

Brocade Fabric OS Command Reference, 8.1.x

Supporting Fabric OS 8.1.0

Supporting Fabric OS 8.1.1

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Document conventions

The document conventions describe text formatting conventions, command syntax conventions, and important notice formats used in Brocade technical documentation.

Text formatting conventions

Text formatting conventions such as boldface, italic, or Courier font may be used in the flow of the text to highlight specific words or phrases.

Format	Description
bold text	Identifies command names
	Identifies keywords and operands
	Identifies the names of user-manipulated GUI elements
	Identifies text to enter at the GUI
italic text	Identifies emphasis
	Identifies variables
	Identifies document titles
Courier font	Identifies CLI output
	Identifies command syntax examples

Command syntax conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
italic text	Identifies a variable.
value	In Fibre Channel products, a fixed value provided as input to a command option is printed in plain text, for example, --show WWN.
[]	Syntax components displayed within square brackets are optional.
	Default responses to system prompts are enclosed in square brackets.

<code>{ x | y | z }</code>	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options. In Fibre Channel products, square brackets may be used instead for this purpose.
<code>x | y</code>	A vertical bar separates mutually exclusive elements.
<code>< ></code>	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
<code>...</code>	Repeat the previous element, for example, <code>member[member...]</code> .
<code>\</code>	Indicates a "soft" line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Notes, cautions, and warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE

A Note provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.



CAUTION

A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.



DANGER

A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Brocade resources

Visit the Brocade website to locate related documentation for your product and additional Brocade resources.

You can download additional publications supporting your product at www.brocade.com. Select the Brocade Products tab to locate your product, then click the Brocade product name or image to open the individual product page. The user manuals are available in the resources module at the bottom of the page under the Documentation category.

To get up-to-the-minute information on Brocade products and resources, go to MyBrocade. You can register at no cost to obtain a user ID and password.

Release notes are available on MyBrocade under Product Downloads.

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As a Brocade customer, you can contact Brocade Technical Support 24x7 online, by telephone, or by e-mail. Brocade OEM customers contact their OEM/Solutions provider.

Brocade customers

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Online	Telephone
Preferred method of contact for nonurgent issues: <ul style="list-style-type: none"> • My Cases through MyBrocade • Software downloads and licensing tools • Knowledge Base 	Required for Sev 1-Critical and Sev 2-High issues: <ul style="list-style-type: none"> • Continental US: 1-800-752-8061 • Europe, Middle East, Africa, and Asia Pacific: +800-AT FIBREE (+800 28 34 27 33) • For areas unable to access toll free number: +1-408-333-6061 • Toll-free numbers are available in many countries.

Brocade OEM customers

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- OEM/Solution Providers are trained and certified by Brocade to support Brocade® products.
- Brocade provides backline support for issues that cannot be resolved by the OEM/Solution Provider.
- Brocade Supplemental Support augments your existing OEM support contract, providing direct access to Brocade expertise. For more information, contact Brocade or your OEM.
- For questions regarding service levels and response times, contact your OEM/Solution Provider.

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Quality is our first concern at Brocade and we have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission, or you think that a topic needs further development, we want to hear from you. You can provide feedback in two ways:

- Through the online feedback form in the HTML documents posted on www.brocade.com.
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Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

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Supported hardware

In those instances in which procedures or parts of procedures documented here apply to some devices but not to others, this list identifies exactly which devices are supported by Fabric OS 8.1.x and which are not.

Although many different software and hardware configurations are tested and supported by Brocade Communication Systems, Inc for Fabric OS 8.1.x, documenting all possible configurations and scenarios is beyond the scope of this document.

Fabric OS 8.1.x provides features that interoperate with the Brocade Analytics Monitoring Platform running Fabric OS 7.4.0_amp. For more information about the Brocade Analytics Monitoring Platform and Fabric OS 8.1.0, you can find content on MyBrocade.com.

The following hardware platforms are supported by Fabric OS 8.1.x

Brocade Gen 5 platform (16-Gbps) fixed-port switches

- Brocade 6505 switch
- Brocade 6510 switch
- Brocade 6520 switch
- Brocade M6505 blade server SAN I/O module
- Brocade 6542 blade server SAN I/O module
- Brocade 6543 blade server SAN I/O module
- Brocade 6545 blade server SAN I/O module
- Brocade 6546 blade server SAN I/O module
- Brocade 6547 blade server SAN I/O module
- Brocade 6548 blade server SAN I/O module
- Brocade 6549 blade server SAN I/O module
- Brocade 6558 blade server SAN I/O module
- Brocade 6559 blade server SAN I/O module
- Brocade 7840 Extension Switch

Brocade Gen 5 platform (16-Gbps) DCX Directors

NOTE

For ease of reference, Brocade chassis-based storage systems are standardizing on the term "Director". The legacy term "Backbone" can be used interchangeably with the term "Director".

- Brocade DCX 8510-4 Director

- Brocade DCX 8510-8 Director

Brocade Gen 6 platform (32-Gbps) fixed-port switches

- Brocade G610
- Brocade G620

Brocade Gen 6 platform (32-Gbps) Directors

- Brocade X6-4 Director
- Brocade X6-8 Director

What is new in this document

This Brocade Fabric OS Command Reference Manual documents all FOS commands that are officially supported. Any commands not listed in this Command Reference are not supported and may be subject to removal without notification.

The Virtual Fabric restrictions for Fabric OS commands table in the “[Command Availability](#)” has been updated. The table lists the Context, Switch type, and Remote Domain Execution for the commands.

NOTE

Admin Domain is deprecated and the information about Admin Domain restrictions are removed.

Changes made for the initial release (53-1004389-01)

New commands

- **appServer** - Displays application server information.
- **fpgaUpgrade** - Upgrades and verifies the field-programmable gate array (FPGA) firmware image.
- **gePortPerfShow** - Displays throughput information for Gigabit Ethernet (GbE) ports and XGE ports.
- **secCertMgmt** - Upgrades and verifies the field-programmable gate array (FPGA) firmware image. - Manages certificates on a switch.
- **slotCfgPersistence** - Sets or removes the persistent disable flag on a slot, and displays all the persistently disabled slots in the chassis.

Modified commands

- **aaaConfig** - Added the **-logpriauth** operand. Added the supported characters for the **-s** operand. Updated the description of the **-e** operand to clarify that encryption algorithm is supported on both RADIUS configuration and TACACS+ configurations. The output of the **aaaConfig --show** command has been enhanced to display the “Log Primary Authentication Status”.
- **ad** - Deleted the **--activate**, **--add**, **--clear**, **--create**, and **--rename** operands.
- **agShow** - Added the **--all** operand.
- **aliAdd** - Added a note that an alias with mixed-type members (WWN and D.I) is not allowed to be part of an alias peer zone.
- **aliCreate** - Added a note that an alias with mixed-type members (WWN and D.I) is not allowed to be part of an alias peer zone. The **aliName** option has been enhanced to begin with number and can consist of letters, numbers, hyphen (-), dollar (\$), or caret (^) character.

- **auditDump** - The audit log count has increased to 1024 entries.
- **bladeCfgGeMode** - Updated the description of the command.
- **bufOpMode** - Added a note that this command is not supported on Gen6 platforms.
- **cfgClear** - The **cfgName** option has been enhanced to begin with number and can consist of letters, numbers, hyphen (-), dollar (\$), or caret (^) character.
- **cfgDisable**, **cfgEnable**, and **cfgSave** - Added the **-force** operand.
- **cfgSize** - Added the "Chassis-Wide Committed Zone DB size" field.
- **configDefault** and **configDownload** - Added a note that this command is blocked on Gen6 platforms if encryption is enabled on ports.
- **dlsShow** - Added the "DLS is set with Lossless enabled, Two-hop Lossless disabled" message.
- **ethIf** - Removed the **half** option for the **-duplex** operand.
- **extnCf** - Added the **--fwld-prep** operand.
- **fabricLog** - Added the **--failstop** operand and added **dport** option to the **--disable** and **--enable** operands.
- **faPwwn** - Corrected minor typos.
- **fcipLedTest** - Added a note that you cannot run this command on a specific slot by disabling the blade in the slot using the **bladeDisable** command.
- **fcipPathTest** - Updated the default value as 1 for the **-nframes** operand.
- **fcrFabricShow** - Added the **--alias** operand.
- **fcrLsanCount** - Added the maximum LSan count values for the Gen6 platforms.
- **ficonCupSet** - Added the **UALERT_type** alert type.
- **ficonCupShow** - Added the **UALERT_MODE** parameter.
- **fipsCf** - Added the **simulate** option and removed the following options: **sha256**, **--showall**, and **--force**.
- **flow** - Added the **-sfid**, **-dfid**, and **-srceid** options. Modified the description of the **-time** operand.
- **fosExec** - Added **--ag** operand.
- **frameLog** - Added the following discard frame types: **type1miss**, **type2miss**, **type6miss**, and **all**. Added the **Src Entity Id** and **Dst Entity Id** fields.
- **ipAddrSet** - Added **-gwyip gateway_ip** operand.
- **ldapCf** - Added the **--mapattr** operand.
- **lfcf** - Updated the description of the **--lislenable** operand.
- **licenseRemove** - Added the following prerequisite: You may need to refresh the ports using the **portDisable/portEnable**, **switchDisable/switchEnable**, or **chassisDisable/chassisEnable** commands.
- **lsanZoneShow** - Added the **-m** and **-r** operands.
- **lsCf** - Added the following options: **-lisldisable**, **-ficon**, and **-instance**.
- **mapsConfig** - Added the **unquar** and **uninstall_vtap** MAPS actions.
- **mapsRule** - Added the **unquar** and **uninstall_vtap** MAPS actions and **--createRoR** and **--cloneByGroup** operands. Added new monitoring systems.
- **motd** - Added a note that the d banner is shown only in the Fabric OS CLI prompt and it is not shown in Web Tools.
- **nsShow** - Added **NodeSymb**, **Connected through AG**, and **Real device behind AG** fields and updated command examples.
- **portAddress** - This command is enhanced to accept port range.

- **portBufferShow** - Added buffer allocation details for the Gen6 platforms.
- **portCfg** - Added the following options: **filter-set**, **app-type**, **--preshared-key**, **--key-pair**, **--legacy**, **restart**, **--arl-algorithm**, **--legacy-qos-mode**, and **--decrypt-cfgdb**.
- **portCfgCompress** and **portCfgEncrypt** - Updated encryption and compression feature support information for 32 Gbps-capable platforms.
- **portCfgDefault** - This command is blocked if encryption is enabled on a 32 Gbps-capable port.
- **portCfgOctetSpeedCombo** - This command is blocked if encryption is enabled on Brocade G610 switch.
- **portCfgQoS** - The **--setratelimit** operand is not supported on Brocade G610 switch.
- **portCmd** - Added the **--connection-type** and **--peer** operands.
- **portErrShow** - Added the "uncor err" field.
- **portLedTest** - Modified the description of the **-uports** operand to clarify that this operand is supported on Brocade FX8-24.
- **portLoopbackTest** - The loopback mode **7** is supported on Brocade FX8-24 blade. The **-uports** operand is not supported on Brocade FX8-24.
- **portShow** - Added the **filter-set**, **app-type**, and **--hcl-status** options.
- **portStatsShow** - Added the **other_credit_loss**, **er_encr_blk**, **er_encr_short_frame**, and **er_encr_discard** fields. Modified the description of the "compression_ratio" to clarify that it is not displayed on Brocade G610.
- **rasAdmin** - Added the **--quiet** operand.
- **sfpShow** - Updated command examples.
- **slotShow** - Added blade type ID 176.
- **snmpConfig** - Added the **passwd_encryption** option and "mapsQuietTimeExpirationTrap" trap. Updated the description of the **-auth_passwd** and **-priv_passwd** operands to clarify that the password must be between 8 and 32 characters long in FIPS mode.
- **snmpTraps** - The **ALL** option is not supported with the **--block** operand.
- **spinFab** - Added a note that the ICL or QSFP port LEDs glow steady green and blinking is not supported. Spinfab is not supported on F_Port that is d as a D_Port.
- **sshUtil** - Added a **rekeyinterval** and **showrekey** operands.
- **switchName** - Updated the command examples.
- **switchShow** - Added the 32G and N32 speed options. Added "Port not bounded to Address in FICON Switch" and "Decommissioned" port disable reasons.
- **zoneAdd** and **zoneRemove** - The **-principal** and **-members** operands are enhanced to accept zone alias.
- **zoneCreate** - The **zonename** option has been enhanced to begin with number and can consist of letters, numbers, hyphen (-), dollar (\$), or caret (^) character. The **-principal** and **-members** operands are enhanced to accept zone alias.
- **zoneObjectCopy** and **zoneObjectRename** - The zone configuration name has been enhanced to begin with number and can consist of letters, numbers, hyphen (-), dollar (\$), or caret (^) character.
- **zoneShow** - The command output is enhanced to display peer zones including the peer zones with alias.

Deprecated commands

None

Changes made for the previous release (53-1004389-02)

New commands

- **bladeVerShow** - Displays versions of FPGA code in various blades and blade components.
- **haShutdown** - Shuts down high availability (HA) reboot.
- **nbrShow** - Displays FSPF protocol information.
- **pathBwConfig** - Controls and displays information about ISL and ICL bandwidth relate features.
- **slotStatsClear** - Clears hardware statistics for all the ports or the ports in specified slot or chip.
- **snmpStatistics** - Changes or displays the SNMP throttling attributes.
- **uConfigShow** - Displays static unicast fabric routes in the route path database.

Modified commands

- **cfgEnable**, **cfgDisable**, **cfgSave**, **mapsRule**, and **portCfgLongDistance** - Updated the command examples.
- **cliHistory** - Removed the **-clear** operand.
- **ethIf**, **ficonCupShow**, **portCfg**, and **snmpConfig** - Corrected minor typos.
- **fcipPathTest** - Added frame count for Brocade 7840 switch and Brocade SX6 blades.
- **lsCfg** - Added Brocade 7840 switch and Brocade SX6 blades support for **--ge** option for the **-show** operand.
- **mapsRule** - Updated the description of the **-group group_name** option.
- **passwdCfg** - Updated the description of the **-charset value** and **-minlength value**.
- **portCfgFec** - Updated the description that except for transparent DWDM, FEC is not supported over Dense Wavelength Division Multiplexing (DWDM).
- **portCfgQoS** - The **--setratelimit ratelimit** operand is not supported on Brocade G610 switch.
- **sfpShow** - Added 32 Gbps SPFPs to **-health** operand.
- **slotCfgPersistence** - Updated the description to clarify the status change of blade when persistent slot power off is set on.

Deprecated commands

None

Changes made for the previous release (53-1004389-03)

New commands

- **commandComplete**, **saveHistory**, and **saveHistoryOnReboot** - These commands are used by FOS to support certain shell functions. Users should not run these commands directly.
- **export_switch**, **set_console_switch**, **set_switch_inst**, and **setSlot** - These commands are used for administrative functions and will fail when run directly.
- **tcpTimeStamp** - Enables or disables the TCP Timestamping in the TCP frame.

Modified commands

- **dlSet** - Updated the description of the **--enable -lossless** to note the difference of loseless feature between Gen 5 and Gen 6 switches.

What is new in this document

- **ficonCupSet** - Updated the note to add High Integrity Fabric (HIF) mode must be enabled before FMSMODE is enabled.
- **firmwareCheck** - Added the **--enable -boot**, **--disable -boot**, and **--show** operands.
- **mapsPolicy** - Updated the **--create *policy_name*** characters length to 31 characters.
- **portCfgFillword** - Updated the note to say the command is applicable only to 8Gbps FC ports on the FC8-64 and FX8-24 blades in DCX8510 directors.
- **portCmd** - Updated **--wtool create -t | --time *time*** unit to minutes.
- **secCertMgmt** - Updated the **delete** description to replace FCIP with FCAP.
- **snmpConfig** - Added **--set snmpv3** and **--default** operands to synopsis that were missing. Updated **--default** description to state the operand is valid with snmpv1, snmpv3, accesscontrol, mibcapability, systemgroup, seclevel, and auditinterval.
- **switchName** - Updated **name** description and added few examples.
- **uRouteShow** - Removed reference of unsupported uRouteConfig command in **Flags** description.

Deprecated command

- uConfigShow

Changes made for this release (53-1004389-04)

New commands

None

Modified commands

- **configure** - Updated the *F-Port Device Update Mode* in command examples.
- **fosConfig** - Removed the **-ethsw** operand.
- **mapsSam** - Added **AE_port** and **AF_port** types.
- **passwdCfg** - Updated **-history *value*** description to modify the default value to 1.
- **portCfgNonDfe** - Updated notes to say the command is applicable only on the fixed 8 Gbps link on Gen5 switches.
- **portShow** - Removed the **Diag_Flt** option.
- **switchShow** - Removed the **Diag_Flt** option.
- **userConfig** - Updated the **-at | -access-time start_time -end_time** description.

Deprecated commands

- bportloopbacktest
- bpturboramtest
- ceeportledtest
- ceeportloopbacktest
- ceeturboramtest
- cmsh
- fcoe
- fcoelogincfg

- fcoelogingroup
- ifmodeset
- ifmodeshow
- minispropshow
- portmirror
- resourcemonitor
- syslogdipadd
- syslogdipremove
- syslogdipshow
- userrename

Command spelling and capitalization corrections

The following errors appear in the Command Reference or Man pages.

TABLE 1 Command spelling and capitalization corrections

Incorrect command format	Correction
setslot	Incorrect capitalization; this is the same as the setSlot command.
commandcomplete	Incorrect capitalization; this is the same as the commandComplete command.
tstimezone	Incorrect capitalization; this is the same as the tsTimeZone command.
portcfglag	A space is missing; this appears only in the -help listing for the portcfg lag command.
portcfgsla	A space is missing; this appears only in the -help listing for portcfg sla command.

CLI usage conventions

- Some Fabric OS show commands display certain switch or fabric components in three-digit decimal numbers, for example, 003. When you use these numeric identifiers as inputs to other commands, you must remove the leading zeros; otherwise the commands will either fail or generate incorrect results. Adding zeros to any decimal number in a command input will cause that number to be treated as an Octal number.
- The entire command line (both commands and options) is case-sensitive. Selected command names and options may also support Java-style capitalization. Java-style capitalization means that while **bannershow** and **bannerShow** will both work, **BANNERSHOW** and **BannerShow** will not. The options of commands on the other hand, are strictly case sensitive and therefore only lower case or Java-style capitalization can be entered depending on each option. This means that while the **-USB** option of the **configDownload** command works, but **-usb** will not. Refer to each syntax for explicit instructions on supported capitalization for each command and options.
- When command examples in this guide show user input enclosed in quotation marks, the quotation marks are required. Example: **zonecreate "zonename"** requires that the value for **zonename** be in quotation marks.
- Automatic page breaks in CLI command output displays are being phased out. Use the **more** option to display command output with page breaks: **command | more**. Do not use the **more** option in conjunction with help pages. Executing **help command | more** will display a "no manual entry for command" message.

Using Fabric OS Commands

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Using the command line interface

The Fabric OS command line interface (CLI), accessed via Telnet, SSH, or serial console, provides full management capability on a Brocade switch. The Fabric OS CLI enables an administrator to monitor and manage individual switches, ports, and entire fabrics from a standard workstation. Selected commands must be issued from a secure Telnet or SSH session.

Access is controlled by a switch-level password for each access level. The commands available through the CLI are based on the user's login role and the license keys used to unlock certain features.

The Fabric OS CLI provides the following capabilities:

- Access to the full range of Fabric OS features, given the license keys installed.
- Assistance with configuration, monitoring, dynamic provisioning, and daily management of every aspect of storage area networks (SANs).
- A deeper view of the tasks involved in managing a Brocade SAN.
- Identification, isolation, and management of SAN events across every switch in the fabric.
- Management of Brocade licenses.

The documentation for each command includes a synopsis of its syntax, a description of command use, and a set of examples. The same information can be accessed by issuing the **help** command followed by the command name on a Brocade switch or director. This command displays the help page for the specified command. For example, to display the help page for **portCfg**, enter:

```
switch:admin> help portCfg
```

Understanding Role-Based Access Control

Fabric OS implements Role-Based Access Control (RBAC) to control access to all Fabric OS operations.

Eight predefined roles are supported, as described in [Table 2](#). These predefined role definitions are guided by perceived common operational situations and the operations and effects a role is permitted to have on a fabric and individual fabric elements.

TABLE 2 Role definitions

Role name	Definition
User	Non-administrative use, such as monitoring system activity. In Fabric OS v6.2.0 and later, the user account gains access to Fabric ID 128. This is the default logical fabric after a firmware upgrade.
Operator	A subset of administrative tasks typically required for routine maintenance operations.
SwitchAdmin	Administrative use excluding security, user management, and zoning.
ZoneAdmin	Zone management only.

TABLE 2 Role definitions (Continued)

Role name	Definition
FabricAdmin	Administrative use excluding user management management.
BasicSwitchAdmin	A subset of administrative tasks, typically of a more limited scope and effect.
Admin	All administrative tasks, including encryption and chassis commands.
SecurityAdmin	Administrative use including admin, encryption, security, user management, and zoning.

In addition to these predefined roles, Fabric OS v7.0.0 and later provides support for creating user-defined roles. Refer to the **roleConfig** command for more information.

Additional command restrictions apply depending on whether Virtual Fabrics are enabled in a fabric. Refer to ["Command Availability"](#).

Encryption commands and permissions

There are two system RBAC roles that are permitted to perform encryption operations.

- Admin and SecurityAdmin

Users authenticated with the Admin and SecurityAdmin RBAC roles may perform cryptographic functions assigned to the FIPS Crypto Officer, including the following:

- Perform encryption node initialization.
- Enable cryptographic operations.
- Manage critical security parameters (CSPs) input and output functions.
- Zeroize encryption CSPs.
- Register and a key vault.
- Configure a recovery share policy.
- Create and register recovery share.
- Encryption group and clustering-related operations.
- Manage keys, including creation, recovery, and archiving functions.

- Admin and FabricAdmin

Users authenticated with the Admin and FabricAdmin RBAC roles may perform routine encryption switch management functions including the following:

- Configure virtual devices and crypto LUN.
- Configure LUN/tape associations.
- Perform re-keying operations.
- Perform firmware download.
- Perform regular Fabric OS management functions.

For a listing of RBAC permissions for cryptoCfg subcommands, refer to the *Fabric OS Encryption Administrator's Guide*.

Understanding Virtual Fabric restrictions

All Fabric OS commands are subject to additional RBAC enforcement with regard to Virtual Fabric contexts and switch types. Commands can be executed in one or more of the contexts described in [Table 3](#). Execution of chassis commands requires chassis permissions.

TABLE 3 Virtual Fabric contexts

Context type	Definition
Switch context	Command applies to the current logical switch only, or to a specified logical switch.
Chassis context	Command applies to the chassis on which it is executed.
Switch and chassis context	Command can be executed in a logical switch context or in a chassis context.
Disallowed	Command is not supported in Virtual Fabric mode.

Switch commands are further defined by the switch type restrictions as described in [Table 4](#). Switch type restrictions are not applicable to commands that require chassis permissions.

TABLE 4 Switch types

Switch type	Definition
All Switches	Command can be executed in any switch context.
Base Switch Only	Command can be executed only on the base switch.
Default Switch Only	Command can be executed only on the default switch.
N/A	Command is a chassis command or not supported in Virtual Fabric mode.

In a Virtual Fabric environment where contexts are enforced, the following Virtual Fabric restrictions apply to the RBAC permissions specified in [Table 2](#). Refer to the **userConfig** command for more information on configuring user account access permissions in a Virtual Fabric environment.

- Any given role is allowed to execute all switch commands to which the role is authorized in the account's home context. The default home context is the default logical fabric FID 128.
- You can change an account's home context to a specified FID and the account permissions to access additional logical switches specified in the user's Fabric ID list.
- Accounts with user or admin permissions can be granted chassis permissions. A user account with the chassis role can execute chassis-level commands at the user RBAC access level. An admin account with the chassis role can execute chassis-level commands at the admin RBAC access level.

Use the **classConfig --showcli** command to look up the Virtual Fabric context for a specified command. Refer to ["Command Availability"](#) for a complete listing of Virtual Fabric restrictions that apply to the commands included in this manual.

Determining RBAC permissions for a specific command

To determine RBAC permission for a specific command, use the **classconfig** command.

1. Enter the **classconfig --showcli** command for a specified command.

The command displays the RBAC class and access permissions for each of the command options. Note that options for a single command option can belong to different classes.

2. Enter the **classconfig --showroles** command and specify the RBAC class of the command option you want to look up.

The command displays the default roles and the permissions they have to access commands in the specified RBAC class.

The following example shows how you can obtain permission information for the **zone** command. Suppose you want to know if a user with the SwitchAdmin role can create a zone. You issue the **classconfig --showcli zone** command for the zone command, which shows that the **zone --add** command belongs to the RBAC class "zoning". You then issue the **classconfig --showroles** command for the zoning RBAC class. The output shows that the SwitchAdmin role has 'Observe' (O) permissions only for any command in the zoning class. This means that the user with the SwitchAdmin role is not allowed to create zones. To allow this user to create a zone, you must change the user's access to any of the roles that have "observe and modify" (OM) access. Use the **userConfig** command to change the user's role or use the **roleConfig** command to create a custom role.

```
switch:admin> classconfig --showcli zone
```

CLI	Option	Permission	RBAC Class	Context
zone	Killall	OM	Debug	vf
zone	evlogclear	OM	Debug	vf
zone	evlogshow	O	Debug	vf
zone	evlogtoggle	OM	Debug	vf
zone	mergeshow	O	Debug	vf
zone	stateshow	O	Debug	vf
zone	activate	OM	Zoning	vf
zone	add	OM	Zoning	vf
zone	copy	OM	Zoning	vf
zone	create	OM	Zoning	vf
zone	deactivate	OM	Zoning	vf

(output truncated)

```
switch:admin> classconfig --showroles zoning
```

Roles that have access to the RBAC Class 'zoning' are:

Role Name	Permission
User	O
Admin	OM
Factory	OM
Root	OM
Operator	O
SwitchAdmin	O
ZoneAdmin	OM
FabricAdmin	OM
BasicSwitchAdmin	O
SecurityAdmin	O

NOTE

If a Role Name does not appear in the list, it indicates that the role is not available to the specified class and associated commands in that class are restricted and cannot be executed in that role.

Fabric OS Commands

aaaConfig

Manages RADIUS, LDAP, and TACACS+ configuration information.

Synopsis

aaaconfig

aaaconfig --show

aaaconfig --add | --change *server -conf* radius | ldap | tacacs+
[-p *port*] [-d *domain*] [-t *timeout*] [-s *secret*]
[-a chap | pap | peap-mschapv2] [-e *encr_type*]

aaaconfig --remove *server -conf* radius | ldap | tacacs+

aaaconfig --move *server -conf* radius | ldap | tacacs+ *to_position*

aaaconfig --authspec *aaa1*[:*aaa2*] [-backup] [-nologout]
[-logpriauth *yes* | *no*]

aaaconfig --help

Description

Use this command to manage the RADIUS, LDAP, and TACACS+ server configuration for the authentication, authorization and accounting (AAA) services. Use this command to display, add, remove, change, enable or disable the RADIUS, LDAP, or TACACS+ configuration.

Brocade switches use a local as well as a remote authentication mechanism for validating a login. Supported authentication protocols include Password Authentication Protocol (PAP), Challenge-Handshake Authentication Protocol (CHAP) and Protected Extensible Authentication Protocol (PEAP). Light-weight Directory Access Protocol (LDAP) authentication against Active Directory for user authentication and authorization is supported.

RADIUS, LDAP or TACACS+ servers are contacted in the order they appear in the configuration list. The first server returning authentication success or failure causes the authentication request to succeed or fail. If no response is received within the specified timeout, the next RADIUS, LDAP, or TACACS+ server in the list is contacted. An event entry logs if all RADIUS, LDAP, or TACACS+ servers fail to respond.

When the command succeeds, it triggers an event log (the Fabric OS error log) to indicate a server is added, removed, or modified. Refer to the Fabric OS Message Reference manual for specific details.

There are two modes of operation in LDAP authentication, FIPS mode and non-FIPS mode. However, there is no option to configure LDAP while the switch is in FIPS mode. The LDAP client checks if FIPS mode is set on the switch and uses FIPS-compliant TLS ciphers for LDAP. If FIPS mode is not set and the ADir server is configured for FIPS ciphers, it uses FIPS-compliant ciphers.

Configuration changes are persistently saved and take effect with the next AAA request. The configuration applies to all switch instances in a platform supporting multiple switch domains.

Notes Customers can use centralized RADIUS servers to manage AAA services for a switch, as defined in the RFC 2865 RADIUS specification.

This command can be executed when logged in through the console, Telnet or SSH connection.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

server

Specifies an IP address or a server name in dot-decimal notation. IPv6 addresses are supported. If a name is used, a DNS entry must be correctly configured for the server. If the specified server IP address or name already exists in the current configuration, the command fails and generates an error. However, the command does not validate the server name against the IP address in the configuration. Make sure to avoid duplicate configuration of the same server, one specified by the name, the other specified by the IP address.

--show

Displays the current AAA service configuration.

--add | --change *server* [*options*]

Adds or modifies a RADIUS, LDAP, or TACACS+ server. The --add option appends the specified server to the end of the current configuration list. A maximum of 5 servers are supported for each authentication type. The --change option modifies the specified server configuration to use the new arguments. The server must be one of the IP addresses or names shown in the current configuration.

The following options are supported:

-conf *radius* | *ldap* | *tacacs+*

Specifies the server configuration as either RADIUS, LDAP, or TACACS+. This operand is required.

The following operands are optional:

-p *port*

Specifies the RADIUS, LDAP, or TACACS+ server port number. Supported range is 1 to 65535. The default port is 1812 for RADIUS authentication. The default port is 1813 for RADIUS accounting. The default port is 389 for LDAP authentication. The default port is 49 for TACACS+ authentication. This operand is optional. If no port is specified, the default is used.

-t *timeout*

Specifies the response timeout for the RADIUS, the LDAP or the TACACS+ server. The supported range is 1 to 30 seconds. The default is 3 seconds. This operand is optional. If no timeout is specified, the default is used.

-d *domain*

Specifies the Windows domain name for the LDAP server, for example, brocade.com. This option is valid only with the -conf ldap option. This operand is required.

-s *secret*

Specifies a common secret between the switch and the RADIUS or TACACS+ server. The secret must be 8 to 40 characters for RADIUS server, and 1 to 40 characters for TACACS+ server. This option is valid only with `-conf radius` or `-conf tacacs+` options, and it is optional. The default value is `sharedsecret`. The secret can include any printable ASCII character from 0x21 to 0x7E. Spaces are not allowed.

-a

Specifies the remote authentication protocol for the RADIUS or TACACS+ server. This operand is valid with `-conf radius` or `-conf tacacs+` options, and it is optional. The default value for this operand is CHAP.

Note that the distinction between protocols is only applicable to the packets between a system and the RADIUS or TACACS+ server. To authenticate a user to the system, a password is always used.

Valid protocols are one of the following:

pap

Password Authentication Protocol

chap

Challenge-Handshake Authentication Protocol

peap-mschapv2

Protected Extensible Authentication Protocol. This is applicable only to RADIUS configuration. The combination of "peap-mschapv2" and IPv6 causes RADIUS authentication to be rejected. PEAP with IPv4 succeeds.

-e *encr_type*

Specifies the encryption algorithm. This is applicable to both RADIUS and TACACS+ configurations. Valid algorithms include the following:

none

Null encryption algorithm

aes256

AES-256 algorithm

--remove *server*

Removes the specified server from the configuration. The server must match one of the IP addresses or the names shown in the current configuration. The following operand is required:

-conf radius | ldap | tacacs+

Specifies the server configuration as either RADIUS, LDAP, or TACACS+. If the server is enabled, the command does not allow the last server to be removed from the configuration list. RADIUS, LDAP, or TACACS+ must first be disabled before the last server of the specified type may be removed.

--move server option

Moves the specified server from the current position in a RADIUS, LDAP, or TACACS+ configuration list to the specified position. If the specified position is the same as the current position, no change takes place. Valid options include the following:

-conf radius | ldap | tacacs+

Specifies the server configuration as RADIUS, LDAP, or TACACS+. This operand is required.

to_position

Specifies the new position for the server. The value for to_position is an integer, and must be within the range of server positions in the current configuration. Use the --show option to determine current server positions. This operand is required.

--authspec "aaa1[:aaa2]" [-backup] [-nologout]

Replaces the configuration with the specified AAA service. Each service can be specified only once in the list, for example, "radius; local; radius" is invalid. No edit option is provided. The --authspec option takes as an argument a semicolon-separated list of AAA services. Services must be enclosed in double quotation marks.

The following AAA services and service pairs are valid:

"local"

Default setting. Authenticates the user against the local database only. If the password does not match or the user is not defined, the login fails.

"radius"

When "radius" is specified, the first RADIUS server is contacted. If the RADIUS server is not reachable, the next RADIUS server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.

"ldap"

When "ldap" is specified, the first Active directory (AD) server is contacted. If the AD server is not reachable, the next AD server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.

"tacacs+"

When "tacacs+" is specified, the first Active directory (AD) server is contacted. If the AD server is not reachable, the next AD server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.

"radius;local"

Enables the current RADIUS configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "radius" and "local" are specified, and if the RADIUS servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, the RADIUS authentication fails but login succeeds through the switch database.

"ldap;local"

Enables the current LDAP configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "ldap" and "local" are specified, and if the AD servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, AD authentication fails but login would still succeed through the switch database.

"tacacs+;local"

Enables the current TACACS+ configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "tacacs+" and "local" are specified, and if the AD servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, AD authentication fails but login would still succeed through the switch database.

-backup

For use with the "radius;local", "ldap;local", and "tacacs+;local" options only. The backup option states to try the secondary AAA service only if none of the primary AAA services are available.

-nologout

If -nologout is not specified, a change in the authentication mechanism may result in the termination of existing sessions. All existing sessions are terminated if the new authentication mechanism is one of the following: RADIUS only, LDAP only, TACACS+ only, or Local. If -nologout is specified, there will be no effect on the existing sessions regardless of the chosen authentication mechanism.

-logpriauth yes | no

Suppresses (no) or displays (yes) log message for authentication failure by primary AAA service if authentication is to be done through secondary AAA service, which is local switch database. By default, primary authentication failure logs are displayed.

--help

Displays the command usage.

Examples

To display the current RADIUS, LDAP, and TACACS+ configurations:

```
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====
  Position Server      Port  Timeout(s) Auth-Protocol
-----
  1   192.168.233.48   1812   3          CHAP
  2   192.168.233.44   1812   3          CHAP
  3   radserver       1812   5          CHAP

LDAP CONFIGURATIONS
=====
LDAP configuration does not exist.

TACACS+ CONFIGURATIONS
=====
TACACS+ configuration does not exist.

Primary AAA Service: Switch database
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To move the RADIUS server "radserver" from position 3 to position 1:

```
switch:admin> aaaconfig --move radserver -conf radius 1
```

To configure the RADIUS server 192.168.233.48 as an LDAP server:

```
switch:admin> aaaconfig --change 192.168.233.48 \  
-conf ldap -p 3002 -t 1
```

To add an AD/LDAP server to the configuration:

```
switch:admin> aaaconfig --add 194.72.68.335 \  
-conf ldap -p 3002 -d brocade.com -t 1
```

To replace the AAA service with backup option:

```
switch:admin> aaaconfig --authspec "ldap;local" -backup
```

To change the authentication mechanism with the no logout provision:

```
switch:admin> aaaconfig --authspec radius -nologout  
switch:admin> aaaconfig --show  
RADIUS CONFIGURATIONS  
=====
```

Position	: 1
Server	: 172.20.1.68
Port	: 1812
Timeout(s)	: 3
Auth-Protocol:	PEAP-MSCHAPv2

```
LDAP CONFIGURATIONS  
=====
```

LDAP configuration does not exist.

```
TACACS+ CONFIGURATIONS  
=====
```

TACACS+ configuration does not exist.

```
Primary AAA Service: RADIUS  
Secondary AAA Service: None  
Log Primary Authentication Status: yes
```

To add a TACACS+ server to the configuration:

```
switch:admin> aaaconfig --add 10.17.56.56 -conf tacacs+ \  
-s "sharedkey" -p 49 -t 5 -a pap  
switch:admin> aaaconfig --authspec tacacs+  
switch:admin> aaaconfig --show  
RADIUS CONFIGURATIONS  
=====
```

RADIUS configuration does not exist.

```
LDAP CONFIGURATIONS  
=====
```

LDAP configuration does not exist.

```
TACACS+ CONFIGURATIONS  
=====
```

Position	: 1
Server	: 10.17.56.56
Port	: 49
Retries	: 5

```
Timeout(s)      : 5
Auth-Protocol: PAP
```

```
Primary AAA Service: TACACS+
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To suppress log of primary authentication status:

```
switch:admin> aaaconfig --authspec "tacacs+;local" -logpriauth no
Log for primary authentication status configured to no
AUTH configuration already enabled
```

To display log of primary authentication status:

```
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====

Position      : 1
Server        : 1.2.3.4
Port          : 1812
Secret        : *****
Timeout(s)    : 3
Auth-Protocol : CHAP
Encryption level : AES256

LDAP CONFIGURATIONS
=====

Position      : 1
Server        : 10.38.37.183
Port          : 389
Domain        : lal2security.brocade.com
Timeout(s)    : 3

TACACS+ CONFIGURATIONS
=====

Position      : 1
Server        : 1.1.1.1
Port          : 49
Secret        : *****
Timeout(s)    : 3
Auth-Protocol : CHAP
Encryption level : AES256
Primary AAA Service: TACACS+
Secondary AAA Service: Switch database
Log Primary Authentication Status: yes
```

SEE ALSO None

ad

Manages Admin Domain operations.

Synopsis

```

ad --apply

ad --clear [-f]

ad --deactivate ad_id

ad --delete ad_id

ad --exec ad_id "command_list"

ad --remove ad_id [-d "dev_list"] [-s "switch_list"]

ad --save

ad --select ad_id

ad --show [-i | [ad_id [-m mode]]] (in AD255 context)

ad --show [-i ] (in AD0 context)

ad --show (in AD1-254 context)

ad --validate [-i | [ad_id | [-m mode]]]

ad --transabort

ad --transshow

```

Description

Use this command to manage Admin Domain operations. Admin Domains are not supported in Fabric OS v8.1.0 and later. When this command is executed, it displays the following warning message: "Warning: Admin Domains are not supported in Fabric OS v8.1.0. Admin Domain commands and functionality will be removed in future Fabric OS versions."

This command follows a batched-transaction model. When executed with the `--clear`, `--deactivate`, `--delete`, `--remove` options, this command changes only the Defined Configuration in the transaction buffer. The `--save` option sends the changes made in the transaction buffer to all other switches and permanently saves the changes to the Defined configuration in persistent storage. The `--apply` option performs a save operation, sends a request to apply the Admin Domain configuration (as defined in the persistent storage), and then enforces the configuration locally.

The Admin Domain transaction buffer is linked to the current login shell and is lost on logout. Use the `--transshow` option to display the current Admin Domain transaction information.

Before creating Admin Domains, the default zone mode should be set to "No Access". To set the default zone mode to "No Access" execute the following command sequence:

```

switch:admin> ad --select AD0
switch:admin> defzone --noaccess
switch:admin> cfgsave

```

Refer to defZone help for more information.

All switches, switch ports and devices in the fabric that are not specified in any other Admin Domain are treated as implicit members of ADO. Members added to ADO are called explicit members.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The generalized syntax for this command is "ad action arguments". Command actions are described first. Argument details follow the description of actions.

The following actions are supported:

--apply

Saves the current transaction buffer contents to the defined configuration and enforces the defined configuration on all switches in the fabric. ad --apply prompts for confirmation.

--clear [-f]

Deletes all ADs and clears ADO's explicit members. This command fails if AD1 through AD254's zone databases are not empty. The command prompts for confirmation before deleting all Admin Domains. The clear operation remains in the transaction buffer until you issue ad --apply or ad --save.

When used with the -f option, this command deletes all ADs and clears all explicit members from ADO, even if the zone databases or AD1 through AD254 are not empty. Use the force option to remove Admin Domains before enabling Virtual Fabrics.

--deactivate arg

Deactivates an Admin Domain. This operation fails if an effective zone configuration exists under the Admin Domain. This operation is not allowed on ADO. ad --deactivate does not disable any ports. Existing logins to a deactivated Admin Domain are not terminated; however, subsequent CLI execution is disallowed. A message is displayed to indicate that the current Admin Domain is not active. The command prompts for confirmation. The deactivate operation remains in the transaction buffer until you issue ad --apply or ad --save.

--delete arg

Deletes an Admin Domain. This command succeeds regardless of whether the Admin Domain is in a deactivated or an activated state. ADO always exists; using this operation on ADO does not delete ADO, it only removes all explicit members from ADO. The ADO zone database does not need to be empty for the delete operation to succeed. Not all existing user sessions to a deleted Admin Domain are terminated; however, subsequent CLI execution is disallowed. A message displays indicating that the current Admin Domain is not active. The command prompts for confirmation before executing the delete action. The delete operation remains in the transaction buffer until you issue ad --apply or ad --save.

--exec arguments

This command performs the following tasks:

- Creates a new shell.
- Executes `ad --select` to the specified Admin Domain.
- Executes the specified commands.
- Exits the shell.

--remove arguments

Removes one or more members from an Admin Domain. Removing the last member from an Admin Domain deletes the Admin Domain. The remove operation remains in the transaction buffer until you issue `ad --apply` or `ad --save`.

--save

Saves the outstanding Admin Domain transaction to the defined configuration on all switches in the fabric. The saved Admin Domain definition is enforced only when `ad --apply` is issued. Attempts to modify and save an Admin Domain that is currently enforced will fail. The command prompts for confirmation.

--select arg

Selects an Admin Domain context. This command fails if the corresponding Admin Domain is not activated. This operation succeeds only if you have the specified Admin Domain. This command internally spawns off a new shell within the requested Admin Domain context. Type `logout` or `exit` to exit from the selected Admin Domain. The zone transaction is linked to the current shell; therefore, the zone transaction buffer is lost on `logout`. Use `cfgTransShow` to display the current zoning transaction information.

--show arguments

Displays the membership information of the specified Admin Domain or all Admin Domains.

When executed in an AD255 context and an Admin Domain name is not specified, all information about all existing Admin Domains is displayed. When executed in an ADO-AD254 context, the command, by default, displays the members of the current Admin Domain's effective configuration, and therefore you cannot specify an `ad_id` or mode.

When executed in an AD255 context, all Admin Domain information from the transaction buffer, defined configuration and effective configuration is displayed.

--validate arguments

Checks whether Admin Domain members are from a non-Admin Domain aware switch or the members do not exist in the fabric. The output is similar to `ad --show`; however, all members that are from non-Admin Domain aware switches are marked with a plus sign (+). Members that are not online are marked with an asterisk (*).

FC Router Front Phantom Domain and FC Router Translate Phantom Domain are virtual entities without any exposed management interfaces; therefore, any FC Router phantom switch WWN specified in an AD switch member list is marked as a non-Admin Domain aware member. All D,PI members in the device list corresponding to an FC Router Phantom Domain are marked as non-Admin Domain aware members. All FC Router imported devices in the AD device list are marked as AD-aware members.

--transabort

Aborts the transaction buffer. The command prompts for confirmation before aborting the transaction.

--transshow

Displays the ID of the current Admin Domain transaction and indicates whether or not the transaction can be aborted. The transaction cannot be aborted if it is an internal Admin Domain transaction.

The following arguments are supported with selected AD actions:

ad_id

Uniquely identifies an Admin Domain. An *ad_id* can be a name or a number:

name

An Admin Domain name can be up to 63 bytes, must begin with a letter, and can consist of letters, numbers, and underscore characters. The Admin Domain names with the format AD[0-255] are reserved for autoassigning Admin Domain names to Admin Domains created with an Admin Domain number, and can be assigned only to the corresponding Admin Domain.

number

An Admin Domain can be specified by a number. Valid values include 0 through 255. AD0 and AD255 are always active. AD0 cannot be specified with --activate, --deactivate or --delete actions. AD255 can be specified only with --exec, --show and --validate actions.

For all command iterations, the Admin Domain is specified either by a name or a number.

-d "*dev_list*"

Specifies the list of devices in an Admin Domain, in quotation marks. Separate each entry in the device list with a semicolon (;). Valid formats include the following:

D,PI

Uses existing zone D,PI member types. Benefits include the following:

- Grants port control and zoning on the switch port and the devices attached to that port.
- PI can be specified as a range; for example, D,[0 to 34]. The port index range is expanded and stored internally.
- The same D,PI members can be specified in more than one Admin Domain.

Device WWN

Uses traditional zone WWN member types. Benefits include the following:

- Supports node or port WWNs.
- End-device members, whose WWNs are used in an Admin Domain definition, need not be online when the Admin Domain is created (similar to a zoneCreate operation).
- Provides rights to zone the devices.
- Provides administrative view rights to the switch port the device is connected to.

-s "*switch_list*"

Specifies the list of switches in an Admin Domain. The list must be enclosed in quotation marks. Separate each entry in the switch list with a semicolon (;). Specify the switch in one of the following formats:

Switch WWN

World wide name of the switch.

Domain ID

Any switch member specified in Domain ID format is converted into a switch WWN-based on the current fabric information. Operations with switch list fail if the domain ID to switch WWN lookup fails.

Membership in an AD switch_list grants switch administrative operations such as switchDisable, switchEnable, reboot, ad, etc. on the switch. Ownership of a switch implicitly provides port control capability on all its ports, but no zoning control.

"command_list"

Specifies one or more commands to execute in an Admin Domain context. This operand is valid only with the --exec option.

-i

Displays the implicit members of ADO. This operand is valid only with the --show option.

-m mode

Specifies the mode in which Admin Domain configuration information is displayed. This operand is valid only with --show and --validate. Valid values for mode include the following:

0

Displays the Admin Domain configuration in the current transaction buffer.

1

Displays the Admin Domain configuration stored in persistent memory (defined configuration).

2

Displays the currently enforced Admin Domain configuration currently enforced (effective configuration).

Examples

To apply all changes made to the Admin Domain configurations since --apply was last executed:

```
switch:admin> ad --apply
You are about to enforce the saved AD configuration.
This action will trigger ad --apply to all switches \
in the fabric.
Do you want to apply all admin domains \
(yes, y, no, n): [no] y
```

To clear all Admin Domain definitions:

```
switch:admin> ad --clear
You are about to delete all ADs definitions.
This operation will fail if zone configurations \
exists in AD1-AD254
Do you want to clear all admin domains \
(yes, y, no, n): [no] y
```

To deactivate Admin Domain 5:

```
switch:admin> ad --deactivate 5
You are about to deactivate an AD.
This operation will fail if an effective zone \
configuration exists in the AD
Do you want to deactivate '5' admin domain \
(yes, y, no, n): [no] y
```

To delete AD13:

```
switch:admin> ad --delete 13
You are about to delete an AD.
This operation will fail if an effective zone \
configuration exists in the AD
Do you want to delete '13' admin domain \
(yes, y, no, n): [no] y
```

To execute switchShow in an AD7 context (using the current user_id):

```
switch:admin> ad --exec 7 "switchshow"
```

To remove the devices 100,5 and 1,3 from AD1:

```
switch:admin> ad --remove "AD1", \
-d "100,5; 1,3; 21:00:00:e0:8b:05:4d:05"
```

To remove the switch 100 from AD1:

```
switch:admin> ad --remove "AD1", -s "100"
```

To save any outstanding Admin Domain definition-related transaction buffer

```
switch:admin> ad --save
You are about to save the outstanding AD membership.
This action will only save the changes to Defined \
configuration.
Any changes made will be enforced only on ad --apply.
Do you want to save admin domains \
(yes, y, no, n): [no] y
```

To select a new Admin Domain context by specifying the AD number:

```
switch:admin> ad --select 12
```

To display all ADs:

```
switch:admin> ad --show
Current AD: 255 : AD255

Transaction buffer configuration:
-----
no configuration

Defined configuration:
-----

AD: 1 :          AD1      Active

Device WWN members:    21:00:00:80:e5:12:8b:37;
                        21:00:00:80:e5:12:8b:55;
Switch port members:   1,0; 1,1; 1,2; 1,3; 1,4; 1,5;
                        1,6; 1,7; 1,8; 1,9; 1,10; 1,11;
                        1,12; 1,13; 1,14; 1,15;
Switch WWN members:    10:00:00:60:69:00:02:53;
```

Effective configuration:

```

AD: 1 :          AD1      Active

Device WWN members:  21:00:00:80:e5:12:8b:37;
                     21:00:00:80:e5:12:8b:55;
Switch port members: 1,0; 1,1; 1,2; 1,3; 1,4; 1,5;
                     1,6; 1,7; 1,8; 1,9; 1,10; 1,11;
                     1,12; 1,13; 1,14; 1,15;
Switch WWN members:  10:00:00:60:69:00:02:53;

```

To display the AD1 configuration information in the transaction buffer:

```

switch:admin> ad --show 1 -m 0
Current AD: 255 : AD255

Transaction buffer configuration:
-----
no configuration

```

To display the AD10 configuration information in persistent storage:

```

switch:admin> ad --show 10 -m 1
Current AD: 255 : AD255

Defined configuration:
-----

AD: 1 :          AD1      Active

Device WWN members:  21:00:00:80:e5:12:8b:37;
                     21:00:00:80:e5:12:8b:55;
Switch port members: 1,0; 1,1; 1,2; 1,3; 1,4; 1,5;
                     1,6; 1,7; 1,8; 1,9; 1,10; 1,11;
                     1,12; 1,13; 1,14; 1,15;
Switch WWN members:  10:00:00:60:69:00:02:53;

```

To display the Admin Domain effective configuration information:

```

switch:admin> ad --show -m 2
Current AD: 255 : AD255

Effective configuration:
-----

AD: 1 :          AD1      Active

Device WWN members:  21:00:00:80:e5:12:8b:37;
                     21:00:00:80:e5:12:8b:55;
Switch port members: 1,0; 1,1; 1,2; 1,3; 1,4; 1,5;
                     1,6; 1,7; 1,8; 1,9; 1,10; 1,11;
                     1,12; 1,13; 1,14; 1,15;
Switch WWN members:  10:00:00:60:69:00:02:53;

```

To display the configuration information in the transaction buffer:

```
switch:admin> ad --validate
Current AD Number: 255  AD Name: AD255

Transaction buffer configuration:
-----
no configuration

Defined configuration:
-----

AD Number:    1  AD Name: AD1    State: Inactive

Device WWN members:      10:00:00:00:00:01:00:00;
                        10:00:00:00:00:00:04:00:00;
                        10:00:00:00:00:00:05:00:00;
                        10:00:00:00:00:00:06:00:00;
                        10:00:00:00:00:00:08:00:00;
                        10:00:00:00:00:00:03:00:00;
                        10:00:00:00:00:00:02:00:00;
                        10:00:00:00:00:00:07:00:00;
                        10:00:00:00:00:00:15:00:00;
                        10:00:00:00:00:00:16:00:00;
                        10:00:00:00:00:00:17:00:00;
                        10:00:00:00:00:00:18:00:00;
                        10:00:00:00:00:00:11:00:00;
                        10:00:00:00:00:00:12:00:00;
                        10:00:00:00:00:00:13:00:00;
                        10:00:00:00:00:00:14:00:00;

Effective configuration:
-----

AD Number:    50  AD Name: AD50    State: Active

Device WWN members:      10:00:00:00:00:00:17:00:00;
                        10:00:00:00:00:00:15:00:00;
Switch port members:      2,52; 2,53; 2,54; 2,55; 21,5;
                        3,28; 3,29; 98,72; 98,75;
                        69,16; 69,18; 69,21; 1,336;
                        1,337;

-----
* - Member does not exist
+ - Member is AD Unaware
```

To abort the Admin Domain management transaction buffer:

```
switch:admin> ad --transabort
You are about to abort the outstanding AD transaction.
Do you want to abort the AD transaction \
(yes, y, no, n): [no] y
```

To display the current Admin Domain transaction:

```
switch:admin> ad --transshow  
Current transaction token is 26816  
It is abortable  
  
switch:admin> ad --transshow  
There is no outstanding zoning transaction
```

SEE ALSO [cfgSave](#), [cfgTransShow](#), [defZone](#), [logout](#)

ag

Enables Access Gateway (AG) and manages AG-specific operations.

Synopsis

```

ag --help

ag --show

ag --modeshow | --modeenable | --modedisable

ag [--policyenable | --policydisable] policy

ag --policyshow

ag --mapshow [N_Port]

ag [--mapset | --mapadd | --mapdel] N_Port [F_Port1; F_Port2;...]

ag [--staticadd | --staticdel] N_Port [F_Port1; F_Port2;...]

ag --pgshow [pgid]

ag --pgcreate pgid "N_Port1 [;N_Port2;...]" [-n pgname]
    [-m "lb; mfnm"]

ag [--pgadd | --pgdel] pgid "N_Port1 [; N_Port2;...]"

ag --pgrename pgid newname

ag --pgremove pgid

ag [--pgmapadd | --pgmapdel] pgid "F_Port1 [; F_Port2;...]"

ag [--pgsetmodes | --pgdelmodes] pgid "mfnm;lb"

ag --pgfnmtov [new_tov]

ag [--failoverenable | --failoverdisable] [N_Port | -pg pgid]

ag --failovershow [N_Port]

ag [--failbackenable | --failbackdisable] [N_Port | -pg pgid]

ag --failbackshow [N_Port]

ag [--prefset | --prefdel] "F_Port [;F_Port2;...]" N_Port

ag --prefshow

ag [--adsset | --adsadd | --adsdel] "F_Port [;F_Port2;...]"
    "WWN [;WWN2;...]"

ag --adsshow

ag --persistentalpaenable [1 | ON] | [0 | OFF] mode

```

ag --printalpamap *F_Port*

ag --deletepwwnfromdb *PWWN*

ag --clearalpamap *F_Port*

ag --addwwnmapping *N_Port* "WWN [*WWN2*;...]" | **--all**

ag --delwwnmapping *N_Port* "WWN [*WWN2*;...]" | **--all**

ag --addwwnpgmapping *Port_Group* "WWN [*WWN2*;...]" | **--all**

ag --delwwnpgmapping *Port_Group* "WWN [*WWN2*;...]" | **--all**

ag --addwwnfailovermapping *N_Port* "WWN [*WWN2*;...]" | **--all**

ag --delwwnfailovermapping *N_Port* "WWN [*WWN2*;...]" | **--all**

ag --wwnmappingenable "WWN [*WWN2*;...]" | **--all**

ag --wwnmappingdisable "WWN [*WWN2*;...]" | **--all**

ag --wwnmapshow

ag --reliabilitycounterset

ag --reliabilitycountershow

ag --backupmappingsave *N_Port*

ag --backupmappingdel *N_Port*

ag --backupmappingshow *N_Port*

Description Use this command to perform the following Access Gateway management functions:

- Enable or disable Access Gateway mode.
- Display current configuration and state of AG.
- Configure and display F_Port to N_Port mapping.
- Configure and display N_Port failover and failback policies.
- Configure and display Port Group policy.
- Create or remove a Port group.
- Get or set timeout value for fabric name monitoring.
- Display Port Groups and member N_Ports.
- Add or delete N_Ports in a Port group.
- Display all policies and their status.
- Enable or disable auto port configuration (APC) policy.
- Enable or disable preferred secondary N_Port policy.
- Enable, disable, and manage advanced device security (ADS) policy.
- Manage persistent ALPA mode.
- Manage device WWN to N_Port mappings.
- Manage device WWN to N_Port group mappings.
- Manage device WWN failover to N_Ports configured as preferred failover ports.
- Enable or disable device WWN mappings.
- Configure the reliability limit for the preferred N_Port.
- Save the configured F_Ports, static F_Ports for the given N_Port, and F_Ports for which the given N_Port is a preferred one.
- Delete the backup mappings for the given N_Port, if any.
- Display the saved mappings for the given N_Port, if any.

AG configuration changes are saved persistently as configuration keys. Use the portCfgNPort command to set a port as N_Port.

This command supports multiple configurations for mapping device logins to N_Ports for the purposes of load balancing and redistribution in the event of a fabric change. If multiple mappings are configured, the system considers the available mappings in a fixed order of priority to determine which of the available N_Ports should be assigned to the login request. The first eligible mapping is chosen in the order specified below.

1. Device WWN to N_Port
2. Device WWN to N_Port Group
3. Automatic device WWN load balancing.
4. F_Port to N_Port
5. F_Port to N_Port Group

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

AG is supported only on selected Brocade hardware platforms. Refer to the Access Gateway Administrator's Guide for hardware support and AG configuration procedures.

In non-AG mode, only two actions are available: `--modeenable` and `--modeshow`.

The `--backupmappingsave`, `--backupmappingdel` and `--backupmappingshow` commands can be executed if the auto policy is disabled.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

--help

Displays the command usage.

--show

Displays the current configuration of the Access Gateway. This includes all N_Ports and F_Ports that are currently online, failover and failback settings as well as any online F_Ports that are currently mapped to N_Ports. Failover and failback policies are displayed as enabled (1) or disabled (0).

--modeshow

Displays the current Access Gateway operating mode of the switch as either enabled or disabled.

--modeenable

Enables Access Gateway mode on a switch. Long distance mode settings should be cleared for all ports on the NPIV edge switch to which the AG is connected. Otherwise, the NPIV switch port displays the long distance port type along with the F_Port.

--modedisable

Disables Access Gateway mode on a switch. After AG mode is disabled, the switch reboots automatically and comes online with default zone access set to "No Access". In order to merge the switch to a fabric, set the default zone to "All Access" and disable/enable the E_Port.

--policyshow

Displays the supported AG port policies and their status as either enabled or disabled. AG supports four types of policies:

- Port Grouping (pg) policy: This policy manages failover of an F_Port to a set of related N_Ports in a port group.
- Auto Port Configuration (auto): When this policy is enabled, the AG enabled switch automatically detects available ports and maps F_Ports to N_Ports. Auto port configuration is disabled by default.
- Advanced Device Security (ADS) policy. This policy restricts access to the fabric at the AG level to a set of authorized devices. Unauthorized access is rejected and the system logs a RASLOG message. You can configure the list of allowed devices for each F_Port by specifying their Port WWN. Refer to the `ag --ads*` commands for information on managing advanced device security. ADS policy is disabled by default, which means that all devices can connect to the switch.
- WWN Based Load Balancing policy: This policy routes device logins to the least loaded port in the port group to which they are mapped.

`--policyenable policy`

Enables the specified port policy for the Access Gateway. When a new policy is enabled, all port related configuration settings are lost. Use the `configUpload` command to save the current port configuration. Valid policies include the following:

pg

Enables the port grouping policy. A default port group "pg0" is created, which includes all configured N_Ports assigned to the policy. Enabling port grouping policy disables the Get Fabric Name policy.

auto

Enables the automatic port configuration policy. When enabled, this policy applies to all ports on the switch. All F_Port to N_Port mapping and port group configurations are ignored.

ads

Enables the advanced device security (ADS) policy. When enabled, this policy applies to all the ports on the switch. By default all devices have access to the fabric on all ports.

wwnloadbalance

Enables the device WWN load balancing policy. When this policy is enabled, device logins are sent to the least loaded port in the port group to which they are mapped. These devices are displayed with `ag --wwnmapshow` as dynamic device mappings. Port Group policy must be enabled before you can enable the WWN load balancing policy.

`--policydisable policy`

Disables the specified policy for the Access Gateway. When a policy is disabled, all port-related configuration settings are lost. Use the `configUpload` command to save the current port configuration. Valid policies include the following:

pg

Disables the port grouping policy. All port group configurations are deleted. Disabling port grouping policy enables the Get Fabric Name policy.

auto

Disables the automatic port configuration policy and deletes all associated configuration settings.

ads

Disables the advanced device security (ADS) policy and deletes all lists of allowed device WWNs.

wwnloadbalance

Disables the device WWN load balancing policy.

--mapshow [*N_Port* | *device_WWN*]

Displays the F_Ports that are configured and currently mapped to a given "primary" N_Port. Optionally specify an N_Port to display the F_Ports that are mapped to the specified N_Port only, or specify a device WWN to display the N_Port to which the device WWN is mapped. Failover and failback policies are displayed as enabled (1) or disabled (0).

--mapset *N_Port* [*F_Port1*; *F_Port2*;...]

Maps a set of F_Ports to a specified "primary" N_Port forcing all traffic from the F_Ports to be routed through this N_Port to the attached fabric. An F_Port cannot be mapped to more than one primary N_Port at any given time. F_Ports are enabled only if the N_Port is online. This command overwrites existing port mappings. Use a blank list (") to clear current mappings.

--mapadd *N_Port* *F_Port1* [: *F_Port2*;...]

Adds one or more specified F_Ports to the mapping of an existing "primary" N_Port. The traffic for the configured F_Ports is routed to the fabric through the specified N_Port when the F_Ports come online. An F_Port cannot be mapped to more than one primary N_Port at the same time.

--mapdel *N_Port* *F_Port1* [: *F_Port2*;...]

Deletes one or more specified F_Ports from the "primary" N_Port mapping.

--staticadd *N_Port* *F_Port1* [: *F_Port2*;...]

Creates a static mapping between an existing "primary" N_Port and one or more specified F_Ports. This command removes exiting mappings. Once the static mapping is enabled, the F_Ports and all logged-in devices will logout of the previous N_Port and login using the new N_Port.

--staticdel *N_Port* *F_Port1* [: *F_Port2*;...]

Deletes a static mapping between an existing "primary" N_Port and one or more specified F_Ports. This command removes exiting mappings. Alternately, you can remove an existing mapping by mapping the F_Port to another N_Port.

--pgshow [*pgid*]

Displays the Port Group configuration. The port grouping feature supports specifying a set of N_Ports to be included in the Port Group (PG) Policy. The factory default PG is "pg0", which includes all N_Ports. The default PG cannot be removed or renamed.

--pgcreate *pgid*

"N_Port1 [:N_Port2;...]" [-n *pgname*][-m "*lb*; *mfnm*"]

Creates a port group with the ID *pgid* and a specified list of N_Ports to be included in the policy. The list must be enclosed in quotation marks. Ports must be separated by semicolons. The Port Group ID must not exceed 64 characters. Optionally specify a name for the port group and a mode. Modes are by default disabled. For an explanation of mode values, refer to --pgsetmodes.

--pgadd *pgid* "*N_Port1* [: *N_Port2*;...]"

Adds one or more N_Ports to the specified port group. The port list must be enclosed in quotation marks. Ports must be separated by semicolons.

--pgdel *pgid* "*N_Port1* [*; N_Port2*;...]"

Deletes one or more N_Ports from the specified port group. Deleted ports are added to the default port group "pg0". The port list must be enclosed in quotation marks. Ports must be separated by semicolons.

--pgrename *pgid newname*

Replaces the name of an existing port group with the specified new name. The port group ID must not exceed 64 characters.

--pgremove *pgid*

Deletes the specified port group. The N_Ports in the port group that was deleted are moved to the default port group, which is pgid 0.

--pgmapadd *pgid* "*F_Port1* [*; F_Port2*;...]"

Maps the specified F_Ports to the PG identified by the pgid. Upon execution, the system identifies the least loaded N_Port in the port group and maps the F_Ports to that N_Port. The port list must be enclosed in double quotation marks. Ports must be separated by semicolons. Login balancing (LB) mode must be enabled on the port group for this command to succeed. Use `ag --pgsetmodes` to enable LB mode.

--pgmapdel *pgid* "*F_Port1* [*; F_Port2*;...]"

Removes one or more F_Ports that are part of the port group identified by the pgid from their mapping to a corresponding N_Port. The port list must be enclosed in double quotation marks. Ports must be separated by semicolons. Login balancing (LB) mode must be enabled on the port group for this command to succeed. Use `ag --pgsetmodes` to enable LB mode.

--pgsetmodes *pgid* "*lb*;*mfnm*"

Sets the APC modes for the specified port group. The mode list must be enclosed in double quotation marks and the modes must be separated by a semicolon. Alternately you can set the modes at the time when you create the port group with the `pgcreate` command. The following modes are supported:

lb

Specifies the login balancing mode for the specified port group. If login balancing mode is enabled and an F_Port goes offline, logins in the port group are redistributed among the remaining F_Ports. Similarly, if an N_Port comes online, port logins in the PG are redistributed to maintain a balanced N_Port to F_Port ratio. This operation is disruptive. Login balancing mode is disabled by default in all port groups.

mfnm

Enables the managed fabric name monitoring mode (MFNM) in the specified port group. This command changes the fabric name monitoring mode from "default" to "managed". In both default and managed mode, the system queries the fabric name once every 120 seconds, and if it detects an inconsistency, for example, if the port group is connected to multiple fabrics, it triggers a RASLOG message. The difference between default and managed fabric name monitoring is that in managed mode, failover is disabled for all ports in the port group if the system detects an inconsistency in fabric names.

You can add or remove MFNM from a port group, however, doing so will enable or disable MFNM on the entire switch. RASLOG messages are generated only if MFNM is enabled on the entire switch and multiple fabrics are connected to the switch.

--pgdelmodes *pgid* "lb;mfnm"

Disables the specified modes on a given port group. The mode list must be enclosed in double quotation marks and the modes must be separated by a semicolon. For a description of supported modes, refer to `--pgsetmodes`.

--pgfnmtov *new_tov*

Displays the fabric name monitoring timeout value in seconds when used without specifying a new value. To change the current value, specify a new timeout value in seconds. The valid range is 30 to 120 seconds. The default value is 120 seconds.

--failoverenable [*N_Port*] | -pg *pgid*

Enables the failover policy for a given *N_Port* or for all *N_Ports* in the given port group.

When failover policy is enabled for a given *N_Port*, *F_Ports* behave as follows:

- If only primary *F_Port* to *N_Port* mapping is in place, all currently mapped *F_Ports* fail over to another available *N_Port* in the event the original *N_Port* becomes disabled. If multiple *N_Ports* are available for failover, *F_Ports* are evenly balanced across all available *N_Ports*. If no other *N_Port* is available, failover does not occur.
- If preferred secondary *F_Port* to *N_Port* Mapping is in place, the *F_Ports* are routed through the preferred Secondary *N_Port*. If the preferred secondary *N_Port* is offline, the *F_Ports* are disabled.

--failoverdisable [*N_Port*] -pg *pgid*

Disables the failover policy for a given *N_Port* or for all *N_Ports* in the given port group.

--failovershow [*N_Port*]

If an *N_Port* is specified (optional), the command displays the failover policy for this *N_Port*. Otherwise, the failover policy for all *N_Ports* is displayed. Failover is displayed as enabled (1) or disabled (0).

--failbackenable [*N_Port*] | -pg *pgid*

Enables the failback policy for a specified *N_Port* or for all *N_Ports* in the given port group.

When failback policy is enabled, ports behave as follows:

- If only primary *F_Port* to *N_Port* mapping is in place, all *F_Ports* are automatically rerouted back to the *N_Ports* to which they were originally mapped as those *N_Ports* come back online. Only the originally mapped *F_Ports* fail back. In the case of multiple *N_Port* failures, only *F_Ports* that were mapped to the recovered *N_Port* experience failback. The remaining *F_Ports* are not redistributed among the online *N_Ports* during the failback.
- If preferred secondary *F_Port* to *N_Port* mapping is in place, and the primary *N_Port* comes back online, then the *F_Ports* are rerouted through the primary *N_Port*. If the secondary *N_Port* comes online, while the primary *N_Port* is still offline, *F_Ports* are rerouted through the secondary *N_Port*.

--failbackdisable [*N_Port*] | -pg *pgid*

Disables the failback policy for the specified *N_Port* or for all *N_Ports* in the given port group.

--failbackshow [*N_Port*]

If an *N_Port* is specified (optional), the command displays the failback policy for this *N_Port*. Otherwise, the failover policy for all the *N_Ports* is displayed. The failback policy is displayed as disabled (0) or enabled (1).

--prefset "F_Port [;F_Port2;...]" N_Port

Sets the preferred secondary N_Port for one or more F_Ports. Preferred mapping is optional. Preferred F_Port to N_Port Mapping provides an alternate N_Port for F_Ports to come online for predictable failover and failback. An F_Port must have primary N_Port mapping before a secondary N_Port can be configured. The list of F_Ports to be mapped must be enclosed in double quotation marks. Port numbers must be separated by semicolons.

--prefdel "F_Port [;F_Port2;...]" N_Port

Deletes the preferred Secondary N_Port for the specified F_Ports. The list of F_Ports to be deleted from the secondary mapping must be enclosed in double quotation marks. Port numbers must be separated by semicolons.

--prefshow

Displays the preferred Secondary N_Port for all F_Ports.

--adsset "F_Port [;F_Port2;...]" "WWN [;WWN2;...]"

Sets the list of devices that are allowed to login to a specified set of F_Ports. Devices are specified by their world wide names. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. The maximum number of entries in the allowed device list is twice the per port maximum login count. Replace the WWN list with an asterisk (*) to indicate all access on the specified F_Port list. Replace the F_Port list with an asterisk (*) to add the specified WWNs to all the F_Ports' allow lists. A blank WWN list ("") indicates no access. ADS policy must be enabled for this command to succeed.

--adsadd "F_Port [;F_Port2;...]" "WWN [;WWN2;...]"

Adds the specified WWNs to the list of devices allowed to login to the specified F_Ports. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. Replace the F_Port list with an asterisk (*) to add the specified WWNs to all the F_Ports' allow lists. ADS policy must be enabled for this command to succeed.

--adsdel "F_Port [;F_Port2;...]" "WWN [;WWN2;...]"

Deletes the specified WWNs from the list of devices allowed to login to the specified F_Ports. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. Replace the F_Port list with an asterisk (*) to remove the specified WWNs from all the F_Ports' allow lists. ADS policy must be enabled for this command to succeed.

--adsshow

Displays the list of allowed device WWNs for all F_Ports.

--persistentalpaenable [1 | ON] | [0 | OFF] mode

Configures the persistent ALPA feature. Once enabled, the ALPA parts of all device PIDs become persistent regardless of whether they were logged in before or after the persistent ALPA feature was enabled. ALPA persistence ensures that there is no inconsistency between logged in devices. The persistent ALPA feature is disabled by default.

[1 | On] | [0 | Off]

Specify 1 or On to enable persistent ALPA. Specify 0 or Off to disable the feature.

mode

Specifies the manner in which the ALPA is obtained in the event that the ALPA value is already taken by another host. Valid modes include the following:

-s | stringent

Specifies a stringent ALPA request mode. In stringent mode, the login is rejected if the ALPA is not available.

-f | flexible

Specifies a flexible ALPA request mode. In flexible mode, the host login is accepted either with the requested ALPA value or with a different ALPA value if the requested ALPA is not available.

--printalpamap *F_Port*

Displays the database entry for the specified port. An *F_Port* must be specified. The output displays the PWWN-to-host-ALPA mapping.

--deletepwwnfromdb *PWWN*

Removes the specified port WWN entry from the database after the host has logged out.

--clearalpamap *F_Port*

Clears the ALPA values for the specific *F_Port*. This command removes the PWWN-to-ALPA-value mapping from the database.

--addwwnmapping *N_Port* "*WWN* [*WWN2*;...] " | **--all**

Maps one or more device WWNs to a preferred *N_Port*. All traffic from the specified devices is forced through the specified *N_Port*, regardless of which *F_Port* the device logs into. In the event the designated *N_Port* should become unavailable, an alternate port can serve as a preferred failover port. This command only affects devices that are connecting to the fabric after successful execution of this command; it will not affect devices already logged in. If a device is already connected to the switch when its mapping is created, that mapping goes into effect the next time the device connects. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.

The **--all** option indicates all device WWNs already mapped, for example, if you wish to change an existing WWN mapping. It does not affect device WWNs that are not part of an existing mapping.

--delwwnmapping *N_Port* "*WWN* [*WWN2*;...] " | **--all**

Removes the mapping of one or more device WWNs to a preferred *N_Port*. The **--all** option removes the mapping for all device WWNs currently mapped to the specified *N_Port*. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The mappings are removed upon execution of this command.

--addwwnpgmapping *PG* "*WWN* [*WWN2*;...] " | **--all**

Maps one or more device WWNs to any of the *N_Ports* included in the specified port group. The port group is identified by its port group ID. The **--all** option maps all currently mapped device WWNs to the specified port group. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The device WWN to port group mapping takes effect the next time the device logs in.

--delwwnpgmapping *PG* "WWN[:WWN2;...]" | --all

Removes the mapping between the specified device WWNs and the specified port group. The port group is identified by its port group ID. The --all option removes the mapping of all device WWNs currently mapped to the specified port group. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The mappings are removed upon execution of this command.

--addwwnfailovermapping *N_Port* "WWN[:WWN2;...]" | --all

Maps one or more device WWNs to a preferred failover *N_Port*. If the *N_Port* to which the WWNs are mapped is not available or goes down, the device logins fail over to the preferred failover *N_Port*. The --alloption maps all currently mapped device WWNs to the specified failover *N_Port*. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.

--delwwnfailovermapping *N_Port* "WWN[:WWN2;...]" | --all

Deletes the mapping of one or more device WWNs to a preferred failover *N_Port*. The --all option deletes the failover mappings of all device WWNs currently mapped to the specified *N_Port*. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.

--wwnmappingdisable "WWN[:WWN2;...]" | --all

Disables one or more device WWN mappings. Use this command if you want to disable the mapping action temporarily without making permanent changes to the mappings. The mappings remain disabled until they are re-enabled or deleted. The --all option disables all currently existing device WWN mappings.

--wwnmappingenable "WWN[:WWN2;...]" | --all

e-enables one or more previously disabled device WWN mappings. The --all option re-enables all previously disabled device WWN mappings.

--wwnmapshow

Displays all device WWN mappings. For each device WWN, the command displays the *N_Port* number to which it is mapped, the secondary (failover) *N_Port*, and the port group if applicable. The "Current" field shows the port the device is currently using. If the device is not logged in, the field displays "none." If the device is logged in to a port other than the one it is mapped to, the field displays that port. If the device is mapped to a port group, the field displays the number of the port within that port group that the device is currently using. If the device is using a trunk, the field displays which port in that trunk the device is logged in. The "Enabled" field indicates, whether a mapping has been temporarily disabled ("no"), or whether it is in enabled state ("yes").

--reliabilitycounterset *count*

Sets the reliability limit for the preferred *N_Port*. This parameter controls the number of ONLINE or OFFLINE State Change Notification (SCN) messages a port can receive before becoming unreliable. The range is 10 through 100. The default value is 25.

The port becomes reliable again if it does not receive any SCN messages for a period of five minutes. Preferred N_Port settings are not enforced on unreliable N_Ports. When the port becomes reliable again, the behavior is as follows:

- If a FAILBACK flag is set, the port will fail back the configured F_Ports.
- Configured F_Ports that are offline will come back online.
- If LB mode or auto policy is configured, load rebalancing resumes.

--reliabilitycountershow

Displays the configured reliability limit for N_Ports.

--backupmappingsave N_Port

Saves the configured F_Ports, static F_Ports for the given N_Port, and F_Ports for which the given N_Port is a preferred one.

--backupmappingdel N_Port

Deletes the backup mappings for the given N_Port, if any.

--backupmappingshow N_Port

Displays the saved mappings for the given N_Port, if any.

Examples

To display the current state of the Access Gateway with Failover (FO) and Failback (FB) enabled on N_Ports 9 and 12:

```
switch:admin> ag --show
Name                : core_ag
NodeName             : 10:00:00:05:1e:85:ae:f8
Number of Ports      : 40
IP Address(es)       : 10.17.31.2
Firmware Version     : v7.1.0ING
N_Ports              : 8
F_Ports              : 5
Policies enabled     : pg
Persistent ALPA      : Disabled
Static WWN Map       : None
Port Group information :
    PG_ID  PG_Members          PG_Name  PG_Mode
    -----
    0      0;1;2;3;8;          pg0      -
           9;10;11;32;33;
           34;35;36;37;38;
           39
    -----
Fabric Information :
    Attached Fabric Name      N_Ports
    -----
    10:00:00:05:1e:d6:f8:c9   0;1;2;3;8;
                               9;10;11
    -----
N_Port information :
    Port  PortID  Attached PWWN  Attached_Switch
    -----
    0     0x010100  50:00:51:ed:6f:8e:60:28  Spirit\
    1     0x010100  50:00:51:ed:6f:8e:60:28  Spirit\
    2     0x010100  50:00:51:ed:6f:8e:60:28  Spirit\
    F-port\
    \
```

```

3      0x010100  50:00:51:ed:6f:8e:60:28  Spirit\
8      0x010d00  20:0d:00:05:1e:d6:f8:c9   Spirit\
9      0x010c00  20:0c:00:05:1e:d6:f8:c9   Spirit\
10     0x010e00  20:0e:00:05:1e:d6:f8:c9   Spirit\
11     0x010f00  20:0f:00:05:1e:d6:f8:c9   Spirit\

```

```

Switch  FO  FB  IP_Addr  F_Ports
-----
0       1   1   10.17.31.170  4;5;23;
0       1   1   10.17.31.170  None
0       1   1   10.17.31.170  None
0       1   1   10.17.31.170  None
13      1   1   10.17.31.170  6;
12      1   1   10.17.31.170  7;
14      1   1   10.17.31.170  None
15      1   1   10.17.31.170  None
-----

```

F_Port information :

```

Port  PortID      Attached PWWN      N_Port\
-----
4      0x010103  20:00:00:05:1e:85:92:88  0 \
5      0x010102  20:01:00:05:1e:85:92:88  0 \
6      0x010d01  20:02:00:05:1e:85:92:88  8 \
7      0x010c01  20:03:00:05:1e:85:92:88  9 \
23     0x010101  10:00:00:05:1e:65:95:81  0 \

```

Preferred N_port Login Exceeded?

```

-----
None          No
None          No
None          No
None          No
None          No
-----

```

Static N-Port to F-Port Mapping :

```

N-Port      F-Port
-----
0           None
1           None
2           None
3           None
8           None
9           None
10          None
11          None
-----

```

To display the current Access Gateway mode:

```

switch:admin> ag --modeshow
Access Gateway mode is enabled.

```

```

switch:admin> ag --modeshow
Access Gateway mode is NOT enabled.

```

AG group policy commands

To show current policies:

```
switch:admin> ag --policyshow
AG Policy                Policy Name      State
-----
Port Grouping            pg              Enabled
Auto Port Configuration  auto           Disabled
Advanced Device Security ads            Disabled
WWN Based Load Balancing wwnloadbalance Disabled
-----
```

To enable a port grouping policy:

```
switch:admin> ag --policyenable pg
```

To disable a port grouping policy

```
switch:admin> ag --policydisable pg
```

To enable auto port configuration policy when both policies are disabled and the switch is already disabled:

```
switch:admin> ag --policyenable auto
All Port related Access Gateway configurations will be lost.
Please save the current configuration using configupload.
Do you want to continue? (yes, y, no, n): [no] y
```

To disable auto port configuration policy when the switch is disabled:

```
switch:admin> ag --policydisable auto
Default factory settings will be restored.
Default mappings will come into effect.
Please save the current configuration using configupload.
Do you want to continue? (yes, y, no, n): [no] y
Access Gateway configuration has been restored \
to factory default
```

To enable the ADS policy:

```
switch:admin> ag --policyenable ads
```

To disable the ADS policy:

```
switch:admin> ag --policydisable ads
```

To enable the WWN load balancing policy:

```
switch:admin> ag --policyenable wwnloadbalance
```

To disable the WWN load balancing policy:

```
switch:admin> ag --policydisable wwnloadbalance
```

AG port mapping commands

To display current port mappings and port grouping policies:

```
switch:admin> ag --mapshow
```

N_Port	Configured _F_Ports	Static _F_Ports	Current _F_Ports	Failover	Failback	PG_ID	PG_Name
0	4;5;6	None	4;5;6	1	0	2	SecondFabric
1	7;8;9	None	7;8;9	0	1	0	pg0
2	10;11	None	10;11	1	0	2	SecondFabric
3	12;13	None	12;13	0	1	0	pg0

Explanation of fields in --mapshow output:

- Static F_Ports are part of static F_Port to N_Port mapping.
- Current F_Ports are the F_Ports that are currently online and mapped to a given N_Port either because they are mapped to that N_Port or as a result of N_Port failover.
- Configured F_Ports are the F_Ports that are explicitly mapped to this N_Port (saved in config).
- Failover and Failback indicate whether or not N_Port policy is enabled (1) or disabled (0).
- PG_ID is the Port Group ID and PG_Name is the Port Group Name.

To clear all F_Ports mapped to the configured primary N_Port 0:

```
switch:admin> ag --mapset 0 ""
F_Port to N_Port mapping has been updated successfully
```

To add F_Ports 4 and 6 to N_Port 0 (observe that Port 0 has no configured F_Ports):

```
switch:admin> ag --mapset 0 "4;6"
F_Port to N_Port mapping has been updated successfully
```

To add F_Port 5 to N_Port 2 (observe that N_Port 2 already has mapped F_Ports):

```
switch:admin> ag --mapadd 2 "5"
```

To display the new mappings:

```
switch:admin> ag --mapshow
```

N_Port	Configured _F_Ports	Static _F_Ports	Current F_Ports	Failover	Failback	PG_ID	PG_Name
0	4;6	None	4;6	1	0	2	SecondFabric
1	7;8;9	None	7;8;9	0	1	0	pg0
2	5;10;11	None	5;10;11	1	0	2	SecondFabric
3	12;13	None	12;13	0	1	0	pg0

To delete F_Port 5 that was mapped to N_Port 2:

```
switch:admin> ag --mapdel 2 "5"
Preferred N_port is set for F_Port[s]
Please delete it before removing primary N_Port
ERROR:Unable to remove F_Port[s] from mapping,
retry the command

switch:admin> ag --prefshow
F_Ports                                Preferred N_Port
-----
10;11                                0
4;5;6                                2
7;8;9                                3
-----

switch:admin> ag --prefdel 5 2

Preferred N_Port is deleted successfully \
for the F_Port[s]

switch:admin> ag --mapdel 2 "5"
F_Port to N_Port mapping has been updated successfully
```

To create and display a static mapping:

```
switch:admin> ag --staticadd 17 1

switch:admin> ag --show

N_Port information :
  Port  PortID      Attached PWWN      Attached_Switch
                                F-port\
-----\
0   0x010100  50:00:51:ed:6f:8e:60:28  Spirit \
17  0x010100  50:00:51:ed:6f:8e:60:28  Spirit \

Switch  FO  FB  IP_Addr    F_Ports
-----
0       1   1   10.17.31.170  4;5;23;
0       1   1   10.17.31.170  None
-----

F_Port information :
  Port PortID      Attached PWWN    N_Port Preferred \
-----\
4   0x010103  20:00:00:05:1e:85:92:88  0      \
5   0x010102  20:01:00:05:1e:85:92:88  0      \

N_port Login Exceeded?
-----
None           No
None           No
-----

N_Port Configured Current Failover Failback PG_ID PG_Name
  _F_Ports  _F_Ports
-----
0      None      None      1      1      N/A      N/A
```

17	2	2	0	0	N/A	N/A

Static N-Port to F-Port Mapping						
N-Port		F-Port				

17		1				

AG failover policy commands

To display failover policy settings for all N_Ports:

```
switch:admin> ag --failovershow
N_Port  failover_bit
-----
      0             1
      1             0
      2             1
      3             0
```

To set and display failover and failback policies on a single port:

```
switch:admin> ag --failoverenable 1
Failover policy is enabled for port 1

switch:admin> ag --failoverdisable 0
Failover policy is disabled for port 0

switch:admin> ag --failovershow 0
Failover on N_Port 0 is not supported

switch:admin> ag --failbackdisable 2
Failback policy is disabled for port 2

switch:admin> ag --failbackshow 2
Failback on N_Port 2 is not supported

switch:admin> ag --failbackenable 2
Failback policy is enabled for port 2
```

To display failback policy settings for all the N_Ports:

```
switch:admin> ag --failbackshow
N_Port  failback_bit
-----
      0             0
      1             1
      2             0
      3             1
```

To set and display failback policy settings on a single port:

```
switch:admin> ag --failbackenable 0
Failback policy cannot be enabled since failover
policy is disabled for port 0

switch:admin> ag --failbackenable 2
Failback policy is enabled for port 2
```

```
switch:admin> ag --failbackenable 3
Failback on N_Port 3 is not supported
```

```
switch:admin> ag --failbackenable 2
Failback on N_Port 2 is supported
```

Port Group commands

To display Port Group information:

```
switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports  F_Ports
-----
0      pg0          lb,mfnm   1;3      10;11
2      SecondFabric -         0;2      4;5;6
-----
```

To create a port group "FirstFabric" that includes N_Ports 1 and 3 and has login balancing enabled:

```
switch:admin> ag --pgcreate 3 "1;3" -n FirstFabric1 -m "lb"
Port Group 3 created successfully
```

```
switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports  F_Ports
-----
0      pg0          lb,mfnm   none     none
2      SecondFabric -         0;2      4;5;6
3      FirstFabric lb        1;3      10;11
-----
```

To rename the port group with pgid 2 to "MyEvenFabric":

```
switch:admin> ag --pgrename 2 MyEvenFabric
Port Group 2 has been renamed as MyEvenFabric successfully
```

```
switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports  F_Ports
-----
0      pg0          lb,mfnm   none     none
2      MyEvenFabric -         0;2      4;5;6
3      FirstFabric lb        1;3      10;11
-----
```

To remove the port group with pgid 2:

```
switch:admin> ag --pgremove 2
Port Group 2 has been removed successfully
```

```
switch:admin> ag --pgshow
PG_ID PG_Name      PG_Mode  N_Ports  F_Ports
-----
0      pg0          lb,mfnm   0;2      4;5;6
3      FirstFabric lb        1;3      10;11
-----
```

To enable managed fabric name monitoring in port group 3:

```
switch:admin> ag --pgsetmodes 3 "mfnm"
Managed Fabric Name Monitoring mode has been \
enabled for Port Group 3
```

```
switch:admin> ag --pgshow
```

PG_ID	PG_Name	PG_Mode	N_Ports	F_Ports
0	pg0	lb,mfnm	0;2	4;5;6
3	FirstFabric	lb,mfnm	1;3	10;11

To disable managed fabric name monitoring in port group 3:

```
switch:admin> ag --pgdelmodes 3 "mfnm"
Managed Fabric Name Monitoring mode has been disabled for Port Group 3
```

```
switch:admin> ag --pgshow
```

PG_ID	PG_Name	PG_Mode	N_Ports	F_Ports
0	pg0	lb,mfnm	0;2	4;5;6
3	FirstFabric	lb	1;3	10;11

To get the current fabric name monitoring timeout value:

```
switch:admin> ag --pgfnmtov
Fabric Name Monitoring TOV: 120 seconds
```

To set the fabric name monitoring timeout value to 30 seconds:

```
switch:admin> ag --pgfnmtov 30
```

AG Preferred port information commands

To display preferred port settings for F_Ports:

```
switch:admin> ag --prefshow
```

F_Ports	Preferred N_Port
10;11	0
12;13	1
4;6	2
7;8;9	3

To delete secondary port mapping for F_Ports 7, 8 and 9:

```
switch:admin> ag --prefdel "7;8;9" 3
Preferred N_Port is deleted successfully \
for the F_Port[s]
```

To set secondary port mapping for F_Ports 7, 8 and 9:

```
switch:admin> ag --prefset "7;8;9" 3
Preferred N_Port is set successfully \
for the F_Port[s]
```


ADS Policy commands

To set the list of allowed devices for Ports 11 and 12 to 'no access':

```
switch:admin> ag --adsset "11;12" ""
WWN list set successfully as the Allow Lists of \
the F_Port[s]
```

To set the list of allowed devices for Ports 1, 10 and 13 to 'all access':

```
switch:admin> ag --adsset "1;10;13" ""
WWN list set successfully as the Allow Lists of \
the F_Port[s]
```

To remove two devices from the lists of allowed devices for ports 1 and 9:

```
switch:admin> ag --adsdel "3;9" \
"22:03:08:00:88:35:a0:12;22:00:00:e0:8b:88:01:8b"
WWNs removed successfully from Allow Lists of the \
F_Port[s]
```

To add a two new device to the lists of allowed devices for ports 1 and 9:

```
switch:admin> ag --adsadd "3;9" \
"20:03:08:00:88:35:a0:12;21:00:00:e0:8b:88:01:8b"
WWNs added successfully to Allow Lists of the \
F_Port[s]
```

To display the lists of allowed devices on the switch:

```
switch:admin> ag --adsshow
F_Port          WWNs Allowed
-----
1              ALL ACCESS
3              20:03:08:00:88:35:a0:12
               21:00:00:e0:8b:88:01:8b
9              20:03:08:00:88:35:a0:12
               21:00:00:e0:8b:88:01:8b
10             ALL ACCESS
11             NO ACCESS
12             NO ACCESS
13             ALL ACCESS
-----
```

Persistent ALPA configuration commands

To enable persistent ALPA in flexible mode:

```
switch:admin> ag --persistentalpaenable 1 -f
Persistent ALPA mode is enabled
```

To enable persistent ALPA in stringent mode:

```
switch:admin> ag --persistentalpaenable 1 -s
Persistent ALPA mode is enabled
```

To disable persistent ALPA mode:

```
switch:admin> ag --persistentalpaenable 0
Persistent ALPA mode is enabled
```

To display the ALPA database entries for F_Port 5:

```
switch:admin> ag --printalpamap 5
Hash table for Port 5 data
PWWN                ALPA
=====
20:12:00:05:1e:85:92:88      1
20:07:00:05:1e:01:0b:4a      3
```

To attempt to remove a device entry from the database while the device is online and cannot be removed:

```
switch:admin> ag --deletepwwnfromdb \
0:12:00:05:1e:85:92:88 20:08:00:05:1e:01:0b:4a Online. \
Cannot delete an online device
```

To remove a device entry from the database when the device is offline:

```
switch:admin> ag --deletepwwnfromdb \
0:12:00:05:1e:85:92:88
Device 20:13:00:05:1e:85:92:88 successfully deleted
```

To remove a device entry from the database when the device is not present in the table

```
switch:admin> ag --deletepwwnfromdb \
0:12:00:05:1e:85:92:00 20:12:00:05:1e:85:92:00 not found.
Please check the device name
```

To remove the PWWN to ALPA value for port 5 from the database and to verify the removal:

```
switch:admin> ag --clearalpamap 5
ALPA Table for port 5 is cleared

switch:admin> ag --clearalpamap 5

Hash table for Port 5 data
PWWN                ALPA
=====
Hash Table is empty
```

Device WWN mapping commands

To create a WWN to N_Port mapping for two devices.

```
switch:admin> ag --addwwnmapping 8 \
"0:12:00:05:1e:85:92:88; 0:12:00:05:1e:85:92:88"
```

To delete one of the device WWN to N_Port mappings.

```
switch:admin> ag --delwwnmapping 8 \
"0:12:00:05:1e:85:92:88"
```

To create a WWN to port group mapping for all currently mapped devices (this command does not affect devices not already mapped or connecting later).

```
switch:admin> ag --addwnpgmapping 4 --all
```

To add port 13 as a preferred failover N_Port for a device:

```
switch:admin> ag --addwnfailovermapping 13 "0:12:00:05:1e:85:92:88"
```

To disable all WWN mappings:

```
switch:admin> ag --wnmappingdisable --all
```

To display the WWN mappings when WWN load balancing policy is not enabled:

```
switch:admin> ag --wnmapshow
Static Device Mapping Information:
WWN,          1st N_Port 2nd N_Port PG_ID Current Enabled
-----
25:f7:00:0c:29:00:02:8b 9      None      None  None  yes
25:f7:00:0c:29:00:03:8b 9      None      None  None  yes
25:f7:00:0c:29:00:04:8b 9      None      None  None  yes
25:f7:00:0c:29:00:05:8b 9      None      None  None  yes
25:f7:00:0c:29:00:07:8b 9      None      None  None  yes
25:f7:00:0c:29:00:08:8b 9      None      None  None  yes
25:f7:00:0c:29:00:09:8b 9      None      None  None  yes
25:f7:00:0c:29:00:0a:8b 9      None      None  None  yes
-----

Dynamic Device Mapping Information:
-----
No dynamic mappings in use
-----
```

To display the WWN mappings when WWN load balancing policy is enabled:

```
switch:admin> ag --wnmapshow
Static Device Mapping Information:
WWN,          1st N_Port 2nd N_Port PG_ID Current Enabled
-----
No static mappings are defined
-----

Dynamic Device Mapping Information:
WWN,          1st N_Port 2nd N_Port PG_ID Current Enabled
-----
10:00:00:06:2b:11:52:df 23      None      0      23      yes
-----
```

To configure and display the reliability counter for the preferred N_Port:

```
switch:admin> ag --reliabilitycounterset 50

switch:admin> ag --reliabilitycountershow
=====
Reliability Counter = 50
=====
```

Backup mapping commands

To save the configured, static, and preferred mapping of an N_Port:

```
switch:admin> ag --backupmappingsave 43
Configured,static and preferred mappings have been saved \
for the N_port successfully.
```

To display the saved mappings for the given N_Port:

```
switch:admin> ag --backupmappingshow 43
N_Port                                     : 43
Backed-up Configured F_Ports              : 15;16;17
Backed-up Static F_ports                   : 18;19
Backed-up Preferred F_ports                : 27;28
```

To delete the backup mappings for the given N_Port:

```
switch:admin> ag --backupmappingdel 43
Backed up mappings have been deleted for the N_port.
```

SEE ALSO [agAutoMapBalance](#), [portCfgNPort](#), [portCfgNPiVPort](#)

agAutoMapBalance

Controls automatic remapping of F_Ports in AG mode.

Synopsis

**agautomapbalance --enable [-fport | -nport]
[-pg *Port_Group_Number* | -all]**

**agautomapbalance --disable [-fport | -nport]
[-pg *Port_Group_Number* | -all]**

agautomapbalance --force

agautomapbalance --show

agautomapbalance --help

Description

Use this command to control the automatic rebalancing of F_Ports for login distribution in the event that an F_Port goes offline or an N_Port comes online.

If automatic rebalancing is enabled, and an F_Port goes offline, the remaining F_Port logins are redistributed across the existing N_Ports. Similarly if a new N_Port comes online, some of the F_Port logins being routed through existing N_Ports would be failed over to the new N_Ports. Both operations are potentially disruptive. Disabling automatic rebalancing of login distribution provides a way of avoiding disruptions associated with routine F_Port/N_Port offline/online events.

The default values for `agautomapbalance` are as follows:

- Disable automatic login redistribution when F_Ports go offline.
- Enable automatic login redistribution when N_Ports come online.

Use the `--show` option to display the current configuration of the automatic rebalancing feature. The command output varies depending on current AG policy settings:

- If Port Group Policy is enabled on the switch, the command displays the following information for each configured port group:
 - PG_ID - Port Group number
 - LB mode - Login Balancing mode: enabled or disabled
 - nport - Enabled or disabled
 - fport- Enabled or disabled
- If Auto Policy is enabled on the switch, the command displays the status of the automatic rebalancing feature per port type as either disabled or enabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable

Enables automatic login redistribution upon removal or addition of a specified port type.

-fport	Enables automatic login redistribution in the event that one or more F_Ports go offline. When automatic login redistribution is enabled, the remaining F_Ports are remapped such that logins are balanced among the existing Imports.
-nport	Enables automatic login redistribution in the event that one or more N_Ports come online. When automatic login redistribution is enabled, the F_Ports mapped to the current N_Ports are rebalanced among the N_Ports.
--disable	Disables automatic login redistribution upon removal or addition of a specified port type.
-fport	Disables automatic login redistribution in the event that one or more F_Ports go offline. When automatic login redistribution is disabled, the remaining F_Ports maintain their existing N_Port mappings.
-nport	Disables automatic login redistribution in the event that one or more N_Ports come online. When auto map balancing is enabled, the F_Ports mapped to the current N_Ports are rebalanced among the N_Ports.
-pg <i>Port_Group_Number</i> | -all	Specifies the port group number or all port groups. These operands are mutually exclusive and optional with the --enable and --disable options. When a port group is specified, command execution is targeted to the members of that specific port group. When all port groups are specified, command execution is targeted to all port groups defined in the Access Gateway. The port group options are allowed only when login balancing is enabled on the specified port groups.
--force	Enforces automatic login redistribution on a one-time basis in the event that automatic login redistribution is disabled for N_Port addition, F_Port removal or both. This command forces rebalancing of the F_Port to N_Port mapping once. It does not affect the configuration settings.
--show	Displays the auto login distribution configuration.
--help	Displays the command usage.

Examples

To display the automatic login redistribution settings for port groups 0 and 1:

```
switch:admin> agautomapbalance --show
AG Policy:  pg
-----
PG_ID      LB mode      nport      fport
-----
0          Enabled      Enabled     Disabled
1          Disabled     -           -
-----
```

To display the automatic login redistribution settings for N_Ports and F_Ports.

```
switch:admin> agautomapbalance --show
```

```
-----  
AG Policy:                                     Auto  
-----  
automapbalance on N_Port Online Event:   Disabled  
automapbalance on F_Port Offline Event:   Enabled  
-----
```

To disable automatic login redistribution on F_Port offline events:

```
switch:admin> agautomapbalance --disable -fport
```

To enable automatic login redistribution on F_Ports and N_Ports on port group 1 in the Access Gateway:

```
switch:admin> agautomapbalance --enable -fport pg 1
```

To disable automatic login redistribution on F_Ports and N_Ports on all port groups in the Access Gateway:

```
switch:admin> agautomapbalance --disable -all
```

SEE ALSO [ag](#), [agShow](#)

agShow

Displays the Access Gateway information registered with the fabric.

Synopsis

agshow

agshow --name *ag_name*

agshow --local

agshow --all

Description

This command displays the details of the F_Ports and the configured N_Ports in the Access Gateway attached to the fabric. The command output displays the following information.

Name	The name of the Access Gateway.
Type	The type of switch.
NodeName	The World Wide Name of the Access Gateway node.
Ports	The number of ports in the Access Gateway.
Enet IP Addr	The IP address of the Access Gateway.
Firmware	Current firmware running on the Access Gateway.
Local/Remote	Indicates whether the Access Gateway is locally or remotely registered to this switch.
World Wide Name	The world wide name (WWN) of the given Access Gateway.
N-Port ID(s)	The port ids of the N_Ports configured in the given Access Gateway.
N-Ports	The number of configured N_Ports that are online.
F-Ports	The number of F_Ports that are online.
Attached F-Port information	Displays the Port ID, the switch F-port number, and the Port WWN of each F_Port that is online on the Access Gateway.

Access Gateway F-Port information

Displays the port number, the port ID, and the Port WWN of the Access Gateway to which the F_Port is connected. This information is displayed only if both the Access Gateway and the switch to which the Access Gateway is attached are running Fabric OS v.7.0.0 or later. The data in this section is not always synchronized with the data in the Attached F-Port information section.

Notes NPIV capability should be enabled on the ports connected to the Access Gateway. NPIV capability is enabled by default. Use portCfgNPIVPort to enable NPIV capability a port if it was previously disabled. Note that enabling or disabling NPIV capability is no longer supported in Access Gateway mode.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operands:

- name *ag_name*** Displays information regarding a specific Access Gateway that is registered with this fabric.
- local** Display information regarding all Access Gateways that are locally registered to this switch.
- all** Displays detailed information regarding all Access Gateways that are registered with this fabric.

Examples To display the Access Gateway information registered with the fabric:

```
switch:admin> agshow --name core_ag
Name           : core_ag
Type           : 162
NodeName       : 10:00:00:27:f8:f1:14:a0
N-Port ID(s)   : 0x0a6e00,0x0a3f00,0x071000
Number of Ports : 64
IP Address(es) : 10.20.113.165
Firmware Version : v8.1.0
N-Ports       : 3
F-Ports       : 29
Attached F-Port information :
    PortID      Port WWN                      Switch F-port
    -----
    0x0a6e01    10:00:00:05:1e:56:5f:29        91
    0x0a6e02    10:00:00:05:1e:56:5e:00        91
    0x0a6e03    10:00:8c:7c:ff:42:12:01        91
    0x0a6e04    10:00:00:05:1e:56:5f:84        91
    0x0a6e05    10:00:00:05:1e:56:5f:83        91
    0x0a6e06    10:00:00:05:1e:56:63:59        91
    0x0a6e07    10:00:00:05:1e:56:63:58        91
    0x0a6e08    10:00:8c:7c:ff:42:81:00        91
    0x0a6e09    10:00:00:00:00:00:00:01        91
    0x0a6e0a    10:00:00:00:00:00:00:02        91
    0x0a6e0b    10:00:00:00:00:00:00:03        91
    [...]
Access Gateway F-Port Information :
```

F-Port Number	F-Port ID	F-Port WWN
22	0x071001	20:16:00:27:f8:f1:14:a0
23	0x071002	20:17:00:27:f8:f1:14:a0
22	0x071003	20:16:00:27:f8:f1:14:a0
22	0x071004	20:16:00:27:f8:f1:14:a0
22	0x071005	20:16:00:27:f8:f1:14:a0
22	0x071006	20:16:00:27:f8:f1:14:a0
22	0x071007	20:16:00:27:f8:f1:14:a0

[...]

To display the locally registered Access Gateways:

```
switch:admin> agshow --local
Worldwide Name          Ports Enet IP Addr Firmware \
-----\
10:00:00:05:1e:04:06:ae  24  10.32.173.64  v6.4.0  \

Local/Remote Name
-----
local          L5D_B14_4024_1
```

To display all Access Gateways attached to the fabric:

```
switch:admin> agshow
Worldwide Name          Ports Enet IP Addr Firmware \
-----\
10:00:00:05:1e:02:b7:2c  16  10.32.173.62  v6.4.0  \
10:00:00:05:1e:04:06:ae  24  10.32.173.64  v6.4.0  \
10:00:00:05:1e:04:06:ae  24  10.32.173.51  v6.4.0  \

Local/Remote Name
-----
local          L5D_B10_4016_1
local          L5D_B14_4024_1
local          L5D_B13_200_AG
```

To display the detailed information of Access Gateways registered with the fabric:

```
switch:admin> agshow --all
AG #1:
Name          : AG_300_154
Type          : 71
NodeName      : 10:00:00:05:1e:0b:50:99
N-Port ID(s)  : 0x0a1700,0x0a1e00,0x076e00
Number of Ports : 24
IP Address(es) : 10.20.113.154
Firmware Version : v7.4.0a
N-Ports       : 3
F-Ports       : 0
Attached F-Port information :
      PortID      Port WWN                      Switch F-port
      -----
AG #2:
Name          : AG_155
Type          : 66
NodeName      : 10:00:00:05:1e:61:dd:62
N-Port ID(s)  : 0x0a0b00,0x0a5b00
```

```

Number of Ports      : 40
IP Address(es)       : 10.20.113.155
Firmware Version     : v7.4.0a
N-Ports              : 2
F-Ports              : 0
Attached F-Port information :
      PortID      Port WWN      Switch F-port
      -----

```

```

AG #3:
Name           : AG_Tom2_157
Type           : 118
NodeName       : 10:00:00:05:33:13:8a:ba
N-Port ID(s)   : 0x0a0a00,0x0a0d00
Number of Ports : 24
IP Address(es) : 10.20.113.157
Firmware Version : v8.0.1_bld49
N-Ports        : 2
F-Ports        : 8

```

```

Attached F-Port information :
      PortID      Port WWN      Switch F-port
      -----
0x0a0a01  10:00:8c:7c:ff:42:67:00      88
0x0a0a02  10:00:8c:7c:ff:42:67:01      88
0x0a0a03  10:00:8c:7c:ff:42:80:00      88
0x0a0a04  10:00:8c:7c:ff:42:70:01      88
0x0a0a05  10:00:8c:7c:ff:42:6d:00      88
0x0a0a06  10:00:8c:7c:ff:42:6d:01      88
0x0a0a07  10:00:8c:7c:ff:42:73:00      88
0x0a0a08  10:00:8c:7c:ff:42:73:01      88

```

```

Access Gateway F-Port Information :
      F-Port Number  F-Port ID      F-Port WWN
      -----
12      0x0a0a01      20:0c:00:05:33:13:8a:ba
13      0x0a0a02      20:0d:00:05:33:13:8a:ba
14      0x0a0a03      20:0e:00:05:33:13:8a:ba
17      0x0a0a04      20:11:00:05:33:13:8a:ba
18      0x0a0a05      20:12:00:05:33:13:8a:ba
19      0x0a0a06      20:13:00:05:33:13:8a:ba
20      0x0a0a07      20:14:00:05:33:13:8a:ba
21      0x0a0a08      20:15:00:05:33:13:8a:ba

```

SEE ALSO [portCfgNPiVPort](#)

aliAdd

Adds a member to a zone alias.

Synopsis **aliadd** "*aliName*", "*member*[: *member*...]"

Description Use this command to add one or more members to an existing zone alias. The alias member list cannot contain another zone alias.

This command changes the defined configuration. For the change to become effective, enable the zone configuration with the `cfgEnable` command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory with the `cfgSave` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

An alias with mixed-type members (WWN and D,I) is not allowed to be part of an alias peer zone.

Operands The following operands are required:

"*aliName*"

Specify the name of a zone alias, enclosed in double quotation marks.

"*member*"

Specify a member or list of members to be added to the alias, enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

- A switch domain and port index pair. Use `switchShow` for a list of valid port index numbers.
- A world wide name (WWN).

Examples To add members to zone aliases `array1`, `array2`, and `loop1`:

```
switch:admin> aliadd "array1", "1,2"
```

```
switch:admin> aliadd "array2", "21:00:00:20:37:0c:72:51"
```

SEE ALSO [aliCreate](#), [aliDelete](#), [aliRemove](#), [aliShow](#)

aliCreate

Creates a zone alias.

Synopsis **alicreate** "*aliName*", "*member*[: *member*...]"

Description Use this command to create a new zone alias. The zone alias member list must have at least one member (empty lists are not allowed). The alias member list cannot contain another zone alias. Refer to the zoneCreate command for more information on name and member specifications.

This command changes the defined configuration. For the change to become effective, enable the zone configuration with the cfgEnable command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory with the cfgSave command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

An alias with mixed-type members (WWN and D,I) is not allowed to be part of an alias peer zone.

Operands The following operands are required:

"*aliName*"

Specify a name for the zone alias, in double quotation marks. A zone alias name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar (\$), or caret (^) characters. Names are case-sensitive. For example, "Ali_1" and "ali_1" are different zone aliases. Spaces are ignored.

"*member*"

Specify a member or list of members to be added to the alias, enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

- A switch domain and port index pair. Use switchShow for a list of valid port index numbers.
- A world wide name (WWN).

Examples To create a zone alias defined by domain and port index pairs:

```
switch:admin> alicreate "array1", "2,32; 2,33; 2,34"
```

To create a zone alias with one member defined by WWN.

```
switch:admin> alicreate "array2", "21:00:00:20:37:0c:66:23"
```

SEE ALSO [aliAdd](#), [aliDelete](#), [aliRemove](#), [aliShow](#)

aliDelete

Deletes a zone alias.

Synopsis **alidelete** "*aliName*"

Description Use this command to delete a zone alias.

This command changes the defined configuration. For the change to become effective, enable the zone configuration with the `cfgEnable` command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory with the `cfgSave` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operand is required:

"*aliName*"

Specify the name of the zone alias to be deleted. Double quotation marks are optional.

Examples To delete the zone alias "array2":

```
switch:admin> alidelete "array2"
```

```
switch:admin> alidelete array1
```

SEE ALSO [aliAdd](#), [aliCreate](#), [aliRemove](#), [aliShow](#)

aliRemove

Removes a member from a zone alias.

Synopsis **aliremove** "*aliName*", "*member[; member...]*"

Description Use this command to remove one or more members from an existing zone alias.

If all members are removed, the zone alias is deleted.

This command changes the defined configuration. For the change to become effective, enable the zone configuration with the `cfgEnable` command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory with the `cfgSave` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

"*aliName*"

Specify the name of the zone alias from which members are to be removed in double quotation marks. This operand is required.

"*member*"

Specify a member or list of members to be removed from the alias. The list must be enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

- A switch domain and port index number pair. Use `switchShow` for a list of valid port index numbers.
- A world wide name (WWN)

The member list is located by an exact string match; therefore, it is important to maintain the order when removing multiple members. For example, if a zone alias contains "1,2; 1,3; 1,4", then removing "1,3; 1,4" succeeds but removing "1,4; 1,3" fails.

Examples To remove a world wide name from "array1":

```
switch:admin> aliremove "array1", "3,5"
```

```
switch:admin> aliremove "array1", "21:00:00:20:37:0c:76:8c"
```

```
switch:admin> aliremove "array1", "0xEF"
```

SEE ALSO [aliAdd](#), [aliCreate](#), [aliDelete](#), [aliShow](#)

aliShow

Displays zone alias information.

Synopsis **alishow** [--ic] ["*pattern*"][, *mode*]

alishow --help

Description Use this command to display zone configuration information.

Use the pattern operand to display only matching zone alias names in the defined configuration.

If no parameters are specified, all zone configuration information (both defined and effective) is displayed. Refer to `cfgShow` for a description of this display.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands When invoked without an operand, this command displays all zone configuration information (defined and effective). Refer to `cfgShow` for a description of this display. The following operands are optional:

--ic

Displays all configured zone alias names for a given pattern without case distinction.

"*pattern*"

A POSIX-style regular expression that matches zone alias names. This operand must be enclosed in quotation marks. Patterns may contain:

- Question mark (?) - matches any single character.
- Asterisk (*) - matches any string of characters.
- Range - matches any character within the range. Ranges must be enclosed in brackets: for example, [0-9] or [a-f].

mode

Specify 0 to display the contents of the transaction buffer (the contents of the current transaction), or specify 1 to display the contents of the nonvolatile memory. The default value is 0.

--help

Displays the command usage.

Examples To display all zone aliases beginning with "arr":

```
switch:admin> alishow "arr*"
alias: array1  21:00:00:20:37:0c:76:8c
alias: array2  21:00:00:20:37:0c:66:23
```


aliShow

To display all zone alias names beginning with "arr", regardless of the case:

```
switch:admin> alishow --ic "arr"  
alias: array1  20:e0:00:05:33:11:1f:00  
alias: ARRAY2  2f:11:00:05:33:c1:37:a2
```

SEE ALSO None

appLoginHistory

Displays the history of HTTP login sessions.

Synopsis **apploginhistory --show**

apploginhistory --help

Description Use this command to display the history of HTTP login sessions from external management applications such as Brocade Network Advisor or Web Tools. The command displays both current sessions and a history of past sessions. For each entry, the command output shows the following information:

- The date and time when the session started (YYYY/MM/DD-HH:MM:SS.MS).
- The IP address of the machine that initiated the HTTP login.
- The role of the user initiating the login.
- The application initiating the login.

The history supports a maximum of 100 entries. If the history exceeds the maximum size, the oldest entries will be removed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--show

Displays the currently active logins and a history of past logins.

--help

Displays the command usage.

Examples To display the application login history:

```
switch:admin> apploginhistory -- show
```

The following are history of logins to the switch from external applications

(Login Timestamp, IP Address, User Account, Application):

```
2011/10/13-15:51:31.203814, 10.20.10.160, admin, DCFM-HttpConnector/null
2011/10/13-15:51:33.095638, 10.20.10.160, admin, DCFM-HttpConnector/null
2011/10/13-15:52:14.178299, 10.20.10.161, admin, DCFM-HttpConnector/null
2011/10/13-15:52:14.643639, 10.20.10.161, admin, DCFM-HttpConnector/null
2011/10/13-15:53:55.966050, 10.20.10.161, admin, DCFM-HttpConnector/null
2011/10/13-15:53:56.329979, 10.20.10.161, admin, DCFM-HttpConnector/null
2011/10/13-15:53:56.858216, 10.20.10.161, admin, DCFM-HttpConnector/null
2011/10/13-15:53:57.547672, 10.20.10.161, admin, DCFM-HttpConnector/null
```

The following are the sessions from the external applications that are

appLoginHistory

active currently:

```
2011/10/13-15:51:31.203814, 10.20.10.160, admin, DCFM-HttpConnector/null
2011/10/13-15:51:33.095638, 10.20.10.160, admin, DCFM-HttpConnector/null
2011/10/13-15:52:14.178299, 10.20.10.161, admin, DCFM-HttpConnector/null
2011/10/13-15:53:57.547672, 10.20.10.161, admin, DCFM-HttpConnector/null
```

SEE ALSO None

appServer

Displays application server information.

Synopsis **appserver --domainInfo [-all | -domain *[domain_ID | local]*]**

appserver --show [-all | -domain *[domain_ID | local]* |
-pid *N_Port_ID* | -eid *entity_ID*

appserver --help

Description Use this command to display information that is stored or managed by the application server daemon.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--domainInfo

Displays information of the specified application server domain or all application server domains in the fabric. Specify one of the following operands:

-all

Displays information for all application server domains in the fabric.

-domain *[domain_ID | local]*

Displays information for the specified application server domain. Specify local to display information for the local domain.

--show

Displays information of the application server database. Specify one of the following operands:

-all

Displays database information for all application servers in the fabric.

-domain *[domain_ID | local]*

Displays database information for the specified application server domain. Specify local to display information for the local domain.

-pid *N_Port_ID*

Displays application server database information for the specified Port ID. Specify *N_Port_ID* (the 24 bit Fibre Channel address including the domain part) in hexadecimal format.

-eid *entity_ID*

Displays application server database information for the specified entity ID. Specify *entity_ID* in ASCII or hexadecimal format.

--help

Displays the command usage.

Examples

To display information of a specific application server domain:

```
switch:admin> appserver --domainInfo -domain 3
-----
Domain      : 03 [10:00:00:00:f8:f1:e0:c0]
State       : known dca [Application Server Supported]
-----
```

Application Server displays 1 entry

To display information of all application server domains:

```
switch:admin> appserver --domainInfo -all
-----
Domain      : 04 [10:00:c0:f5:7c:00:00:00]
State       : local [Application Server Supported]
-----
```

Application Server displays 1 entry

To display database information for a specific port ID:

```
switch:admin> appserver --show -pid 010200
-----
Displaying results for PID 010200
-----
N_Port ID      : 010200
Entity ID (ASCII) : 52 fc ef 53 8b ed 5a 32-10 5b 72 77 e7 df d8 83
Entity ID (Hex)  : 0x35322066632065662035332038622065642035612033322d \
                  3130203562203732203737206537206466206438203833
Application ID   : 0x00000209h (521)
-----
```

Application Server displays 1 entry

To display database information for a specific entity ID:

```
switch:admin> appserver --show -eid 0x3532206663206566203 \
5332038622065642035612033322d313020356220373220 \
3737206537206466206438203833
-----
Displaying results for Entity ID
-----
N_Port ID      : 010200
Entity ID (ASCII) : 52 fc ef 53 8b ed 5a 32-10 5b 72 77 e7 df d8 83
Entity ID (Hex)  : 0x35322066632065662035332038622065642035612033322d \
                  3130203562203732203737206537206466206438203833
Application ID   : 0x00000209h (521)
-----
```

Application Server displays 1 entry

SEE ALSO

None

aptPolicy

Changes or displays the Advanced Performance Tuning (APT) policy.

Synopsis **aptpolicy** [*policy*]

Description Use this command to display and change the advanced performance tuning (APT) policies on a switch.

Distributed path selection (DPS) is supported in logical fabrics. APT policy settings affecting the DPS behavior can be configured per logical switch, and settings apply to the partition for which they are set. Note that policy settings for the base switch or any switch in the base fabric affect all traffic going through the base fabric including any logical fabric traffic that uses the base fabric.

When invoked without arguments, this command displays the APT policies supported on this switch, as well as the current policy.

Notes You must disable the switch before using this command to change the current policy. Changes take effect immediately for all EX/VEX_Ports after the switch is re-enabled.

For details on performance tuning, refer to the Fabric OS Administrator's Guide.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

policy

Specifies the APT policy. The following policies are supported:

1

Port-based routing policy. With this policy, the path chosen for an ingress frame is based on both of the following items:

- The ingress port on which the frame was received.
- The destination domain for the frame.

The chosen path remains the same if Dynamic Load Sharing (DLS) is not enabled. If DLS is enabled, a different path may be chosen for a fabric event. Refer to `dlsSet` for a definition of a fabric event.

This policy may provide better ISL utilization when there is little or no oversubscription of the ISLs.

Note that static routes are supported only with this policy.

2

Device Based Routing Policy. Device-based routing is supported in FICON environments, and in open environments only when FICON coexists. With this policy, the path chosen for an ingress frame is based on the following items:

- The ingress port on which the frame was received.
- The FC address of the source fabric device (SID) for this frame.
- The FC address of the destination fabric device (DID) for this frame.

This policy optimizes the utilization of the available paths by allowing I/O traffic between different source fabric device (SID) or destination fabric device (DID) pairs to use different paths. As a result, every distinct flow in the fabric can take a different path through the fabric. Effectively, device based routing works the same as exchange-based routing but does not use the Originator Exchange ID (OXID) field. This helps to ensure that the exchanges between a pair of devices stay in order.

Device-based routing is also a form of Dynamic Path Selection (DPS). DPS assigns communication paths between end devices in a fabric to egress ports in ratios proportional to the potential bandwidth of the ISL, ICL, or trunk group. When there are multiple paths to a destination, the input traffic is distributed across the different paths in proportion to the bandwidth available on each of the paths. This improves utilization of the available paths and reduces possible path congestion.

3

Exchange-based routing policy (default). With this policy, the path chosen for an ingress frame is based on all of the following items:

- The ingress port on which the frame was received.
- The FC address of the SID for this frame.
- The FC address of the DID for this frame.
- The FC OXID for this frame.

This policy optimizes the utilization of the available paths by allowing I/O traffic between different SID, DID, or OXID pairs to use different paths. All frames received on an ingress port with the same SID, DID, or OXID parameters take the same path unless there is a fabric event. Refer to `dlsSet` for the definition of a fabric event.

This policy does not support static routes. DLS is always enabled and the DLS setting cannot change with this policy.

Examples To display the current APT policy:

```
switch:admin> aptpolicy
Current Policy: 3
3: Default Policy
1: Port Based Routing Policy
2: Device Based Routing Policy (FICON support only)
3: Exchange Based Routing Policy
```

To change the current APT policy to the exchange-based routing policy:

```
switch:admin> aptpolicy 3
Switch must be disabled in order to modify \
this configuration parameter. To disable the switch, \
use the "switchDisable" command.

switch:admin> switchdisable

switch:admin> aptpolicy 3
Policy updated successfully.

switch:admin> switchenable

switch:admin> aptpolicy
Current Policy: 3

3: Default Policy
1: Port Based Routing Policy
2: Device Based Routing Policy (FICON support only)
3: Exchange Based Routing Policy
```

SEE ALSO [dlsReset](#), [dlsSet](#), [dlsShow](#), [switchDisable](#)

auditCfg

Modifies and displays the audit log filter configuration.

Synopsis

auditcfg --class *audit_class*

auditcfg --enable | --disable

auditcfg --severity *severity_level*

auditcfg --show

Description

Use this command to configure the audit logging and to display the audit log configuration. This command allows you to set filters by configuring certain classes, to add or remove any of the classes in the filter list, to set severity levels for audit messages, and to enable or disable audit filters. Based on the configuration, certain classes are logged to syslog for auditing. Syslog configuration is required for logging audit messages. Use the `syslogAdmin` command to add the syslogd server IP address.

Notes

The RAS class is not configurable; its function is to audit the audit log management operations and it is always enabled internally.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--class

Configures filters for a specified audit class. To add or remove any of the classes in the filter list, reissue the `--class` option.

audit_class

Specifies the filters to be configured. Valid values are: 1-ZONE, 2-SECURITY, 3-CONFIGURATION, 4-FIRMWARE, 5-FABRIC, 7-LS (Logical Switch), 8-CLI, and 9-MAPS. The filter is specified by its numeric value. To add more than one filter, the numeric values must be separated by commas. Spaces are not permitted. This operand is required.

--severity

Sets audit severity level to a specified value. When severity is set, only log messages of type *severity_level* and higher are displayed. You cannot enter multiple severity levels.

severity_level

Valid values are INFO, WARNING, ERROR, and CRITICAL. By default, all messages are logged. This operand is required.

--enable

Enables all filters. This action enables an existing configuration; it does not change the configuration.

--disable

Disables all filters. This action disables an existing configuration; it does not change the configuration.

--show

Displays the current configuration. This operand is optional.

Examples

To configure the audit log filter:

```
switch:admin> auditcfg --class 2,3,8
Audit filter is configured.
```

To enable audit logging:

```
switch:admin> auditcfg --enable
Audit filter is enabled.
```

To display the configuration:

```
switch:admin> auditcfg --show
Audit filter is enabled.
2-SECURITY
3-CONFIGURATION
8-CLI
Severity level: INFO
```

To disable audit logging and to display the configuration (the filters are unchanged but show the disabled state):

```
switch:admin> auditcfg --disable
Audit filter is disabled.
switch:admin> auditcfg --show
Audit filter is disabled.
2-SECURITY
3-CONFIGURATION
8-CLI
Severity level: INFO
```

SEE ALSO [auditDump](#), [rasAdmin](#)

auditDump

Displays or clears the audit log.

Synopsis **auditdump -s | -show**

auditdump -c | -clear

Description Use this command to display or clear the audit log on the switch. The audit log persistently saves the most recent 1024 log entries on the switch. On modular platforms, the entries are not shared across CPs. Each CLI executed on a switch from non-root user account is saved as an audit log. To display or clear the logs, this command must be issued for each CP separately.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-s | -show

Displays the audit log on the switch or the CP.

-c | -clear

Clears the audit log on the switch or the CP.

Examples To display the audit log:

```
switch:admin> auditdump -s
0 AUDIT, 2010/02/18-01:45:52 (PDT), [SEC-3022], INFO, SECURITY,
admin/admin/10.32.220.161/http/DCFM-HttpConnec, ad_0/ras035/FID
128,, Event: logout, Status: success, Info: Successful logout
by user [admin].

1 AUDIT, 2010/02/18-01:46:00 (PDT), [SEC-3022], INFO, SECURITY,
admin/admin/10.32.220.161/http/DCFM-HttpConnec, ad_0/ras035/FID
128,, Event: logout, Status: success, Info: Successful logout
by user [admin].

2 AUDIT, 2010/02/18-01:46:18 (PDT), [SEC-3020], INFO, SECURITY,
admin/admin/10.32.220.161/http/DCFM-HttpConnec, ad_0/ras035/FID
128,, Event: login, Status: success, Info: Successful login
attempt via HTTP, IP Addr: 10.32.220.161.

3 AUDIT,2012/05/23-03:45:15 (UTC),[RAS-3005], INFO, CLI,
admin/admin/NONE/console/CLI,ad_0/McKsSpirit/CHASSIS,
CLI:clihistory

4 AUDIT,2012/05/23-04:12:04 (UTC),[RAS-3005],INFO,CLI,
admin/admin/NONE/console/CLI,ad_0/McKsSpirit/CHASSIS,
CLI:auditdump -s

(output truncated)
```

To clear the audit log:

```
switch:admin> auditdump -c
```

SEE ALSO [auditCfg](#)

authUtil

Displays and sets the authentication configuration.

Synopsis

authutil

authutil --show

authutil --set *option value*

authutil --policy -sw *option* | **-dev** *option*

authutil --authinit [*slot*]/*port*[, [*slot*]/*port*...] | **allE**

Description

Use this command to display and set local switch authentication parameters.

Use --set to change authentication parameters such as protocol, Diffie-Hellman group (DH group), or hash type. When no protocol is set, the default setting of "FCAP, DH- CHAP" is used. When no group is set, the default setting of "" (meaning "0,1,2,3,4") is used. Configuration settings are saved persistently across reboots. Configuration changes take effect during the next authentication request.

Use the --show command to display the current authentication configuration.

Authentication parameters are set on a per-switch basis. If Virtual Fabrics are enabled, all authentication parameters apply to the current logical switch context only, and must be configured separately for each logical switch. Use setContext to change the current logical switch context.

In a VF environment, authentication is performed only on physical E_Ports, not on logical interswitch links (LISLs).

An FCR switch does not depend on the authentication policy to perform authentication or encryption/compression key exchange with the edge fabric. The authentication policy set on an FCR switch is not considered to perform authentication with the edge fabric. The authUtil configuration on the FCR switch does not affect EX_Port. The EX_Port acts passively by accepting the parameters received from the edge fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays the local authentication configuration. This option is supported in the Access Gateway (AG) mode.

--set option value

Modifies the authentication configuration. Valid options and their values include the following:

-a fcap | dhchap | all

Sets the authentication protocol. Specify "fcap" to set only FCAP authentication. Specify "dhchap" to set only DH-CHAP authentication. Specify "all" to set both FCAP and DH-CHAP, which is the default setting. When authentication is set to "all", the implicit order is FCAP followed by DH-CHAP. This means that in authentication negotiation, FCAP is given priority over DH-CHAP on the local switch. If the negotiation is done for an encrypted port, DHCHAP takes precedence over FCAP. The --set dhchap and --set all options are supported in the AG mode.

Before setting the authentication type, make sure that FCAP certificates and dhchap secrets are configured.

-g 0 | 1 | 2 | 3 | 4 | *

Sets the Diffie-Hellman (DH) group. Valid values are 0 to 4 and "*". The DH group 0 is called NULL DH. Each DH group implicitly specifies a key size and associated parameters. A higher group value provides stronger cryptography and a higher level of security. When DH group is set to a specified value, only that DH group is enabled. Specifying "*" enables all DH groups 0, 1, 2, 3, and 4, in that order. This means that in authentication negotiation, the NULL DH group is given priority over all other groups. In the case of a port that is enabled for encryption and you specify "*", the DH group 4 is selected. This option is supported in AG mode.

-h sha256 | sha1 | md5 | all

Sets the hash type. Valid values are "sha256", "sha1", "md5", or "all". Enabling sha256 access is required when configuring the system for FIPS. Refer to the Fabric OS Administrator's Guide for details on FIPS configuration.

--policy

Sets the switch authentication policy or device authentication policy. The following options are supported:

-sw off | passive | active | on

Sets the switch authentication policy. Specify one of the following modes. Operands are exclusive. If the switch has ports enabled for encryption, only the ON and ACTIVE options are supported. Only on and off options are supported in AG mode.

off

Turns the authentication policy off, and the switch rejects any authentication requests.

passive

Sets the authentication policy to passive mode (default). The switch does not initiate authentication but participates in authentication if the connecting switch initiates authentication.

active

Sets the authentication policy to active mode. During switch initialization, authentication is initiated on all E_Ports, but the port is not disabled if the connecting switch does not support authentication or the authentication policy is turned off.

on	Sets the switch authentication policy to ON mode. Strict authentication is enforced on all E_Ports. The interswitch link (ISL) goes down (port disable), if the connecting switch does not support the authentication or the authentication policy is switched off.
-dev off | passive | on	Sets the device authentication policy. Three modes are supported. Device authentication policy is off by default. This option and suboptions are supported in AG mode.
off	Turns off the device authentication policy. Authentication is not required. The switch ignores any authentication requests and continues with the FC probing without authentication.
passive	Sets the authentication policy to passive mode. Authentication is optional. If the attached device is capable of doing the authentication then the switch participates in authentication; otherwise it forms an F_Port without authentication. In this mode the device accepts authentication on all F_Ports.
on	Sets the authentication policy to "on" mode. Authentication is mandatory. If the attached device is not capable of doing authentication, the corresponding port is disabled.
--authinit [slot/port [, [slot/port...]] allE	Reinitiates authentication on selected ports after changing the DH-CHAP group, hash type, and shared secret between a pair of switches. This command does not work on Private, Loop, NPIV and FICON devices. This command may bring down the E_Ports if the DH-CHAP shared secrets are not installed correctly. This command is not supported on encrypted ports. This option is not supported in AG mode. This command does not initiate authentication on disabled ports. Valid options include the following:
slot	Specify the slot number, if applicable, followed by a slash (/).
port	Specify the port number. On enterprise-class platforms, use the slot/port format for specifying the port number.
allE	Specify all E_Ports in the switch.

Examples

To set DH-CHAP as the authentication protocol:

```
switch:admin> authutil --set -a dhchap
Authentication is set to dhchap.
```

To set both protocols in order of FCAP and then DH-CHAP:

```
switch:admin> authutil --set -a all
Authentication is set to fcap,dhchap.
```

To enable sha1 hash type:

```
switch:admin> authutil --set -h sha1
Hash is set to sha1.
```

To enable all hash types:

```
switch:admin> authutil --set -h all
Hash is set to sha256,sha1,md5.
```

To check the hash types set:

```
switch:admin> authutil --show
AUTH TYPE      HASH TYPE      GROUP TYPE
-----
fcap,dhchap    sha256,sha1,md5    1

Switch Authentication Policy: PASSIVE
Device Authentication Policy: OFF
```

To enable Sha256 hash type:

sha256 hash type is recommended for FIPS configuration.

```
switch:admin> authutil --set -h sha256
Hash is set to sha256.

switch:admin> authutil --show
AUTH TYPE      HASH TYPE      GROUP TYPE
-----
fcap,dhchap    sha256          1

Switch Authentication Policy: PASSIVE
Device Authentication Policy: OFF
```

To set DH group 3:

```
switch:admin> authutil --set -g 3
DH Group was set to 3.
```

To set all DH groups to be specified in the authentication negotiation in the order of 0, 1, 2, 3, and 4:

```
switch:admin> authutil --set -g ""
DH Group is set to 0,1,2,3,4
```

To set the Switch policy to active mode:

```
switch:admin> authutil --policy -sw active
Warning: Activating the authentication policy requires
either DH-CHAP secrets or PKI certificates depending
on the protocol selected. Otherwise, ISLs will be
segmented during next E-port bring-up.
ARE YOU SURE (yes, y, no, n): [no] y
Auth Policy is set to ACTIVE
```


To set the Device policy to passive mode:

```
switch:admin> authutil --policy -dev passive
Warning: Activating the authentication policy requires
DH-CHAP secrets on both switch and device. Otherwise,
the F-port will be disabled during next F-port
bring-up.
ARE YOU SURE (yes, y, no, n): [no] y
Device authentication is set to PASSIVE
```

To set the device authentication policy to "on" mode:

```
switch:admin> authutil --policy -dev on
Warning: Activating the authentication policy requires
DH-CHAP secrets on both switch and device. Otherwise,
the F-port will be disabled during next F-port
bring-up.
ARE YOU SURE (yes, y, no, n): [no] y
Device authentication is set to ON
2008/03/24-23:13:06, [AUTH-1003], 112,, INFO, Stealth_3,
Device authentication type has been successfully set to ON
```

To start authentication on E/F_Ports 2, 3, and 4:

```
switch:admin> authutil --authinit 2,3,4
Warning: Initiating the authentication requires either DH-CHAP
secrets or PKI certificates depending on the protocol selected.
Failed authentication may result in traffic disruption.
Authentication will not be initiated on encrypted ports.
ARE YOU SURE (yes, y, no, n): [no]y
```

SEE ALSO [portShow](#), [secAuthSecret](#)

bannerSet

Sets the banner on the local switch.

Synopsis **bannerSet** [*banner*]

Description Use this command to set the banner on the local switch.

The banner is a string of alphanumeric characters. It is displayed after you log in to a switch.

The banner can be created using the banner operand or interactively by entering the bannerSet command without an operand.

If you enter the banner text using the interactive method, the valid length is 1022 characters. If the banner text length exceeds the maximum allowed, the software truncates the input. To close the banner text string, enter a period at the beginning of a new line.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operand:

banner

Specify a text string to be displayed upon login. If you enter the banner text using the banner operand, the valid length is 116 characters.

Examples To set a new banner for a switch:

```
switch:admin> bannerSet "My banner"
```

```
switch:admin> bannerSet
```

```
Please input context of security banner (press "." RETURN \
at the beginning of a newline to finish input):
```

SEE ALSO [bannerShow](#), [motd](#)

bannerShow

Displays the banner text.

Synopsis **bannershow**

Description Use this command to display the text of the local switch banner.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the banner for a switch:

```
switch:admin> bannershow  
Banner: Do not disturb the setup on this switch.
```

SEE ALSO [bannerSet](#), [motd](#)

Synopsis **bcastshow**

The following fields are displayed:

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Examples

To display the broadcast routing information for all ports in the switch:

SEE ALSO [portRouteShow](#)

bladeCfgGeMode

Configures a GbE port or a 10GbE port on the Brocade FX8-24 blade.

Synopsis **bladecfggemode --set mode -slot slot**

bladecfggemode --show -slot slot | -all

bladecfggemode --help

Description Use this command to configure the GbE port mode on the Brocade FX8-24 extension blade or to display the configuration. The mode configuration controls which ports are enabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on the Brocade FX8-24 blade in a DCX 8510 chassis.

Operands This command has the following operands:

--set mode

Sets the GbE port mode for a specified slot. Valid modes are one of the following:

1g

Enables the GbE ports ge0-ge9 (xge0 and xge1 are disabled).

10g

Enables the GbE ports xge0 and xge1 (ge0-ge9 ports are disabled).

dual

Enables the GbE ports ge0-ge9 and xge0 (xge1 is disabled).

-slot slot

Specifies the slot number for the FX8-24 blade. This operand is required when setting the GbE port mode

--show

Displays the GbE port mode for the specified slots.

-slot slot

Displays the GbE port mode for a single slot.

-all

Displays the GbE port mode for all configured slots.

--help

Displays the command usage.

Examples To configure the Brocade FX8-24 blade in slot 4 in 1G mode:

```
switch:admin> bladecfggemode --set 1g -slot 4
```

To display the GbE port mode for the Brocade FX8-24 blade in slot 4:

```
switch:admin> bladecfggemode --show -slot 4  
bladeCfgGeMode: Blade in slot 4 is configured in 10GigE Mode  
10GigE mode: only xge0 and xge1 are enabled (ge0-9 ports \  
are disabled)
```

To display the GbE port mode for all configured slots:

```
switch:admin> bladecfggemode --show -all  
bladeCfgGeMode: Blade in slot 1 is configured in 1GigE Mode  
1GigE mode: only the ge0-9 ports are enabled (xge0 and xge1 \  
are disabled)  
bladeCfgGeMode: Blade in slot 4 is configured in 10GigE Mode  
10GigE mode: only xge0 and xge1 are enabled (ge0-9 ports \  
are disabled)
```

SEE ALSO None

bladeDisable

Disables all user ports on a blade.

Synopsis **bladedisable** *slot*

Description Use this command to disable all user ports on a blade. All Fibre Channel ports on the blade are taken offline. If the switch was connected to a fabric through this blade, the remaining switches reconfigure, and the switch reconfigures based on the other blade ports. As each port is disabled, the front panel LED changes to a slow-flashing amber.

After issuing bladeDisable on a slot in a chassis, switchShow displays the user ports in the disabled state. The blade is still shown as enabled in both switchShow and slotShow output.

The blade must be disabled before making configuration changes or before running many of the diagnostic tests. The blade does not need to be disabled before rebooting or powering off.

You cannot disable a blade when the blade is faulted, powered off, or running diagnostics.

This command disables the ports on a single blade. To disable the ports in an entire chassis, use the chassisDisable command.

Notes This command appears to execute successfully along with slotpoweron operation on an AP Blade, but the command is ignored.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

slot

Specifies the slot number for the ports to be disabled.

Examples To disable a blade in slot 5:

```
switch:admin> bladedisable 5
Blade 5 is being disabled...Done
```

To verify that the user ports on the blade are disabled:

```
switch:admin> switchshow -slot 5
switchName:    DCX57_9
switchType:    62.1
switchState:    Online
switchMode:    Native
switchRole:    Subordinate
switchDomain:   9
switchId:       fffc09
switchWwn:      10:00:00:05:1e:40:4a:00
zoning:        ON (all_cfg)
switchBeacon:   OFF
FC Router:     OFF
FC Router BB Fabric ID: 128
```

Slot	Blade Type	ID	Model Name	Status
5	COREBLADE	52	CORE8	ENABLED

Index	Slot	Port	Address	Media	Speed	State	Proto
384	5	0	-----	cu	8G	In_Sync	FC Disabled
385	5	1	-----	cu	8G	In_Sync	FC Disabled
386	5	2	-----	cu	8G	In_Sync	FC Disabled
387	5	3	-----	cu	8G	In_Sync	FC Disabled
388	5	4	-----	cu	8G	In_Sync	FC Disabled
389	5	5	-----	cu	8G	In_Sync	FC Disabled
390	5	6	-----	cu	8G	In_Sync	FC Disabled
391	5	7	-----	cu	8G	In_Sync	FC Disabled
392	5	8	-----	cu	8G	In_Sync	FC Disabled
393	5	9	-----	cu	8G	In_Sync	FC Disabled
394	5	10	-----	cu	8G	In_Sync	FC Disabled
395	5	11	-----	cu	8G	In_Sync	FC Disabled
396	5	12	-----	cu	8G	In_Sync	FC Disabled
397	5	13	-----	cu	8G	In_Sync	FC Disabled
398	5	14	-----	cu	8G	In_Sync	FC Disabled
399	5	15	-----	cu	8G	In_Sync	FC Disabled
400	5	16	-----	cu	8G	In_Sync	FC Disabled
401	5	17	-----	cu	8G	In_Sync	FC Disabled
402	5	18	-----	cu	8G	In_Sync	FC Disabled
403	5	19	-----	cu	8G	In_Sync	FC Disabled
404	5	20	-----	cu	8G	In_Sync	FC Disabled
405	5	21	-----	cu	8G	In_Sync	FC Disabled
406	5	22	-----	cu	8G	In_Sync	FC Disabled
407	5	23	-----	cu	8G	In_Sync	FC Disabled
408	5	24	-----	cu	8G	In_Sync	FC Disabled
409	5	25	-----	cu	8G	In_Sync	FC Disabled
410	5	26	-----	cu	8G	In_Sync	FC Disabled
411	5	27	-----	cu	8G	In_Sync	FC Disabled
412	5	28	-----	cu	8G	In_Sync	FC Disabled
413	5	29	-----	cu	8G	In_Sync	FC Disabled
414	5	30	-----	cu	8G	In_Sync	FC Disabled
415	5	31	-----	cu	8G	In_Sync	FC Disabled

SEE ALSO [bladeEnable](#), [chassisDisable](#), [chassisEnable](#), [portDisable](#), [portEnable](#), [slotShow](#), [switchEnable](#), [switchDisable](#), [switchShow](#)

bladeEnable

Enables all user ports on a blade.

Synopsis **bladeenable slot**

Description Use this command to enable all user ports on a blade. All ports within the blade that did not fail the power-on self-test (POST) are enabled (except for persistently disabled ports). They may come online if connected to a device, or remain offline if disconnected. Use the bladeEnable command to re-enable the blade after making configuration changes or running offline diagnostics.

If the switch is connected to a fabric through previously disabled ports, it rejoins the fabric. If this switch remains the principal switch at the end of the fabric countdown, it assigns itself a domain ID. If another switch assumes the principal role, the re-enabled switch becomes a subordinate switch and accepts a domain ID from the principal.

As each port is enabled, the front panel LED changes from a slow-flashing amber to nonflashing green for online ports or to nonflashing amber for ports that do not initialize. Disconnected ports remain unlit.

Notes You cannot disable a single blade when the entire chassis is disabled, or when the blade itself is faulted, powered off, or running diagnostics. Use chassisEnable to enable the ports on an entire chassis.

This command does not enable the ports for the given blade in a disabled logical switch.

Persistently disabled ports are not enabled by this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

slot
Specifies the slot number to be enabled.

Examples To display the slot status, enable the user ports in slot 4, and verify the settings:

```
switch:admin> slotshow

Slot  Blade Type  ID  Status
-----
  1    SW BLADE    2  ENABLED
  2    UNKNOWN          VACANT
  3    UNKNOWN          VACANT
  4    SW BLADE    2  ENABLED (User Ports Disabled)
  5    CP BLADE    1  ENABLED
  6    CP BLADE    1  ENABLED
  7    SW BLADE    2  ENABLED
  8    UNKNOWN          VACANT
  9    UNKNOWN          VACANT
 10    UNKNOWN          VACANT

switch:admin> bladeenable 4
Blade 4 is being enabled...Done
```

switch:admin> **slotshow**

Slot	Blade Type	ID	Status

1	SW BLADE	2	ENABLED
2	UNKNOWN		VACANT
3	UNKNOWN		VACANT
4	SW BLADE	2	ENABLED
5	CP BLADE	1	ENABLED
6	CP BLADE	1	ENABLED
7	SW BLADE	2	ENABLED
8	UNKNOWN		VACANT
9	UNKNOWN		VACANT
10	UNKNOWN		VACANT

SEE ALSO [bladeDisable](#), [chassisDisable](#), [chassisEnable](#), [portEnable](#), [portDisable](#), [switchDisable](#), [switchShow](#)

bladeSwap

Swaps the area numbers for matching port pairs of two blades.

Synopsis **bladeSwap -src** *source_slot* **-dest** *destination_slot*

Description Use this command to swap the area numbers for matching port pairs of two blades. All ports must qualify for swapping for this command to succeed. It validates that the blades in the indicated slots are of the same type, have the same number of ports, and that the port pairs are in the same partition.

If all the ports qualify for swapping, this command automatically performs the following operations:

1. It enables the port swapping feature by executing the portSwapEnable command.
2. It takes all ports on both the source and destination blades offline by executing the bladeDisable command.
3. It swaps the matching port pairs on each of the specified blades.
4. It re-enables the blade by executing the bladeEnable command.

The result of this operation is persistent across reboots and power cycles.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command leaves both the source and destination blades in a disabled state. To enable all ports on a blade, issue the bladeEnable command. To enable individual ports, issue the portEnable command.

This command affects port swap information that is kept in its own database. It cannot be manipulated by editing the configuration database reported by configShow.

This command is not allowed if one or both the blades are faulty.

Operands This command has the following operands:

-src *source_slot*

Specifies the slot number for the source blade.

-dest *destination_slot*

Specifies the slot number for the destination blade. Use slotShow for a listing of valid slots.

Examples To swap area numbers between matching port pairs of two slots:

```
switch:admin> bladeswap -src 1 -dest 3
bladeswap done
```

SEE ALSO [portSwapEnable](#), [portSwapDisable](#), [portSwapShow](#), [portShow](#), [portEnable](#), [portDisable](#), [bladeEnable](#), [bladeDisable](#), [switchShow](#), [switchEnable](#)

bladeVerShow

Displays versions of FPGA code in various blades and blade components.

Synopsis **bladevershow** [*slot* | **all**]

bladevershow --help

Description Use this command on the active CP to display the system FPGA versions of a switch, a specific blade slot, or all blades.

The behavior of this command is platform-specific; output varies depending on the platform and is unsupported on older platforms.

Notes This command is intended for Support-related usage only. FPGA version levels can vary among the same blade types due to manufacturing versions and other factors without affecting blade or system functionality.

Use the slotshow -m command to correlate blade ID numbers to model names.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

Specifies the slot number on bladed systems. Value of 0 may optionally be used for non-bladed systems.

all

Displays FPGA versions of all the blades.

--help

Displays the command usage.

Examples To display system FPGA version on a non-bladed switch:

```
switch:admin> bladevershow
bladeId:      171
=====
FPGA version  0x11
```

To display system FPGA versions on a director class switch:

```
switch:admin> bladevershow all
Slot# 1 BladeID: 175
=====
FPGA version      0x06
FPGA sub-version  0x0a

Slot# 2 BladeID: 175
=====
FPGA version      0x06
FPGA sub-version  0x0a
```

bladeVerShow

```
Slot# 3 BladeID: 178
=====
cpld_version:    0x6_2

Slot# 4 BladeID: 186
=====
cpld_version:    0xc_0
0x20:cpld_rev:   0xc

Slot# 5 BladeID: 176
=====
cpld_version:    0x6_0

Slot# 6 BladeID: 176
=====
cpld_version:    0x6_0

Slot# 7 BladeID: 186
=====
cpld_version:    0xc_0
0x20:cpld_rev:   0xc

Slot# 8 BladeID: 178
=====
cpld_version:    0x6_2
```

To display a specific blade slot system FPGA:

```
switch:admin> bladevershow 7
Slot# 7 BladeID: 186
=====
cpld_version:    0xc_0
0x20:cpld_rev:   0xc
```

SEE ALSO [slotShow](#), [switchShow](#)

bootLunCfg

Transparently configures the boot LUN for an HBA.

Synopsis **bootluncfg --add** *HBA_WWN PWWN LUN_ID*

bootluncfg --delete *HBA_WWN [PWWN LUN_ID]*

bootluncfg --show

bootluncfg --help

Description Use this command to configure the boot LUN for an HBA.

Existing fabric-based boot LUN discovery allows the host's boot LUN information to be stored in the fabric zone database by using a zone name that contains the PWWN of an HBA port. The zone members consist of storage target PWWN and LUN ID.

This command provides a simplified and transparent procedure for configuring the boot LUN. Once configured, the HBA boot code queries the zone member list for the zone name matching the HBA PWWN to determine the boot target and LUN.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

HBA_WWN

Specifies the WWN of the HBA port connecting to the boot LUN. This is a hexadecimal number, for example, 10:00:00:000:05:1e:41:9a:cb.

PWWN

Specifies the WWN of the remote storage target's port. For example, 50:00:00:05:1e:41:9a:ca. This operand is required with the --add option and optional with the --delete option.

LUN_ID

Specifies the hexadecimal LUN identification. The LUN ID is represented as an eight-byte value (four-level LUN addressing), for example, 09AABBCCDDEEFF00. This operand is required with the --add option and optional with the --delete option.

--add

Configures the specified HBA (HBA_WWN) to boot from the specified LUN (LUN_WWN) accessible through the Target PWWN (PWWN).

--delete

Removes the mapping for the HBA (HBA_PWWN) to boot from the LUN (LUN_ID) accessible through the Target Port (PWWN).

--show

Displays all configured HBA to Port/LUN Mappings.

--help

Displays the command usage.

Examples

To configure a boot LUN:

```
switch:admin> bootluncfg --add 11:22:ab:44:44:ff:44:ca \
1b:6c:55:55:55:3a:55:ff 9abc345fa1112410
Operation Successful
```

To display existing Port/LUN mappings:

```
switch:admin> bootluncfg --show

00:11:22:33:44:55:66:77
00:00:00:00:aa:bb:cc:dd;00:00:00:01:ee:ff:11:22; \
00:00:00:02:9a:bc:34:5f;00:00:00:03:a1:11:24:10

aa:aa:aa:aa:aa:aa:aa:aa
00:00:00:00:11:11:11:11;00:00:00:01:11:11:11:11; \
00:00:00:02:9a:bc:34:5f;00:00:00:03:a1:11:24:10

bb:aa:aa:aa:aa:aa:aa:aa
00:00:00:00:11:11:11:11;00:00:00:01:11:11:11:11; \
00:00:00:02:9a:bc:34:5f;00:00:00:03:a1:11:24:10
```

To remove an HBA to Port/LUN mapping:

```
switch:admin> bootluncfg --delete 11:22:ab:44:44:ff:44:ca \
1b:6c:55:55:55:3a:55:ff 9abc345fa1112410
Operation Successful
```

SEE ALSO

None

bufOpMode

Changes or displays the Buffer Optimized Mode.

Synopsis **bufopmode --set slot [-force | -f]**

bufopmode --setall [-force | -f]

bufopmode --reset slot

bufopmode --resetall [-force | -f]

bufopmode --show slot

bufopmode --showall

Description Use this command to display or change the buffer optimized mode on a switch.

When buffer optimized mode is enabled on a slot, additional buffers are allocated on the internal ports. Use this feature, if you have slow draining devices connected to the slot and there are no long distance links or F_Port buffers configured on that slot.

You must power off the slot before changing the buffer optimized mode. Changes take effect immediately after the slot is powered on.

Enabling buffer optimized mode removes all long distance configurations or F_Port buffers on that slot. You will be prompted if any F_Port buffers or long distance configurations are detected.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported on the Brocade FC16-32, FC16-48, and FC16-64 blades in a DCX 8510 chassis. An asterisk (*) next to the slot configuration status indicates an unsupported blade. Refer to the example section for an illustration.

Beginning with Fabric OS v8.1.0 or later, this command is not supported on Brocade Gen 6 platforms.

This command is not supported on Control Processor (CP) blades and core blades.

The --set operand is not supported in the following conditions on Brocade DCX 8510-family switches:

- On CP blade, core blade, or empty slot. This operand is allowed only when a blade is inserted into an empty slot and buffer optimized mode is enabled on all the other non empty slots.
- If the buffer optimized mode is already enabled on a slot in the chassis with 16 Gbps-capable core blades.
- If the buffer optimized mode is not enabled on any slot in the chassis with 16 Gbps-capable core blades. You can enable buffer optimized mode on all slots by using the bufopmode --setall command.

The --reset option is not supported on the control processor (CP) blades, core blades, and FC16 port blades.

The --setall and --resetall options are not supported on the FC8 core blades.

The 8G blades are supported in the 8G chassis. The 16G blades are supported on the 16G chassis. On 16G chassis, all blades, including the core blades, are enabled at the same time with the --setall option.

Operands This command has the following operands:

slot

Specifies the slot number.

--set [-force | -f]

Enables buffer optimized mode on the specified slot. This command prompts for confirmation before removing any F_Port buffers or long distance configurations on that slot. Use the -force or -f option to execute this command without confirmation.

--setall [-force | -f]

Enables buffer optimized mode on all slots. All switches on the chassis must be disabled using the chassisDisable command before executing this command. The switch must be rebooted for changes to take effect and therefore this operation is disruptive. The command prompts for confirmation before rebooting the switch. Use the -force or -f option to execute this command without confirmation.

--reset

Clears buffer optimized mode on the specified slot.

--resetall [-force | -f]

Clears buffer optimized mode on all slots. The switch must be rebooted for changes to take effect and therefore this operation is disruptive. The command prompts for confirmation before rebooting the switch. Use the -force or -f option to execute this command without confirmation.

--show

Displays the current buffer optimized mode for the specified slot (On or Off).

--showall

Displays the current buffer optimized mode for all slots. An asterisk (*) next to the slot configuration status indicates an unsupported blade.

Examples To display current buffer optimized mode for a single slot:

```
switch:admin> bufopmode --show 12
Slot 12: buffer optimized mode - On
```

To enable buffer optimized mode for a given slot:

```
switch:admin> bufopmode --set 11
The slot must first be powered off to perform this operation

switch:admin> bufopmode --reset 12
The slot must first be powered off to perform this operation

switch:admin> slotpoweroff 11

switch:admin> slotpoweroff 12

switch:admin> bufopmode --set 12
Buffer optimized mode is turned on for slot 11

switch:admin> bufopmode --reset 12
```

Buffer optimized mode is turned off for slot 12

```
switch:admin> slotpoweron 11
```

```
switch:admin> slotpoweron 12
```

To display the changes:

```
switch:admin> bufopmode --showall
Slot 1: buffer optimized mode - Off
Slot 2: buffer optimized mode - Off
Slot 3: buffer optimized mode - Off
Slot 4: buffer optimized mode - On
Slot 9: buffer optimized mode - Off
Slot 10: buffer optimized mode - Off
Slot 11: buffer optimized mode - On
Slot 12: buffer optimized mode - Off
-----
* indicates buffer optimization not supported on this blade
```

To display the buffer optimized mode for all slots on a DCX 8510-8 with unsupported 16G port blades:

```
switch:admin> bufopmode --showall

Slot 1: buffer optimized mode - Off*
Slot 2: buffer optimized mode - Off*
Slot 3: buffer optimized mode - Off*
Slot 4: buffer optimized mode - Off*
Slot 5: buffer optimized mode - Off*
Slot 8: buffer optimized mode - Off*
Slot 9: buffer optimized mode - Off*
Slot 10: buffer optimized mode - Off*
Slot 11: buffer optimized mode - Off*
Slot 12: buffer optimized mode - Off*
-----
* indicates buffer optimization not supported on this blade
```

To enable buffer optimized mode on all slots:

```
switch:admin> chassisdisable
```

```
switch:admin> bufopmode --setall
```

```
Buffer optimized mode is turned on for slot 5
Buffer optimized mode is turned on for slot 8
Buffer optimized mode is turned on for slot 10
Buffer optimized mode is turned on for slot 12
```

```
WARNING: Must reboot switch for changes to take effect. Reboot now [y/n]? y
```

bufOpMode

To clear buffer optimized mode on all slots:

```
switch:admin> bufopmode --resetall  
Buffer optimized mode is turned off for slot 5  
Buffer optimized mode is turned off for slot 8  
Buffer optimized mode is turned off for slot 10  
Buffer optimized mode is turned off for slot 12
```

WARNING: Must reboot switch for changes to take effect. Reboot now [y/n]? **y**

SEE ALSO [slotShow](#), [slotPowerOn](#), [slotPowerOff](#)

cfgActvShow

Displays effective zone configuration information.

Synopsis **cfgactvshow**

Description Use this command to display the effective zone configuration information.

The current configuration is a single zone configuration that is currently in effect. The devices that an initiator sees are based on this configuration. The effective configuration is built when a specified zone configuration is enabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the effective zone configuration information:

```
switch:admin> cfgactvshow
Effective configuration:
cfg:    c4
zone:   z3          33:07:06:05:04:03:02:01
zone:   z4          44:01:23:45:67:89:a0:bc
              40:01:23:45:67:89:a0:bc
```

SEE ALSO [cfgClear](#), [cfgDelete](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#)

cfgAdd

Adds a member to a zone configuration.

Synopsis `cfgadd "cfgName", "member[: member...]"`

Description Use this command to add one or more members to an existing zone configuration.

This command changes the Defined Configuration. For the change to take effect, enable the configuration with the `cfgEnable` command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operands are required:

"cfgName"

Specify a name for the zone configuration, enclosed in double quotation marks.

"member"

Specify a zone member or a list of zone members to be added to the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons.

Examples To add two new zones to the configuration "Test_cfg":

```
switch:admin> cfgadd "Test_cfg", "greenzone;bluezone"
```

SEE ALSO [cfgClear](#), [cfgCreate](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#)

cfgClear

Clears all zone configurations.

Synopsis **cfgclear**

Description Use this command to clear all zone information in the transaction buffer. All defined zone objects in the transaction buffer are deleted. If an attempt is made to commit the empty transaction buffer while a zone configuration is enabled, you are warned to first disable the enabled zone configuration or to provide a valid configuration with the same name.

After clearing the transaction buffer with the `cfgClear` command, use the `cfgDisable` command to clear the entire zoning configuration (both the transaction buffer and the active configuration). If there is no current active zoning configuration, or you just want to clear the transaction buffer, use the `cfgSave` command to commit the transaction.

If the default zone access mode is "No Access", this command recreates the default zoning objects.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands None

Examples To clear all zones and then clear nonvolatile memory:

```
switch:admin> cfgclear
The Clear All action will clear all Aliases, Zones, FA Zones
and configurations in the Defined configuration.
Run cfgSave to commit the transaction or cfgTransAbort to
cancel the transaction.
Do you really want to clear all configurations? \
  (yes, y, no, n): [no] n

switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
Any changes made on the Effective configuration will not
take effect until it is re-enabled. Until the Effective
configuration is re-enabled, merging new switches into the
fabric is not recommended and may cause unpredictable
results with the potential of mismatched Effective Zoning
configurations.
Do you want to save Defined zoning configuration only? \
  (yes, y, no, n): [no]n
```

SEE ALSO [cfgDisable](#), [cfgEnable](#), [cfgSave](#)

cfgCreate

Creates a zone configuration.

Synopsis `cfgcreate "cfgName", "member[:member...]"`

Description Use this command to create a new zone configuration.

This command changes the Defined Configuration (see `cfgShow`). For the change to become effective, enable the configuration with the `cfgEnable` command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command.

Refer to the `zoneCreate` command for more information on name and member specifications.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operands are required:

"cfgName"

Specify a name for the zone configuration in double quotation marks. A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar (\$), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Blank spaces are ignored.

"member"

Specify a zone member or list of zone members to be added to the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons. The zone configuration member list must have at least one member. Empty member lists are not allowed.

Examples To create a configuration containing three zones:

```
switch:admin> cfgcreate "USA_cfg", \  
"Purple_zone;Blue_zone;Green_zone"
```

SEE ALSO [cfgAdd](#), [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#)

cfgDelete

Deletes a zone configuration.

Synopsis `cfgdelete "cfgName"`

Description Use this command to delete a zone configuration.

This command changes the Defined Configuration (see `cfgShow`). For the change to become effective, enable the configuration with the `cfgEnable` command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands The following operand is required:

"cfgName"

Specify a name for the zone configuration to be deleted. The name must be enclosed in double quotation marks.

Examples To delete a zone configuration:

```
switch:admin> cfgdelete "USA_cfg"
```

SEE ALSO [cfgClear](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#)

cfgDisable

Disables a zone configuration.

Synopsis **cfgdisable [-force | -f]**

Description Use this command to disable the current zone configuration. The fabric returns to non-zoning mode, a mode in which all devices can see each other.

This command ends and commits the current zoning transaction buffer to both volatile and nonvolatile memory. If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch is automatically aborted. A message displays on the other switches to indicate that the transaction was aborted.

If the default zone access mode is "No Access", then this command becomes equivalent to `cfgEnable "d_default_Cfg"`. Refer to `defZone` help for information on zone access configuration.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands This command has the following operand:

-force | -f

Disables the zone configuration without confirmation. This operand is optional.

Examples To disable the current zone configuration:

```
switch:admin> cfgdisable
You are about to disable zoning configuration. This
action will disable any previous zoning configuration.
Do you want to disable zoning configuration? \
  (yes, y, no, n): [no] y
```

To disable the current zone configuration with the `-force` option:

```
switch:admin> cfgdisable -force
You have disabled zoning configuration. This
action disabled any previous zoning configuration enabled.
Note: The above operation was performed without user prompting
      due to using the '-force' option.
```

SEE ALSO [cfgClear](#), [cfgEnable](#), [cfgSave](#)

cfgEnable

Enables a zone configuration.

Synopsis **cfgenable "cfgName" [-force | -f]**

Description Use this command to enable a zone configuration. The command builds the specified zone configuration. It checks for undefined zone names, zone alias names, or other inconsistencies, by expanding zone aliases, removing duplicate entries, and then installing the effective configuration.

If the build fails, the previous state is preserved (zoning remains disabled, or the previous effective configuration remains in effect). If the build succeeds, the new configuration replaces the previous configuration. Refer to the `cfgShow` command for a description of the defined and effective configurations.

If there are open transactions in the fabric, only single transaction can be saved. Use the `cfgtransshow --opentrans` command to view the list of all the domains in the fabric with open transactions.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands This command has the following operands:

"cfgName"

Specifies the name of the zone configuration. The name must be enclosed in double quotation marks.

-force | -f

Enables the zone configuration without confirmation. This operand is optional.

Examples To enable the zone configuration `USA_cfg`:

```
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes
Do you want to enable 'USA_cfg' configuration \
  (yes, y, no, n): [no] y
zone config "USA_cfg" is in effect
Updating flash ...
```

To enable the zone configuration `USA_cfg` when there are open transactions in the fabric:

```
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes
```

Multiple open transactions are pending in this fabric. Only one transaction can be saved. Please abort all unwanted transactions using the `cfgtransabort` command. Use the `cfgtransshow --opentrans` command to display a list of domains with open transactions

```
switch:admin> cfgtransabort 271010736
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes
Do you want to enable 'USA_cfg' configuration \
    (yes, y, no, n): [no] y
zone config "USA_cfg" is in effect
Updating flash ...
```

To enable the zone configuration `USA_cfg` with `-force` option:

```
switch:admin> cfgenable "USA_cfg" -force
You have enabled a new zoning configuration.
This action replaced the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes.
Note: The above operation was performed without user prompting
      due to using the '-force' option.
```

SEE ALSO [cfgClear](#), [cfgDisable](#), [cfgSave](#), [cfgShow](#)

cfgRemove

Removes a member from a zone configuration.

Synopsis `cfgremove "cfgName", "member[; member...]"`

Description Use this command to remove one or more members from an existing zone configuration. If all members are removed, the zone configuration is deleted.

This command changes the Defined Configuration (see `cfgShow`). For the change to become effective, enable the configuration with the `cfgEnable` command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands The following operands are required:

"cfgName"

Specify a name for the zone configuration, enclosed in double quotation marks.

"member"

Specify a zone member or a list of zone members to be removed from the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons.

Examples To remove a zone from a configuration:

```
switch:admin> cfgremove "Test_cfg", "bluezone"
```

SEE ALSO [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgSave](#), [cfgShow](#), [cfgTransAbort](#), [cfgTransShow](#)

cfgSave

Saves the zone configuration to nonvolatile memory.

Synopsis **cfgsave [-force | -f]**

Description Use this command to save the current zone configuration. This command writes the defined configuration and the name of the effective configuration to nonvolatile memory in all switches in the fabric.

The saved configuration is automatically reloaded at power on, and, if a configuration was in effect at the time it was saved, the same configuration is reinstalled with an automatic `cfgEnable` command.

Because the saved configuration is reloaded at power on, only valid configurations are saved. The `cfgSave` command validates the effective configuration by performing the same tests as the `cfgEnable` command. If the tests fail, an error message is displayed and the configuration is not saved.

This command ends and commits the current transaction. If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch is automatically aborted. A message displays on the other switches to indicate that the transaction was aborted.

If there are open transactions in the fabric, only single transaction can be saved. Use the `cfgtransshow --opentrans` command to view the list of all the domains in the fabric with open transactions.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands This command has the following operand:

-force | -f

Saves the zone configuration without confirmation. This operand is optional.

Examples To save a zone configuration:

```
switch:admin> cfgsave
WARNING!!!
The changes you are attempting to save will render the
Effective configuration and the Defined configuration
inconsistent. The inconsistency will result in different
Effective Zoning configurations for switches in the fabric if
a zone merge or HA failover happens. To avoid inconsistency
it is recommended to commit the configurations using the
cfgenable command.
Do you want to save Defined zoning configuration
only? (yes, y, no, n): [no]y
```

To save a zone configuration if there are multiple open transactions:

```
switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
Multiple open transactions are pending in this fabric. Only one
transaction can be saved. Please abort all unwanted transactions
```

```

using the cfgtransabort command. Use the cfgtransshow --opentrans
command to display a list of domains with open transactions
Do you want to save the Defined zoning configuration only? (yes, y, no, n): [no] n
switch:admin> cfgtransabort 271010736
switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
If the update includes changes to one or more traffic isolation
zones, you must issue the 'cfgenable' command for the changes
to take effect.
Do you want to save the Defined zoning configuration only? (yes, y, no, n): [no] y

```

To save a zone configuration with -force option:

```

switch:admin> cfgsave -force
You have force saved the Defined zoning configuration. This
action only saved the changes on Defined configuration.
If the update includes changes to one or more traffic isolation
zones, you must issue the 'cfgenable' command for the changes
to take effect.
Note: The above operation was performed without user prompting
      due to using the '-force' option.

```

SEE ALSO [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgShow](#), [cfgTransAbort](#), [cfgTransShow](#)

cfgShow

Displays zone configuration information.

Synopsis **cfgshow** [--ic] ["*pattern*"] [, *mode*]

cfgshow [--transdiffs]

cfgshow [--transdiffsonly]

cfgshow --help

Description Use this command to display zone configuration information.

If no operand is specified, all zone configuration information (both defined and effective) is displayed. If the local switch has an outstanding transaction, this command displays the most recently edited zone configuration that has not yet been saved. If the local switch has no outstanding transaction, this command displays the committed zone configuration.

If a pattern is specified, only matching configurations are displayed.

- The defined configuration is the complete set of all zone objects that have been defined in the fabric. There can be multiple zone configurations defined, but only one can be enabled at a time. There might be inconsistencies in the definitions, zones, or aliases that are referenced but not defined, or there might be duplicate members. The defined configuration is the current state of the administrator input.
- The effective configuration is the single zone configuration that is currently enabled. The devices that an initiator sees in the fabric are based on this configuration. The effective configuration is built when a specific zone configuration is enabled and all error checking has been completed successfully.

Use the --transdiffs and --transdiffsonly options to view changes in the current transaction.

The command output displays changes in the current transaction by the following notations:

- An asterisk(*) before any tag indicates a change in that zone, zone configuration, alias or any other entity in the zone configuration.
- A plus(+) before any entity indicates that it is a newly added entity.
- A minus(-) before any entity indicates that it is a deleted entity.

When this command is executed after a zoning transaction was aborted on the local switch, it displays the following warning message: "Warning: Current Zoning Transaction was aborted. Reason code = Zone Config update received."

When default zoning is enabled with "No Access" mode, "No Effective configuration: (No Access)" is displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operands are optional:

--ic

Displays all zone configuration names for a given pattern without case distinction.

"pattern"

A regular expression that matches zone configuration names. The pattern must be enclosed in quotation marks and can contain the following:

Question mark (?)

Matches any single character

Asterisk (*)

Matches any string of characters.

Range

Matches any character within the range. Ranges must be enclosed in square brackets, for example, [0-9] or [a-f].

mode

Specify 0 to display the contents of the transaction buffer (the contents of the current transaction), 1 to display the contents of committed defined database, and 2 to display the contents of effective zone configuration. The default value is 0.

--transdiffs

Displays changes in the current transaction.

--transdiffsonly

Displays only the changes in the current transaction.

Examples

To display all zone configurations that start with "Test":

```
switch:admin> cfgshow "Test*"
cfg:   Test1 Blue_zone
cfg:   Test_cfg Red_zone; Blue_zone
```

To display all zone configurations that start with "Test", regardless of the case:

```
switch:admin> cfgshow -ic "Test*"
cfg:   Test1 Blue_zone
cfg:   TEST2_cfg Red_zone; Blue_zone
```

To display all zone configuration information:

```
switch:admin> cfgshow
Defined configuration:
cfg:   USA1    Blue_zone
cfg:   USA_cfg Red_zone; Blue_zone
zone:   Blue_zone
       1,1; array1; 1,2; array2
zone:   Red_zone
       1,0; loop1
alias: array1  21:00:00:20:37:0c:76:8c; \
       21:00:00:20:37:0c:71:02
alias: array2  21:00:00:20:37:0c:76:22; \
       21:00:00:20:37:0c:76:28
alias: loop1   21:00:00:20:37:0c:76:85; \
       21:00:00:20:37:0c:71:df

Effective configuration:
cfg:   USA_cfg
zone:   Blue_zone
       1,1
```



```

21:00:00:20:37:0c:76:8c
21:00:00:20:37:0c:71:02
1,2
21:00:00:20:37:0c:76:22
21:00:00:20:37:0c:76:28
zone: Red_zone
1,0
21:00:00:20:37:0c:76:85
21:00:00:20:37:0c:71:df

```

To display only configuration names:

```

switch:admin> cfgshow ""
cfg:   USA1      Blue_zone
cfg:   USA_cfg Red_zone; Blue_zone

```

To display changes in the current transaction:

```

switch:admin> cfgshow --transdiffs
Defined configuration:
cfg:   fabric_cfg Blue_zone

zone:   Blue_zone
       1,1; array1; 1,2; array2

*zone:  green_zone
       -1,1; 1,2; +6, 15

*zone:  +red_zone
       5,1; 4,2

alias: array1 21:00:00:20:37:0c:76:8c; \
       21:00:00:20:37:0c:71:02
       alias: array2 21:00:00:20:37:0c:76:22; \
       21:00:00:20:37:0c:76:28

Effective configuration:
cfg:   fabric_cfg
zone:   Blue_zone
       1,1
       21:00:00:20:37:0c:76:8c
       21:00:00:20:37:0c:71:02
       1,2

```

To display only the changes in the current transaction:

```

switch:admin> cfgshow --transdiffsonly
*zone:  -Blue_zone
       21:00:00:20:37:0c:76:8c
       21:00:00:20:37:0c:71:02

*zone:  green_zone
       1,1; -1,2;+5,4;+ 21:00:00:20:37:0c:76:55

*zone:  +red_zone
       5,4; 5,6

```

SEE ALSO [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgTransAbort](#), [cfgTransShow](#)

cfgSize

Displays zone database size details.

Synopsis `cfgsize [integer]`

Description Use this command to display the size details of the zone database.

The size details include maximum size, the committed size, and the transaction size of the Zone database in bytes.

Chassis-Wide Committed Zone DB size

Displays the committed zone database size of all partitions taken together plus the size of the AD member header for each logical switch.

Zone DB maximum size

Defines the upper limit for the Zone defined configuration, determined by the amount of nonvolatile memory available for storing the defined configuration. The Zone DB maximum size is further reduced due to a message header that is propagated with the zone configuration to all switches in the fabric.

The maximum supported zone database size is 2 MB for chassis based switches and 1 MB for other switches.

Available Zone DB size

Displays the size of the database that is actually available for storage.

Committed size

Displays the size of the defined configuration currently stored in nonvolatile memory.

Transaction size

Displays the size of the uncommitted defined configuration. This value will be nonzero if the defined configuration is being modified by Telnet, API, and so forth; otherwise it is 0.

Refer to the `cfgShow` help page for a description of defined and effective zone configurations.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

In Virtual Fabric environments, the zone database size of all partitions taken together cannot exceed 2 MB for chassis based switches and 1 MB for other switches. Exceeding the zone database size limit can result in unexpected behavior. Note that in Virtual Fabric mode, the zone database limit is enforced per partition, but not chassis-wide.

Operands The following operand is optional:

integer

If a nonzero integer is specified, the size of the nonvolatile memory allocated for the zone database is displayed. The zone database includes both the defined and effective configurations. The database size is displayed in bytes.

cfgSize

Examples To display the zone database on a Brocade 6510

```
switch:admin> cfgsize

Chassis-Wide Committed Zone DB size - 1086 bytes
Zone DB max size - 1045274 bytes
Available Zone DB size - 1044188 bytes
    committed - 74
    transaction - 0
```

SEE ALSO [cfgShow](#)

cfgTransAbort

Aborts the current zoning transaction.

Synopsis **cfgtransabort** [*token*]

Description Use this command to abort the current zoning transaction without committing it. All changes made since the transaction was started are removed and the zone configuration database is restored to the state before the transaction was started.

If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch remains open and unaffected.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands When invoked without an operand, this command aborts the current transaction. The following operand is optional:

token

Specify the token ID of the transaction to be aborted. Use the `cfgTransShow` command to obtain the token ID of a transaction.

Examples To abort the current transaction:

```
switch:admin> cfgtransabort
```

SEE ALSO [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#), [cfgTransShow](#)

cfgTransShow

Displays information about the current zoning transaction.

Synopsis **cfgtransshow**

cfgtransshow --opentrans

cfgtransshow --help

Description Use this command to display the ID of the current zoning transaction. In addition, the command provides information on whether or not the transaction can be aborted. The transaction cannot be aborted if it is an internal zoning transaction.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands This command has the following operands:

--opentrans Displays local open transaction token details and the list of domains with open transactions.

--help Displays the command usage.

Examples To display the current transaction:

```
switch:admin> cfgtransshow
There is no outstanding zone transaction

switch:admin> cfgclear
Do you really want to clear all configurations? \
    (yes, y, no, n): [no] y
Clearing All zoning configurations...

switch:admin> cfgtransshow
Current transaction token is 271010736
It is abortable
```

To display the current transaction and the list of domains with open transactions:

```
switch:admin> cfgtransshow --opentrans  
Current transaction token is 0x3109  
It is abortable  
  
Transactions Detect: Capable  
  
Current Open Transactions  
Domain List:  
-----  
1 2 3 4
```

SEE ALSO [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#), [cfgTransAbort](#)

chassisBeacon

Sets chassis beaoning mode.

Synopsis **chassisbeacon** [*mode*]

Description Use this command to enable or disable beaoning on a chassis. Chassis beaoning can be used to locate a failing chassis in a group of chassis. Use the portBeacon command to locate a failing port, and use the switchBeacon command to locate a failing (logical) switch.

When beaoning mode is turned on, the port LEDs flash green at various rates across the chassis. The beaoning continues until you turn it off.

Beaoning mode takes over the port LEDs. The normal flashing LED pattern associated with an active, faulty, or disabled port is suppressed, and only the beaoning pattern is shown. Other commands are still executable and functional. However, if diagnostic frame-based tests such as portLoopbackTest are executed, the diagnostic LED pattern is interleaved with the beaoning pattern.

The chassisBeacon command is one of the commands that control beaoning. Each command has a clearly defined scope of action:

- The portBeacon command enables or disables beaoning on a specified port.
- The switchBeacon command enables or disables beaoning on all ports in the current logical switch.
- The chassisBeacon command enables or disables beaoning on all ports in the chassis.
- The portPeerBeacon command enables or disables beaoning to identify the interconnections between ports.

The actions of the beaoning commands are independent and mutually exclusive. For example, if you enabled beaoning on the logical switch and you want to enable beaoning on the entire chassis, you must first disable switch beaoning with the switchBeacon command before you can use the chassisBeacon command to enable beaoning on the entire chassis. Likewise, existing portBeacon settings remain unaffected if you enable or disable beaoning on the switch or on the chassis. Failure to disable existing beaoning commands before using a different type of beaoning may cause the commands to interfere with each other in unexpected ways.

On a Brocade X6 Director, enabling chassis beaoning activates beaoning on CP blades also.

To determine whether or not beaoning is enabled or disabled on the switch or chassis, use the switchBeacon or chassisBeacon command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the portBeacon --showcommand to display beaoning for a specific port. The switchShow command displays the status of the switchBeacon command only.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

mode

Specify 1 to enable chassis beaoning mode or 0 to disable beaoning mode. This operand is optional. If no operand is specified, the current value is displayed.

Examples To turn chassis beaconing mode on:

```
switch:admin> chassisbeacon 1  
Chassis beacon success 1
```

To turn beaconing mode off:

```
switch:admin> chassisbeacon 0  
Chassis beacon success 0
```

To display the chassis beaconing mode:

```
switch:admin> chassisbeacon  
Value = 0
```

SEE ALSO [portBeacon](#), [switchShow](#), [switchBeacon](#), [portPeerBeacon](#)

chassisCfgPerrThreshold

Configures parity error threshold and fault capability on a blade or switch.

Synopsis **chassiscfgperrthreshold --enable [-threshold *threshold_value*]**

chassiscfgperrthreshold --disable

chassiscfgperrthreshold --show

chassiscfgperrthreshold --help

Description Use this command to enable or disable the fault capability on a blade and switch based on the parity error threshold, to set the threshold value for parity errors, or to display the configuration. If the fault capability is enabled, the state of the blade or switch changes to Faulty when the parity errors exceed the threshold value within a time interval of 5 minutes. The default threshold value is 2. You can modify the threshold using the **-threshold threshold_value** option.

The configuration is persistent across system reboots and high availability (HA) failover.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--enable

Enables the fault capability on a blade or switch. The default threshold value is 2. The following operand is optional:

-threshold *threshold_value*

Specifies the threshold value for parity errors. The range is from 2 through 100.

--disable

Disables the fault capability on a blade or switch.

--show

Displays the configured threshold value and the current status of the fault capability as enabled or disabled.

--help

Displays the command usage.

Examples To enable fault capability:

```
switch:admin> chassiscfgperrthreshold --enable
```

To disable fault capability:

```
switch:admin> chassiscfgperrthreshold --disable
```

To enable fault capability and set the threshold value to 76:

```
switch:admin> chassiscfgperrthreshold --enable -threshold 76
```

To display the configuration:

```
switch:admin> chassiscfgperrthreshold --show  
Configured Threshold is 76 and the Fault is enabled.
```

SEE ALSO None

chassisDisable

Disables all user ports in a chassis.

Synopsis **chassisdisable [-force]**

Description	Use this command to disable a Virtual Fabric-aware chassis. All Fibre Channel ports are taken offline. This command prompts for confirmation unless the <code>-force</code> option is used. If the chassis is partitioned into logical switches that are part of logical fabrics, the remaining switches in these fabrics reconfigure. As each port is disabled, the front panel LED changes to a slow-flashing amber.
--------------------	--

You must disable the chassis before making configuration changes or running offline diagnostic tests. Commands that require the chassis to be disabled generate an error message if invoked while the chassis is enabled. It is not necessary to disable a chassis before rebooting or powering off the switch.

To disable the ports of a single logical switch, use the `switchDisable` command. To disable the ports of a single blade, use the `bladeDisable` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands -force

Disables the chassis without confirmation. This operand is optional.

Examples To disable a chassis:

```
switch:admin> chassisdisable
This command can cause disruption to\
multiple logical switches.
Are you sure you want to disable all chassis ports now?\
(yes, y, no, n): [no]y
```

SEE ALSO [bladeDisable](#), [bladeEnable](#), [chassisEnable](#), [switchShow](#), [switchDisable](#), [switchEnable](#), [switchCfgPersistentEnable](#), [switchCfgPersistentDisable](#)

chassisDistribute

Distributes IP filter policies.

Synopsis **chassisdistribute -db ipfilter -fid *target_FID* [-force]**
chassisdistribute -db ipfilter -domain *target_domain_list* [-force]

Description Use this command to manually distribute the IP Filter policy database. The behavior of this command depends on whether Virtual Fabrics are enabled or disabled.

- If Virtual Fabrics are enabled on the originating switch, this command distributes the IP filter policy database to all chassis that are connected through the specified logical switch (FID). If the target chassis has Virtual Fabrics enabled, the IP filter policy database is distributed to all logical switches configured on the target. If Virtual Fabrics are not enabled on the target, the IP filter policy database is distributed to the default logical switch of the target.
- If Virtual fabrics are disabled on the originating switch, the IP filter policy database is distributed to a list of target switches specified by their Domain IDs. If a target domain has Virtual Fabrics enabled, the IP filter policy database is distributed to all logical switches on the target domain. If Virtual Fabrics are not enabled on the target domain, the IP filter policy database is distributed to the default logical switch of the target domain.

This command distributes the entire IP Filter database and overwrites any existing IP Filter policies on the receiving switches. The chassisDistribute command does not enforce FCS policy.

The target chassis or switches must be capable of accepting the distribution. The distribution is aborted if one of the connected chassis or domains is configured to reject the distribution. Use the fddCfg command to configure the fabric-wide policies that control distribution behavior.

When upgrading from pre-7.2.0 to 7.2.0 or later versions, the RPC port rules will be removed from the IP Filter policy database.

The command output includes the following information:

FID

Indicates whether Virtual Fabrics are enabled or not on the domain that receives the distribution. If Virtual Fabrics are enabled, the FID is displayed, and all logical switches which are part of the chassis are targeted to receive the distribution.

DOMAIN

Displays the Domain ID of the originating switch.

CHASSISWWN

Displays the WWN of the originating or receiving chassis. Displays the originating switch WWN in switches running Fabric OS versions that do not support the chassis WWN feature.

CHASSISNAME

Displays the name of the chassis.

SUPPORTED_DIST

Displays yes if the distribution is supported on the receiving chassis. Displays no if the distribution is not supported.

Notes This command distributes the IP Filter database only. To distribute other security databases, use the distribute command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-db ipfilter

Specifies the policy database to be distributed with this command. The only accepted value for -db is ipfilter. The database name is case insensitive. The legacy notation ("IPFILTER") still works but is not necessary. The following operands are mutually exclusive:

-fid target_FID

Specifies the target logical switch for the distribution. The logical switch is identified by its fabric ID (FID). When a FID is specified, the database is distributed to all chassis that are connected to the specified logical switch (FID) and are configured to accept the distribution. This operand is required and valid only when the originating switch is in Virtual Fabric mode.

-domain target_domain_list

Specifies a list of target switch domain IDs that should receive the database. The list must be enclosed in double quotation marks; members must be separated by a semicolon. A wildcard (*) may be specified to include all switches in the fabric that support the distribute feature. This operand is required and valid only when Virtual Fabrics are disabled.

-force

Distributes the database without confirmation.

Examples To distribute the IP Filter policies to all chassis that are connected through the logical fabric 128 and support the distribute feature:

```
switch:admin> chassisDistribute -db ipfilter -fid 128
FID    DOMAIN    CHASSISWWN          CHASSISNAME  SUPPORTED_DIST
-----
 128    3  10:00:00:05:1e:38:ac:0e  DCX_93       yes
NON-VF 4  10:00:00:05:1e:39:bd:0f  Brocade300   yes
 128    98 10:00:00:05:1e:41:22:9f  Brocade6510  no

chassisDistribute will distribute the database(s) to \
above topology.
Would you like to continue [Y/N] : y
ChassisDistribute operation succeeded for above topology
```

To distribute the IP Filter policies to all switches in the fabric that support the distribute feature (Virtual Fabrics are disabled on the evoking switch):

```
switch:admin> chassisDistribute -db ipfilter -domain "*"
FID    DOMAIN    CHASSISWWN          CHASSISNAME  SUPPORTED_DIST
-----
 128    3  10:00:00:05:1e:38:ac:0e  DCX_93       no
NON-VF 4  10:00:00:05:1e:39:bd:0f  Brocade300   yes
```

```
128    98 10:00:00:05:1e:41:22:9f Brocade6510      no
ChassisDistribute will distribute the database(s) to \
above topology.
Would you like to continue [Y/N] : y
ChassisDistribute operation succeeded for above topology
```

SEE ALSO [distribute](#), [fddCfg](#)

chassisEnable

Enables all user ports in a chassis.

Synopsis **chassisenable**

Description Use this command to enable a Virtual Fabric-aware chassis. All Fibre Channel ports that passed the power-on self test (POST) are enabled. They may come online if connected to a device, or remain offline if disconnected. Use chassisEnable to re-enable the chassis after making configuration changes or running offline diagnostics.

If the chassis is partitioned into multiple logical switches and physically connected to multiple logical fabrics, the logical switches rejoin their fabrics.

As each port is enabled, the front panel LED changes from slow-flashing amber to nonflashing green for online ports, or to nonflashing amber for ports that do not initialize. Disconnected ports remain unlit. Loopback ports slowly flash green when online.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable a chassis:

```
switch:admin> chassisenable
```

SEE ALSO [bladeDisable](#), [bladeEnable](#), [chassisDisable](#), [switchShow](#), [switchDisable](#), [switchEnable](#), [switchCfgPersistentEnable](#), [switchCfgPersistentDisable](#)

chassisName

Displays or sets the chassis name.

Synopsis **chassisname** [*name*]

Description Use this command to display or change the name associated with the chassis. The configured chassis name appears in all the chassis event RASLog messages.

Use this command without parameters to display the current chassis name. Use this command with the name operand to assign a new chassis name.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

name

Specify a new name for the chassis, optionally in double quotation marks. A chassis name can include up to 31 characters. A chassis name must begin with a letter, and can consist of letters, numbers, underscore or hyphen characters. Spaces are not permitted.

Examples To change the chassis name to "dilbert":

```
switch:admin> chassisname dilbert
switch:admin> chassisname
dilbert
```

SEE ALSO [switchName](#)

chassisShow

Displays all field replaceable units (FRUs).

Synopsis **chassisshow**

Description Use this command to display the Field Replaceable Unit (FR) header content for each object in the chassis and chassis backplane version. This command displays the following information:

1. The chassis family, for example, DCX 8510.
2. The backplane version number, in hexadecimal: Chassis Backplane Revision: xx
3. The first line of each record contains the object ID. If the FRU is part of an assembly, a brief description is displayed in parentheses.
 - a. Object type: CHASSIS, FAN, POWER SUPPLY, SW BLADE (switch), CP BLADE (control processor), WWN (world wide name), or UNKNOWN.
 - b. Object number: Slot nn (for blades), Unit nn (for everything else).
4. FRU header version number: Header Version: x
5. Displays the maximum allowed power consumption for a given hardware component: positive for power supplies and negative for power consumers. The combined total maximum allowed power consumption for the entire chassis is shown in the output of the slotShow -p command. Power Consume Factor: -xxx
6. Displays the real-time power consumption for each FRU that supports real-time power measurement. Only 16Gb blades currently support real time measurement of power being consumed by these blades. When the capability is not supported for a FRU, the line is suppressed. Power Usage (Watts):
7. Factory part number (up to 14 characters): Factory Part Num: xx-xxxxxx-xx
8. Factory serial number (up to 12 characters): Factory Serial Num:xxxxxxxxxx
9. FRU manufacture date: Manufacture: Day: dd Month: mm Year: yyyy
10. Date of the last FRU header update: Update: Day: dd Month: mm Year: yyyy
11. Cumulative number of days the FRU has been powered on: Time Alive: dddd days
12. Time elapsed, in days, since the FRU was last powered on: Time Awake: dddd days
13. Externally supplied ID (up to 10 characters): ID: xxxxxxxxxx
14. Externally supplied part number (up to 20 characters): Part Num: xxxxxxxxxxxxxxxxxxxxx
15. Externally supplied serial number (up to 20 characters): Serial Num: xxxxxxxxxxxxxxxxxxxxx
16. Externally supplied revision number (up to 4 characters): Revision Num: xxxx

The output of this command depends on the platforms on which it is executed. On some platforms, for certain FRU types, a few items may not be available. In these cases, the lines are suppressed. Possibly affected lines are 1, 3 through 7, 9, and 11 through 14. In addition, for lines 11 through 14, if there is no data set, these lines are suppressed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the FRUs for a DCX 8510-8:

```
switch:user> chassisshow

Chassis Family:          DCX8510-8
Chassis Backplane Revision: 0

SW BLADE Slot: 1
Header Version:          2
Power Consume Factor:    -180
Power Usage (Watts):     -286
Factory Part Num:        60-1002144-02
Factory Serial Num:      BQB0345F00G
Manufacture:              Day: 9  Month: 11  Year: 2010
Update:                  Day: 19  Month: 2  Year: 2011
Time Alive:              41 days
Time Awake:              1 days

SW BLADE Slot: 2
Header Version:          2
Power Consume Factor:    -180
Power Usage (Watts):     -306
Factory Part Num:        60-1002144-02
Factory Serial Num:      BQB0345F02R
Manufacture:              Day: 21  Month: 11  Year: 2010
Update:                  Day: 19  Month: 2  Year: 2011
Time Alive:              41 days
Time Awake:              1 days

SW BLADE Slot: 3
Header Version:          2
Power Consume Factor:    -180
Power Usage (Watts):     -315
Factory Part Num:        60-1002144-02
Factory Serial Num:      BQB0345F01N
Manufacture:              Day: 16  Month: 11  Year: 2010
Update:                  Day: 19  Month: 2  Year: 2011
Time Alive:              39 days
Time Awake:              1 days
(output truncated)
```

SEE ALSO [slotShow](#)

classConfig

Displays RBAC class permissions.

Synopsis **classconfig --show** *class_name* | **-all** | **-classlist**

classconfig --showcli *command*

classconfig --showroles *class_name*

classconfig --help

Description Use this command to display information about role-based access control (RBAC) permissions for one or all meta-object format (MOF) classes, to display permissions for a specified command, or to display the permissions for a specified MOF class.

Fabric OS commands are grouped into feature sets called MOF classes. For example, the commands `ldapCfg`, `passwd`, `passwdCfg`, and `userConfig` are all related to User Management and are therefore grouped together under a MOF class called `UserManagement`.

The pre-defined roles `Root`, `Factory`, `Admin`, `User`, `SwitchAdmin`, `ZoneAdmin`, `FabricAdmin`, `BasicSwitchAdmin`, `SecurityAdmin` and `Operator` provide a mechanism for further restricting access to commands of a certain class by role-specific permissions. For example, a user with the `ZoneAdmin` role will have access to the commands under the MOF class `Zoning` but not to those under the `UserManagement` class.

The following RBAC permissions are supported in Fabric OS:

- O = observe
- OM = observe-modify
- N = no access

Note that the MOF class level permissions extend to all commands in that class, but not necessarily to each and every command option. For example, a command may have the RBAC class permission of "OM", but a show only option under that command may have the permission "O". At the role level, a certain role may be excluded from viewing the command information, in which case the permission for that role would be "N".

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operand:

--show

Displays RBAC permission information. One of the following operands is required:

class_name or **-all**

Displays permissions for a single MOF class or for all classes. The output displays the class name, the CLIs grouped under the specified class, the command options, and the RBAC class permissions for each command option.

-classlist

Displays an alphabetical listing of all MOF classes supported in Fabric OS.

--showcli *command*

Displays the RBAC permissions for the specified command and associated command options. The output displays the command name, the command options, the RBAC class permissions for each command option, the MOF class, and the context restriction for the command in VF mode only. If the length of a row is too long to fit in one line, the strings displayed under RBAC Class and Option column will be split and displayed in two lines.

--showroles *class_name*

Displays the role permissions the specified MOF class.

--help

Displays the command usage.

Examples

To display an alphabetical listing of all MOF classes supported in Fabric OS:

```
switch:admin> classconfig --show -classlist
```

```
List of RBAC classes:
```

1. AdminDomains
2. ADSelect
3. AG
4. APM
5. Audit
6. Authentication
7. Blade
8. ChassisConfiguration
9. ChassisManagement
10. ConfigManagement
11. Configure
12. DCE
13. Debug
14. Diagnostics
15. DMM
16. EncryptionConfiguration
17. EncryptionManagement
18. EthernetConfig
19. Fabric
20. FabricDistribution
21. FabricRouting
22. FabricWatch
23. Factory
24. FCoE
25. FICON
26. FIPSBootprom
27. FIPSCfg
28. FirmwareKeyManagement
29. FirmwareManagement
30. FRUManagement
31. HA
32. IPfilter
33. IPSec
34. ISCSI
35. License
36. LocalUserEnvironment
37. Logging
38. LogSupportsave
39. ManagementAccessConfiguration
40. ManagementServer
41. NameServer

```

42. Nocheck
43. NxPortManagement
44. PhysicalComputerSystem
45. PKI
46. PortMirror
47. RADIUS
48. Reboot
49. Restricted
50. RoleConfig
51. RoutingAdvanced
52. RoutingBasic
53. Security
54. SessionManagement
55. SNMP
56. Statistics
57. StatisticsDevice
58. StatisticsPort
59. SwitchConfiguration
60. SwitchManagement
61. SwitchManagementIPConfiguration
62. SwitchPortConfiguration
63. SwitchPortManagement
64. Topology
65. USBManagement
66. UserManagement
67. WWNCard
68. Zoning

```

To display the RBAC permissions for the commands included in the UserManagement class:

```
switch:admin> classconfig --show UserManagement
```

```
RBAC class Name : UserManagement
```

CLI	Option	Permission
ldapcfg	help	O
ldapcfg	maprole	OM
ldapcfg	show	O
ldapcfg	unmaprole	OM
passwd	OperandPresent	OM
passwdcfg	disableadminlockout	OM
passwdcfg	enableadminlockout	OM
passwdcfg	help	O
passwdcfg	set	OM
passwdcfg	setdefault	OM
passwdcfg	showall	O
userconfig	add	OM
userconfig	addad	OM
userconfig	addlf	OM
userconfig	change	OM
userconfig	delete	OM
userconfig	deletead	OM
userconfig	deletelf	OM
userconfig	showad	O
userconfig	showlf	O
userconfig	showuser	O
userrename		OM

To display the RBAC permissions for the UserManagement class:

```
switch:admin> classconfig --showroles UserManagement
Roles that have access to the RBAC class 'usermanagement' are:
```

Role Name	Permission
Admin	OM
Factory	OM
Root	OM
SecurityAdmin	OM

To display the RBAC permissions for a command:

```
switch:admin> classconfig --showcli classconfig
```

CLI	Option	Permission	RBAC Class	Context
classconfig	help	O	RoleConfig	chassis
classconfig	show	O	RoleConfig	chassis
classconfig	showcli	O	RoleConfig	chassis
classconfig	showroles	O	RoleConfig	chassis

To display the RBAC permissions for a command (in the following example, the command option entries are split and displayed in two lines because the length of the rows is too long):

```
switch:admin> classconfig --showcli ag
```

CLI	Option	Permission	RBAC Class
ag	addwnfailov ermapping	OM	AG
ag	addwnmappin g	OM	AG
ag	addwnpgmapp ing	OM	AG
[...]			

SEE ALSO [roleConfig](#)

cliHistory

Displays switch command history.

Synopsis

clihistory

clihistory --show

clihistory --showuser *username*

clihistory --showall

clihistory --help

Description

This command saves the following information whenever a command is executed on the switch:

- Timestamp
- Username
- FID (VF mode only)
- IP address of the Telnet session
- Options
- Arguments

This command displays the local CLI command history. The information is saved in the SSHOW_SYS file as part of supportSave. The CLI history is saved persistently to compact flash. The maximum number of saved entries for this command is 1680. CLI history records is wrapped after reaching the maximum limit specified.

The CLI history is wrapped and saved in a file that is persistent across reboots and firmware download.

Only the command name is stored in the CLI history for commands that requires password; no arguments are stored.

This command can also be executed on the standby CP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--show

Displays the CLI history of the current user.

--showuser *username*

Displays the CLI history of the given user.

--showall

Displays the CLI history of all users.

--help

Displays the command usage.

Examples To display the command history on a switch:

```
switch:admin> clihistory
Date & Time                Message
Fri Sep 19 09:43:53 2014    root, FID 10, console, tracedump
Fri Sep 19 09:43:59 2014    root, FID 10, console, coreshow
Fri Sep 19 09:44:21 2014    root, , console, firmwareshow
Fri Sep 19 09:44:25 2014    root, , console, errdump
switch:admin> firmwaredownload -s -p scp 10.70.4.109,fvt,/dist,pray4green
Server IP: 10.70.4.109, Protocol IPv4
Checking system settings for firmwaredownload...
Failed to access scp://fvt:*****@10.70.4.109//dist/release.plist
switch:admin> clihistory
Date & Time                Message
Wed May 23 03:39:37 2012    admin, console, firmwaredownload
```

SEE ALSO None

configDefault

Resets the nonpersistent configuration data to factory defaults.

Synopsis `configdefault [-fid FID | -all | -switch] [-force]`

Description Use this command to reset the nonpersistent configuration settings to their factory default values.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. The behavior of configDefault depends on the environment in which the command is executed:

- In a Virtual Fabric environment, when executed without operands, this command resets the switch configuration to default values on the current logical switch only. An Admin with chassis permissions can use additional parameters to reset configuration data for a specified logical switch (-fid *FID*) or for all logical switches and the chassis (-all). Resetting default FCR configuration data requires base switch to be configured in the chassis.
- In a non-Virtual Fabric environment, when executed without operands, this command resets the switch configuration. When executed with the -all operand, configDefault resets all of the system's configuration data, including chassis and switch configurations. The -switch option resets the switch configuration only. The -fid option is not valid.

This command resets nonpersistent configuration parameters only. The following parameters are not affected by this command:

- Ethernet MAC address, IP address, subnet mask, and boot ROM parameters
- IP gateway address
- License keys
- OEM customization
- Product ID and Vendor ID
- SNMP configuration
- System name
- Chassis name
- World wide name
- Zoning configuration (includes aliases, zones, and configurations)
- Security parameters and policies
- User account passwords (includes all user configuration and all built-in accounts)
- Switch PID format
- Ethernet Link Mode

Refer to the help files for configure and configureChassis help for more information on default values for configuration parameters.

Notes This command cannot be executed on an enabled switch. You must first disable the switch using switchDisable or chassisDisable.

Some configuration parameters are cached by the system. To avoid unexpected system behavior, reboot the system after executing configDefault.

Note that configDefault does not completely remove all FCIP tunnels and GbE IP address information. This may be an issue when attempting to use the same information to create new tunnels or modify the existing ones.

On Gen6 platforms, this command is blocked if encryption is enabled on ports.

This command should be used with caution on Embedded switches, as it can alter the factory default settings. In addition, not all Embedded switches provide the same support for this command.

The execution of this command is subject to Virtual Fabric restrictions may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-fid *FID*

Specifies the Fabric ID of the logical switch for which to reset the configuration. This operand is valid only in Virtual Fabric mode, and the executing account must have chassis permissions.

-all

Restores all nonpersistent configuration parameters to factory default values (switch and chassis parameters). This command requires chassis permissions.

-switch

Resets the switch configuration only. This operand is not valid in VF mode.

-force

Executes the command without confirmation and reboots the switch. This operand is optional.

Examples

To restore all system configuration parameters to default values:

```
switch:admin> configdefault -all
WARNING: This is a disruptive operation that requires a switch reboot.
Would you like to continue [Y/N]: y
Executing configdefault...Please wait
Already in Native Mode continuing with configDefault
Committing configuration ... done.
The switch has to be rebooted to allow the changes to take effect.
Switch rebooting .....
Restarting system.
The system is coming up, please wait...
```

To restore all system configuration parameters with -force option:

```
switch:admin> configdefault -all -force
Executing configdefault...Please wait
setting the default config on switch sw_6510_79
Already in Native Mode continuing with configDefault
Committing configuration ... done.
```

configDefault

```
The switch has to be rebooted to allow the changes to take effect.  
Switch rebooting .....  
Restarting system.  
The system is coming up, please wait...
```

SEE ALSO [snmpConfig](#), [configure](#), [configureChassis](#), [switchDisable](#), [switchEnable](#)

configDownload

Downloads configuration data to the system.

Synopsis

configdownload

configdownload [- all] [-p ftp | -ftp] ["host", "user", "path"
[, "passwd"]]

configdownload [- all] [-p scp | -scp] [-cra] ["host", "user", "path"]

configdownload [- all] [-p sftp | -sftp] ["host", "user", "path"]

configdownload [- all] [-local | -USB | -U ["file"]]

configdownload [-fid FID | -chassis | -all | -switch]
[-p ftp | -ftp] ["host", "user", "path" [, "passwd"]]

configdownload [-fid FID | -chassis | -all | -switch]
[-p scp | -scp] [-cra] ["host", "user", "path"]

configdownload [-fid FID | -chassis | -all | -switch]
[-p sftp | -sftp] ["host", "user", "path"]

configdownload [-fid FID | -chassis | -all | -switch]
[-force] [-local | -USB | -U ["file"]]

configdownload [-vf] [-p ftp | -ftp] ["host", "user", "path"
[, "passwd"]]

configdownload [-vf] [-p scp | -scp] [-cra] ["host", "user", "path"]

configdownload [-vf] [-p sftp | -sftp] ["host", "user", "path"]

configdownload [-vf] [-local | -USB | -U ["file"]]

configdownload [-fid FID | -all] -map [-p ftp | -ftp]
["host", "user", "path" [, "passwd"]]

configdownload [-fid FID | -all] -map [-p scp | -scp]
[-cra] ["host", "user", "path"]

configdownload [-fid FID | -all] -map [-p sftp | -sftp]
[-cra] ["host", "user", "path"]

Description

This command downloads configuration parameters to the local system. Two types of configuration files can be downloaded with this command: Virtual Fabric configuration parameters and system configuration parameters. You must download both types of configuration data for the system to behave as expected. You can use FTP or SCP to download configuration files from a remote host, or you can retrieve the configuration files from a predetermined directory on the local system, or from an attached USB device.

Use the `-vf` option to download the Virtual Fabric configuration data. The Virtual Fabric configuration file includes logical switch definitions and Virtual Fabric status (enabled or disabled). The file should be named `vf-conf_xx.txt` to distinguish it from the regular system configuration (`config.txt`). The `xx` indicates the platform ID. Virtual Fabric configuration data can only be shared between switches that belong to the same platform type and share the same platform ID. If the platform ID contained in the header of the configuration file does not match the platform ID of the system to which it is downloaded, `configDownload` fails. When you download a `vf-conf_xx.txt` file, all attributes defined in this file are downloaded to the system and take effect with the exception of LISL ports. The LISL ports on the system are not affected by this download.

Use the `-all` option to download the system configuration data (which must be downloaded separately from the Virtual Fabric configuration data). It is grouped into chassis information and switch information. Each configuration type is managed separately and the behavior of `configDownload` depends on the environment in which the command is executed and which part of the system configuration you wish to download.

- In a Virtual Fabric environment, when the `configDownload` command is executed without chassis permissions, this command downloads the switch configuration to the current logical switch only. An Admin user with chassis permissions can use additional parameters to perform the following selective configuration downloads:
 - Download the switch configuration to a specified logical switch (`-fid FID`).
 - Download the chassis configuration only (`-chassis`).
 - Download the entire configuration including the data for all logical switches and for the chassis (`-all`).

The interactive version of the command (no operands) prompts for input on only the parameters the user is allowed to execute.
- In a non-Virtual Fabric environment, this command by default downloads the configuration for the default logical switch only. To download the chassis-level configuration only, use the `-chassis` option. To download both the chassis and switch configuration, use the `-all` option. Chassis permissions are required. The `-fid` option is not valid. The `-switch` option is equivalent to issuing the command `default` (without options).

Perform the following steps to backup and then restore a configuration in a switch using Virtual Fabrics:

1. Run the `configUpload -vf` command followed by the `configUpload -all` command from the old setup.
2. Run the `configDownload -vf` command followed by the `configDownload -all` command in the new setup.

The switch must be disabled for configuration download of all parameters with the exception of SNMP and MAPS.

The following rules apply to configuration download in Virtual Fabric mode:

- When downloading the chassis configuration, the number of logical switches defined in the configuration download must match the number of logical switches currently defined on the switch.
- When downloading the switch configuration, the target FID must be defined in both the configuration download and the current system.
- When downloading the switch configuration from a specified source FID to a target FID, the target FID must be defined on the switch and the source FID and associated configuration must be defined in the configuration download. In addition, downloading an SFID configuration resets the target FID ports without warning. Caution is advised when using this option.
- When downloading all configuration parameters, the number of switches defined in the downloaded configuration file must match the number of switches currently defined on the switch. In addition, the following restrictions apply:
 - The switches must be disabled unless you only wish to download SNMP or MAPS parameters.
 - Downloading a configuration file from a system that is not Virtual Fabric-capable to a system in Virtual Fabric mode is not recommended. The configuration is applied to the default switch only, and only to the ports that are part of the default switch.

If an FCS policy is enabled, the following rules and restrictions apply:

- Both [Defined Security Policies] and [Active Security Policies] sections must exist and contain the FCS_POLICY.
- In the [Defined Security Policies] section, at least one member of the FCS_POLICY must be the same as a member in the previous FCS_POLICY.
- In the [Active Security Policies] section, the FCS_POLICY must be exactly the same as the previous FCS_POLICY. Order of members must be maintained.
- If either security policies section has an RSNMP_POLICY, then that section must have a WSNMP_POLICY.
- After the switch is enabled, if the switch is the primary FCS, then its security and zoning information is propagated to all other switches in the fabric.
- After the switch is enabled, if the switch is a non-FCS or a backup FCS, then its security and zoning information will be overwritten by the primary FCS.

Security parameters and the switch identity cannot be changed by configDownload. Parameters such as the switch name and IP address are ignored; they are lines in the configuration file that begin with "boot". Security parameters and version stamp are ignored; they are the lines in the configuration file that begin with "sec".

[License] is only accepted if the boot.mac parameter matches the license ID (WWN) of the switch performing the download; otherwise, it is ignored.

The configuration parameters R_A_TOV, E_D_TOV, WAN_TOV, and MAX_HOPS are interrelated. Assigning a specific value to one or more of these parameters might change the range of allowed values that can be assigned to the other parameters. As a result, you may not be able to set all the values within the range displayed for each parameter. This command validates the modified values of these four parameters and terminates the download operation, if the validation check fails.

This is particularly important when downloading a zoning configuration. Because the new zoning information is added to the current configuration, there might not be any conflicts. If the current zoning configuration is to be replaced, the keyword "clear:" should be inserted into the configuration file immediately before the zoning lines (starting at the line "[Zoning]").

If the configuration file contains the keyword "enable:" followed by a zone_configuration, that zoning configuration is enabled in the fabric. If there is no "enable:" keyword in the configuration file or no zoning configuration by that name exists, or if enable fails for any reason (such as dangling aliases), then the following conditions apply:

- The effective configuration remains as it was prior to the configuration download. The "enable:" action is ignored.
- The Defined Configuration changes to reflect the new zoning configuration.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If the switch is in Access Gateway mode, some of the configuration parameters will take effect only after the switch has been re-enabled with the switchEnable command.

F_Port trunking configurations are not saved in the configuration file and will not be restored after a configuration download.

Do not manually edit a configuration file after uploading the file and before downloading the file to a switch. Manual editing bypasses sanity checks for some configuration parameters and results in unpredictable system behavior.

The configDownload command prompts for confirmation and issues a notice that "A switch reboot is required for the changes to take effect." A configuration download affects large amount of configuration data, and there is no reliable mechanism to determine, which of these parameters may or may not require a reboot. To ensure that all configuration changes are applied correctly, Brocade strongly recommends that you always reboot the switch after a configuration download.

On Gen6 platforms, this command is blocked if encryption is enabled on ports.

Operands This command has the following operands:

-p ftp | -ftp or -p scp | -scp or -p sftp | -sftp

Specifies the data transmission protocol as either file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP). If no protocol is specified, the protocol defaults to FTP.

-cra

Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.

-vf

Downloads the Virtual Fabric configuration (vf-conf_xx.txt) instead of the regular system configuration. The vf-con_xx.txt file contains a listing of logical switches configured on the platform specified by the platform ID (xx) and other Virtual Fabric parameters. You cannot use the -vf option with any of the system configuration upload options (-fid, -chassis, -all).

-all

Downloads all configuration data, including chassis and switch configuration data.

-fid FID

Downloads the switch configuration to a logical switch specified by its fabric ID. This operand is valid only in a Virtual Fabric environment and requires chassis permissions.

-chassis

Downloads the chassis configuration only.

-switch	Downloads the switch configuration only. This operand is valid only in non-VF mode.
-map	Downloads the port-to-area addressing mode configuration files.
"host"	Specifies the name or the IP address of the external host, from which to download the configuration. IPv4 and IPv6 addresses are supported. To be able to mention the FTP server by name, you need to set up two DNS servers with dnsConfig. Quotation marks are optional.
"user"	Specifies the login name for the external host. Quotation marks are optional.
"path"	Specifies the file name and path of the configuration file. When used with the -map option, this parameter specifies a folder that contains all port-to-area mapping files. Absolute path names may be specified using a forward slash (/). Relative path names search for the file in the login account's home directory on UNIX hosts and in the directory on which the FTP server is running on Windows hosts. This operand is valid only when the file is downloaded from an external host. Quotation marks are optional.
"passwd"	Specifies the account password. Quotation marks are optional.
-local	Downloads a specified configuration file from a predetermined directory on the local chassis.
-USB | -U	Downloads a specified configuration file from a predetermined directory on an attached USB device.
"file"	Specifies the name of the configuration file to be downloaded. This parameter can be used only with the -local or -USB option, each of which retrieves files from a predetermined directory on the local chassis or on an attached USB device. Therefore, subdirectories and absolute path names are not permitted. Quotation marks are optional.
-force	Overwrites an existing file without confirmation. This parameter is valid only with the -local or -USB options.

Diagnostics

The configuration download may fail for one or more of the following reasons:

- The switch has not been disabled. Disabling the switch is not necessary for configuration files containing only certain SNMP or MAPS parameters. You can run configDownload first without disabling the switch, and if there is at least one changed parameter outside of SNMP or MAPS, you are prompted to disable the switch before proceeding.
- The host name is not known to the switch.
- The host IP address cannot be contacted.
- You do not have permission on the host.
- You are running a script that prints something at login.
- The file does not exist on the host.
- The file is not a switch configuration file.
- The FTP server is not running on the host.
- The configuration file contains errors.
- The configuration file's logical switch definitions do not match the definitions on the target switch.

Examples

To download the switch configuration file interactively to the current logical switch from a local directory (no chassis permissions):

```
switch:admin> configdownload
Protocol (scp, ftp, sftp, local) [ftp]:
Server Name or IP Address [host]: 192.168.163.233
User Name [user]: admin
Path/Filename [<home dir>/config.txt]:
Section (all|chassis|FID# [all]):
      *** CAUTION ***
```

This command is used to download a backed-up configuration for a specific switch. If using a file from a different switch, this file's configuration settings will override any current switch settings. Downloading a configuration file, which was uploaded from a different type of switch, may cause the switch to fail.

A switch reboot is required for the changes to take effect.

Please make sure all the switches are disabled by using chassisdisable command. Downloading configuration to an online switch may result in some configuration not being downloaded to that switch.

```
configDownload operation may take several minutes
to complete for large files.
Do you want to continue [y/n]: y
Password: *****
Activating configDownload: Switch is disabled
configDownload complete: All config parameters are downloaded
```

To download the switch configuration data to the current logical switch from an external FTP server (no chassis permissions):

```
switch:admin> configdownload -ftp 192.168.38.245, \
      jdoe,config.txt,password
```

To download all system configuration data for the chassis and all logical switches (requires chassis permissions):

```
switch:admin> configdownload -all -ftp 192.168.38.245, \
jdoe,config.txt,password
```

To download the switch configurations to a logical switch with FID 8 from an attached USB device (requires chassis permissions):

```
switch:admin> configdownload -fid 8 -USB config.txt
```

To download the switch configurations belonging to a logical switch with FID 4 to a logical switch with FID 8 from an attached USB device (requires chassis permissions):

```
switch:admin> configdownload -fid 8 -sfid 4 \
-USB config_fid8.txt
```

To download the Virtual Fabric configuration file using secure FTP:

```
switch:admin> configdownload -vf -p sftp \
10.32.248.119,jdoe,/temp/vf-conf_66.txt,mypassword
```

SEE ALSO [configDefault](#), [configList](#), [configShow](#), [configUpload](#), [configure](#), [configRemove](#)

configList

Lists uploaded configuration files.

Synopsis **configlist -local | -USB | -U**

Description This command displays a list of names, sizes, and creation dates of configuration files saved on the local chassis or on an attached USB device. These files are created when the configUpload command is executed with the -local or the -USB option.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-local

Displays the list of configuration files on the local chassis.

-USB | -U

Displays the list of configuration files on the attached USB device.

Examples To display a list of configuration files stored on the local chassis:

```
switch:admin> configlist -local
config.txt      25679      2007 Jan 02 15:16
config2.txt     25679      2007 Jan 06 15:16
next_cfg.txt    20977      2007 Jan 18 15:16
```

SEE ALSO [configDownload](#), [configUpload](#), [configShow](#), [configRemove](#)

configRemove

Deletes a saved configuration file.

Synopsis **configremove -local | -USB | -U [file]**

Description This command deletes a configuration file that was previously saved to the local chassis or to an attached USB device by using the configUpload command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- local** Removes a configuration file that was previously created by configUpload -local from the local chassis.
- USB | -U** Removes a configuration file that was previously created by configUpload -USB from an attached USB device.
- file** Specifies the configuration file to be removed. If the file option is omitted, the command prompts for a file name.

Examples To remove a configuration file from the local chassis:

```
switch:admin> configremove -local first_config.txt
```

To remove a configuration file from an attached USB device without specifying a filename:

```
switch:admin> configremove -USB
File Name [config.txt]: second_config.txt
```

SEE ALSO [configDownload](#), [configUpload](#), [configList](#), [configShow](#)

configShow

Displays system configuration settings.

Synopsis **configshow**

configshow [-all | -fid *FID* | -chassis | -switch] |
[-local | -USB | -U] [*file*] [-pattern "*pattern*"]

Description

Use this command to display system configuration settings. Some but not all of these parameters are set by the configure and configureChassis commands.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. The behavior of configShow depends on the environment in which the command is executed:

- In a Virtual Fabric environment, when executed without operands, this command displays the switch configuration for the current logical switch. An Admin with chassis permissions can use additional parameters to display configuration data for a specified logical switch (-fid *FID*), for the chassis (-chassis), or for all logical switches and the chassis (-all).
- In a non-Virtual Fabric environment, when executed without operands, this command displays the switch configuration. When executed with the -all operand, configShow displays all of the system's configuration data, including chassis and switch configuration data. The -chassis option displays the chassis configuration only. The -switch option displays the switch configuration only. The -fid option is not valid.

Notes

Not all values displayed are applicable to all system models and configurations.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

-pattern "*pattern*"

Specifies a text string, enclosed in double quotation marks, that limits the output of the command to only those entries that contain the pattern. Use of wildcards and other common regular expression operators is not supported. Some configuration settings do not display when filtered. When in doubt, use the command without the -pattern operand. Executing configShow -pattern without further operands is not recommended and can cause unspecified behavior.

-all

Displays all configuration data including chassis and switch configuration.

-fid *FID*

Displays configuration data for a logical switch specified by its fabric ID. This option is valid only in a Virtual Fabric environment and requires chassis permissions

-chassis

Displays configuration data for the chassis only. This option is valid only in a Virtual Fabric environment and requires chassis permissions

-switch

Displays the switch configuration only. This option is valid only in a Non-Virtual Fabric environment.

-local [file]

Displays the content of a configuration file that was previously created by configUpload and stored on the chassis. The output can be optionally filtered by -pattern "pattern". If file is omitted, the command prompts for a file name. The output format when -local is specified matches that of configUpload and contains a superset of the information provided when -local is not specified.

-USB | -U [file]

Displays the content of a configuration file that was previously created by configUpload and stored on an attached USB device. The output can be optionally filtered by -pattern "pattern". If file is omitted, the command prompts for a file name. The output format when -USB is specified matches that of configUpload and contains a superset of the information provided when -USB is not specified.

Examples

To display all configuration data on a Virtual Fabric-enabled system:

```
switch :admin> configshow -all
[Configuration upload Information]
Configuration Format = 3.0
Minimum Compatible Format = 3.0
Excluding Format = 0.0
date = Sun May 26 06:18:40 2013
FOS version = v7.2.0
Number of LS = 2
[Chassis Configuration Begin]

[fcRouting]
fcRoute.backboneFabricId:100
fcRoute.fcrState:2
fcRouteParam.maxLsanCount:3000
fcRoute.port.8.xportAdmin:DISABLED
fcRoute.port.8.fabricId:4
fcRoute.port.8.ratov:10000
fcRoute.port.8.edtov:2000
fcRoute.port.8.frontConfigDid:160
fcRoute.port.8.portType:400
fcRoute.port.8.portMode:0
fcRoute.port.8.autoElp:7
fcRoute.port.9.xportAdmin:DISABLED
fcRoute.port.9.fabricId:5
fcRoute.port.9.ratov:10000
fcRoute.port.9.edtov:2000
fcRoute.port.9.frontConfigDid:160
fcRoute.port.9.portType:400
fcRoute.port.9.portMode:0
fcRoute.port.9.autoElp:7
fcRouteParam.port.8.rportCost:0
fcRouteParam.port.9.rportCost:0
fcRoute.xlate.persistxdState:1
fcRouteParam.lsan.tagCnt:0

[Chassis Configuration]
passwdcfg.minlength:8
passwdcfg.lowercase:0
passwdcfg.uppercase:0
passwdcfg.digits:0
passwdcfg.punctuation:0
```

```

passwdcfg.history:1
passwdcfg.minpasswordage:0
passwdcfg.maxpasswordage:0
passwdcfg.warning:0
passwdcfg.lockoutthreshold:0
passwdcfg.lockoutduration:30
passwdcfg.adminlockout:0
passwdcfg.repeat:1
passwdcfg.sequence:1
passwdcfg.status:0
fips.mode:0
fips.selftests:0
ipfilter.0.name:default_ipv4
ipfilter.0.numofrules:12
ipfilter.0.rule.1:0,0x23,0,0,6,22
ipfilter.0.rule.10:0,0x23,0,0,17,123
ipfilter.0.rule.11:0,0x63,0,0,6,600,1023
ipfilter.0.rule.12:0,0x63,0,0,17,600,1023
ipfilter.0.rule.2:0,0x23,0,0,6,23
ipfilter.0.rule.3:0,0x23,0,0,6,897
ipfilter.0.rule.4:0,0x23,0,0,6,898
ipfilter.0.rule.5:0,0x23,0,0,6,111
ipfilter.0.rule.6:0,0x23,0,0,6,80
ipfilter.0.rule.7:0,0x23,0,0,6,443
ipfilter.0.rule.8:0,0x23,0,0,17,161
ipfilter.0.rule.9:0,0x23,0,0,17,111
ipfilter.0.state:3
ipfilter.0.type:0
ipfilter.1.name:default_ipv6
ipfilter.1.numofrules:12
ipfilter.1.rule.1:0,0x23,0,0,6,22
ipfilter.1.rule.10:0,0x23,0,0,17,123
ipfilter.1.rule.11:0,0x63,0,0,6,600,1023
ipfilter.1.rule.12:0,0x63,0,0,17,600,1023
ipfilter.1.rule.2:0,0x23,0,0,6,23
ipfilter.1.rule.3:0,0x23,0,0,6,897
ipfilter.1.rule.4:0,0x23,0,0,6,898
ipfilter.1.rule.5:0,0x23,0,0,6,111
ipfilter.1.rule.6:0,0x23,0,0,6,80
ipfilter.1.rule.7:0,0x23,0,0,6,443
ipfilter.1.rule.8:0,0x23,0,0,17,161
ipfilter.1.rule.9:0,0x23,0,0,17,111
ipfilter.1.state:3
ipfilter.1.type:1
(output truncated)

```

To filter the content to display only the password configuration:

```

switch :admin> configshow -all -pattern "passwdcfg"
passwdcfg.minlength:8
passwdcfg.lowercase:0
passwdcfg.uppercase:0
passwdcfg.digits:0
passwdcfg.punctuation:0
passwdcfg.history:1
passwdcfg.minpasswordage:0
passwdcfg.maxpasswordage:0
passwdcfg.warning:0
passwdcfg.lockoutthreshold:0

```

```

passwdcfg.lockoutduration:30
passwdcfg.adminlockout:0
passwdcfg.repeat:1
passwdcfg.sequence:1
passwdcfg.status:0

```

To display switch configuration data for FID 20:

```

switch :admin> configshow -fid 20
[Configuration upload Information]
Configuration Format = 2.0
date = Tue Oct 7 14:53:12 2008
FOS version = v6.2.0.0
Number of LS = 3
[Switch Configuration Begin : 0]
SwitchName = Spirit_66
Fabric ID = 20

[Boot Parameters]
boot.name:Spirit_66
boot.ipa:10.32.228.66
boot.licid:10:00:00:05:1e:41:5c:c1
boot.mac:10:00:00:05:1e:41:5c:c1
boot.device:eth0
boot.gateway.ipa:10.32.224.1

[Configuration]
acl.clear:0
ag.port.nfportfailback:0x0
ag.port.nfportfailover:0x0
ag.port.nfporttopo.0:0x0
ag.port.nfporttopo.1:0x0
ag.port.nfporttopo.10:0x0
ag.port.nfporttopo.11:0x0
ag.port.nfporttopo.12:0x0
ag.port.nfporttopo.13:0x0
ag.port.nfporttopo.14:0x0
ag.port.nfporttopo.15:0x0
ag.port.nfporttopo.16:0x0
ag.port.nfporttopo.17:0x0
ag.port.nfporttopo.18:0x0
ag.port.nfporttopo.19:0x0
ag.port.nfporttopo.2:0x0
ag.port.nfporttopo.20:0x0
(output truncated)

```

SEE ALSO [configure](#), [configureChassis](#), [configDownload](#), [configUpload](#), [configList](#), [configRemove](#), [diagDisablePost](#), [diagEnablePost](#), [ipAddrShow](#), [licenseShow](#)

configUpload

Uploads system configuration data to a file.

Synopsis

configupload

configupload [-all] [-p ftp | -ftp] ["host", "user", "path"
[, "passwd"]]

configupload [-all] [-p scp | -scp] [-cra] ["host", "user", "path"]

configupload [-all] [-p sftp | -sftp] ["host", "user", "path"]

configupload [-all] [-force] [-local | USB | -U] ["file"]

configupload [-fid FID | -chassis | -all | -switch]
[-p ftp | -ftp] ["host", "user", "path" [, "passwd"]]

configupload [-fid FID | -chassis | -all | -switch]
[-p scp | -scp] [-cra] ["host", "user", "path"]

configupload [-fid FID | -chassis | -all | -switch]
[-p sftp | -sftp] ["host", "user", "path"]

configupload [-fid FID | -chassis | -all | -switch]
[-force] [-local | USB | -U] ["file"]

configupload [-vf] [-p ftp | -ftp] ["host", "user", "path"
[, "passwd"]]

configupload [-vf] [-p scp | -scp] [-cra] ["host", "user", "path"]

configupload [-vf] [-p sftp | -sftp] ["host", "user", "path"]

configupload [-vf] [-force] [-local | USB | -U] ["file"]

configupload [-fid FID | -all] -map [-p ftp | -ftp]
["host", "user", "path" [, "passwd"]]

configupload [-fid FID | -all] -map [-p scp | -scp]
[-cra] ["host", "user", "path"]

configupload [-fid FID | -all] -map [-p sftp | -sftp]
[-cra] ["host", "user", "path"]

Description

This command uploads configuration data to a file. Two types of configuration files can be uploaded with this command: Virtual Fabric configuration parameters and system configuration parameters.

Use the `-vf` option to upload Virtual Fabric configuration parameters. The Virtual Fabric configuration includes logical switch definitions and Virtual Fabric status (enabled or disabled). The file should be named `vf-conf_xx.txt` to distinguish it from the regular system configuration (`config.txt`). The `xx` indicates the platform ID specified in the header of the configuration file. The platform ID is the same as the first two digits of the "switchType" parameter displayed by `switchShow`. Virtual Fabric configuration data can only be shared between switches that belong to the same platform type and share the same platform ID. Refer to `configDownload` help for more information on the Virtual Fabric configuration.

The system configuration data is uploaded separately. It is grouped into chassis information and switch information. Each configuration type is managed separately and the behavior of `configUpload` depends on the environment in which the command is executed and which part of the system configuration you wish to upload.

- In a Virtual Fabric environment, when executed without chassis permissions, this command uploads the current logical switch configuration only. An Admin user with chassis permissions can use additional parameters to perform the following selective configuration uploads:
 - Upload the switch configuration of a specified logical switch (`-fid FID`).
 - Upload the chassis configuration only (`-chassis`).
 - Upload the entire system configuration including the data for all logical switches and for the chassis (`-all`).
 - Upload the switch configuration only in Non-VF mode (`-switch`).

The interactive version of the command (no operands) prompts for input on only the parameters the user is allowed to execute.
- In a non-Virtual Fabric environment, this command by default uploads the configuration for the default logical switch only. To upload the chassis-level configuration only, use the `-chassis` option. To upload both the chassis and switch configuration, use the `-all` option. Chassis permissions are required. The `-fid` option is not valid. The `-switch` option is equivalent to issuing the command default (without options).

Perform the following steps to backup and then restore a configuration in a switch using Virtual Fabrics:

1. Run the `configUpload -vf` command followed by the `configUpload -all` command from the old setup.
2. Run the `configDownload -vf` command followed by the `configDownload -all` command in the new setup.

You can use the file transfer protocol (FTP), the secure copy protocol (SCP), or secure FTP (SFTP) to upload configuration files to an external host, or you can save the configuration in a predetermined directory on the local chassis or on an attached USB device. If the specified file already exists, this command prompts you to overwrite the file. Specify `-force` to overwrite the file without confirmation. When the local chassis is chosen as the destination, the resulting file is written to both primary and secondary partitions, and on enterprise-class platforms, to both Active and Standby Control Processors (CPs).

Refer to the Fabric OS Administrator's Guide for information on backward compatibility and on the content of the configuration file.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

F_Port trunking configurations are not saved in the configuration file and will not be restored after a configuration download.

Do not manually edit a configuration or a vf-conf.xx file after uploading the file and before downloading the file to a switch. Manual editing bypasses sanity checks for some configuration parameters and results in unpredictable system behavior.

Operands

This command has the following operands:

-p ftp | -ftp or -p scp | -scp or -p sftp | -sftp

Specifies the data transmission protocol as either file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP). If no protocol is specified, the protocol defaults to FTP.

-cra

Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.

-vf

Uploads the Virtual fabric configuration to a file. You must specify a filename when uploading this file. It is recommended to name this file vf-conf_xx.txt (where xx indicates the platform ID) to distinguish this file from the system configuration (config.txt). Use switchShow to determine the platform ID of the system. The platform ID in the header of the configuration file is the same as the first two digits of the switchType parameter in the switchShow output. You cannot use the -vf option with any of the regular configuration upload options (-fid, -chassis, -all).

-fid FID

Uploads switch configuration data from a logical switch specified by its fabric ID. This parameter is valid only in a Virtual Fabric environment and requires chassis permissions.

-chassis

Uploads chassis configuration only.

-all

Uploads all system configuration data including chassis and switch configuration for all logical switches.

-switch

Uploads the switch configuration only. This operand is not valid in VF mode.

-map

Uploads the port-to-area addressing mode configuration files.

"host"

Specifies the name or the IP address of the external host to which to upload the configuration. To be able to mention the FTP server by name, you need to set up one or more DNS servers with dnsConfig. Quotation marks are optional.

"user"

Specifies the login name for the external host. Quotation marks are optional.

"path"

Specifies the file name and path of the configuration file. When used with the `-map` option, this parameter specifies a folder that contains all port-to-area mapping files. Absolute path names may be specified using a forward slash (/). Relative path names upload the file to the login account's home directory on UNIX hosts and into the directory on which the FTP server is running on Windows hosts. This operand is valid only when the file is uploaded to an external host. Quotation marks are optional.

"passwd"

Specifies the account password. Quotation marks are optional.

-local

Uploads a specified configuration file to a predetermined directory on the local chassis. This option requires a file name.

-USB|-U

Uploads a specified configuration file to a predetermined directory on an attached USB device. This option requires a file name.

"file"

Specifies the file name. Quotation marks are optional. This parameter is valid only with the `-local` or `-USB` options, each of which stores files in a predetermined directory on the local chassis or on an attached USB device. Therefore, subdirectories and absolute path names are not permitted.

-force

Overwrites an existing file without confirmation. This parameter is valid only with the `-local` or `-USB` options.

When invoked without operands or without "host" or "file" parameters, configUpload runs in interactive mode.

Diagnostics

The configuration upload may fail for one or more of the following reasons:

- The host name is not known to the switch.
- The host IP address cannot be contacted.
- The user does not have permission on the host.
- The FTP server is not running on the host.

Examples

To upload the switch configuration interactively from a switch that is not enabled for Virtual Fabrics:

```
switch:admin> configupload
Protocol (scp, ftp, sftp, local) [ftp]: sftp
Server Name or IP Address [host]: 192.168.38.245
User Name [user]: jdoe
File Name [<home dir>/config.txt]:
Section (all|chassis|switch [all]):
Password: *****

configUpload complete: All config parameters are uploaded
```

To upload the switch configuration that belongs to a logical switch with FID 100:

```
switch:admin> configupload
Protocol (scp, ftp, sftp, local) [ftp]: sftp
Server Name or IP Address [host]: 10.32.220.100
User Name [user]: jdoe
File Name [<home dir>/config.txt]: config.fid100.txt
Section (all|chassis|FID# [all]): 100
Password: *****

configUpload complete: All config parameters are uploaded
```

To upload the configuration for the entire chassis to a local file from the command line forcing an overwrite:

```
switch:admin> configupload -chassis -local \
-force config.txt

configUpload complete: All config parameters are uploaded
```

To upload the configuration for the current logical switch to an external FTP server:

```
switch:admin> configupload -ftp 192.168.38.245, \
jdoe,config.txt,password
```

To upload all system configuration data to an external FTP server:

```
switch:admin> configupload -all -ftp \
192.168.38.245,jdoe,config.txt,password
```

To upload the system configuration file for a logical switch with FID 8 to an attached USB device:

```
switch:admin> configupload -fid 8 \
-USB config.txt
```

To upload the Virtual Fabric configuration of the current platform to an external FTP server:

```
switch:admin> configupload -vf -p ftp \
10.32.248.119,jdoe,/temp/vf-conf.66.txt,password
```

SEE ALSO [configDefault](#), [configDownload](#), [configShow](#), [configList](#), [configRemove](#), [configure](#), [configureChassis](#)

configure

Changes switch configuration settings.

Synopsis **configure**

Description Use this command to change switch configuration settings.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. For information on file format and specific parameters contained in each section, refer to the `configUpload` help page.

The behavior of the `configure` command depends on the environment in which the command is executed:

- In a Virtual Fabric environment, the `configure` command sets switch configuration parameters for the current logical switch only. If a switch or chassis is configured with multiple logical switches, you must configure each logical switch separately. Use the `setContext` command to change the current logical switch context.
- In a non-Virtual Fabric environment, the `configure` command sets switch configuration parameters.

To configure chassis-wide parameters, use the `configureChassis` command.

The following switch configuration parameters can be set with the `configure` command:

- Switch fabric parameters
- Virtual channel parameters
- F_Port login parameters
- Zoning operation parameters
- Remote State Change Notifications (RSCN) transmission mode
- Arbitrated Loop parameters
- System Services settings
- Portlog Events enable or disable settings
- Secure Socket Layer (SSL) attributes
- Remote Procedure Call Daemon (RPCD) attributes
- Web Tools attributes

To access all parameters controlled by this command, you must disable the switch using the `switchDisable` command. If executed on an enabled switch, only a subset of attributes are configurable. Menu displays may vary depending on the hardware platform.

The `configure` command runs in interactive mode and presents you with a series of hierarchical menus. Each top-level menu and its associated submenus consist of a text prompt, a selection of valid values, and a default value (in brackets).

The following keys control the execution of the command:

Return

When entered at a prompt with no preceding input, the command accepts the default value (if applicable) and moves to the next prompt.

Interrupt (Ctrl-C)

Aborts the command immediately and ignores all changes made.

End-of-file (Ctrl-D)

When entered at a prompt with no preceding input, terminates the command and saves changes made.

The following parameters can be modified with the configure command:

Fabric Parameters

Fabric settings control the overall behavior and operation of the fabric. Some of these settings, such as the domain, are assigned automatically and may differ from one switch to another in a given fabric. Other parameters, such as buffer-to-buffer credit or timeout values, can be modified to suit specific applications or operating environments but must be in agreement among all switches to allow formation of the fabric.

The following fabric settings can be modified (* = multiplication symbol)

Field	Type	Default	Range
Domain	Number	1	1-239
Enable 8-bit			
Dynamic Area Mode	Boolean	0	0 or 1
WWN Based persistent PID	Boolean	no	yes/no
D-Port Parameters	Boolean	on	on/off
Dynamic D-Port	Boolean	on	on/off
On-Demand D-Port	Boolean	on	on/off
RDP Polling Cycle	Number	1	0 to 24
Allow XISL Use	Boolean	yes	yes/no
Remote Foxexec	Boolean	on	on/off
High Integrity Fabric Mode	Boolean	on	on/off
Display FDMI Host Name	Boolean	on	on/off
Location ID	Number	0	0 to 4
Disable FID Check	Boolean	no	yes/no
Enable a 256 Area Limit	Number	0	0 to 2
R_A_TOV	Number	10000	E_D_TOV * 2 to 120000
E_D_TOV	Number	2000	1000 to R_A_TOV/2
WAN_TOV	Number	0	0 to R_A_TOV/4
MAX_HOPS	Number	7	7 to 19
Data Field Size	Number	2112	256 to 2112
Sequence Level Switching	Boolean	0	0 or 1
Disable Device Probing	Boolean	0	0 or 1
Suppress Class F Traffic	Boolean	0	0 or 1
Per-frame Route Priority	Boolean	0	0 or 1
Long Distance Fabric	Boolean	0	0 or 1
BB Credit	Number	16	1 to 27
Disable FID Check	Boolean	yes	yes/no
Insistent Domain ID Mode	Boolean	no	yes/no
Disable Default PortName	Boolean	no	yes/no
Dynamic Portname	Boolean	no	yes/no
Edge hold time	Number	220	80 to 500
F-Port Device Update Mode	Boolean	off	on/off

Fabric parameters are defined as follows:

Domain

The domain number uniquely identifies a switch in a fabric. This value is automatically assigned by the fabric. The range is 1-239.

Enable 8-bit Dynamic Area Mode

When enabled, this feature supports Dynamic Area Mode in default partitions on the Brocade DCX 8510-8 and DCX 8510-4. Dynamic Area Mode is disabled by default. When enabled, Dynamic Area Mode supports both static and dynamic area assignment. Use the `portAddress` command to perform a static assignment of an area to a given port. In Dynamic Area Mode, areas are dynamically assigned to the ports (up to a 255 limit). Port area assignments are persistent; however, disabling Dynamic Area Mode with `configure` resets the area assignments. This feature is configurable only on the default switch.

Enabling Dynamic Area Mode fails under one or more of the following conditions:

- The number of ports in the default partition exceeds 255.
- An AP blade with FL ports is present in the chassis (Brocade Encryption blade, or FCoE 10-24).

WWN Based persistent PID

When enabled, this feature supports both dynamic and static WWN-based PID assignment. In dynamic PID binding, the first area assigned to a device when it logs in is bound to the device WWN and remains persistent through subsequent logins. Every time the device logs into the switch, it is guaranteed to get the same PID. Alternately, you can use the `wwnAddress` command to create a static WWN-based PID assignment. In either case, the WWN-based persistent PID feature must be enabled through `configure`. The feature is disabled by default; it is dependent on Dynamic Area Mode being enabled.

D-Port Parameters

Disables or enables the D_Port parameters on the switch.

Dynamic D_Port

Disables or enables Dynamic D_Port mode configuration on the switch. By default, Dynamic D_Port mode is ON. When Dynamic D_Port mode is ON, the port may dynamically go into D_Port mode based on external request from remote HBA or device port. After the D_Port tests are complete, the port may automatically switch to operate as an F_Port. This option is not supported in AG mode.

On Demand D_Port

Disables or enables On-Demand D_Port mode configuration on the switch. By default, On-Demand D_Port mode is OFF.

RDP Polling Cycle

Displays the Switch Driver timer routine for polling. The switch need not be disabled to configure this variable.

Allow XISL Use

An extended interswitch link (XISL) is an interswitch link (ISL) that connects the logical switch to the base switch and carries traffic for multiple logical fabrics. This feature is supported only on Virtual Fabric-aware platforms under the following conditions: Virtual Fabrics must be enabled on the switch, and the switch cannot be a base switch. In addition, on the

Brocade DCX 8510-8 and DCX 8510-4 the switch cannot be a default switch or include interchassis link (ICL) ports. This feature is enabled by default (yes=enabled). On the Brocade 6510 default switch, the feature is disabled by default (no=disabled). The XISL feature is supported on the Brocade extension blade (FX8-24).

You do not need to disable the logical switch before changing the value of this parameter. Turning off XISL use requires confirmation because all LISLs will be removed upon execution. If the logical switch is enabled and is part of an edge fabric connected to an FCR, this parameter cannot be turned on. If the logical switch is disabled or it is not yet part of an edge fabric, this parameter can be turned on. However, execution may cause edge fabric segmentation if the EX_Port connected to the edge fabric is disabled while the logical switch is enabled or connected to the edge fabric.

Location ID

The Location ID parameter affects routing calculations, and should remain set to the default value of 0 for normal use. Do not change the value unless explicitly instructed to do so by a Brocade Support engineer.

Disable FID Check

If fabric ID (FID) check is disabled, the fabric ignores the Fabric Identifier conflict with the neighboring switch during fabric formation. By default, FID check is enabled. If the fabric detects a FID conflict, it disables the E_Port with a "Fabric ID conflict" message. This parameter is configurable only if the switch is Virtual Fabric-aware and Virtual Fabric is enabled on the switch.

Enable 256 Area limit

The 256 area limit allows the partition to be configured for 8-bit addressing rather than the default 10-bit addressing. Each port in this partition is given a unique area represented by the middle 8 bits of the PID. Valid values include the following:

0

No limit is imposed on the area. This is the default value. The partition is configured for 10-bit addressing and supports up to 1800 ports.

1

The unique area assignments begin at zero regardless of where the port is physically located. This allows FICON users to make use of high port count port blades with port indexes greater than 256.

2

The unique area assignments are based on the port index. This mode does not allow FICON users to make use of ports with an index greater than 256 (high ports of a high port count blade), but this mode is compatible with domain-index zoning. This parameter is configurable only if the switch is Virtual Fabric-aware and Virtual Fabric is enabled on the switch.

R_A_TOV

The resource allocation time out value specified in milliseconds. This variable works with the variable E_D_TOV to determine switch actions when presented with an error condition.

Allocated circuit resources with detected errors are not released until the time value has expired. If the condition is resolved prior to the time out, the internal time-out clock resets and waits for the next error condition.

E_D_TOV

Error detect time out value specified in milliseconds. This timer is used to flag a potential error condition when an expected response is not received within the set time limit. If the time for an expected response exceeds the set value, then an error condition occurs.

WAN_TOV

Wide area network time out value specified in milliseconds. This timer is the maximum frame time out value for a WAN, if any, interconnecting the Fibre Channel islands.

MAX_HOPS

Maximum hops is an integer that denotes the upper limit on the number of hops a frame might have to traverse to reach any destination port from any source port across the fabric.

Note that the R_A_TOV, E_D_TOV, WAN_TOV, and MAX_HOPS configuration parameters are interrelated. Assigning a specific value to one or more of these parameters can change the range of allowed values that can be assigned to the other parameters. As a result, you may not be able to set all the values within the range displayed against each parameter. To reduce problems, the configuration utility validates the modified parameter values and prompts you to re-enter some values, if the validation check fails.

Data Field Size

The data field size specifies the largest possible value, in bytes, for the size of a type 1 (data) frame. The switch advertises this value to other switches in the fabric during construction of the fabric as well as to other devices when they connect to the fabric. Setting this parameter to a value smaller than 2112 might result in decreased performance.

Sequence-Level Switching

When sequence-level switching is set to 1, frames of the same sequence from a particular source are transmitted as a group. When this feature is set to 0, frames are transmitted interleaved among multiple sequences.

Under normal conditions, sequence-level switching should be disabled for better performance. However, some host adapters have performance issues when receiving interleaved frames from multiple sequences. When there are such devices attached to the fabric, sequence-level switching should be enabled.

Disable Device Probing

When disable device probing is set to 1, devices that do not register with the Name Server will not be present in the Name Server data base. Set this mode only if the switch's N_Port discovery process (PLOGI, PRLI, INQUIRY) causes an attached device to fail.

Suppress Class F Traffic

By default, the switch can send Class F frames. When this option is turned on, Class F traffic is converted to Class 2 traffic before being transmitted.

Per-frame Route Priority

In addition to the eight virtual channels used in frame routing priority, support is also available for per-frame-based prioritization when this value is set. When Per-frame Route Priority is set to 1, the virtual channel ID is used in conjunction with a frame header to form the final virtual channel ID.

Long Distance Fabric

When this mode is set to 1, ISLs in a fabric can be up to 100 km long. The exact distance level is determined by the per-port configuration on the E_Ports of each ISL. Both E_Ports in an ISL must be configured to run the same long-distance level; otherwise, the fabric will be segmented.

An Extended Fabrics license is required to set this mode.

BB Credit

The buffer-to-buffer (BB) credit represents the number of buffers available to attached devices for frame receipt. The range of allowed values varies depending on other system settings (see Unicast-only Operation). Refer to the Fabric OS Administrator's Guide for more information on platform-specific BB Credit limitations.

Insistent Domain ID Mode

When this mode is set, the switch attempts to acquire from the fabric the domain number programmed in its "Switch Fabric Settings." If the operation fails, the switch will segment from the fabric. You must disable the switch before configuring this parameter.

Disable Default PortName

When this mode is set, the switch does not generate a default port name.

Display FDMI Host Name

When this mode is set, the switch displays the FDMI Host name. By default this feature is in OFF state.

Dynamic Portname

When enabled, this feature dynamically assigns port name with various fields such as switch name, port type, port index, and alias name. Dynamic Portname and Display FDMI Host Name features are mutually exclusive.

Remote Fosexec feature

The remote fosexec configuration is bi-directional. The configuration is checked when sending any fosexec request to a remote switch and also when receiving the request from a remote switch. Thus, both the sending and receiving switch must be configured with fosexec ON. By default remote fosexec feature is in OFF state.

High Integrity Fabric Mode

Disables or enables the system to check for FMS mode and all existing HIF parameters present in the switch. By default this feature is in OFF state.

Edge hold time

Configures the maximum time a frame can wait after it is received on the ingress port and before it is delivered to the egress port. If the frame waits in the egress buffer for more than the configured hold time, the switch drops the frame, replenishes sender's credit, and increments the counters er_tx_c3_timeout and er_rx_c3_timeout on the TX and RX ports respectively. The frame-timeout indicates a slow draining or a congestion or bottleneck in the fabric. Decreasing hold time on the edge switches may reduce frame drop counts in the core switches. This parameter is stored persistently in the configuration file. You can configure edge hold time on both default and logical switch.

The edge hold time configuration is a chip-based value and the configuration varies between 8 Gbps-capable, 16 Gbps-capable, and 32 Gbps-capable platforms. 8 Gbps-capable platform provides one register to store the edge hold time value and any change in this value will affect all ports in the chip. Therefore, the edge hold time configuration will not be changed for 8 Gbps-capable platform ports in a logical switch. The 8 Gbps-capable platform ports in a logical switch take the default edge hold time value (220 milliseconds) or the value configured in the default switch. Both 16 Gbps and 32 Gbps-capable platforms provide four registers to store the edge hold time configuration and therefore each port in a chip can be configured one of the four values.

The edge hold time parameter is enabled by default with a value of 220 milliseconds. The following are the three predefined edge hold time values:

80

Low edge hold time (in milliseconds).

220

Medium edge hold time (in milliseconds). This is the default value.

500

High edge hold time (in milliseconds).

User Defined

A user-defined value may be defined in the range of 80 - 500 milliseconds in increments of one. This value is only applicable to the default switch.

In a logical switch, the edge hold time configuration is updated only for 16 Gbps-capable ports. If 8 Gbps-capable ports are present in the logical switch, the SWCH-1025 RASLog message is triggered to indicate that 8 Gbps-capable ports are present and the edge hold time configuration will not change for these ports.

F-Port Device Update Mode

When enabled, this feature provides the ability to update NS entries when the base devices perform logout. This option can only be changed when a switch is disabled. In Fabric OS prior to 7.3.0, the details of devices logged in with FLOGI (base devices) with AL_PA 0x40 and 0xCO are not propagated to NS or FCP unless the devices are registered with NS. Since they cannot be probed, devices with these AL_PAs must initiate NS registration. If they do register with NS and then later logout, there can be multiple LUNs losing access during login time because the logged out base device entry is not removed from NS. Furthermore, the logged out base device cannot login to the fabric again. Enabling this update mode ensures NS and login database consistency.

Virtual Channel Settings

VC Priority specifies the class of frame traffic given priority for a virtual channel. The switch enables fine-tuning for a specific application by configuring the parameters for eight virtual channels. The first two virtual channels are reserved for switch internal functions and are not available for modification.

The default virtual channel settings have already been optimized for switch performance. Changing the default values can improve switch performance but can also degrade performance. Do not change these settings without fully understanding the effects of the changes.

The values for virtual channel settings are as follows:

Field	Default	Range
VC Priority 2	2	2 to 3
VC Priority 3	2	2 to 3
VC Priority 4	2	2 to 3
VC Priority 5	2	2 to 3
VC Priority 6	3	2 to 3
VC Priority 7	3	2 to 3

F_Port Login Parameters

Specifies the F_Port login parameters. The following F_Port login settings are configurable. Unless there are issues with F_Port staging, do not change default values. (* = multiplication symbol)

Field	Type	Default	Range
Maximum logins per switch	Number	For directors: 16 * the max number of physical ports	1 to 126 * the max
Logins per second	Number	0	0 to 100
Login stage interval (milli-seconds)	Number	0	0 to 10000
Stage FDISC logins with busy rejects:	Number	0	1 to 255
Enforce FLOGI/FDISC login:	Number	0	0 to 1
MAX num. of FLOGIs allowed	Number	100	0 to 100

Maximum logins per switch

Sets a switch-wide limit on allowed logins.

The following three parameters are related to staged F_Port logins by FLOGI requests and virtual device logins by FDISC(SID=0) requests.

Logins per second

Specifies the number of logins the switch accepts per second in staged F_Port bring up.

Login stage interval

Specifies the stage interval in staged F_Port bring up.

Stage FDISC logins with busy reject:

This parameter, if nonzero, enables staging of FDISC logins by rejecting the FDISC requests with "logical busy", when the requests are more than the number of configured "logins per second". It also specifies the number of FDISC requests that will always be accepted first without reject.

Enforce FLOGI/FDISC login

Setting this flag allows a second F_Port login (FLOGI/FDISC login) in the event of two devices attempting to log in with the same PWWN. In default mode (zero) the first FLOGI/FDISC login takes precedence over the second. When the mode is set to 1, the second FLOGI/FDISC login takes precedence over the first. All modes are for NPIV and

non-NPIV F-Ports. When mode is set to 2, on FLOGI login the first FLOGI takes precedence. On FDISC login, the second FDISC takes precedence. For more information, refer to "Configure FLOGI-time handling of duplicate PWWNs" section in the Fabric OS Administrator's Guide. You must disable the switch to change this parameter.

MAX num. of FLOGIs allowed

Specifies the number of FLOGIs the port can accept per second. The default value is 100. When the FLOGI limit is reached, the port will be fenced.

Zoning Operation Parameters

The following zoning operation parameter can be modified.

Disable NodeName Zone Checking

Specify 1 to disable using node WWN when specifying nodes in the zone database. Specify 0 to enable using node WWN when specifying nodes in the zone data. The default value is 0. This value must be set to 1 for interpretability.

Local TI Filtering

Specify on to enforce TI zone rules on the local devices. The default value is off. You must first disable the switch using the switchDisable command before enabling this feature.

RSCN Transmission Mode

The RSCN transmission modes and values are as follows:

End-device RSCN Transmission Mode

Values are as follows:

- 0** RSCN only contains single PID
- 1** RSCN contains multiple PIDs (Default)
- 2** Fabric addresses RSCN

Domain RSCN to End-device

Values are as follows:

- 0** Disabled. No domain RSCN is sent to the end-device for the switch IP address or name change.
- 1** Enabled. Domain RSCN is sent to the end-device for the switch IP address or name change.

Arbitrated Loop Parameters

Arbitrated Loop Parameter and their values are as follows:

Send FAN frames?

Specifies that fabric address notification (FAN) frames be sent to public loop devices to notify them of their node ID and address. When set to 1, frames are sent; when set to 0, frames are not sent. The default value is 1.

Enable CLOSE on OPEN received?

If this is set, a CLS is returned immediately to an OPN if no buffers are available. This is required for TachLite. The valid range is 0 to 4. The default value is 0.

Always send RSCN?

Following the completion of loop initialization, a remote state change notification (RSCN) is issued when FL_Ports detect the presence of new devices or the absence of preexisting devices. When set to 1, an RSCN is issued upon completion of loop initialization, regardless of the presence or absence of new or preexisting devices. When set to 0, an RSCN is not sent (default).

System Services Settings

The values for the System Services settings are as follows:

Disable RLS probing

Enables or disables the read link status (RLS) probing. Performed by the FCP daemon, RLS probing reads the link error block from the device. This extended link services command is defined by the FC standards. Refer to the FC standards for information. RLS probing is enabled by default, meaning "Disable RLS probing" is "off". "on" disables RLS probing.

Portlog Events Enable/Disable Settings

These settings determine whether or not various types of port events are logged.

Each event type displayed on the screen is enabled by default ("on"). When disabled, this event is not logged by the port log.

Application Attributes

A number of application attributes are configurable. The following table specifies the attributes for applications that can be modified.

Application Field		Type	Default	Range
ssl	Certificate File	string	[not-set]	varies
	CA Certificate File	string	[not-set]	varies
	Length of crypto key	number	[128]	40,56,128
rpcd	Secure RPCd Callback Secret	string	none	varies
Webtools	Basic User Enabled	boolean	no	no/yes
	Perform License Checking and Warning	boolean	yes	yes/no
	Allow Fabric Event Collection	boolean	yes	yes/no
	Login Session Timeout (in seconds)	number	200	60 to 432000

- Notes
- The maximum per port login limit is no longer configurable with this command. Use the portcfgNPiVPort --setloginlimit command to configure this parameter on a per port basis.

The Telnet interface is no longer configurable with this command. Use the ipFilter command to enable or disable the Telnet interface.

The SNMP attributes are no longer configurable with this command. Use the `snmpConfig --set seclvl` command to configure SNMP attributes.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable XISL use on a logical switch with FID 20:

```
switch:admin> setcontext 20

switch:admin> switchdisable

switch:admin> configure
Configure...

Fabric parameters (yes, y, no, n): [no] y

    Domain: (1..239) [1]
    Enable a 256 Area Limit
        (0 = No,
         1 = Zero Based Area Assignment,
         2 = Port Based Area Assignment): (0..2) [0] 1
    WWN Based persistent PID (yes, y, no, n): [no]
Allow XISL Use (yes, y, no, n): [yes]yes
R_A_TOV: (4000..120000) [10000]
E_D_TOV: (1000.. 5000) [2000]
WAN_TOV: (0..30000) [0]
MAX_HOPS: (7..19) [7]
Data field size: (256..2112) [2112]
Sequence Level Switching: (0..1) [0]
Disable Device Probing: (0..1) [0]
Suppress Class F Traffic: (0..1) [0]
Per-frame Route Priority: (0..1) [0]
Long Distance Fabric: (0..1) [0]
BB credit: (1..27) [16]
Disable FID Check (yes, y, no, n): [no]
Insistent Domain ID Mode (yes, y, no, n): [no]
Disable Default PortName (yes, y, no, n): [no]
Display FDMI Host Name (yes, y, no, n): [no]
Edge Hold Time(Low(80ms), Medium(220ms), High(500ms)
    UserDefined(80-500ms): (80..500) [500]
Remote Fosexec feature: (on, off): [on]
High Integrity Fabric Mode (yes, y, no, n): [no]
Virtual Channel parameters (yes, y, no, n): [no]
F-Port login parameters (yes, y, no, n): [no]
D-Port Parameters (yes, y, no, n): [no] yes
    Dynamic D-Port (on, off): [on]
    On Demand D-Port (on, off): [on]
RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
Zoning Operation parameters (yes, y, no, n): [no]
RSCN Transmission Mode (yes, y, no, n): [no]
Arbitrated Loop parameters (yes, y, no, n): [no]
System services (yes, y, no, n): [no]
```


configure

```
Portlog events enable (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
rpcd attributes (yes, y, no, n): [no]
webtools attributes (yes, y, no, n): [no]
switch:admin> switchenable
```

To enable Dynamic Area Mode on the default partition of the Brocade DCX:

```
switch:admin> switchdisable
switch:admin> configure
Configure...

Change fabric parameters? Y
  Domain: (1..239) [160]
  Enable 8 bit Dynamic Area Mode
    (0 = No,
     1 = Zero Based Area Assignment): (0..1) [0] 1
  R_A_TOV: (4000..120000) [10000]
  E_D_TOV: (1000..5000) [2000]
  WAN_TOV: (0..30000) [0]
  MAX_HOPS: (7..19) [7]
  Data field size: (256..2112) [2112]
  Sequence Level Switching: (0..1) [0]
  Disable Device Probing: (0..1) [0]
  Suppress Class F Traffic: (0..1) [0]
  Per-frame Route Priority: (0..1) [0]
  Long Distance Fabric: (0..1) [0]
  BB credit: (1..27) [16]
  Disable FID Check (yes, y, no, n): [no]
  Insistent Domain ID Mode (yes, y, no, n): [no]
  Disable Default PortName (yes, y, no, n): [no]
  Edge Hold Time(Low(80ms), Medium(220ms), High(500ms),
  UserDefined(80-500ms): (80..500) [500]
  Remote Fosexec feature: (on, off): [on]
  High Integrity Fabric Mode (yes, y, no, n): [no]
  Virtual Channel parameters (yes, y, no, n): [no]
  F-Port login parameters (yes, y, no, n): [no]
  D-Port Parameters (yes, y, no, n): [no] yes
    Dynamic D-Port (on, off): [on]
    On Demand D-Port (on, off): [on]
  RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
  Zoning Operation parameters (yes, y, no, n): [no]
  RSCN Transmission Mode (yes, y, no, n): [no]
  Arbitrated Loop parameters (yes, y, no, n): [no]
  System services (yes, y, no, n): [no]
  Portlog events enable (yes, y, no, n): [no]
  ssl attributes (yes, y, no, n): [no]
  rpcd attributes (yes, y, no, n): [no]
  webtools attributes (yes, y, no, n): [no]
```

SEE ALSO [configDefault](#), [configShow](#), [configureChassis](#), [ipAddrSet](#), [portCfgLongDistance](#), [switchDisable](#), [switchEnable](#), [upTime](#)

configureChassis

Changes chassis-level system configuration settings.

Synopsis **configurechassis**

Description Use this command to modify chassis-level system configuration settings.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately.

Use the configure command to modify switch configuration parameters. Use the configureChassis command to modify the following chassis configuration parameters:

- Cfgload attributes
- Custom Attributes
- System settings
- fos attributes

This command requires chassis permissions in both Virtual Fabric and non-Virtual Fabric environments.

The configureChassis command interactively presents a hierarchical menu. Each top-level heading and its associated subheadings consist of a text prompt, a selection of valid values, and a default value (in brackets).

The following keys control the execution of the command:

Return

When entered at a prompt with no preceding input, the command accepts the default value (if applicable) and moves to the next prompt.

Interrupt (Ctrl-C)

Aborts the command immediately and ignores all changes made.

End-of-file (Ctrl-D)

When entered at a prompt with no preceding input, terminates the command and saves changes made.

The following parameters can be modified with the configureChassis command:

Cfgload Attributes

Configures configuration upload and download parameters.

Enforce secure Config Upload/Download

Enables (yes) or disables (no) secure configuration upload or download. The default value is "no.

Add Suffix to the uploaded file name

Appends a suffix to the uploaded configuration file. The suffix includes the chassis name and a time stamp in the yyymmdd_hhmmss format. Refer to the example section for an illustration. This feature is disabled by default.

Do you want to enable auto firmwaresync

Enables the firmware from the active CP to synchronize automatically to the standby CP.

Custom Attributes

The following custom attributes can be modified.

config Index

OEM custom configuration. The range is 0 through 10000. The default is 0. This attribute is for internal use only.

System attributes

The following system-related parameters are configurable on a Virtual Fabric-aware switch.

system.blade.bladeFaultOnHwErrMsk

If this field is set to a value other than 0, then any nonfatal HW ASIC data parity error causes the problem blade to be powered off. The valid range is 0x0 to 0xffff. The default value is 0x0.

system.cpuLoad

Sets a threshold to define internally when the CPU is busy. The default threshold is 121, which represents a CPU instantaneous load average of 1.21 in the `top` command. The range is 10 to 121 (representing CPU load thresholds of .10 to 1.21).

system.i2cTurboCnfg

Configures the i2c driver that manages processing of the i2c interrupts. The I2C Turbo mode is enabled (Setting 1) by default on all 16G platforms running Fabric OS v7.0 or later. The mode is disabled by default for any switches capable of running Fabric OS v6.4x and Fabric OS v6.3x. An upgrade preserves the pre-upgrade configuration. The value shown in brackets is the current value. The following values are supported:

0

Disables the I2C Turbo mode. When the I2C Turbo mode is disabled, every byte received by an i2c interrupt is scheduled for processing by the given task or process. This permits other high priority processes to complete, thereby allowing for possible delay in the receipt of the I2C response message.

1

Enables the I2C Turbo mode for SFP transceivers only. This is the default setting. When the I2C Turbo mode is enabled, every I2C byte received from an SFP transceiver is processed by the interrupt handler itself, thus preventing any higher priority processes from preempting this processing.

2

For internal use only.

fos attributes

The following chassis-wide CS_CTL mappings can be modified:

CSCTL QoS Mode

Configures the CS_CTL to virtual channel (VC) mapping. After changing the CS_CTL QoS mode in a chassis, you must run the `slotPowerOff` and `slotPowerOn` commands for all the edge blades; In a fixed-port switch, you must reboot the switch. Because this mode change affects the persistent storage in the switch and chassis, rebooting is required for the new CS_CTL QoS mode to become effective.

- 0 Clears any previously configured CS_CTL to VC mapping and sets one-to-one mapping between a CS_CTL value and VC number for 8 Gbps-capable and 16 Gbps-capable ASIC. The CS_CTL values are divided into three groups: 1-8 (low priority), 9-16 (medium priority), and 17-24 (high priority). This is the default mode.
- 1 Sets the CS_CTL to VC mapping to support three CS_CTL values: 1 (low priority), 2 (medium priority), and 3 (high priority). Each CS_CTL value can map to more than one VC depending on the underlying support from ASIC. This is the auto mode. For more information about CS_CTL-based frame prioritization, refer to the Fabric OS Administrator's Guide.

Chassis SDDQ Limit

Specifies the number of user ports that can be quarantined in the chassis or unit. Valid values are 0 through 32. The default value is 10. The slow drain device quarantine (SDDQ) feature automatically isolates the slow-drain flows to a low priority VC from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC.

vTap and QoS High Priority Zone Compatibility Mode

Enables or disables vTap and QoS high priority zone compatibility mode. If vTap and QoSH compatibility is enabled and affected vTap features are also active on the local switch, then vTap/QoSH compatibility cannot be disabled. The vTap features must be deactivated on the local switch before disabling vTap and QoSH compatibility. By default, this mode is disabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To add a suffix to the uploaded file name:

```
switch:admin> configurechassis

Configure...

cfgload attributes (yes, y, no, n): [no] y

  Enforce secure config Upload/Download (yes, y, no, n): [no]
  Add Suffix to the uploaded file name (yes, y, no, n): [no] y
  Do you want to enable auto firmwaresync (yes, y, no, n): [no]

Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no]
```

To change the CS_CTL-based frame prioritization to default mode (one-to-one mapping):

```
switch:admin> configurechassis
Configure...

cfgload attributes (yes, y, no, n): [no]
Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no] y
  CSCTL QoS Mode (0 = default; 1 = auto mode): (0..1) [1] 0
  Chassis SDDQ Limit: (0..32) [10]
```

To change the slow drain device quarantine limit:

```
switch:admin> configurechassis
Configure...

cfgload attributes (yes, y, no, n): [no]
Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no] y
  CSCTL QoS Mode (0 = default; 1 = auto mode): (0..1) [1]
  Chassis SDDQ Limit: (0..32) [10] 20
```

SEE ALSO [configDefault](#), [configShow](#), [chassisEnable](#), [chassisDisable](#), [configure](#), [ipAddrSet](#), [portCfgLongDistance](#), [switchDisable](#), [switchEnable](#), [upTime](#)

creditRecovMode

Enables credit loss recovery on back-end ports of 8Gbps-capable, 16Gbps-capable, 32 Gbps-capable blades, and time-out based credit loss detection of 8 Gbps-capable front-end ports.

Synopsis

creditrecovmode --cfg [off | onLrOnly | onLrThresh]
[-lrthreshold *threshold*]

creditrecovmode --fault [edgeblade | coreblade | edgecoreblade]

creditrecovmode --check [*slot*]*blade_port*,VC

creditrecovmode --fe_crdloss [off | on]

creditrecovmode --be_crdloss [off | on]

creditrecovmode --be_losync [off | on]

creditrecovmode --linkreset [*slot*]*blade_port*

creditrecovmode --show

creditrecovmode --help

Description

Use this command to enable or disable credit recovery of backend ports and to display the configuration. When this feature is enabled, credit is recovered on backend ports (ports connected to the core blade or core blade backend ports) when credit loss has been detected on these ports. If complete loss of credit on a 8 Gbps-capable backend port causes frame timeouts, a link reset will be performed on that port regardless of the configured setting, even if that setting is --cfg off. When used with the --cfg onLrOnly option, the recovery mechanism takes the following escalating actions:

- When it detects credit loss, it performs a link reset and logs a RASlog message (RAS Cx-1014).
- If the link reset fails to recover the port, the port reinitializes. A RASlog message is generated (RAS Cx-1015). Note that the port reinitialization does not fault the blade.
- If the port fails to reinitialize, the port is faulted. A RASlog message (RAS Cx-1016) is generated.
- If a port is faulted and there are no more online backend ports in the trunk, the core blade is faulted. (Note that the port blade will always be faulted.) A RASlog message is generated (RAS Cx-1017).

When used with the --cfg onLrThresh option, recovery is attempted through repeated link resets and a count of the link resets is kept. If the threshold of more than the configured threshold value (using the -lrthreshold option) per hour is reached, the blade is faulted (RAS Cx-1018). Note that regardless of whether the link reset occurs on the port blade or on the core blade, the port blade is always faulted.

The onLrOnly and onLrThresh options activate link reset for both credit loss and loss of synchronization. The be_crdloss option activates link reset for credit loss only. The be_losync option activates link reset for loss of synchronization only.

If you suspect complete credit loss on a particular virtual channel (VC) on a particular backend port, use the `--check` option to examine that particular backend port and VC for credit loss. If the command detects complete credit loss, it reports the information. If, in addition, you have enabled link resets on backend ports, this command will perform a link reset on the link in an attempt to recover from the problem. You must explicitly initiate this check and it is a one-time operation. In other words, this command does not continuously monitor for credit loss in the background. Detection of credit loss takes 2 to 7 seconds, after which the results of the operation are displayed. A link reset also generates a RASlog message.

For more information on the RASlog messages, refer to the Fabric OS Message Reference.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on backend ports of 8 Gbps-capable, 16 Gbps-capable, and 32 Gbps-capable blades.

The `--check` option is supported only on modular switches, and only on links between 8 Gbps-capable backend ports or the 8 Gbps-capable to 16 Gbps-capable backend ports. AP blades are not supported.

The `--fe_crdloss` option is supported only on 8 Gbps-capable front-end interswitch link (ISL) ports.

Operands This command has the following operands:

--cfg

Configures credit recovery for backend ports. Use one of the following required recovery options to configure credit recovery:

onLrOnly

Enables the backend port recovery feature in link reset mode.

onLrThresh

Enables the backend port recovery feature in link reset threshold mode.

off

Disables the backend port credit recovery feature.

-lrthreshold *threshold*

Specifies the link reset threshold value. The default value is 2. Note that the threshold value set using this option will apply only when the recovery mode is onLrThresh.

--fault

Configures the blade fault option. Valid values are as follows:

edgeblade

The edge blade alone is faulted when the link reset threshold is reached.

coreblade

The core blade alone is faulted when the link reset threshold is reached.

edgecoreblade

The edge blade is faulted the first two times the link reset threshold value is reached. If the threshold value is reached the third time, the core blade is faulted.

--fe_crdloss	Configures time-out based credit loss detection of 8 Gbps-capable front-end ISL links. This feature is disabled by default.
off	Disables credit loss detection on 8 Gbps-capable front-end ports.
on	Enables credit loss detection on 8 Gbps-capable front-end ports.
--be_crdloss	Activates link reset when credit loss occurs on backend ports. This feature is disabled by default.
off	Disables link reset for credit loss on backend ports.
on	Enables link reset for credit loss on backend ports.
--be_losync	Activates link reset when loss of synchronization occurs on backend ports. This feature is disabled by default.
off	Disables link reset for loss of synchronization on backend ports.
on	Enables link reset for loss of synchronization on backend ports.
-check	Performs the on-demand detection of credit loss on a given backend port and VC. This operand is optional and exclusive; when you specify this option you cannot use the --cfg options at the same time. You must specify a port and a VC, separated by a comma. A space before the comma is not permitted.
<i>slot/blade_port</i>	Specifies the backend port that is to be examined for credit loss. The port number must be the blade port number, because this is a backend port. The blade port number can be located in the "Bpt" column output of the bladePortMap command. Note that the bladeportmap command requires root permissions.
<i>VC</i>	Specifies the Virtual Channel number. The valid range is from 1 through 31. VC 0 is invalid.
--linkreset <i>slot/blade_port</i>	Performs a link reset on the specified front-end or back-end blade port. The blade port number can be located in the "Bpt" column output of the bladePortMap command. The bladeportmap command requires root permissions.
--show	Displays the backend port credit recovery configuration as enabled or disabled. In addition, the output indicates whether link reset mode or link reset threshold mode is configured.
--help	Displays the command usage.

Examples

To enable backend port credit loss recovery with the link reset only option and to display the configuration:

```
switch:admin> creditrecovmode --cfg onLrOnly
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrOnly
C2 FE Complete Credit Loss Detection is Enabled
```

To enable backend port credit loss recovery with the link reset threshold option and to display the configuration:

```
switch:admin> creditrecovmode --cfg onLrThresh
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Enabled with LrThresh
C2 FE Complete Credit Loss Detection is Enabled
```

To disable backend port credit loss recovery and to display the configuration:

```
switch:admin> creditrecovmode --cfg off
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Disabled
C2 FE Complete Credit Loss Detection is Enabled
```

To configure a fault option and to display the configuration:

```
switch:admin> creditrecovmode --fault edgecoreblade
switch:admin> creditrecovmode --show
Internal port credit recovery is Disabled
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 2
Fault Option : EDGECOREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To disable credit loss detection on 8 Gbps-capable front-end ports:

```
switch:admin> creditrecovmode --fe_crdloss off
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Disabled
C2 FE Complete Credit Loss Detection is Disabled
```

To examine a backend port for credit loss:

```
switch:admin> creditrecovmode --cfg off
switch:admin> creditrecovmode --check 2/32,1
Started Credit loss Detection on slot 2 port 32 VC 1.
Please wait....
Detected credit loss.
Link Reset performed.
```

To activate credit loss and loss of sync detection with link reset and set link reset threshold value to 10:

```
switch:admin> creditrecovmode --cfg onLrThresh --lrthreshold 10
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrThresh
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 10
Fault Option : COREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To disable link reset for credit loss alone:

```
switch:admin> creditrecovmode --be_crdloss off  
switch:admin> creditrecovmode --show  
Internal port credit recovery is Disabled  
Back end port Loss of Sync's Link Reset is Enabled with LrThresh  
LR threshold (currently activated): 2  
Fault Option : COREBLADE  
C2 FE Complete Credit Loss Detection is Disabled
```

To enable link reset for loss of sync alone:

```
switch:admin> creditrecovmode --be_losync on  
switch:admin> creditrecovmode --show  
Internal port credit recovery is Enabled with LrThresh  
Back end port Loss of Sync's Link Reset is Enabled with LrThresh  
LR threshold (currently activated): 2  
Fault Option : COREBLADE  
C2 FE Complete Credit Loss Detection is Disabled
```

SEE ALSO None

dataTypeShow

Displays sample data stream types used in some diagnostic commands.

Synopsis **datatypeshow** [-seed *value*]

Description Use this command to display sample data stream types used in diagnostic commands. There are 25 different sample data types. The command displays an example of each data stream.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

-seed *value*

Specify the data pattern seed value. This operand is optional. The default value is 0.

Examples To display sample data streams you can use with diagnostics:

```
switch:admin> datatypeshow
```

Pattern	type	example
BYTE_FILL	1	15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15
WORD_FILL	2	0015 0015 0015 0015 0015 0015 0015 0015
QUAD_FILL	3	00000015 00000015 00000015 00000015
BYTE_NOT	4	15 ea 15 ea 15 ea 15 ea 15 ea 15 ea 15 ea
WORD_NOT	5	0015 ffea 0015 ffea 0015 ffea 0015 ffea
QUAD_NOT	6	00000015 fffffffea 00000015 fffffffea
BYTE_RAMP	7	15 16 17 18 19 1a 1b 1c 1d 1e 1f 20 21 22 23 24
WORD_RAMP	8	0015 0016 0017 0018 0019 001a 001b 001c
QUAD_RAMP	9	00000015 00000016 00000017 00000018
BYTE_LFSR	10	1c 38 71 e3 c6 8d 1a 34 68 d0 a0 41 82 04 09 12
RANDOM	11	14 5b 52 66 77 c5 bc 76 5a 6e d3 e2 de 3b 6b 40
CRPAT	12	bc bc 23 47 6b 8f b3 d7 fb 14 36 59 bc bc 23 47
CSPAT	13	7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f
CHALF_SQ	14	b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5
CQTR_SQ	15	d9 26 d9 26 d9 26 d9 26 d9 26 d9 26 d9 26 d9
RDRAM_PAT	16	ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00
jCRPAT	17	be d7 23 47 6b 8f b3 14 5e fb 35 59 be d7 23 47
jCJTPAT	18	7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
jCSPAT	19	7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f
PRED_RAND	20	00000015 11111126 22222237 33333348
SMI_TEST	21	00000015 fffffffea 00000015 fffffffea
CJPAT	22	7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
QUAD_NOTP	23	00000015 ffffffffa 00000015 ffffffffa
JSPAT	24	7e 7e 7e 7e 7e 7e 7e 7e 9e f8 50 81 e7 50 aa c9
JTSPAT	25	7e 7e 7e 7e 7e 7e 7e 7e 9e f8 50 81 e7 50 aa c9

SEE ALSO None

date

Displays or sets the switch date and time.

Synopsis **date** ["*newdate*"]

Description Use this command to display or set the date and time. All switches maintain current date and time in flash memory. Date and time are used for logging events. Normal switch operation does not depend on the date and time; a switch with incorrect date values continues to function properly.

This command sets a common date and time for the entire fabric. A change in date or time to one switch is forwarded to the principal switch and distributed to the fabric. It may take up to 64 seconds for the switches in the fabric to be synchronized. However, if an FCS policy is enabled, this command can be executed only on the Primary FCS switch, and only the primary FCS switch can distribute the time stamp to all other switches in the fabric.

If Virtual Fabrics are enabled, the date is set for the entire chassis, including all logical switches.

The date specified is always the local switch time, taking into account daylight saving time and the time zone setup of the switch. Each switch takes care of converting the GMT time distributed fabric-wide to its local time. Refer to `tsTimeZone` for more information on time zone support.

If the switch is operating in FICON Management Server mode (`fmsMode`), setting the date is subject to the director clock alert mode (DCAM). If DCAM is 1, the operator issues a warning that the switch date is about to change. The operator then prompts to confirm the change with a yes or no response.

Notes This command becomes read-only if external NTP synchronization is enabled. For more information, refer to `tsClockServer`.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

"<i>newdate</i>"	Specify the new date and time enclosed in double quotation marks. this operand is optional; if omitted, the current date and time is displayed. Date and time are specified as a string in the mmddhhmmyy format.
<i>mm</i>	Specifies the month. Valid values are 01 to 12.
<i>dd</i>	Specifies the date. Valid values are 01 to 31.
<i>hh</i>	Specifies the hour. Valid values are 00 to 23.
<i>mm</i>	Specifies the minutes. Valid values are 00 to 59.

date

yy

Specifies the year, valid values are 00 to 37 and 70 to 99. Year values from 70 to 99 are interpreted as 1970 to 1999; year values from 00 to 37 are interpreted as 2000 to 2037.

Examples To display the current date and time and then modify it:

```
switch:admin> date  
Tue Oct 22 14:05:10 UTC 2013  
switch:admin> date "1022140613"  
Tue Oct 22 14:06:00 UTC 2013
```

SEE ALSO [errShow](#), [portLogShow](#), [tsClockServer](#), [tsTimeZone](#), [upTime](#)

dbgShow

Displays current values of debug and verbosity levels of the specified module.

Synopsis **dbgshow** [*module_name*]

Description Use this command to display the current values of debug and verbosity levels of the specified module. If no module name is specified, this command displays a listing of all modules along with debug and verbosity levels.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

module_name

Specifies the name of the module for which you want to view the debug and verbosity levels. Module names are case-sensitive. This operand is optional.

Examples To display information about a specific module named NS:

```
switch:admin> dbgshow NS  
Module NS,          debug level = 1, verbose level = 1
```

SEE ALSO [setDbg](#)

defZone

Sets or displays the default zone access mode.

Synopsis **defzone [--noaccess | --allaccess | --show]**

Description Use this command to display or set the Default Zone access mode. Setting the Default Zone mode initializes a zoning transaction (if one is not already in progress), and create reserved zoning objects.

A default zone controls device access when zoning is not enabled. When a user-specified zoning configuration is not enabled, Default Zone is in effect, allowing access to all devices. When a user-specified zone configuration is enabled, it overrides the Default Zone access mode.

Notes This command must be issued from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Zone object names beginning with the d_default_ prefix are reserved for default zoning use. Editing of these objects is not permitted. Therefore, cfgShow does not display the names of these objects.

If d_default_Cfg is the effective zone configuration, both cfgShow and cfgActvShow do not display d_default_Cfg as the effective zone configuration.

Operands This command has the following operands:

--noaccess

Sets the default zone access mode to No Access, initializes a zoning transaction (if one is not already in progress), and creates the reserved zoning objects equivalent to the following zoning commands:

- `cfgCreate "d_default_Cfg","d_default_Zone"`
- `zoneCreate "d_default_Zone","00:00:00:00:00:00:00:01"`

A `cfgSave`, `cfgEnable`, or `cfgDisable` command must be issued after issuing this command to commit the changes and distribute them to the fabric; for example:

- `defzone --noaccess`
- `cfgsave`

An audit log record is generated for each execution of this command.

When No Access default zone is activated, the following conditions apply:

- If the current effective zone configuration is disabled with the `cfgDisable` command, the local switch converts this command to the equivalent of `cfgEnable "d_default_Cfg"`.
- If zoning receives a `cfgDisable` command from a remote switch that does not support default zoning, zoning rejects the `cfgDisable` command in the second phase of RCS because the remote switch does not convert the `cfgDisable` command to `cfgEnable "d_default_Cfg"`.

--allaccess

Sets the default zone access mode to All Access, initiates a zoning transaction (if one is not already in progress), and deletes the reserved zoning objects by performing the equivalent to the following zoning commands:

- `cfgDelete "d_default_Cfg"`
- `zoneDelete "d_default_Zone"`

A `cfgSave`, `cfgEnable`, or `cfgDisable` command must be performed subsequent to the use of this command to commit the changes and distribute them to the fabric. If a `cfgSave` is performed and the fabric is already in the No Access default zone state, a `cfgDisable` is sent to the fabric. For example:

- `defzone --allaccess`
- `cfgsave`

An audit log record is generated for each use of this command.

--show

Displays the current state of the default zone access mode.

Examples

To create a default zone configuration:

```
primaryfcs:admin> cfgactvshow
Effective configuration:
No Effective configuration

primaryfcs:admin> defzone --noaccess

primaryfcs:admin> cfgsave

primaryfcs:admin> defzone --show
Default Zone Access Mode
committed - No Access
transaction - No Transaction

primaryfcs:admin> cfgactvshow
Effective configuration:
No Effective configuration: (No Access)
```

SEE ALSO

None

diagClearError

Clears the diagnostics failure status.

Synopsis **diagclearerror** [--slot] *slot* **-all**

Description Use this command to clear the diagnostics failure status. When used without operands, this command clears all port failure flags.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

--slot *slot*

Specify the slot on which to clear the diagnostics failure status. The default is set to 0 and designed to operate on fixed-port-count products.

-all

If specified, all blades clear.

Examples To clear the diag software flag:

```
switch:admin> diagclearerror --slot 8
                ERROR: DIAG CLEARERR
Diagnostics Errors Cleared, port: 8/31
Err# 0120041 081F
```

SEE ALSO None

diagDisablePost

Disables the power-on self-test (POST).

Synopsis **diagdisablepost**

Description Use this command to disable POST. A reboot is not required for this command to take effect. Use the `diagPost` command to display the current POST status, and use `diagEnablePost` to enable POST.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable the POST:

```
switch:admin> diagdisablepost
Config update Succeeded
Diagnostic POST is now disabled.
```

SEE ALSO [diagEnablePost](#), [diagPost](#)

diagEnablePost

Enables the power-on self-test (POST).

Synopsis **diagenablepost**

Description Use this command to enable POST. A reboot is not required for this command to take effect. POST includes two phases: POST Phase I mainly tests hardware and POST Phase II tests system functionality.

Use the diagPost command to display the current POST status, and use diagDisablePost to disable POST.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable POST:

```
switch:admin> diagenablepost
Config update Succeeded
Diagnostic POST is now enabled.
```

SEE ALSO [diagDisablePost](#), [diagPost](#)

diagHelp

Displays diagnostic command information.

Synopsis **diaghelp**

Description Use this command to display a short description of diagnostic commands.

Use default operands when running diagnostics commands. Non-default settings require detailed knowledge of the underlying hardware and are intended for support personnel only. Contact support if you want to use these operands.

Notes The diagHelp command displays diagnostic commands that may not be available. Execute help command to verify availability.

Operands None

Examples To display diagnostic command information:

```
switch:admin> diaghelp
bportloopbacktest      Functional test of port via
                        blade processor path.
bpturboramtest          MBIST test for AP blade BP ASICs
ceepportloopbacktest    Functional test of port N->N path.
ceeturboramtest         MBIST test for ASICs
(output truncated)
```

SEE ALSO None

diagPost

Displays the diagnostic power-on self-test (POST) configuration.

Synopsis **diagpost**

Description Use this command to display the current POST configuration. Use diagEnablePost or diagDisablePost to modify the POST configuration.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the current POST configuration:

```
switch:admin> diagpost  
Diagnostic POST is currently disabled.
```

SEE ALSO None

diagRetry

Sets or displays diagnostic retry mode.

Synopsis **diagretry** [*mode* | **-show**]

Description Use this command to enable retry mode if the mode value is nonzero and to disable the retry mode if the mode value is 0. The mode value is saved in nonvolatile memory until you change the mode. Changes made by this command do not require a reboot to take effect.

Retry mode modifies the behavior of the diagnostic test methods, power-on self-test (POST), and burn-in scripts. The exact behavior depends on the tests and scripts that are run.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operands:

mode

Specify 1 to enable retry mode. Specify 0 to disable the feature.

-show

Displays the current mode setting. The --show option is equivalent to using the command without operands.

Examples To view and modify the current retry mode value:

```
switch:admin> diagretry -show
Diagnostic Retry Mode is currently enabled.
```

```
switch:admin> diagretry 0
Config update Succeeded
```

```
Diagnostic Retry Mode is now disabled.
```

```
switch:admin> diagretry 1
Config update Succeeded
Diagnostic Retry Mode is now enabled.
```

SEE ALSO None

diagShow

Displays diagnostics status.

Synopsis **diagshow**
 [**--slot** *number*]
 [**-post**]
 [**-port** *number*]
 [**-use_bports** *value*]

Description Use this command to display the diagnostics status for the specified list of ports.

Notes You cannot interrupt the test by pressing the return key (<cr>).

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operands:

- slot *number***
Specify which slot to operate on. If this option is not specified, the default slot 0 is used. The default slot is designed to operate on fixed-port-count products. By default, this command displays information for all user ports in the system. Default slot 0 is not valid in a chassis system.
- post**
Displays the status of the last run power-on self-test (POST) on the specified slot. This operand is supported only on 32 Gbps-capable platforms.
- port *number***
Displays status of the specified user slot. This is the default behavior if the -post option is not specified.
- use_bports *value***
If this value is nonzero, this command displays the diagnostics status for the blade ports specified in -use_bports; otherwise, the command displays information for the user ports specified in -uports. The default value is 0.

Examples To display diagnostic status on a switch blade:

```
switch:admin> diagshow
Slot#           Switch Type           ID   Status   Rev#   Blade   Post Status
0               Fixed Configuration Switch 171  ENABLED  2.0    FX8-24   POST PASSED
(output truncated)
```

SEE ALSO [itemList](#)

diagStatus

Displays currently running diagnostic tests.

Synopsis **diagstatus** [*slotnumber*]

Description Use this command to display currently running diagnostic test names.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

slotnumber

Specifies the slot number to display diagnostic test names. If omitted, information for all blades in the system is displayed.

Examples To display currently running diagnostic tests:

```
switch:user> diagstatus
Diagnostic status for slot: 1.
Diag executing "NONE"
Diagnostic status for slot: 2.
Diag executing "NONE"

Diagnostic status for slot: 3.
Diag executing "NONE"
Diagnostic status for slot: 4.
Diag executing "NONE"
(output truncated)
```

SEE ALSO None

distribute

Distributes data to switches in a fabric.

Synopsis **distribute -p *policy_list* -d *switch_list***

Description Use this command to distribute data to a specified list of switches in the fabric. The distributed data must be from the list of currently supported policy sets:

SCC

Switch Connection Control Policy

DCC

Device Connection Control Policy

PWD

Password Database and Password Configuration Policy

AUTH

E_Port and F_Port Authentication Policy

FCS

Fabric Configuration Server Policy

Each supported database has a switch-local configuration parameter that controls whether the database can be distributed and accepts distributions. Use the `fddCfg` command to view and modify these parameters.

Notes IP Filter policies cannot be distributed with the `distribute` command. Use the `chassisDistribute` command.

The password database received from a switch running pre-v6.3.0 firmware will be rejected by a Virtual Fabric-enabled v6.3.0 chassis if it has more than one logical switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

If FCS policy is enabled, only primary FCS switch can distribute the data.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-p *policy_list*

Specify the list of policy sets, also called security databases, to be distributed. *policy_list* is a semicolon-separated list. Valid values include SCC, DCC, PWD, AUTH, and FCS.

-d *switch_list*

Specify the list of switches that should receive the data distribution. The *switch_list* is a semicolon-separated list of one of the following:

- Switch domain IDs
- Switch names
- Switch WWNs

A wildcard (*) may be specified to include all switches in the fabric that support the distribute feature.

Examples

To distribute the Switch Connection Control Policy and Device Connection Control Policy to domains 3 and 5 in the fabric:

```
switch:admin> distribute -p "SCC;DCC" -d "3;5"
```

To distribute the Switch Connection Control Policy, Fabric Configuration Server Policy, and Password database to all domains in the fabric that support the distribute feature:

```
switch:admin> distribute -p "SCC;FCS;PWD" -d "**"  
Wildcard domains are:  
1 3 5
```

To distribute the FCS policy, and the Password database to all domains in the fabric that support the distribute feature:

```
switch:admin> distribute -p "FCS;PWD" -d "**"
```

To distribute the AUTH and FCS policies to all switches in the fabric:

```
switch:admin> distribute -p "AUTH;FCS" -d "**"
```

To distribute the AUTH and SCC policies to domains 1 and 3 in the fabric:

```
switch:admin> distribute -p "AUTH;SCC" -d "1;3"
```

SEE ALSO [fddCfg](#)

dlsReset

Disables Dynamic Load Sharing (DLS).

Synopsis **dlsreset**

Description Use this command to disable Dynamic Load Sharing.

If DLS is turned off, load sharing calculations are used only to place new routes. Once placed, existing routes are never moved from one output E_Port to another, unless the original output E_Port is no longer a recognized path to the remote domain. Optimal balance is rarely achieved with this setting. Refer to the dlsSet help page for a full description of load sharing options, including the Lossless feature and the E_Port Balance Priority feature.

The behavior of this command depends on the routing policies configured on the switch:

- If a port-based routing policy is in place, DLS is disabled by default, and dlsReset returns the DLS setting to default. This command resets the Lossless, and the E_Port Balance Priority features along with the DLS feature and returns a message stating that "DLS is not set".
- If an exchange-based routing policy is in place, DLS is always enabled. It cannot be disabled and the dlsReset command fails. The command generates a message stating that "DLS is enabled and cannot be changed with the current routing policy". If Lossless is enabled, the feature remains enabled until you disable it with the dlsSet --disable -lossless command. If E_Port Balance Priority is enabled, the feature remains enabled until you disable it with the dlsset --disable -eportbal command.
- If DLS is already disabled, the command output confirms the disabled status: "DLS is not set (unchanged)."
- If two-hop lossless DLS is enabled while DLS is disabled, the command output shows the message: "Two-hop lossless requires LosslessDLS be enabled prior to enabling."

Refer to aptPolicy for information on routing policies.

Notes The Lossless feature is not supported on GbE ports and FCoE ports. On unsupported platforms, this command exits with an appropriate message.

On platforms that do not support the E_Port Balance Priority feature, the command output indicates that the feature is not supported.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable the Dynamic Load Sharing option on a switch with a port-based routing policy and DLS enabled:

```
switch:admin> dlsreset
DLS is not set
```

To execute dlsReset on a switch with an exchange-based routing policy and DLS enabled:

```
switch:admin> dlsreset
DLS is enabled and cannot be changed with the current routing policy
```

SEE ALSO [aptPolicy](#), [dlsSet](#), [dlsShow](#)

dlsSet

Enables Dynamic Load Sharing (DLS) without frame loss.

Synopsis

dlsset

dlsset --enable -lossless

dlsset --enable -eportbal

dlsset --enable -twohop

dlsset --disable -lossless

dlsset --disable -eportbal

dlsset --disable -twohop

dlsset --rebalance

dlsset --rebalance -all

dlsset --help

Description

Use this command to enable or disable lossless Dynamic Load Sharing (DLS) in the event of a fabric change, to configure DLS without frame loss, and to display the DLS configuration.

Use this command to enable or disable the E_Port Balance Priority feature. Enabling E_Port balancing causes the E_Port load to be even across all E_Ports to the same domain. E_Port balancing is disabled by default.

Dynamic load sharing optimizes the utilization of the interswitch links (ISLs) by rebalancing the paths going over the ISLs whenever there is a fabric event that may result in a sub-optimal utilization of the ISL. Dynamic rebalancing can be triggered by any one of the following events:

- A change in the fabric occurs.
- A local E_Port (including trunk ports) goes up or down.
- A local Fx_Port goes down.

When used without operands, this command enables Dynamic Load Sharing on a switch (legacy DLS behavior). Frames may be lost during reroute operations. If the switch has an exchanged-based routing policy, DLS is enabled by default and this command fails with the following message: "DLS is enabled and cannot be changed with the current routing policy."

During the load sharing recomputation, existing routes may be moved to maintain optimal load balance. Frame loss is unavoidable when a port goes down. To prevent frames from being lost during this operation, you can enable DLS without frame loss by issuing this command with the --enable -lossless option.

Dynamic load sharing without frame loss is supported in logical fabrics and is configured per logical switch. However, there is a potential impact on other logical switches because they share the same hardware. Chassis permissions are required to configure DLS in a logical fabric environment.

For example, assume a chassis is partitioned as follows: logical switch LS1 consists of ports 1/0-1/5, and logical switch LS2 consists of ports 1/6-1/10. Lossless is enabled on logical switch LS1. Because the ports 1/0-1/10 share the same chip, traffic in LS2 is affected whenever traffic for LS1 on ports 1/0-1/5 is rebalanced. The impact on LS2 depends on the configuration on LS2:

- If the Lossless feature is enabled on LS1, traffic pauses and resumes without frame loss on both switches at the same time.
- If the Lossless feature is disabled on LS1, traffic on LS2 is not affected.

Notes

For switches running Fabric OS v7.1.0 or later, you can enable Lossless (or enable Fabric Management Server mode) when XISL is enabled and enable XISL when Lossless or Fabric Management Server mode is enabled.

When you downgrade from Fabric OS v7.1.x to Fabric OS v7.0.x the following rules apply: If Lossless (or Fabric Management Server mode) and XISL use are not enabled at the same time, firmware download can be executed. If both of them are enabled, firmware download is rejected with an error message.

If the active control processor (CP) runs Fabric OS v7.1.x or later, and the standby CP runs Fabric OS v7.0.x and if both Lossless (or Fabric Management Server mode) and XISLs are enabled, High Availability synchronization will fail. Otherwise, standby CP will synchronize with the active CP. After the synchronization of the active and standby CP, enabling Lossless (or Fabric Management Server mode), when XISL is enabled, is rejected with an error message. Enabling XISL, when Lossless (or Fabric Management Server mode) is enabled, is also rejected with an error message.

Use the configure command to disable XISL use.

Lossless is supported with both exchange-based and port-based routing policies. Behavior depends on the kind of policy configured and concurrent IOD settings. Refer to the Fabric OS Administrator's Guide for information on how to optimize your configuration. Refer to the aptPolicy help page for more information on routing policies.

The Lossless feature is not supported on GbE ports and FCoE. On unsupported platforms, this command exits with an appropriate message.

When the E_Port Balance Priority feature status is changed using --enable -eportbal or --disable -eportbal, the status of the DLS and Lossless features remains unchanged. The E_Port Balance Priority feature is supported only on multi-ASIC platforms like Brocade 6520, DCX 8510-8, and DCX 8510-4.

Two-hop Lossless DLS is not supported over LISLs.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--enable -lossless

Enables the Lossless feature. Frame loss is reduced while the path is rerouted. If DLS is set on the switch, this command adds the Lossless feature to the existing DLS legacy mode. If DLS is not set on the switch, this command enables both DLS and the Lossless feature. The Lossless feature is disabled by default in Gen 5 switches; it is enabled by default in Gen 6 switches.

--disable -lossless

Disables the previously enabled Lossless feature. Execution of this command is equivalent to the legacy dlsSet command. Dynamic load balancing is enforced but not without frame loss. DLS (legacy mode) continues to be enabled after Lossless is disabled. Use dlsReset to disable DLS completely.

--enable -eportbal

Enables the E_Port Balance Priority feature. The E_Port load is rebalanced when topology changes occur, such as an E_Port going offline and then online. If DLS is disabled on the switch, it remains disabled with this command.

--disable -eportbal

Disables the E_Port Balance Priority feature.

--enable -twohop

Enables two-hop lossless DLS. When enabled, this enhancement coordinates route updates of the switches in the fabric such that the intermediate switches have performed their route rebalancing updates for the new path prior to an upstream switch attempting to use that new path. The Lossless feature must be enabled to perform route updates. Two-hop lossless DLS is disabled by default.

--disable -twohop

Disables the previously enabled two-hop lossless DLS.

--rebalance

Rebalances the E_Port load on a logical switch, without waiting for a topology change to occur.

--rebalance -all

Rebalances the E_Port load on all logical switches, without waiting for a topology change to occur.

--help

Displays the command usage.

Examples

DLS configuration commands on a switch with an exchange-based policy:

```
switch:admin> aptpolicy
Current Policy: 3 0(ap)
```

```
3 0(ap) : Default Policy
1: Port Based Routing Policy
3: Exchange Based Routing Policy
    0: AP Shared Link Policy
    1: AP Dedicated Link Policy
```

```
switch:admin> dlsshow
```

```
DLS is set by default with current routing policy
```

```
DLS is set with Lossless enabled
```

```
E-port Balance Priority is not set
```

```
switch:admin> dlsreset
```

```
DLS is enabled and cannot be changed with the current routing policy
```

```
switch:admin> dlsset
```

```
DLS is enabled and cannot be changed with the current routing policy
```

```
switch:admin> dlsset --enable -lossless
```

```
Lossless is set
```

```
switch:admin> dlsset --disable -lossless
```

```
Lossless is not set
```

```
switch:admin> dlssshow
```

```
DLS is set by default with current routing policy
```

```
E-port Balance Priority is not set
```

DLS configuration commands on a switch with a port-based policy:

```
switch:admin> dlssshow
```

```
DLS is set by default with current routing policy
```

```
DLS is set with Lossless enabled
```

```
E-port Balance Priority is not set
```

```
switch:admin> dlsreset
```

```
DLS is not set
```

```
switch:admin> dlssshow
```

```
DLS is not set
```

```
E-port Balance Priority is not set
```

```
switch:admin> dlsset --enable -lossless
```

```
DLS and Lossless are set
```

```
switch:admin> dlssshow
```

```
DLS is set with Lossless enabled
```

```
switch:admin> dlsset
```

```
Lossless is set (unchanged)
```

```
switch:admin> dlsset --disable -lossless
```

```
Lossless is not set
```

```
switch:admin> dlssshow
```

```
DLS is not set
```

```
E-port Balance Priority is not set
```

To attempt to enable Lossless while XISL use is enabled:

```
switch:admin> dlsset --enable -lossless
```

Lossless option cannot be enabled when XISL use is allowed.
Please disable the switch with 'switchdisable' and run \
'configure' to disallow XISL use before enabling Lossless.

To enable the E_Port Balance Priority:

```
switch:admin> dlsset --enable -eportbal  
E-port Balance Priority is set
```

To disable the E_Port Balance Priority:

```
switch:admin> dlsset --disable -eportbal  
E-port Balance Priority is not set
```

To rebalance the E_Port load on a switch:

```
switch:admin> dlsset --rebalance  
Route rebalance successful
```

To rebalance the E_Port load on all switches:

```
switch:admin> dlsset --rebalance -all  
Route rebalance all successful
```

SEE ALSO [aptPolicy](#), [dlsReset](#), [dlsShow](#), [iodReset](#), [iodSet](#), [iodShow](#), [uRouteShow](#), [topologyShow](#)

dlsShow

Displays the setting of Dynamic Load Sharing (DLS).

Synopsis **dlsshow**

Description Use this command to display information about Dynamic Load Sharing configuration settings on the switch. Depending on the configuration, the command output displays one of the following messages:

- DLS is set with Lossless enabled - DLS is enabled with the Lossless feature. Load sharing is recomputed with every change in the fabric, and existing routes can be moved to maintain optimal balance. In Lossless mode, no frames are lost during this operation.
- DLS is set with Lossless disabled - DLS is enabled without the Lossless feature. Load sharing is reconfigured with every change in the fabric, and existing routes can be moved to maintain optimal balance. No attempt is made to prevent frames from being lost while load sharing is recomputed.
- DLS is not set with Lossless disabled - DLS is disabled and the Lossless option is disabled. Existing routes are never moved to maintain optimal balance. If the Lossless option was enabled before you disabled DLS, it is now disabled as well. This means, frame loss is not prevented during a load sharing recomputation.
- DLS is set with Two-hop Lossless enabled - DLS is enabled with Lossless and two-hop lossless DLS.
- DLS is set with Lossless enabled, Two-hop Lossless disabled - DLS with Lossless is enabled and the two-hop lossless DLS feature is disabled.

Refer to dlsSet for a description of load sharing.

This command also displays the status of the E_Port Balance Priority feature on the switch. If the feature is enabled, the message "E-port Balance Priority is set" displays. If the feature is disabled, the message "E-port Balance Priority is not set" displays.

Notes The Lossless feature is not supported on GbE ports and FCoE ports. On unsupported platforms, this command exits with an appropriate message.

On platforms that do not support the E_Port Balance Priority feature, the command output indicates that the feature is not supported.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the current DLS and E_Port Balance Priority configuration on a switch with port-based routing:

```
switch:admin> dlsshow
DLS is set with Lossless enabled.
E_Port Balance Priority is set.
```

SEE ALSO None

dnsConfig

Sets, displays, or removes domain name service (DNS) parameters.

Synopsis

dnsconfig

dnsconfig --add -domain *name* -serverip1 *ipaddr* serverip2 *ipaddr*

dnsconfig --delete

dnsconfig --show

dnsconfig --help

Description

Use this command to display, set, or remove the domain name service parameters.

The domain name service parameters are the domain name and the name server IP address for primary and secondary name servers. The dnsconfig command displays IPv4 and IPv6 addresses.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add

Sets the DNS configuration.

-domain *name*

Specifies the DNS domain name.

-serverip1 *ipaddr*

Specifies the DNS primary server IP address. The IP address can be an IPv4 or IPv6 address.

-serverip2 *ipaddr*

Specifies the DNS secondary server IP address. The IP address can be an IPv4 or IPv6 address.

--delete

Removes the DNS configurations.

--show

Displays the current DNS configuration.

--help

Displays the command usage.

Examples

To set the DNS parameters for the system:

```
switch:admin> dnsconfig
```

```
Enter option
```

```
1 Display Domain Name Service (DNS) configuration
```

```
2 Set DNS configuration
```

```

3 Remove DNS configuration
4 Quit
Select an item: (1..4) [4] 2

Enter Domain Name: [] domain.com
Enter Name Server IP address in dot notation: [] \
123.123.123.123
Enter Name Server IP address in dot notation: [] \
123.123.123.124
DNS parameters saved successfully

Enter option
1 Display Domain Name Service (DNS) configuration
2 Set DNS configuration
3 Remove DNS configuration
4 Quit
Select an item: (1..4) [4] 4

```

To configure the DNS domain name, DNS server address:

```

switch:admin> dnsconfig --add -domain www.cp0.com \
serverip1 192.168.1.1 serverip2 192.168.201.1
DNS parameters saved successfully.

```

To delete the DNS configurations:

```

switch:admin> dnsconfig --delete
DNS parameters removed successfully.

```

To display the DNS configurations:

```

switch:admin> dnsconfig --show
Domain Name Server Configuration Information
-----
Domain Name           = www.cp0.com
Name Server IP Address = 192.168.1.1
Name Server IP Address = 192.168.201.1

```

SEE ALSO [configDownload](#), [configUpload](#), [firmwareDownload](#), [ipAddrSet](#), [ipAddrShow](#)

enclosureShow

Displays attributes of the switch enclosure.

Synopsis **enclosureshow** *attribute*

Description Use this command to display attributes of the switch enclosure, including the vendor-specific enclosure identifier and the identifier of the enclosure interface to which the switch is attached.

This command applies to products that are embedded in a blade server or storage chassis. Most options are platform-specific. Options that do not apply to a platform are identified with a "Not supported on this platform" message.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

<i>attribute</i>	Specifies the enclosure attribute. Valid attributes include the following:
id	The vendor-specific enclosure identifier.
modelName	The vendor-specific enclosure model name.
slotid	The identifier of the enclosure interface to which the switch is attached.
rackname	The name assigned by the enclosure manager to the rack.
rackid	The serial number assigned by the enclosure manager to the rack.
enclosurename	The name assigned by the enclosure manager to the enclosure.
enclosureid	The serial number assigned by the enclosure manager to the enclosure.
connname	The product name used by the enclosure manager for the switch model.
connaddr	The connector address used by the enclosure manager for this switch (indicates the physical position of the switch in the enclosure).
connid	The serial number of the switch used by the enclosure manager (not to be confused with the Factory Serial Number).

enclosureShow

conntype	The connector type used by the enclosure manager for this model of switch.
connloc	The switch location within the enclosure.
connpres	Information about the presence of the switch that is used by the enclosure manager.
connfuse	Information about whether or not the switch has a fuse.
uuid	The Universal Unique ID for the switch if visible to the enclosure manager.
mmmacaddr	The enclosure manager's Ethernet MAC Address.
snmpports	The SNMP agent and trap ports if visible to the enclosure manager.

Examples To display the identifier of the enclosure interface to which the switch is attached:

```
switch:admin> enclosureShow slotid  
Bay 4
```

SEE ALSO [chassisShow](#)

errClear

Clears all error log messages for all switch instances on this Control Processor (CP).

Synopsis **errclear**

Description Use this command to clear all internal and external error log messages for all switch instances on the CP where the command is executed. For products with a single processor, all error log messages are cleared. For products that contain multiple processors, this command can be executed on either control processor. It clears the error log only on the CP where the command is executed. For example, to clear the error log on the standby CP, issue errclear on the standby CP.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To clear the error log messages:

```
switch:admin> errclear
```

SEE ALSO [errDump](#), [errShow](#)

errDelimiterSet

Sets the error log start and end delimiters for messages sent to the console and syslog.

Synopsis

errdelimiterset
 [-s "start_delimiter_string"]
 [-e "end_delimiter_string"]

Description

Use this command to set the error log start and end delimiters for log messages sent to the console and syslog. An empty string clears the start and the end delimiters (including the colon) so that they are not displayed.

When used without operands, this command displays the existing errDelimiterSet configuration. The delimiter configuration is stored persistently.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Start and end delimiters are displayed only at the console; they are not displayed in a Telnet session or in the RASLog.

Operands

This command has the following operands:

-s "start_delimiter_string"

Specifies an alphanumeric string for the start delimiter. The string can be up to 10 characters long and must be enclosed in double quotation marks. This operand is optional.

-e "end_delimiter_string"

Specifies the alphanumeric string for the end delimiter. The string can be up to 10 characters long and must be enclosed in double quotation marks. This operand is optional.

Examples

To display the start and end delimiters:

```
switch:admin> errdelimiterset
delimiter start string: <none>
delimiter end string: <none>
```

To change the start and end delimiters (with sample output):

```
switch:admin> errdelimiterset -s "Start" -e "End"

switch:admin> errdelimiterset
delimiter start string: Start
delimiter end string: End
```

Sample output:

```
Start2003/03/10-09:54:03, [NS-1002], 1035,, ERROR,
SWITCH43, Name Server received an invalid request
from device 10:02:32:A3:78:23:23:End
```

SEE ALSO

[errDump](#), [errFilterSet](#), [errShow](#)

errDump

Displays the error log without pagination.

Synopsis

```
errdump [--all]
errdump [--count number]
errdump [--reverse]
errdump [--severity severity]
errdump [--slot slotnum]
errdump [--attribute attribute]
errdump [--message msgID]
errdump [--start YYYY/MM/DD-HH:MM:SS]
errdump [--stop YYYY/MM/DD-HH:MM:SS]
errdump [--help]
```

Description

Use this command to dump external error log messages without any page breaks. When executed without operands, this command prints all error messages for the logical switch context in which the command is executed.

The output of this command is unique for each control processor (CP). On dual CP systems this command must be executed on each CP to obtain a complete record.

Specify both --start and --stop operands to display messages within a time period. Specify the --start operand alone to display messages from a specific time to the end of the log. Specify the --stop operand alone to display messages from the beginning of the log to the specified time.

The following information is displayed in each message:

Start delimiter

Delimiter string for the start of a message.

Timestamp

Timestamp for the message.

Message ID

Message identifier.

External sequence number

Sequence number for the message.

Security audit flag

Security audit message displayed as AUDIT.

Severity

Severity of the message. Valid values include INFO, WARNING, ERROR, and CRITICAL.

Switch name	Switch name for the generator of this message, or "chassis".
Message	Message body.
End delimiter	Delimiter string for the end of a message.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--all	Displays messages for the entire chassis for a user with chassis permissions. This operand is optional; if omitted, the messages for the current logical switch context are displayed.
--count <i>number</i>	Displays messages based on count value.
--reverse	Displays messages in reversed order. This operand is optional; if omitted, the messages display in chronological order.
--severity <i>severity</i>	Displays messages based on severity.
CRITICAL	Displays critical messages.
ERROR	Displays error messages.
WARNING	Displays warning messages.
INFO	Displays informational messages.
--slot <i>slotnum</i>	Displays messages based on slot.
--attribute <i>attribute</i>	Displays messages with the given attribute. Valid attributes values are ALL and FFDC.
--message <i>msgID</i>	Displays all raslog messages based on the message ID.
--start YYYY/MM/DD-HH:MM:SS	Displays messages from the given start time. The value of the time is related to the raslog storage time.
--stop YYYY/MM/DD-HH:MM:SS	Display messages that are logged up to the given end time.

--help

Displays command usage.

Examples

To display the error log for the chassis:

```
switch:admin> errdump --all
Fabric OS: v8.0.1

2015/12/17-22:29:17, [SEC-1203], 9036, CHASSIS, INFO, \
Spir_67, Login information : Login successful via \
TELNET/SSH/RSH. IP Addr: 10.106.7.62

2015/12/17-22:29:17, [ZONE-1022], 9037, CHASSIS, INFO, \
Spir_67, The effective configuration has changed to meh.

2015/12/17-22:29:17, [FABR-1001], 9041, CHASSIS, WARNING, \
Spir_67, port 0, incompatible Long distance mode.

2015/12/17-22:29:17, [LOG-1000], 9043, CHASSIS, INFO, \
Spir_67, Previous message repeated 1 time(s)
(output truncated)
```

To display messages for a slot:

```
switch:admin> errdump --slot 4
Fabric OS: v8.0.1

2015/06/19-03:26:44, [HAM-1004], 31, SLOT 4 | CHASSIS, INFO, \
pluto_19, Processor rebooted - Reboot.

2015/06/19-03:26:44, [SULB-1003], 32, SLOT 4 | CHASSIS, INFO, \
pluto_19, Firmwarecommit has started.

2015/06/19-03:26:44, [IPAD-1001], 33, SLOT 4 | CHASSIS, INFO, \
pluto_19, CP/1 IPv6 manual fe80::224:38ff:fe1b:4400 DHCP Off.

2015/06/19-03:29:15, [IPAD-1000], 48, SLOT 4 | CHASSIS, INFO, \
pluto_19, CP/0 Ether/0 IPv6 autoconf
fd00:60:69bc:816:205:1eff:fe84:3f49/64 tentative DHCP Off.

2015/06/19-03:29:15, [IPAD-1000], 51, SLOT 4 | CHASSIS, INFO, \
pluto_19, CP/1 Ether/0 IPv6 autoconf
fd00:60:69bc:816:205:1eff:fe84:4aal/64 tentative DHCP Off.
```

To display messages based on severity:

```
switch:admin> errdump --severity WARNING
Fabric OS: v8.0.1

2015/06/18-20:24:52, [SULB-1001], 2, SLOT 5 | CHASSIS, WARNING, \
pluto_19, Firmwaredownload command has started.

2015/06/18-20:36:08, [FSSM-1003], 6, SLOT 5 | CHASSIS, WARNING, \
pluto_19, HA State out of sync.

2015/06/18-20:36:11, [FABR-1001], 8, SLOT 5 | FID 128, WARNING, \
sw0, port 268, ESC detected Fabric ID conflict with neighbor \
(FID 10).
```

```
2015/06/18-20:36:11, [FABR-1001], 9, SLOT 5 | FID 128, WARNING, \
sw0, port 281, ESC detected Fabric ID conflict with neighbor \
(FID 20).
```

```
2015/06/18-20:36:11, [FABR-1001], 10, SLOT 5 | FID 128, WARNING, \
sw0, port 265, ESC detected Fabric ID conflict with neighbor\
(FID 1).
```

To display messages based on attributes:

```
switch:admin> errdump --attribute FFDC
Fabric OS: v8.0.1
```

```
2015/06/19-03:58:42, [LOG-1001], 81, SLOT 5 | FFDC | CHASSIS, \
WARNING, pluto_19, A log message was dropped
```

To display messages based on count value:

```
switch:admin> errdump --count 3
Fabric OS: v8.0.1
```

```
2015/06/18-20:23:09, [LOG-1003], 1, SLOT 5 | CHASSIS, INFO, \
pluto_19, The log has been cleared.
```

```
2015/06/18-20:24:52, [SULB-1001], 2, SLOT 5 | CHASSIS, WARNING, \
pluto_19, Firmwaredownload command has started.
```

```
2015/06/18-20:24:52, [SULB-1036], 3, SLOT 5 | CHASSIS, INFO, \
pluto_19, The current Version: Fabric OS v8.0.1
```

To display raslog messages based on a message ID:

```
switch:admin> errdump --message SEC-1203
Fabric OS: v8.0.1
```

```
2015/11/21-11:06:21, [SEC-1203], 19, FID 128, INFO, switch, \
Login information: Login successful via TELNET/SSH/RSH. \
IP Addr: 10.70.12.104
```

```
2015/11/21-12:32:40, [SEC-1203], 20, FID 128, INFO, switch, \
Login information: Login successful via TELNET/SSH/RSH. \
IP Addr: 172.26.1.93
```

```
2015/11/22-10:27:41, [SEC-1203], 21, FID 128, INFO, switch, \
Login information: Login successful via TELNET/SSH/RSH. \
IP Addr: 10.70.4.109
```

To display messages from specified time to the end of the log:

```
switch:admin> errdump --start 2015/10/10-2042:06
Fabric OS: v8.0.1
2015/10/10-20:42:06, [XTUN-1997], 16, CHASSIS, WARNING, ch3456789012345678901234, \
FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:06, [PLAT-1001], 17, CHASSIS, INFO, ch3456789012345678901234, \
CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:06, [XTUN-1997], 18, CHASSIS, WARNING, ch3456789012345678901234, \
FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 19, CHASSIS, INFO, ch3456789012345678901234, \
```

```

CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:07, [XTUN-1997], 20, CHASSIS, WARNING, ch3456789012345678901234, \
FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 21, CHASSIS, INFO, ch3456789012345678901234, \
CP0 resetting other CP (double reset may occur).

```

To display messages from beginning of the log to the specified time:

```

switch:admin> errdump --stop 2015/10/10-20:42:05
Fabric OS: v8.0.1
2015/10/10-20:41:58, [LOG-1003], 1, CHASSIS, INFO, ch3456789012345678901234, \
The log has been cleared.
2015/10/10-20:42:05, [XTUN-1997], 2, CHASSIS, WARNING, ch3456789012345678901234, \
FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:05, [PLAT-1001], 3, CHASSIS, INFO, ch3456789012345678901234, \
CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:05, [XTUN-1997], 4, CHASSIS, WARNING, ch3456789012345678901234, \
FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:05, [PLAT-1001], 5, CHASSIS, INFO, ch3456789012345678901234, \
CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:05, [XTUN-1997], 6, CHASSIS, WARNING, ch3456789012345678901234, \
FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:05, [PLAT-1001], 7, CHASSIS, INFO, ch3456789012345678901234, \
CP0 resetting other CP (double reset may occur).

```

To display messages within a time period:

```

switch:admin> errdump --start 2015/10/10-20:42:06 --stop 2015/10/10-20:42:07
Fabric OS: v8.0.1
2015/10/10-20:42:06, [XTUN-1997], 8, CHASSIS, WARNING, \
ch3456789012345678901234, FTRACE buffer 0 on slot 1 \
dp 2 has been triggered.
2015/10/10-20:42:06, [PLAT-1001], 9, CHASSIS, INFO, \
ch3456789012345678901234, CP0 resetting other CP \
(double reset may occur).
2015/10/10-20:42:06, [XTUN-1997], 10, CHASSIS, WARNING, \
ch3456789012345678901234, FTRACE buffer 0 on slot 1 \
dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 19, CHASSIS, INFO, \
ch3456789012345678901234, CP0 resetting other CP \
(double reset may occur).
2015/10/10-20:42:07, [XTUN-1997], 20, CHASSIS, WARNING, \
ch3456789012345678901234, FTRACE buffer 0 on slot 1 \
dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 21, CHASSIS, INFO, \
ch3456789012345678901234, CP0 resetting other CP \
(double reset may occur).

```

SEE ALSO [errDelimiterSet](#), [errFilterSet](#), [errShow](#)

errFilterSet

Sets a filter for an error log destination.

Synopsis **errfilterset** [-d *destination*][-v *severity*]

Description Use this command to set a filter for an error log destination. A filter is set based on the severity level of the messages.

When used without operands, this command displays the filters that are currently in configured.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- d *destination*** Specifies the destination for the filter. The string console is the only valid value at this time.
- v *severity*** Specifies the minimum severity level of the message to pass through the filter. Valid values are INFO, WARNING, ERROR, or CRITICAL. Input values are not case-sensitive.

Examples To display the current filter settings:

```
switch:admin> errfilterset

console: filter severity = WARNING
```

To set the filter severity level for the console:

```
switch:admin> errfilterset -d console -v warning
```

SEE ALSO [errDump](#), [errShow](#)

errModuleShow

Displays all the defined error log modules.

Synopsis **errmoduleshow**

Description Use this command to display a list of all defined error log modules.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display a list of all defined error log modules:

```
switch:user> errmoduleshow
Module IDs:

    1 KT          2 UT          3 TRCE          4 KTRC
    5 LOG         6 CDR         7 BLPU         8 PISP

    9 PIXE        10 EGR        11 BL          12 PIC
   13 PS          14 RTE        15 AS          16 AUTH
   17 BLDE        18 BLM        19 BPRT        20 CER
   21 CFLD        22 CFMN        23 CHPS        24 CONF
(output truncated)
```

SEE ALSO [errDump](#), [errShow](#)

errShow

Displays the error log messages with pagination.

Synopsis `errshow [-a | -r | -t | -o]`

Description Use this command to display external error log messages one at a time. When executed without operands, this command prints the error messages for the logical switch context in which the command is executed. When used with the -a option, the command prints the error messages for the entire chassis. The messages are displayed with page breaks. The -r operand displays the messages in reversed order.

The output of this command is unique for each Control Processor (CP). On dual CPs this command must be executed on each CP to obtain a complete record.

Specify both -t and -o operands to display messages within a time period. Specify the -t operand alone to display messages from a specific time to the end of the log. Specify the -o operand alone to display messages from the beginning of the log to the specified time.

The following information displays in each message:

Start delimiter	Delimiter string for the start of a message.
Timestamp	Timestamp for the message.
Message ID	Message identifier.
External sequence number	Sequence number for the message
Security audit flag	Security audit message displayed as AUDIT.
Severity	Severity of the message. Valid values include INFO, WARNING, ERROR, and CRITICAL.
Switch name	Switch name for the generator of this message, or "chassis".
Message	Message body.
End delimiter	Delimiter string for the end of a message.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- a** Displays messages for the entire chassis for a user with admin and chassis permissions. This operand is optional; if omitted, the messages for the current logical switch context are displayed.
- r** Displays messages in reversed order. This operand is optional; if omitted, the messages display in the chronological order.
- t** Displays messages from the given start time. The value of the time is related to the raslog storage time.
- o** Display messages that are logged up to the given end time.

Examples To display the error log for the chassis:

```
switch:admin> errshow -a
Fabric OS: v8.0.1

2015/06/11-10:16:07, [SEC-1203], 261, FID 128, INFO, \
switch, Login information: Login successful via \
TELNET/SSH/RSH. IP Addr: 192.0.2.2

[Type <CR> to continue, Q<CR> to stop:

2015/06/11-10:44:13, [TS-1002], 262, FID 128, INFO, \
switch, External Clock Server used instead of \
LOCL: loc1: 0x45585400 remote: 0x4c4f434c.

[Type <CR> to continue, Q<CR> to stop:

2015/06/11-11:00:49, [SNMP-1005], 287, FID 128, INFO, \
switch, SNMP configuration attribute, SNMPv3 Trap \
Recipient IP Address 6, has changed from [192.0.2.10] \
to [0.0.0.0].

[Type <CR> to continue, Q<CR> to stop:

2015/06/11-11:00:49, [SNMP-1005], 288, FID 128, INFO, \
switch, SNMP configuration attribute, SNMPv3 Trap \
Recipient Severity Level 6, has changed from 4 to 0.

[Type <CR> to continue, Q<CR> to stop:
```


To display messages from specified time to the end of the log:

```
switch:admin> errshow -t 2015/10/31-19:17:23
Fabric OS: v8.0.0
2015/10/31-19:17:25, [IPAD-1000], 15, CHASSIS, INFO, Brocade5300, \
  SW/0 Ether/0 IPv6 autoconf 2012::90/64 DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:17:25, [HAM-1004], 16, CHASSIS, INFO, Brocade5300, \
  Processor rebooted - Hareboot.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:17:29, [FV-1001], 17, CHASSIS, INFO, switch, \
  Flow Vision daemon initialized.

Type <CR> to continue, Q<CR> to stop:
```

To display messages from beginning of the log to the specified time:

```
switch:admin> errshow -o 2015/10/31-19:01:05
Fabric OS: v8.0.1
2015/10/31-18:59:52, [LOG-1003], 1, CHASSIS, INFO, Brocade5300, \
  The log has been cleared.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:00:09, [SEC-1203], 2, FID 128, INFO, switch, \
  Login information: Login successful via TELNET/SSH/RSH. IP Addr: 10.70.12.103

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:00:10, [SEC-1203], 3, FID 128, INFO, switch, \
  Login information: Login successful via TELNET/SSH/RSH. IP Addr: 10.70.12.103

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:00:16, [RAS-1007], 4, CHASSIS, INFO, Brocade5300, \
  System is about to reload.

Type <CR> to continue, Q<CR> to stop:
```

To display messages within a time period:

```
switch:admin> errshow -t 2015/10/31-19:01:06 -o 2015/10/31-19:01:11
Fabric OS: v8.0.1
2015/10/31-19:01:06, [IPAD-1000], 5, CHASSIS, INFO, Brocade5300, \
  SW/0 Ether/0 IPv6 autoconf 2012::90/64 DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [IPAD-1001], 6, CHASSIS, INFO, Brocade5300, \
  CP/0 IPv6 autoconf fe80::224:38ff:fea5:6200 DHCP not Set.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [IPAD-1000], 7, CHASSIS, INFO, Brocade5300, \
  SW/0 Ether/0 IPv6 autoconf 2620:100:4:f801:205:33ff:fe00:9b28/64 tentative DHCP
```

Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [HAM-1004], 8, CHASSIS, INFO, Brocade5300, \
Processor rebooted - Fastboot.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [IPAD-1000], 9, CHASSIS, INFO, Brocade5300, \
SW/0 Ether/0 IPv6 autoconf 2620:100:4:f801:205:33ff:fe00:9b28/64 DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:11, [FV-1001], 10, CHASSIS, INFO, switch, \
Flow Vision daemon initialized.

Type <CR> to continue, Q<CR> to stop:

SEE ALSO [errDelimiterSet](#), [errDump](#), [errFilterSet](#)

ethIf

Displays and sets the link operating mode for a network interface.

Synopsis **ethif --set *interface* -auto-negotiate | -an [on | off] -speed [*speed*] -duplex [full]**

ethif --reseterror *interface*

ethif --show *interface*

ethif --help

Description Use this command to set and view the link operating mode for a network interface.

Changing the link mode is not supported for all network interfaces or for all Ethernet network interfaces. On the CP of a Brocade DCX or DCX-4S, this command supports eth0 and eth3 as interface parameters. On all other platforms, only eth0 is supported.

The CP on a Brocade DCX or DCX-4S has two external physical Ethernet management ports, eth0 and eth3. Both interfaces are bonded together to form a single logical interface, bond0.

The management port IP addresses are assigned to the logical interface, bond0. Link layer Ethernet operations are applied to the physical interfaces, eth0 and eth3.

Ethernet bonding provides link layer redundancy using the active-standby failover model. The two Ethernet ports must be part of the same subnet. By default, all traffic is transmitted over the active Ethernet port, eth0. The second Ethernet port, eth3, acts as a standby interface and no traffic is transmitted over it. When the active Ethernet port is disconnected, the alternate Ethernet port becomes active. When the system reboots, the Ethernet port eth0 is always made active if it is connected.

When executed with the bond0 operand, ethif --show displays the active Ethernet port.

When selecting autonegotiation, you can choose the specific link operating modes that are advertised to the link partner. At least one common link operating mode must be advertised by both sides of the link.

When forcing the link operating mode, both sides of the link must be forced to the same mode. The link does not work reliably if one side is set to autonegotiate and the other side is set to forced mode.

Exercise care when using this command. Forcing the link to an operating mode not supported by the network equipment to which it is attached may result in an inability to communicate with the system through its Ethernet interface. It is recommended that this command be used only from the serial console port. When used through an interface other than the serial console port, the command displays a warning message and prompts for verification before continuing. This warning is not displayed and you are not prompted when the command is used through the serial console port.

For dual-CP systems, this command affects only the CP to which you are currently logged in to set the link operating mode on the active CP; you must issue this command on the active CP; to set the link operating mode on the standby CP, you must issue this command on the standby CP. During failover, the link operating mode is retained separately for each CP, because the physical links may be set to operate in different modes.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--set

Sets a link operating mode for a network interface.

interface

Specifies the name of the interface, optionally enclosed in double quotation marks. Valid interfaces include the following:

eth0 | eth3

Displays the link operating mode of the specified interface. The value eth3 is valid only on the CP of a Brocade DCX or DCX-4S.

bond0

Displays the active Ethernet port. This operand is valid only on the CP of a DCX or a DCX-4S.

-auto-negotiate | -an

Configures auto-negotiation.

on | off

Sets auto-negotiation on or off.

-speed speed

Configures the speed. You can configure 1000, 100, or 10 as the speed. Note that 1000 Mbps speed can be configured only when auto-negotiation is on.

-duplex

Configures the capability of operation as full duplex.

--reseterror interface

Resets error counters on the network interface. The valid values for interface are eth0 and eth3.

--show

Displays the link operating mode for a network interface.

interface

Specifies the name of the interface, optionally enclosed in double quotation marks. Valid interfaces include the following:

eth0 | eth3

Displays the link operating mode of the specified interface. The value eth3 is valid only on the CP of a Brocade DCX or DCX-4S.

bond0

Displays the active Ethernet port. This operand is valid only on the CP of a DCX or a DCX-4S.

--help

Displays the command usage.

Examples

To reset the link operating attributes on eth0:

```
switch:admin> ethif --reseterror eth0
Statistics cleared for eth0
```

To view the link operating attributes on bond0:

```
switch:admin> ethif --show bond0
bond0 interface:

bond0 includes physical interfaces: eth0 eth3
Currently Active Interface: eth0
Currently Slave Interface: eth3
Link mode: negotiated 1000baseT-FD, link ok
MAC Address: 00:05:1E:86:7B:79

bond0      Link encap:Ethernet  HWaddr 00:05:1E:86:7B:79
            inet addr:10.38.18.135  Bcast:10.38.31.255  Mask:255.255.240.0
            UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1
            RX packets:2373 errors:0 dropped:0 overruns:0 frame:0
            TX packets:56 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:0
```

To view the link operating attributes on a network interface:

```
switch:admin> ethif --show eth0
eth0 interface:

Link mode: negotiated 1000baseT-FD, link ok
MAC Address: 00:05:1E:86:7B:79

eth0      Link encap:Ethernet  HWaddr 00:05:1E:86:7B:79
            UP BROADCAST RUNNING SLAVE MULTICAST  MTU:1500  Metric:1
            RX packets:2397 errors:0 dropped:0 overruns:0 frame:0
            TX packets:55 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
```

To set the link operating attributes on a network interface:

```
switch:admin> ethif --set eth0 -an on -speed 100 -duplex full
an:on
speed:100
cap:full
MII_CMD:-A

ADVERTISE:Advertise
DEFMODE:yes
auto:1
MII_MODE:100baseTx-FD,
Committing configuration...done.
```

To check the link operating attributes:

```
switch:admin> ethlf --show eth0
Link mode: negotiated 100baseTx-FD, link ok
MAC Address: 00:05:1E:86:7B:79

eth0      Link encap:Ethernet  HWaddr 00:05:1E:86:7B:79

          UP BROADCAST RUNNING SLAVE MULTICAST  MTU:1500  Metric:1
          RX packets:2397 errors:0 dropped:0 overruns:0 frame:0
          TX packets:56 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
```

SEE ALSO [ipAddrSet](#), [ipAddrShow](#)

exit

exit

Description	See logout .
SEE ALSO	None

extnCfg

Sets the extension mode configuration.

Synopsis **extnCfg --ve | --ve-mode [--slot *slot*] 10VE | 20VE**
extnCfg --app-mode fcip | hybrid
extnCfg --config -default | -clear [--slot *slot* | -all]
extnCfg --fwld-prep [-version *version*]
extnCfg --show
extnCfg --help

Description Use this command to set the extension mode configuration. This command switches the Field Programmable Gate Array (FPGA) images or the VE_Port mappings.

Notes The execution of this command is disruptive and requires the switch reboot.
 The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--slot *slot*/
 For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

--ve | --ve-mode 10VE | 20VE
 Switches the VE_Port mode between 10 VE-ports and 20 VE-ports. The default VE_Port mode is 10VE.

--app-mode fcip | hybrid
 Sets the system extension mode to FCIP or hybrid (FCIP with IPEXT). The default APP_Port mode is FCIP. Configuring the switch for hybrid mode is disruptive. The switch reboots and loads the hybrid image.

--config -default
 Removes active extension configurations from the specified slot or all slots.

--config -clear
 Removes the inactive (stale) extension configurations from the specified slot or all slots. After executing this command, you must run the slotPowerOff and slotPowerOn commands for the extension blade to clear the configurations completely.

-all
 For bladed systems only, indicates all slots in the chassis.

--fwld-prep [-version *version*]

Prepares the switch for firmware download to the specified firmware version. The `-version` option is optional. If the version is not specified, this command prepares the switch for downgrade to the previous Fabric OS version containing the extension configuration changes.

-show

Displays the current extension mode configuration.

--help

Displays the command usage.

Examples

To display the current extension mode configuration:

```
switch:admin> extncfg --show
App Mode is FCIP
VE-Mode: configured for 10VE mode.
```

To switch the extension mode configuration:

```
switch:admin> extncfg --ve-mode 20VE
This operation will require a reboot of the switch and will disrupt
any running traffic.
Are you sure you want to proceed? (y/n): y

Operation Succeeded. Rebooting Switch.
```

To configure the system for hybrid mode:

```
switch:admin> extncfg --app-mode hybrid
This action will configure the system for Hybrid (FCIP/IPEXT) mode.

WARNING: This is a disruptive operation that requires a reboot \
to take effect. Would you like to continue (Y,y,N,n): [ n] y

Operation succeeded. Rebooting the system...

switch:admin> extncfg --show
APP Mode is Hybrid (FCIP with IPEXT)
VE-Mode: configured for 20VE mode.
```

To prepare the switch for firmware download to Fabric OS 8.0.1:

```
switch:admin> extncfg --fwld-prep -version 8.0.1
Operation Succeeded.
```

SEE ALSO

None

fabRetryShow

Displays the retry count of the fabric commands.

Synopsis **fabretryshow**

Description Use this command to display the retry count of the fabric commands. For each port, the command output displays counts for the following Switch Internal Link Service (SW_ILS) requests:

ELP	Exchange Link Parameters
EFP	Exchange Fabric Parameters
HA_EFP	Exchange Fabric Parameters used during warm recovery
DIA	Domain Identifier Assigned
RDI	Request Domain Identifier
BF	Build Fabric
FWD	Fabric Controller Forward
EMT	Fabric Controller Mark Timestamp
ETP	Fabric Controller Trunk Parameters
RAID	Return Address Identifier
GAID	Get Address Identifier
ELP_TMR	Used internally for fabric application (not a SW_ILS)
GRE	Get Route Entry
ECP	Exchange Credit Parameters
ESC	Exchange Switch Capabilities
EFMD	Exchange Fabric Membership Data

ESA

Exchange Security Attributes

DIAG_CMD

Diagnostic Command

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the retry count of Fabric OS Commands:

```
switch:user> fabretryshow
              SW_ILS
E_Port  ELP  EFP  HA_EFP  DIA  RDI  BF    FWD  EMT  ETP  RAID \
34      0   0   0        0   0   0     0   0   0   0   \
35      0   0   0        0   0   0     0   0   0   0   \

GAID  ELP_TMR  GRE  ECP  ESC  EFMD  ESA  DIAG_CMD
0     0        0   0   0   0   0   0
0     0        0   0   0   0   0   0
```

SEE ALSO

None

fabRetryStats

Displays or manages the retry count of fabric commands.

Synopsis **fabretrystats --show**

fabretrystats --clear

fabretrystats --help

Description Use this command to view and clear the retry count of the fabric commands. The --clear option clears the counters for all the Switch Internal Link Service (SW_ILS) requests. For each E/D_Port, the --show option displays the counters for the following Switch Internal Link Service (SW_ILS) requests:

ELP	Exchange Link Parameters
EFP	Exchange Fabric Parameters
HA_EFP	Exchange Fabric Parameters used during warm recovery
DIA	Domain Identifier Assigned
RDI	Request Domain Identifier
BF	Build Fabric
FWD	Fabric Controller Forward
EMT	Fabric Controller Mark Timestamp
ETP	Fabric Controller Trunk Parameters
RAID	Return Address Identifier
GAID	Get Address Identifier
ELP_TMR	Used internally for fabric application (not a SW_ILS)
GRE	Get Route Entry
ECP	Exchange Credit Parameters

ESC	Exchange Switch Capabilities
EFMD	Exchange Fabric Membership Data
ESA	Exchange Security Attributes
DIAG_CMD	D diagnostic Command

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--show	Displays the retry count of fabric commands for all E_Ports and D_Ports.
--clear	Clears the retry count of fabric commands.
--help	Displays the command usage.

Examples To display the retry count of fabric commands:

```
switch:admin> fabretrystats --show
SW_ILS
-----\
E/D_Port  ELP  EFP  HA_EFP  DIA  RDI  BF  FWD  EMT \
-----\
3          1    0    0    0    0    0    0    0 \
12         0    2    0    0    0    0    0    0 \
      ETP  RAID  GAID  ELP_TMR  GRE  ECP  ESC  EFMD  ESA  DIAG_CMD
      0    0    0    0    0    0    0    0    0    0
      0    0    0    0    0    0    0    0    0    0
```

To clear the retry count of fabric commands:

```
switch:admin> fabretrystats --clear
switch:admin> fabretrystats --show
SW_ILS
-----\
E/D_Port  ELP  EFP  HA_EFP  DIA  RDI  BF  FWD  EMT \
-----\
3          0    0    0    0    0    0    0    0 \
12         0    0    0    0    0    0    0    0 \
      ETP  RAID  GAID  ELP_TMR  GRE  ECP  ESC  EFMD  ESA  DIAG_CMD
      0    0    0    0    0    0    0    0    0    0
      0    0    0    0    0    0    0    0    0    0
```

SEE ALSO [fabRetryShow](#), [fabStatsShow](#)

fabricLog

Displays (all users) or manipulates (admin) the fabric log.

Synopsis

```

fabriclog -s | --show [dport]
fabriclog -c | --clear [dport]
fabriclog -d | --disable [dport]
fabriclog -e | --enable [dport]
fabriclog -t | --failstop dport
fabriclog -h | --help

```

Description Use this command to display, clear, disable, or enable the fabric log. When used with the --show option, this command displays the following information:

Time Stamp

Time of the event in the following format HH:MM:SS:MS.

Input and *Action

Fabric log message. An asterisk (*) in the message indicates an action. The link reset information is indicated by LR_IN and LR_OUT. LR_IN indicates a link reset on the remote switch, whereas LR_OUT indicates a link reset on the local switch.

S

Current switch state. Valid switch states include the following:

FO

Build Fabric (BF) received.

F1

Reconfigure Fabric (RCF) is not supported.

F2

Exchange Fabric Parameters (EFP) is waiting for last Accept Frame (ACC) from flood.

F3

Flood EFPs.

D0

The switch is the principal switch.

D1

The principal switch is sending Domain ID Assigned (DIA).

D2

The principal switch is waiting for Request Domain ID (RDI).

D3

The principle switch is processing the RDI.

A0	The switch is not the principal switch.
A1	The non-principal switch is sending a DIA.
A2	The non-principal switch is waiting for an RDI.
A3	The non-Principal switch is processing an RDI.
S0	The switch is in offline state.
P	Port state. Port states include the following:
PO	The port is offline.
P1	The port is online.
P2	Exchange Link Parameters (ELP) Accept Frame (ACC) received.
P3	Link reset occurred on master or E_Port.
I0	Trunk Initiator: Exchange Mark Timestamp (EMT) sent.
I1	Trunk Initiator: Exchange Trunking Parameters (ETP) Accept Frame (ACC) received.
I2	Trunk Initiator: ETP sent.
I3	Trunk Initiator: Link reset occurred.
I4	Trunk Initiator: Link reset done on slave.
T0	Trunk Target: EMT received.
T1	Trunk Target: ETP received.
T2	Trunk Target: Link reset.
T3	Trunk Target: Link reset done on slave.
LD	Dynamic long distance ECP sent or received.

ESC

Exchange Switch Capabilities (ESC) state between P2 and P3.

Sn

Next switch state. Refer to switch states for valid states.

Pn

Next port state. Refer to port states for valid states.

Port

Port number, if applicable, or NA

Xid

OXID (Exchange ID) Port number, if applicable, or NA

Refer to the FC-SW-5 specification for more information on the port and switch states logged by this command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s | --show [dport]

Displays the fabric log. Optionally displays the D_Port logs only.

-c | --clear [dport]

Clears the fabric log. Optionally clears the D_Port logs only.

-d | --disable [dport]

Disables the fabric log. By default, the fabric log is enabled. Optionally disables the D_Port logs only.

-e | --enable [dport]

Enables the fabric log. Optionally enables the D_Port logs only.

-f | --failstop dport

Disables D_Port logs on the first D_Port test failure. This option is cleared automatically when the D_Port fabric log is enabled.

-h | --help

Displays the command usage.

Examples

To display the fabric log:

```
switch:admin> fabriclog -s
Time Stamp      Input and *Action                                     S, P   Sn,Pn  Port  Xid
=====
Switch 0; Thu Feb 23 06:55:59 2012 GMT (GMT+0:00)
06:55:59.661357 *Fss Init                               NA,NA  NA,NA  NA    NA
06:55:59.661606 *Initiate State                         NA,NA  F2,NA  NA    NA
06:55:59.963652 Expd1 0x00000000 0000ffff ffffffff ffffffff F2,NA  F2,NA  0     NA
06:56:03.242214 Rcv FSS_RECOV_COLD                     F2,NA  F2,NA  NA    NA
06:56:03.242264 D-port Offline Skip Cnt 1(inst = 1)    F2,NA  F2,NA  NA    NA
```


fabricLog

06:58:44.880675	SCN LR_PORT (0);g=0x22; LR_IN	A2,P0	A2,P0	41	NA
07:00:12.107354	D-port Offline Skip Cnt 1(inst = 4)	F2,NA	F2,NA	NA	NA
07:00:12.640790	SCN LR_PORT (0);g=0x0; LR_OUT	F2,P0	F2,P0	11	NA
07:00:12.772930	SCN Port Online;g=0x0;	F2,P0	F2,P1	11	NA
(output truncated)					

To display the cleared fabric log:

```
switch:admin> fabriclog -s
Time Stamp   Input and *Action      S, P   Sn,Pn  Port  Xid
=====
Number of entries: 0
Max number of entries: 64
```

SEE ALSO None

fabricName

Displays the fabric name parameter.

Synopsis **fabricname --show**

Description Use this command to display the name of the fabric.

With Virtual Fabrics it is not uncommon to have multiple fabrics in a single chassis. These logical fabrics are identified by their Fabric ID.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

--show

Displays the fabric name. If a fabric name is not configured, an appropriate message is displayed.

Examples

```
switch:user> fabricname --show
Fabric Name: "my new fabric"
```

SEE ALSO [switchShow](#), [fabricShow](#)

fabricPrincipal

Sets the principal switch selection mode.

Synopsis **fabricprincipal --help | -h**

fabricprincipal [--show | -q]

fabricprincipal --enable
 [-priority | -p *priority*]
 [-force | -f]

fabricprincipal --disable

fabricprincipal [-f] *mode*

Description Use this command to set principal switch selection mode for a switch and to set priorities for principal switch selection.

The implementation of the fabricPrincipal command is based solely on mechanisms specified in the Fibre Channel standards. These mechanisms provide a preference for a switch requesting to be the principal switch in a fabric, but they do not provide an absolute guarantee that a switch requesting to be the principal switch is granted this status.

When dealing with large fabrics, the selection of the principal switch is less deterministic. In these cases, to help ensure that the desired switch is selected as the principal switch, a small cluster of switches should be interconnected first, followed by additional switches to enlarge the fabric.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--help | -h Displays the command usage.

--show Displays the current mode setting and principal switch selection priority. This operand is optional; if not specified, fabricPrincipal displays the same data as with the --show option.

-q Displays principal mode only (enabled or disabled). This is a legacy command option that does not display the priority settings.

--enable Enables principal switch selection. The following operands are optional. If you do not provide a priority value, the system assigns the default of 0x01 or generates a value based on the switch state.

-priority | -p *priority* Sets the principal selection priority of the switch. The specified priority value is used in the principal switch selection protocol when the fabric rebuilds. Not all of these values can be assigned.

0x00	Reserved. This value cannot be assigned.
0x01	Highest priority. This is a user-defined value
0x02	Switch was principal prior to sending or receiving a build fabric (BF) request. This value is generated by the switch to initiate a fabric reconfiguration. This value should not be assigned.
0x3 - 0xFE	Priority value range. Choose a value in this range to indicate priority. Higher numbers mean lower priority.
0xFF	Switch is not capable of acting as a principal switch. This is a user-defined value. Use --enable with a new priority to revert to this condition.
-force | -f	Forces a fabric rebuild regardless of whether the switch is principal or subordinate. This option is not valid with the --disable command.
--disable	Disables principal switch selection. This command resets the priority to the default value 0xFE.
[-f] mode	Sets the principal switch selection mode. Specify 1 to enable principal switch selection mode. Specify 0 to disable principal switch selection mode. Optionally, use the -f operand to force a fabric rebuild. Mode changes take effect when the fabric rebuilds. This operand is optional.

Examples

To enable a high fabric principal priority setting:

```
switch:admin> fabricprincipal --enable -p 0xff
Principal Selection Mode enabled (Activate in \
next fabric rebuild)
```

To disable the principal mode selection:

```
switch:admin> fabricprincipal --disable
Principal Selection Mode disabled
```

To display the current mode setting:

```
switch:admin> fabricprincipal -q
Principal Selection Mode: Enable
```

To disable the mode setting:

```
switch:admin> fabricprincipal 0
Principal Selection Mode disabled
```

fabricPrincipal

To enable the mode setting:

```
switch:admin> fabricprincipal 1  
Principal Selection Mode enabled
```

To enable the mode setting and force fabric rebuild:

```
switch:admin> fabricprincipal -f 1  
Principal Selection Mode enabled \  
(Forcing fabric rebuild)
```

To display the principal switch selection priority:

```
switch:admin> fabricprincipal --show  
Principal Selection Mode: Enable  
Principal Switch Selection Priority: 0x10
```

SEE ALSO [fabricShow](#)

fabricShow

Displays fabric membership information.

Synopsis **fabricshow [-membership | -chassis | -paths | -version]**

fabricshow -help

Description Use this command to display information about switches in the fabric.

If the switch is initializing or is disabled, the message "no fabric" is displayed.

Running this command on an FCR or edge switch does not provide any router information; running this command on an edge switch with the -membership option does provide router information.

If the fabric is reconfiguring, some or all switches may not be displayed; otherwise, the following fields are displayed depending on the command option used:

Switch ID

The switch Domain_ID and embedded port D_ID.

Worldwide Name

The switch WWN.

Enet IP Addr

The switch Ethernet IP address for IPv4- and IPv6-configured switches. For IPv6 switches, only the static IP address displays.

FC IP Addr

The switch IP FC (IP over Fibre Channel) address.

Name

The switch symbolic name. An arrow (>) indicates the principal switch.

FC Router IP Addr

The IP address of the FC Router. This field is empty if the switch is not an FC Router or if the FC Router does not support it.

FC Router Name

The FC Router symbolic name. This field is empty if the switch is not an FC Router or if the FC Router does not support it.

Chassis WWN

The world wide name of the chassis. For switches running firmware versions that do not distribute the chassis WWN, this field displays "NA".

Chassis Name

The name of the chassis. For switches running firmware versions that do not distribute the chassis name, this field displays "NA".

Fabric Name

If the fabric has an assigned name, the fabric name is displayed at the end of the command output.

Path Count

The number of currently available paths to the remote domain.

Version

The firmware version of the domain.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- membership** Displays fabric membership information with additional details of the FC Router, if present in the fabric.
- chassis** Displays information about the chassis including chassis WWN and chassis name.
- paths** Displays the number of paths available to each remote domain.
- version** Displays firmware version details for each domain.
- help** Displays the command usage.

Examples The following example illustrates a fabric of four switches. The switch named "sw180" is the Principal switch. Three of the switches are configured to run IP over Fibre Channel. The fabric name is configured.

```
switch:admin> fabricshow
Switch ID      Worldwide Name      Enet IP Addr      FC IP Addr      Name
-----
64:fffc40  10:00:00:60:69:00:06:56  192.168.64.59    192.168.65.59    "sw5"
65:fffc41  10:00:00:60:69:00:02:0b  192.168.64.180   192.168.65.180> "sw180"

66:fffc42  10:00:00:60:69:00:05:91  192.168.64.60    192.168.65.60    "sw60"
67:fffc43  10:00:00:60:69:10:60:1f  192.168.64.187   0.0.0.0          "sw187"

The Fabric has 4 switches
Fabric Name: mainFabricA
```

To show a mixed fabric with IPv4- and IPv6-configured switches (the fabric name is not configured):

```
switch:admin> fabricshow
Switch ID      Worldwide Name      Enet IP Addr      FC IP Addr      Name
-----
1:fffc41  10:00:00:60:69:00:02:0b  192.168.64.180   192.168.65.180> "sw180"
                                     1080::8:800:200C:1234/64
2:fffc42  10:00:00:60:69:00:05:91  192.168.64.60    192.168.65.60    "sw60"

The Fabric has 2 switches.
```

To show additional details of the FC Router, if present:

```
switch:admin> fabricshow -membership
```

Switch ID	Name	ENET IP Addr	FC Router IP Addr	FC Router Name
1: fffc01	fcr_sprint_01	10.33.59.224		
160: fffca0	fcr_fd_160	0.0.0.0	10.33.59.25	fcr_meteor2
190: fffcbe	fcr_mojo_6	10.33.59.32		

The Fabric has 3 switches

To show additional details about the chassis:

```
switch:admin> fabricshow -chassis
```

Switch ID	Name	ENET IP Addr	Chassis WWN	Chassis Name
4:fffc04	sw5100_126_128	10.38.17.126	10:00:00:05:1e:0e:eb:58	Brzd5100
5:fffc05	sw1500_127_128	10.38.17.127	10:00:00:05:1e:0e:eb:98	Brzd5100

The Fabric has 2 switches

To show additional details about the paths:

```
switch:admin> fabricshow -paths
```

Switch ID	Name	ENET IP Addr	Worldwide Name	Path Count
28: fffc02	DCX_28	192.0.2.28	10:00:00:05:1e:e5:ab:00	N/A
38: fffc0c	DCX_38	192.0.2.38	10:00:00:05:1e:47:cb:00	9

The Fabric has 2 switches

To show firmware version details:

```
switch:admin> fabricshow -version
```

Switch ID	Worldwide Name	Enet IP Addr	FC IP Addr	Version
1: fffc01	10:00:00:05:1e:82:3c:2a	10.25.224.140	11.22.33.44	v7.3.0

SEE ALSO [fabricName](#), [switchShow](#)

fabStatsShow

Displays fabric statistics.

Synopsis **fabstatsshow**

Description Use this command to display statistics for the fabric. The following information is displayed:

- Number of times a switch domain ID has been forcibly changed
- Number of E_Port offline transitions
- Number of fabric reconfigurations
- Number of fabric segmentations resulting from any of the following causes:
 - Loopback
 - Incompatibility
 - Overlap
 - Zoning
 - E_Port segment
 - Licensing
 - Disabled E_Port
 - Platform DB
 - Security incompatibility
 - Security violation
 - ECP error
 - Duplicate WWN
 - E_Port isolated
 - MSFR/RD H&T WWN conflict (internal only)
 - Enhanced/Overlapping TI zones (ETIZ) Incompatibility
 - Exchange Switch Capabilities (ESC) detected conflict
 - Encryption conflict - Both ends are not configured for encryption
 - Compression conflict - Both ends are not configured for encryption
 - Encryp/Comp bw availability - Encryption or compression - Configured but lack of bandwidth in the ASIC

For each recorded incident, the command provides the following additional information:

Count

The total number of times the specific event occurred on various ports on the switch.

Port

The number of the port where the latest incident occurred. An arrow (<) next to the port number denotes the type of event that occurred last.

Timestamp

The time when the latest incident occurred.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the fabric statistics:

```
switch:admin> fabstatsshow
```

Description	Count	Port	Timestamp
-----	-----	-----	-----
Domain ID forcibly changed:	0		
E_Port offline transitions:	0		
Reconfigurations:	2	0	Sat Dec 18 14:29:56 2010
Segmentations due to:			
Loopback:	0		
Incompatibility:	0		
Overlap:	0		
Zoning:	0		
E_Port Segment:	0		
Licensing:	0		
Disabled E_Port:	0		
Platform DB:	0		
Sec Incompatibility:	0		
Sec Violation:	0		
ECP Error:	0		
Duplicate WWN:	0		
Eport Isolated:	0		
AD header conflict:	0		
VF AD conflict:	0		
MSFR/RD H&T WWN conflict:	0		
ETIZ Incompatibility:	0		
ESC detected conflict:	0		
Encryption conflict:	0		
Compression conflict:	0 < 349		Wed Oct 27 15:33:58 2010
Encryp/Comp bw availability:	0		

'<' - Denotes the type of event that occurred last.

SEE ALSO [fabRetryShow](#)

fanDisable

Disables a fan unit.

Synopsis **fandisable** *unit*

Description Use this command to disable a nonfaulty fan unit by setting the RPM speed to 0.

Notes This command is not available on nonbladed systems.

Disabling the fan units on a Brocade X6 Director does not change their RPM speed to 0.

Fan units on a Brocade X6 Director take few minutes to change the speed to minimum RPM after being disabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

unit

Specifies the number of the fan unit to disable.

Examples To disable a fan unit:

```
switch:admin> fandisable 1
```

```
Fan unit 1 has been disabled
```

SEE ALSO [fanEnable](#), [fanShow](#)

fanEnable

Enables a fan unit.

Synopsis **fanenable** *unit*

Description Use this command to set a previously disabled fan unit back to the default RPM speed.

Notes This command is not available on nonbladed systems.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

unit

Specify the fan unit number to enable.

Examples To enable a fan unit:

```
switch:admin> fanenable 1
```

```
Fan unit 1 has been enabled
```

SEE ALSO [fanDisable](#), [fanShow](#)

fanShow

Displays fan status and speed.

Synopsis **fanshow**

Description Use this command to display the current status and speed of each fan in the system.

Fan status is displayed as follows:

OK

Fan is functioning correctly.

absent

Fan is not present.

below minimum

Fan is present but rotating too slowly or stopped.

above maximum

Fan is rotating too quickly.

unknown

Unknown fan unit installed.

faulty

Fan has exceeded hardware tolerance and has stopped. In this case, the last known fan speed is displayed.

The output from this command varies depending on switch type and number of fans present.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display information on the fans in the system:

```
switch:admin> fanshow
Fan #1 is OK, speed is 2721 RPM
Fan #2 is OK, speed is 2657 RPM
Fan #3 is OK, speed is 2700 RPM
```

SEE ALSO [chassisShow](#), [fanDisable](#), [fanEnable](#), [psShow](#)

faPwwn

Manages fabric-assigned port world wide names.

Synopsis

```
fapwwn --enable -port [slot]port[-port]  
fapwwn --enable -ag AG_WWN -port port  
fapwwn --disable -port [slot]port[-port]  
fapwwn --disable -ag AG_WWN -port port  
fapwwn --assign [-ag AG_WWN] -port [slot]port [-v VPWWN]  
fapwwn --delete -port [slot]port[-port]  
fapwwn --delete -ag AG_WWN [-port port]  
fapwwn --delete -v VWWN  
fapwwn --move -srcport source_port -dstport dest_port  
fapwwn --move -srcag AG_WWN -srcport source_port  
    -dstag AG_WWN -dstport dest_port  
fapwwn --show [-port | -ag] all  
fapwwn --show -port [slot]port[-port]  
fapwwn --show -ag AG_WWN [-port]  
fapwwn --help
```

Description

Use this command to create and manage fabric-assigned port world wide names (FA-PPWWNs) for Dynamic Fabric Provisioning (DFP). A FA-PWWN is a "virtual" port WWN that will bind to a device port and can be later assigned to a physical device. A FA-PWWN can be either user-generated or automatically assigned by the fabric. The automatically assigned FA-PWWN is created by default when you enable the feature without explicitly providing a VPWWN. With FA-PWWNs assigned to FC ports or Access Gateway (AG) ports, you can provision the ports in advance with zoning configurations, access control, or Ports on Demand assignments, and you can easily move servers across ports or Access Gateways by way of reassigning the FA-PWWN to another port.

The `fapwwn` command supports the following management tasks:

- Bind an automatically assigned or a user-assigned FA-PWWN to a switch port.
- Override an automatically assigned FA-PWWN with a user-assigned FA-PWWN.
- Bind an AG port with an automatically assigned or a user-assigned FA-PWWN.
- Delete any existing FA-PWWN bindings.
- Move a FA-PWWN from one port to another port.
- Move a FA-PWWN assigned to an AG port to another AG.
- Display information about configured FA-PWWN bindings.

A single port can be assigned up to two WWNs, one assigned automatically and one assigned by the user. Only one FA-PWWN can be active at any given time. The user-assigned FA-PWWN takes precedence over the automatically assigned FA-PWWN. This means, the switch will bind the user-assigned FA-PWWN to the port if both a user-assigned and an automatically assigned FA-PWWN are available.

FA-PWWN configurations are saved persistently and are preserved even if the feature is disabled on a port, or if you move the port to a different logical switch. The same configuration will be reapplied on the port once the feature is enabled or the port is moved back to the switch where you initially created and saved the configuration.

When issued for switch ports, the `--show` option displays the following information:

Port

Port number

PPWWN

Real PWWN of the device

VPWWN

Currently active FA-PWWN.

The following information is displayed for Access Gateway ports:

AG Port

Access Gateway node WWN followed by a slash and port number

Port

The FC switch port number

Device Port WWN

The real device port WWN displays only if the device is logged into the Access Gateway.

Virtual Port WWN

The FA-PWWN (user-assigned or automatically assigned) created on the FC switch for the Access Gateway port.

The following information is displayed for both AG and FC switch ports:

PID

Port ID.

Enable

Displays "yes" if the configuration is enabled; displays "No" if the configuration is disabled.

MapType

Displays the type of mapping: Access Gateway (AG) or switch port (port), user-assigned (user) or automatically assigned (auto).

Notes

This command is supported only on the Brocade DCX 8510-4 and DCX 8510-8, and the and Brocade 6510. The AG port must be configured on the switch to which the AG is connected. However, both AG switches are FA-PWWN-aware, which means that they can connect to switches with configured FA-PWWN ports. Refer to the Release Notes for other restrictions that may apply.

You cannot enable the FA-PWWN feature if portSwap is enabled on the ports.

The operands, --assign, --delete, --enable, and --disable can be executed only on a disabled port (switch ports and AG ports). You must re-enable the ports to come online with the new configuration.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

this command has the following operands:

--enable

Enables the FA-PWWN feature on the specified switch ports or AG ports. If a FA-PWWN is not available for the ports, this command automatically assigns FA-PWWNs to the ports. The switch ports must be disabled using the portDisable command before executing this command.

--disable

Disables the FA-PWWN feature on the specified switch ports or AG ports. This command disables the binding of any existing FA-PWWNs to the specified ports, it does not delete the port configurations themselves. When you re-enable the feature, the persistently saved configurations are re-applied to the ports.

--assign

Assigns a FA-PWWN to a specified port. You can specify only a single port with this command (not a port range) and optionally provide a VPWWN. The switch ports must be disabled using the portDisable command before executing this command. When executed without the -v option, this command automatically generates a FA-PWWN and assigns it to the port. When executed with the -v option, and a user-assigned FA-PWWN already exists, this command fails with an appropriate message. If an automatically assigned FA-PWWN exists, the user-generated FA-PWWN overrides the automatically generated FA-PWWN. When you assign a FA-PWWN to an AG port, you must specify the AG node WWN to uniquely identify the AG. The new FA-PWWN will take effect upon the next login session.

--delete

Deletes the active FA-PWWN from the specified ports. If a port is bound to a user-assigned FA-PWWN, this command deletes the currently active FA-PWWN and activates the automatically assigned FA-PWWN. If the active FA-PWWN is automatically assigned and no user-assigned FA-PWWN exists, this command deletes the FA-PWWN. When deleting VPWWNs from an AG, you must specify the AG node WWN and the `-port` operand is optional; if omitted, all active FA-PWWNs are deleted from the AG. To delete a single FA-PWWN, use the delete command with the `-v` option.

If no active FA-PWWNs exist on the ports, the FA-PWWN feature is disabled. Use the `-enable` command to re-enable the feature.

--show

Displays the FA-PWWN configuration for the specified ports or for all ports in the logical switch. When displaying information for AG ports, you must specify the AG node WWN.

-port[slot/]port[-port]

Specifies the ports to be configured or displayed on the switch or on the AG, preceded by a slot number on bladed systems whose FA-PWWN configuration is to be displayed. The port list can include a single port or a port range, for example, 3-5 or 1/3-5. Port ranges are supported only with automatically assigned FA-PWWNs, and only on switch ports. You cannot use a port range on AG ports.

-ag AG_WWN

Specifies the Access Gateway node WWN.

-v VPWWN

Specifies a virtual PWWN to be assigned to the port. This operation deactivates any existing FA-PWWN on the port.

all

Specifies all ports on the logical switch. This operand is valid only with the `--show` option.

--move

Moves an active FA-PWWN from a source to the specified destination port. Use this command to move a server across switch ports. If the source port has both a user-assigned and an automatically assigned FA-PWWN, the user-assigned FA-PWWN will be moved to the destination port as a user-assigned FA-PWWN and replace any automatically assigned FA-PWWN that may be active on that port. If the source port has only an auto-assigned FA-PWWN, the auto-assigned FA-PWWN will be moved to the destination port and the FA-PWWN feature will be disabled on the source port, because there is no FA-PWWN left on that port. When moving PWWNs between Access Gateways, you must specify the source AG node WWN and the destination AG node WWN in addition to the ports.

The following operands are supported with the `--move` option:

-srcag AG_WWN

Specifies the source AG by its node WWN. This operand is required only when moving ports between Access Gateways.

-dstag AG_WWN

Specifies the destination AG by its node WWN. This operand is required only when moving ports between Access Gateways.

-srcport *source_port*

Specifies the port from which to move the PWWN.

-dstport *dest_port*

Specifies the destination port for the moved PWWN.

--help

Displays the command usage.

Examples

To enable the FA-PWWN feature on a switch port:

```
switch:admin> portdisable 10
switch:admin> fapwwn --enable -port 10
```

To disable the FA-PWWN feature on the switch port:

```
switch:admin> fapwwn --disable -port 10
```

To move the active FA-PWWN from a source port to another port:

```
switch:admin> fapwwn --move -srcport 2 -dstport 3
```

To move the active FA-PWWN from a source AG port to a destination AG port:

```
switch:admin> fapwwn --move -srcag 11:11:11:11:11:11:11:11 \
  -srcport 12 -dstag 22:22:22:22:22:22:22:22 -dstport 14
```

To assign a user-assigned FA-PWWN to a switch port:

```
switch:admin> portdisable 1/10
switch:admin> fapwwn --assign -port 1/10 -v 50:60:70:71:72:73:81:81
```

To assign an automatically assigned FA-PWWN to a switch port:

```
switch:admin> portdisable 1/10
switch:admin> fapwwn --assign -port 1/10
```

To assign a fabric-assigned FA-PWWN to an AG port identified by the AG node WWNN and port number:

```
switch:admin> portdisable 0
switch:admin> fapwwn --assign -ag 12:34:56:78:90:12:23:45 -port 0
```

To assign an user-assigned FA-PWWN to an AG port:

```
switch:admin> portdisable 0
switch:admin> fapwwn --assign -ag 12:34:56:78:90:12:23:45 -port 0 \
  -v 11:22:33:44:55:66:77:88
```

To delete the active FA-PWWN of a switch port:

```
switch:admin> fapwwn --delete -port 10
```

To delete the active FA-PWWN of an AG port:

```
switch:admin> fapwwn --delete -ag 12:34:56:78:90:12:34:56 -port 10
```

To display the active FA-PWWN for a single FC port (the real device PWWN is hidden):

```
switch:admin> fapwwn --show -port 10
```

Port	PPWWN	VPWWN	PID	Enable	MapType
10	--:--:--:--:--:--:--	52:00:10:00:00:0f:50:45	--	Yes	Port/Auto

To display the active FA-PWWNs for all FC switch ports:

```
switch:admin> fapwwn --show -port all
```

Port	PPWWN	VPWWN	PID	Enable	MapType
0	--:--:--:--:--:--:--	52:00:10:00:00:0f:50:30	10101	Yes	Port/Auto
1	--:--:--:--:--:--:--	11:22:33:44:33:22:11:22	--	Yes	Port/User
		52:00:10:00:00:0f:50:44			
10	--:--:~:~:~:~:~:~:~:~	52:00:10:00:00:0f:50:45	--	Yes	Port/Auto

To display the active FA-PWWN of an AG port :

```
switch:admin> fapwwn --show -ag 10:00:00:05:1e:d7:3d:dc -port 8
```

AG Port	Port	Device Port WWN	\
10:00:00:05:1e:d7:3d:dc/8	20	20:08:00:05:1e:d7:2b:74	\

Virtual Port WWN	PID	Enable	MapType
11:22:33:44:55:66:77:88	11403	Yes	AG/User
52:00:10:00:00:0f:50:32			

(output split)

To display the active FA-PWWNs of all configured AG ports:

```
switch:admin> fapwwn --show -ag all
```

AG Port	Port	Device Port WWN	\
10:00:00:05:1e:65:8a:d5/16	--	--:~:~:~:~:~:~:~:~	\
10:00:00:05:1e:d7:3d:dc/8	20	20:08:00:05:1e:d7:2b:74	\
10:00:00:05:1e:d7:3d:dc/9	20	20:09:00:05:1e:d7:2b:73	\
10:00:00:05:1e:d7:3d:dc/16	--	--:~:~:~:~:~:~:~:~	\

Virtual Port WWN	PID	Enable	MapType
52:00:10:00:00:0f:50:30	--	Yes	AG/Auto
11:22:33:44:55:66:77:88	11403	Yes	AG/User
52:00:10:00:00:0f:50:32			
2:00:10:00:00:0f:50:33	11404	Yes	AG/Auto
52:00:10:00:00:0f:50:38	--	Yes	AG/Auto

(output split)

To display the active FA-PWWNs of all ports associated with a single AG (in the following example, one VPWWN is not unassigned):

```
switch:admin> fapwwn --show -ag 10:00:00:05:1e:d7:3d:dc
```

AG Port	Port	Device Port	WWN
10:00:00:05:1e:d7:3d:dc/16	--	--:--:--:--:--:--:--:--	\
10:00:00:05:1e:d7:3d:dc/9	20	20:09:00:05:1e:d7:2b:73	\
10:00:00:05:1e:d7:3d:dc/8	20	20:08:00:05:1e:d7:2b:74	\
10:00:00:05:1e:d7:3d:dc/16	--	--:--:--:--:--:--:--:--	\

Virtual Port	WWN	PID	Enable	MapType
52:00:10:00:00:0f:50:38	--	Yes	AG/Auto	
20:00:10:00:00:0f:50:33	11404	Yes	AG/Auto	
11:22:33:44:55:66:77:88	11403	Yes	AG/User	
52:00:10:00:00:0f:50:32				

(output split)

SEE ALSO None

fastBoot

Reboots the Control Processor (CP), bypassing the Power-On Self-Test (POST).

Synopsis **fastboot**

Description Use this command to perform a "cold reboot" (power off/restart) of the CP bypassing POST when the system comes back up. Bypassing POST can reduce boot time significantly. If POST was previously disabled using the diagDisablePost command, then fastBoot is the same as reBoot.

The fastBoot operation is disruptive, and the command prompts for confirmation before executing. When you reboot a switch connected to a fabric, all traffic to and from that switch stops. All Fibre Channel ports on that switch including E_Ports become inactive until the switch comes back online.

The behavior of this command varies according to platform type:

- When issued on a standalone (single-processor) switch, this command performs a cold reboot of the switch.
- When issued on an enterprise-class platform (Brocade DCX, DCX-4S, or 48000) with two CPs (active and standby), the following rules apply:
 - When the Standby CP reboots, it goes down and there is no failover because there is no traffic on that switch. When the Standby CP comes up again, it is temporarily no longer in sync with the Active CP.
 - When the Active CP reboots, it fails over to the Standby CP. The Standby CP becomes the new Active CP and traffic is disrupted.
 - When HA is disabled and fastBoot is issued on the Active CP, both the Active and Standby CPs reboot with the original mastership retained. The original Active CP remains the Active CP after the reboot, and the original Standby CP remains the Standby CP. After the reboot, HA is enabled.
 - When HA is disabled and fastBoot is issued on the Standby CP, the Standby CP reboots without prompting. It boots up with the default switch only, even if the Active CP has multiple logical switches configured. After the Standby CP boots up, HA is still disabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To reboot a standalone (single-processor) switch without executing POST on startup:

```
switch:admin> fastboot

Warning: This command would cause the switch to reboot
and result in traffic disruption.
Are you sure you want to reboot the switch [y/n]? y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

To reboot a DCX without executing POST on startup (in the example, HA is enabled):

```
switch:admin> fastboot
Warning: This command is being run on a control processor (CP)
based system and will cause the active CP to reboot.
Are you sure you want to reboot the active CP [y/n]? y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

To reboot a DCX without executing POST on startup (in the example, HA is disabled):

```
switch:admin> fastboot
This command is being run on a control processor (CP)
based system. Because HA is disabled, it will cause both
active CP and the standby CP to reboot. After reboot, the
HA will be enabled.

Do you want to continue [y/n] y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

SEE ALSO [diagDisablePost](#), [diagEnablePost](#), [reboot](#), [haDisable](#), [haEnable](#), [haFailover](#)

fcipHelp

Displays FCIP command information.

Synopsis **fciphelp**

Description Use this command to display a listing of Fibre Channel over IP (FCIP) commands with short descriptions for each command. FCIP commands require an FCIP license.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display FCIP command help information:

switch:admin> fciphelp	
bladecfggemode	Configure 1GigE/10GigE port configuration for blade
extncfg	Configure blade/switch extension product features
fciphelp	Print FCIP help info
licenseslotcfg	Configure licenses on a slot basis
portcfg	Create/Delete a new ip interface/route/arp entry on the GigE port
portcfgge	Configure GigE port features
portcfggemediatype	Configure media type for GigE port
portcmd	Execute commands (ping etc) on the GigE port
portshow	Show configured ip interfaces/routes/arp entries on the GigE Port

SEE ALSO [portCfg](#), [portCmd](#), [portShow](#)

fcipLedTest

Exercises the GbE port LEDS on the Brocade 7840, FX8-24, and SX6 extension blade.

Synopsis **fcipledtest** [**--slot** *slot* | **all**]

Description Use this command to exercise the GbE port LEDs on the Brocade 7840, FX8-24, and SX6 extension blade. The behavior of this command varies according to platform:

- On Brocade FX8-24, this test cycles through the port LEDs by lighting GREEN and then flashing GREEN on all ports for 3 seconds. As the test continues the ports turn AMBER and then flashing AMBER for 3 seconds. The LEDs turn off when the test has finished.
- On Brocade 7840, this test cycles all the port LEDs by lighting GREEN on all ports for 3 seconds. The switch will reboot once the test is complete.
- On Brocade SX6, this test cycles all the port LEDs by lighting GREEN on all ports for 3 seconds. As the test continues the ports turn AMBER for 3 seconds. The LEDs turn off when the test has finished. The blade will reboot once the test is complete.

This diagnostic cannot be run on an operational switch. You must disable the switch using the `chassisDisable` command before you can run this test. After the command completes, the ATTN LEDs flash amber, indicating that the command has finished and exited. Enable the switch using the `chassisEnable` command to set the ATTN LEDs back to black.

Notes You cannot run `fcipLedTest` on a specific slot by disabling the blade in the slot using the `bladeDisable` command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--slot *slot*

Tests all GbE ports in the specified slot. This operand is optional. This operand is valid only on chassis-based platforms.

all

Tests all GbE ports in the chassis. This operand is optional. This operand is valid only on chassis-based platforms.

Examples To test the LEDs on slot 4 of Brocade DCX 8510 with an FX8-24 blade.

```
switch:admin> fcipledtest --slot 4
PASSED.
```

SEE ALSO [bladeDisable](#), [bladeEnable](#), [chassisDisable](#), [chassisEnable](#), [extnCfgr](#), [portLedTest](#)

fcipPathTest

Tests the data path of the FCIP complex.

Synopsis **fcippathtest**
 [**--slot** *slot*]
 [**-lb_mode** *mode*]
 [**-nframes** *count*]

Description Use this command to verify the data paths in the FCIP complex. All data path modes run tests by comparing Fibre Channel frames or data packets transmitted from and received by the network processor due to the designated loopback.

This command is supported only on the Brocade 7840, FX8-24, and SX6 platforms.

Executing this command causes the switch or blade to reboot.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- slot** *slot*

Specifies the slot number on which the diagnostic operates. The default is 0 and operates on fixed-port-count products.
- lb_mode** *mode*

Specifies the loopback mode for the test. By default, this test uses the External (SERDES) loopback mode 2 which is the only loopback mode supported on Brocade 7840 and SX6 platforms. Other valid values in addition to mode 2 for FX8-24 platforms are as follows:

1

Port loopback (requires loopback plugs)

2

External (SERDES) loopback

5

Internal (parallel) loopback

7

Backend bypass and port loopback (requires loopback plugs)

8

Backend bypass and SERDES loopback
- nframes** *count*

Specifies the number of frames to send. The test will progress until the specified number of frames has been transmitted on each port. The default value is 1 for Brocade 7500/FR4-18i and Brocade 7800/FX8-24 and 4 for Brocade 7840 switch and Brocade SX6 blades.

Diagnostics When it detects failures, the test may report one or more of the following error messages:

PATH_TEST_ERR
PATH_TEST_CHIP_INIT_ERR
PATH_TEST_IMAGE_ERR
PATH_TEST_TIMEOUT_ERR
PATH_TEST_HEARTBEAT_ERR
PATH_TEST_INVALID_RESULT
PATH_TEST_GE_PORT_ENABLE_ERR
PATH_TEST_GE_PORT_DISABLE_ERR

Examples To run the test on slot 2:

```
switch:admin> fcippathtest --slot 2  
Running fcippathtest .....  
Test Complete: fcippathtest Pass 10 of 10  
Duration 0 hr, 1 min & 50 sec (0:1:50:942).  
passed.
```

SEE ALSO [bladeDisable](#), [bladeEnable](#), [chassisDisable](#), [chassisEnable](#)

fcPing

Sends a Fibre Channel Extended Link Service (ELS) Echo request to a pair of ports or to a single destination, or executes a SuperPing.

Synopsis

```
fcping
  [--number frames]
  [--length size]
  [--interval wait]
  [--pattern pattern]
  [--bypasszone]
  [--quiet]
  [source] destination
```

```
fcping --allpaths
  [-printis]
  [-maxtries M]
  [-covcount N]
  [-delay D]
  [-framelength len]
  [-errstats]
  [-vc]
  destination
```

```
fcping --help
```

Description

Use this command to send a Fibre Channel ELS Echo request to a pair of ports (a source and a destination), to a single device, or to execute a SuperPing that exercises all interswitch links (ISLs) and internal links in different paths that route to the destination device.

- When you use fcPing with a source and a destination, the command performs a zoning check between the two ports. In addition, two Fibre Channel ELS requests are generated. The first ELS request is from the domain controller to the source port identifier. The second ELS request is from the domain controller to the destination port identifier. The ELS Echo request elicits an ELS Echo response from a port identifier in the fabric and is useful for validating link connectivity.

The source and destination port identifiers can be specified as a 24-bit Fibre Channel port identifier (PISD), a port World Wide Name, or a node World Wide Name. The two port identifiers are then used to determine if the identifiers are zoned together.

- When you use fcPing to probe a single destination, an ELS Echo is sent to the specified destination and a response obtained. The destination can be a switch WWN, a domain ID, or a switch domain controller ID. No zoning check is performed when a single device is probed.
- When you use fcPing with the --allpaths option, the command exercises a "SuperPing." A SuperPing exercises all ISLs and the internal links included in the least-cost paths that route to the destination. It collects statistical data of all the covered paths and their port and provides optional parameters to selectively display the data. SuperPing takes only one argument, the destination port identifier. To execute a SuperPing for two destinations, you must issue the fcping --allpathscommand separately for each destination.

SuperPing facilitates troubleshooting of links that experience problems. When an echo frame is dropped, all the ISLs and internal links potentially traversed by this frame are marked as failures. If a fabric topology is considered fully redundant, that is, at each hop there are multiple paths to reach a destination, a high percentage of errors are recorded on the link that experiences errors.

Logical Fabrics: When executed in a Logical Fabric from a switch to a destination device connected through the base fabric, SuperPing exercises all paths in the base fabric along with the ISLs in the logical fabric. The path output indicates the LISLs and the base switch. Refer to the Examples section for an illustration.

Notes The ELS Echo may not be supported on all devices. In such cases, the response could be either an ELS reject or a request timeout.

By default, fcPing sends five ELS Echo requests to each port. When a device does not respond to the ELS Echo request, further debugging may be needed to determine, whether the device does not support ELS Echo, or whether the request is rejected for some other reason. Do not assume that the device is not connected.

If a fabric reconfiguration occurs while SuperPing is in progress, the command reports an error message. Exit the command and rerun the test after the fabric becomes stable again.

SuperPing and the fcPing command are not supported for the simulated devices that exist on SIM ports. Use the flow command to enable the SIM ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

destination

Specifies the destination as follows.

- When using fcPing between a source and a destination, specify the destination as port WWN or a node WWN.
- When using fcPing to ping a single device, specify the destination as a PID, a switch WWN, a domain ID, or a switch domain controller ID.
- When using fcPing with the --allpaths option, specify the destination as a PID, a switch WWN, or a domain ID.

source

Specifies the source port ID, port WWN, or node WWN. This operand is optional; it is not valid with the SuperPing command (--allpaths).

The following operands are valid only when fcPing is executed without the --allpaths option (legacy mode):

--number frames

Specifies the number of ELS Echo requests to send. The default value is 5.

--length size

Specifies the frame size of the requests in bytes. The default value is 0. Without data, the Fibre Channel Echo request frame size is 12 bytes. The total byte count includes four bytes from the Echo request header and eight bytes from the timestamp. The maximum allowed value is 2,036 bytes. The length must be word-aligned.

--interval wait

Specifies the interval, in seconds, between successive ELS Echo requests. The default value is 0 seconds.

--pattern *pattern*

Specifies up to 16 "pad" bytes, which are used to fill out the request frame payload sent. This is useful for diagnosing data-dependent problems in the fabric link. The pattern bytes are specified as hexadecimal characters. For example, `--pattern ff` fills the request frame with instances of the number 1. If a non-byte-aligned pattern is specified, the upper nibble of the last pattern byte is filled with zeros. For example, `--pattern 123` fills the payload with a pattern of 0x1203.

--bypasszone

Bypasses the zone check.

--quiet

Suppresses the diagnostic output. Only zoning information, if applicable, and the summary line are displayed.

The following operands are valid only when fcPing is executed to perform a SuperPing:

--allpaths [*args*] *destination*

Executes a SuperPing that covers all available least-cost paths to the specified destination. The number of actual paths covered depends on two other parameters that you can optionally specify. When you issue `fcping --allpaths` for a destination without any other options, SuperPing covers all ISLs in the routes between source to destination but does not exercise all possible combinations of end-to-end paths. This operand is required when executing fcPing as SuperPing.

The following operands are optional and valid only with the `--allpaths` option:

-printisl

Displays statistical data for each ISL and internal port along the paths traversed by SuperPing. This information displays in addition to the path display.

-covcount *N*

Specifies the minimum number of times each ISL is exercised by the SuperPing command. The command sends *N* frames and checks if each ISL is exercised at least *N* times. When the condition is met, superPing exits and prints the statistics. The default value is 5.

-maxtries *M*

Specifies the maximum number of frames to be sent before SuperPing exits. If both `-maxtries` and `-covcount` are specified, SuperPing checks the ISL coverage and keeps resending frames until the minimum coverage condition is met or until the maximum number of echo frames specified in maxtries has been sent. For example, assuming a coverage count of 100 and a Maxtries value of 300, SuperPing will send 100 frames at a time and checks if each ISL is covered at least 100 times. If not, SuperPing will keep sending 100 frames at a time to check for coverage up to 3 times for a maximum of 300 frames ($3 \times 100 = 300$) on each egress port. If this value is set too low in relation to the specified coverage count, not all ISLs may be covered. The default value is 100.

-delay *D*

Includes a delay of *D* milliseconds between each echo frame sent.

-framelength *len*

Specifies the size of the data to send.

-errstats

Collects error statistics of each user port that is part of ISLs covered through SuperPing to reach destination domain.

-vc

Displays the ISL and internal port statistics per VC.

--help

Displays the command usage.

Examples

To display one device that accepts the request and another device that rejects the request:

```
switch:admin> fcping 10:00:00:00:c9:29:0e:c4 21:00:00:20:37:25:ad:05
Source:      10:00:00:00:c9:29:0e:c4
Destination: 21:00:00:20:37:25:ad:05
Zone Check:  Not Zoned

Pinging 10:00:00:00:c9:29:0e:c4 [0x20800] with 12 bytes of data:
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1162 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1013 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1442 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1052 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1012 usec
5 frames sent, 5 frames received, 0 frames rejected, 0 frames timeout
Round-trip min/avg/max = 1012/1136/1442 usec

Pinging 21:00:00:20:37:25:ad:05 [0x211e8] with 12 bytes of data:
Request rejected
Request rejected
Request rejected
Request rejected
Request rejected
5 frames sent, 0 frames received, 5 frames rejected, 0 frames timeout
Round-trip min/avg/max = 0/0/0 usec
```

To display one device that accepts the request and another device that does not respond to the request:

```
switch:admin> fcping 0x020800 22:00:00:04:cf:75:63:85
Source:      0x020800
Destination: 22:00:00:04:cf:75:63:85
Zone Check:  Zoned

Pinging 0x020800 with 12 bytes of data:
received reply from 0x020800: 12 bytes time:1159 usec
received reply from 0x020800: 12 bytes time:1006 usec
received reply from 0x020800: 12 bytes time:1008 usec
received reply from 0x020800: 12 bytes time:1038 usec
received reply from 0x020800: 12 bytes time:1010 usec
5 frames sent, 5 frames received, 0 frames rejected, 0 frames timeout
Round-trip min/avg/max = 1006/1044/1159 usec

Pinging 22:00:00:04:cf:75:63:85 [0x0217d9] with 12 bytes of data:
Request timed out
Request timed out
Request timed out
Request timed out
Request timed out
5 frames sent, 0 frames received, 0 frames rejected, 5 frames timeout
Round-trip min/avg/max = 0/0/0 usec
```

To use fcping with a single destination:

```
switch:admin> fcping 20:03:00:05:33:7e:97:e9
Pinging 20:03:00:05:33:7e:97:e9 [0x022300] with 12 bytes of data:
Request rejected
Request rejected by 0x022300: Command not supported: time: 1159 usec
Request rejected by 0x022300: Command not supported: time: 1006 usec
Request rejected by 0x022300: Command not supported: time: 1008 usec
Request rejected by 0x022300: Command not supported: time: 1038 usec
Request rejected by 0x022300: Command not supported: time: 1010 usec
5 frames sent, 0 frames received, 5 frames rejected, 0 frames timeout
Round-trip min/avg/max = 1006/1044/1159 usec
```

To use fcPing with a single destination (in the example, the destination is a switch WWN):

```
switch:admin> fabricshow
Switch ID      Worldwide Name      Enet IP Addr      FC IP Addr      Name
-----
6: fffc06 10:00:00:05:1e:34:2b:66 10.202.90.201 0.0.0.0 "mps_daz_1"
55:fffc37 10:00:00:05:1e:34:01:f5 10.202.90.226 0.0.0.0  pulsar055"

switch:admin> fcping 10:00:00:05:1e:34:2b:66
Destination:      10:00:00:05:1e:34:2b:66

Pinging 20:00:00:05:1e:34:2b:66 [fffc06] with 12 bytes of data:
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1162 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1013 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1442 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1052 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1012 usec
5 frames sent, 5 frames received, 0 frames rejected, 0 frames timeout
Round-trip min/avg/max = 1012/1136/1442 usec
```

To use fcPing with a single destination (in the example, the destination is a device node WWN):

```
switch:admin> nsshow
{
  Type Pid      COS      PortName      NodeName      TTL(sec)
N  370500;3;20:07:00:05:1e:35:10:7f;10:00:00:05:1e:35:10:7f; na
  Fabric Port Name: 20:05:00:05:1e:34:01:f5
  Permanent Port Name: 20:07:00:05:1e:35:10:7f
  Port Index: 5
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: NO
N  370501; 3;10:00:00:00:c9:3f:7c:b8;20:00:00:00:c9:3f:7c:b8; na
  FC4s: FCP
  NodeSymb: [44] "Emulex LP1050 FV1.81A1 DV5-5.20A9 DELL1750-3"
  Fabric Port Name: 20:05:00:05:1e:34:01:f5
  Permanent Port Name: 20:07:00:05:1e:35:10:7f
  Port Index: 5
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: NO
The Local Name Server has 2 entries }
```

```

switch:admin> fcping 20:00:00:00:c9:3f:7c:b8
Destination:      20:00:00:00:c9:3f:7c:b8

Pinging 20:00:00:00:c9:3f:7c:b8 [0x370501] with 12 bytes of data:
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:825 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:713 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:714 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:741 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:880 usec
5 frames sent,5 frames received,0 frames rejected,0 frames timeout
Round-trip min/avg/max = 713/774/880 usec

```

To execute a SuperPing testing all ISLs to a specified destination (in the example, two paths are tested, and each hop is displayed in Domain/Index format):

```

switch:admin> fcping --allpaths 165

Pinging(size:12 bytes) destination domain 165 through all paths

PATH SWITCH1-->      SWITCH2-->      SWITCH3-->      \
-----
1.(3/EMB,3/205)[128] (207/25,207/42)[128] (101/3,101/16)[128]\
2.(3/EMB,3/204)[128] (207/27,207/42)[128] (101/3,101/16)[128]\

SWITCH4      STATUS
-----
(165/99,165/0)[128]  SUCCESS
2(165/99,165/0)[128]  SUCCESS

```

To execute a SuperPing in a logical fabric (in the example, domains 10 and 40 in FID 1 are connected through the base fabric (FID 2)):

```

switch:admin: fcping --allpaths 40
Pinging(size:12 bytes) destination domain 30 through all paths

PATH SWITCH1-->  SWITCH2-->
-----
1.(10/EMB,10/4)[128] (20/5,20/EMB ) [128] (1/EMB, 1/6)[2] \
Successfully completed superping for all paths

SWITCH3-->      SWITCH4      STATUS
-----
(2/7,2/EMB)[2] (30/EMB,30/8)[128] (40/9, 40/EMB)[128] SUCCESS
Successfully completed superping for all paths

```

To execute a SuperPing and print statistical coverage of each ISL and internal port along the potential paths (in the example, a few errors are recorded on the ISLs 3/205->2/25, 3/204->2/27, 2/42->101/3, and 2/1->101/8, but the internal port analysis shows that errors are recorded on the internal port 0/284 in domain 2, which is the potential faulty link):

```

switch:admin> fcping --allpaths -printisl 101
Pinging(size:12 bytes) destination domain 101 through all paths

PATH      SWITCH1-->      SWITCH2-->      \
-----
1.      ( 3/EMB, 3/123)[128] (165/96 ,165/99 ) [128] \

```



```

2.   ( 3/EMB, 3/205)[128] ( 2/25 , 2/1 ) [128]   \
3.   ( 3/EMB, 3/205)[128] ( 2/25 , 2/42 ) [128]   \
4.   ( 3/EMB, 3/204)[128] ( 2/27 , 2/42 ) [128]   \
5.   ( 3/EMB, 3/204)[128] ( 2/27 , 2/1  ) [128]   \

```

```

SWITCH3                STATUS
-----
(101/16 ,101/EMB)[128]  SUCCESS
(101/8  ,101/EMB)[128]  FAILED
(101/3  ,101/EMB)[128]  FAILED
4(101/3 ,101/EMB)[128]  FAILED
 101/8  ,101/EMB)[128]  FAILED

```

Completed superping for all paths. Error found in few paths

ISL COVERAGE

```

-----
SNO                ISL                                STATUS
-----
1      ( 3/123[128]-->165/96[128] )                SUCCESS(5/5)
2      ( 3/205[128]--> 2/25[128] )                FAILURE(7/50)
3      ( 3/204[128]--> 2/27[128] )                FAILURE(11/50)
4      (165/99[128] -->101/16[128] )                SUCCESS(5/5)
6      ( 2/42[128] -->101/3[128] )                FAILURE(10/67)
7      ( 2/1[128]  -->101/8[128] )                FAILURE(8/33)

```

INTERNAL PORT COVERAGE

```

-----
SNO      DOMAIN  INTRNL_PORT    STATUS
-----
1         2       0/272      SUCCESS(40/40)
2         2       0/276      SUCCESS(44/44)
3         2       0/280      SUCCESS(30/30)
4         2       0/284      FAILURE(20/20)

```

To execute a SuperPing with a coverage count of 1000 and a maxtries value of 5000 (in the example, the ISL (3/204->204/27), could not be covered 1000 times):

```

switch:admin> fcping --allpaths -covcount 1000 \
-maxtries 5000 -printisl 165

```

Pinging(size:12 bytes) destination domain 165 through all paths

```

|
PATH SWITCH1-->  SWITCH2-->          SWITCH3-->          \
-----
1.(3/EMB,3/205)[128] (207/25,207/42)[128] (101/3,101/16)[128]\
2.(3/EMB,3/204)[128] (207/27,207/42)[128] (101/3,101/16)[128]\

```

```

SWITCH4                STATUS
-----
(165/99,165/0)[128]  SUCCESS

(165/99,165/0)[128]  SUCCESS

```

Successfully completed superping for all paths

ISL COVERAGE

SNO	ISL	STATUS

1	(3/205-->207/25)	SUCCESS(4025/4025)
2	(3/204-->207/27)	SUCCESS(5/5)
3	(207/42 -->101/3)	SUCCESS(4030/4030)
4	(101/16 -->165/99)	SUCCESS(4030/4030)

INTERNAL PORT COVERAGE

SNO	DOMAIN	INTRNL_PORT	STATUS

SEE ALSO None

fcpLogClear

Clears the FCPD debug information log.

Synopsis **fcplogclear**

Description Use this command to clear the debug information logged by the Fibre Channel Protocol daemon (FCPD).

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To clear the FCPD debug information log:

```
switch:admin> fcplogclear
```

SEE ALSO [fcpLogDisable](#), [fcpLogEnable](#), [fcpLogShow](#)

fcpLogDisable

Disables the FCPD debug information log.

Synopsis **fcplogdisable**

Description Use this command to disable the logging of debug information by the Fibre Channel Protocol daemon (FCPD).

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable the FCPD debug information log:

```
switch:admin> fcplogdisable
```

SEE ALSO [fcpLogClear](#), [fcpLogEnable](#), [fcpLogShow](#)

fcpLogEnable

Enables the FCPD debug information log.

Synopsis **fcplogenable**

Description Use this command to enable Fibre Channel Protocol daemon (FCPD) logging. Debug information logging is enabled by default.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable the FCPD debug information log:

```
switch:admin> fcplogenable
```

SEE ALSO [fcpLogClear](#), [fcpLogDisable](#), [fcpLogShow](#)

fcpLogShow

Displays the FCPD debug information log.

Synopsis **fcplogshow**

Description Use this command to display the debug information logged at various stages during the Fibre Channel Protocol daemon (FCPD) device probing.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the FCPD debug information log:

```
switch:admin> fcplogshow
Switch 0; Sat Dec 18 14:22:05 2010
14:22:05.799269 Flush or Probe rcvd, port 15, \
    Line: 16777862, scn_type: 2
14:22:05.799279 Probe flush, port:15, \
    Line:16780554, flag:0
14:22:17.469561 Flush or Probe rcvd, port 15, \
    Line: 16777862, scn_type: 1
14:22:17.469567 Probe Msg Rcvd, port: 15, Line: 16777899, \
    prev_state: 0, msg_scn_arg1: 0
14:22:17.470618 fcpStartProbe, port: 15, line: 16778347, \
    async_state: 1, origin: 0,probe_state: 0, opt_code: 0
14:22:17.471052 fcpStartProbe, port: 15, line: 16778413, \
    async_state: 1073741824, origin: 0,probe_state: 0, opt_code: 0
14:22:17.471057 Probe flush, port:15, Line:16780554, flag:1
(output truncated)
```

SEE ALSO [fcpLogClear](#), [fcpLogDisable](#), [fcpLogEnable](#)

fcpProbeShow

Displays the Fibre Channel Protocol (FCP) probe information.

Synopsis **fcpprobeshow** [*slot*]/*port*

Description Use this command to display the Fibre Channel Protocol daemon (FCPD) device probing information for the devices attached to the specified F_Port or FL_Port. This information includes the number of successful logins and SCSI INQUIRY commands sent over this port and a list of the attached devices.

This command includes probing information for NPIV devices. In addition, this command displays the list of devices connected to a port and the number of successful PLOGI, PRLI, INQUIRies, and current probe state. For F_Ports and NPIV ports, when the F_Port Device Update Mode is ON, the probed device details are updated in the "npiv update map" field. When the F_Port Device Update Mode is OFF, the probed device details are updated in the "update map" field. Use the configure command to configure the F_Port Device Update Mode.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

Specify the port number to display, relative to its slot for bladed systems. Use switchShow to list valid ports. This operand is required.

Examples To display the FCP probe information:

```
switch:admin> fcpprobeshow 31

port 0 is FV-Port and it is online.
nodes probed:          3
successful PLOGIs:     3
successful PRLIs:      3
successful INQUIRies:  3
successful LOGOs:      3
outstanding IUs:       0
probing state:         3
probing TOV:           0
probing count:         0
probing next:          0
pmap:                  0x00000000, 0x00000000, 0x00000000, 0x00000000
update map:            0x40000000, 0x00000000, 0x00000000, 0x00000000
npiv pmap:             0x00000000 0x00000000 0x00000000 0x00000000 \
                      0x00000000 0x00000000 0x00000000 0x00000000
npiv update map:       0x00000006 0x00000000 0x00000000 0x00000000 \
                      0x00000000 0x00000000 0x00000000 0x00000000
```

```
list of devices(may include old NPIV devices):  
0x500e8: SEAGATE ST318452FC      0005  
0x500e4: SEAGATE ST318452FC      0001  
0x500e2: SEAGATE ST318452FC      0005
```

SEE ALSO [portLoginShow](#), [portLogShow](#)

fcpRlsProbe

Initiates the Fibre Channel Protocol (FCP) Read Link Status (RLS) probing for F_Port and displays the RLS information.

Synopsis **fcpRlsProbe --start** [*slot*]/*port_list*

fcpRlsProbe --show [*slot*]/*port*

fcpRlsProbe --help

Description Use this command to initiate the FCP RLS probing or to display the RLS information. This information describes the number of link failures, loss-of-signal, loss-of-sync, CRC errors, and other failure events detected on the specified port.

Use the `fcpRlsProbe --start` command to read the error status block for F/FL-Ports. This command will send a RLS ELS probe to the device on the specified port and caches the RLS information.

Use the `fcpRlsProbe --show` command to display the cached RLS information. For the command to send RLS probe to the device you must enable the following parameter: Disable Device Probing = 0 (Enables device probing. By default Device probing is enabled).

For this command to gather and display F_Port error statistics, apart from enabling the device probing, you must enable RLS Probing using the `fcpRlsProbe --start` command or use the configure command, "Disable RLS Probing". By default, RLS probing is disabled.

Notes The cached RLS information will be provided in `supportsave`. To have the updated RLS information for a specified port or port range in `supportsave`, execute `fcpRlsProbe --start` successfully before initiating the `supportsave`.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

Specifies the slot number, if applicable, followed by a slash (/).

port_list

Specifies a port number. You can specify a port or range of ports.

--start

Sends the ELS RLS to the device and gets the RLS information.

--show

Displays the RLS information.

--help

Displays the command usage.

Examples To start the RLS probing:

```
switch:admin> fcprlsprobe --start 1
RLS probing initiated...
Please use the fcprlsprobe --show port command to view the RLS info.
```

To view the RLS information:

```
switch:admin> fcprlsprobe --show 1
Rls Probing Statistics for port 1
=====
AL_PA 0x0
-----
RLS Probe Status      : SUCCESS
Last Updated         : Fri May 18 08:44:11 2012

-----
link fail loss sync loss sig prtc err bad word crc err
-----
0         6         6         0         65555     0
```

SEE ALSO [fcpRlsShow](#)

fcprlsShow

Displays the Fibre Channel Protocol (FCP) Read Link Status (RLS) information.

Synopsis **fcprlsshow** [*slot*]/*port*

Description Use this command to display the FCP RLS information for an F_Port or FL_Port. This information describes the number of loss-of-signal, loss-of-sync, CRC errors, and other failure events detected on the specified port.

For this command to gather and display F_Port error statistics,

- you must enable the configuration parameter: Disable Device Probing = 0 (Enables device probing. By default Device probing is enabled).
- you must enable RLS Probing in the following ways: Use the fcprlsprobe --startcommand which enables RLS Probing or use the configure command "Disable RLS Probing" to enable RLS probing. Disable RLS Probing = Off (Enables RLS Probing) by default RLS probing is disabled.

Use the fcprlsprobe --show command to view the RLS information.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

port

Specifies the port number to display, relative to its slot for bladed systems. Use switchShow for a listing of valid ports. This operand is required.

Examples To display the FCP RLS information:

```
switch:admin> fcprlsshow 9
RLS Probing Statistics for port 9
=====

AL_PA 0x1
=====
RLS Probe Status      : SUCCESS
Last Updated         : Mar 4 03:17:50 2012
-----
link fail loss sync  loss sig  prtc err  bad word  crc err
-----
1138          65047      1138      0          4996278  71

AL_PA 0x2
=====
RLS Probe Status      : FAIL (RLS Send timed out)
Last Updated         : Mar 4 03:17:50 2012
```

```

AL_PA  0x3
=====
RLS Probe Status      : SUCCESS
Last Updated          : Mar 4 03:17:52 2012
-----
link fail  loss sync  loss sig  prtc err  bad word  crc err
-----
147        1035      118        0        306278    72

```

SEE ALSO [portLoginShow](#), [portShow](#)

fcrBcastConfig

Displays or sets the broadcast frame forwarding option.

Synopsis **fcrbcastconfig --show**

fcrbcastconfig --enable -f *fabric_id*

fcrbcastconfig --disable -f *fabric_id*

fcrbcastconfig --help

Description Use this command to enable or disable the broadcast frame option or to display the current configuration. If no operands are specified, this command displays the usage. By default, frame forward option is disabled. Use the --show option to display the current settings on the switch.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--show

Shows the current broadcast configuration as enabled or disabled. If broadcast frame forwarding is disabled for selected FIDs, only the enabled FIDs in the current configuration are displayed.

--enable

Enables the frame forwarding option for a specified fabric ID.

--disable

Disables the frame forwarding option for a specified fabric ID

-f *fabric_id*

Specifies the fabric ID to be disabled or enabled. Valid values are 1 to 128. This operand is required with the --enable and --disable options.

--help

Displays the command usage.

Examples To display the current configuration:

```
fcr:admin> fcrbcastconfig --show
Broadcast configuration is disabled for all FID
```

To enable broadcast frame forwarding for FID 33, 28, and 2:

```
fcr:admin> fcrbcastconfig --enable -f 33
fcr:admin> fcrbcastconfig --enable -f 28
fcr:admin> fcrbcastconfig --enable -f 2
```

To display the new configuration:

```
fcr:admin> fcrbcastconfig --show  
Broadcast configuration is enabled for FID:  
2 33 128
```

To disable broadcast frame forwarding for FID 33:

```
fcr:admin> fcrbcastconfig --disable -f 33
```

To display the new configuration:

```
switch:admin> fcrbcastconfig --show  
Broadcast configuration is enabled for FID:  
2 128
```

SEE ALSO [bcastShow](#), [portRouteShow](#)

fcrConfigure

Displays or sets FC Router configuration parameters.

Synopsis

```

fcrconfigure --bbfid

fcrconfigure --enable -shortestifl

fcrconfigure --disable -shortestifl

fcrconfigure --add -alias Alias_name -fid FID

fcrconfigure --delete -alias [FID | -all]

fcrconfigure --resetphantomdomain [-force]

fcrconfigure --show [-alias]

fcrconfigure --help

```

Description Use this command to change the backbone fabric ID, or to enable or disable the shortest inter-fabric link (IFL) mode. If no operands are specified, this command displays the usage. Use the --show option to display the current settings on the switch.

Before you configure the backbone fabric ID using the --bbfid option, you must disable FC routing by using the fosConfig command and disable the switch using the switchDisable command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--bbfid

Specifies the Backbone Fabric ID. This is an interactive option. A fabric ID uniquely identifies a fabric in FC Router configurations. The backbone fabric is the fabric attached to the U_Ports of the switch, for example, E_Ports or F_Ports. The backbone fabric ID must be unique across all fabrics connected to the FC Router. Use the switchShow command to display the current Backbone Fabric ID.

--enable -shortestifl

Enables the shortest IFL mode in FC Router.

When the shortest IFL mode is enabled, FC Router can choose a lowest-cost IFL path in the backbone fabric. This feature is useful when an FC Router has multiple connections to the source edge fabric and the backbone fabric has multiple FC Routers connected through FCIP links (VE_Ports) and FC links (E_Ports). Because a domain in an edge fabric can choose any equal cost path to reach the translate domain, frames can be transmitted through FCIP links even though FC links are present in the backbone fabric. When the shortest IFL mode is enabled, the FCIP path in the backbone fabric is avoided while reaching the destination edge fabric.

You should identify the FCIP links in the backbone fabric and then the direction of the FCIP path (across the backbone fabric) from the source to the destination edge fabric. Once the direction of the FCIP path is identified, set the cost of the FCIP link greater than or equal to 10000 by using the linkCost command. The link cost must be set for all FC Routers in the identified FCIP link path. Likewise, identify and set the cost for other FCIP paths of all destination edge fabrics.

After you identify the FCIP links between FC Routers for all fabrics and updated the cost of all FCIP links, enable the shortest IFL mode in all the FC Routers in the backbone fabric using this option. If the FCIP link is the only available path from the source to the destination edge fabric, then traffic will flow through that FCIP link only.

--disable -shortestifl

Disables the shortest IFL mode in FC Router.

--add -alias *Alias_name* -fid *FID*

Adds the alias name to the specific FID.

--delete -alias [*FID* | -all]

Deletes a specific FID alias association or all FID alias associations.

--resetphantomdomain

Resets the persistent front and translate domain IDs to the default starting value (160 for front domain ID and 200 for translate domain ID).

-force

Executes the command without confirmation. This operand is optional.

--show [-alias]

Shows the current Backbone Fabric ID with the associated alias name and the status of the shortest IFL mode as enabled or disabled.

--help

Displays the command usage.

Examples

To configure FC Router parameters:

```
fcr:admin> fcrconfigure --bbfid
Backbone fabric ID parameter set. <cr> to skip this parameter
Please make sure new Backbone Fabric ID does \
    not conflict with any configured EX-Port's Fabric ID
Backbone fabric ID: (1-128)[128]32
```

To enable shortest IFL mode:

```
fcr:admin> fcrconfigure --enable -shortestifl
Shortest IFL path is enabled.
```

To disable shortest IFL mode:

```
fcr:admin> fcrconfigure --disable -shortestifl
Shortest IFL path is disabled
```


To display the current configuration:

```
fcr:admin> fcrconfigure --show
Backbone fabric ID: 32
Shortest IFL feature is disabled
```

To assign a name to a FID:

```
fcr:admin> fcrconfigure --add -alias Red_fabric -fid 10
```

To display a name associated to a FID:

```
fcr:admin> fcrconfigure --show -alias
FIDAlias
=====
10Red_fabric
```

To delete the name of a FID:

```
fcr:admin> fcrconfigure --delete -alias 10
```

To reset all the phantom domain to the default range:

```
fcr:admin> fcrconfigure --resetphantomdomain
This operation will reset all the phantom domain to be default range
Do you want to continue (Y/N):y

Phantom Domain IDs were successfully reset to default
```

SEE ALSO [fosConfig](#), [portCfgEXPort](#), [switchDisable](#), [switchEnable](#), [switchShow](#), [linkCost](#)

fcrEdgeShow

Displays the FIDs of all configured EX_Ports.

Synopsis **fcredgeshow**

fcredgeshow [-fid *FabricID*]

fcredgeshow --help

Description Use this command without operand to display information about all Fabric IDs (FIDs) that have been created on the chassis and are assigned to EX_Ports.

When a FID is specified, fcredgeshow displays information for all EX_Ports configured with the specified FID.

For each FID, the command output includes the following:

FID	Fabric ID of the EX_Port.
EX-port	EX_Port number of the switch.
E_Port	Port number for the remote E_Port.
PWWN	Neighbor switch port WWN.
SWWN	Neighbor switch WWN.
Flags	encryption, compression and fec features

The command output depends on the EX_Port configuration:

- If the EX_Port is online, the command displays the FID, the EX_Port to which it is assigned, the E_Port, the port WWN, the switch WWN and Port flags. Inter Chassis Link (ICL) EX_Ports do not support encryption and compression.
- If no EX_Ports are configured in the switch, the command displays "No EX-port Configured".
- If no EX_Ports are configured within the specified FID, the command displays the following message: "No EX-ports with FID FabricID."

Notes This command is not supported on the Brocade Analytics Monitoring Platform.

The execution of this command is subject to Virtual Fabric or Admin Domain restrictions that may be in place. Refer to Chapter 1, "Using Fabric OS Commands" and Appendix A, "Command Availability" for details.

Operands This command has the following operands:

-fid *FabricID* Specifies the FID for which to display the configured EX_Ports.

--help

Displays the command usage.

Examples

To display the EX_Ports configured in the switch:

```
switch:admin> fcredgeshow
FID  EX-port  E-port  Neighbor Switch (PWWN, SWWN ) Flags
-----
25   1/13      244    20:f4:00:05:1e:38:a4:cb 10:00:00:05:1e:38:a4:cb FEC \
      ENCRYPTION COMPRESSION
35   1/12      299    2e:2b:00:05:1e:40:44:02 10:00:00:05:1e:40:44:02 ENCRYPTION \
      COMPRESSION
11   5/13      273    2e:11:00:05:33:b3:39:00 10:00:00:05:33:b3:39:00 FEC
```

To display the EX_Ports configured with a specified FID:

```
switch:admin> fcredgeshow -fid 25
FID EX-port  E-port  Neighbor Switch (PWWN, SWWN ) Flags
-----
25  11         244    20:f4:00:05:1e:38:a4:cb 10:00:00:05:1e:38:a4:cb FEC ENCRYPTION \
      COMPRESSION
```

To display a FID for which no EX_Ports are configured:

```
switch:admin> fcredgeshow -fid 29
No EX-ports with FID 29
```

SEE ALSO
[fcrPhyDevShow](#), [fcrProxyDevShow](#), [fcrRouteShow](#), [lsanZoneShow](#), [switchShow](#), [fcrFabricShow](#)

fcrFabricShow

Displays the FC Routers on a backbone fabric.

Synopsis

fcrfabricshow

fcrfabricshow --name

fcrfabricshow --alias

fcrfabricshow --help

Description

Use this command to display information about FC Routers that exist in an FC Router backbone fabric. The existing syntax is maintained for IPv6 support. When IPv6 addresses are not configured, the output of fcrFabricShow displays the IPv4 format. Use the --name option to display the fabric name along with EX-port, FID, and switch name.

The message "No active FC Routers found" is displayed if no active FC Routers are present on the backbone fabric.

The following information is displayed for each FC Router found on the backbone fabric:

WWN

The world wide name of the FC Router.

Domain ID

The domain ID of the FC Router. This domain ID is relevant only on the backbone fabric.

Info

The Ethernet IP address and switch name of the FC Router. When IPv6 addresses are configured, only the static IP address displays for each FC Router found on the backbone fabric.

EX_Ports

A listing of active EX_Ports for the FC Router and information about these EX_Ports. This information includes:

EX_Port

The port number for the trunkmaster EX_Port. An asterisk (*) at the end of the line indicates that the EX_Port is a Remote Router Port.

FID

The fabric ID of the EX_Port.

Neighbor Switch Info(WWN, enet IP, name)

The WWN, Ethernet IP address, and switch name of the switch attached to the EX_Port.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand.

--name

Displays the FC Routers on a backbone fabric with edge fabric names.

--alias

Displays the FC Routers on a backbone fabric with alias name of each fabric.

--help

Displays the command usage.

Examples

To display the FC Routers in the backbone fabric:

```
switch:admin> fcrfabricshow

FC Router WWN: 10:00:00:05:1e:41:59:81, Dom ID: 2, Info:
10.33.36.8, "swd77"
EX_Port FID Neighbor Switch Info (enet IP, WWN, name)
-----
12      5  10.33.35.81 10:00:00:05:1e:34:01:d0 "B10_4"

FC Router WWN: 10:00:00:05:1e:41:1c:73, Dom ID: 4, Info:
10.33.36.12, "ttv12"
EX_Port FID Neighbor Switch Info (enet IP, WWN, name)
-----
9       2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"
10      2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"

FC Router WWN: 10:00:00:05:1e:39:51:67, Dom ID: 5, Info:
10.33.36.96, "Scimitar"
EX_Port FID Neighbor Switch Info (enet IP, WWN, name)
-----
151     2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"*
```

To display the fabric name along with EX-port, FID, and switch name:

```
switch:admin> fcrfabricshow --name

FC Router WWN: 10:00:00:05:33:13:70:3e, Dom ID: 1,
Info: 10.17.33.129, "U34"
EX_Port FID Neighbor Switch Info (swname, fabricname)
-----
16      22 "SPIRIT-2" "FOSFCR"
17      22 "SPIRIT-2" "FOSFCR"
18      22 "SPIRIT-2" "FOSFCR"

FC Router WWN: 10:00:00:05:33:13:74:3e, Dom ID: 2,
Info: 10.17.33.128, "U35"
EX_Port FID Neighbor Switch Info (swname, fabricname)
-----
7       33 "STINGER-U33" "BODCFER"
4       33 "STINGER-U33" "BODCFER"
5       33 "STINGER-U33" "BODCFER"
6       33 "STINGER-U33" "BODCFER"
```

To display the FC Routers on a backbone fabric with alias name:

```
switch:admin> fcrfabricshow --alias
FC Router WWN: 10:00:00:05:1e:44:d2:00, Dom ID: 20,
Info: 10.38.134.20, 2620:100:4:f400:205:1eff:fe44:d200 "DCX+"
EX_Port Alias_name Neighbor Switch Info (enet IP, name)
-----
249 "RED" 10.38.134.30 "p8510"
2620:100:4:f400:205:1eff:feb7:1000
215 "GREEN" 10.38.134.13 "Skybolt13_sw1"
```

SEE ALSO [fcrPhyDevShow](#), [fcrProxyDevShow](#), [fcrRouteShow](#), [lsanZoneShow](#), [switchShow](#)

fcrIclPathBWMonitor

Sets or displays FC Router ICL bandwidth monitor parameters for EX_Ports.

Synopsis **fcrIclpathbwmonitor --enable**

fcrIclpathbwmonitor --disable

fcrIclpathbwmonitor --show

fcrIclpathbwmonitor --help

Description Use this command to enable or disable the Inter Chassis Link (ICL) EX_Ports bandwidth Monitor feature on an FC Router, or to display the current status of ICL bandwidth feature and the ICL slot bandwidth assigned to connected edge fabrics. If no operands are specified, this command displays the usage. By default, this feature is disabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--enable

Enables the ICL EX_Port bandwidth Monitor feature on an FC Router. In the enable mode, FC Router will periodically check for bandwidth imbalances from each ICL slot of FC Router to each ICL slot of neighbor switch connected through EX_Ports. A RASLog message will be generated when bandwidth imbalance is detected or resolved to other fabric.

--disable

Disables the ICL EX_Port bandwidth Monitor feature on an FC Router.

--show

Displays the current ICL EX_Port bandwidth Monitor feature status and bandwidth from each slot to connected edge fabric.

--help

Displays the command usage.

Examples To enable ICL EX_Port bandwidth Monitor:

```
fcr:admin> fcrIclpathbwmonitor --enable
ICL bandwidth balance Monitor functionality is enabled
```

To disable ICL EX_Port bandwidth Monitor:

```
fcr:admin> fcrIclpathbwmonitor --disable
ICL bandwidth balance Monitor functionality is disabled
```

To display the current configuration:

```
fcr:admin> fcrIclPathBWMonitor --show
ICL Path Bandwidth state :Enabled

FABRIC  SLOT-3 BW  SLOT-6 BW  STATE
=====
    48      128      128    BALANCED
    126      64      128    UNBALANCED
```

SEE ALSO [fosConfig](#), [switchDisable](#), [switchEnable](#), [switchShow](#)

fcrLsan

Configures and displays LSAN policies.

Synopsis **fcrLsan**

fcrLsan --add -enforce tag | -speed tag

fcrLsan --remove -enforce tag | -speed tag

fcrLsan --show -enforce | -speed | -all

fcrLsan --help

Description

Use this command to add or remove LSAN tags, or to display existing tags in the configuration. LSAN tagging optimizes an FC Router's behavior based on a specified subset of LSANS. This feature improves scalability and performance related to LSAN zone size and the speed with which they are imported or exported.

This command supports two types of LSAN tags: enforced tags and speed tags.

- Enforced LSAN tags filter zones accepted by the FC Router from the edge fabric by matching the zones to the configured tags. Only matching zones are accepted into the local database for export and import. For example, if you configure an enforced LSAN tag "BRCD" on a router, only zones with names starting with "lsan_BRCD" are accepted. If multiple tags are configured, any matching zones are accepted. A maximum of eight LSAN enforce tags are configurable per FC Router switch.
- A speed tag is a flag to indicate to the FCR that the targets in the LSANs matching the tag need to be imported permanently when host and target are zoned together, even if the host is not present. This mechanism facilitates a speedy discovery process by reducing instances of failure related to timeouts. Once the devices that belong to the target edge fabric are defined as speed LSANS, the import or export can occur with a minimum amount of delay when hosts reboot or are added to the zone database.

The following restrictions apply when configuring LSAN tags:

- The switch must be disabled when you configure enforce tags. Speed tags can be configured while the switch is online.
- You must change the LSAN name in the edge fabric or the backbone fabric and propagate the LSAN to the FCR. Note that enforce tags are not supported in the backbone fabric.
- The speed tags must be set in all related FC Routers in order for import and export to proceed correctly. However, only LSANs on the target edge fabric must append the tag.

When executed without operands, fcrLsan displays the command usage.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add

Adds the specified tag to the LSAN tag configuration.

--remove

Removes the specified tag from the LSAN tag configuration.

--show

Displays the specified tag from the LSAN tag configuration.

--help

Displays the command usage.

-enforce tag

Accepts only the LSANs from the edge fabric that matches the specified tag string into the local FCR database. A valid tag is a string of a maximum of eight characters. The maximum configurable enforced tags is eight.

-speed tag

Allows the FCR to always import these target devices to the hosts specified in the LSANs that match the speed tag. Only one speed tag is allowed per FC router.

-all

When used with the --show option, this command displays all LSAN tags in the FCR LSAN tag database.

Examples

To add an LSAN enforcement tag named "brocade":

```
switch:admin> switchdisable

switch:admin> fcrlsan --add -enforce brocade
LSAN tag set successfully
```

To add a speed tag named "mcdt":

```
switch:admin> fcrlsan --add -speed mcdt
LSAN tag set successfully
```

To remove the LSAN enforcement tag "brocade":

```
switch:admin> fcrlsan --remove -enforce brocade
LSAN tag removed successfully
```

To remove the speed tag "mcdt":

```
switch:admin> fcrlsan --remove -speed mcdt
LSAN tag removed successfully
```

To display the information from the cache:

```
switch:admin> fcrlsan --show -enforce
Total LSAN tags : 2
ENFORCE : brocade
ENFORCE : cisco

switch:admin> fcrlsan --show -speed
Total LSAN tags : 1
SPEED: mcdt
```

```
switch:admin> fcrlsan --show -all
Total LSAN tags : 3
ENFORCE : brocade
ENFORCE : cisco
SPEED: mcdt
```

SEE ALSO [fcrFabricShow](#), [lsanZoneShow](#), [fcrPhyDevShow](#), [fcrProxyDevShow](#), [fcrRouteShow](#), [switchShow](#)

fcrLsanCount

Displays or sets the maximum LSAN count.

Synopsis **fcrlsancount** [*max_lsan_count*]

Description Use this command to set or display the maximum number of LSAN zones that can be configured on the edge or backbone fabric. By default, the maximum LSAN count is set to 3000, which is also the minimum. This command allows you to create LSAN zones up to 5000 for Gen5 platforms and 7500 for Gen6 platforms in the backbone fabric, if needed to support additional devices. The maximum number of supported LSAN devices is 10,000 for Gen5 platforms and 15000 for Gen6 platforms.

When executed without operand, this command displays the current LSAN zone limit.

This command assumes that all FCRs in the same LSAN fabric matrix or backbone have the same maximum LSAN count defined in order to protect the FCRs from running into indefinite state. Asymmetric LSAN configurations due to different maximum LSAN counts may lead to different devices being imported on different FCRs.

Because the maximum number of LSANs is configured per switch, if there is a different maximum LSAN count on the switches throughout the meta-SAN, the device import or export will not be identical on the FCRs. You should therefore enter the same maximum LSAN count for all the FCR switches in the same backbone that support this feature. Verify the configured maximum limit against the LSANs configured using the `fcrResourceShow` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

max_lsan_count
Specifies the maximum LSAN count.

Examples To display the current LSAN limit:

```
switch:admin> fcrlsancount
LSAN Zone Limit: 3000
```

To increase the LSAN zone limit:

```
switch:admin> fcrlsancount 5000
LSAN Zone Limit: 5000
```

SEE ALSO [fcrResourceShow](#)

fcrLsanMatrix

Creates, modifies, and displays the LSAN fabric matrix or the FCR matrix.

Synopsis

fcrLsanMatrix

fcrLsanMatrix --add -lsan *FID FID* | -fcr *wwn wwn*

fcrLsanMatrix --remove -lsan *FID FID* | -fcr *wwn wwn*

fcrLsanMatrix --apply -lsan | -fcr | -all

fcrLsanMatrix --cancel -lsan | -fcr | -all

fcrLsanMatrix --display -lsan | -fcr

fcrLsanMatrix --fabricview -lsan | -fcr

fcrLsanMatrix --verify -lsan | -fcr

fcrLsanMatrix --quickmode -lsan | -fcr

fcrLsanMatrix --help

Description

Use this command to create, modify, remove, and manage Logical SAN (LSAN) Zone bindings between edge fabrics or between FC routers. LSAN Zone bindings specify pairs of edge fabrics or FCRs that can access each other and share LSAN Zone and device database information.

This command follows a transaction model. Modifications to the LSAN fabric matrix or to the FC router matrix are saved nonpersistently in a cache until you save the changes persistently with the --apply option.

When used with the -lsan option, this command manages the LSAN matrix information. An LSAN fabric pair binds two edge fabrics specified by their Fabric IDs. Every paired edge fabric implies two-way communications. The paired edge fabrics have access only to the edge fabrics associated with them by this command. The edge fabrics that are not specified in the LSAN fabric matrix have access to the remaining unspecified edge fabrics. Using this information, the FCR switch maintains the remote LSAN Zone and the device state database only if it is associated with its local edge fabrics.

For example, if the edge fabrics with FIDs 1, 2, 3, 4, and 5 are online, all edge fabrics have two-way communication. This is the default behavior. If you pair the edge fabrics 1 and 2 with the --add -lsan command, the default access between the edge fabrics is changed as follows:

- Fabric 1 can access only fabric 2.
- Fabric 2 can access only fabric 1.
- The fabrics 3, 4, and 5 can access each other, but cannot access Fabric 1 or 2.

The LSAN matrix information is automatically distributed to all switches in the fabric. The FIDs entered are not required to be online when you set up the LSAN fabric matrix.

When used with the -fcr option, this command manages the FC router matrix. This database consists of FC router pairs that can talk to each other. All edge fabrics connected to a defined pair of FCRs are allowed to import devices to each other.

Once a fabric is removed from an FCR, the communication with other fabrics of the two FCRs is also removed. It is advisable to update the matrix to reflect the change. If FCR Binding is enabled in the edge fabrics, the edge fabrics can still communicate with the backbone fabric. The LSan matrix provides a higher level of granularity than the FCR matrix. Therefore, communication between two fabrics could pass the FCR matrix, but fail due to restriction of the FID matrix.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands If no operands are specified, this command displays the persistent LSan Zone matrix information. The following operands are optional:

--add -lsan FID FID | -fcr wwn wwn

Adds the pair of edge fabrics or FCR members that can access each other to the LSan matrix cache. Edge fabrics are specified by their Fabric IDs. FCRs are specified by their world wide names (WWNs). If the FCR is online, the domain ID of the switch can be used in place of the WWN. If you specify --add with zero (0) value for FID or 00:00:00:00:00:00:00:00 for wwn, the command returns the cache to default mode.

--remove -lsan FID FID | -fcr wwn wwn

Removes the specified pair of FIDs or FCRs from the cache. When you remove a fabric or FCR pair from the LSan matrix, the edge fabrics assume the default behavior.

--apply -lsan | -fcr | -all

Applies the information from the cache to persistent memory. This operation succeeds only if there is no effect on the existing import/export devices. Otherwise, this command generates an error message. See the Diagnostics section for more information.

--cancel -lsan | -fcr

Cancels changes made to the cache that were not applied. This command effectively reverts to the persistently stored information.

--display -lsan | -fcr

Displays the information saved in the cache.

--fabricview -lsan | -fcr

Displays all static and default/dynamic fabric bindings in the backbone.

--verify -lsan | -fcr

Verifies if the LSan Zone information previously entered and stored in the cache can be successfully applied. The data is considered acceptable if the apply operation does not cause any traffic disruption

--quickmode

Derives the LSan Zone matrix from the imported or exported devices.

Diagnostics Error message (1)

LSan Matrix in the cache conflicts with existing import/export devices and may disrupt traffic. Please refer to the man page for the corrective action.

Corrective actions:

- Any new router added to the backbone fabric automatically triggers a matrix merge. If a router does not support the matrix merge feature, the router cannot join the backbone fabric. Make sure that all legacy FCR switches in the backbone support the matrix merge feature, otherwise the feature is not supported.
- Use `fcrLsanmatrix --fabricview -lsan | -fcr` to confirm that all the switches in the backbone have the same LSAN and FCR Binding matrix. If not, there are two solutions. The first solution is to modify one FCR or both to make them the same and then activate the FCRs. The second solution is to zero out the database of one FCR to signal that this FCR accepts the database from the other FCR once the change is activated.

To zero out the database, execute the following commands:

- `fcrLsanmatrix --add -lsan 0 0`
- `fcrLsanmatrix --add -fcr 00:00:00:00:00:00:00:00 00:00:00:00:00:00:00:00`
- `fcrLsanmatrix --apply -all`
- In a dual backbone configuration, execute `fcrLsanmatrix --fabricview` on the FCR switches to confirm that the shared edge fabric FIDs have the same access in both backbones.
- Execute `fcrLsanmatrix --display -lsan | -fcr` and `fcrproxydevshow -a`. Check that the LSAN Binding matrix in the cache is not in conflict with the existing import/export devices that are displayed on the FCR switch. If there is a conflict, do one of the following:
 - Update the LSAN/FCR Binding matrix in the cache to allow access for the FIDs that have imported devices.
 - Remove the conflicting import/export devices by updating the LSAN zone in the edge fabrics.
 - Disable the conflicting devices.

Error message (2)

There may be other FCR switches in the backbone that do not support the LSAN Binding feature or do not have the same `fcrLsanmatrix` settings.

Please refer to the man page for the corrective action.

Corrective actions:

- Verify that all FCR switches in the backbone support the LSAN Binding features.
- Execute `fcrLsanmatrix --fabricview` to confirm that all the switches in the backbone have the same LSAN Binding matrix. If not, clear the LSAN Binding feature on all the switches and reapply the same LSAN Binding matrix on all the FCR switches in the backbone.
- In a dual backbone configuration, use `fcrLsanmatrix --fabricview` on the FCR switches to confirm that the shared edge fabric FIDs have the same access in both backbones.

Refer to the Fabric OS Message Reference manual for further diagnostic information.

Examples

To add the LSAN Zone Matrix data (For the following example, assume that the backbone has the following online edge fabrics (FIDs): 1, 2, 4, 5, 7, 8, and 10. Currently, FIDs 14 and 19 are not available.):

```
switch:admin> fcrLsanmatrix --add -lsan 4 5
switch:admin> fcrLsanmatrix --add -lsan 4 7
switch:admin> fcrLsanmatrix --add -lsan 10 14
switch:admin> fcrLsanmatrix --add -lsan 10 19
```

To remove an entry from the LSAN matrix:

```
switch:admin> fcrLsanmatrix --remove -lsan 10 14
```

To display the information from the cache:

```
switch:admin> fcrlsanmatrix --display -lsan
```

Fabric ID 1	Fabric ID 2
4	5
4	7
10	19

To apply the changes persistently:

```
switch:admin> fcrlsanmatrix --apply -lsan
```

To view the persistent changes:

```
switch:admin> fcrlsanmatrix -lsan
```

LSAN MATRIX is activated

Fabric ID 1	Fabric ID 2
4	5
4	7
10	19

To view the LSAN Zone static and default/dynamic binding in the backbone where online fabrics are: 1, 2, 4, 5, 7, 8, 10:

```
switch:admin> fcrlsanmatrix --fabricview -lsan
```

LSAN MATRIX is activated

Fabric ID 1	Fabric ID 2
4	5
4	7
10	19

Default LSAN Matrix:
1 2 8

To display all proxy devices for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router:

```
switch:admin> fcrproxydevshow -a
```

Proxy Created in Fabric	WWN	Proxy PID	Device Exists in Fabric	Physical PID	State
52	10:00:00:06:2b:0e:4d:e5	01f001	78	4e0000	Imported
52	10:32:16:90:28:dd:d0:03	0bf001	82	2a0900	Imported
52	10:32:16:91:24:dd:d0:07	0bf002	82	520c00	Imported
52	10:32:16:91:25:dd:d0:06	01f002	78	4e3000	Imported
78	10:00:00:06:2b:0d:29:31	09f002	52	482200	Imported
78	10:32:16:90:29:dd:d0:07	08f002	82	2a0a00	Imported
78	10:32:16:91:24:dd:d0:05	09f001	52	48a100	Imported
78	10:32:16:91:25:dd:d0:03	08f001	82	520f00	Imported


```

      82  10:00:00:06:2b:0d:29:30  01f002   78   4e1400  Imported
      82  10:00:00:06:2b:0d:2f:ed  03f002   52   480200  Imported
      82  10:00:00:06:2b:0d:33:4d  01f001   78   4e1800  Imported
      82  10:00:00:06:2b:0e:4d:c9  03f001   52   482000  Imported
Total devices displayed: 12

```

To display the information from the cache:

```
switch:admin> fcrLsanmatrix --display -lsan
```

```

Fabric ID 1                Fabric ID 2
-----
52                        78
52                        82
78                        82

```

To apply the changes persistently:

```
switch:admin> fcrLsanmatrix --apply -lsan
```

To view all the static and the default/dynamic fabric binding in the backbone:

```
switch:admin> fcrLsanmatrix --fabricview -lsan
LSAN MATRIX is activated
```

```

Fabric ID 1                Fabric ID 2
-----
52                        78
52                        82
78                        82

```

```

Default LSAN Matrix:
57 91

```

To add FCR Bindings to the FCR matrix:

```
switch:admin> fcrLsanmatrix --add -fcr 10:00:00:60:69:e2:09:fa \
10:00:00:60:69:e2:09:fb
```

```
switch:admin> fcrLsanmatrix --add -fcr 10:00:00:60:69:e2:09:fb \
10:00:00:60:69:e2:09:fc
```

To remove an entry from the FCR matrix:

```
switch:admin> fcrLsanmatrix --remove -fcr 10:00:00:60:69:e2:09:fb \
10:00:00:60:69:e2:09:fc
```

To display the information from the cache:

```
switch:admin> fcrLsanmatrix --display --fcr
```

```

CACHE FCR PAIRS
=====
FCR                                FCR
-----
10:00:00:60:69:e2:09:fa (2)  10:00:00:60:69:e2:09:fb (unknown)

```

To apply the changes persistently:

```
switch:admin> fcrLsanmatrix --apply -fcr
```

To view the persistent changes:

```
switch:admin> fcrLsanmatrix --fabricview -fcr
```

```

      SAVED FCR PAIRS
=====
FCR                                FCR
-----
10:00:00:60:69:e2:09:fa (2)      10:00:00:60:69:e2:09:fb (unknown)

```

SEE ALSO [fcrFabricShow](#), [lsanZoneShow](#), [fcrPhyDevShow](#), [fcrProxyDevShow](#), [fcrRouteShow](#), [switchShow](#)

fcrPhyDevShow

Displays the FC Router physical device information.

Synopsis **fcrphydevshow** [-a][-f *FID*][-w *wwn*][-c][-d] [-h]

Description Use this command to display the physical (real) devices that are configured to be exported to other fabrics. A device is considered to be configured to be exported to another fabric if it is a member of an LSAN zone. The device is displayed only if it is discovered in the EX_Port-attached fabric and backbone fabric's name server (for instance, the device is online).

Physical device information is available only for physical devices that exist in fabrics attached to EX_Ports of FC Routers on the same backbone fabric as the current FC Router.

The default output displays only physical device information relevant to the current FC Router. Relevant physical devices include physical devices that are configured to be exported from fabrics attached to the current FC Router's EX_Ports.

The physical devices are listed by fabric.

The -f and -w operands allow searching for physical devices based on fabric ID or port world wide name.

"No device found" is displayed if there is no physical device information available at the current FC Router.

Each line of the output displays:

Device Exists in Fabric

The fabric in which the physical device exists.

WWN

The world wide name of the device port.

Physical PID

The port ID of the physical device. This port ID is only relevant on the fabric specified by the "Device Exists in Fabric" column.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-a

Displays all physical devices for all FC Routers in the same backbone fabric whether or not they are relevant to the current FC Router.

-a -f *FID*

Displays the physical devices in the specified fabric for all FC Routers in the same backbone fabric whether or not they are relevant to the current FC Router.

-w *wwn*

Displays the physical devices with the specified port WWN.

-c

Clears login-related counters.

- d

Displays the following login-related counters. Counters are cleared upon reboot or failover.
- login try*

The number of times the device attempted to log in.
- local failure*

the number of times the device login failed because of missing LSAN zones within the device fabric.
- remote failure*

the number of times the device login failed due to missing LSAN zones within the remote fabric.
- h

Displays command usage.

Examples To display the physical devices relevant to an FC Router:

```
fcr:admin> fcrphydevshow
      Device      WWN      Physical
      Exists
      in Fabric
-----
      2      10:00:00:00:c9:2b:6a:68      c70000
      3      50:05:07:65:05:84:09:0e      0100ef
      3      50:05:07:65:05:84:0b:83      0100e8
Total devices displayed: 3
```

SEE ALSO [fcrFabricShow](#), [fcrProxyDevShow](#), [fcrRouteShow](#), [lsanZoneShow](#), [switchShow](#)

fcrProxyConfig

Displays or configures proxy devices presented by an FC Router.

Synopsis **fcrproxyconfig**
 [-s *importedFID devWWN slot*]
 [-r *importedFID devWWN*]

Description Use this command to display or set the persistent configuration of proxy devices presented by the local FC Router.

When used without operand, this command displays the persistent proxy device configuration; otherwise, it sets the specified attributes to its new value.

The proxy device must be inactive prior to setting or clearing persistent attributes. Disabling EX_Ports (using the portDisable command) attached to the relevant edge fabric, removing the device from the appropriate LSAN zones, or disabling the physical device are valid methods of ensuring a proxy device is inactive.

Persistent proxy device configuration attributes apply to the local FC Router. Multiple FC Routers attached to the same edge fabric coordinate to present the same proxy devices. As a result, persistent proxy device configurations must be consistent across all FC Routers attached to the same edge fabric or unpredictable results may occur. If the proxy device configuration is not altered, no action is required. If the configuration is altered, then care must be taken to ensure consistency across all FC Routers attached to the same edge fabric.

When used without operands, this command displays the following information:

importedFID

The imported fabric ID of the proxy device.

devWWN

The port world wide name of the device.

Slot

The slot used for the device WWN. The device WWN-to-slot association is persistently stored. The slot format is XYYH, where XX specifies the translate domain area_ID (valid values include FOH through FFH) and YY specifies the Port ID value or the low 8-bits of the proxy device address (valid values include 01H through 7FH). The address of the proxy device is derived from the PID format (for example, native, core, or extended edge) and the proxy device slot.

If no proxy device WWN is stored in any slot for all edge fabrics, the following message is displayed: "All slots empty."

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-s importedFID devWWN slot

Adds the specified devWWN (format: xx:xx:xx:xx:xx:xx:xx:xx) to the specified slot (format XXYH, where XX is the translate domain area_ID [FOH through FFH] and YY is the port_ID [01H through 7FH]) for the edge fabric specified (1 through 128). The following messages may be displayed:

- "WWN does not exist in any proxy device slot." The WWN does not exist in any slot for the specified edge fabric.
- "Too many proxy slots configured. Remove some unused proxy device WWNs from their slots using the -r operand and try again." All slots are used for the specified edge fabric.
- "The specified slot already contains a WWN, overwrite? [y]" The specified slot already contains an entry. You are then prompted for confirmation.

-r importedFID devWWN

Removes the specified devWWN (format: XX:XX:XX:XX:XX:XX:XX:XX) from its slot for the edge fabric specified by importedFID (1 through 128). If the WWN does not exist in any slot for the specified edge fabric, the following message is displayed: "WWN does not exist in any proxy device slot."

Examples To display the persistent proxy device configuration:

```
switch:admin> fcrproxyconfig
Imported FID      Device WWN          Slot
002               50:05:07:65:05:84:d7  f001
002               50:05:07:65:05:84:0a:7b f002
002               22:00:00:20:37:c3:11:71 f001
002               22:00:00:20:37:c3:1a:8a f002
003               10:00:00:00:c9:2b:6a:2c f001
```

To persistently configure device WWN 00:11:22:33:44:55:66:77 to use slot f101h in fabric 5:

```
switch:admin> fcrproxyconfig -s 5 \
00:11:22:33:44:55:66:77 f101
```

To remove device WWN 00:11:22:33:44:55:66:77 from its persistent slot in fabric 5:

```
switch:admin> fcrproxyconfig -r 5 \
00:11:22:33:44:55:66:77
WWN deleted from proxy device slot
```

SEE ALSO [fcrPhyDevShow](#), [fcrProxyDevShow](#), [fcrXlateConfig](#), [lsanZoneShow](#), [switchShow](#)

fcrProxyDevShow

Displays FC Router proxy device information.

Synopsis `fcrproxydevshow [-a][-f fabricid][-w wwn]`

Description Use this command to display the proxy devices presented by FC Router EX_Ports and information about the proxy devices. A proxy device is a virtual device presented in to a fabric by an FC Router. A proxy device represents a real device on another fabric. When a proxy device is created in a fabric, the real Fibre Channel device is considered to be imported in to this fabric. The presence of a proxy device is required for inter-fabric device communication. The proxy device appears to the fabric as a real Fibre Channel device. It has a name server entry and is assigned a valid port ID.

Proxy device information is available only for proxy devices that are presented by FC Routers on the same backbone fabric as this FC Router.

The default output displays only proxy device information relevant to this FC Router. Relevant proxy devices include proxy devices created by this FC Router (devices imported by this FC Router).

The proxy devices are listed by fabric. Search parameters -f and -w allow searching for proxy devices based on fabric ID or port WWN.

"No proxy device found" is displayed if there is no proxy device information available on this FC Router.

This command displays the following information:

Proxy Created in Fabric

The fabric in which the proxy device has been created.

WWN

The WWN of the device port.

Proxy PID

The port ID of the proxy device. The port ID is only relevant on the fabric specified by the "Proxy Created in Fabric" column.

Device Exists in Fabric

The fabric in which the physical device represented by this proxy device exists.

Physical PID

The port ID of the physical device. The port ID is relevant only on the fabric specified by the "Device Exists in Fabric" column.

State

State includes:

Imported

Proxy device has been imported into the fabric.

Initializing

The proxy device is being initialized and will soon be imported into the fabric.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- a** Display all proxy devices for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router.
- a -f fabricid** Display the proxy devices in the specified fabric for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router.
- f fabricid** Display the proxy devices in the specified fabric that are relevant to this FC Router.
- w wwn** Displays proxy devices with the specified port WWN.

Examples To display the proxy devices relevant to this FC Router:

```
switch:admin> fcrproxydevshow
Proxy          WWN          Proxy  Device  Physical State
Created                               PID    exists   PID
in Fabric                               in Fabric
-----
2   50:05:07:65:05:84:09:0e 01f001    3   0100ef Imported
2   50:05:07:65:05:84:0b:83 01f000    3   0100e8 Imported
3   10:00:00:00:c9:2b:6a:68 02f000    2   c70000 Imported
Total devices displayed: 3
```

SEE ALSO [fcrFabricShow](#), [fcrRouteShow](#), [lsanZoneShow](#), [switchShow](#)

fcrResourceShow

Displays FC Router physical resource usage.

Synopsis `fcrresourceshow`

Description Use this command to display the FC Router-available resources. The maximum number allowed versus the currently used is displayed for various resources. The command output includes:

LSAN Zones

The maximum versus the currently used LSAN zones.

LSAN Devices

The maximum versus the currently used LSAN device database entries. Each proxy or physical device constitutes an entry.

Proxy Device Slots

The maximum versus the currently used proxy device slots. A proxy device is presented to an edge fabric as being connected to a translate domain slot. A slot is the port number and AL_PA combination. The slot-to-device WWN association is persistently stored.

Phantom Node WWNs

The maximum versus the currently allocated phantom switch node WWNs. The phantom switch requires node WWNs for fabric-shortest-path-first (FSPF) and manageability purposes. Phantom node names are allocated from the pool sequentially and are not reused until the pool is exhausted and rolls over. The last allocated phantom node WWN is persistently stored. If the switch is disabled, the phantom node WWNs are not returned to the pool because the phantom switch could still be accessible through other switches. Across a switch reboot, the allocation starts from the next usable WWN from the pool and not from the beginning.

Phantom Port WWNs

The maximum versus the currently used phantom domain port WWNs. Phantom domain ports require port WWNs for manageability purposes. Phantom domain ports include ports connecting front and translate domains (virtual ISLs), translate domain ports for proxy devices, and EX_Ports. Phantom port names are allocated from the pool sequentially and are not resumed until the pool is exhausted and rolls over. The last allocated phantom port WWN is persistently stored. If the switch is disabled, phantom port WWNs are not returned to the pool because the phantom switch might still be accessible through other switches. Across the switch reboot, the allocation starts from the next usable WWN base from the pool and not from the beginning.

Port Limits

Displays resources for each physical port (EX_Port), which include the following:

Max Proxy Devices

The maximum versus the currently used proxy device.

Max NR_Ports

The maximum versus the currently used NR_Port entries. Destination NR_Port entries are stored at every physical port for routing decision purposes.

Notes Only configured EX/VEX_Ports are displayed

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the resource usage for the local FC Router:

```
switch:admin> fcrresourceshow
```

Daemon Limits:		
	Max Allowed	Currently Used
LSAN Zones:	3000	22
LSAN Devices:	10000	1208
Proxy Device Slots:	10000	2

	WWN Pool Size	Allocated
Phantom Node WWN:	8192	3790
Phantom Port WWN:	32768	6446


```
Port Limits:
Max proxy devices: 2000
Max NR_Ports: 1000
```



```
Currently Used(column 1: proxy, column 2: NR_Ports):
```

48	|	0	0
49	|	0	0
50	|	0	0
52	|	0	0
53	|	0	0
54	|	0	0
60	|	0	0
63	|	1	4
176	|	1	4
177	|	1	4
183	|	1	4
190	|	0	0

SEE ALSO [fcrFabricShow](#), [fcrProxyDevShow](#), [fcrRouteShow](#), [lsanZoneShow](#), [switchShow](#)

fcrRouterPortCost

Displays or sets an FC Router port cost.

Synopsis **fcrrouterportcost** *[[slot/]port]* *[cost]*

Description Use this command to set or display the cost of the FC Router ports. You can set the cost of the link to one of two fixed values: 1000 or 10000. The option 0 sets the cost of the link to the default value based on link type (EX/VEX). The router module chooses the router port path based on the minimum cost per fabric ID (FID) connection. If multiple paths exist with the same minimum cost, the load is shared over these paths.

Every inter-fabric link (IFL) has a default cost. For an EX_Port IFL, the default cost is 1000. For a VEX_Port, the default cost is 10000. If the cost is set to 0, the link cost defaults to 1000 for an EX_Port and to 10000 for a VEX_Port.

when used without operands, this command displays the current link costs for all ports on the switch.

Notes Before setting the cost, ensure that admin is enabled for the EX_Port/VEX_Port with portCfgEXPort or portCfgVEXPort. The cost can be set only on a disabled port.

The bandwidth of an inter-fabric link (IFL) is unrelated to its default cost. In other words, 1 Gbps, 2 Gbps, 4 Gbps, and 8 Gbps EX_Port IFLs have the same cost value of 1000 as their FC Router port.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port whose cost is to be displayed or changed, followed by a slash (/).

port

Specifies the number of the port whose cost is to be displayed or changed. This value is relative to the slot for bladed systems. Use switchShow for a list of valid ports. If a port is not specified, this command displays the costs of all ports.

cost

Specifies the new cost of the link connected to the specified port. This operand is optional; if omitted, this command displays the cost of the specified port. The cost of the link can be changed only when the specified port is disabled. Valid values for cost are 0, 1000 or 10000.

Examples To display the cost of all EX_Ports:

```
switch:admin> fcrrouterportcost
Port          Cost
-----
7/3           1000
7/4           1000
7/9           1000
7/10          1000
7/16          10000
10/0          10000
```

To display the cost on an EX_Port:

```
switch:admin> fcrrouterportcost 7/10 0

switch:admin> fcrrouterportcost 7/10
Port          Cost
-----
7/10          1000
```

To set the cost of an EX_Port and display the result:

```
switch:admin> fcrrouterportcost 7/10 10000
switch:admin> fcrrouterportcost 7/10
Port          Cost
-----
7/10          10000
```

To set the default cost on the EX_Port:

```
switch:admin> fcrrouterportcost 7/10 0
switch:admin> fcrrouterportcost 7/10
Port          Cost
-----
7/10          1000
```

SEE ALSO [switchShow](#), [fcrRouteShow](#), [portCfgEXPort](#)

fcrRouteShow

Displays FC Router route information.

Synopsis `fcrrouteshow`

Description Use this command to display routes through the FC Router backbone fabric to accessible destination fabrics. An FC Router backbone fabric is the fabric that contains the E_Ports of this platform and routes inter-fabric traffic between imported fabrics, creating a meta-SAN.

There are FC Router ports that reside on the backbone fabric. These ports are known as NR_Ports. NR_Ports send and receive inter-fabric traffic. For the AP7420, there is a one-to-one relationship between an NR_Port on a backbone fabric and an EX_Port. NR_Port technology enables EX_Ports to exchange traffic across an intermediate fabric. NR_Ports are addressable entities on the backbone fabric and have port IDs relevant to the backbone fabric.

Because cascaded backbone/intermediate fabrics are currently not supported, an NR_Port provides a path to a single fabric with a single FC Router protocol cost. Multiple NR_Ports can provide paths to the same destination fabric.

"No routes found" is displayed if there is no route information available at this FC Router. There is no route information available if no EX_Ports are configured at this FC Router.

The output includes:

Destination Fabric ID

The destination fabric.

NR_Port PID

The port ID of the NR_Port. The port ID is relevant only on the backbone fabric. This NR_Port has a route to the destination fabric identified by the "Destination Fabric ID" column.

FCRP Cost

The FC Router protocol cost (for routing decisions) for this NR_Port. The FCRP cost is the same (1000) for all NR_Ports.

WWN of the Principal Switch in the Dest. Fabric

The world wide name of the principal switch in the destination fabric.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the route information:

```
switch:admin> fcrrouteshow
Destination NR_Port   FCRP Cost  WWN of Principal
Fabric Id   PID           Switch in the Dest. Fabric
-----
      4      640000      1000  10:00:00:60:69:c0:05:d1
      4      640100      1000  10:00:00:60:69:c0:05:d1
      5      640200      1000  10:00:00:60:69:c0:20:ed
      5      640300      1000  10:00:00:60:69:c0:20:ed
```

SEE ALSO [fcrFabricShow](#), [fcrPhyDevShow](#), [fcrProxyDevShow](#), [lsanZoneShow](#), [switchShow](#)

fcrXlateConfig

Configures a translate (xlate) domain's domain ID and state of persistence for both the EX_Port-attached fabric and the backbone fabric.

Synopsis

fcrxlateconfig

fcrxlateconfig *importedFID exportedFID preferredDomainID*

fcrxlateconfig --remove | **-r** *importedFID exportedFID*

fcrxlateconfig --enable persistxd

fcrxlateconfig --disable persistxd

fcrxlateconfig --show stalexd *importedFID*

fcrxlateconfig --delete stalexd *importedFID staleXlateDomainID*

fcrxlateconfig --help

Description

Use this command to display a translate (xlate) domain ID or change the preferred domain ID and its state of persistence.

A translate domain is a phantom domain created by an FC Router. FC Routers emulate proxy devices representing real devices in remote fabrics. These proxy devices are emulated to be connected to translate domains. Translate domains are presented to a fabric as residing topologically behind front phantom domains (domains created by an EX_Port). In the case of backbone fabrics, translate domains are topologically behind an E_Port. In every EX_Port-attached edge fabric and backbone fabric, there can be a translate domain for every FC Router-accessible remote fabric.

During a fabric build, the translate domain requests a domain ID from the principal switch in the EX_Port-attached edge fabric. The domain ID requested is the preferred domain ID. You can set the preferred domain ID when the translate domain is not active and is persistently saved. The principal switch attempts to provide the translate domain with the requested domain ID, but it may not provide it if there are domain ID conflicts with other domains in the fabric. If the requested domain ID (such as the preferred domain ID) is unavailable, the domain ID assignment is completely at the discretion of the principal switch. The assignment domain ID is persistently stored and is used as the preferred domain ID in the future.

By default, FCR creates the translate domain for a remote fabric if a valid persistent translate domain ID is configured in the local fabric, even if no devices are imported or exported across the edge fabrics. Disabling the persistxd parameter prevents the xlate domain from being created. Enabling the persistxd parameter from a disabled state re-enables the FCR default behavior.

If the remote edge fabric becomes unreachable, the translate domains created in other edge fabrics for this remote edge fabric become stale. Use the --show stalexd option to identify translate domains that have become stale, and delete them in a nondisruptive manner with the --delete stalexd option.

When executed without operands, fcrxlateconfig displays for each translate domain the imported FID, the exported FID, the domain ID and the xlate WWN.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Information displayed is not related to the entire backbone. The FC Router displays only connections to an edge fabric for which there are translate domain IDs. Any changes you intend to make using this command should be issued on the switches to which the edge fabrics are directly attached. In a Virtual Fabric environment, this is the base switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

fcrxlateconfig

Sets the preferred domain ID (1-239) to preferredDomainID for the translate phantom domain and saves the configuration persistently. The translate domain must be inactive to set the preferred domain ID. The following operands are required:

importedFID

Specifies the fabric ID (1 through 128) of the fabric that contains the translate domain.

exportedFID

Specifies the fabric ID (1 through 128) of the remote fabric represented by this translate domain.

preferredDomainID

Specifies the preferred domain ID (1 through 239) of the translate phantom domain.

--remove | -r

Removes the preferred domain ID of the translate phantom domain. The translate domain must be inactive to remove the preferred domain ID. The following operands are required:

importedFID

Specifies the fabric ID (1 through 128) of the fabric that contains the translate domain.

exportedFID

Specifies the fabric ID (1 through 128) of the remote fabric represented by this translate domain.

preferredDomainID

Specifies the preferred domain ID (1 through 239) of the translate phantom.

--enable persistxd

Enables translate domain persistence. When persistxd is enabled, the translate domain is created based on the persistent translate domain ID configuration. If a valid persistent translate domain ID is configured for a given importedFID and exportedFID pair, a translate domain for the exportedFID is created, even if no devices need to be imported or exported across the edge fabrics represented by importedFID and exportedFID. By default, persistxd is enabled.

--disable persistxd

Disables translate domain persistence. When persistxd is disabled, the translate domain is not created, even if a valid persistent translate domain ID is configured for the importedFID and exportedFID pair, so long as no devices are imported or exported across the edge fabrics represented by importedFID and exportedFID. Once devices need to be imported or exported across the edge fabrics, the translate domain is created.

--show stalexd [*importedFID*]

Displays stale translate domains associated with the specified Fabric ID (1-128). A translate domain becomes stale when the remote edge fabric for which this translate domain was created in the specified edge fabric becomes unreachable. When issued without specifying an imported FID, this command lists all stale translate domains in all edge fabrics connected to the FCR.

--delete stalexd *importedFID* *staleXlateDomainID*

Deletes the specified stale translate domain from the edge fabric specified by its fabric ID. This command must be executed in the FCR that owns the stale translate domain.

Examples

To display the translate domain configuration and the state of the persistxd parameter:

```
switch:admin> fcrxlateconfig
```

ImportedFid	ExportedFid	Domain	OwnerDid	XlateWWN
001	002	004	000001	N/A
001	005	003	N/A	N/A

```
Persist XD state: Enabled
```

To set the preferred domain ID of the translate domain created in fabric 2, which represents the remote fabric 3, to a value of 8:

```
switch:admin> fcrxlateconfig 2 3 8
xlate domain already configured, overwrite?(n) y
```

To clear the preferred domain ID of the translate domain created in fabric 2, which represents remote fabric 3:

```
switch:admin> fcrxlateconfig -r 2 3
xlate domain deleted
```

To enable translate domain persistence:

```
fcr:admin> fcrxlateconfig --enable persistxd
Persist XD is enabled
```

To disable translate domain persistence:

```
fcr:admin> fcrxlateconfig --disable persistxd
Persist XD is disabled
```

To identify and remove stale translate domains in a single backbone multiple FCR configuration:

```
fcr:admin> fcrxlateconfig --show stalexd
```

Imported FID	Stale XD	Owner Domain
012	002	007 (this FCR)
013	002	001 (other FCR)

To remove the stale translate domain (only the translate domain owned by the current owner can be removed; note that trailing zeros must be removed from the FID and Xlate domain ID.>):

```
fcr:admin> fcrxlateconfig --delete stalexd 12 2  
Xlate domain 2 is deleted
```

SEE ALSO [portCfgEXPort](#), [portCfgVEXPort](#), [portDisable](#), [portEnable](#), [portShow](#)

fddCfg

Manages the fabric data distribution configuration parameters.

Synopsis

fddcfg --showall

fddcfg --localaccept *policy_list*

fddcfg --localreject *policy_list*

fddcfg --fabwideset *policy_list*

Description

Use this command to manage the fabric data distribution configuration parameters. These parameters control the fabric-wide consistency policy.

Switches can be locally configured to allow or reject a security policy. Supported policies include the following:

SCC

Switch Connection Control policy

DCC

Device Connection Control policy

SCC

Switch Connection Control policy

PWD

Password policy

FCS

Fabric Configuration Server policy

PWD

Fabric Element Authentication policy

IPFILTER

IP Filter policy

Automatic distribution of a fabric-wide consistency policy is limited to SCC, DCC, and FCS policies. Use the **--fabwideset** parameter to enforce these policies fabric-wide in tolerant or strict mode. In strict mode, fabric-wide enforcement of FCS consistency policy is possible in mixed fabrics. However, switches that do not support the policies ignore them.

Notes

When a policy is set to strict mode, the manual distribution of the policy is not allowed.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--showall

Displays the accept/reject configuration of all policy sets and the fabric-wide consistency policy on the switch.

--localaccept *policy_list*

Configures the switch to accept distributions of the specified policies. The policies in *policy_list* must be separated by semicolons and enclosed in quotation marks; for example, "SCC;DCC;FCS".

--localreject *policy_list*

Configures the switch to reject distributions of the specified policies in *policy_list*. However, a database cannot be rejected if it is specified in the fabric-wide consistency policy. The policies in *policy_list* must be separated by semicolons and enclosed in quotation marks; for example, "SCC;DCC".

--fabwideset *policy_list*

Sets the fabric-wide consistency policy. A database that is set to reject distributions cannot be specified in the fabric-wide consistency policy. To set the fabric-wide consistency policy as strict, use the strictness indicator "S". To set the fabric-wide consistency policy as tolerant, omit the "S". A valid policy set should be of the form "SCC:S;DCC;FCS". To set the fabric-wide policy to NULL (default) or no fabric-wide consistency, use the policy Set "". Supported policies are Switch Connection Control (SCC), Device Connection Control (DCC), and Fabric Configuration Server (FCS). All members specified in a given policy set are automatically distributed to all participating switches in the fabric that support the policy. Refer to the DESCRIPTION section for specific exceptions. In the presence of a fabric-wide FCS consistency policy, this command can only be run from the primary FCS switch.

Examples

To display the fabric-wide consistency policy and the accept/reject configuration for all databases:

```
switch:admin> fddcfg --showall
Local Switch Configuration for all Databases:-
DATABASE - Accept/Reject
-----
      SCC - accept
      DCC - accept
      PWD - accept
      FCS - accept
      AUTH - accept
      IPFILTER - accept
Fabric Wide Consistency Policy:- "SCC:S;DCC;FCS"
```

To configure the switch to accept distribution of the SCC policy set and PWD database:

```
switch:admin> fddcfg --localaccept "SCC;PWD"
Local Switch Configured to accept policies.
```

To configure this switch to reject distribution of SCC and DCC policy sets:

```
switch:admin> fddcfg --localreject "SCC;DCC"
Local Switch Configured to reject policies.
```

To set the fabric-wide consistency policy to "strict" for SCC and "tolerant" for DCC and FCS:

```
switch:admin> fddcfg --fabwideset "SCC:S;DCC;FCS"
```

SEE ALSO

None

fdmiCacheShow

Displays abbreviated remote FDMI device information, according to remote domain ID.

Synopsis **fdmicacheshow**

Description Use this command to display FDMI cache information for remote domains only.

The state of each remote domain, identified by its domain ID, is shown to be unknown, known, unsupported, or error.

The revision of the switch also displays, followed by the world wide name of the switch.

For HBAs, only the HBA identifiers and registered port lists are displayed. No detailed HBA attributes are displayed. For registered ports, only port identifier and corresponding HBA are shown; no detailed port attributes are displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the FDMI cache:

```
switch:admin> fdmicacheshow
Switch entry for domain 3
  state:   known
  version: v310
  wwn:     10:00:00:60:69:90:03:c7

HBAs:
  10:00:00:00:c9:25:9b:96

Ports: 1
  10:00:00:00:c9:25:9b:96

Total count of devices on the switch is 1
```

SEE ALSO [fdmiShow](#)

fdmiShow

Displays detailed FDMI information.

Synopsis **fdmishow [-hexoutput]**

fdmishow --help

Description Use this command to display Fabric-Device Management Interface (FDMI) information for all Host Bus Adapters (HBAs) and ports.

Detailed FDMI information is displayed for local HBAs and ports.

Only abbreviated FDMI information is shown for HBA and ports on remote switches.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-hexoutput

Displays raw hex data for all non-ASCII and non-WWN FDMI port attributes. This operand is optional.

--help

Displays the command usage.

Examples To display FDMI information on a local switch:

```
switch:admin> fdmishow
Local HBA database contains:
  10:00:8c:7c:ff:01:eb:00
  Ports: 1
    10:00:8c:7c:ff:01:eb:00
      Port attributes:
        FC4 Types: FCP
        Supported Speed: 2 4 8 16 Gb/s
        Port Speed: 16 Gb/s
        Frame Size: 2112 bytes
        Device Name: bfa
        Host Name: X3650050014
        Node Name: 20:00:8c:7c:ff:01:eb:00
        Port Name: 10:00:8c:7c:ff:01:eb:00
        Port Type: N_PORT (0x1)
        Port Symb Name: port2
        Class of Service: 3
        Fabric Name: 10:00:00:05:1e:e5:e8:00
        FC4 Active Type: FCP
        Port State: 0x5
        Discovered Ports: 0x2
        Port Identifier: 0x030200
      HBA attributes:
        Node Name: 20:00:8c:7c:ff:01:eb:00
        Manufacturer: Brocade
        Serial Number: BUK0406G041
```

```
Model: Brocade-1860-2p
Model Description: Brocade-1860-2p
Hardware Version: Rev-A
Driver Version: 3.2.0.0705
Option ROM Version: 3.2.0.0_alpha_bld02_20120831_0705
Firmware Version: 3.2.0.0_alpha_bld02_20120831_0705
OS Name and Version: Windows Server 2008 R2 Standard | N/A
Max CT Payload Length: 0x00000840
Symbolic Name: Brocade-1860-2p | 3.2.0.0705 | X3650050014 |
Number of Ports: 2
Fabric Name: 10:00:00:05:1e:e5:e8:00
Bios Version: 3.2.0.0_alpha_bld02_20120831_0705
Bios State: TRUE
Vendor Identifier: BROCADE
Vendor Info: 0x31000000
```

```
Local Port database contains:
    10:00:8c:7c:ff:01:eb:00
```

```
Remote HBA database contains:
  10:00:00:05:1e:ea:05:fa
Ports: 1
      10:00:00:05:1e:ea:05:fa
```

```
Remote Port database contains:
10:00:00:05:1e:ea:05:fa
```

To display FDMI information in raw hex format (for non-ASCII and non-WWN FDMI port attributes) on a local switch:

[illegible]

```
Hardware Version: Rev-A
Driver Version: 3.2.0.0705
Option ROM Version: 3.2.0.0_alpha_bld02_20120831_0705
Firmware Version: 3.2.0.0_alpha_bld02_20120831_0705
OS Name and Version: Windows Server 2008 R2 Standard | N/A
Max CT Payload Length: 0x00000840
Symbolic Name: Brocade-1860-2p | 3.2.0.0705 | X3650050014 |
Number of Ports: 2
Fabric Name: 10:00:00:05:1e:e5:e8:00
Bios Version: 3.2.0.0_alpha_bld02_20120831_0705
Bios State: TRUE
Vendor Identifier: BROCADE
Vendor Info: 0x31000000
```

```
Local Port database contains:
10:00:8c:7c:ff:01:eb:00
```

```
Remote HBA database contains:
10:00:00:05:1e:ea:05:fa
Ports: 1
10:00:00:05:1e:ea:05:fa
```

```
Remote Port database contains:
10:00:00:05:1e:ea:05:fa
```

SEE ALSO [fdmiCacheShow](#)

femDump

Collects limited debug information to a remote directory through FTP, SFTP, or SCP. This command is a minimal version of supportsave command.

Synopsis `femdump [-u user_name -p password -h host_ip -d remote_dir -l protocol]`

Description Use this command to collect limited debug information to a remote directory through FTP or SCP. This command is a minimal version of a supportsave command.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data are removed after the command has finished.

If there are blade processor (BP) blades installed on the switch, a support file (a tar.gz file) is generated from each slot.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto-file transfer and event notification to syslog will not work in the case where the Fabric OS version is downgraded. You must reconfigure auto-file transfer and syslog with IPv4 IP addresses.

In a Virtual Fabric environment, the command saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If you use anonymous FTP to run femDump on a chassis with multiple AP blades, configure the FTP Windows server to allow unlimited anonymous users.

Operands This command has the following operands:

- u *user_name*** Specifies the user name for the FTP, SCP, or SFTP server. This operand is optional; if omitted, anonymous FTP is used.
- p *password*** Specifies the password for the FTP, SCP, or SFTP server. If special characters are used in the password, the password must be enclosed in double quotes. This operand is optional with FTP; if omitted, anonymous FTP is used.
- h *host_ip*** Specifies the IPv4 or IPv6 address for the remote server.
- d *remote_dir*** Specifies the remote directory to which the file is to be transferred.
- l *protocol*** Specifies the transfer protocol. Valid values are File Transfer Protocol (FTP), Secure Copy (SCP), or Secure File Transfer Protocol (SFTP).

If you plan to use SCP to transfer files, it is important to test the command prior to its use with various SCP-mode services. Because the femDump command makes several access requests to copy files, it is important that the SCP-mode service be configured so that passwords are not required for each attempted transfer. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the femDump command.

When using SCP, femDump may create a directory if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.

Examples To collect limited debug information to a remote directory through SCP:

```
switch:admin> femdump -u admin -h 10.70.4.104 -d /temp/support -l scp
Password:
Saving support information for switch:SW_178, module:F_SSHOW_ASICDB...
Saving support information for switch:SW_178, module:F_SSHOW_FABRIC...
Saving support information for switch:SW_178, module:F_SSHOW_SYS...
Saving support information for switch:SW_178, module:F_SSHOW_PORT...
Saving support information for switch:SW_178, module:F_SSHOW_SERVICE...
Saving support information for switch:SW_178, module:F_SSHOW_ISWITCH...
Saving support information for switch:SW_178, module:F_C3REGDUMP...
Saving support information for switch:SW_178, module:F_C2REGDUMP...
Saving support information for switch:SW_178, module:F_C1REGDUMP...
Saving support information for switch:SW_178, module:F_PBREGDUMP...
Saving support information for switch:SW_178, module:F_BLSREGDUMP...

SupportSave completed.
```

SEE ALSO [supportSave](#), [supportShow](#), [supportFtp](#)

ficonCfg

Configures the specified FICON database.

Synopsis **ficoncfg --set database *port***

ficoncfg --reset database

ficoncfg --help

Description Use this command to configure a FICON database on a specified port. Refer to ficonShow for a description of the database content.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

port

Specifies the port to be configured. You can specify the port by its port index number or by a hexadecimal number that contains the Area field (middle byte) of the three-byte Fibre Channel Port Address. Use switchShow for a listing of valid port index numbers.

--set

Sets the configuration entry.

--reset

Resets the configuration entry to its default value.

database

Specifies the name of the FICON database. The only database currently supported is the following:

LIRR

Devices registered to receive link incident reports.

Examples To set the LIRR database on a port using a decimal index number:

```
switch:user> ficoncfg --set LIRR 27
```

To reset the LIRR

```
switch:user> ficoncfg --reset LIRR
```

To set the LIRR database using a hexadecimal index number that contains the Area field (middle byte) of the three-byte Fibre Channel Port Address:

```
switch:user> ficoncfg --set LIRR 0x1b  
switch:user> ficonshow LIRR  
The Local LIRR database has 0 entries.  
  
Current LIRR device port number: 27 (0x1b)
```

SEE ALSO [ficonHelp](#), [ficonShow](#)

ficonClear

Clears the records from the specified FICON database.

Synopsis **ficonclear** *database*

Description Use this command to remove records from the local FICON database. The command effect depends on the specified database.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

database

Specifies the name of the FICON database. The databases include the following:

RLIR

Remove all entries from the link incidents database including implicit link incidents (ILIR).

RNID

Remove all the "not current" entries from the device node identification database (the entries are for devices that were previously connected but are no longer online). Note that "current" entries are not removed from the RNID database.

Examples To clear the RLIR database:

```
switch:user> ficonclear RLIR
successfully clear local RLIR Database.
```

To clear the RNID database:

```
switch:user> ficonclear RNID
successfully clear not current
entries from local RNID Database.
```

SEE ALSO [ficonHelp](#), [ficonShow](#)

ficonCupSet

Sets FICON-CUP parameters for a switch.

Synopsis **ficoncupset fmsmode enable | disable | reset**

ficoncupset modereg *bitname* 0 | 1

ficoncupset MIHPTO *seconds*

ficoncupset CRP *PID CHID*

ficoncupset UALERT_*type* enable | disable

Description Use this command to set FICON-CUP (Control Unit Port) parameters for a switch. All parameters can be set while the switch is online. Changes made by this command take effect immediately. A reboot is not required.

Use ficonCupShow to display current settings.

Notes A FICON License is required to enable FMSMODE and to manage ports with FICON CUP. Without a license, FICON CUP traffic will not be allowed.

High Integrity Fabric (HIF) mode must be enabled before FMSMODE is enabled. When FMSMODE is enabled, port names are truncated to 24 characters to be FICON compliant, and a 24-character limit is imposed on all newly created port names.

FICON Management Server (FMS) mode cannot be enabled if port ID (PID) Format 2 is used. Refer to the Fabric OS Administrator's Guide for information on PID formats.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

fmsmode

Configures the FICON Management Server (FMS) mode for the switch. Specify one of the following modes:

enable

Enables the FICON Management Server mode. When you enable the switch, you must wait until all ports have come online before enabling fmsmode.

disable

Disables the FICON Management Server mode.

reset

Resets the CUP to a neutral execution state. This command does not modify any other configuration state.

modereg

Set a bit in the FICON-CUP mode register. The following operands are required:

***bitname* 0 | 1**

Specifies a given bit value to be (1) set or not set (0). Valid values for bitname are

POSC	Programmed offline state control
ASM	Active=saved mode
DCAM	Director clock alert mode
ACP	Alternate control prohibited
HCP	Host control prohibited

MIHPTO

Sets the missing interrupt handler primary timeout (MIHPTO) value for the CUP. The following operand is required:

seconds

Specifies the timeout value in seconds. Provide a decimal value in the range between 15 and 600 seconds. The default timeout value is 180 seconds. If a value greater than 63 seconds is specified, the timeout value is rounded down to the closest value divisible by 10. For example, an MIHPTO timeout value of 86 defaults to 80.

CRP PID CHID

Sets the current reporting path (CRP). The reporting path is a CUP mechanism for sending FRU-failure reports to a FICON logical path via FICON protocol. The logical path between the PID and the CHID must exist and be in operational state for this command to succeed. Use ficonCupShow with the LP option to display the logical paths on the switch. The following operands are required:

PID

Specifies the Port identifier, which is a three-byte Fibre Channel Port Address.

CHID

Specifies the Channel ID (CHID). The CHID is the Logical Partition (LPAR) identifier supplied as part of the FICON protocol header. The CHID is a 1-byte value in hexadecimal format. The first nibble indicating the Channel Subsystem identifier (a value between 0 and 3) and the second the LPAR within that CSS (a value between 0 and F).

UALERT_type enable | disable

Enables or disables the specified unsolicited alert types and displays the status of the unsolicited alerts. Valid values for UALERT_type include the following:

- UALERT_HSC - Indicates HSC alert type
- UALERT_FRU - Indicates FRU alert type
- UALERT_INVATT - Indicates invalid attach alert type
- UALERT_ALL - Indicates all alert types (HSC, FRU, and Invalid attach)

Examples

To enable FMS mode for the switch:

```
switch:admin> ficoncupset fmsmode enable
fmsmode for the switch is now Enabled
```

To set the ASM bit in the mode register for the switch:

```
switch:admin> ficoncupset modereg ASM 1
Active=Saved Mode bit is set to 1
```

To set the MIHPTO value to 60 seconds:

```
switch:admin> ficoncupset MIHPTO 60
MIHPTO has been changed to 60 seconds
```

To set the current reporting path:

```
switch:admin> ficoncupset CRP 082300 1A
```

To display the current reporting path:

```
switch:admin> ficoncupshow LP
FICON CUP Logical Paths for CUP 0x08FE00
```

PID	LP CHID	Reporting State	Path
-----	----	----	-----
082300	1A	Oper***	Curr
082300	1B	Oper	
082300	1C	Oper	
082400	1A	Reset	
082400	1B	Reset	
612400	1E	Reset	Prim
612400	1F	Reset	

To reset the FMS mode for a switch:

```
switch:admin> ficoncupset fmsmode reset
FMS_001(I) - FMSMODE RESET completed - FMSMODE(Disabled)
```

Conditions prior to reset:

```
All CUP states nominal, no conditions reset
```

```
----- END DISPLAY of FMSMODE RESET -----
```

To disable the alert type "UALERT_HSC":

```
switch:admin> ficoncupset UALERT_HSC disable
FMS_001(I) - Processing - set UALERT_Mode
FMS_001(I) - Disabled Alerts(HSC )
FMS_001(I) - Enabled Alerts(FRU INV_ATT )
```

SEE ALSO [ficonCupShow](#)

ficonCupShow

Displays FICON-CUP parameters for a switch.

- Synopsis
- ficoncupshow fmsmode

ficoncupshow modereg [bitname]

ficoncupshow MIHPTO

ficoncupshow DD_LOG

ficoncupshow diag_info

ficoncupshow hlthchk_log

ficoncupshow LP

ficoncupshow UALERT_MODE

Description

Use this command to display FICON-CUP (Control Unit Port) parameters for a switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

fmsmode	Display the FICON Management Server (FMS) mode for the switch.
modereg	Display the FICON-CUP mode register. If no operand is specified, all mode register bit settings are displayed. If a mode register bit name is specified, then only the value of that bit is displayed. A value of 1 indicates that a given mode register bit is set, and 0 indicates that it is not set. The following operand is optional: <div><div>bitname</div><div>Displays the specified mode register bit as either set (1) or not set (0). Valid values for bitname include the following:</div></div>
POSC	Programmed offline state control
UAM	User alert mode
ASM	Active=save mode
DCAM	Director clock alert mode

ACP	Alternate control prohibited
HCP	Host control prohibited
MIHPTO	Displays the FICON-CUP missing interrupt handler primary timeout (MIHPTO) value in seconds.
DD_LOG	Displays the latest Director Diagnostics Log.
diag_info	Displays diagnostic information for the logical switch such as whether Diagnostic Interval has been set for CUP Diagnostics (if so, then Statistics Sampling is running), along with additional information about Statistics Sampling by the CUP, the detected CUP Diagnostic capabilities and settings for other switches in the fabric..
hlthchk_log	Displays the HealthCheck Logs for the logical switch. It displays Sense Data returned to the FICON host for Asynchronous Error Reporting events generated by the CUP for Congestion, Latency, or Port Fencing events which have been detected by the switch.
LP	Displays the logical paths on the switch. For each entry, the command displays the port identifier (PID), the LPAR identifier (CHID), reporting state (operational or reset (=nonoperational)), and reporting path state (current, primary, or alternate).
UALERT_MODE	Displays the status of the unsolicited alerts such as FRU, invalid attach, and HSC as either enabled or disabled.

Examples

To display the FMS mode for the switch:

```
switch:user> ficoncupshow fmsmode
fmsmode for the switch: Enabled
```

To display the mode register for the switch:

```
switch:user> ficoncupshow modereg
  POSC  UAM  ASM  DCAM  ACP  HCP
-----
      1    0    1      1    1    0
```

To display the ASM bit in the mode register for the switch:

```
switch:user> ficoncupshow modereg ASM
ASM
---
1
```

To display the MIHPTO value for the CUP:

```
switch:user> ficoncupshow MIHPTO
MIHPTO for the CUP: 60 seconds
```

To display the logical paths for the switch:

```
switch:user> ficoncupshow LP
FICON CUP Logical Paths for CUP 0x08FE00
      LP      Operational  Reporting
PID    CHID    State      Path State
-----
082300  1A      Oper***   Current
082300  1B      Oper
082300  1C      Oper
082400  1A      Reset
082400  1B      Reset
612400  1E      Reset      Primary
612400  1F      Reset
```

To display the status of the unsolicited alerts:

```
switch:user> ficoncupshow UALERT_MODE
FMS_001(I) - Disabled Alerts(HSC)
FMS_001(I) - Enabled Alerts(FRU INV_ATT)
```

SEE ALSO [ficonCupSet](#), [ficonHelp](#)

ficonHelp

Displays a list of FICON support commands.

Synopsis **ficonhelp**

Description Use this command to display a list of FICON support commands with descriptions.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display a list of FICON commands:

```
switch:admin> ficonhelp
ficoncfg      Manage FICON configuration
ficonclear    Clears contents of the specified FICON
               management database
ficoncupset    Sets FICON-CUP parameters for a switch
ficoncupshow  Displays FICON-CUP parameters for a switch
ficonhelp     Displays FICON commands
ficonshow     Displays contents of the specified FICON
               management database
```

SEE ALSO None

ficonShow

Displays the contents of the specified FICON database.

Synopsis **ficonshow** *database* [**fabric** | **table** | **port** *port_index*]

Description Use this command to display the contents of a FICON database. The ficonShow database operand is the name of the database to display. If the fabric operand is absent, the command displays the members of the named database that are local to the switch on which the command was issued. If the fabric operand is present, it must be entered exactly as shown, and this specifies that all members are displayed, both local and remote.

The following information may be displayed, depending on which database you enter and which operands you use with the command:

Domain

Displays the domain ID.

Fabric WWN

Displays the fabric WWN.

Flag

Indicates if the node is valid, not valid, or not current. Flag values are as follows:

0x00

Indicates the node ID of the storage port is valid.

0x10

Indicates the node ID of the channel port is valid.

0x20

Indicates the node ID of the storage port is not current.

0x30

Indicates the node ID of the channel port is not current.

0x40

Indicates the node ID of the storage port for the RNID switch for RLIR is not valid.

0x50

Indicates the node ID of the channel port is not valid.

Fmt

Displays the record-registration format.

FRU Failure Description

Indicates the FRU failure type as one of the following:

WWN card [*unit number*]

The WWN card

Power Supply [*unit number*]

The Power Supply card

Hardware Slot [*unit number*]

The Hardware Slot

Blower *[unit number]*

The Blower

FRU Part Number

Displays the FRU part number.

FRU Serial Number

Displays the FRU serial number.

Incident Count

Displays the incident count. This number increases by 1 for each incident within the individual switch.

Link Incident Description

Same as Link Incident Type.

Link Incident Type

Indicates the link incident type as one of the following:

- Bit-error-rate threshold exceeded
- Loss of signal or synchronization
- NOS recognized
- Primitive sequence timeout
- Invalid primitive sequence for port state

Listener PID

Same as PID.

Listener Port Type

Same as Port Type.

Listener Port WWN

Displays the channel HBA port world wide name.

Listener Type

Indicates the listener type as follows:

Conditional

This port receives a link incident record if no other recipients from the established registration list have been chosen.

Unconditional

This port is always chosen as a recipient of a link incident record.

Manufacturer

Displays the manufacturer name or code.

Model Number

Displays the model number.

Node Parameters

Same as Parameters.

Parameters

Displays the node type for the switch in three bytes, 0xAABBCC:

Byte AA 0x20

FC-SB-2 and updates

Byte BB 0x0a

Switch

Byte CC 0x00

Port number. It is dynamically assigned whenever a link incident occurs.

Parm

Displays the incident node parameters type in three bytes, 0xAABBCC:

Byte AA

Possible values include the following:

0x00

Reserved.

0x20

FC-SB-2 and updates.

0x40

Other FC-4s including FCP and updates.

0x60

FC-SB-2 and updates and other FC-4s including FCP and updates.

0x80

FC-4 support not specified.

0xa0

Reserved.

0xc0

Reserved.

0xe0

Vendor-specific.

Byte BB

Possible values include the following:

0x00

Unspecified class.

0x01

Direct access storage device, if it is a storage port; otherwise, not channel-to-channel capable.

0x02

Magnetic tape, if it is a storage port; otherwise, a reserved field for a channel port.

0x03

Input unit record, if it is a storage port; otherwise, a reserved field for a channel port.

0x04

Output unit, if it is a storage port; otherwise, a reserved field for a channel port.

0x05

Reserved field for a channel port.

0x06	Controller, if it is a storage port; otherwise, a reserved field for a channel port.
0x07	Terminal - Full screen if it is a storage port; otherwise, a reserved field for a channel port.
0x08	Terminal - Line mode if it is a storage port; otherwise, an emulated control unit support only.
0x09	Reserved.
0x10	Switch, if it is a switch device; otherwise, reserved.
0x0b-0xff	Reserved.
Byte CC	Possible values include the following:
0x00	If storage CU port has registered with the switch.
0xID	CHIPID if channel port has registered with the switch.
0xPN	If switch has registered with the channel, PN represents the FL port number.
Part Number	Displays the switch chassis part number.
PID	Displays the 24-bit Fibre Channel port address in OxDDAAPP format. DD is Domain ID. AA is Area ID. PP is AL_PA ID.
Plant of Manufacture	Displays the manufacturer plant name or code.
Port	Physical port number.
Port Status	Displays the status of the port as one of the following: <ul style="list-style-type: none"> • Link degraded but operational • Link not operational
Port Type	Displays the port type as one of the following:
U	Unknown

N
N_Port

NL
NL_Port

Protocol

Displays whether the traffic is using FICON or FCP.

Registered Node WWN

Displays the device's node world wide name associated with the device HBA.

Registered Port WWN

Displays the device's channel or storage CU port world wide name associated with the device HBA.

Sequence Number

Displays the sequence number of the self-describing node.

Serial Number

Displays the switch serial number.

Switch node WWN

Displays the switch node world wide name.

Switch Port WWN

Displays the switch port world wide name.

Switch WWN

Displays the switch WWN.

Tag

Displays the physical identifier for the self-describing node interface.

TS Format

Displays the Time Server format.

Time Stamp

Displays the timestamp, expressed in date format.

Type

Same as Port Type.

Type Number

Displays the type number of the self-describing node. It also describes the machine type.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

database

Specify the database to display. This operand is required. Valid values include the following

RNID

Device node identification.

LIRR

Devices registered to receive link incident reports. Entries can have the following flags:

-C*

A user-configured LIRR entry defined as current (set with the ficonCfg command).

-C

A LIRR entry defined by the management server demon as current based on order.

-S

A LIRR entry defined by the management server demon as secondary.

SwitchRNID

Switch node identification.

RLIR

Link incident reports.

ILIR

Implicit link incident reports.

fabric

Displays FICON database information for the entire fabric. This operand is optional; if omitted, only local members of the named database are displayed.

table

Displays RNID data in table format.

port

Displays RNID data for the specified port.

port_index

Specifies the port index number in decimal or the area field (middle byte) of the Fibre Channel Address (PID) in hexadecimal format.

Examples

To display the local RNID database:

```
switch:admin> ficonshow RNID
{
  {Fmt Type PID Registered Port WWN      Registered  Node WWN \
0x18 N 502b00 50:05:07:64:01:00:15:8d 50:05:07:64:00:c1:69:ca \
    flag Parm
    0x10 0x200110
    Type number:      002064
    Model number:      101
    Manufacturer:      IBM
    Plant of Manufacture: 02
    Sequence Number:    0000000169CA
    tag:                102b
  }
  {Fmt Type PID Registered Port WWN      Registered  Node WWN \
0x18 N 502e00 50:05:07:64:01:40:0f:ca 50:05:07:64:00:c1:69:ca \
    flag Parm
    0x10 0x200105
    Type number:      002064
    Model number:      101
    Manufacturer:      IBM
  }
```

```

Plant of Manufacture: 02
Sequence Number:      0000000169CA
tag:                  052e
}
}

```

To display the local RNID database in tabular format:

```

switch:admin> ficonshow RNID table
{
  Fmt  Type  PID      Registered Port WWN      Registered Node WWN
  0x18 N    252500  50:05:07:60:28:bf:42:cf  50:05:07:64:00:cd:01:b6
  0x18 N    255800  50:05:07:60:28:bf:3e:98  50:05:07:64:00:cd:01:b6
  0x18 N    255A00  50:05:07:60:28:bf:2c:9e  50:05:07:64:00:cd:01:b6
  0x18 N    255B00  50:05:07:60:28:bf:3f:0b  50:05:07:64:00:cd:01:b6
  0x18 N    255C00  50:05:07:60:28:bf:3f:0a  50:05:07:64:00:cd:01:b6
  0x18 N    255D00  50:05:07:60:28:bf:2c:9f  50:05:07:64:00:cd:01:b6
  0x18 N    255E00  50:05:07:60:28:bf:18:63  50:05:07:64:00:cd:01:b6
  0x18 N    255F00  50:05:07:60:28:bf:18:64  50:05:07:64:00:cd:01:b6
  0x18 E    258600  20:86:00:05:33:0d:b7:05  10:00:00:05:33:0d:b7:05
  0x18 E    258700  20:87:00:05:33:0d:b7:05  10:00:00:05:33:0d:b7:05
  0x18 E    25F600  20:f6:00:05:33:0d:b7:05  10:00:00:05:33:0d:b7:05
                                flag Parm      Type  Mod  Manf  Plant  Sequence#  Tag
                                0x10 0x3101DB 002817 M15  IBM   02      0000000D01B6 40DB
                                0x10 0x310138 002817 M15  IBM   02      0000000D01B6 4038
                                0x10 0x3101D4 002817 M15  IBM   02      0000000D01B6 40D4
                                0x10 0x3101D7 002817 M15  IBM   02      0000000D01B6 40D7
                                0x10 0x3101D6 002817 M15  IBM   02      0000000D01B6 40D6
                                0x10 0x3101D5 002817 M15  IBM   02      0000000D01B6 40D5
                                0x10 0x3101D8 002817 M15  IBM   02      0000000D01B6 40D8
                                0x10 0x3101D9 002817 M15  IBM   02      0000000D01B6 40D9
                                0x00 0x200A00 SLKW RM DCX BRD  CA    5FT00X39C19A 22FF
                                0x00 0x200A00 SLKW RM DCX BRD  CA    5FT00X39C19A 22FF
                                0x00 0x200A00 SLKW RM DCX BRD  CA    5FT00X39C19A 22FF
}
11 valid entries, 0 not current entries
The Local RNID database has 11 entries.

```

To display RNID data for the specified port:

```

switch:admin> ficonshow RNID port 0x08
{Fmt  Type  PID      Registered Port WWN      Registered Node WWN  \
  0x18 E    010800  20:08:00:05:1e:57:b1:86  10:00:00:05:1e:57:b1:86\
                                flag Parm
                                0x00 0x200a00

  Type number:      BROCAD
  Model number:     510
  Manufacturer:     BRD
  Plant of Manufacture: CA
  Sequence Number:   0ALM0632D038
  tag:              03ff
}

```

To display the local LIRR database:

```
switch:admin> ficonshow LIRR
{Fmt  Type PID      Listener Port WWN
 0x18 N    255800 50:05:07:60:28:bf:3e:98 \
 0x18 N    255a00 50:05:07:60:28:bf:2c:9e \
 0x18 N    255b00 50:05:07:60:28:bf:3f:0b \
 0x18 N    255c00 50:05:07:60:28:bf:3f:0a \
 0x18 N    255d00 50:05:07:60:28:bf:2c:9f \
 0x18 N    255e00 50:05:07:60:28:bf:18:63 \
 0x18 N    255f00 50:05:07:60:28:bf:18:64 \
```

```
Switch Port WWN      Listener Type
20:58:00:05:33:0d:b7:05 Conditional-S
20:5a:00:05:33:0d:b7:05 Conditional
20:5b:00:05:33:0d:b7:05 Conditional
20:5c:00:05:33:0d:b7:05 Conditional
20:5d:00:05:33:0d:b7:05 Conditional
20:5e:00:05:33:0d:b7:05 Conditional
20:5f:00:05:33:0d:b7:05 Conditional-C*
}
```

The Local LIRR database has 7 entries.

Current LIRR device port number: 95 (0x5f)

To display the local and remote LIRR database:

```
switch:admin> ficonshow LIRR fabric
{Fmt  Type PID      Listener Port WWN      \
 0x18 N    502d00 50:05:07:64:01:40:11:79 \
 0x18 N    510d00 50:05:07:64:01:00:15:8c \
 0x18 N    510f00 50:05:07:64:01:00:14:62 \
```

```
Switch Port WWN      Listener Type
20:2d:00:60:69:80:1e:4e Conditional-C
20:0d:00:60:69:80:1e:4f Conditional-S
 20:0f:00:60:69:80:1e:4f Conditional
}
```

The LIRR database has 3 entries.

Current LIRR device port number: Not configured

To display the local Switch RNID database:

```
switch:admin> ficonshow switchrnid
{
  {Switch WWN          flag Parm
   10:00:00:60:69:80:1e:4e 0x00  0x200a00
   Type number:          SLKWRM
   Model number:         48K
   Manufacturer:         BRD
   Plant of Manufacture: CA
   Sequence Number:      ORB030000082
   tag:                  00ff
  }
}
```

The Local switch RNID database has 1 entries.

To display the local RLIR database:

```
switch:user> ficonshow RLIR

{
  {Fmt Type PID Port Incident Count TS Format Time Stamp
    0x18 N 502e00 46 1 Time server Mon Jan 13 04:29:33 2003
    Port Status: Link not operational
    Link Failure Type: Loss of signal or synchronization

    Registered Port WWN Registered Node WWN Flag Node Parameters
    50:05:07:64:01:40:0f:ca 50:05:07:64:00:c1:69:ca 0x50 0x200105
    Type Number: 002064
    Model Number: 101
    Manufacturer: IBM
    Plant of Manufacture: 02
    Sequence Number: 0000000169CA
    tag: 2e00

    Switch Port WWN Switch Node WWN Flag Node Parameters
    20:2e:00:60:69:80:1e:4e 10:00:00:60:69:80:1e:4e 0x00 0x200a2e
    Switch Part Number: 060-0001501-05
    Switch Serial Number: 0FT02X801E4E
    Domain: 20480
  }
}
The local RLIR database has 1 entry.
```

SEE ALSO [ficonClear](#)

fipsCfg

Configures FIPS (Federal Information Processing Standards) mode.

Synopsis **fipscfg --enable** [fips | simulate | selftests | bootprom | dh]
 [-nowarn] [-dp] [enable | disable]

fipscfg --disable [simulate | selftests | bootprom | dh]
 [-nowarn] [-dp] [enable | disable]

fipscfg --zeroize [-nowarn] [-dp]

fipscfg --show

fipscfg --verify fips [-dp]

Description Use this command to configure FIPS mode on the switch. In this mode, only FIPS-compliant algorithms are allowed. As part of FIPS 140-2 level-2 compliance, passwords, shared secrets and the private keys used in SSL/TLS, system login, etc., need to be zeroized. Power-up self tests are executed when the switch is powered on to check for the consistency of the algorithms implemented on the switch.

This command prompts for confirmation before FIPS configuration changes take effect. Specifying no cancels the operation. The -nowarn option overrides the prompting.

Notes Certain services and functions, such as FTP, HTTP, remote procedure calls (RPC), root account, boot prom access, etc., must be blocked before the system can enter FIPS mode.

LDAP should not be configured while FIPS is enabled.

The system must be rebooted for FIPS mode changes to take effect.

Refer to the Fabric OS Administrator's Guide for information on configuring your system for FIPS 140-2 level-2 compliance.

FIPS mode cannot be modified through configDownload.

FIPS is not supported on all platforms. For FIPS-compliant hardware, refer to the Fabric OS Administrator's Guide.

In a Virtual Fabric environment, FIPS is treated as chassis-wide configuration and applies to all logical switches in the chassis. Chassis permissions are required to configure FIPS.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--help Prints command usage.

--disable selftests [-nowarn] Disables selftests mode.

--enable [fips | selftests] [-nowarn] Enables FIPS or selftests mode. Selftests must be enabled before FIPS mode is enabled.

--zeroize [-nowarn] [-dp]

Erases all passwords, shared secrets, private keys, etc. in the system. Specify the -dp option to zeroize both CP and dual-CP.

--show

Displays the current FIPS configuration.

--verify fips [-dp]

Scans the prerequisites for enabling FIPS and print the failure/success cases. Specify the -dp option to verify both CP and dual-CP.

--disable | --enable bootprom [-nowarn]

Disables or enables the Boot Programmable Read-Only Memory (Boot PROM) on the switch. Boot PROM access is blocked in FIPS mode. Disabling Boot PROM requires root permission. Enabling Boot PROM does not require root permission.

--disable | --enable dh [-nowarn]

Removes or configures all the Diffie hellman specific SSH configurations on both the SSH server and client configuration, and restarts the SSH server. This command is supported only in FIPS mode

--disable | --enable selftests [-dp] [enable | disable]

Disables or enables the selftests mode on dual-CP or both dual-CP and CP. Specify the -dp enable option to enable or disable selftests on both CP and dual-CP. Specify the -dp disable option to enable or disable selftests on DP only. Ignore the -dp option to enable or disable selftests on the CP only.

--disable | --enable simulate [-nowarn]

Disables or enables FIPS simulation mode. This feature is used to test the switch in simulated FIPS environment without disabling root and Boot PROM.

Examples

To display the current FIPS configuration:

```
switch:admin> fipscfg --show
FIPS mode is :      Disabled
FIPS Selftests mode/status is :  Disabled/None
```

To enable selftests:

```
switch admin> fipscfg --enable selftests
You are enabling selftests.
Do you want to continue? (yes, y, no, n) [no] : yes
FIPS Selftests mode/status has been set to :      Enabled/None
```

To verify FIPS prerequisites:

```
switch:admin> fipscfg --verify fips
Standby firmware supports FIPS - PASS
SELF tests check has passed - PASS
Root account is enabled - FAIL
Radius check has passed - PASS
Authentication check has passed - PASS
Inflight Encryption check has passed - PASS
IPSec check has passed - PASS
Telnet port number <23> for the policy <default_ipv4> is in permit state.
HTTP port number <80> for the policy <default_ipv4> is in permit state.
```

```

RPC port number <897> for the policy <default_ipv4> is in permit state.
IPv4 policies not FIPS compliant - FAIL    NEWLY Added message
Telnet port number <23> for the policy <default_ipv6> is in permit state.
HTTP port number <80> for the policy <default_ipv6> is in permit state.
RPC port number <897> for the policy <default_ipv6> is in permit state.
IPv6 policies not FIPS compliant - FAIL
SNMP is not in read only mode - FAIL
Bootprom access is enabled - FAIL
Firmwaredownload signature verification is disabled - FAIL
Secure config upload/download is disabled - FAIL
SSH DSA Keys check passed - PASS
Inband Management interface is disabled - PASS
Ipsecconfig is disabled. - PASS
Signature Algorithm used in LDAP CA certificate is not Sha256
Signature Algorithm used in Switch CA certificate is not Sha256
Signature Algorithm used in HTTPS certificate is not Sha256
Signature Algorithm used in FCAP certificate is not Sha256
Signature Algorithm used in FCAP CA certificate is not Sha256
Certificates are not FIPS compliant - FAIL
Certificates validation has passed - PASS
SSH client's ShaValue is not configured as 2 - FAIL
SSH client's MinPrime is not configured as 2048 - FAIL
SSH client's KexAlgorithms is not configured as diffie-hellman-group-exchange-sha256
- FAIL
SSH client's ServerHostKeySize is not configured as 2048 - FAIL
SSH server's ShaValue is not configured as 2 - FAIL
SSH config is not FIPS compliant - FAIL

```

To enable FIPS after prerequisites have been met:

```

switch:admin> fipscfg --enable fips
You are enabling FIPS.
Do you want to continue? (yes, y, no, n) [no] : yes
FIPS mode has been set to : Enabled
Please reboot the system

switch:admin> fipscfg --show
FIPS mode is : Enabled

```

To attempt enabling FIPS when prerequisites are not met:

```

switch:admin> fipscfg --enable fips
SelfTests mode is not enabled.
Root account is enabled.
Authentication uses MD5 hash algorithm.
Authentication uses DH group 0.
Telnet port number <23> for the policy <default_ipv4> \
is in permit state.
HTTP port number <80> for the policy <default_ipv4> \
is in permit state.
RPC port number <898> for the policy <default_ipv4> \
is in permit state.
Telnet port number <23> for the policy <default_ipv6>\
is in permit state.
HTTP port number <80> for the policy <default_ipv6> \
is in permit state.
RPC port number <898> for the policy <default_ipv6> \

```



```

    is in permit state.
SNMP is not in read only mode.
Bootprom access is enabled.

```

FIPS mode cannot be configured at this time

To back out of a zeroizing operation:

```

switch:admin> fipscfg --zeroize
You are Zeroizing FIPS configuration.
Do you want to continue? (yes, y, no, n) [no]: no
Operation cancelled.

switch:admin> fipscfg --zeroize
You are Zeroizing FIPS configuration.
Do you want to continue? (yes, y, no, n) [no]: yes

Executing 'secauthsecret --remove --all':

This command deletes database of DH-CHAP secret keys.\
    If a fabric requires authentication, deleting this \
    database may cause switch to segment from the fabric.

Do want to remove secret key database? \
    (yes, y, no, n): [no]
Operation cancelled...
Executing 'pkiremove':

WARNING!!!

Removing pki objects will impair the security functionality
of this fibre channel switch. If you want secure mode enabled,
you will need to get the switch certificate again.

About to remove Pki objects.
ARE YOU SURE (yes, y, no, n): [no]
Operation cancelled.
Executing 'passwddefault':
Password policies are already set to default.
Executing 'seccertutil delkey':

Deleting the key pair will automatically do the following:

1. Delete all existing CSRs.
2. Delete all existing certificates.
3. Reset the certificate filename to none.
4. Disable secure protocols.

Continue (yes, y, no, n): [no]
Operation cancelled.
Zeroizing Radius configuration:
RADIUS configuration does not exist.
LDAP configuration does not exist.
Zeroizing IPSec static SA configuration.
Zeroizing SSH key.
Permission denied to perform this operation.
Failed to zeroize SSH public key.
switch:admin>

```

To disable bootprom:

```
switch:root> fipscfg --disable bootprom  
You are disabling bootprom.  
Do you want to continue? (yes, y, no, n) [no] : no  
Operation cancelled.
```

To enable FIPS simulation mode:

```
switch:root> fipscfg --enable simulate  
You are enabling simulate.  
Do you want to continue? (yes, y, no, n) [no]: yes  
FIPS SIMULATE mode has been set to : Enabled  
Please reboot the system
```

```
switch:root> fipscfg --show  
FIPS mode is : Enable(SIMULATE)  
FIPS Selftests mode/status is : Enabled/None  
diffie-hellman-group-exchange-sha256 is : Enabled
```

SEE ALSO None

firmwareActivate

Activates switch firmware.

Synopsis **firmwareactivate**

firmwareactivate [-l | -local]

firmwareactivate --help

Description Use this command to activate the firmware that has been downloaded to the secondary partition using the firmwareDownload -r command. This command swaps partitions and reboots the system to activate the new image. Execute this command with the -local or -l option to activate the firmware on a local control processor (CP).

The firmwareRestore and firmwareCommit commands only take action if the new firmware is activated; otherwise, the process terminates with an error. However, you can execute the firmwareDownload command before activating the firmware.

Notes This command is supported on the single CP and dual-CP systems.

You must not make any configuration changes before activating the firmware.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operands are optional:

-l | -local

Activates the firmware on the local CP.

--help

Displays the command usage.

Examples To activate a new version of the firmware:

```
switch:admin> firmwareactivate
```

This command will activate the firmware on the secondary partition but will require that existing telnet, secure telnet or SSH sessions to be restarted.

```
Do you want to continue (Y/N) [Y]:
```

SEE ALSO [firmwareCommit](#), [firmwareDownload](#), [firmwareDownloadStatus](#), [firmwareKeyShow](#), [firmwareRestore](#), [firmwareShow](#), [version](#)

firmwareCheck

Performs firmware integrity test.

Synopsis

```
firmwarecheck
firmwarecheck --enable
firmwarecheck --disable
firmwarecheck --show
```

Description Use this command to check the integrity of software image that is stored on a switch. This command also detects the files whose checksum has changed. The firmware integrity test fails if the files or packages are modified manually.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

```
--enable -boot           Enables firmware integrity check on every reboot.
--disable -boot        Disables firmware integrity check on every reboot.
--show                  Displays whether the integrity check on boot is enabled or disabled.
```

Examples To perform firmware integrity test:

```
switch:user> firmwarecheck
Validating integrity of firmware on root filesystem
Please wait...
Firmware integrity test passed.
```

To enable firmware integrity test:

```
switch:user> firmwarecheck --enable -boot
```

To disable firmware integrity test:

```
switch:user> firmwarecheck --disable -boot
```

To display the firmware integrity check is enabled or disabled:

```
switch:user> firmwarecheck --show
```

SEE ALSO [firmwareCommit](#), [firmwareDownload](#), [firmwareKeyShow](#), [firmwareRestore](#), [firmwareShow](#), [version](#)

firmwareCleanInstall

Recovers the switch firmware.

Synopsis **firmwarecleaninstall**

firmwarecleaninstall [-p | -protocol *protocol*] [*host,user,path,passwd*]

firmwarecleaninstall --help

Description Use this command to initiate a clean reinstall of the firmware in cases where the loaded firmware does not function correctly, the normal firmware download fails, or to recover from a rolling reboot situation.

Notes The firmwarecleaninstall operation should be performed similarly on both standalone platforms and on directors. On a director, it should be invoked on each CP, and operates only on that CP. Firmwarecleaninstall can be run on both active and standby CPs, however it should not be run simultaneously on both CPs.

If for any reason, boot flash is corrupted and boot ROM cannot be loaded, you must let it go through RMA. Firmwarecleaninstall mechanism cannot be used to recover from such damage.

If local CF is corrupted in a way that the Linux image cannot be loaded, firmwarecleaninstall cannot be used to recover the switch.

Since pre-existing configurations are totally wiped out by firmwarecleaninstall, to restore the previous configuration or the OEM configuration you must do a specific configdownload.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operands are optional. When invoked without operands, the command goes into interactive mode.

-p | -protocol *protocol*

Specifies the file transfer protocol. Valid values are ftp, scp, and sftp.

host

Specifies a valid FTP or SSH server name or IP address. The firmware is downloaded from the specified host.

user

Specifies a user name for FTP or SSH server access.

path

Specifies a path for the firmware files.

passwd

Specifies a password.

--help

Displays the command usage.

Examples To perform a clean firmware install interactively:

```
switch:admin> firmwarecleaninstall
Server Name or IP Address: 10.10.2.10
User Name: admin
File Name: /admin/dist/FOS7.4.0/
Network Protocol(1-FTP, 2-SCP, 3-SFTP) [1]: 1
Password:
```

This command will erase all the data on the Compact Flash before installing a new firmware. There are also disruptive reboots during the process. Please use "configupload -all" if all configurations need to be saved before continuing with firmwarecleaninstall.

Do you want to continue (Y/N) [Y]:

To perform a clean firmware install non-interactively:

```
switch:admin> firmwarecleaninstall 10.10.2.10 \
admin,/admin/dist/FOS7.4.0/
```

SEE ALSO [firmwareActivate](#), [firmwareCommit](#), [firmwareDownload](#), [firmwareDownloadStatus](#), [firmwareKeyShow](#), [firmwareRestore](#), [firmwareShow](#), [version](#)

firmwareCommit

Commits switch firmware.

Synopsis **firmwarecommit**

Description Use this command to commit a firmware download to a CP. This command copies an updated firmware image to the secondary partition and commits both partitions of the CP to an updated version of the firmware. This must be done after each firmware download and after the switch has been rebooted and a sanity check is performed to make sure the new image is fine.

For switches that have nonvolatile memory set into two equal partitions, the primary partition is the where the system boots from; the secondary partition is where a copy of the firmware is stored, in case the primary partition is damaged.

To maintain the integrity of the firmware image in the nonvolatile memory, the firmwareDownload command updates the secondary partition only. When firmwareDownload completes successfully and the CP is rebooted, the system switches the primary partition (with the old firmware) to the secondary, and the secondary partition (with the new firmware) to the primary.

The default behavior of the firmwareDownload command is to automatically run the firmwareCommit command after the reboot. If you decide to disable the autocommit option when running firmwareDownload, you must execute one of the following two commands after the CP is rebooted:

- firmwareCommit copies the primary partition (with new firmware) to the secondary and commits the new firmware to both partitions of the CP.
- firmwareRestore copies the secondary partition (with the old firmware) to the primary and backs out of the new firmware download. The firmwareRestore command can be run only if autocommit was disabled during the firmware download. Autocommit can be disabled only when you run firmwareDownload in single mode.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To commit a new version of the firmware:

```
switch:admin> firmwarecommit
Validating primary partition...
Doing firmwarecommit now.
Please wait ...
Replicating kernel image
.....
FirmwareCommit completes successfully.
```

SEE ALSO [firmwareDownload](#), [firmwareRestore](#)

firmwareDownload

Downloads firmware from a remote host, a local directory, or a USB device.

Synopsis To invoke the command in interactive mode:

```
firmwaredownload
```

To download FOS firmware over a network:

```
firmwaredownload [-s [-b | -n]] [-p ftp | scp | sftp]  
[-A cra] [-c] [-r] [-lr] [host, user, path, password]
```

To download FOS firmware from a USB device:

```
firmwaredownload [-s [-b | -n]] [-U]  
[-c] [-r] [-lr] path
```

Description

Use this command to download switch firmware from an FTP or SSH server or local NFS directory to nonvolatile storage. Switch firmware can also be downloaded from an external USB device on platforms that support USB.

The new firmware is downloaded as a bundle of packages. Package names are defined in a *.plist file along with other firmware information (time stamp, platform code, version, etc.). These packages are made available periodically to add features or to remedy defects. Contact customer support to obtain information about available firmware versions.

On enterprise-class platforms, this command, by default, downloads the firmware image to both control processors (CPs) in rollover mode to prevent disruption to application services. This operation depends on High Availability (HA) support. If HA is not available, use the -s option to upgrade the CPs one at a time.

All systems supported by this firmware have two partitions of nonvolatile storage (primary and secondary) to store two firmware images. This command always downloads the new image to the secondary partition and then swaps partitions so the secondary partition becomes the primary.

By default, firmwareDownload reboots the system and activates the new image. Finally, the command performs a firmwareCommit automatically to copy the new image to the other partition. In systems with blade processors (BPs), after the new CP firmware is downloaded to the system and activated, the BP firmware is downloaded to the BP processors if there is a mismatch between the BP and CP firmware.

By default, firmwareDownload performs a full install, autoreboot, and autocommit. These modes are selectable only in single CP (-s) mode, in which case autoreboot is OFF by default.

For each standalone switch in your fabric, complete all firmware download changes before issuing the firmwareDownload command on the next switch to ensure a nondisruptive download.

If firmwareDownload is interrupted due to an unexpected reboot as a result of a software error or power failure, the command automatically recovers the corrupted secondary partition. Wait for the recovery to complete before starting another firmware download.

Notes Firmware download and subsequent POST failure may occur on some platforms, if the firmware commit operation coincides with the execution of POST. The recommended work around is to disable POST (diagDisablePost) before you initiate a firmware download and re-enable POST (diagEnablePost) after the firmware commit operation has completed.

Firmware download procedures may vary depending on which Fabric OS version you are migrating from. See the Fabric OS Administrator's Guide for restrictions on changing Fabric OS versions.

On certain occasions, you may see messages in the console output of firmwareDownload. These are internal messages generated by the Linux utilities. You can safely ignore these messages. For relevant Brocade-generated firmware download messages, refer to the Fabric OS Message Reference (SULB module).

To correlate Brocade blade names with blade IDs, use the slotShow command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operands are optional. When invoked without operands, the command goes into interactive mode.

-U

Downloads the firmware from an attached USB device. This option is valid only on platforms that support a USB port. Refer to your specific Hardware Reference Guide for details. The USB device must be enabled prior to firmware download with the usbStorage command. Firmware must be stored under the default firmware directory in the USB file system. On a dual-CP chassis, the USB device must be attached to the active CP. When downloading firmware from a USB device, the -p option is ignored.

-s

Enables single-CP mode. This mode supports selectively enabling or disabling a full install, autoreboot, and autocommit on bladed and nonbladed systems. On enterprise-class platforms, this mode supports upgrading a single CP. When downloading the main Fabric OS firmware, this option disables autoreboot, unless overridden by the -b option.

-b

Enables autoreboot mode. When single CP mode is enabled and this operand is not specified, reboot must be run manually to activate the downloaded image. If autoreboot mode is enabled, the switch reboots automatically after the firmware has been downloaded.

-n

Disables autocommit mode. When autocommit mode is disabled, the firmwareCommit command must be executed manually to propagate the downloaded image to both partitions of the storage device.

host

Specify a valid FTP or SSH server name or IP address. IPV4 and IPV6 addresses are supported. The firmware is downloaded from the specified host. If a host is not specified, the firmware is considered accessible on a local directory. To mention an FTP server by name, a DNS server must first be set up with the dnsConfig command. If DNS is enabled and a server name is specified, firmwareDownload automatically determines whether IPV4 or IPV6 should be used.

user

Specify a user name for FTP or SSH server access. This operand can be omitted, if the firmware is accessible on a local directory, a USB device, or by anonymous FTP server access. A user name other than "anonymous" is required for SSH server access.

path

Specify a fully qualified path for the firmware. Absolute path names may be specified using forward slashes (/).

password

Specify a password. This operand can be omitted, if the firmware is accessible through a local directory or an attached USB device, or if no password is required by the FTP server. This operand is required when accessing an SSH server. In Fabric OS v7.0.0 or later, you can omit the password if the switch is configured as follows:

- The switch must be configured with public key authentication. Refer to the sshUtil help page for more information.
- You select a secure protocol (SCP or SFTP).
- The private key is installed on the switch, and the public key is exported to the remote host. Refer to the Fabric OS Administrator's Guide for configuration procedures.

-p scp | ftp | sftp

Specify the file transfer protocol. Valid values are ftp (file transfer protocol), sftp (secure file transfer protocol), and scp (secure copy protocol). Values are not case-sensitive. If -p is not specified, firmwareCommit determines the protocol automatically by checking the config.security parameter.

-A cra

Specify the method for protocol. Valid option is cra. Challenge Response Authentication (CRA) is supported only with the SCP protocol.

-c

Disables version compatibility checking. By default, firmwareDownload checks if the firmware being downloaded is compatible with other running firmware images in the system. If the firmware version is not compatible, firmwareDownload fails. If this option is specified, version compatibility checking is disabled.

-r

Downloads the firmware to the secondary partition only.

-lr

Downloads the firmware locally to the secondary partition on the CP.

Diagnostics

The command checks the network connection and other system parameters before initiating firmwareDownload. It may fail if at least one of the following conditions is encountered:

- The host is not reachable from the switch.
- The user does not have permission on the host.
- The password is not specified correctly.
- Indicated firmware does not exist on the host, or is not in the right format, or is corrupted.
- The FTP or SSH service is not running on the host.
- The platform is not supported by the firmware indicated.
- The USB device may not be plugged in correctly. On standalone switches, the device must be plugged into the switch USB port. On enterprise-class platforms, the USB device must be plugged into the Active CP
- The USB device is not enabled. Use the usbStorage command on the switch to enable the USB device. On enterprise-class platforms, the command must be run on the Active CP to enable the USB device.

For additional system messages, refer to the Fabric OS Message Reference.

Examples

To download the firmware to both CPs on a dual-CP chassis with an attached USB device (You would execute the same command on a single-CP switch with USB support. Output may vary depending on platform.):

```
switch:admin> firmwaredownload -U v7.4.0_amp

Checking system settings for firmwaredownload...
Protocol selected: USB
Trying address-->AF_INET IP: 127.1.1.8, flags : 2
System settings check passed.

Checking version compatibility...
Version compatibility check passed.

This command will upgrade the firmware on both
CP blades. If you want to upgrade firmware on a single
CP only, please use -s option.

You may run firmwaredownloadstatus to get the status
of this command.

This command will cause a warm/non-disruptive boot on
the active CP, but will require that existing telnet,
secure telnet or SSH sessions be restarted.
```

To download firmware interactively:

```
switch:admin> firmwaredownload
Server Name or IP Address: 192.168.32.10
User Name: admin
File Name: ~admin/dist/FOS7.0.0/
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP) [1]:
Password:*****
Do you want to continue with CRA (Y/N) [N]:
```

To download firmware without a password using public key authentication:

```
switch:admin> firmwaredownload
Server Name or IP Address: 10.38.17.17
User Name: admin
File Name: /users/home25/admin/dist
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP) [1]: 3
Verifying if the public key authentication is available.
Please wait ...Success.

Do Auto-Commit after Reboot [Y]: y
Reboot system after download [N]: y
Server IP: 10.38.17.17, Protocol IPv4
Checking system settings for firmwaredownload...
System settings check passed.
(Output truncated)
```

SEE ALSO [firmwareCommit](#), [firmwareDownloadStatus](#), [firmwareKeyShow](#), [firmwareRestore](#), [firmwareShow](#), [reboot](#), [slotShow](#), [version](#)

firmwareDownloadStatus

Displays the status of a firmware download.

Synopsis **firmwaredownloadstatus**

Description Use this command to display an event log that records the progress and status of events during a firmware download. The event log is created by the firmware download process and is kept until you issue another firmwareDownload command. A timestamp is associated with each event. When downloading Fabric OS firmware, the event logs in the two control processors (CPs) are synchronized and you can run this command from either CP.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the status of a firmware download on a switch:

```
switch:admin> firmwaredownloadstatus
[1]: Tue Mar 29 21:43:14 2011
Firmware is being downloaded to the switch. This step may take up to 30 minutes.

[2]: Tue Mar 29 21:48:26 2011
Firmware has been downloaded to the secondary partition of the switch.

[3]: Tue Mar 29 22:06:57 2011
The firmware commit operation has started. This may take up to 10 minutes.

[4]: Tue Mar 29 22:10:19 2011
The commit operation has completed successfully.

[5]: Tue Mar 29 22:10:19 2011
Firmwaredownload command has completed successfully. Use firmwareshow to verify the
firmware versions.
```

To display the status of a firmware download on a chassis:

```
switch:admin> firmwaredownloadstatus
[1]: Fri Mar 25 13:12:56 2011
Slot 7 (CP1, active): Firmware is being downloaded to the switch. This step may take
up to 30 minutes.

[2]: Fri Mar 25 13:33:23 2011
Slot 7 (CP1, active): Firmware has been downloaded to the secondary partition of the
switch.

[3]: Fri Mar 25 16:38:55 2011
Slot 7 (CP1, active): Firmwarerestore is entered. System will reboot and a firmware
commit operation will start upon boot up.

[4]: Fri Mar 25 16:49:12 2011
Slot 7 (CP1, standby): The firmware commit operation has started. This may take up to
10 minutes.

[5]: Fri Mar 25 16:58:44 2011
```

```
Slot 7 (CP1, standby): Firmware commit operation has started to restore the secondary partition.
```

```
[6]: Fri Mar 25 16:58:45 2011
```

```
Slot 7 (CP1, standby): The firmware commit operation has started. This may take up to 10 minutes.
```

```
[7]: Fri Mar 25 17:05:34 2011
```

```
Slot 7 (CP1, standby): The commit operation has completed successfully.
```

SEE ALSO [firmwareCommit](#), [firmwareDownload](#), [firmwareRestore](#), [firmwareShow](#)

firmwareKeyShow

Displays the public key used for signed firmware validation.

Synopsis **firmwarekeyshow**

Description This command displays the contents of the public key used for validating the integrity of firmware images when signed firmware validation is enabled.

Notes A firmware key should be installed on every switch as a part of the Fabric OS installation. The presence of a firmware key does not imply that the firmware signature is checked during firmwareDownload. Signed Firmware Download must be enabled before the public key can be used for signature validation.

Use the configure command to enable Signed Firmware Download.

If Signed Firmware Download is enabled, and if the validation succeeds, firmware download proceeds normally. If the firmware is not signed or if the signature validation fails, signed firmware download fails.

Refer to the Fabric OS Administrator's Guide for complete details on upgrading or downgrading firmware.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the public key used for signed firmware validation:

```
switch:admin> firmwarekeyshow
-----BEGIN PUBLIC KEY-----
MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDjuQpMk4FrceFvVZ12iAakFNv9
k4ZGhFDMPGIHIems1Ywqdl55U7LTDIVwoViTLevtIDn012r1X1NQ+DORAzvJfkWd
XegkeTn/8wDgHBwotPz4WTd9UGJ9M0Vs52ro1TiukIpsh084LXKgxt+IgdseRCzY
8p8rQZWLPyputx6rgwIDAQAB
-----END PUBLIC KEY-----
```

SEE ALSO [firmwareDownload](#), [configureChassis](#)

firmwareRestore

Restores the former active firmware image.

Synopsis **firmwarerestore**

Description Use this command to restore the former active Fabric OS firmware image. This command can only be run if autocommit was disabled during the firmwareDownload process.

After a firmwareDownload and a reboot (with autocommit disabled), the downloaded firmware becomes active. If you do not want to commit the firmware and want to restore the former firmware, issue the firmwareRestore command. After running firmwareRestore, you can run firmwareDownload again.

This command reboots the system and makes the former firmware active. After the switch reboots, both primary and secondary partitions restore the previous firmware.

This command only takes action if the system is booted after a firmwareDownload; otherwise, the process terminates with an error.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To restore the former active firmware image:

```
switch:admin> firmwarerestore
Restore old image to be active ...
Restore both primary and secondary image after reboot.
The system is going down for reboot NOW !!
Broadcast message from root (ttyS0) Fri Oct 22 23:48:54 2010...

Doing firmwarecommit now.
Please wait ...
```

SEE ALSO [firmwareCommit](#), [firmwareDownload](#)

firmwareShow

Displays the firmware version and download history.

- Synopsis **firmwareshow**
- firmwareshow --history**
- firmwareshow --help**

Description Use this command to display the firmware versions and the firmware download history. The command shows the firmware versions on both the primary and secondary partitions of the storage device. When this command is issued while a firmware download is in process, an appropriate warning message is displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- history** Displays the contents of the firmware download log. For each firmware download record, the command displays the date and time, the switch name, the slot number, port ID, and firmware version.
- help** Displays the command usage.

Examples To display the firmware versions on a Brocade DCX 8510-8 while a firmware download is in progress:

```
switch:admin> firmwareshow
Slot Name  Appl Primary/Secondary Versions  Status
-----
   6  CP0   FOS      v7.2.0
                        v7.2.0
                        STANDBY
   7  CP1   FOS      v7.2.0
                        v7.2.0
                        ACTIVE *
```

WARNING: Firmwaredownload is in progress.

To display the firmware version on a standalone switch:

```
switch:admin> firmwareshow
Appl      Primary/Secondary Versions
-----
FOS       v7.2.0
          v7.2.0
```

To display the firmware download history:

```
switch:admin> firmwareshow --history  
Firmware version history
```

Sno	Date & Time	Switch Name	Slot	PID	FOS Version
1	Fri Feb 18 12:58:06 2011	CDCX16	7	1556	Fabos Version v7.0.0d
2	Wed Feb 16 07:27:38 2011	CDCX16	7	1560	Fabos Version v7.0.0c

SEE ALSO [firmwareDownload](#), [firmwareDownloadStatus](#)

firmwareSync

Synchronizes the firmware from the active control processor (CP) to the standby CP.

Synopsis **firmwaresync [-force]**

firmwaresync --help

Description Use this command to manually synchronize the firmware from the active CP to the standby CP. Execute the command without arguments to synchronize the active CP firmware to the standby CP.

Notes This command is applicable only for the dual CP systems. Execution of this command updates the firmware version of the standby CP with that of the active CP. The lowest firmware version on the standby CP can be Fabric OS v6.4.0.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

[-force]

Executes the command without user confirmation. This operand is optional.

--help

Displays the command usage.

Examples To synchronize the standby CP with active CP firmware version:

```
switch:admin> firmwaresync
```

This command will copy the firmware on the active CP blade to the standby CP blade but will require that existing telnet, secure telnet or SSH sessions to the standby CP blade to be restarted.

This command may take up to 10 minutes.

Do you want to continue (Y/N) [Y]:

Firmwaresync has started.

.....Firmwaresync has been completed successfully.

SEE ALSO [aaaConfig](#)

flow

Creates, manages, and displays flows in Flow Vision.

Synopsis

```
flow --create flow_name -feature feature_list
    port_options frame_options [config_options]

flow --activate flow_name -feature feature_list

flow --deactivate flow_name -feature feature_list

flow --control [flow_name] [-feature feature_list]
    [-deviceldMode mode | -portldMode mode]
    [-simport port_num -enable | -disable]
    [-size payload_size | -pattern pattern_string]
    [-enable_wrap | -disable_wrap]

flow --modify flow_name port_options

flow --reset flow_name -feature feature_list

flow --show [flow_name] [-feature feature_list | -allzoned]
    [port_options frame_options]
    [-count iterations | -time interval | -verbose [-domain domain_id]]
    [-sortBy field] [-ctrlcfg]
    [-increase [count] | -decrease [count]]

flow --delete flow_name | all [-force]

flow --help
```

Description

Use this command to perform the following functions:

- Create a flow
- Activate or deactivate features for a flow
- Clear the data collected for a particular feature of a flow
- Change the control parameters for a feature or a flow
- Modify the definition of the predefined Analytics VTAP flow
- Display the flow statistics
- Delete a flow

Each of these functions is documented in a separate section that includes function, synopsis, description, operands, and examples.

A flow is a set of related Fibre Channel (FC) frames or packets that share similar traits, such as an ingress port, egress port, or frame options that can uniquely differentiate one set of related frames or packets from a different set of frames. A flow is defined by a combination of ingress port, egress port, source device, and destination device parameters. Flow Vision supports Flow Monitor, Flow Generator, and Flow Mirror features to monitor, simulate, and capture the network traffic respectively. You can create up to 512 flows on Brocade director and 128 flow on switch-based system. For more information on Flow Vision, refer to the Flow Vision Administrator's Guide.

Notes This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Function Creating a flow

Synopsis **flow --create** *flow_name* **-feature** *feature_list*
port_options frame_options [config_options]

Description Use this command to create a flow and by default activate the flow for the specified features. This command validates the flow definition before creating a flow. If the flow definition is not supported by any specified feature or if the flow definition is a duplicate of an existing active flow, the operation will terminate with an appropriate error message. For more information on duplicate flows, refer to the Fabric OS Administrator's Guide.

The following rules apply for creating a flow:

- You must specify at least one port option (-ingrport or -egrport) but not both.
- You must specify the source device (-srcdev), the destination device (-dstdev), or both. The source device and the destination device can be learned using a wildcard ("**").
- The ingress port and egress port must reside in the local switch.
- The source device and destination device can reside in either the local or remote switch.
- You can create 512 flows on a Brocade director and 128 flows on a switch-based system. Note that each flow discovered when using "*" as a source device or destination device will count as one of these flows. These system-discovered flows will impact the number of user-defined flows allowed to be active.
- The configuration options -noactivate, -noconfig, and -bidir are optional.
- You can create up to 64 monitor flows and four generator flows per port.
- You can activate one mirror flow per chassis or switch-based system.

Operands The --create command has the following operands:

flow_name

Specifies the name of the flow. Each flow name must be a unique string composed of a maximum of 20 alphanumeric or underscore characters. The flow name is case-insensitive and is always stored as lowercase.

-feature *feature_list*

Specifies a comma-separated list of features to activate for the flow. Specify "all" to activate all features for a flow. Valid values for *feature_list* include the following:

monitor

Activates the Flow Monitor feature for a flow. The Flow Monitor feature monitors and provides statistics for the specified flow.

The following configuration considerations apply for the Flow Monitor feature:

- The ingress port and egress port can be an SIM Port, F_Port, E_Port, or EX_Port (Gen 5 or later) on the local switch. The ingress port must be a Gen 5 or later port and egress port can be a Gen 4, Gen 5 or later port. The SIM Port must be a Gen 5 or later port.
- VE_Port, VEX_Port, FCoE ports, and GigE are not supported.
- The source device and destination device can be a host or target switch, or a wildcard (""). Using the wildcard ("") enables Flow Vision to learn (discover) all flows on an F_Port and displays statistics for each learnt flow. The learning mode is supported only on Gen 5 or later F_Ports and trunked F_Ports.
- You can use WWN or Fibre Channel ID (FCID) for the -srcdev and -dstdev operands when creating Flow Monitor on EX_Ports. If the Flow Monitor feature is configured on the ingress port using FCID addressing mode, you must specify the real SID of the source device and the proxy ID of the destination device. If the Flow Monitor feature is configured on the egress port using FCID addressing mode, you must specify the proxy ID of the source device and real DID of the destination device.
- Inter Fabric Link (IFL) flows can be monitored only on EX_Ports in a Fibre Channel router (FCR).
- You can activate the Flow Monitor feature for a maximum of 64 flows per port.
- Access Gateway (AG) mode is supported

generator

Activates the Flow Generator feature for a flow. The Flow Generator is a traffic flow diagnostics feature that generates traffic at line rate in the fabric to validate connectivity, hardware components, and network performance. You must configure the ingress or egress ports and the source and destination devices to be SIM ports before activating a flow using the Flow Generator feature.

You can modify the frame size and payload pattern using the --control options after creating the flow.

The following configuration considerations apply for the Flow Monitor feature:

- The Flow Generator feature is not supported on a base switch or ICL port.
- AG mode is not supported.
- You can activate the Flow Generator feature on four flows per port.
- The -frametype, -lun, and -bidir options are not supported with the Flow Generator feature.

mirror

Activates the Flow Mirror feature for a flow. The Flow Mirror captures network traffic in a flow and sends it to the switch CPU for traffic analysis. This feature mirrors only the flows that are in active state. The logging mechanism of the frames can be modified by using the --control -enable_wrap | -disable_wrap options.

For both switch-based system and a chassis-based system, a maximum of 256 frames per second are mirrored. A maximum of 1280 frames are stored for switch-based systems and 5120 frames are stored for chassis-based systems.

The following configuration considerations apply for the Flow Mirror feature:

- The ingress port or the egress port must be an F_Port, which is 8G or less, on the local switch.
- The Flow Mirror feature is supported only on Gen 5 or later ports.
- EX_Ports, XISL ports, DISL ports, E_Ports, trunked E_Ports, and trunked F_Ports are not supported.
- The Flow Mirror feature is not supported on SIM ports.
- The Flow Mirror feature can be active on only one flow per chassis or switch-based system.

port_options

Specifies the options to configure the ingress or egress ports.

-ingrport *port*

Specifies the ingress port. The port can be in either [slot/]port or D,I (Domain, Index) format depending on the port mode configured using the -portIdMode operand.

-egrport *port*

Specifies the egress port. The port can be in either [slot/]port or D,I format depending on the port mode configured using the -portIdMode operand.

The -ingrport and -egrport options are mutually exclusive; that is, you can specify only one of the options. The learning mode ("") is not supported.

-mirrorport *port*

Specifies the port from which mirrored frames exits. The port can be in either [slot/]port or D,I format depending on the port mode configured using the -portIdMode operand.

frame_options

Specifies the options that represent the content of the FC frame or attributes of the frame.

-srcdev *device_id*

Specifies the 3-byte source ID of the originator device. The device_id can be in PID or PWWN format depending on the device ID mode configured using the -deviceIdMode operand. The PID format is OxDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "" to enumerate all originator devices.

-dstdev *device_id*

Specifies the 3-byte destination ID of the destination device. The device_id can be in PID or PWWN format depending on the device ID mode configured using the -deviceIdMode operand. The PID format is OxDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "" to enumerate all destination devices.

-sfid *fid*

Specifies the source fabric ID.

-dfid *fid*

Specifies the destination fabric ID.

-lun *LUN_id*

Specifies the LUN identification in decimal or hexadecimal (2-byte value) format. The valid range for *LUN_id* is from 0 through 65535 (0x0000 to 0xFFFF). The LUN parameter includes the addressing method and fields associated with the respective addressing method. If the most significant byte (MSB) is not specified in the flow definition, 0x00 is used. This operand is not supported by the Flow Generator feature.

-frametype *type*

Specifies the predefined frame type. Valid values for *type* include the following: SCSI, SCSIRead, SCSIWrite, SCSIRW, SCSI2Reserve, SCSI3Reserve, scsicmdsts, ABTS, BAACC, SCSI2Release, SCSI3Release, SCSTur, SCSI2ReserveRelease, SCSI3ReserveRelease, SCSIGoodStatus, SCSICheckStatus, SCSIResvConflict, SCSIInquiry, SCSIxferrdy, Srr, and BARJT. This operand is not supported by the Flow Generator feature.

-srceid *vm_uuid*

Specifies the source entity ID.

config_options

Specifies the flow configuration options.

-bidir

Configures the features to act on both incoming and outgoing directions on bidirectional traffic. For example, the Flow Mirror feature mirrors the frames on both directions: traffic originating from the source device and traffic that is destined to the source device. This operand is not supported by the Flow Generator feature.

-noactivate

Allows a flow to be created, but suppresses activation of a flow.

-noconfig

Overrides the default behavior, which automatically saves the flow in the persistent configuration when you create a flow. The flow will be lost when the system is rebooted.

Examples

To create a flow on ingress port (1/10) for traffic from the source device (0x020a00) to the destination device (0x030000) and activate the flow for the Flow Mirror and Flow Monitor features:

```
switch:admin> flow --create myflow1 -feature mirror,monitor
               -ingrport 1/10 -srcdev 0x020a00 -dstdev 0x030000
```

To create a flow to monitor SCSI frames going through an egress port:

```
switch:admin> flow --create scsicsflow -feature monitor
               -egrport 1/9 -frametype scsichkstatus
```

To create a flow to monitor statistics from a particular source to destination on a specified LUN:

```
switch:admin> flow --create lunflow -feature monitor
               -srcdev 0x010502 -dstdev 0x030700 -ingrport 1/5 -lun 4
```

To create a flow from source device (0x010203) to destination device(0x020304) for Flow Generator feature without saving the flow:

```
switch:admin> flow --create myflow2 -feature generator
               -srcdev 0x010203 -dstdev 0x020304 -ingrport 2/3 -noconfig
```


To create a flow from source device (0x01ba00) to destination device(0x01c000) for Flow Generator feature without activating the flow:

```
switch:admin> flow --create myflow3 -feature generator
               -srcdev 0x01ba00 -dstdev 0x01c000 -ingrport 2/18 -noactivate
```

To create a flow to monitor bidirectional traffic from a particular source to destination:

```
switch:admin> flow --create endtoendflow -feature monitor
               -ingrport 2/5 -srcdev 010500 -dstdev 040900 -bidir
```

To create a flow to monitor traffic from source devices to destination devices in learning mode:

```
switch:admin> flow --create flowLearn -feature monitor
               -ingrport 3/5 -srcdev "*" -dstdev "*"
```

To create a flow to mirror ingress and egress traffic flowing through a port to an embedded port:

```
switch:admin> flow --create myflow4 -feature mirror
               -ingrport 1/20 -srcdev 0x010203 -lun 0x02 -bidir
```

To create a flow to generate traffic from the source device (0x020a00) to all destination devices that are zoned with the source device:

```
switch:admin> flow --create myflow5 -feature generator
               -ingrport 1/10 -srcdev 0x020a00 -dstdev "*"
```

Function Activating features or flow

Synopsis **flow --activate** *flow_name* **-feature** *feature_list*

Description Use this command to activate a flow if it is not in the active state or configure the specified features for a flow. Use this command if you created a flow using the -noactivate operand or if none of the features are activated for the flow. Note that the flows are not enforced until they are active and the flows cannot be activated without configuring the features. If one or more of the flow parameters are not supported by any specified feature, the flow will not be activated and the operation will fail with an appropriate error message.

Operands The --activate command has the following operands:

flow_name

Specifies the name of the flow on which the specified features must be activated. Specify "all" to activate the specified features for all flows. The following predefined flows are supported:

sys_mon_all_fports

Used for automatically learning and monitoring the traffic passing through all the online F_Ports in the switch. By default, this flow is in the deactivated state. This flow is supported only with the monitor feature.

sys_analytics_vtap

Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the mirror feature.

feature_list

Specifies a comma-separated list of features to activate for a flow. Specify "all" to activate all features for a flow. Valid values for *feature_list* include the following: monitor, generator, and mirror.

Examples To activate Flow Mirror feature for a flow:

```
switch:admin> flow --activate myflow2 -feature mirror
```

Function Deactivating features

Synopsis **flow --deactivate** *flow_name* **-feature** *feature_list*

Description Use this command to deactivate the specified features for a flow. All data associated with the deactivated feature will be cleared.

Operands The --deactivate command has the following operands:

flow_name

Specifies the name of the flow on which the specified features must be deactivated. Specify "all" to deactivate the specified features for all flows. The following predefined flow is supported:

sys_mon_all_fports

Used for automatically learning and monitoring the traffic passing through all the online F_Ports in the switch. This flow is supported only with the monitor feature.

feature_list

Specifies a comma-separated list of features to deactivate for the flow. Specify "all" to deactivate all features for a flow. Valid values for *feature_list* include the following: monitor, generator, and mirror.

Examples To deactivate the Flow Mirror feature for a flow:

```
switch:admin> flow --deactivate myflow2 -feature mirror
```

Function Changing the control parameters

Synopsis **flow --control** [*flow_name*] **[-feature** *feature_list*]
[-deviceIdMode *mode* | **-portIdMode** *mode*]
[-simport *port_num* **-enable** | **-disable**]
[-size *payload_size* | **-pattern** *pattern_string*]
[-enable_wrap | **-disable_wrap**]

Description Use this command to modify the port or device addressing mode and to change the control parameters of a flow or features.

Operands The --control command has the following operands:

flow_name

Specifies the flow name. Specify "all" to modify the control parameters for all flows. If a flow name is not specified, the default values of the control parameters, -size and -pattern will be modified; the flows which are already present does not intake the modified control parameters. The modified control parameters will apply to all flows created in future.

-feature *feature_list*

Specifies a comma-separated list of features on which the control parameters should be applied. Valid values for feature_list include the following: generator and mirror.

-deviceIdMode *mode*

Specifies the mode for addressing the devices. The valid values for mode are pid and wwn. The default mode is pid.

-portIdMode *mode*

Specifies the mode for addressing the ports. The valid values for mode are slotport and index. The default mode is slotport.

-simport *port*

Enables or disables a port as a SIM port. The port can be in [slot/]port or D,I format depending on the port ID mode configured using the -portIdMode operand. You can specify a single port or a range of ports in slot/port, slot/port-port, slot/* (all ports in slot), */* (all ports in switch or logical switch), port, port-port, and * (all ports in switch or logical switch) formats. The flow name is not required for enabling or disabling a port as SIM port.

-enable

Enables the port as a SIM port.

-disable

Disables the SIM port configuration on the port.

-size *payload_size*

Specifies the size of the frame payload. The frame size must be specified in multiples of 4, for example, 64, 68, 120, or 320 characters. The valid range is from 64 through 2048 characters; 0 for random size. The default payload size is 2048 bytes.

The following operands are specific to the flow generator feature:

-pattern *pattern_string*

Specifies the ASCII pattern of the payload. The valid range is from 1 through 32 bytes; 0 for random pattern. The default is random pattern.

The following operands are specific to the flow mirror feature. You can use these operands only if the Flow Mirror feature is not activated for a flow. The flow name is not required for enabling or disabling this option.

-enable_wrap

Enables the wrapping of mirrored frame logs. This is the default value. The Flow Mirror flow must be deactivated before using this command. The statistics of the Flow Mirror flow are reset during this operation.

-disable_wrap

Disables the wrapping of mirrored frame logs. The Flow Mirror flow must be deactivated before using this command. The statistics of the Flow Mirror flow are reset during this operation.

Examples

To change the device addressing mode to WWN:

```
switch:admin> flow --control -deviceidmode wwn
```

To change the port addressing mode to index:

```
switch:admin> flow --control -portidmode index
```

To configure the ports from 1 to 40 in slot 1 as SIM port:

```
switch:admin> flow --control -simport 1/1-40 -enable
```

To remove the SIM port configuration on port 20 in slot 1:

```
switch:admin> flow --control -simport 1/20 -disable
```

To modify the size and pattern for a flow:

```
switch:admin> flow --control myflow2 -feature generator
               -size 100 -pattern "1234"
```

To disable wrapping of frame logs for the Flow Mirror feature:

```
switch:admin> flow --control -feature mirror -disable_wrap
```

Function

Modifying definition of Analytics vTap flow

Synopsis

flow --modify *flow_name* *port_options*

Description

Use this command to modify the existing flow definition of the predefined flow "sys_analytics_vtap" and specify either a single port, a MAPS logical port group name, or a wildcard (*) as ingress port. You can also override the default mirror port by using the --mirrorport port option.

Operands

The --modify command has the following operands:

flow_name

Specifies the name of the Analytics vTap flow. Valid option is sys_analytics_vtap. The sys_analytics_vtap flow is used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. The flow can be modified only if it is in the deactive state.

port_options

Specifies the options to configure the ingress or mirror port.

-ingrport *port*

Specifies the ingress port. The port can be in either [slot/]port or D.I (Domain, Index) format depending on the port mode configured using the -portIdMode operand, or a wildcard (*).

-mirrorport *port*

Specifies the port from which mirrored frames exits. The port must be in the D.I (Domain, Index) format.

Examples

To modify and activate the predefined Analytics vTap flow:

```
switch:admin> flow --modify sys_analytics_vtap -ingrport 2/10 -mirrorport 12, 21
switch:admin> flow -activate sys_analytics_vtap -feature mirror
```

Function

Clearing feature data

Synopsis

flow --reset *flow_name* **-feature** *feature_list*

Description

Use this command to clear the data of the specified flow and feature combination. All the data collected for the flow and feature combination will be cleared.

Operands

The --reset command has the following operands:

flow_name

Specifies the name of the flow on which the feature data must be cleared. Specify "all" to reset all flows. The following predefined flow is supported:

sys_mon_all_fports

Used for automatically learning and monitoring the traffic passing through all the online F_Ports in the switch. This flow is supported only with the monitor feature.

feature_list

Specifies a comma-separated list of features. Specify "all" to reset all features for a flow. Valid values for feature_list include the following: monitor, generator, and mirror.

Examples

To clear all the mirrored frames for a flow:

```
switch:admin> flow --reset myflow1 -feature mirror
```

Function

Displaying flow data

Synopsis

flow --show [*flow_name*] **[-feature** *feature_list* **| -allzoned]**
 [*port_options* *frame_options*]
[-count *iterations* **| -time** *interval* **| -verbose** **[-domain** *domain_id*]
[-sortby *field* **[-ctrlcfg]**
[-increase *count* **| -decrease** *count*]

Description	<p>Displays the flow definitions and frame statistics. When used without operand, the --show command displays the list of all flows configured in Flow Vision.</p> <p>The show on demand feature allows you to display the statistics of the features without creating a flow. To display the statistics of the features without creating a flow, you must specify the operands without a flow name and provide a flow definition. The flow will run for a time interval of 6 seconds and the data will be displayed for the specified features.</p>
Operands	<p>The --show command has the following operands:</p> <p><i>flow_name</i></p> <p>Displays the parameters and flow statistics for the specified flow. Specify "all" to display all flows. The following predefined flows are supported:</p> <p>sys_mon_all_fports</p> <p>Used for automatically learning and monitoring the traffic passing through all the online F_Ports in the switch. By default, this flow is in the deactivated state. You can activate this flow using the --activate operand. This flow is supported only with the monitor feature.</p> <p>sys_analytics_vtap</p> <p>Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the mirror feature.</p> <p>-feature feature_list</p> <p>Displays the statistics for the specified features. Specify "all" to display statistics of all configured features. Valid values for feature_list include the following: monitor, generator, mirror, and fabinfo.</p> <p>fabinfo</p> <p>Displays the topology data (the summary of all the paths taken by the flows in the flow definition) and the MAPS violations. The flow_name, -lun, -frametype, and -sortby options are not supported with this feature.</p> <p>-allzoned</p> <p>Displays all the zoned devices for a specified port, flow name, or flow definition.</p> <p><i>port_options</i></p> <p>Specifies the ingress or egress port options.</p> <p>-ingrport port</p> <p>Specifies the ingress port. The port can be in either [slot/]port or D,I (Domain, Index) format depending on the port mode configured using the -portIdMode operand.</p> <p>-egrport port</p> <p>Specifies the egress port. The port can be in either [slot/]port or D,I format depending on the port mode configured using the -portIdMode operand.</p> <p>-mirrorport port</p> <p>Specifies the port from which mirrored frames exits. The port can be in either [slot/]port or D,I format depending on the port mode configured using the -portIdMode operand.</p> <p><i>frame_options</i></p> <p>Specifies the options that represent the content of the FC frame or attributes of the frame.</p>

-srcdev device_id

Specifies the 3-byte source ID of the originator device. The device_id can be in PID or PWWN format depending on the device ID mode configured using the -deviceIdMode operand. The PID format is 0xDDAAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "" to enumerate all originator devices.

-dstdev device_id

Specifies the 3-byte destination ID of the destination device. The device_id can be in PID or PWWN format depending on the device ID mode configured using the -deviceIdMode operand. The PID format is 0xDDAAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "" to enumerate all destination devices.

-lun LUN_id

Specifies the LUN identification in decimal or hexadecimal (2-byte value) format. The valid range for LUN_id is from 0 through 65535 (0x0000 to 0xFFFF). The LUN ID includes the addressing mode. If the most significant byte (MSB) is not specified, 0x00 is used. This operand is not supported by the Flow Generator feature.

-frametype type

Specifies the predefined frame type. Valid values for type include the following: SCSI, SCSIRead, SCSIWrite, SCISIRW, SCSI2Reserve, SCSI3Reserve, scsicmdsts, ABTS, BAACC, SCSI2Release, SCSI3Release, SCSTur, SCSI2ReserveRelease, SCSI3ReserveRelease, SCSIGoodStatus, SCSICheckStatus, SCSIResvConflict, SCSIInquiry, SCSIxferrdy, Srr, and BARJT. This operand is not supported by the Flow Generator feature.

-count value

Specifies the number of times the output must be repeated. The default value is 1 and the maximum value is 10.

-time time_interval

Displays the flow information for the specified time interval until it is terminated with Ctrl + C. Values are in seconds. The time interval must be specified in multiples of 6, for example, 6, 12, 18, or 24 seconds. Valid range is from 6 through 300 seconds.

-verbose

Displays the flow or feature statistics in verbose mode.

-domain domain_id

Displays detailed information for the specified domain. The operand is valid only with the fabInfo feature.

-sortby field

Displays the sub-flows for a feature in the specified order. The field can be columnX, where X is the column number. The value of X can be from 1 to maximum number of columns present in the --show output. For the Flow Mirror feature, the sub-flows may or may not be present but the mirrored frames can be sorted. The -sortby option can be applied if only one feature is specified with the --show command.

-ctrlcfg

Displays the control parameters.

-increase [count]

Displays the monitoring statistics in ascending order based on the throughput. The count parameter is optional and it can be used to specify the number of entries to be displayed. This operand is supported only with the monitor feature.

-decrease [count]

Displays the monitoring statistics in descending order based on the throughput. The count parameter is optional and it can be used to specify the number of entries to be displayed. This operand is supported only with the monitor feature.

Examples To display all flows in Flow Vision:

```
switch:admin> flow --show
```

Flow Name	Feature	SrcDev	DstDev	IngrPt	EgrPt
myflow1	mon+	020a00	030000	1/10	-
scsicsflow	mon+	520a00	520b00	-	1/9
lunflow	mon+	010502	030700	1/5	-
myflow2	gen+	010203	020304	2/3	-
myflow3	gen	01ba00	01c000	1/18	-
endtoendflow	mon+	010500	040900	2/5	-
flowLearn	mon+	*	*	3/5	-
myflow4	mir+	010203	-	1/20	-
myflow5	gen+	020a00	*	1/10	-

BiDir	LUN	FrameType
no	-	-
no	-	sstatc
no	4	-
no	-	-
no	-	-
yes	-	-
no	-	-
no	0x02	-
no	-	-

+ Denotes feature is currently activated for the flow

To display the flow definition and statistics of a flow:

```
switch:admin> flow --show myflow2
```

```
=====
```

```
Name       : myflow2      Features: gen(Activated)
```

```
Definition: IngrPort(3),SrcDev(0x010203),DstDev(0x020304)
```

```
Flow Generator (Activated):
```

```
-----
```

SrcDev	DstDev
0x010203	0x020304

```
-----
```

```
Number of frames generated from IngrPort : 1.50G
```

```
=====
```


To display the statistics of the Flow Monitor feature:

```
switch:admin> flow --show myflow1 -feature monitor
=====
Name      : myflow1      Features: mon(Activated)
Definition: IngrPort(10),SrcDev(0x020a00),DstDev(0x030000)

Flow Monitor (Activated):
Monitor time: | Tue Jun 25 04:20:06 PDT 2013 |
-----
|      Frame Count      |      Frames Per Sec.      |      Byte count      | \
| Tx / Rx / Total | Tx / Rx / Total | Tx / Rx / Total | \
| 18.20G/ 0 / 18.20G| 786.52k/ 0 / 786.52k| 73.48T/ 0 / 73.48T | \
----- \

===== \
|      Throughput(Bps)      |      Frame Size(Bytes)      |
| Tx / Rx / Total | Tx / Rx |
| 1.56G/ 0 / 1.56G| -- / -- |
-----
=====
```

To display the monitor statistics from a particular source to destination on a specified LUN:

```
switch:admin> flow --show lunflow
=====
Name : lunflow  Features: mon(Activated)
Definition: IngrPort(5),SrcDev(0x010502),DstDev(0x030700),Lun(4)
Flow Monitor:
Monitor time: | Thu Jun 06 15:15:39 UTC 2013 |
-----
| I/O Count      | I/O Per Sec.(IOPS)      | I/O bytes Transferred | \
| Reads / Writes/ Total | Reads / Writes/ Total | Reads / Writes/ Total | \
| 44.92k/ 44.94k/ 89.85k| 2.00k/ 2.00k/ 4.01k | 5.88M/ 5.89M/ 11.77M | \
----- \

===== \
| I/O bytes Per Sec.      |
| Reads / Writes/ Total |
| 2.62M/ 2.62M/ 5.25M |
-----
=====
```

To display the Flow Monitor statistics for bidirectional traffic:

```
switch:admin> flow --show endtoendflow -feature monitor
=====
Name : endtoendflow Features: mon(Activated)
Definition: IngrPort(1,5),SrcDev(010500),DstDev(040900),BiDir
Flow Monitor:
```

```

Monitor time: | Thu Jun 06 15:15:39 UTC 2013 |
-----
| Frame Count      | Frames Per Sec.  | Byte count      | \
| Tx / Rx / Total | Tx / Rx / Total  | Tx / Rx / Total | \
-----
| 2.92M/ 2.96M/ 5.88M | 159.31k/161.78k/321.10k | 5.99G/ 5.99G/ 11.99G | \
-----
| Throughput(Bps)  | Frame Size(Bytes) | \
| Tx / Rx / Total  | Tx / Rx           | \
-----
| 327.15M/327.28M/654.44M | 2052 / 2020 | \
-----

| I/O Count        | I/O Per Sec.(IOPS) | I/O bytes Transferred | \
| Reads / Writes/ Total | Reads / Writes/ Total | Reads / Writes/ Total | \
-----
| 44.92k/ 44.94k/ 89.85k | 2.00k/ 2.00k/ 4.01k | 5.88G/ 5.89G/ 11.77G | \
-----
=====
| I/O bytes Per Sec. | \
| Reads / Writes/ Total | \
| 262.84M/262.73M/525.68M | \
-----
=====

```

To display the monitor statistics for a flow:

```

switch:admin> flow --show flowLearn -feature monitor
-----
| SID(*) | DID(*) | Rx Frames Count | Rx Frames per Sec. | Rx Bytes Count | \
-----
| 010500 | 030700 | 2.92M           | 159.31k            | 5.99G           | \
| 010501 | 030700 | 1.92M           | 100.22k            | 4.91G           | \
| 010502 | 030700 | 0.92M           | 51.81k             | 2.36G           | \
| 010500 | 040900 | 2.92M           | 259.31k            | 7.89G           | \
| 010501 | 040900 | 1.92M           | 159.31k            | 3.72G           | \
| 010502 | 040900 | 0.92M           | 159.31k            | 1.08G           | \
-----
| *      | *      | 12.72M          | 770.37K            | 25.86G          | \
-----

| Rx Throughput(Bps) | Avg Rx Frm Sz(Bytes) | \
-----
| 627.15M             | 2052                  | \
| 444.62M             | 1052                  | \
| 314.17M             | 452                   | \
| 327.15M             | 2052                  | \
| 327.15M             | 1052                  | \
| 327.15M             | 452                   | \
-----
| 2.68G               | 1192                  | \
-----

```

To display the statistics for the Flow Mirror feature in learning mode:

```
switch:admin> flow --show mirFlow -feature mirror
Name : mirFlow          Features: mir(Activated)
Definition: EgrPort(17),DstDev(0x051100),BiDir
Flow Mirror:
----- \
| SID(*) | DID(*) | OXID | RXID | SOF   | EOF   | Frame_type | \
----- \
| 051600 | 051100 | 0883 | ffff | SOFi3 | EOFt  | SCSIRead   | \
| 051600 | 051100 | 0191 | 0bce | SOFn3 | EOFn  | Data       | \
| 051600 | 051100 | 0c8f | ffff | SOFi3 | EOFt  | SCSIWrite  | \
| 051600 | 051100 | 0017 | ffff | SOFi3 | EOFt  | SCSIWrite  | \
| 051600 | 051100 | 0191 | 0bce | SOFn3 | EOFn  | Data       | \
----- \
| Dir | Time-Stamp |
----- \
| Tx | Jun 10 11:08:10 |
| Tx | Jun 10 11:08:10 |
| Tx | Jun 10 11:08:10 |
| Tx | Jun 10 11:08:10 |
| Tx | Jun 10 11:08:10 |
----- \
```

To display all the devices zoned with device at port '11' (F_Port) as destination:

```
switch:admin> flow --show -allzoned -src "" -dst 0x190b00 -egr 11
Active Flows:
-----
| SrcDev | DstDev |
-----
| 0x21400 0x21e00 0x21f00 0x31000 0x31100 | 0x190b00 |
-----
```

To display all the devices zoned with device at port 11 (F_Port) as source:

```
switch:admin> flow --show -allzoned -src "" -dst * -ing 11
Active Flows:
-----
| SrcDev | DstDev |
-----
| 0x190b00 | 0x21400 0x21e00 0x21f00 0x31000 0x31100 |
-----
```

To display all the zoned devices for port 15 (E_Port):

```
switch:admin> flow --show -allzoned -src "" -dst "" -ing 15
Active Flows:
-----
| SrcDev | DstDev |
-----
| 0x190a00 | 0x21400 0x21e00 0x21f00 0x31000 0x31100 |
-----
| 0x190b00 | 0x21400 0x21e00 0x21f00 0x31000 0x31100 |
-----
```

To display all the zoned devices for a flow:

```
switch:admin> flow --create flow3 -fe mon -src "*" -dst 0x190b00 -egr 11
switch:admin> flow --show flow3 -allzoned
Active Flows:
-----
| SrcDev                                | DstDev |
-----
| 0x21400 0x21e00 0x21f00 0x31000 0x31100 | 0x190b00 |
-----
```

To display the statistics for the Flow Mirror feature in verbose mode:

```
switch:admin> flow --show mirFlow1 -feature mirror -verbose
Name : mirFlow1      Features: mir(Activated)
Definition: EgrPort(1/5),SrcDev(010200),DstDev(*),BiDir
Flow Mirror:
-----
Time-Stamp      | Dir | SOF | EOF | Frame_Type | Frame Contents |
-----
Jun 04 08:27:04 | Tx  | SOFi3 | EOFt | SCSI3_Res   | 06040500 00010200 08290000
009a0fd3 00000000 00000000 00000000 00000001 5f010300 00000000 18000000 00000000
Jun 04 08:27:04 | Tx  | SOFi3 | EOFt | SCSTxRdy    | 05040500 00010200 08890000
07ce01ca 00000000 00000000 00000018 00000000
Jun 04 08:27:04 | Rx  | SOFi3 | EOFt | Data        | 01010200 00040500 08090008
089a0f71 00000000 00000000 ffaabbcc 00000000 00000000 00000000 00000000
Jun 04 08:27:04 | Rx  | SOFi3 | EOFt | SCSIGoodSts | 07010200 00040500 08990000
089a0f71 00000000 00000000 00000000 00000000 00000000 00000000
```

To display the feature statistics in sorted order:

```
switch:admin> flow --show myflow -feature monitor -sortby column1
Monitor time: | Fri Jun 07 03:56:24 MDT 2013 |
=====
Name          : myflow Features: gen(Activated), mon(Activated)
Definition: EgrPort(4,8),SrcDev(0x*),DstDev(0x040800)
Flow Monitor:
----- \
|SID(*)| Tx Frames Count | Tx Frames per Sec. | Tx Bytes Count | \
----- \
| 40600|      11.99M      |      169.68k       |      25.08G     | \
| 40700|      11.99M      |      169.86k       |      25.08G     | \
| 40900|      28.49M      |      403.22k       |      59.38G     | \
----- \
| Tx Throughput(Bps) | Avg Tx Frm Sz(Bytes)|
-----
|      354.97M       |      2088           |
|      355.35M       |      2088           |
|      124.48M       |      2080           |
```

To display the SCSI frame statistics for the Flow Monitor feature:

```
switch:admin> flow --show scsicsflow -feature monitor
-----
Frame Statistics
-----
| Tx Frames Count | Tx Frames per Sec. |
-----
| 238             | 5                   |
-----
```

To display the control parameters:

```
switch:admin> flow --show -ctrlcfg
SimPort Information
-----|-----|-----|-----|-----|
Slot | Port | PID | PWNN | SID Frame Count | \
-----|-----|-----|-----|-----| \
1    | 2    | 050200 | 20:02:00:05:1e:e2:8e:00 | 0K | \
      |-----|
      | DID Frame Count |
      |-----|
      | 19.46K |
      |-----|
```

To display the control parameters for the Flow Generator feature:

```
switch:admin> flow --show -ctrlcfg -feature generator
Control Parameters of Generator
Size: 1024
Pattern: SCSITur
```

To display the statistics for the Flow Mirror feature on ingress port (1/10) without creating a flow (show on demand):

```
switch:admin> flow --show -srcdev 0x030000 -ingrport 1/10 -feature mirror
```

To display the flow dashboard data:

```
switch:admin> flow --show -feature fabinfo -srcdev "*" -egrport 17
Flow Dashboard Information:
=====

Topology Data:
-----

srcDev (0x170500), dstDev(0x31100)
srcDev(0x170500) <-> (23/1#, 23/5) <-> (3/7, 3/17) <-> dstDev(0x31100)

srcDev (0x190a00), dstDev(0x31100)
[srcDev: 0x190a00]<-> (25/10, 25/2)<->(23/2#, 23/5)<->(3/7, 3/17#)<->
  [dstDev:0x31100]
[srcDev:0x190a00]<-> (25/10, 25/3)<->(21/3, 21/1#)<->(3/4, 3/17#)<-> [dstDev:0x31100]
[srcDev:0x190a00]<-> (25/10, 25/4)<->(21/4, 21/1#)->(3/4, 3/17#)<-> [dstDev:0x31100]

# "Indicates there are MAPS violations on these ports"

Switch Specific Data:
=====
```

```

SwitchDomain      : 3 (0x3)
Name: sw0  Model   : 121.3  Uptime: (41 days 0 hrs 02 mins)
FirmwareVersion   : v8.0.0
OperationalStatus : Healthy
RebootReason      : Reboot
Fenced Ports     : 24
Decommissioned Ports : None
Quarantined Ports : None

```

MAPS violation:

```

-----
Port Health(24) |6 | defALL_HOST_PORTSCRC_2|09/17/14 09:13:24|Port17| 5 |
Port Health(15) |2 | defNON_E_F_PORTSFLF_0 |09/17/14 09:18:24|Port17| 3 |

```

```

=====
SwitchDomain: 25 (0x19)
Name: sw0  Model: 121.3  Uptime: (40 days 21 hrs 12 mins)
FirmwareVersion   : v8.0.0
OperationalStatus : CRITICAL Reason : FAULTY_BLADE
RebootReason      : Reboot
Fenced Ports     : None
Decommissioned Ports : None
Quarantined Ports : None

```

```

Category(Rule Count)|RepeatCount|Rule Name   |Execution Time |Object |Triggered
Value(Units)|
-----

```

No violations on the ports in the flow path

```

=====
SwitchDomain: 21 (0x15)
Name: sw0  Model: 121.3  Uptime: (40 days 03 hrs 10 mins)
FirmwareVersion   : v8.0.0
OperationalStatus : Healthy
RebootReason      : Reboot
Fenced Ports     : None
Decommissioned Ports : None
Quarantined Ports : None

```

No MAPS violations

To display the bottom five monitoring entries based on throughput:

```

switch:admin> flow --show sys_mon_all_fports -fe mon -increase 5

```

```

=====
Name      : sys_mon_all_fports  Features: mon(Activated)      noConfig: Off
Definition: IngrPort(*),SrcDev(*),DstDev(*)

```

Flow Monitor (Activated):

```

Monitor time: | Wed Dec 10 23:49:48 UTC 2014 |
-----
-----

```

```
|Ingr(*)|SID(*)|DID(*)| Rx Frames Count | Rx Frames per Sec. | Rx Bytes Count | Rx
Throughput(Bps) | Avg Rx Frm Sz(Bytes)|
```

```
-----
|13      |010d00|010a00|      2.26M      |      377.30k      |      1.51G      |
259.38M      |      720      |
|14      |010e00|010d00|      1.98M      |      330.81k      |      1.74G      |
298.36M      |      948      |
|18      |011200|010c00|      2.28M      |      381.04k      |      1.76G      |
300.72M      |      828      |
|20      |011400|011200|      1.89M      |      315.93k      |      1.78G      |
303.97M      |      1008     |
|16      |011000|011200|      1.99M      |      333.30k      |      1.80G      |
307.82M      |      968      |
-----
|*      |*      |*      |      92.41M      |      15.40M      |      99.69G      |
16.61G      |      1160     |
-----
=====
=====
```

To display flow dashboard information for a specific domain:

```
switch:admin> flow --show -feature fabinfo -srcdev 0x011100 \
               -egrport 17 -verbose -domain 3
```

Flow Dashboard Information:

```
=====
```

Switch Specific Data:

```
=====
```

SwitchDomain: 3 (0x3)

Name: sw0 Model: 121.3 Uptime: (41 days 0 hrs 02 mins)

FirmwareVersion : v8.0.0

OperationalStatus: Healthy

RebootReason: Reboot

MAPS violation:

```
-----
```

```
Port Health(24) |6      | defALL_HOST_PORTSCRC_2|09/17/14 09:13:24|Port17| 5 |
Port Health(15) |2      | defNON_E_F_PORTSLF_0 |09/17/14 09:18:24|Port17| 3 |
```

MAPS history data:

```
-----
```

```
Stats(Units)  Current   05/06/15   05/05/15   05/04/15   04/30/15   04/29/15
04/28/15
```

```
Port(val) Port(val) Port(val) Port(val) Port(val) Port(val)
Port(val)
```

```
-----
CRC          32(3)    32(2)    46(34)    45(7)    32(1)    -      32(7)
42(2)        42(2)    43(33)    44(6)    33(1)    -      33(7)
12(1)        12(1)    42(31)    42(5)    34(1)    -      34(7)
```

	06(1)	06(1)	47(20)	46(5)	35(1)	-	35(7)
ITW	32(11)	32(8)	45(2300)	45(539)	32(3)	0(1)	32(21)
	33(3)	33(3)	40(2282)	40(522)	33(1)	-	33(7)
	34(3)	34(3)	44(2276)	41(519)	34(1)	-	34(7)
	35(3)	35(3)	41(2269)	44(517)	35(1)	-	35(7)

Function Deleting a flow

Synopsis **flow --delete** *flow_name*

Description Use this command to delete the specified flow from Flow Vision. All the data associated with the flow will be cleared.

Operands The --delete command has the following operands:

flow_name | **all**

Specifies the name of the flow to be deleted. Specify all to delete all flows. Use of all option prompts for a confirmation.

-force

Executes the command without confirmation. This operand is optional.

Examples To delete a flow:

```
switch:admin> flow --delete myflow1
```

To delete all flows:

```
switch:admin> flow --delete all
```

```
This operation will delete all user defined flows and deactivate pre-defined flows.
Are you sure? (yes, y, no, n): [no] y
All flows deleted successfully.
```

Function Displaying the command help

Synopsis **flow --help** [*operand*] [...]

Description Use this command to display the command usage.

Operands *operand*

Displays the syntax and usage guidelines for the specified operand or sub-option.

Examples To display the command usage:

```
switch:admin> flow --help
```

```
Description - Perform Flow Vision operations
```

```
SYNTAX: flow <Flow_operations>
```

```
<Flow_operations>
```

```
--create <flowname> -feature <list>
```

```
<Port options> <Frame options> <Config options>
```



```

--delete      <flowname>
--control     [flowname] [-feature <list>]
               [-deviceIdMode <mode> | -portIdMode <mode>]
               [-simport <portID> -enable/-disable]
               [-size <frame size> | -pattern <pattern string>]
               [-enable_wrap/-disable_wrap]
--reset       <flowname> -feature <list>
--activate    <flowname> -feature <list>
--deactivate  <flowname> -feature <list>
--show        [flowname] [-feature <list>]
               [<Port options> <Frame_options>]
               [-count <iterations> | -time <interval> | -verbose]
               [-sortby <field>] [-ctrlcfg]

```

To display the command usage for an operand:

```

switch:admin> flow --help --create
Description - Create a flow definition for Flow Vision features
SYNTAX: flow --create <flowname> -feature <list>
               <Port options> <Frame options> <Config options>

<flowname>      : Unique string of characters to identify a flow
-feature <list> : Comma separated list of Flow Vision features
                  (mirror, monitor and generator)

<Port options>
  -ingrport <portID>: Switch receive port on which feature(s) is applied
  -egrport <portID>: Switch transmit port on which feature(s) is applied

<Frame options>
  -srcdev <devID>  : FC device that is flow source (SID or PWWN)
  -dstdev <devID>  : FC device that is flow destination (DID or PWWN)
  -lun <LUN ID>    : SCSI LUN identifier
  -frametype <ftyp>: Frame type applicable to the flow

<Config options>
  -bidir          : Applies Flow Vision features for both directions of flow
  -noactivate     : Creates flow without activating the flow
  -noconfig       : Creates flow without saving persistently

```

To display the command usage for an operand and sub-option:

```

switch:admin> flow --help --create -frametype
-frametype <ftyp>: FC frame types applicable to the flow.
                  <ftyp> can be one of scsi, srd, swr, srdwr, sres2, sres3,
                  scsirel2, stur, scsiresrel2, scsigoodstatus,
                  scsichkstatus, scsirel3, scsiresrel3, srescnfl, sing,
                  sxfr, scmdsts, abts, bacc, barjt.

```

SEE ALSO None

fosConfig

Displays or modifies Fabric OS features.

Synopsis **fosconfig --enable** *feature*

fosconfig --disable *feature*

fosconfig --show

Description Use this command to enable or disable a feature, or to display the current operating status of features on a switch. This command can be run while the switch is online.

The following features are supported (refer to the Notes for limitations):

- FC Routing service (see fcrConfigure)
- Virtual Fabrics (see IfCfgr and IsCfgr)

Notes The features described may not be supported on all platforms. If you attempt to enable a feature that is not supported on your platform, an error message stating "Command not supported on this platform" is displayed.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--enable *feature*

Enables a feature on the switch. Valid values for feature include the following:

fcr

Enables the FC Routing service on the switch. The FC Routing service is disabled by default. Use fosConfig --show to determine if FCR is enabled or disabled.

When enabling FCR, you may encounter one of the following system messages:

"FC Routing service is in the process of being disabled, please try again after a few minutes."
This means that a command to disable the FC Routing service is still in progress. Wait a few minutes and try again.

"FC Routing service is already enabled." This means that the FC Routing service is already enabled.

vf

Enables Virtual Fabrics. By default, Virtual Fabrics are enabled. Before enabling the Virtual Fabrics, ensure that there are no Administrative Domains (ADs) in effect. Administrative Domains must be disabled before enabling Virtual Fabrics. This command prompts for confirmation, because the chassis reboots after this command is executed.

--disable feature

Disables a feature on the switch. Valid values for feature include the following:

fcr

Disables the FC Routing service on the switch. All enabled EX_Ports and VEX_Ports on the switch must be offline for this command to succeed.

To use this command to disable the FC Routing service only instead of disabling the switch, issue this command, then change the BB fabric ID using fcrConfigure.

When disabling the FCR service, you may encounter the following system messages:

"Please disable all EX/VEX_Ports first before running this command." This means that there were EX_Ports or VEX_Ports online when this command was issued. Take these ports offline and try the command again.

"FC Routing service is already disabled" -This means that the FC Routing service is already disabled.

vf

Disables Virtual Fabrics on the switch. This command prompts for confirmation, because the chassis reboots after this command is executed.

--show

Displays the current operating status of features on the switch.

Examples

To display the operating status of the services on a Brocade 6510:

```
switch:admin> fosconfig --show
FC Routing service:           disabled
Virtual Fabric:               enabled
Ethernet Switch Service:      Service not supported on this Platform
```

To disable the FC Routing service:

```
switch:admin> fosconfig --disable fcr
FC Routing service is disabled
```

To enable the FC Routing service:

```
switch:admin> fosconfig --enable fcr
FC Routing service is enabled
```

To enable Virtual Fabrics:

```
switch:admin> fosconfig --enable vf
WARNING: This is a disruptive operation that \
requires a reboot to take effect.
All EX ports will be disabled upon reboot.
Would you like to continue [Y/N]y
```

To disable Virtual Fabrics:

```
switch:admin> fosconfig --disable vf  
WARNING: This is a disruptive operation that \  
requires a reboot to take effect.  
Would you like to continue [Y/N]y
```

SEE ALSO [fcrConfigure](#), [switchShow](#)

fosExec

Executes any Fabric OS command on a specified or all the remote domains, logical switches, or AG switches.

Synopsis

```

fosexec --fid FID -cmd "cmd [args]"

fosexec --fid all [-force] -cmd "cmd [args]"

fosexec --domain DID -cmd "cmd [args]"

fosexec --domain all -cmd "cmd [args]"

fosexec --ag switch_name -cmd "cmd [args]"

fosexec --ag all -cmd "cmd [args]"

```

Description Use this command to execute any Fabric OS command on a specified remote domain, logical switch context, AG switch or all remote domains, logical switches, or AG switches.

The target logical switch is identified by its fabric ID (FID). When used with the `--fid all` option, the specified command is executed in all logical switches.

The target remote domain is identified by its Domain ID (DID). When used with the `--domain all` option, the specified command is executed in all remote domains.

The target AG switch is identified by its name. When used with the `--ag all` option, the specified command is executed in all AG switches connected to the fabric.

The FIDs must be part of the FID permission list associated with the user account. If you execute `fosexec --fid all` and you do not have permission to one or more of the logical switches (FIDs), the command prompts for confirmation to continue with the execution of the command in the FIDs for which you do have permission. You can override the prompt for confirmation with the `-force` option. Refer to `userConfig help` for more information on logical switch access permissions.

Executing chassis-level commands through `fosexec --fid all` results in redundant output.

Use the `configure` command to set the Remote Fosexec feature. By default, the Remote Fosexec feature is disabled.

Notes The `--domain` option can be executed only if the Remote Fosexec feature is enabled on local and remote switches.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-cmd "cmd [args]"

Specifies the command to be executed including command options if applicable. The entire command string must be enclosed in double quotation marks.

--fid FID

Specifies the Fabric ID of the logical switch for which the command is executed.

- fid all**
Executes the specified command in all logical switch contexts configured on the physical switch.
- force**
Executes the specified command on all logical switches in your permission list without prompting for confirmation.
- domain DID**
Specifies the Domain ID of the remote switch for which the command is executed.
- domain all**
Executes the specified command on all switches in the fabric.
- ag switch_name**
Specifies the name of the switch for which the command is executed.
- ag all**
Executes the specified command on all AG switches connected to the fabric.

Examples

To display switch information for a logical switch with FID 10:

```
switch:admin> fosexec --fid 10 -cmd "switchshow"
-----
"switchshow" on FID 10
switchName:      switch_10
switchType:      66.1
switchState:     Online
switchMode:      Native
switchRole:      Subordinate
switchDomain:    1
switchId:        fffc01
switchWwn:       10:00:00:05:1e:41:5f:c2
zoning:          ON (lsan_cfg)
switchBeacon:    OFF
FC Router:       OFF
Allow XISL Use:  ON
LS Attributes:   [FID: 10, Base Switch: No, \
                  Default Switch: No, Address Mode 0]
Index Slot Port Address Media Speed State  Proto
-----
0      1      0   640000  --    N8   No_Module  FC
1      1      1   640100  --    N8   No_Module  FC
2      1      2   640200  --    N8   No_Module  FC
```

To enable port 5/0 on all logical switches:

```
switch:admin> fosexec --fid all -cmd "portenable 5/0"
-----

"portenable" on FID 128:
-----

"portenable" on FID 10:
```

A port or ports is/are not part of this switch.

"portenable" on FID 20:

A port or ports is/are not part of this switch.

To display the firmware version for all logical switches:

```
switch:user> fosexec --fid all -cmd "firmwareshow -v"
LF permission does not exist for one or more \
    logical switches.
Would you like to continue [Y/N] : y
```

"firmwareshow" on FID 10:

Appl Primary/Secondary Versions

```
FOS      v7.0.0
          v7.0.0
```

"firmwareshow" on FID 20:

Appl Primary/Secondary Versions

```
FOS      v7.0.0
          v7.0.0
```

To display the switch name for all logical switches without confirmation:

```
switch:user> fosexec --fid all -force -cmd "switchname"
```

"switchname" on FID 10:

switch_10

"switchname" on FID 20:

switch_20

To display the fabric information for all switch in the fabric:

```
switch:user> fosexec --domain all -cmd "fabricshow"
```

Domain 3

=====

Switch ID	Worldwide Name	Enet IP Addr	FC IP Addr	Name
3: fffc03	10:00:00:05:1e:61:28:0a	10.17.33.66	0.0.0.0	"TOM-1"

```
4: fffc04 10:00:00:05:1e:61:28:22 10.17.33.68 0.0.0.0 "TOM_4"
```

```
The Fabric has 2 switches
Fabric Name: POD_1
```

```
Domain 4
```

```
=====
```

Switch ID	Worldwide Name	Enet IP Addr	FC IP Addr	Name
3: fffc03	10:00:00:05:1e:61:28:0a	10.17.33.66	0.0.0.0	>"TOM-1"
4: fffc04	10:00:00:05:1e:61:28:22	10.17.33.68	0.0.0.0	"TOM_4"

```
The Fabric has 2 switches
Fabric Name: POD_1
```

To display the fabric information for domain 3 in the fabric:

```
switch:user> foexec --domain 3 -cmd "fabricshow"
```

```
Domain 3
```

```
=====
```

Switch ID	Worldwide Name	Enet IP Addr	FC IP Addr	Name
3: fffc03	10:00:00:05:1e:61:28:0a	10.17.33.66	0.0.0.0	"TOM-1"
4: fffc04	10:00:00:05:1e:61:28:22	10.17.33.68	0.0.0.0	"TOM_4"

```
The Fabric has 2 switches
Fabric Name: POD_1
```

To display firmware version information in an AG switch:

```
switch:user> foexec --ag C3_CORE_AG -cmd "version"
```

```
Access Gateway: 10:00:00:27:f8:fd:1f:80
```

```
=====
```

```
Kernel:      2.6.14.2
Fabric OS: v8.1.0
Made on:     Mon Aug 8 06:32:02 2016
Flash:       Tue Jul 21 19:32:17 2015
BootProm:    1.0.11
```

To display the firmware version information in all AG switches:

```
switch:user> foexec --ag all -cmd "version"
```

```
Access Gateway: C4_CORE_AG(10:00:00:05:33:e6:ce:80)
```

```
=====
```

```
Kernel:      2.6.34.6
Fabric OS: v8.1.0
Made on:     Mon Aug 8 06:40:42 2016
Flash:       Wed Jul 22 12:18:02 2015
BootProm:    3.0.1
```

```
Access Gateway: C3_CORE_AG(10:00:00:27:f8:fd:1f:80)
```

```
=====
```

```
Kernel:      2.6.14.2
Fabric OS: v8.1.0
Made on:     Mon Aug 8 06:32:02 2016
```



```
Flash:      Tue Jul 21 19:32:17 2015
BootProm:   1.0.11

Access Gateway: sw0(10:00:c4:f5:7c:16:98:14)
=====
Remote fosexec feature is disabled.
Access Gateway: C4_EDGE_AG(10:00:c4:f5:7c:16:a4:60)
=====
Kernel:     2.6.34.6
Fabric OS:  v8.1.0
Made on:    Mon Aug 8 06:40:42 2016
Flash:      Tue Jul 21 11:06:38 2015
BootProm:   3.0.1
```

SEE ALSO [setContext](#), [userConfig](#)

fpgaUpgrade

Upgrades and verifies the field-programmable gate array (FPGA) firmware image.

Synopsis **fpgaupgrade**

fpgaupgrade --slot *slot_num*

fpgaupgrade --verbose

fpgaupgrade --help

Description

Use this command to update the flash reserved for FPGA with a new image and to verify the newly downloaded image. If the operation is successful, the switch must be power cycled for changes to take effect and therefore this operation is disruptive. If the operation fails, an error message is displayed.

When this command is executed on a system that is already running with the latest FPGA image, it displays the following warning message: "The switch is already running the latest FPGA version."

The behavior of this command is platform-specific; output varies depending on the platform.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--slot *slot_num*

Specifies the slot number on bladed systems.

--verbose

Displays the statistics in verbose mode.

--help

Displays the command usage.

Examples

To upgrade FPGA image:

```
switch:admin> fpgaupgrade
This is a disruptive operation and will require a power-cycle after the completion of
the operation.
Do you want to continue (y/n)? y
Programming new FPGA, this may take a few minutes ...
Device #1 IDCODE is 0310A0DD
full-chip erasing Max 10 FPGA device(s) ...
programming Max 10 FPGA CFM0 block at sector 5 ...
programming Max 10 FPGA CFM1 block at sector 3 ...
programming Max 10 FPGA CFM1 block at sector 4 ...
programming Max 10 FPGA UFM block at sector 2 ...
verifying Max 10 FPGA CFM0 block at sector 5 ...
verifying Max 10 FPGA CFM1 block at sector 3 ...
verifying Max 10 FPGA CFM1 block at sector 4 ...
verifying Max 10 FPGA UFM block at sector 2 ...
```

fpgaUpgrade

```
programming Max 10 FPGA DSM block ...  
DONE  
Test time elapsed = 162.764267 sec  
Exit code = 0... Success  
Programmed new FPGA successfully. Please power-cycle for it to take effect.
```

To upgrade FPGA image (in this example, the command is executed on a system that is already running with the latest FPGA image):

```
switch:admin> fpgaupgrade  
The switch is already running the latest FPGA version
```

To upgrade FPGA image (in this example, the command failed with an error message):

```
switch:admin> fpgaupgrade  
This is a disruptive operation and will require a power-cycle after the completion of  
the operation.  
Do you want to continue (y/n)? y  
Programming new FPGA, this may take a few minutes ...  
The FPGA installer did not pass sanity check. Please firmwaredownload to a target path  
firmware and retry.  
Failed to program new FPGA (-1)
```

SEE ALSO None

frameLog

Displays information about discarded frames.

Synopsis **frameLog --disable** [-type timeout | du | unrout
| type1miss | type2miss | type6miss | all]

frameLog --enable [-type timeout | du | unrout
| type1miss | type2miss | type6miss | all]

frameLog --clear

frameLog --status

frameLog --show [-type timeout | du | unrout
| type1miss | type2miss | type6miss | all]
[-txport [slot/]port]
[-rxport [slot/]port]
[-sid source_PID][-did destination_PID]
[-sfid fabric_ID] [-dfid fabric_ID>]
[-mode summary | dump] [-n num_items]

Description Use this command to disable or re-enable the frame log, and to display detailed information about the discarded frames logged by the frame log. The frame log stores information about frames discarded due to certain reasons. The frame log sees information about only 40 discarded frames per second per chip on the chassis.

When frame drops occur on a switch, the frame log can help you identify to which flows the dropped frames belong and zero in on the affected applications by finding out the end-points of the dropped frame.

Use the --show option to display detailed information about the discarded frames that match the filter criteria provided by this command. The --show option supports two viewing modes: summary and dump mode. In summary mode, the command aggregates similar frames (those that have the same log timestamp, TX port, RX port, SID, DID, SFID, DFID, Src Entity Id, and Dst Entity Id) without displaying the raw frame contents. In dump mode, the command displays the raw frame contents, but the frames are not aggregated in the manner of the summary mode. In either mode, you can specify additional filters to customize the number and properties of the frames for closer examination.

When viewed in summary mode, the frame log displays the following information:

Log timestamp

The date and time when the frames described in this line of output were discarded. This value is accurate to within one second, that is, the displayed frames were not necessarily dropped at precisely the same time.

TX port

Egress port where the frames were bound to exit the chassis. A port displayed as -1 (or -1/-1 on slot-based systems) indicates an internal port.

RX port

Ingress port where the frames entered the chassis. A port displayed as -1 (or -1/-1 on slot-based systems) indicates an internal port.

SID	Source port ID in hexadecimal PID format.
DID	Destination port ID in hexadecimal PID format.
SFID	Source Fabric ID
DFID	Destination Fabric ID
Src Entity Id	Source ID
Dst Entity Id	Destination ID
Type	Reason for the frame discard. Frames can be discarded for a variety of reasons. The discard reasons currently handled by the frame log are timeout, unroutable, and du.
Count	The number of discarded frames logged in the frame log that have the log timestamp, TX port, RX port, SID, DID, SFID and DFID values listed on this line of output. Note that this count may be less than the actual number of such frames discarded, because the frame log cannot log the details of all discarded frames.

When viewed in dump mode, the frame log displays the following information:

Log timestamp	The date and time when the frames described in this line of output were discarded.
TX port	Egress port where the frames were bound to exit the chassis. A port displayed as -1 (or -1/-1 on slot-based systems) indicates an internal port.
RX port	Ingress port where the frames were bound to enter the chassis. A port displayed as -1 (or -1/-1 on slot-based systems) indicates an internal port.
Type	Reason for the frame discard. Frames can be discarded for a variety of reasons. The discard reasons currently handled by the frame log are timeout, unroutable, and du.
Frame contents	The first 64 bytes of the frame contents in hexadecimal format.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Frame Log operation is chassis-wide.

Operands

This command has the following operands:

-type

Specifies the discard frame types. Valid values for this operand include the following:

- timeout: Timeout discard frames
- du: Destination unreachable frames
- unroute: Unroutable frames
- type1miss: FTB type 1 miss discarded frames
- type2miss: FTB type 2 miss discarded frames
- type6miss: FTB type 6 miss discarded frames
- all: Specifies all discard frame types

--disable

Disables logging of discarded frames, which is enabled by default. This command clears the history of discarded frames and gathering of new information ceases. When frame logging is disabled, only the --help and --enable operations are permitted.

--enable

Enables logging of discarded frames after the feature was disabled.

--clear

Clears the stored history of discarded frames. This operation is permitted only when the feature is enabled.

--status

Displays the current status of the frame log service, and the type of discard frames that are being logged.

--show

Prints a listing of details about stored frames that match the specified filter criteria. This operation is permitted only when the feature is enabled. You can specify one or more of the following options to filter the output. When used without operands, the --show command displays the unfiltered output. This option supports specifying that the TX port or RX port of displayed frames should be a backend port.

-type timeout | du | unroute | type1miss | type2miss | type6miss | all

Specifies the discard frame types to display.

-txport [slot]/port

Displays only the frames that were bound to exit by the specified egress port. The -txport option accepts argument "-1" (for fixed-port switches) or "-1/-1" (for modular switches). These stand for "any backend port". Using this notation, you can select specifically those discarded frames that have a backend port in the TX port field. Individual backend ports cannot be specified, only the quality of being a backend port can be specified.

-rxport [slot]/port

Displays only the frames that entered the chassis on the specified port. The -rxport option accepts argument "-1" (for fixed-port switches) or "-1/-1" (for modular switches). These stand for "any backend port". Using this notation, you can select specifically those discarded frames that have a backend port in the RX port field. Individual backend ports cannot be specified, only the quality of being a backend port can be specified.

- sid source_PID
Displays only the frames with the specified 24-bit source address in the FC header. The port ID (PID) must be written in hexadecimal and must be prefixed by 0x.
- did destination_PID
Displays only the frames with the specified 24-bit destination address in the FC header. The port ID (PID) must be written in hexadecimal and must be prefixed by 0x.
- sfid fabric_ID
Displays only the frames with the specified fabric ID as the source fabric ID.
- sdfid fabric_ID
Displays only the frames with the specified fabric ID as the destination fabric ID.
- mode summary | dump
Specifies the command output mode. In dump mode, the command prints the 64 bytes of frame contents. In summary mode, the frame contents are not displayed. Summary mode is the default.
- n num_items
Displays the specified number of items. In summary mode, an item is a record of frames with the same values of log timestamp, TX port, RX port, SID, DID, SFID and DFID. Note that more frames may be represented in the lines of output than specified in the num_items value, because one line can aggregate multiple frames in summary mode. In dump mode, each item represents a single frame. The default value of num_items is 20. The maximum value in summary mode is 1200, and in dump mode it is 12,000.

Examples To display the status of the frame log service and the discard frame type:

```
switch:user> framelog --status
Service Status:           Enabled
Enabled Disc Frame Types:  timeout unroute
```

To display the framelog when unroute type is enabled:

```
switch:user> framelog --show
=====
Wed Aug 03 19:54:07 UTC 2016
=====

Timestamp      |Tx Port|Rx Port|SID      |DID      |SFID|DFID|Src Entity Id|Dst
Entity Id|Type  |Count|
-----
Aug 03 2016 19:53:28|--  |8      |0x520800|0x101010|128 |128 |vm_2          |vm_2
|unrout|10    |
|e      |      |
Aug 03 2016 19:52:26|--  |8      |0x520800|0x101010|128 |128 |N/A           |N/A
|unrout|10    |
|e      |      |
```

To display eight lines of an unfiltered frame log view in summary mode:

```
switch:user> framelog --show -mode summary -n 8
=====
Mon Jan 31 23:54:59 UTC 2011
=====
Log
timestamp      TX    RX
                port port SID      DID      SFID  DFID Type    Count
=====
Jan 31 23:49:37 2     2    0xffffffff 0xffffffff 1      1    timeout 1
Jan 31 23:49:37 2     1    0x051500   0x060100   1      1    timeout 4
Jan 31 23:49:37 2     0    0x051700   0x060000   1      1    timeout 4
Jan 31 23:49:36 2     1    0x051500   0x060100   1      1    timeout 3
Jan 31 23:49:36 2     0    0x051700   0x060000   1      1    timeout 3
Jan 31 23:49:35 2     1    0x051500   0x060100   1      1    timeout 2
```

To display the frame contents in dump mode:

```
switch:user> framelog --show -mode dump -n 4
=====
Mon Jan 31 18:34:47 UTC 2011
=====
Log
timestamp      TX    RX
                port port Type    Frame contents (first 64 bytes)
=====
Jan 31 18:34:46 7/32 7/33 timeout
                                00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                                80 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                                00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00
                                80 00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                                00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00
                                80 00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                                00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00
                                80 00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00
                                00 00 00 00 00 00 00 00 00 00 00 00 00
```

SEE ALSO None

fspfShow

Displays Fabric Shortest Path First (FSPF) protocol information.

Synopsis **fspfshow**

Description Use this command to display FSPF protocol information and internal data structures of the FSPF module. The command displays the following fields:

version	Version of the FSPF protocol.
domainID	Domain number of the local switch.
switchOnline	State of the local switch.
switchGenNum	Switch generation number.
switchGenNum(mmap)	Switch's current generation number managed by the switch driver.
domainValid	TRUE if the domain of the local switch is currently confirmed.
isl_ports	Bit map of all ISL ports. Bit positions correspond to the default areas of the ports. Bit 0 refers to default area of the switch, bit 1 refers to default area 1, and so forth.
trunk_ports	Bit map of all trunk slave ports.
f_ports	Bit map of all FX_Ports.
seg_ports	Bit map of all segmented ports.
active_ports	Bit map of all online ports.
minLSArrival	FSPF constant.
minLSInterval	FSPF constant.
LSoriginCount	Internal variable.
startTime	Start time of the FSPF task from boot time, in milliseconds.

fspfQ	FSPF input message queue.
fabP	Pointer to fabric data structure.
agingTID	Aging timer ID.
agingTo	Aging time out value in milliseconds.
IsrDlyTID	Link State Record delay timer ID.
IsrDelayTo	Link State Record delay time out value in milliseconds.
IsrDelayCount	Counter of delayed Link State Records.
ddb_sem	FSPF semaphore ID.
event_sch	FSPF scheduled events bit map.

Notes The output displays only the lines with a bit set. If a port bitmap does not have any bits set, the output displays as "None" for the first line of the bitmap.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display FSPF protocol information:

```
switch:admin> fspfshow
version                = 2
domainID               = 1
switchOnline           = TRUE
switchGenNum           = 4
switchGenNum(mmap)     = 4
domainValid            = TRUE
isl_ports              = None
trunk_ports            = None
fports                 = None
seg_ports              = None
active_ports           = None
le_ports               = None
nbStFullPortsP         = None
ve_portsP              = None
minLSArrival           = 3000
minLSInterval          = 5000
LSoriginCount          = 0
startTime              = 0
fspfQ                  = 0x111ffba8
```

fspfShow

```
fabP                = 0x11209bc8
agingTID            = 0x11329ae0
agingTo             = 10000
lsrDlyTID           = 0x1132ac90
lsrDelayTo          = 5000
lsrDelayCount       = 0
ddb_sem             = 0x11209bd8

fabP:
event_sch           = 0x0
max port            = 200
max phy port        = 40
```

SEE ALSO [bcastShow](#), [topologyShow](#), [uRouteShow](#)

gePortErrShow

Displays error statistics of Gigabit Ethernet (GbE) port and XGE ports.

Synopsis **geporterrshow**

geporterrshow --help

Description Use this command to display error statistics of Gigabit Ethernet (GbE) ports on the Brocade FX8-24 extension blade. Values for the following parameters are displayed:

frames tx Number of frames transmitted (Tx).

frames rx Number of frames received (Rx).

crc err Number of CRC errors.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

--help Displays command usage.

Examples To display error statistics:

```
switch:admin> geporterrshow
              frames      crc
              tx         rx   err
              =====
1/ge0  :      0          0      0
1/ge1  :      0          0      0
1/ge2  :      0          0      0
1/ge3  :      0          0      0
1/ge4  :      0          0      0
1/ge5  :      0          0      0
1/ge6  :      0          0      0
1/ge7  :      0          0      0
1/ge8  :      0          0      0
1/ge9  :      0          0      0
```

SEE ALSO [portCfgShow](#), [portErrShow](#)

gePortPerfShow

Displays throughput information for Gigabit Ethernet (GbE) ports and XGE ports.

Synopsis **geportperfshow**

geportperfshow *[[slot] [-tx | -rx | -tx -rx]*
[-t time_interval]

geportperfshow --help

Description

Use this command to display throughput information for all GbE ports on a switch or chassis or to display the information of GE ports in the specified slot of chassis. Output includes the number of bytes received and transmitted per interval. Throughput values are displayed as bytes per second. Values are rounded down.

The data is displayed one column per GbE port plus one column that displays the total for these GbE ports. Results display every second or over a specified interval. Press Enter, Ctrl-c, or Ctrl-d to terminate the command.

When executed with the command line arguments -tx, -rx, or -tx -rx, this command displays the transmitter throughput, the receiver throughput, or both. For ports with status of "No_Module," "No_Light," "No_SigDet," or "Loopback" throughput is displayed as 0.

An asterisk (*) in the output indicates a SIM port that is generating or receiving traffic.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported on Brocade FX8-24 and AP blade in a Brocade DCX 8510 chassis.

Operands

This command has the following operands:

slot

Displays throughput information for the GbE ports in the specified slot.

-t time_interval

Specifies the interval, in seconds, between each sample. The default interval is one second. If no interval is specified, the default is used.

-tx

Displays the transmitter throughput.

-rx

Displays the receiver throughput.

-tx -rx

Displays the transmitter and receiver throughput.

--help

Displays the command usage.

Examples

To display performance information for all GbE ports at a one second (default) interval:

```
switch:user> geportperfshow
slot 1:
  ge0    ge1    ge2    ge3    ge4    ge5
  =====
    0      0      0    71.8m    0      0

  ge6    ge7    ge8    ge9    xge0    xge1    Total
  =====
    0      0      0      0      0      0    71.8m

slot 2:
  ge0    ge1    ge2    ge3    ge4    ge5
  =====
    0      0      0      0      0      0

  ge6    ge7    ge8    ge9    xge0    xge1    Total
  =====
    0      0      0    32.9m    0      0    32.9m
```

To display transmitter throughput for a single slot:

```
switch:user> portperfshow 1 -tx
slot 1:
  ge0    ge1    ge2    ge3    ge4    ge5
  =====
    0      0      0    55.7m    0      0

  ge6    ge7    ge8    ge9    xge0    xge1
  =====
    0      0      0      0      0      0
```

To display receiver throughput for a single slot:

```
switch:user> portperfshow 1 -rx
slot 1:
  ge0    ge1    ge2    ge3    ge4    ge5
  =====
    0      0      0    1.4m    0      0

  ge6    ge7    ge8    ge9    xge0    xge1
  =====
    0      0      0      0      0      0
```

To display transmitter and receiver throughput for all GbE ports:

```
switch:user> portperfshow -tx -rx
slot 1:
  ge0          ge1          ge2          ge3          ge4          ge5
  ==TX==RX==TX==RX==TX==RX==TX==RX==TX==RX==TX==RX==
    0      0      0      0      0      0    40.2m 964.3k    0      0      0      0

  ge6          ge7          ge8          ge9          xge0          xge1
  ==TX==RX==TX==RX==TX==RX==TX==RX==TX==RX==TX==RX==
    0      0      0      0      0      0      0      0      0      0      0      0

slot 2:
  ge0          ge1          ge2          ge3          ge4          ge5
```

gePortPerfShow

==TX=====RX=====		TX=====RX=====		TX=====RX=====		TX=====RX=====		TX=====RX=====		TX=====RX=====	
0	0	0	0	0	0	0	0	0	0	0	0
ge6		ge7		ge8		ge9		xge0		xge1	
==TX=====RX=====		TX=====RX=====		TX=====RX=====		TX=====RX=====		TX=====RX=====		TX=====RX=====	
0	0	0	0	0	0	16.1m	347.2k	0	0	0	0

SEE ALSO [portStatsShow](#)

h

Displays shell history.

Synopsis **h**

history

Description Use this command to view the shell history. The shell history mechanism is similar to the UNIX shell history facility. The h command displays the 20 most recent commands typed into the shell; the oldest commands are replaced as new ones are entered.

Operands None

Examples To display previous shell commands:

```
switch:admin> h
1 version
2 switchshow
3 portdisable 2
4 portenable 2
5 switchshow
```

SEE ALSO None

haDisable

Disables the High Availability feature.

Synopsis **hadisable**

Description Use this command to disable the High Availability (HA) feature on a switch. If the HA feature is already disabled, this command does nothing.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable the High Availability feature:

```
switch:admin> hadisable  
HA is disabled
```

SEE ALSO [haEnable](#), [haShow](#)

haDump

Displays High Availability status information.

Synopsis **hadump**

Description Use this command to display information about the status of the High Availability (HA) feature on a switch or a chassis. This command displays the following information:

- Time Stamp
- Local CP state (slot number and CP ID)
- Remote CP state (slot number and CP ID)
- Type of recovery (warm or cold)
- High Availability (enabled or disabled)
- Heartbeat (up or down)
- Health of standby CP
- HA synchronization status
- IP and Fibre Channel addresses configured for the switch or chassis.
- Additional internal HA state information, subject to change.

The health of the standby CP is defined as follows:

Healthy

The standby CP is running and the background health diagnostic has not detected any errors.

Failed

The standby CP is running, but the background health diagnostic has discovered a problem with the blade. Check the logs to determine an appropriate course of action. Failover is disabled until the standby CP is repaired. Information about the failing device in the standby CP is displayed.

Unknown

The standby CP health state is unknown because the standby CP does not exist, heartbeat is down, or Health Monitor detects a configuration file error.

The High Availability synchronization status is defined as follows:

HA State synchronized

The system is currently fully synchronized. If a failover becomes necessary, it is nondisruptive.

HA State not in sync

The system is unable to synchronize the two control processors (CPs) because the standby CP is faulty, an haSyncStop command was issued, or a system error occurred. If a failover becomes necessary at this time, active CP reboots and the failover is disruptive.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To view information about the High Availability feature status on a Brocade DCX 8510-8:

```
switch:admin> hadump
-----
TIME_STAMP: Mar 30 12:57:35.109173
-----
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized

CHASSIS
Ethernet IP Address: 10.20.114.57
Ethernet Subnetmask: 255.255.240.0

CP0
Ethernet IP Address: 10.20.114.58
Ethernet Subnetmask: 255.255.240.0
Host Name: cp0
Gateway IP Address: 10.20.112.1

CP1
Ethernet IP Address: 10.20.114.59
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.20.112.1

Backplane IP address of CP0 : 10.0.0.5
Backplane IP address of CP1 : 10.0.0.6
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
IPv6 Gateways:
-----
TIME_STAMP: Mar 30 12:57:37.31282
-----
== Service ==
chassis0:0(8.0)
major:      8      part:      0
lo:         0      role:      2
id:         0      dump:     3
epoch:      3      log:       0
block:      0      bits:     321
recov:      0      index:    14
upper:     14      coldnum:   3
warmnum:   14      stbnum:   4
stat:      4      prevstat: 4
sv_winsz:  64      nscm:    10
== Config ==
(Output truncated)
```

SEE ALSO [haShow](#)

haEnable

Enables the High Availability feature.

Synopsis **haenable**

Description Use this command to enable the High Availability (HA) feature on a switch. If the HA feature is already enabled, this command has no effect.

If the HA feature is disabled, this command enables it. The standby CP reboots as part of the process. The command displays a warning message and prompts for confirmation before rebooting the CP.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable the High Availability feature on a Brocade DCX 8510-8:

```
switch:admin> haenable
Warning: This command will enable the HA. It will reboot the standby
CP and require all telnet, secure telnet, and SSH sessions to the
standby CP to be restarted

Are you sure you want to go ahead [y/n]?y
y
```

To verify that High Availability is enabled:

```
switch:admin> hashow
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
```

SEE ALSO [haDisable](#), [reboot](#)

haFailover

Forces the failover mechanism so that the standby control processor (CP) becomes the active CP.

Synopsis **hafailover**

Description Use this command to force the failover mechanism to occur so that the standby CP becomes the active CP. In case the active and standby CPs are not synchronized or the system is not in redundant mode, the command aborts.

Notes When High Availability (HA) synchronization is enabled and the CPs are in sync, the port traffic light does not flash during the failover, even while traffic is continuing to flow.

This command is supported only on dual-CP systems.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To force the failover of the active CP to the standby CP in the switch:

```
switch:admin> hafailover
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
Warning: This command is being run on a redundant control processor(CP)
system, and this operation will cause the active CP to reset.
Therefore all existing telnet sessions are required to be restarted.

Are you sure you want to fail over to the standby CP [y/n]?
```

SEE ALSO [haDisable](#), [haEnable](#), [haShow](#)

haReboot

Performs high availability (HA) reboot.

Synopsis **hareboot**

Description Use this command to perform warm reboot in the switch-based systems. On chassis-based systems, this command behaves similar to the haFailover command so that the standby CP becomes the active CP.

In chassis-based systems, if the active and standby CPs are not synchronized or the system is not in the redundant mode, the command aborts.

When the switch-based system is not fully up or stable, the haReboot command cannot be completed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To perform Ha reboot in the switch-based systems:

```
switch:admin> hareboot  
HA Rebooting ...
```

To perform Ha reboot in the chassis-based systems:

```
switch:admin> hareboot  
Restarting system with command 'Machine Rebooting
```

SEE ALSO [haDisable](#), [haEnable](#), [haFailover](#), [haShow](#)

haRedundancy

Displays switch uptime.

Synopsis **haredundancy --show**

haredundancy --help

Description Use this command to display the switch uptime and the chassis control processor redundancy statistics. For chassis, the command displays the control processor redundancy settings and switch uptime. For switches, the command displays the switch uptime only.

The display includes the following information:

- Current active session: Displays the settings for the current session.
 - HA synchronization status.
 - Active slot state: Displays CP ID, whether CP is local or remote, and recovery type information.
 - Standby slot state: Displays CP ID, and whether CP is local or remote.
 - Start time: Displays the start time of the services in sync state.
- Previous active session: Displays the settings for the previous active session.
 - Active slot state: Displays CP ID, and recovery type information.
 - Standby slot state: Displays CP ID information.
 - Start time: Displays the start time of the services in sync state for the session.
 - End time: Displays end time of the session caused by expected or unexpected recovery.
- System uptime: Displays the start time of the system services. This changes when there is a power cycle or both CPs are reset together.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--show

Displays the switch uptime and other information.

--help

Displays the command usage.

Examples To display switch uptime with a health standby CP:

```
switch:admin> haredundancy --show
=== HA Redundancy Statistics ===
      HA State synchronized
      Current Active Session:
      Active Slot = CP0 (Local), Expected Recovered
      Standby Slot = CP1 (Remote)
      Start Time: 17:55:33 UTC Fri Jan 03 2014

      Previous Active Session:
      Active Slot = CP1, Expected Recovered
```

```
Standby Slot = CP0
Start Time: 17:49:46 UTC Fri Jan 03 2014
End Time: 17:54:10 UTC Fri Jan 03 2014

System Uptime: 17:42:11 UTC Fri Jan 03 2014
```

To display switch uptime without a standby CP:

```
switch:admin> haredundancy --show
=== HA Redundancy Statistics ===
Non-redundant

System Uptime: 17:42:11 UTC Fri Jan 03 2014
```

To display switch uptime:

```
switch:admin> haredundancy --show
=== HA Redundancy Statistics ===

Not supported on this platform

System Uptime: 09:42:12 UTC Wed Nov 22 2013
```

SEE ALSO [haShow](#)

haShow

Displays control processor (CP) status.

Synopsis **hashow**

Description Use this command to display the control processor status. The display includes the following information:

- Local CP state (slot number and CP ID), warm or cold, recovering or recovered.
- Remote CP state (slot number and CP ID).
- High Availability (enabled or disabled).
- Heartbeat (up or down).
- Health of standby CP
- HA synchronization status

The health of the standby CP is defined as follows:

Healthy

The standby CP is running and the background health diagnostic has not detected any errors.

Failed

The standby CP is running, but the background health diagnostic has discovered a problem with the blade. Check the logs to determine the appropriate action. Failover is disabled until the standby CP is repaired. Information about the failing device in the standby CP is displayed.

Unknown

The standby CP health state is unknown because of one of the following reasons: the standby CP does not exist, Heartbeat is down, or the Health Monitor has detected a configuration file error.

The High Availability synchronization status is defined as follows:

HA State synchronized

The system is currently fully synchronized. If a failover becomes necessary, it is nondisruptive.

HA State not in sync

The system is unable to synchronize the two CPs. This may be caused by one or more of the following conditions:

- The haFailover command was issued. In this case the "HA State not in sync" state is transitory.
- The standby CP is faulty.
- The haSyncStop command was issued.
- A system error occurred.

If a failover becomes necessary while the CPs are not in sync, the standby CP reboots, and the failover is disruptive.

Notes This command may not be supported on nonbladed systems.

Slot numbers for CP1 and CP0 vary depending on the hardware platform. On the Brocade DCX 8510-8, CP0 is in slot 6 and CP1 is in slot 7. On the Brocade DCX 8510-4, CP0 is in slot 4 and CP1 is in slot 5. On the Brocade X6 Director, CP0 is in slot 1 and CP1 is in slot 2.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display CP status on a Brocade DCX 8510-8 with a healthy standby CP:

```
switch:admin> hashow  
Local CP (Slot 7, CP1) : Active, Warm Recovered  
Remote CP (Slot 6, CP0) : Standby, Healthy  
HA Enabled, Heartbeat Up, HA State Synchronized
```

To display CP status on a Brocade X6 Director with a healthy standby CP:

```
switch:admin> hashow  
Local CP (Slot 1, CP0): Active, Cold Recovered  
Remote CP (Slot 2, CP1): Standby, Healthy  
HA enabled, Heartbeat Up, HA State synchronized
```

SEE ALSO None

haShutdown

Shuts down high availability (HA) reboot.

Synopsis **hashutdown**

Description Use this command to shut down the High Availability (HA) feature on a switch. If the HA feature is already shut down, this command has no effect.

After haShutdown, switch reboot is required to enable the HA feature.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To shut down the High Availability feature:

```
switch:admin> hashutdown
```

SEE ALSO [haDisable](#), [haEnable](#), [haFailover](#), [haReboot](#), [haShow](#)

haSyncStart

Enables High Availability state synchronization.

Synopsis **hasyncstart**

Description Use this command to enable the High Availability (HA) state synchronization.

After issuing haSyncStop, the switch does not go back to sync start unless you perform one of the following actions: reboot the active CP, reboot the standby CP, insert a new standby CP (blade), or issue the haSyncStart command. The time it takes for the HA sync to complete depends on the system configuration. The HA sync timeout is set to 10 minutes.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Examples To enable the HA state synchronization:

```
switch:admin> hasyncstart
```

SEE ALSO [haShow](#)

haSyncStop

Disables High Availability state synchronization.

Synopsis **hasyncstop**

Description Use this command to temporarily disable High Availability (HA) synchronization.

After issuing haSyncStop, the switch does not go back to sync start unless you perform one of the following actions: reboot the active CP, reboot the standby CP, insert a new standby CP (blade), or issue the haSyncStart command. The time it takes for the HA sync to complete depends on the system configuration. The HA sync timeout is set to 10 minutes.

Notes Disabling HA synchronization may cause failover to be disruptive.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable the HA state synchronizing process:

```
switch:admin> hasyncstop
```

SEE ALSO [haShow](#)

help

Displays command help information.

Synopsis **help** [*command*]

help [-p | -page]

help --help

Description Use this command without operands to display an alphabetical listing of commands for which help is available. When used without an operand, the command listing displays without page break.

Pipe the output through the Unix grep command to filter the output.

Use the -page operand to display the commands for which help is available one page at a time. Press Enter to go to the next page. When using help with the -page option, you can search for specific strings by entering a forward slash, followed by a text string, for example /zone.

The help listing includes only commands that are available to the current user; command availability may vary depending on the following conditions:

- Login user role
- License key
- Hardware platform

To access help information for a specific command, enter the command name as an operand.

Commands ending in "Help" display grouped commands for a particular subsystem; for example, the diagHelp command displays a list of diagnostic commands.

Operands This command has the following operands:

command

Specifies the name of the command for which to display help information. This operand is optional.

p | -page

Displays help output with page breaks.

--help

Displays the command usage.

Examples To display a listing of commands for which help is available (with page breaks):

```
switch:admin> help -p
aaaconfig      Configure RADIUS for AAA services
ad             Specifies all administration domain
               (AD)-level operations
ag             Configure the Access Gateway feature
agshow        Displays the Access Gateway information
               registered with the fabric
aliadd         Add a member to a zone alias
alicreate      Create a zone alias
```

```

alidelete      Delete a zone alias
aliremove      Remove a member from a zone alias
alishow        Print zone alias information
aptpolicy      Get and set Advanced Performance
                Tuning policy
auditcfg       Modifies and displays audit log filter
                configuration.
auditdump      Display audit log
(output truncated)

```

To search for the string "zone" while paging is enabled (enter /zone after issuing the command):

```

switch:admin> help -p
aaaconfig      Configure RADIUS for AAA services
ad             Specifies all administration domain
                (AD)-level operations
ag             Configure the Access Gateway feature
agshow         Displays the Access Gateway information
                registere with the fabric
aliadd         Add a member to a zone alias
alicreate      Create a zone alias
alidelete      Delete a zone alias
aliremove      Remove a member from a zone alias
alishow        Print zone alias information
aptpolicy      Get and set Advanced Performance Tuning
                policy
auditcfg       Modifies and displays audit log filter
                configuration.
auditdump      Display audit log
authutil       Get and set  configuration
backplanetest  Backplane connection test for multi-blade
                systems.
backport       Test for back-end ASIC pair to ASIC pair links.
bannerset      Set security banner
bannershow     Display security banner
bcastshow      Display broadcast routing information
Type <CR> or <SPACE BAR> to continue, <q> to stop
/zone
aliadd         Add a member to a zone alias
alicreate      Create a zone alias
alidelete      Delete a zone alias
aliremove      Remove a member from a zone alias
alishow        Print zone alias information
aptpolicy      Get and set Advanced Performance Tuning policy
auditcfg       Modifies and displays audit log filter
                configuration.
(output truncated)

```

To filter the output with the grep command:

```

switch:admin> help | grep errshow
errshow        Print error log
porterrshow    Print port  summary
switch:admin>

```

SEE ALSO [diagHelp](#), [routeHelp](#), [zoneHelp](#)

historyLastShow

Displays the latest entry in the field replaceable unit (FRU) history log.

Synopsis `historylastshow`

Description Use this command to display the latest entry of the history log, which records insertion and removal events for field-replaceable units (FRUs), such as blades, power supplies, fans, and world wide name (WWN) cards. The type of FRU supported depends on the hardware platform.

Each history record contains three lines of information. The first line of each record contains the following fields:

Object type

On standalone platforms: FAN, POWER SUPPLY, WWN (WWN card), or UNKNOWN. On enterprise-class platforms: FAN, POWER SUPPLY, CORE BLADE (core switch blade), AP BLADE (application processor), SW BLADE (port blade), CP BLADE (control processor), WWN (WWN card), or UNKNOWN.

Object number

Slot number for blades. Unit number for all other object types.

Event type

Inserted, Removed, or Invalid.

Time of the event

Format: Day Month dd hh:mm:ss yyyy,

The second and third lines of a record contain the factory part number and factory serial number, if applicable.

Factory Part Number

xx-yyyyyyy-zz or Not available.

Factory Serial Number

xxxxxxxxxxx or Not available.

The size of the history log depends on the hardware platform. The Brocade DCX supports a maximum log size of 50 entries. Because the WWNs are completely separate FRUs in the DCX, they have redundant data in these units. All other platforms that contain FRUs support 28 history log entries.

historyLastShow

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the late FRU insertion or removal event:

```
switch:admin> historylastshow
```

```
POWER SUPPLY  Unit 2      Inserted at Tue Aug 14 15:52:10 2001  
Factory Part Number:      60-0001536-02  
Factory Serial Number:    1013456800
```

```
Records:  11
```

SEE ALSO [historyShow](#)

historyMode

Displays the mode of the field replaceable unit (FRU) history log.

Synopsis **historymode**

Description Use this command to display the mode of the history buffer, which records the insertion and removal of FRUs on a switch or chassis.

This command supports two modes of handling new log entries once the history buffer has reached its maximum size:

Rotating mode

Any new entry exceeding the maximum buffer size overwrites the oldest entry in the log. This is the default mode.

First-in mode

Any new entry exceeding the maximum buffer size is discarded. The original entries in the buffer is preserved.

The history mode is a factory setting that cannot be modified. The size of the history buffer depends on the hardware platform. The Brocade DCX backbone supports a maximum log size of 50 entries. Because the WWNs are completely separate FRUs in the DCX, they have redundant data in these units. All other platforms containing FRUs support 28 history log entries.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the mode of the history log:

```
switch:admin> historymode

History Mode is: Rotating.
```

SEE ALSO [historyLastShow](#), [historyShow](#)

historyShow

Displays the entire field replaceable unit (FRU) history log.

Synopsis **historyshow**

Description Use this command to display the entire history log, which records insertion and removal events for field-replaceable units (FRUs), such as blades, power supplies, fans, and world wide name (WWN) cards. The type of FRU supported depends on the hardware platform.

Each history record contains three lines of information. The first line of each record contains the following:

Object type On standalone platforms: FAN, POWER SUPPLY, WWN (WWN card), or UNKNOWN.

On enterprise-class platforms: FAN, POWER SUPPLY, CORE BLADE (core switch blade), SW BLADE (port blade), AP BLADE (application processor), CP BLADE (control processor), WWN (WWN card), or UNKNOWN.

Object number Slot number for blades. Unit number for all other object types.

Event type Inserted, Removed, or Invalid

Time of the event Format: Day Month dd hh:mm:ss yyyy

The second and third lines of a record contain the factory part number and factory serial number, if applicable:

Factory Part Number xx-yyyyyy-yy or Not available

Factory Serial Number xxxxxxxxxxxx or Not available

The size of the history buffer depends on the HW platform. The Brocade DCX supports a maximum log size of 50 entries. Because the WWNs are completely separate FRUs in the DCX, they have redundant data in these units. All other platforms that contain FRUs support 28 history log entries.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the history log of FRUs and removal events on a standalone switch:

```
switch:admin> historyshow

FAN   Unit 3                Removed at Tue Aug 14 10:05:37 1970
Factory Part Number:      20-123456-12
Factory Serial Number:    1013456800

POWER SUPPLY   Unit 1      Inserted at Tue Aug 14 10:52:10 1970
```

```

Factory Part Number:    60-0001536-02
Factory Serial Number:  Not Available

FAN  Unit 3            Inserted at Tue Aug 14 10:23:45 2001
Factory Part Number:    20-123456-12
Factory Serial Number:  1013456800

WWN  Unit 1            Inserted at Tue Aug 14 11:03:45 2001
Factory Part Number:    40-0000031-03
Factory Serial Number:  1013456800

SW BLADE Slot 3         Removed at Tue Aug 14 12:10:09 2001
Factory Part Number:    60-0001532-03
Factory Serial Number:  1013456800

CP BLADE Slot 6         Removed at Tue Aug 14 13:45:07 2001
Factory Part Number:    60-0001604-02
Factory Serial Number:  FP00X600128

SW BLADE Slot 3         Inserted at Tue Aug 14 13:53:40 2001
Factory Part Number:    60-0001532-03
Factory Serial Number:  1013456800

CP BLADE Slot 6         Inserted at Tue Aug 14 13:59:50 2001
Factory Part Number:    60-0001604-02
Factory Serial Number:  FP00X600128

POWER SUPPLY Unit 2     Inserted at Tue Aug 14 15:52:10 2001
Factory Part Number:    60-0001536-02
Factory Serial Number:  1013456800

```

Records: 11

SEE ALSO [historyLastShow](#)

Displays a process summary.

Synopsis **i** [*process/D*]

Description Use this command to display information about a specified process or about all processes running on the local switch. One line is displayed per process. Fields displayed with this command include the

F	Process flags:
ALIGNWARN	001 print alignment warning messages
STARTING	002 being created
EXITING	004 getting shut down
PTRACED	010 set if ptrace (0) has been called
TRACESYS	020 tracing system calls
FORKNOEXEC	040 forked but did not exec
SUPERPRIV	100 used super-user privileges
DUMPCORE	200 dumped core
SIGNALLED	400 killed by a signal
S	Process state codes:
D	Uninterruptable sleep (usually IO)
R	Runnable (on run queue)
S	Sleeping
T	Traced or stopped
Z	A defunct ("zombie") process

UID	The effective user ID number of the process
PID	The process ID of the process
PPID	The process ID of the parent process
C	Processor utilization for scheduling
PRI	Priority number of the process; higher numbers mean lower priority
NI	Nice value used in priority computation
ADDR	Memory address of the process
SZ	The total size of the process in virtual memory, in pages
WCHAN	The address of an event for which a process is sleeping (if blank, process is running)
TTY	The controlling terminal of the process (? displayed for no controlling terminal)
TIME	The cumulative execution time for the process
CMD	The command name of the process.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

processID
Specifies the process name or process ID for the process to display.

Examples To display information about process ID 433:

```
switch:admin> i 433
F   S UID PID PPID C PRI NI ADDR  SZ  WCHAN TTY  TIME  CMD
000 S  0  433   1  0  69  0   - 1283  5c64 ?   00:00:02 fabricd
```

SEE ALSO [diagHelp](#), [routeHelp](#)

iflShow

Displays the interfabric link (IFL) information.

Synopsis **iflshow**

iflshow --help

Description Use this command to display the current connection and information of the interfabric links (IFL) on an edge switch. The command output includes the following information:

E-Port	Port number of the local switch to which FC Router switch is connected
Ex-Port	Port Number of FC Router switch
FCR WWN	WWN of the FC Router switch
FCR FID	Fabric ID of FC Router switch
FCR Name	Switch name of FC Router
Speed	IFL connection speed, if applicable. Connection speed not applicable to VE_Ports. For these port types, speed displays as '-'. IFL connection speed, if applicable. Connection speed not applicable to VE_Ports. For these port types, speed displays as '-'.
BW	Bandwidth of the link.
<ul style="list-style-type: none"> • TRUNK - Trunking enabled, if applicable • QOS - QoS enabled, if applicable • ENCRYPT - Encryption enabled, if applicable • COMPRESS - Compression enabled, if applicable • CR_RECOV - Credit recovery enabled, if applicable • FEC - Forward Error Correction enabled, if applicable 	

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

--help Displays the command usage.

Examples To display the interfabric links:

```
switch:admin> iflshow
```

#	E-Port	EX-Port	FCR WWN	FCR FID	FCR Name	Speed	BW
1: 7->	8	10:00:00:05:1e:8b:68:10	8	fcr1	4G	4G TRUNK	
2: 12->	13	10:00:00:05:1e:a1:e3:3a	15	fcr2	4G	4G TRUNK	
3: 15->	15	10:00:00:05:1e:a1:e1:f9	12	sw87	4G	4G TRUNK QOS	
4: 16->	16	10:00:50:eb:1a:00:00:02	4	fcr3	-	4G	

SEE ALSO [fcrEdgeShow](#), [fcrFabricShow](#)

interfaceShow

Displays FSPF interface information.

Synopsis `interfaceshow [slot][port]`

Description Use this command to display the two data structures associated with FSPF interfaces (E_Ports) on the switch:

- The permanently allocated interface descriptor block (IDB).
- The neighbor data structure. This data structure is allocated when a switch port becomes an E_Port. The neighbor data structure contains all the information relating to the switch that is connected to an adjacent switch.

This command displays the content of both data structures, if they have been allocated.

The following fields are displayed:

idbP	Pointer to IDB.
nghbP	Pointer to neighbor data structure.
ifNo	Interface number.
masterPort	Port number of the trunk master port, if present, of the trunk group of which this port is a part.
prgm_if_id	Internal variable
curr_if_id	Internal variable
prgmCnt	Number of remote domains the link has been programmed to reach for routing traffic.
defaultCost	Default cost of sending a frame over the interswitch link (ISL) connection to this interface.
cost	Cost of sending a frame over the ISL connected to this interface. A value of 1000 indicates a 1-Gbps link. A value of 500 indicates a 2-Gbps link. For links with a bandwidth greater than 2 Gbps, the cost is 500. For links with less than 1 Gbps, the cost is 2000. Refer to linkCost for more information.
ifBw	The rounded bandwidth of the interface, in Gbps.
totalBw	The summed total bandwidth for the entire trunk and ISL, in Gbps.

delay	Conventional delay incurred by a frame transmitted on this ISL. A fixed value required by the FSPF protocol.
lastScn	Type of the last State Change Notification received on this interface.
lastScnTime	Time the last State Change Notification was received on this interface.
upCount	Number of times this interface came up, with respect to FSPF.
lastUpTime	Last time this interface came up.
downCount	Number of times this interface went down.
lastDownTime	Last time this interface went down.
downReason	Type of last State Change Notification that caused this interface to go down.
iState	Current state of this interface. The state can be UP or DOWN. An interface in DOWN state does not have an allocated neighbor data structure and cannot be used to route traffic to other switches.
state	Current state of this interface. This E_Port is used to route traffic to other switches only if the state is NB_ST_FULL.
lastTransition	Time the last state changed on this interface.
nghbCap	Neighbor capabilities. Should be 0.
nghbld	Domain ID of the neighbor (adjacent) switch.
idbNo	IDB number. Should be equal to port.
remPort	Port number on the remote switch connected to this port.
nflags	Internal FSPF flags.
initCount	Number of times this neighbor was initialized without the interface going down.
lastInit	Time of the last initializing state, NB_ST_INIT, on this interface.

firstHlo	Time of the first hello sent on this interface.
nbstFull	Time of the last finishing state, NB_ST_FULL, on this interface.
&dbRetransList	Pointer to the database retransmission list.
&lsrRetransList	Pointer to the link state records (LSR) retransmission list.
&lsrAckList	Pointer to the link state acknowledgements (LSA) retransmission list.
inactTID	Inactivity timer ID.
helloTID	Hello timer ID.
dbRtxTID	Database retransmission timer ID.
lsrRtxTID	LSR retransmission timer ID.
inactTo	Inactivity timeout value, in milliseconds. When this timeout expires, the adjacency with the neighbor switch is broken and new paths are computed to all possible destination switches in the fabric.
helloTo	Hello timeout value, in milliseconds. When this timeout expires, a Hello frame is sent to the neighbor switch through this port.
rXmitTo	Retransmission timeout value, in milliseconds. It is used to transmit topology information to the neighbor switch. If no acknowledgement is received within this value, the frame is retransmitted.
nCmdAcc	Total number of commands accepted from the neighbor switch. Number includes Hellos, Link State Updates (LSUs), and LSAs.
nInvCmd	Number of invalid commands received from the neighbor switch. Usually commands with an FSPF version number higher than the one running on the local switch.
nHloIn	Number of Hello frames received from the neighbor switch.
nInvHlo	Number of invalid Hello frames (Hello frames with invalid parameters) received from the neighbor switch.

nLsuIn	Number of LSUs received from the neighbor switch.
nLsaIn	Number of LSAs received from the neighbor switch.
attHloOut	Number of attempted transmissions of Hello frames to the neighbor switch.
nHloOut	Number of Hello frames transmitted to the neighbor switch.
attLsuOut	Number of attempted transmissions of LSUs to the neighbor switch.
nLsuOut	Number of LSUs transmitted to the neighbor switch.
attLsaOut	Number of attempted transmissions of LSAs to the neighbor switch.
nLsaOut	Number of LSAs transmitted to the neighbor switch.
StuckCnt	Number of HLO timeouts that occurred before the port changed to the NB_ST_FULL state.
state	Substate of the port. The port can be in one of the following 12 substates:
INIT (0)	The port is initializing.
ROUTABLE (1)	The port is ready to receive frames.
ROUTABLE_WAIT (2)	The port is waiting for notification from the neighbor.
ROUTABLE_SEND (3)	The port is preparing for local route update; negotiates for the necessary locks before updating the routes.
ROUTABLE_TIMER (4)	The request for one or more locks failed; delay for a short interval before retrying.
DONE (5)	The port is online and in use.
DECOM_START (6)	The decommissioning request is sent to the neighbor and waiting for a response.
DECOM_WAIT (7)	Waiting for neighbor to remove routes using the interswitch link (ISL).

DECOM_SEND (8)

Preparing to update routes of the local port; negotiates for the necessary before updating the routes.

DECOM_TIMER (9)

The request for one or more locks failed; delay for a short interval before retrying.

DECOM_DONE (10)

The local routes are updated; waiting for acknowledgement from the neighbor.

DECOM_BLOCK (11)

The local routes are updated; the neighbor sent acknowledgement.

chassis_lock

Internal variable

lock_request

Internal variable

nbr_lock_lock

Internal variable

r_rdy_rcvd

Indicates if the neighbor has reported as ready to receive frames.

nbr r_rdy flags

Internal flags reported by the neighbor.

lock_busy_cnt

Number of times a lock has reported as busy.

decom_active

Indicates if a decommissioning request is active on the port.

decom_initiator

Indicates if the local port is the decommissioning request initiator.

decom_active_port

Indicates the port for which the decommissioning request is active.

decom_trunk_member

Indicates if decommissioning request is for a multi-link trunk.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).

port

Specify the number of the port to be displayed, relative to its slot for bladed systems. Use switchShow for a list of valid ports. This operand is optional; if omitted, the interface information for all ports is displayed.

When invoked without operands, this command displays the interface information for all ports on the switch (including non-E_Ports).

Examples To display FSPF interface information:

```
switch:user> interfaceshow 1/19
idbP          = 0x102651a0

Interface 131 data structure:

nghbP          = 0x10b968f0
ifNo           = 131
masterPort     = 131
prgm_if_id     = 0x43120021
curr_if_id     = 0x43120021
prgmCnt        = 1
defaultCost    = 500
cost           = 500
ifBw           = 8G
totalBw        = 24G
delay          = 1
lastScn        = 0
lastScnTime    = Jan 01 00:00:00.000
upCount        = 0
lastUpTime     = Jan 01 00:00:00.000
downCount      = 0
lastDownTime   = Jan 01 00:00:00.000
downReason     = 0
iState         = UP

Neighbor 131 data structure:

state          = NB_ST_FULL
lastTransition  = Jun 04 05:05:02.592
nghbCap        = 0x0
nghbId         = 188
idbNo          = 131
remPort        = 243
nflags         = 0xf
initCount      = 0
lastInit       = Jun 04 05:05:02.592
firstHlo       = Jun 04 05:05:21.474
nbstFull       = Jan 01 00:00:00.000
&dbRetransList = 0x10b96928
&lsrRetransList = 0x10b96930
&lsrAckList     = 0x10b96938
inactTID        = 0x10b96b08
helloTID        = 0x10b97cb8
dbRtxTID        = 0x10b98e68
lsrRtxTID       = 0x10b9b1c8
inactTo         = 160000
helloTo         = 20000
rXmitTo         = 5000
nCmdAcc         = 38
nInvCmd         = 0
nHloIn          = 35
nInvHlo         = 0
nLsuIn          = 2
nLsaIn          = 1
```

interfaceShow

```
attHloOut      = 35
nHloOut        = 35
attLsuOut      = 1
nLsuOut        = 1
attLsaOut      = 2
nLsaOut        = 2
StuckCnt       = 0

Port Sub-State Data:
state          = DONE (5)
chassis_lock   = 0
lock_request   = 0
nbr_lock_lock  = 0
r_rdy_rcvd     = 0
nbr_r_rdy flags = 0x0
lock_busy_cnt  = 0
decom_active   = 0
decom_initiator = 0
decom_active_port = -1
decom_trunk_member = 0
```

SEE ALSO [nbrStateShow](#), [portShow](#), [switchShow](#)

iodReset

Disables in-order delivery (IOD) on a switch.

Synopsis **iodreset**

Description Use this command to disable in-order delivery enforcement on the local switch. IOD is disabled by default, and can only be disabled after it has been enabled with the `iodSet` command. This command disables the legacy IOD enforcement only.

Disabling IOD allows faster rerouting after a fabric topology change, but it may cause out-of-order delivery of frames during fabric topology changes.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable IOD enforcement:

```
switch:admin> iodreset
```

```
IOD is not set
```

SEE ALSO [iodSet](#), [iodShow](#)

iodSet

Enables in-order delivery (IOD).

Synopsis **iodset**

iodset --help

Description Use this command to enforce in-order delivery of frames during a fabric topology change.

In a stable fabric, frames are always delivered in order, even when the traffic between switches is shared among multiple paths. However, when topology changes occur in the fabric (for instance, a link goes down), traffic is rerouted around the failure and some frames might be delivered out of order. This command ensures that frames are not delivered out-of-order, even during fabric topology changes. It enforces a sufficient delay between the event that causes an existing path to be removed and the establishment of a new path, so that frames are delivered in order. However, this also means that frames are dropped during the delay, causing I/O failures.

When used without operands, iodSet enables in-order-delivery of frames on a switch (legacy IOD behavior). Frame loss is unavoidable when a port goes down.

IOD is disabled by default. Use iodShow to display current settings. Use iodReSet to restore the default setting.

Notes This command is not supported on the Brocade Analytics Monitoring Platform.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--help

Displays the command usage.

Examples To display the default legacy IOD setting:

```
switch:admin> iodshow
```

```
IOD is not set
```

To enable IOD:

```
switch:admin> iodset
```

```
IOD is set
```

SEE ALSO [iodShow](#), [iodReset](#)

iodShow

Displays the in-order delivery (IOD) setting.

Synopsis **iodshow**

Description Use this command to display the IOD setting on the switch. By default, IOD is disabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the current setting of the IOD setting:

```
switch:admin> iodshow
```

```
IOD is not set
```

SEE ALSO None

ipAddrSet

Sets the Ethernet and FC IP addresses.

Synopsis

```

ipaddrset [-ipv6 ] [--add x::x::x::x::x/n | --delete]

ipaddrset [-cp cp_number | -chassis]
  [--add x::x::x::x::x/n | --delete]

ipaddrset [-slot slot] [-eth0 | -eth1] [--add x.x.x.x/n | --delete]

ipaddrset [-slot slot] -gate [--add x.x.x.x | --delete]

ipaddrset -ls FID --add IPv4_address/prefix

ipaddrset -ls FID --delete

ipaddrset -ipv6 [-auto | -noauto]

ipaddrset [-cp cp_number | -chassis]

ipaddrset -cp cp_number -ipv4 -add -host hostname
  -ethip ipaddress -ethmask mask
  -gwyip gateway_ip

ipaddrset -ipv4 -add -ethip ipaddress -ethmask mask
  -gwyip gateway_ip -dhcp [ON | OFF]

ipaddrset -chassis -ipv4 -add
  -ethip ipaddress -ethmask mask

ipaddrset -ipv6 [-dhcpv6 | -nodhcpv6]

ipaddrset -ipv6 [-add | -del] -gwyip gateway_ip

ipaddrset --clear

ipaddrset --help
  
```

Description Use this command to configure the IP addresses on a switch, a control processor (CP), a blade processor (BP), or a standalone application processor (AP). On platforms that support Logical Fabrics, this command configures the IPv4 Fibre Channel addresses for the logical fabric IPFC network interface. The IPFC (IP over Fibre Channel) protocol allows switches to send IP traffic over Fibre Channel rather than through Ethernet connections.

This command supports an interactive legacy mode and a command line interface. Use the command line interface to configure IPv6 addresses, to enable or disable stateless IPv6 autoconfiguration, to assign a Fibre Channel IPv4 address and prefix to a logical switch IPFC network interface, and to configure a service port on the CP blade of a Brocade DCX. When run interactively in legacy mode, this command sets the Ethernet IPv4 address, subnet mask, and Gateway on a switch or a chassis.

Command usage depends on the type of IP address and on the platform on which the command is run. Some of the platform- and IP address-specific features of the command are outlined below. For complete details, refer to the Fabric OS Administrator's Guide.

Configuring IP Addresses using the command line interface

- The command accepts the -ipv6 command line syntax with the --add or --delete option on all platforms that support IPv6 addresses. The --add option configures a single static IPv6 address and prefix for the specified managed entity (chassis, CP, or AP). The --delete option deletes a static IPv6 address and prefix for the specified managed entity. On modular platforms, the command can be executed only on the active CP.
 - When using the command line syntax to add or delete IPv6 addresses, the managed entity is identified only on modular platforms. To set the CP IPv6 address, use the -c option; to set the IP address for the entire chassis, use the -chassis option.
 - When using the command line syntax to add or delete IPv6 addresses on standalone platforms, the implied entity is the single managed entity supported by the platform and must be left unspecified.
 - Additionally, the -eth0, -eth1, and -gate command line options are available with the --add or --delete option on platforms with blade processors to set the BP Ethernet or Gateway addresses. On a chassis with a blade processor the values for the blade in can be set from the command line using the -slot option. The -slot option is not accepted in standalone application processors with a hidden blade, such as the AP7600.
- Use the -auto and -noauto options to enable or disable stateless IPv6 autoconfiguration.
- Use the -gwyp operand with the --add or --delete option to add or delete IPv6 gateway address.
- Use the -ls option with appropriate arguments to set or delete the IPv4 Fibre Channel address and prefix for the IPFC interface of a logical switch. In a Virtual Fabric environment, each logical fabric is represented by a separate IPFC network interface. Each of these network interfaces can be assigned a unique IPv4 FC address and prefix. The logical switches that make up a logical fabric are identified by the fabric ID (FID) that is assigned to each of the logical switch instances.

When setting the IPFC interface of a switch that is not in Virtual Fabric mode, use the -ls option with FID 128. FID 128 identifies the switch when Virtual Fabrics are disabled.

Setting IP addresses interactively (IPv4 Ethernet address only):

- To set the CP Ethernet IPv4 address, use the `-cp` option; to set the Ethernet IP address for the entire chassis, use the `-chassis` option. When setting the chassis IP address, the command prompts for the Ethernet IP address and Ethernet subnet mask. When setting the CP Ethernet IP address, the command prompts for the host name, Ethernet IP address, Ethernet subnet mask, and Gateway IP address. Valid switch and CP numbers depend on the platform on which the command is run. The command must be executed on the active CP.
- On most standalone platforms (with the exception of the AP7600), `ipAddrSet` runs interactively if invoked without operands. The command prompts for the Ethernet IP address, Ethernet subnet mask, and Gateway IP address. In addition, the command prompts for a specification of whether the Dynamic Host Control Protocol (DHCP) should be used to acquire the Ethernet IP address, Ethernet subnet mask and Gateway IP address. Valid entries are "On" to enable DHCP and "Off" to disable it. When DHCP is enabled, any user-configured Ethernet IP address, Ethernet subnet mask or Gateway IP address is ignored.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If the IP address is changed while there is an Ethernet connection, connectivity may be lost. The reason for this is explained in detail in the Fabric OS Administrator's Guide. If this happens, take one of the following actions to recover the interface:

- Unplug the network cable, wait 5 seconds, and then plug it back in.
- Perform a High Availability (HA) failover routine or hareboot for fixed port switches.
- Power down the switch and then power it back up again.
- Re-establish new Telnet or SSH sessions for the disconnected session after IP address change.

Operands When used in command line mode, the following operands are supported:

-ipv6

Specifies IP address type as static IPv6 including prefix as needed.

--add x:x:x:x:x:x/n

Sets the specified IPv6 address.

--delete [x:x:x:x:x:x/n]

Deletes the specified IPv6 address. If no address is specified, any existing IPv6 addresses and prefixes are deleted from the specified or implied entity.

-cp cp_number

Specifies the CP on a chassis. Valid values are 0 or 1.

-chassis

Specifies the IPv6 address and prefix of a chassis.

-gwyip gateway_ip

Specifies the IPv6 gateway address.

On platforms with blade processors, the following additional command line options are supported with the `--add` `--delete` options:

-eth0 | -eth1

Specifies the local IPv4 address of the blade processor. A prefix is required.

-gate

Specifies the IPv4 address of the blade processor (BP) Gateway (no prefix).

-slot *number*

On a chassis with a blade processor (BP), specifies the slot number. On standalone platforms with a hidden BP, such as the AP76500, this parameter is not accepted.

-ipv6 [-auto | -noauto]

Enables or disables stateless IPv6 autoconfiguration on a switch or chassis. When autoconfiguration is enabled, the host automatically performs configuration of IPv6 addresses and periodic nondisruptive reconfiguration. By default, autoconfiguration is disabled.

-ls *FID*

Specifies the logical fabric ID for which to configure an IPFC network interface. The FID is a decimal number. A switch that is not in Virtual Fabric mode uses the -ls parameter with FID 128 (the effective, single Logical Fabric number on such switches) to set the IPv4 FC address. Note that setting the IP address for the logical switch is only for the IPFC interface, not for the Ethernet interface.

--add

Assigns a specified IPv4 FC address and prefix to the logical switch instance represented by the specified FID. This command replaces any existing FC IPv4 address.

IPv4_address/prefix

Specifies the IPv4 address and prefix for the IPFC network interface. The IP Address is represented by a dotted decimal number, followed by a slash and a prefix. This operand is required with the --add option.

--delete

Deletes the IPv4 FC address and prefix from a logical switch.

-ls *IFID*

Specifies the fabric ID that identifies the logical switch for which to delete the FC IPv4 address and prefix. This operand is required when deleting an FC IPv4 address from a logical switch. On a switch that is not in Virtual Fabric mode, use the -ls parameter with FID 128 (the effective, single Logical Fabric number on such switches) to delete the IPv4 FC address.

When used interactively to configure IPv4 addresses on a modular platform, ipAddrSet prompts for the following parameters:

-cp *cp_number*

Specifies the managed entity as a CP. Valid values include the following:

0

Sets the Ethernet IP address, Ethernet subnet mask, gateway IP address and host name of CP0.

1

Sets the Ethernet IP address, Ethernet subnet mask, gateway IP address and host name of CP1.

-chassis

Specifies the managed entity as the chassis.

-ipv4	Specifies IP address type as static IPv4.
-add	Sets the specified IPv4 address.
-host <i>hostname</i>	Sets the hostname.
-ethip <i>ipaddress</i>	Sets the ethernet IP address.
-ethmask <i>mask</i>	Sets the ethernet mask.
-gwyip <i>gateway_ip</i>	Sets the gateway IP address.
-dhcp[ON | OFF]	Enables or disables DHCP.
-dhcpv6	Enables DHCPv6. DHCPv6 is supported only on Brocade 6547 and Brocade 6549.
-nodhcpv6	Disables DHCPv6. DHCPv6 is supported only on Brocade 6547 and Brocade 6549.
--clear	Clears all IP (IPv4 and IPv6) addresses on a management interface.
--help	Displays command usage.

Examples

To configure an IPv6 address and prefix on a standalone platform:

```
switch:admin> ipaddrset -ipv6 --add \
fec0:60:69bc:60:260:69ff:fed0:107/64
```

To configure an IPv6 address and prefix on a single CP of a chassis:

```
switch:admin> ipaddrset -cp 0 -ipv6 --add \
1080::8:800:200C:417A/64
```

To delete any existing IPv6 address and prefix on CPO on an enterprise-class platform:

```
switch:admin> ipaddrset cp 0 -ipv6 --delete
```

To configure an IPv4 FC address for the IPFC interface associated with a logical switch with fabric ID 123:

```
switch:admin> ipaddrset -ls 123 --add 11.1.2.4/24
IP address is being changed...Done.
```

To verify the IPv4 FC address for the logical switch:

```
switch:admin> ipaddrshow

CHASSIS
Ethernet IP Address: 10.32.220.10
Ethernet Subnetmask: 255.255.240.0

CP0
Ethernet IP Address: 10.32.220.11
Ethernet Subnetmask: 255.255.240.0
Host Name: cp0
Gateway IP Address: 10.32.208.1

CP1
Ethernet IP Address: 10.32.220.12
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.32.208.1
IPFC address for logical fabric ID 128: 1.2.3.4/24

Backplane IP address of CP0 : 10.0.0.5
Backplane IP address of CP1 : 10.0.0.6
```

To delete the IPv4 address for the IPFC interface associated with a logical switch with Virtual Fabric ID 67:

```
switch:admin> ipaddrset -ls 67 --delete
IP address is being changed...Done.
```

To configure an IPv4 FC address for the IPFC interface associated with a switch that is not in Virtual Fabric mode:

```
switch:admin> ipaddrset -ls 128 --add 10.32.72.70/24
IP address is being changed...Done.
```

To verify the changes:

```
switch:admin> ipaddrshow

SWITCH
Ethernet IP Address: 10.32.72.9
Ethernet Subnetmask: 255.255.240.0
Gateway IP Address: 10.32.64.1
DHCP: Off
IPFC address for virtual fabric ID 128: 10.32.72.70/24
```

To set the IPv4 address details for a switch chassis in interactive mode:

```
switch:admin> ipaddrset -chassis
Ethernet IP Address [192.168.166.148]:
Ethernet Subnetmask [255.255.255.0]:
Committing configuration...Done.
```

To enable DHCP on a standalone, non-AP platform:

```
switch:admin> ipaddrset
Ethernet IP Address [192.168.74.102]:
Ethernet Subnetmask [255.255.255.0]:
Gateway IP Address [192.168.74.1]:
DHCP [Off]: on
```


To enable DHCPv6 on a device:

```
switch:admin> ipaddrset -ipv6 -dhcpv6
```

To clear all IP address information on a management interface and verify the changes:

```
switch:admin> ipaddrset --clear
Warning: All management interface will be closed, \
which will result in all network connections \
being terminated.
Please initiate a connection to the serial console of \
the switch to configure the management interface.
Would you like to continue with clearing the IP \
configuration?(y/n)y
switch:admin> ipaddrshow
CHASSIS
Ethernet IP Address: none
Ethernet Subnetmask: none

CP0
Ethernet IP Address: none
Ethernet Subnetmask: none
Host Name: cp0
Gateway IP Address: none

CP1
Ethernet IP Address: none
Ethernet Subnetmask: none
Host Name: cp1
Gateway IP Address: none
```

SEE ALSO [ipAddrShow](#)

ipAddrShow

Displays IP address information for a switch or control processor (CP).

Synopsis **ipaddrshow**

ipaddrshow [-cp *cp_number*] | **-chassis**

ipaddrshow -slot *slot* [-eth0 | -eth1 | -gate]

Description Use this command to display the IP addresses configured in the system.

The -cp option displays the IP address for a specified CP on modular platforms, or use the command without arguments to display the IP address on a standalone switch, or the IP addresses for both CPs on a chassis.

On a standalone switch, the command displays the following information:

- Ethernet IP Address
- Ethernet Subnet mask
- The Gateway IP Address
- Dynamic Host Control Protocol (DHCP): on or Off
- IPv6 Autoconfiguration Enabled: Yes or No
- Local IPv6 Addresses
- IPv6 Gateway address
- DHCPv6: on or off

On modular platforms, the command displays the following information:

For the chassis:

- Ethernet IP Address
- Ethernet Subnet mask

For each CP:

- Ethernet IP Address
- Ethernet Subnet mask
- Host Name
- Gateway IP Address

If the IPFC network interface is configured for logical switches:

- IPFC address for Virtual Fabric ID

For each CP:

- Backplane IP address
- IPv6 Autoconfiguration Enabled: Yes or No. If enabled, the command displays:
 - ☐ All local IPv6 Addresses
 - ☐ Gateway IP addresses for both CPs

Local IPv6 addresses display the following identifiers:

- IP Address type:
 - static - A statically configured IPv6 address.
 - stateless - Acquired through stateless autoconfiguration.
- IP Address state:
 - tentative
 - preferred
 - deprecated

Refer to the RFC 2462 specification for more information.

On modular platforms with intelligent blades, the addresses configured for each slot can be shown with the `-slot` option. On standalone platforms, all command options are ignored.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-cp *cp_number*

On dual-CP systems, specifies the CP card number to be displayed (0 or 1).

-chassis

On dual-CP systems, displays the IP addresses for the chassis.

-slot *slot*

Specifies the slot for a blade.

-eth0 | -eth1 | -gate

For a specified slot, shows only the selected Ethernet interface or the gateway . This operand is optional with the `-slot` option.

Examples To display the IP addresses on a standalone switch:

```
switch:admin> ipaddrshow

SWITCH
Ethernet IP Address: 10.20.21.204
Ethernet Subnetmask: 255.255.240.0
Gateway IP Address: 10.20.16.1
DHCP: Off
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
dhcipv6 fd00:60:69bc:82:a6f3:568b:a9cc:a149/64 preferred
stateless fd00:60:69bc:82:205:33ff:fe94:771f/64 preferred
IPv6 Gateways:
fe80::21b:edff:fe0b:2400
fe80::21b:edff:fe0b:7800
DHCPv6: On
```

To display all IP addresses on a Brocade DCX backbone:

```
switch:admin> ipaddrshow

Chassis
Ethernet IP Address: 10.33.60.85
Ethernet Subnetmask: 255.255.240.0

CP0
Ethernet IP Address: 10.33.60.86
Ethernet Subnetmask: 255.255.240.0
Host Name: cp0
Gateway IP Address: 10.33.48.1

CP1
Ethernet IP Address: 10.33.60.87
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.33.48.1

Backplane IP address of CP0 : 10.0.0.5
Backplane IP address of CP1 : 10.0.0.6
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
chassis 0 stateless fd00:60:69bc:63:205:1eff:fe39:e45a/64 preferred
chassis 0 stateless fec0:60:69bc:63:205:1eff:fe39:e45a/64 preferred
cp 0 stateless fd00:60:69bc:63:205:1eff:fe40:6230/64 preferred
cp 0 stateless fec0:60:69bc:63:205:1eff:fe40:6230/64 preferred
cp 1 stateless fd00:60:69bc:63:205:1eff:fe39:ff2a/64 preferred
cp 1 stateless fec0:60:69bc:63:205:1eff:fe39:ff2a/64 preferred
IPv6 Gateways:
cp 0 fe80:60:69bc:63::3
cp 0 fe80:60:69bc:63::1
cp 0 fe80:60:69bc:63::2
cp 1 fe80:60:69bc:63::1
cp 1 fe80:60:69bc:63::2
cp 1 fe80:60:69bc:63::3
```

To display the IP addresses for a chassis:

```
switch:admin> ipaddrshow -chassis

CHASSIS
Ethernet IP Address: 10.32.220.10
Ethernet Subnetmask: 255.255.240.0
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
chassis 0 stateless fd00:60:69bc:63:205:1eff:fe39:e45a/64 preferred
chassis 0 stateless fec0:60:69bc:63:205:1eff:fe39:e45a/64 preferred
IPv6 Gateways:
```

ipAddrShow

To display only the IP addresses for CP 1:

```
switch:admin> ipaddrshow
```

```
CP1  
Ethernet IP Address: 10.33.60.87  
Ethernet Subnetmask: 255.255.240.0  
Host Name: cp1  
Gateway IP Address: 10.33.48.1
```

SEE ALSO [ipAddrSet](#)

ipFilter

Manages the IP filter policies.

Synopsis

```

ipfilter --create polycyname -type ipv4 | ipv6

ipfilter --clone polycyname -from src_polycyname

ipfilter --show [-a] [polycyname]

ipfilter --save [polycyname]

ipfilter --activate polycyname

ipfilter --delete polycyname

ipfilter --addrule polycyname -rule rule_number [-sip source_IP]
-dp destination_port -proto protocol -act permit | deny
[-type INPUT | FWD] [-dip destination_IP]

ipfilter --delrule polycyname -rule rule number

ipfilter --transabort

ipfilter --clrcounters

ipfilter --showcounters

```

Description

Use this command to manage IP filter policies. The ipFilter command and command options are noninteractive, except when prompting for a confirmation.

The IP filter policy sets up a packet filtering firewall to provide access control on the management IP interface. The IPv4 and IPv6 policies are either in the defined configuration or in the active configuration.

Excluding the default policies, there can be a maximum of six policies in the defined configuration and one policy per IPv4 and IPv6 type in the active configuration.

The active policy must be the default policy or one of the policies in the defined configuration. Only the active policies are enforced. All of the ipFilter options except --show and --transabort, create a transaction owned by the management session initiating the commands.

An open transaction prevents other transactions from being created on different management sessions. The --create, --clone, --delete, --addrule, and --delrule operands modify policies in memory buffer, while operands, --save and --activate commit policies to the persistent configuration. The operands, --save and --activate, implicitly end the transaction if all policy changes are committed. The operand --transabort explicitly ends an open transaction and aborts policy changes in memory buffer. Closing the management session that owns the transaction also aborts policy changes and closes the transaction.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

In a Virtual Fabric environment, IP Filter policies are treated as chassis-wide configurations and apply to all logical switches in the chassis. Chassis permissions are required to manage IP Filter policies.

Operands This command has the following operands:

policyname

Specifies an IP filter policy name. The policy name is a unique string composed of a maximum of 20 alphanumeric or underscore characters. The default_ipv4 and default_ipv6 names are reserved for default IP filter policies. The policy name is case-insensitive and is always stored as lower case. The policy type identifies the policy as an IPv4 or IPv6 filter. You can create a maximum of eight IP filter policies.

--create *policyname* -type ipv4 | ipv6

Creates an IP filter policy with the specified name and type. The policy created is stored in a temporary buffer and is lost if the policy is not saved to the persistent configuration.

--clone *policyname* -from *src_policyname*

Creates a replica of an existing IP filter policy. The cloned policy is stored in a temporary buffer and has the same rules as the original policy.

--show [-a] [*policyname*]

Displays the IP filter policy content for the specified policy name or all IP filter policies if *policyname* is not specified. For each IP filter policy, the policy name, type, persistent state, and policy rules are displayed. The policy rules are listed by the rule number in ascending order. The -a option displays the traffic type and the configured destination IP.

Command output displays without pagination. Use command | more to display the output with page breaks. If a temporary buffer exists for an IP filter policy, the --show operand displays the content in the temporary buffer, with the persistent state set to modified defined or modified active.

--save [*policyname*]

Saves one or all IP filter policies persistently as the defined configuration. This operand is optional. If a policy name is specified, only the specified IP filter policy in the temporary buffer is saved; otherwise, all IP filter policies in the temporary buffer is saved. Only the CLI session that owns the updated temporary buffer can run this command. Modification to an active policy cannot be saved without being applied. Therefore, the --save option is blocked for the active policies; instead use the --activate option.

--activate *policyname*

Activates the specified IP filter policy. IP filter policies are not enforced until they are activated. Only one IP filter policy per IPv4 and IPv6 type can be active. If there is a temporary buffer for the policy, the policy is saved to the defined configuration and activated at the same time. If there is no temporary buffer for the policy, the policy existing in the defined configuration becomes active. The policy to be activated replaces the existing active policy of the same type. Activating the default IP filter policies returns the IP management interface to its default state. An IP filter policy without any rule cannot be activated. This operand prompts for confirmation before proceeding.

--delete *policyname*

Deletes the specified IP filter policy. Deleting an IP filter policy removes it from the temporary buffer. To permanently delete the policy from the persistent database, issue the ipfilter --save command. An active IP filter policy cannot be deleted.

--addrule *policyname*

Adds a new rule to the specified IP filter policy. The change made to the specified IP filter policy is not saved to the persistent configuration until saved or activated.

The following arguments are supported with the --addrule option:

-sip *source_IP*

Specifies the source IP address. For filters of type IPv4, the address must be a 32-bit address in dot notation, or a CIDR-style IPv4 prefix. For filters of type IPv6, the address must be a 128-bit IPv6 address in any format specified by RFC3513, or a CIDR-style IPv6 prefix. The source IP option is not supported for FORWARD traffic

-dp *destination_port*

Specifies the destination port number, a range of port numbers, or a service name. Note that blocking or permitting of ports 1024 and above is not allowed. These ports are used by various applications and services on the switch.

-proto *protocol*

Specifies the protocol type, for example, tcp or udp.

-act permit | deny

Specifies the permit or deny action associated with this rule. Blocking or permitting port 1024 and above is not allowed. Ports numbered 1024 and higher are used by applications for services such as FTP and blocking these ports may cause these applications to behave in unexpected ways. Blocking or permitting the RPC ports 111, 897, and 898 is not allowed.

rule *rule_number*

Adds a new rule at the specified rule index number. The rule number must be between 1 and the current maximum rule number plus one.

-type INPUT | FWD

Specifies the type of traffic that is allowed for the specified IP address. Forwarding rules manage the bidirectional traffic between the external Ethernet interface (eth0/bond0) and the inband management interface (inbd+). INPUT traffic is the default type of traffic for IP filter rules.

-dip *destination_IP*

Specifies the destination IP address. For filters of type IPV4, the address must be a 32-bit address in dot notation, or a CIDR-style IPv4 prefix. For filters of type IPv6, the address must be in a 128-bit IPv6 address in any format specified by RFC3513, or a CIDR-style IPv6 prefix. The destination IP option is not supported for INPUT traffic type.

--delrule *policyname* -rule *rule_number*

Deletes a rule from the specified IP filter policy. Deleting a rule in the specified IP filter policy causes the rules following the deleted rule to shift up in rule order. The change to the specified IP filter policy is not saved to the persistent configuration until it is saved or activated.

--transabort

A transaction is associated with a CLI or manageability session, which is opened implicitly when you execute the --create, --addrule and --delrule subcommands. The --transabort command explicitly ends the transaction owned by the current CLI or manageability session. If a transaction is not ended, other CLI or manageability sessions are blocked on the subcommands that would open a new transaction.

--clrcounters

Clears the IP filter counters. This command requires root permissions.

--showcounters

Displays the IP filter counters. This command requires root permissions.

Examples

To create an IP filter for a policy with an IPv6 address:

```
switch:admin> ipfilter --create ex1 -type ipv6
```

To add a new rule to the policy and specify the source IP address, destination port, and protocol, and to permit the rule:

```
switch:admin> ipfilter --addrule ex1 \
-sip fec0:60:69bc:60:260:69ff:fe80:d4a -dp 23 \
-proto tcp -act permit
```

To display all existing IP filter policies:

```
switch:admin> ipfilter --show
```

```
Name: default_ipv4, Type: ipv4, State: active
Rule  Source IP      Protocol  Dest Port  Action
1     any             tcp       22         permit
2     any             tcp       23         permit
3     any             tcp       80         permit
4     any             tcp       443        permit
5     any             udp       161        permit
6     any             udp       123        permit
7     any             tcp       600 - 1023 permit
8     any             udp       600 - 1023 permit
```

```
Name: default_ipv6, Type: ipv6, State: active
Rule   Source IP      Protocol  Dest Port  Action
1     any             tcp       22         permit
2     any             tcp       23         permit
3     any             tcp       80         permit
4     any             tcp       443        permit
5     any             udp       161        permit
6     any             udp       123        permit
7     any             tcp       600 - 1023 permit
8     any             udp       600 - 1023 permit
```

To activate the IP Filter policy "ex1":

```
switch:admin> ipfilter --activate ex1
```

To display all IP Filter policies, including the activated policy:

```
switch:admin> ipfilter --show
```

```
Name: default_ipv4, Type: ipv4, State: active
Rule   Source IP      Protocol  Dest Port  Action
1     any             tcp       22         permit
2     any             tcp       23         permit
3     any             tcp       80         permit
4     any             tcp       443        permit
5     any             udp       161        permit
```

```

6      any                udp      123      permit
7      any                tcp      600 - 1023 permit
8      any                udp      600 - 1023 permit

```

```

Name: default_ipv6, Type: ipv6, State: defined
Rule   Source IP          Protocol Dest Port Action
1      any                tcp      22      permit
2      any                tcp      23      permit
3      any                tcp      80      permit
4      any                tcp      443     permit
5      any                udp      161     permit
6      any                udp      123     permit
7      any                tcp      600 - 1023 permit
8      any                udp      600 - 1023 permit

```

```

Name: ex1, Type: ipv6, State: active
Rule   Source IP          Protocol Dest Port Action
1      fec0:60:69bc:60:260:69ff:fe80:d4a tcp 23      permit

```

To create an IPv4-type IP filter policy:

```
switch:admin> ipfilter --create ex2 -type ipv4
```

To add a rule to the created policy "ex2":

```
switch:admin> ipfilter --addrule ex2 -sip 10.32.69.99 \
               -dp 23 -proto tcp -act permit
```

To display the IP filter policies, including the new policy:

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Name: default_ipv4, Type: ipv4, State: active
Rule   Source IP          Protocol Dest Port Action
1      any                tcp      22      permit
2      any                tcp      23      permit
3      any                tcp      80      permit
4      any                tcp      443     permit
5      any                udp      161     permit
6      any                udp      123     permit
7      any                tcp      600 - 1023 permit
8      any                udp      600 - 1023 permit

Name: ex2, Type: ipv4, State: defined (modified)
Rule   Source IP          Protocol Dest Port Action
1      10.32.69.99        tcp      23      permit

```

To save the IP Filter policy "ex2" (the status of the policy changes from modified to defined after the policy is saved):

```
switch:admin> ipfilter --save ex2
```

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Name: default_ipv4, Type: ipv4, State: active
Rule   Source IP          Protocol Dest Port Action
1      any                tcp      22      permit
2      any                tcp      23      permit

```

3	any	tcp	80	permit
4	any	tcp	443	permit
5	any	udp	161	permit
6	any	udp	123	permit
7	any	tcp	600 - 1023	permit
8	any	udp	600 - 1023	permit

Name: ex2, Type: ipv4, State: defined

Rule	Source IP	Protocol	Dest Port	Action
1	10.32.69.99	tcp	23	permit

To add a rule for traffic of type FORWARD and to display the result:

```
switch:admin> ipfilter --addrule ex2 -rule 1 -sip \
10.32.69.99 -dp 23 -proto tcp -act permit -type fwd \
-dip 10.32.69.90
```

```
switch:admin> ipfilter --show -a
```

Legends: [Proto-Protocol, P-Permit, D-Deny, FWD-FORWARD, I/P-INPUT]

Name: default_ipv4, Type: ipv4, State: active

Rule	Source_IP	Proto	Dest_Port	Action	Flow	Destination_IP
1	any	tcp	22	P	I/P	any
2	any	tcp	23	P	I/P	any
3	any	tcp	80	P	I/P	any
4	any	tcp	443	P	I/P	any
5	any	udp	161	P	I/P	any
6	any	udp	123	P	I/P	any
7	any	tcp	600-1023	P	I/P	any
8	any	udp	600-1023	P	I/P	any

Name: default_ipv6, Type: ipv6, State: active

Rule	Source_I	Proto	Dest_Port	Action	Flow	Destination_IP
1	any	tcp	22	P	I/P	any
2	any	tcp	23	P	I/P	any
3	any	tcp	80	P	I/P	any
4	any	tcp	443	P	I/P	any
5	any	udp	161	P	I/P	any
6	any	udp	123	P	I/P	any
7	any	tcp	600-1023	P	I/P	any
8	any	udp	600-1023	P	I/P	any

Name: ex2, Type: ipv4, State: defined (modified)

Rule	Source_IP	Proto	Dest_Port	Action	Flow	Destination_IP
1	10.32.69.99	tcp	23	P	FWD	10.32.69.99

SEE ALSO None

ipSecConfig

Configures Internet Protocol security (IPSec) policies for Ethernet management interfaces.

Synopsis

```

ipseconfig --enable [default] --disable

ipseconfig --add | --modify type [subtype] [arguments]

ipseconfig --delete [type] arguments

ipseconfig --flush manual-sa

ipseconfig --show type [subtype] arguments

ipseconfig --help [command_type subtype]

```

Description Use this command to configure the Internet Protocol Security (IPSec) feature for traffic flows on switch Ethernet management interfaces, or to display the current configuration.

Internet Protocol security (IPSec) is a framework of open standards that provides private, secure communication over Internet Protocol (IP) networks through the use of cryptographic security services.

IPSec uses different protocols to ensure the authentication, integrity, and confidentiality of the communication.

- Encapsulating Security Payload (ESP) provides confidentiality, data integrity and data source authentication of IP packets, and protection against replay attacks.
- Authentication Header (AH) provides data integrity, data source authentication, and protection against replay attacks, but unlike ESP, AH does not provide confidentiality.

IPSec can protect either the entire IP datagram or only the upper-layer protocols. The appropriate modes are called tunnel mode and transport mode.

- In tunnel mode the IP datagram is fully encapsulated by a new IP datagram using the IPSec protocol.
- In transport mode only the payload of the IP datagram is handled by the IPSec protocol; it inserts the IPSec header between the IP header and the upper-layer protocol header.

The IPSec key management supports Internet Key Exchange (IKE) or Manual key/SA entry.

- In IKE the IPsec protocol negotiates shared security parameters and keys. Security Associations (SAs) used in IKE use automatically generated keys for authentication negotiation between peers.
- Manual key/SA entry requires the keys to be generated and managed manually, and it is therefore suited for small static environments. For the selected authentication or encryption algorithms, the correct keys must be generated. The key length is determined by the algorithm selected. Refer to the Fabric OS Administrator's Guide for more information.

The following IPsec configuration tasks can be performed with this command:

- Enable or disable the IPsec policies.
- Configure IP address for both IPv4 and IPv6 format.
- Configure three types of policies and their respective components:
 - IPsec policy including selector, transform, SA-proposal, and SA.
 - IKE policy (automatic key management).
 - Manual SA (manual SA management).
- Modify existing IPsec and IKE policies.
- Delete existing policies and SAs from the configuration database.
- Flush existing SAs from the kernel SA database (SADB).
- Display policy parameters.

Representation of IP addresses

When configuring IPsec policies, IP addresses and ports must be specified in the following format:

IP address

IPv4 addresses are expressed in dotted decimal notation consisting of numeric characters (0-9) and periods (.), for example, 203.178.141.194.

IPv6 address consist of hexadecimal digits (09afAF), colons (:) and a percent sign (%) if necessary, for example, 2001:200:0:8002:203:47ff:fea5:3085

network prefix

A network prefix is represented by a number followed by a slash (/), for example, 1/0.

Notes

IPsec configuration changes take effect upon execution and are persistent across reboot.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command does not provide IPsec protection for traffic flows on external management interfaces of intelligent blades in a chassis, nor does it support protection of traffic flows on FCIP interfaces.

This command does not support manipulating preshared keys corresponding to the identity of the IKE peer or group of peers. Use secCertUtil to import, delete, or display the preshared keys in the local switch database.

The MD5 hash algorithm is blocked when FIPS mode is enabled.

Refer to the Examples section for specific use cases and associated command sequences. Refer to the Fabric OS Administrator's Guide for configuration procedures.

This command accepts abbreviated operands. The abbreviated string must contain the minimum number of characters necessary to uniquely identify the operand within the set of available operands.

Operands

This command has the following operands:

--enable

Enables IPsec on the switch. Existing IPsec configurations are enabled by this command. IPsec is disabled by default. It must be enabled before you can configure the policies and parameters. The following operand is optional:

default

Clears the existing policies (automatic key management and manual keyed entries) and resets the configuration databases to default values.

--disable

Disables IPsec on the switch. All active TCP sessions are terminated when you disable IPsec.

--add | --modify

Adds or modifies an IPsec or IKE policy in an existing enabled configuration. Not all parameters can be modified. Parameters that cannot be modified are indicated below. When modifying a policy the names and identifiers need to refer to valid existing entities. The syntax is as follows:

```
--add | --modify type [subtype] [arguments]
```

type

Specifies the policy to be created. Supported policies include the following:

policy ips

Creates or modifies an IPsec policy. This policy determines the security services afforded to a packet and the treatment of a packet in the network. An IPsec policy allows classifying IP packets into different traffic flows and specifies the actions or transformations performed on IP packets on each of the traffic flows. The main components of an IPsec policy are: IP packet filter/selector (IP address, protocol, and port information) and transform set.

subtype

A subtype is required when configuring an IPsec policy. The subtype specifies the components to be configured. The following are required subtypes for the IPsec policy:

selector

Creates a selector that is applied to the IP data traffic. A selector consists of a set of parameters that identify the IP traffic that needs IPsec protection. To configure the selector, the following parameters must be specified:

-tag name

Specifies a name for the selector. This is a user-generated name. The name must be between 1 and 32 characters in length, and may include alphanumeric characters, dashes (-), and underscores (_).

-direction in | out

Specifies traffic flow direction as inbound or outbound.

-local IP_address[prefixlength]

Specifies the source IPv4 or IPv6 address.

-remote *IP_address[/prefixlength]*
Specifies the peer IPv4 or IPv6 address

-transform *name*
Specifies the transform to be included in the selector. You must create the transform before you can use in the selector. Use ipsecConfig --show policy ips transform to display existing transforms.

-protocol *protocol_name*
Specifies the upper layer protocols to be selected for IPSec protection. Valid protocols include tcp, udp, icmp or any. When any is specified all existing protocols are selected for protection. This operand is optional.

transform

Creates the IPSec transform set. The transform set is a combination of IPSec protocols and cryptographic algorithms that are applied on the packet after it is matched to a selector. The transform set specifies the IPSec protocol, the IPSec mode, and the action to be performed on the IP packet. It also specifies the key management policy that is needed for the IPSec connection and the encryption and authentication algorithms to be used in security associations when IKE is used as key management protocol. The following operands are required:

-tag *name*
Specifies a name for the transform. This is a user-generated name. The name must be between 1 and 32 characters in length, and may include alphanumeric characters, dashes (-), and underscores (_).

-mode tunnel | transport
Specifies the IPSec transform mode. In tunnel mode, the IP datagram is fully encapsulated by a new IP datagram using the IPSec protocol. In transport mode, only the payload of the IP datagram is handled by the IPSec protocol inserting the IPSec header between the IP header and the upper-layer protocol header.

-sa-proposal *name*
Specifies the SA proposal to be included in the transform. You must create the SA proposal first before you can include it in the transform. Use ipsecConfig --show policy ips sa-proposal -a for a listing of existing SA proposals.

-action discard | bypass | protect
Specifies the protective action the transform should take regarding the traffic flows.

-ike *name*
Specifies the IKE policy to be included in the transform. This operand is optional. Use ipsecConfig --show policy ike -a for a listing of existing IKE policies.

-local *IP_address[/prefixlength]*
Specifies the source IPv4 or IPv6 address. This operand is optional. If a local source IP address is defined, a remote peer IP address must also be defined.

-remote *IP_address[/prefixlength]*
Specifies the peer IPv4 or IPv6 address. This operand is optional. If a remote peer IP address is defined, a local source IP address must also be defined.

sa-proposal

Defines the security associations (SA) proposal, including name, SAs to be included and lifetime of the proposal. The following operands are supported:

-tag *name*

Specifies a name for the SA proposal. This is a user-generated name. The name must be between 1 and 32 characters in length, and may include alphanumeric characters, dashes (-), and underscores (_).

-sa *name[,name]*

Specifies the SAs to include in the SA proposal. The bundle consists of one or two SA names, separated by commas. For SA bundles, [AH, ESP] is the supported combination. The SAs must be created prior to being included in the SA proposal. This operand is required.

-lttime *number*

Specifies the SA proposal's lifetime in seconds. This operand is optional. If a lifetime is not specified, the SA does not expire. If lifetime is specified both in seconds and in bytes, the SA expires when the first expiration criterion is met.

-ltbyte *number*

Specifies the SA proposal's lifetime in bytes. The SA expires after the specified number of bytes have been transmitted. This operand is optional.

sa

Defines the Security Association. An SA specifies the IPsec protocol (AH or ESP), the algorithms used for encryption and authentication, and the expiration definitions used in security associations of the traffic. IKE uses these values in negotiations to create IPsec SAs.

You cannot modify an SA once it is created. Use `ipsecConfig --flush manual-sa` to remove all SA entries from the kernel SA database (SADB) and start over.

-tag *name*

Specifies a name for the SA. This is a user-generated name. The name must be between 1 and 32 characters in length, and may include alphanumeric characters, dashes (-), and underscores (_). This operand is required.

-protocol *ah | esp*

Specifies the IPsec protocol. Encapsulating Security Payload (ESP) provides confidentiality, data integrity and data source authentication of IP packets, and protection against replay attacks. Authentication Header (AH) provides data integrity, data source authentication, and protection against replay attacks but, unlike ESP, does not provide confidentiality. This operand is required.

-auth *algorithm*

Specifies the authentication algorithm. This operand is required. Valid algorithms include the following:

hmac_md5

MD5 authentication algorithm

hmac_sha1

SHA1 authentication algorithm

-enc algorithm

Specifies the encryption algorithm. This operand is required. Valid algorithms include the following:

3des_cbc

3DES encryption algorithm

blowfish_cbc

Blowfish encryption algorithm

null_enc

Null encryption algorithm

aes256_cb

AES-256 algorithm

-spi number

Specifies the security parameter index (SPI) for the SA. This is a user-defined index. Valid SPI numbers consist of numeric characters (0-9). This operand is optional.

policy ike

Creates or modifies an IKE policy configuration. No subtype is required with this command. The command defines the following IKE policy parameters: IKE version, IP address of the remote entity, IP address of the local entity, encryption algorithm, hash algorithm, PRF algorithm, DH group, authentication method, path and filename of the preshared key. The syntax is as follows: `ipsecConfig --add | --modify ike arguments`.

arguments

Valid arguments for policy ike include the following:

-tag name

Specifies a name for the IKE policy. This is a user-generated name. The name must be between 1 and 32 characters in length, and may include alphanumeric characters, dashes (-), and underscores (_). This operand is required.

remote IP_address[/prefixlength]

Specifies the peer IPv4 or IPv6 address and prefix.

-id identifier

Specifies the local identifier. The switch is identified by its IPv4 or IPv6 address.

-remoteid identifier

Specifies the peer identifier. The remote peer is identified by its IPv4 or IPv6 address.

-enc algorithm

Specifies the encryption algorithm. Valid encryption algorithms include the following:

3des_cbc

DES algorithm

blowfish_cbc

Blowfish algorithm

aes128_cbc

AES 128-bit algorithm

aes256_cbc

AES 256-bit algorithm

-hash *algorithm*

Specifies the hash algorithm. Valid hash algorithms include the following:

hmac_md5

MD5 algorithm

hmac_sha1

SH1 algorithm

-prf *algorithm*

Specifies the PRF algorithm. Valid PRF algorithms include the following:

hmac_md5

MD5 algorithm

hmac_sha1

SH1 algorithm

-auth *psk | dss | rsasig*

Specifies the authentication method as one of the following:

psk

Authenticate using preshared keys.

dss

Authenticate using digital signature standard.

rsasig

Authenticate using an RSA signature.

-dh *number*

Specifies the DH group number as one of the following:

1

Specifies DH group modp768.

2

Specifies DH group modp1024.

14

Specifies DH group modp2048.

The following operands are optional (use secCertUtil to import the key files to the local and remote systems)

-psk *file*

Specifies the preshared key filename.

-pubkey *file*

Specifies the public key filename (in X.509 PEM format).

-privkey *file*

Specifies the private key filename (in X.509 PEM format).

-peerpubkey *file*

Specifies the peer public key filename (in X.509 PEM format).

-lttime *number*

Specifies the key lifetime in seconds. If a lifetime is not specified, the keys do not expire. If a lifetime is specified both in seconds and in bytes, the keys expire when the first expiration criterion is met.

-ltbyte *number*

Specifies the key lifetime in bytes. The keys expire after the specified number of bytes have been transmitted.

-pfson | off

Enables or disables Perfect Forward Secrecy (PFS). PFS is disabled by default. When PFS is disabled, IKE uses the initial master key it generates in Phase1 to generate the keys for SA connections in Phase2. When PFS is enabled, a new key is generated for keying the SAs. Enabling PFS may provide enhanced protection against keys compromise.

-version 1 | 2

Specifies the IKE version. This operand is optional. If not specified, IKEv2 is used (2). If 1 is specified, IKEv1 is selected. Use -v 2 to revert to version 2 after version 1 was set.

manual-sa

Creates manually keyed SADB entries. When using this option, you must generate the keys manually. The lifetime of an SA entry created using this command is infinite. You cannot modify manually keyed SA entries. Use ipsecConfig --flush, or ipsecConfig --delete and recreate the entries. The syntax for creating an SADB entry is as follows:

ipsecconfig --add manual-sa arguments.

arguments

Valid arguments for manual-sa include the following:

-sp *number*

Specifies the security parameter index (SPI) for the SA. This is a user-defined index. Valid SPI numbers consist of numeric characters (0-9).

-local *ipaddress*

Specifies the local IPv4 or IPv6 address.

-remote *ipaddress*

Specifies the remote IPv4 or IPv6 address.

-protocol *protocol_name*

Specifies the upper layer protocols to be selected for protection. Valid protocols include tcp, udp, icmp or any. When any is specified all existing protocols are selected for protection.

-ipsec ah | esp

Specifies the IPSec protocol. Encapsulating Security Payload (ESP) provides confidentiality, data integrity and data source authentication of IP packets, and protection against replay attacks. Authentication Header (AH) provides data integrity, data source authentication, and protection against replay attacks but, unlike ESP, does not provide confidentiality.

-action discard | bypass | protect

Specifies the IPSec protection type regarding the traffic flows.

-direction in | out

Specifies traffic flow direction as inbound or outbound.

-mode tunnel | transport

Specifies the IPsec mode. In tunnel mode, the IP datagram is fully encapsulated by a new IP datagram using the IPsec protocol. In transport mode, only the payload of the IP datagram is handled by the IPsec protocol; it inserts the IPsec header between the IP header and the upper-layer protocol header.

-enc *algorithm*

Specifies the encryption algorithm. Valid encryption algorithms include the following:

3des_cbc

3DES algorithm

null_enc

Null encryption algorithm (cleartext)

-auth *algorithm*

Specifies the authentication algorithm. Valid authentication algorithms include the following:

hmac_md5

MD5 algorithm

hmac_sha1

SH1 algorithm

-enc-key *number*

Specifies the encryption key. This is a user-generated key based on the length of the key. Use the LINUX random key generator or any other comparable third party utility to generate the manual SA keys. Refer to the Fabric OS Administrator's Guide for details.

- A 192-bit value for the **3des_cbc** encryption algorithm, for example, 0x96358c90783bbfa3d7b196ceabe0536b
- A zero-bit value for the **null_enc** encryption algorithm.

-auth-key *number*

Specifies the authentication key. This is a user-generated key based on the length of the key. Valid keys include the following:

- A 128-bit value for the **hmac_md5** authentication algorithm.
- A 160-bit value for the **hmac_sha1** authentication algorithm.

The following operands are optional:

tunnel-local *ipaddress*

Specifies the local tunnel IPv4 or IPv6 address.

tunnel-remote *ipaddress*

Specifies the peer tunnel IPv4 or IPv6 address.

--delete

Deletes a specified policy or all policies of a certain type from the configuration database. You can delete IPsec policies, IKE policies, and SADB entries. When deleting IPsec policies, you have the option to delete specific components only, such as the transform or the selector, and recreate these components without having to recreate the entire policy. The syntax for deleting a policy is as follows:

```
ipseconfig --delete type [subtype] arguments
```

type

Specifies the policy to be deleted. Valid policy types include the following:

policy ips

Deletes a specified IPsec policy or all IPsec policies.

subtype

Optionally specify a component (subtype) to delete the component only:

selector

Deletes the selector for a specified IPsec policy, or all selectors of all configured IPsec policies.

transform

Deletes the transform for a specified IPsec policy, or all transforms of all configured IPsec policies.

sa-proposal

Deletes the SA proposal for a specified IPsec policy, or all SA proposals of all configured IPsec policies.

sa

Deletes the SAs for a specified IPsec policy, or all SAs of all configured IPsec policies.

policy ike

Deletes a specified IKE policy or all configured IKE policies.

sa

Deletes a specified SADB entry or all manual SADB entries.

manual-sa

Deletes the SA policy entries used in manually keyed SA entries from the configuration database.

arguments

Specifies the selection as one of the following:

-a

Deletes all configuration information for the specified type and subtype.

-tag name

Deletes all configuration information for the specified policy type

--flush manual-sa

Flushes all SA entries (including manually keyed and automatically keyed SAs) from the kernel SADB. All active TCP sessions that are using IPsec protection are terminated when this command is executed. This command, unlike delete, does not remove the policies from the configuration database. Flushing any other policy parameters is not supported.

--show

Displays current IPsec or IKE configuration. The syntax for the display option is as follows:

--show type [subtype] arguments

type

Specifies the policy to be displayed. Valid values for type include the following:

policy ips

Displays the IPsec policy configuration. A policy subtype must be specified when displaying the IPsec policy configuration. Valid subtypes include the following:

selector

Displays IPsec selector parameters including IPsec policy name, IP address of the local entity, IP address of the remote entity, direction of traffic flow (inbound or outbound), upper layer protocol used, and IPsec transform index.

transform

Displays IPsec transform parameters including IPsec policy name, key management protocol (version) or manual SA, processing option for selected IP traffic, IPsec mode (tunnel or transport), IP address of the local entity, IP address of the remote entity, and SA proposal.

sa-proposal

Displays the parameters of the SA proposal, including proposal name, lifetime (in seconds and in byte units, or infinite), and associated SA definitions.

sa

Displays security association (SA) parameters for the specified IPsec policies including policy names, IPsec protocol used (AH or ESP), encryption and authentication algorithms.

policy ike

Displays the IKE policy configuration. No subtype is required with this command. The command displays the following IKE policy parameters: IKE version, IP address of the remote entity, IP address of the local entity, encryption algorithm, hash algorithm, PRF algorithm, DH group, authentication method, path and filename of the preshared key.

manual-sa

Displays the Security Associations in the local SADB. No subtype is required with this command.

arguments

Specifies the display selection as one of the following:

-a

Displays all configuration information for the specified type and subtype.

-tag *name*

Displays configuration information for the specified IPsec policy only.

--help

Displays the command usage. Optionally use --help with a specified command, type, and subtype to display the syntax for specific commands. Do not include a double dash when specifying the command.

Examples

Example 1

The following example illustrates how to secure traffic between two systems using AH protection with MD5 and configure IKE with preshared keys. The two systems are a switch, BROCADE300 (IPv4 address 10.33.74.13), and an external UNIX server (10.33.69.132).

1. On the system console, log in to the switch as Admin and enable IPsec.

```
switch:admin> ipsecconfig --enable
```

2. Create an IPsec SA policy named AH01, which uses AH protection with MD5.

```
switch:admin> ipsecconfig --add policy ips sa \
-t AH01 -p ah -auth hmac_md5
```

3. Create an IPsec proposal IPSEC-AH to use AH01 as SA.

```
switch:admin> ipsecconfig --add policy ips sa-proposal \
-t IPSEC-AH -sa AH01
```

4. Configure the SA proposal's lifetime in time units.

```
switch:admin> ipsecconfig --add policy ips sa-proposal \
-t IPSEC-AH -ltime 280000 -sa AH01
```

5. Import the preshared key file (e.g., ipseckey.psk) using the seCcertUtil import command.

6. Configure an IKE policy for the remote peer.

```
switch:admin> ipsecconfig --add policy ike -t IKE01 \
-remote 10.33.69.132 -id 10.33.74.13 \
-remoteid 10.33.69.132 -enc 3des_cbc \
-hash hmac_md5 -prf hmac_md5 -auth psk \
-dh modp1024 -psk ipseckey.psk
```

7. Create an IPsec transform named TRANSFORM01 to use transport mode to protect traffic identified for IPsec protection and use IKE01 as the key management policy.

```
switch:admin> ipsecconfig --add policy ips transform \
-t TRANSFORM01 -mode transport \
-sa-proposal IPSEC-AH -action protect -ike IKE01
```

8. Create traffic selectors to select the outbound and inbound traffic that needs to be protected.

```
switch:admin> ipsecconfig --add policy ips selector \
-t SELECTOR-OUT -d out -l 10.33.74.13 -r 10.33.69.132 \
-transform TRANSFORM01
```

```
switch:admin> ipsecconfig --add policy ips selector \
-t SELECTOR-IN -d in -l 10.33.69.132 -r 10.33.74.13 \
-transform TRANSFORM01
```

9. Verify the IPsec SAs created using IKE for above traffic flow using ipsecConfig --show manual-sa -a. Refer to the "IPsec display commands" section for an example.
10. Perform the equivalent steps on the remote peer to complete the IPsec configuration. Refer to your server administration guide for instructions.

Example 2

The following example illustrates how to secure traffic between two systems using ESP protection with 3DES_CBC encryption and SHA1 authentication, and how to configure IKE with RSA Certificates signed by the certification authority (CA). The two systems are A SWITCH, BROCADE300 (IPv6 address fe80::220:1aff:fe34:2e82), and an external UNIX host (IPv6 address fe80::205:1fff:fe51:f09e).

1. On the system console, log in to the switch as Admin and enable IPsec.

```
switch:admin> ipsecconfig --enable
```

2. Create an IPsec SA policy named ESP01, which uses ESP protection with 3DES and SHA1.

```
switch:admin> ipsecconfig --add policy ips sa -t ESP01 \
                -p esp -enc 3des_cbc -auth hmac_shal
```

3. Create an IPsec proposal IPSEC-ESP to use ESP01 as the SA.

```
switch:admin> ipsecconfig --add policy ips sa-proposal \
                -t IPSEC-ESP -sa ESP01
```

4. Configure the SA proposal lifetime in seconds.

```
switch:admin> ipsecconfig --add policy ips sa-proposal \
                -t IPSEC-ESP -ltime 280000 -sa ESP01
```

5. Import the public key for the BROCADE300 (Brocade300.pem), the private key for BROCADE300 (Brocade300-key.pem), and the public key of the external host (remote-peer.pem) in X.509 PEM format from the remote certificate server (10.6.103.139).

```
switch:admin> seccertutil import -ipaddr 10.103.6.139 \
                -remotedir /root/certs -certname Brocade300.pem
```

```
switch:admin> seccertutil import -ipaddr 10.103.6.139 \
                -remotedir /root/certs -certname Brocade300-key.pem
```

```
switch:admin> seccertutil import -ipaddr 10.103.6.139 \
    -remotedir /root/certs -certname remote-peer.pem
```

6. Import the CA certificate that was used to sign the public certificates of BROCADE300 and the remote peer as IPSECCA.pem.

```
switch:admin> seccertutil import -ipaddr 10.103.6.139 \
    -remotedir /root/certs -certname IPSECCA.pem
```

7. Configure an IKE policy for the remote peer UNIX host.

```
switch:admin> ipsecconfig --add policy ike -t IKE01 -remote \
    fe80::205:1fff:fe51:f09e -id fe80::220:1aff:fe34:2e82 \
    -remoteid fe80::205:1fff:fe51:f09e \
    -enc 3des_cbc -hash hmac_md5 -prf hmac_md5 -auth rsasig \
    -dh modp1024 -pubkey "Brocade300.pem" \
    -privkey "Brocade300-key.pem" -peerpubkey "remote-peer.pem"
```

8. Create an IPsec transform TRANSFORM01 to use transport mode to protect traffic identified for IPsec protection and use IKE01 as the key management policy.

```
switch:admin> ipsecconfig --add policy ips transform \
    -t TRANSFORM01 -mode transport -sa-proposal IPSEC-ESP \
    -action protect -ike IKE01
```

9. Create traffic selectors to select outbound and inbound TCP traffic that needs to be protected.

```
switch:admin> ipsecconfig --add policy ips selector \
    -t SELECTOR-OUT -d out -l fe80::220:1aff:fe34:2e82 \
    -r fe80::205:1fff:fe51:f09e \
    -protocol "tcp" -transform TRANSFORM01
```

```
switch:admin> ipsecconfig --add policy ips selector \
    -t SELECTOR-IN -d in -l fe80::205:1fff:fe51:f09e -r \
    fe80::220:1aff:fe34:2e82 -protocol "tcp" -t transform TRANSFORM01
```

10. Verify the IPsec SAs using ipSecConfig --show manual-sa -a. Refer to the "IPsec display commands" section for an example.
11. Perform the equivalent steps on the remote peer to complete the IPsec configuration. Refer to your server administration guide for instructions.

Example 3

The following example illustrates how to secure traffic between two systems using AH with SHA1 and ESP protection with 3DES and configure IKE with preshared keys. The two systems are a switch, a Brocade 300 (IP address 10.33.74.13), and an external UNIX host (IPv4 address 10.33.69.132).

1. On the system console, log in to the switch as Admin and enable IPsec.

```
switch:admin> ipsecconfig --enable
```

2. Create an IPsec SA policy named AH01, which uses AH protection with SHA1.

```
switch:admin> ipsecconfig --add policy ips sa \
-t AH01 -p ah -auth hmac_sha1
```

3. Create an IPsec SA policy named ESP01, which uses ESP protection with 3DES.

```
switch:admin> ipsecconfig --add policy ips sa \
-t ESP01 -p esp -enc 3des_cbc
```

4. Create an IPsec proposal IPSEC-AHESP to use an AH01 and ESP01 bundle.

```
switch:admin> ipsecconfig --add policy ips sa-proposal \
-t IPSEC-AHESP -sa AH01,ESP01
```

5. Import the preshared key file (e.g., ipseckey.psk) using the secCertUtil import command.

6. Create an IKE policy for the remote peer.

```
switch:admin> ipsecconfig --add policy ike -t IKE01 \
-remote 10.33.69.132 -id 10.33.74.13 \
-remoteid 10.33.69.132 -enc 3des_cbc \
-hash hmac_md5 -prf hmac_md5 \
-auth psk -dh modp1024 -psk ipseckey.psk
```

7. Create an IPsec transform TRANSFORM01 configured with transport mode to protect traffic identified for IPsec protection and use IKE01 as a key management policy.

```
switch:admin> ipsecconfig --add policy ips transform \
-t TRANSFORM01 -mode transport -sa-proposal IPSEC \
-AHESP -action protect -ike IKE01
```

8. Create traffic selectors to protect outbound and inbound traffic.

```
switch:admin> ipsecconfig --add policy ips selector \
-t SELECTOR-OUT -d out -l 10.33.74.13 -r 10.33.69.132 \
-transform TRANSFORM01
```

```
switch:admin> ipsecconfig --add policy ips selector \
-t SELECTOR-IN -d in -l 10.33.69.132 -r 10.33.74.13 \
-transform TRANSFORM01
```

9. Verify the IPsec SAs using ipSecConfig --show manual-sa -a. Refer to the "IPsec display commands" section for an example.
10. Perform the equivalent steps on the remote peer to complete the IPsec configuration. Refer to your server administration guide for instructions.

Example 4

The following example illustrates how to secure traffic between two systems using protection with MD5 and Manually keyed SAs. The two systems are a switch, the BROCADE300 (IPv4 address 10.33.74.13), and an external UNIX host (IPv4 address 10.33.69.132).

1. On the system console, log in to the switch as Admin and enable IPsec.

```
switch:admin> ipsecconfig --enable
```

2. Create an IPsec Manual SA that uses AH protection with MD5 for outbound traffic:

```
switch:admin> ipsecconfig --add manual-sa -spi 0x300 \
-l 10.33.74.13 -r 10.33.69.132 -p any -d out -m transport \
-ipsec ah -ac protect -auth hmac_md5 \
-auth-key "TAHITEST89ABCDEF"
```

3. Create an SA for inbound traffic.

```
switch:admin> ipsecconfig --add manual-sa -spi 0x200 \
-l 10.33.69.132 -r 10.33.74.13 -p any -d in \
-m transport -ipsec ah -ac protect -auth hmac_md5 \
-auth-key "TAHITEST89ABCDEF"
```

4. Verify the SAs using `ipsecConfig --show manual-sa -a`. Refer to the IPsec display commands section for an example.
5. Perform the equivalent steps on the remote peer to complete the IPsec configuration. Refer to your server administration guide for instructions.

IPsec display commands

To display the IPsec IKE Policy:

```
switch:admin> ipsecconfig --show policy ike -a
IKE-01   version:ikev2 remote:10.33.69.132
        local-id:10.33.74.13  remote-id:10.33.69.132
        encryption algorithm: 3des_cbc
        hash algorithm: hmac_md5
        prf algorithm: hmac_md5
        dh group: 2 1
        auth method:rsasig
        public-key:"/etc/fabos/certs/sw0/thawkcert.pem"
        private-key:"/etc/fabos/certs/sw0/thawkkey.pem"
        peer-public-key:"/etc/fabos/certs/sw0/spiritcert.pem"
```

To display the outbound and inbound SAs in the kernel SA database:

```
switch:admin> ipsecconfig --show manual-sa -a
10.33.69.132[0] 10.33.74.13[0]
ah mode=transport spi=34560190(0x020f58be) reqid=0(0x00000000)
A: hmac-md5 7e5aeb47 e0433649 c1373625 34a64ece
seq=0x00000000 replay=32 flags=0x00000000 state=mature
created: Oct 15 23:34:55 2008  current: Oct 15 23:35:06 2008
diff: 11(s)  hard: 2621440(s)  soft: 2100388(s)
last: Oct 15 23:34:56 2008  hard: 0(s)  soft: 0(s)
current: 256(bytes)  hard: 0(bytes)  soft: 0(bytes)
allocated: 4  hard: 0 soft: 0
sadb_seq=1 pid=10954 refcnt=0
```

```

10.33.74.13[0] 10.33.69.132[0]
  ah mode=transport spi=48095089(0x02dddf71) reqid=0(0x00000000)
  A: hmac-md5 c84d27e5 960d116c bf7c0e4a b232c49e
  seq=0x00000000 replay=32 flags=0x00000000 state=mature
  created: Oct 15 23:34:55 2008 current: Oct 15 23:35:06 2008
  diff: 11(s) hard: 2621440(s) soft: 2137448(s)
  last: Oct 15 23:34:55 2008 hard: 0(s) soft: 0(s)
  current: 540(bytes) hard: 0(bytes) soft: 0(bytes)
  allocated: 5 hard: 0 soft: 0
  sadb_seq=0 pid=10954 refcnt=0

```

To display a specified IPsec SA:

```

switch:admin> ipsecconfig --show policy ips \
sa -t sa-esp-1
sa-esp-1 ipsec-protocol:esp
  encryption algorithm: aes128_cbc 3des_cbc
  authentication algorithm: hmac_sha1 hmac_md5

```

To display all IPsec SA proposals:

```

switch:admin> ipsecconfig --show policy ips \
sa-proposal -a
ipsec-esp-a-b SA(s) used:sa-esp-1 sa-ah-1
  lifetime in seconds:infinite
  lifetime in bytes:infinite

ipsec-esp-def SA(s) used:sa-esp-1
  lifetime in seconds:infinite
  lifetime in bytes:infinite

```

To display all IPsec transforms:

```

switch:admin> ipsecconfig --show policy ips transform -a
policy-A-B action:auto_ipsec mode:transport
  local:10.33.69.132 remote:10.33.74.13
  sa-proposal:ipsec-esp-a-b
  ike-policy:remote-B

```

To display all IPsec traffic selectors:

```

switch:admin> ipsecconfig --show policy ips selector -a
slt-A-B-any local:10.33.69.132 remote:10.33.74.13
  direction:outbound upper-layer-protocol:any
  transform-used:policy-A-B

slt-B-A-any local:10.33.74.13 remote:10.33.69.132
  direction:inbound upper-layer-protocol:any
  transform-used:policy-A-B

```

Using the help command

To use the --help command with arguments to display the syntax of specific types and subtypes:

```

switch:admin> ipsecconfig --help add policy ips selector
Usage: ipsecConfig --add policy ips selector ARGUMENTS

ARGUMENTS
  -tag <name> selector name

```

```

-direction <in|out>      traffic flow direction
-local <addr>            source IPv4 or IPv6 address
-remote <addr>           peers IPv4 or IPv6 address
-transform <name>        transform name
[-protocol <name>]      protocol nam

```

```

switch:admin> ipsecconfig --help modify policy ike
Usage: ipsecConfig --modify policy ike ARGUMENTS

```

ARGUMENTS

```

-tag <name>              ike policy name
-remote <addr>           peers ipaddress
-id <identifier>         local identifier
-remoteid <identifier>   peers identifier
-enc <ALGORITHM>        encryption algorithm
-hash <ALGORITHM>       hash algorithm
-prf <ALGORITHM>        prf algorithm
-dh <number>            dh group number

```

ENCRYPTION ALGORITHM

```
3des_cbc, aes128_cbc, aes256_cbc, null_enc
```

HASH ALGORITHM

```
hmac_md5, hmac_sha1, aes_xcbc
```

PRF ALGORITHM

```
hmac_md5, hmac_sha1, aes_xcbc
```

DH-GROUP

```
modp768(1), modp1024(2), modp2048(14), modp8192(18)
```

References

- [DISR] "DOD IPv6 Standards Profiles for IPv6 Capable Products", v2.0 (6/15/2007).
- [NIST] "A Profile for IPv6 in the U.S. Government", v1.0 (1/31/2007).
- [4301] Kent, S. and K. Seo, "Security Architecture for the Internet Protocol", RFC 4301 (Dec 2005).
- [4302] Kent, S., "IP Authentication Header", RFC4302 (Dec 2005).
- [4303] Kent, S., "IP Encapsulating Security Payload (ESP)", RFC4303 (Dec 2005).
- [4306] Kaufman, C., Ed., "The Internet Key Exchange (IKEv2) Protocol", RFC 4306 (Dec 2005).

SEE ALSO

None

islShow

Displays interswitch link (ISL) information.

Synopsis **islshow**

Description Use this command to display the current connections and status of the interswitch link (ISL) for each port on a switch. The command output includes the following information:

- Node world wide name (WWN)
- Domain ID
- Switch name
- ISL connection speed, if applicable
- Bandwidth
- Trunking enabled, if applicable
- QOS - QoS enabled, if applicable
- ENCRYPT - Encryption enabled, if applicable
- COMPRESS - Compression enabled, if applicable
- CR_RECOV - Credit recovery enabled, if applicable
- FEC -Forward Error Correction enabled, if applicable

When issued on a switch that is part of a logical fabric configuration, the islShow command displays logical interswitch links (LISLs) along with regular ISLs. However, speed (sp) displays N/A for logical ports. The bandwidth (bw) displayed is the sum of the bandwidth of all extended ISLs (XISLs) that form the LISL. A shared ISL (XISL) connects the base switches and is shared by different logical fabrics. It allows devices to communicate with each other within the logical fabric.

Connection speed is not applicable to LE_Ports or VE_Ports. For these port types, speed displays as "sp:-----".

Beginning with Fabric OS 7.1.0, this command will display the neighbor WWN information even when the ISL is segmented during exchange link parameter (ELP) or post ELP segmentation phase. In a fabric that has switches running Fabric OS 7.1.0 and pre-7.0.1 firmware, the neighbor information of the segmented links is displayed only on switches running Fabric OS 7.1.0 firmware. In a rare situation when ELP is not exchanged between two switches, the neighbor WWN information will be displayed only on the responder side that received ELP.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To execute islshow in a base fabric:

```
switch:user> islshow
1: 2->300 10:00:00:05:1e:43:00:00 100 DCX \
    sp: 8.000G bw: 32.000G TRUNK QOS
2: 8-> 3 10:00:00:05:1e:41:8a:d5 30 B5300\
    sp: 4.000G bw: 16.000G TRUNK QOS
3: 19-> 10 10:00:00:05:1e:41:43:ac 50 B300 sp:\
    8.000G bw: 64.000G TRUNK
```

To execute islshow in a logical fabric:

```
switch:user> islshow
1: 33-> 29 10:00:00:60:69:80:4f:84 3 B3200 \
    sp: 2.000G bw: 4.000G TRUNK
2: 39-> 7 10:00:00:60:69:45:68:04 4 B3850 \
    sp: 2.000G bw: 8.000G TRUNK
3: 41-> (incompatible)
4: 47-> (incompatible)
5: 95-> 0 10:00:00:05:1e:01:0b:4a 15 B5100 \
    sp: 2.000G bw: 2.000G TRUNK
6:162->160 10:00:00:60:69:e2:09:fa 5 B2400 \
    sp:----- bw: 0.001G
7:384-> 16 10:00:00:05:1e:37:02:73 39 DCX \
    sp:----- bw: 10.000G
8:385-> 16 10:00:00:05:1e:37:02:73 43 B53000 \
    sp:----- bw: 11.000G
```

To display interswitch links with encryption or compression enabled:

```
switch:user> islshow
1: 33-> 29 10:00:00:60:69:80:4f:84 3 B3200 \
    sp: 2.000G bw: 4.000G TRUNK ENCRYPT
2: 39-> 7 10:00:00:60:69:45:68:04 4 B3850 \
    sp: 2.000G bw: 8.000G ENCRYPT COMPRESS
2: 38-> 6 10:00:00:60:69:45:68:03 4 B3850 \
    sp: 2.000G bw: 8.000G COMPRESS
```

To display interswitch links with Credit Recovery and Forward Error correction enabled:

```
switch:user> islshow
1: 95-> 26 10:00:00:05:33:7e:69:c4 1 sw0 \
    sp: 16.000G bw: 16.000G CR_RECOV FEC
2:164-> 28 10:00:00:05:33:7e:69:c4 1 sw0 \
    sp: 16.000G bw: 16.000G TRUNK QOS CR_RECOV FEC
3:165-> 30 10:00:00:05:33:7e:69:c4 1 sw0 \
    sp: 16.000G bw: 16.000G QOS CR_RECOV FEC
4:166-> 31 10:00:00:05:33:7e:69:c4 1 sw0 \
    sp: 4.000G bw: 4.000G QOS CR_RECOV
5:167-> 29 10:00:00:05:33:7e:69:c4 1 sw0 \
    sp: 16.000G bw: 16.000G CR_RECOV FEC
6:340-> 27 10:00:00:05:33:7e:69:c4 1 sw0 \
    sp: 16.000G bw: 16.000G QOS CR_RECOV FEC
```



```

7:341-> 25 10:00:00:05:33:7e:69:c4 1 sw0 \
      sp: 16.000G bw: 16.000G QOS CR_RECOV FEC
8:342-> 32 10:00:00:05:33:7e:69:c4 1 sw0 \
      sp: 4.000G bw: 4.000G QOS CR_RECOV
9:343-> 24 10:00:00:05:33:7e:69:c4 1 sw0 \
      sp: 16.000G bw: 16.000G CR_RECOV FEC

```

To display interswitch links with D_Port enabled:

```

switch:user> islshow
 1: 24->343 10:00:00:05:1e:e5:e4:00 1 D-Port_DCX      sp: 16.000G bw: 16.000G
CR_RECOV FEC
 2: 25->341 10:00:00:05:1e:e5:e4:00 1 D-Port_DCX      sp: 16.000G bw: 16.000G
CR_RECOV FEC
 3: 26-> 95 10:00:00:05:1e:e5:e4:00 1 D-Port_DCX      sp: 16.000G bw: 16.000G
CR_RECOV FEC
 4: 27->340 10:00:00:05:1e:e5:e4:00 1 D-Port_DCX      sp: 16.000G bw: 16.000G
CR_RECOV FEC
 5: 29->166 10:00:00:05:1e:e5:e4:00 1 D-Port_DCX      sp: 16.000G bw: 16.000G
CR_RECOV FEC
 6: 30->165 10:00:00:05:1e:e5:e4:00 1 D-Port_DCX      sp: 16.000G bw: 16.000G QOS
CR_RECOV FEC

```

To display the neighbor switch WWN for the segmented ISLs during ELP and post ELP phase:

```

switch:user> islshow
[... ]
1:9-> 2 10:00:00:05:1e:a3:00:59 (incompatible)
[... ]

```

SEE ALSO [switchShow](#), [trunkShow](#)

itemList

Lists parameter syntax information.

Synopsis *item_list = element | element white item_list*

element = item | item - item

item = num | slot [white]/ [white] num

slot = num

num = hex | int

int = int digit | digit

hex = 0x hex digit | hex hex digit

digit = 0|1|2|3|4|5|6|7|8|9

hex digit = digit |A|B|C|D|E|F|a|b|c|d|e|f

*white = *["\\t\\f\\r","]*

Description

All kernel diagnostics have at least one item list parameter to specify which ports to test. The normal default value for this parameter is to select everything.

This is not a command; rather, it is a common parameter to many commands.

If you want to restrict the items to be tested to a smaller set, the parameter value is an item list with the following characteristics:

- It is a comma-separated list of items.
- Each item in the list can be a single element or a range of elements separated by a dash character or a combination of both. For example, "0,3,4-6,1", "0,1,3,4,5,6", and "0 3 4 - 6 1" each select items 0, 1, 3, 4, 5, 6, and 7.
- Spaces and tab stops are skipped.
- Each item might be preceded by an optional slot number followed by a slash ("/").

Besides the syntax rules, there are also some grammatical restrictions on the slot numbers:

- Once specified, a slot selection applies to all items to the right of the slot selections until the next slot selection or the end of the item list. For example, "1/0 - 15" and "1/0 - 1/15" are equivalent.
- If no slot number is specified, user port lists are specified by area number. For instance, "0, 16, 32" and "1/0, 2/0, 3/0" specify the same ports on a 16-port/blade system. On that same system, "1/0, 16, 32" is not a valid list: even though it is legal syntax, the ports do not exist.
- If no slot number is specified, all lists except user port lists use the default slot 0.
- No list type except for user port lists may specify multiple conflicting slot numbers. For instance, "1/0, 2/0, 3/0" is a valid user port list but is not valid for any other type of list.

In the case of conflicting settings within a single item list, an error is generated, as described earlier. In the case of multiple item list parameters, the last one on the command line overrides previous settings.

The exact type of list varies, depending on the test and the parameter; however, the most common are blade ports and user ports. A list of blade ports is most commonly used by ASIC-level tests such as turboRamTest and represents which ports on the current blade (specified with --slot number) are tested. A list of user ports is used by higher-level tests to specify which user-accessible external ports within the current switch (selected during Telnet login) are tested. When specified in an item list, user ports might be specified by either the area portion of the ports Fibre Channel address or with slot/port notation. For nonblade systems, the port number on the silkscreen is the area number, so the two notations are identical.

For item list parameters, the parameter type is PT_LIST and the list type is one of the following:

Type	Grouping	Description
BPORTS	Blade	Blade ports, internal and external ports.
UPOINTS	Switch	User ports, ports with external connections.
QUADS	Blade	Quadrants, group of (normally 4) ports.
CHIPS	Blade	Chips, Asics within a blade.
MINIS	Blade	Mini switches.
SLOTS	Chassis	Slots.
INDEX	N/A	Anything.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples None

SEE ALSO [portLedTest](#), [portLoopbackTest](#)

killTelnet

Terminates an open Telnet session.

Synopsis **killtelnet**

Description Use this command to terminate an open Telnet session. The command lists all current Telnet and serial port login sessions and information such as session number, login name, idle time, IP address of the connection, and timestamp of when the login session was opened. The command prompts you to specify the number of the session you want to terminate. The list of open sessions displayed with killTelnet includes your current session; be sure not kill your own Telnet session.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Examples To terminate an open Telnet connection:

```
switch:admin> killtelnet
Collecting login information....Done
List of telnet sessions (3 found)
```

Session No	USER	TTY	IDLE	FROM	LOGIN@
0	root0	ttyS0	1:17m	-	5:13pm
1	admin0	pts/0	16.00s	192.168.130.29	6:29pm
2	admin0	pts/1	3.00s	192.168.130.29	6:31pm

```
~~~~~
Enter Session Number to terminate (q to quit) 1
Collecting process information... Done.
You have opted to terminate the telnet session:-
logged in as "admin0 ", from "192.168.130.29 "
since " 6:29pm" and has been inactive for "16.00s ",
the current command executed being: "-rbash ".
The device entry is: "pts/0 ".
This action will effectively kill these process(es):-
USER          PID ACCESS COMMAND
/dev/pts/0    root      12868 f....  login
              root      12869 f....  login
              root      12877 f....  rbash
Please Ensure (Y/[N]): y
killing session.... Done!
Collecting login information....Done
List of telnet sessions (2 found)
```

Session No	USER	TTY	IDLE	FROM	LOGIN@
0	root0	ttyS0	1:17m	-	5:13pm
1	admin0	pts/1	3.00s	192.168.130.29	6:31pm

```
~~~~~
Enter Session Number to terminate (q to quit) q
```

SEE ALSO None

IdapCfg

Maps LDAP AD server roles to default switch roles.

Synopsis

```
Idapcfg --maprole Idaprole switchrole

Idapcfg --unmaprole Idaprole

Idapcfg --mapattr Idaprole [-l LF_ID_list]
                        [-h LF_ID] [-c chassis_role]

Idapcfg --show

Idapcfg --help
```

Description

Use this command to map a Lightweight Directory Access Protocol (LDAP) Active Directory (AD) server role to one of the default roles available on a switch. This command also provides options to add Brocade and vendor-specific attributes or remove an existing mapping.

This command creates an alias for a customer-defined group which allows a user belonging to that group to login to the switch with the permissions associated with the mapped switch role.

This command supports one-to-one role mapping only. For example, you might map the "SAN administrator" role on the AD server to the "admin" role on the switch, or the "SAN maintenance" role to the switch "operator" role. But the command fails if you attempt to map an already mapped AD server role.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as input an action and its associated arguments. When no operand is specified, the command prints the usage.

This command has the following operands:

--maprole

Maps an LDAP role to a specified switch role. The following operands are required:

Idaprole

Specifies the LDAP role to be mapped to a switch role. The role must be a valid AD server role.

switchrole

Specifies the switch role to which the LDAP role is mapped. Valid switch roles include the following:

- admin
- user
- switchadmin
- zoneadmin
- fabricadmin
- basicswitchadmin
- operator
- securityadmin

--unmaprole

Removes the mapping between an LDAP role and a switch role. Use the --show option for a listing of existing mappings. The following operand is required:

ldaprole

Specifies the LDAP AD sever role to be removed from the mapping.

--mapattr *ldaprole*

Adds the specified attributes to an existing LDAP role. Specify one or more of the following operands:

-l *LF_ID_list*

Specifies the Logical Fabrics to be added to the LDAP role.

-h *LF_ID*

Specifies the home Logical Fabric. Home LF Role is the default logical switch context when you have no permission to log in to a particular logical switch context or over management interface.

-c *chassis_role*

Specifies the access permissions at the chassis level. Valid chassis roles include the default roles except root and any of the user-defined roles.

--show

Displays a table of existing mappings between LDAP roles and their corresponding switch role.

--help

Displays the command usage.

Examples

To display current LDAP and switch role map:

```
switch:admin> ldapcfg --show
LDAP Role | Switch Role | Home VF | Chassis Role
-----|-----|-----|-----
ldaprole | admin=1-128 | 25      | admin
-----|-----|-----|-----
```

To map an LDAP AD server role to the switch role of "operator":

```
switch:admin> ldapcfg --maprole SANoperator operator  
LDAP role SANoperator has been successfully mapped.
```

```
switch:admin> ldapcfg --unmaprole SANoperator  
LDAP role SANoperator has been successfully unmapped.
```

To add attributes to an LDAP AD server role:

```
switch:admin> ldapcfg --mapattr ldaprole -l "user=1-10;admin=11-128" -c admin
```

SEE ALSO [aaaConfig](#), [userConfig](#)

IfCfg

Configures and displays logical fabrics.

Synopsis

IfCfg [--show | --showall] -cfg

IfCfg [--show | --showall] -lisl [-v]

IfCfg [--show -xisl [*slot*]*port* | --showall -xisl

IfCfg --lislenable

IfCfg --help

Description

Use this command to display logical fabric configuration information, to determine the status of logical interswitch links (LISLs), to enable LISLs between logical switches, and to display information about the XISLs and LISLs associated with each XISL.

A logical switch is a partition created on a physical switch that shares the physical resources of the base fabric while functioning as an independent entity in a "virtual" logical fabric. The logical fabric sits on top of a base physical fabric and ties otherwise disconnected logical switches together to share the same connectivity and physical resources. At the same time, the logical fabric provides protocol and management isolation, and each logical fabric is independently scalable.

The display options provided with this command show the logical fabric configuration for a given logical switch context or for a chassis context. Each logical switch displays only the user ports that are configured to be part of that switch instance. The switch context is defined by the fabric ID. The default context is the base logical switch that you are placed in upon login. The default logical switch context is defined by the fabric ID 128. To change the context, use the setContext command.

When issued with the -cfg option, this command displays the following information:

Chassis

Numeric identifier for the chassis.

Chassis WWN

Chassis world wide name.

Base switch Domain

The domain ID of the base switch.

For each logical switch, the following information is displayed:

Logical Switch

Numeric identifier for the logical switch within the chassis.

Base switch

Yes or No. This field indicates whether or not this logical switch is the base switch.

Fabric Id

The logical switch fabric ID (FID).

State

The state of the logical switch: Online or Offline.

Switch WWN

The logical switch world wide name.

When issued with the `-lisl` option, the command displays the following information:

FID

Fabric ID of the logical switch.

Port

Number of the logical LISL port.

remote-domain

Domain ID of the base switch in the remote chassis.

Name

Switch name.

State

Port state: Online or Offline.

Associated physical ports

Physical ports associated with the LISL ports.

When `IfCfg` is issued within a logical switch context, only the configuration regarding that switch and the fabrics reachable from that switch is displayed. When the command is issued in a chassis context the information for all chassis in the base fabric reachable from the current chassis is displayed. Executing chassis-level commands requires chassis permissions. Refer to the `userConfig` command for information on setting chassis user permissions.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on hardware platforms that are Virtual Fabric-aware and run Fabric OS v6.2.0 or later. Refer to the Fabric OS Administrator's Guide for specific hardware support.

You cannot use the `portEnable` command on logical ports. Use `IfCfg` with the `--lislenable` option to re-enable disabled LISL ports on a logical switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

--show -cfg

Displays information for the fabric ID set by the context in all chassis reachable from the base fabric.

--showall -cfg

Displays information for all fabrics in all chassis reachable from the chassis context in which the command is executed. This option requires chassis permissions.

--show -lisl

Displays status information about the LISLs in the logical switch set by the context.

--showall -lisl

Displays status information of all LISLs in the chassis. This option requires chassis permissions.

-v

Displays, in addition to the LISLs, the physical ports on the base switch that are associated with the LISL ports. This operand is optional with the -lisl option.

--show -xisl [slot/port]

Displays the XISL and the LISLs associated with it for the specified XISL port. For each LISL port, the output displays the FID, LISL State (online/offline) and the local and remote logical switch WWNs. This command must be executed from the base switch.

--showall -lisl

Displays the XISL connections between two base switches for all XISL ports. This command must be executed from the base switch.

--lislenable

Re-enables all LISLs in the fabric that were disabled either due to -lisldisable option used during logical switch creation or by some conflict or error condition in the fabric. This command provides the option of manually reestablishing the LISLs after the error condition has been resolved.

--help

Displays the command usage.

Examples

To display logical fabric information for FID 2 in all chassis reachable from the base fabric.

```
switch:admin> lfcfg --show -cfg

----- Chassis: 1 -----
Chassis WWN: 10:00:00:05:1e:39:82:64
Number of Partitions: 2
Base switch domain: 1

Logical switch: 2   Base switch: YES       Fabric Id: 2
State: Online(1)   Switch WWN: 10:00:00:05:1e:39:81:67

----- Chassis: 2 -----
Chassis WWN: 10:00:00:05:1e:0b:a4:5e
Number of Partitions: 2
Base switch domain: 2

Logical switch: 2   Base switch: YES       Fabric Id: 2
State: Online(1)   Switch WWN: 10:00:00:05:1e:0b:a4:41
```

To display information for all fabrics in all chassis reachable from the base fabric:

```
switch:admin> lfcfg --showall -cfg

----- Chassis: 1 -----
Chassis WWN: 10:00:00:05:1e:39:82:64
Number of Partitions: 2
Base switch domain: 1

Logical switch: 2   Base switch: YES       Fabric Id: 2
State: Online(1)   Switch WWN: 10:00:00:05:1e:39:81:67

Logical Switch: 1   Base switch: NO        Fabric Id: 1
```

```

State: Online(1)      Switch WWN: 10:00:00:05:1e:39:81:66

----- Chassis: 2 -----
Chassis WWN: 10:00:00:05:1e:0b:a4:5e
Number of Partitions: 2
Base switch domain: 2

Logical switch: 2      Base switch: YES      Fabric Id: 2
State: Online(1)      Switch WWN: 10:00:00:05:1e:0b:a4:41

Logical Switch: 1      Base switch: NO      Fabric Id: 1
State: Online(1)      Switch WWN: 10:00:00:05:1e:0b:a4:40

```

To display the LISLs in the logical switch:

```

switch:admin> lfcfg --show -lisl
FID      Port#    remote-domai Name    State
2        384      24          sw0    PT Online

```

Displays status information about the LISLs in the logical switch set by the context:

```

switch:admin> lfcfg --show -lisl -v

ID Port# remote-domain Name State Associated Physical Ports
2  384   24          sw0  PT Online 1/29, 2/41, 3/33, 4/24

```

To display information about all LISLs in the chassis:

```

switch:admin> lfcfg --showall -lisl

FID      Port#    remote-domain  Name    State
2        384      24            sw0     PT Online
3        385      24            sw0     PT Online

```

To display all XISLs and the LISLs associated with each XISL:

```

switch:admin> lfcfg --showall -xisl

XISL Port No. : 12/30
LISL Pt. FID LISL State Local LS WWN      Remote LS WWN

450  10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:58:b2:5a
451  20  PortOnline 10:00:00:05:1e:48:f8:03 10:00:00:05:1e:58:b2:5b
452  30  PortOnline 10:00:00:05:1e:48:f8:04 10:00:00:05:1e:5b:69:d5
453  10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:5b:69:d4
454  30  PortOnline 10:00:00:05:1e:48:f8:04 10:00:00:05:1e:58:bd:6b
455  10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:58:bd:6a

XISL Port No. : 12/31
LISL Pt. FID LISL State Local LS WWN      Remote LS WWN
448  10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:0b:87:dd
449  20  PortOnline 10:00:00:05:1e:48:f8:03 10:00:00:05:1e:0b:87:de

```

To display a specific XISL and the LISLs associated with it

```
switch:admin> lfcfg --show -xisl 12/31
```

```
XISL Port No. : 12/31
```

LISL Pt.	FID	LISL State	Local LS WWN	Remote LS WWN
448	10	PortOnline	10:00:00:05:1e:48:f8:02	10:00:00:05:1e:0b:87:dd
449	20	PortOnline	10:00:00:05:1e:48:f8:03	10:00:00:05:1e:0b:87:de

SEE ALSO None

licenseAdd

Adds a license key to a switch.

Synopsis **licenseadd** *license*

Description Use this command to add a license key to a switch.

Some features of the switch and the fabric to which it is connected are optional, licensed products. Without a valid license installed for such products, their services are not available.

A license key is a string of any length consisting of upper- and lowercase letters and numbers. License keys are case-sensitive. The license must be entered exactly as issued. The system may accept an incorrectly entered license, but the licensed products will not function. After entering the license, use the `licenseShow` command to validate the product associated with the license. If no licensed products are shown, the license is invalid.

After you enter a license, the licensed product is generally available immediately without requiring further action. The following exceptions apply:

- Some licenses may require you to refresh the ports in order to activate the license. Depending on your system, use the `portDisable/portEnable`, `switchDisable/switchEnable` or `chassisDisable/chassisEnable` commands to refresh the ports.
- Some licenses may require that you reboot the switch to activate the license. The `licenseAdd` command will prompt you to reboot the switch.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

license

Specifies the license key to be installed. This operand is required.

Examples To add a license key to the switch:

```
switch:admin> licenseadd DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA
adding license-key [DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA]
```

SEE ALSO [licenseRemove](#), [licenseShow](#)

licenseIdShow

Displays the system license ID.

Synopsis **licenseidshow**

Description Use this command to display the license ID of the system.

Some features of the switch and the fabric are optional, licensed products. Without a license installed for such products, the services provided by these features are not available.

This command displays the system license ID used for generating and validating licenses on the system. The license ID format consists of eight pairs of hexadecimal values, separated by colons. Each hexadecimal value is between 00 (0) and FF (255).

Notes While the format of this identifier might be similar or even identical to other identifiers in the system, no inferences should be made about the relationships between them as they are subject to change independently of one another.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the license ID:

```
switch:admin> licenseidshow  
a4:f8:69:33:22:00:ea:18
```

SEE ALSO [licenseAdd](#), [licensePort](#), [licenseRemove](#), [licenseShow](#), [licenseSlotCfg](#)

licensePort

Manages Dynamic Ports On Demand (DPOD) licenses.

Synopsis **licenseport --release** *port1*[-*port2*]

licenseport --reserve *port1*[-*port2*]

licenseport --show

licenseport --method *dynamic* | *static*

Description Use this command to manage and display Dynamic Ports on Demand (DPOD) license assignments.

Dynamic Ports On Demand (DPOD) is an optional feature available on all embedded platforms. DPOD takes the expansion capability of static Ports On Demand (POD) and adds the flexibility of activating any available port as long as a valid license is available. In Static mode, POD allows only specific fixed ports to be activated or licensed. With DPOD, any physical port can be made active as long as the total number of licenses is not exceeded.

The Dynamic POD feature assigns ports to the POD license in the order in which they come online until they equal the number of online licensed ports. This command provides the mechanism to make adjustments to the dynamic assignments by reserving assignments for specific ports in the event that there are more online ports than the purchased POD licenses can support.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

On unsupported platforms, this command returns a "not supported" message.

Operands This command has the following operands:

port1[-*port2*]

Specifies a single port or a range of ports to which to assign or from which to remove a POD license. A port must be specified when releasing or reserving a port.

--release

Releases a license assignment from the specified ports when the switch is using the Dynamic POD method. The ports must be offline for this command to succeed.

--reserve

Reserves a license assignment for the specified ports when the switch is using the Dynamic POD method. The ports must be offline for this command to succeed.

--show

Displays the POD license assignments.

--method

Selects the POD method as one of the following:

dynamic

Selects the dynamic POD method.

static

Selects the static POD method.

The --method operand is not supported on Brocade G620 switch.

Examples

To activate Dynamic Ports On Demand:

```
switch:admin> licenseport --method dynamic
The POD method has been changed to dynamic.
Please reboot the switch now for this change to take effect.
```

To release a port from a Dynamic POD license assignment and to display the assignments:

```
switch:admin> portdisable 22
switch:admin> licenseport --release 22
switch:admin> licenseport --show
24 ports are available in this switch
  1 POD license is installed
    Dynamic POD method is in use
24 port assignments are provisioned for use in this switch:
  12 port assignments are provisioned by the base switch license
  12 port assignments are provisioned by the first POD license
* 0 more assignments are added if the second POD license
  is installed
23 ports are assigned to installed licenses:
  12 ports are assigned to the base switch license
  11 ports are assigned to the first POD license
Ports assigned to the base switch license:
  1, 2, 3, 5, 6, 7, 8, 10, 11, 14, 15, 19
Ports assigned to the first POD license:
  0, 4, 9, 12, 13, 16, 17, 18, 20, 21, 23
Ports assigned to the second POD license:
  None
Ports not assigned to a license:
  22
1 license reservation is still available for use by unassigned ports.
```

To reserve a Dynamic POD license assignment for a range of ports and to display the assignments:

```
switch:admin> portdisable 5-10
switch:admin> licenseport --reserve 5-10
switch:admin> licenseport --show
48 ports are available in this switch
  Full POD license is installed
    Dynamic POD method is in use
48 port assignments are provisioned for use in this switch:
  24 port assignments are provisioned by the base switch license
  24 port assignments are provisioned by a full POD license
9 ports are assigned to installed licenses:
  9 ports are assigned to the base switch license
  0 ports are assigned to the full POD license
Ports assigned to the base switch license:
  4, 5*, 6*, 7*, 8*, 9*, 10*, 16, 31
Ports assigned to the full POD license:
  None
Ports not assigned to a license:
  0, 1, 2, 3, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23
```


licensePort

```
24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40  
41, 42, 43, 44, 45, 46, 47
```

```
39 license reservations are still available for use by unassigned ports  
6 license assignments are held by offline ports (indicated by *)
```

To disable Dynamic Ports On Demand:

```
switch:admin> licenseport --method static  
The POD method has been changed to static.  
Please reboot the switch now for this change to take effect.
```

SEE ALSO [licenseAdd](#), [licenseRemove](#), [licenseShow](#), [licenseShow](#)

licenseRemove

Removes or deactivates a license key.

Synopsis `licenseremove license`

Description Use this command to remove an existing license key from a switch or to deactivate the license key. The existing license key must be entered exactly as shown by the licenseShow command. License keys are case-sensitive.

When the key has been removed, use the licenseShow command to verify that the key and the associated product have been uninstalled. You may need to reboot the switch after removing a license. For a switch that has no licenses installed, licenseShow displays "No licenses." Also, you may need to refresh the ports using the portDisable/portEnable, switchDisable/switchEnable, or chassisDisable/chassisEnable commands.

Upgradeable licenses, such as slot-based licenses or Universal Time-based licenses cannot be permanently removed; they remain in the database but are not displayed in the licenseShow output.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operand is required:

license Specifies the license key to be removed or deactivated. This operand is required.

Examples To remove a license key from the switch:

```
switch:admin> licenseremove bQebzbRdScRfc0iK
removing license key [bQebzbRdScRfc0iK]
```

To deactivate a slot-based license:

```
switch:admin> licenseremove \
    DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA \
    removing license-key \
    [DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA]
```

```
switch:admin> licenseshow
SSezcSec9RXTf0dj:
Performance Monitor license
A7N9rATZLYgFa7JBfmGEJKEtgCMHFGQMY4gfLmGAa4GA:
Advanced FICON Acceleration (FTR_AFA) license
Capacity 6
Consumed 2
Configured Blade Slots 3,4
KSYFYAtAfPGHDRJfCYQrC4Q9T9CYYmXDBJgLB:
Enhanced Group Management license
XFJXYHmPtCWC93CLgBD9BZD9AmTFgDStFDJGMLKC9FgWafgSE:
8 Gig FC license
```

licenseRemove

```
Expiry Date 03/06/2009
License is expired
Hf7MBEEGCFNmTAWXXF99RtHXQN4RRtM3mLGtrWZLAMaTaAY9EB:
Storage Application Services license
Expiry Date 03/07/2009
```

SEE ALSO [licenseAdd](#), [licenseIdShow](#), [licenseShow](#)

licenseShow

Displays current license keys.

Synopsis **licenseshow**

Description Use this command to display current license keys, along with a list of licensed products enabled by these keys. Depending on the type of license, this command displays the following information:

Permanent licenses

- License key
- Associated product

Temporary and universal time-based licenses

- License key
- Associated product
- Expiration date or expiration notice if the license has expired

Slot-based licenses

- License key
- Associated product
- Capacity (number of slots purchased)
- Consumed (number of slots configured to use the license)
- Configured Blade Slot Positions (slot numbers of the configured blade slots)

When no licenses are installed, the message "No license installed on this switch" is displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

On the Brocade DCX and DCX 8510 chassis family running Fabric OS v7.0.0 and later, the interchassis link (ICL) license is displayed as an ICL Ports on Demand (POD) license. The first ICL POD license indicates half of the ICL ports; the second ICL POD license indicates all of the ICL ports. When you upgrade a DCX to Fabric OS v7.0.0, the license display does not change. Refer to the example section for an illustration.

Operands None

Examples To display the license keys on a switch with permanent licenses installed:

```
switch:admin> licenseshow
S9bddb9SQbTAceeC:
    Fabric license
eezeRRySff0fSe:
    Remote Switch license
bzbzRcbcSc0c0SY:
    Remote Fabric license
dSeR9RcSeeTfSAq:
    Extended Fabric license
```

```

RyeSzRScycTzft09:
    Entry Fabric license
RyeSzRScycazft0G:
    Trunking license
RyeSzRScycS0ft09:
    4 Domain Fabric license

```

To display the license keys on a switch with temporary (expired) licenses installed:

```

switch:admin> licenseShow
7QmYFYJrmDgE9tTS4AYXB9trYSGtMtrQZSTK4ZSC7FC9ZAYAgE:
    Integrated Routing license
    Expiry Date 01/16/2008
    License is expired
33YBfZfKZ3tQKrRJJRtgmS3JDtCL99P4fYrJYQP7GffS4ASmNE:
    Enterprise Bundle license
    Expiry Date 01/16/2008
    License is expired

```

To display the license keys on a switch with universal time-based licenses:

```

switch:admin> licenseshow
DAmHTPgQ7KDtKrEYQC7X7STF9HJDL7TmTWrmZPmSTSE49AEfaE:
    Trunking license
    Expiry Date 11/11/2008
    License is expired
H47CFSa93aKgKJM9NWMYEMaLrATQWDHCgHfZftWGGgNCYAJaBA:
    High-Performance Extension over FCIP/FC license
    Expiry Date 12/20/2008

```

To display a slot-based 10G FC and 10G Gigabit Ethernet license on a Brocade DCX 8510-8:

```

switch:admin> licenseshow
tKLFTNAPDQtEPHFcf9YSPrafrTJCQALP49fXEGHA4SPB:
    10 Gigabit FCIP/Fibre Channel (FTR_10G) license
    Capacity 3
    Consumed 3
    Configured Blade Slots 1,3,12

```

```

switch:admin> slotshow -m

```

Slot	Blade Type	ID	Model Name	Status
1	SW BLADE	97	FC16-32	ENABLED
2	UNKNOWN			VACANT
3	AP BLADE	75	FX8-24	ENABLED
4	UNKNOWN			VACANT
5	CORE BLADE	98	CR16-8	ENABLED
6	CP BLADE	50	CP8	ENABLED
7	CP BLADE	50	CP8	ENABLED
8	CORE BLADE	98	CR16-8	ENABLED
9	UNKNOWN			VACANT
10	UNKNOWN			VACANT
11	UNKNOWN			VACANT
12	SW BLADE	96	FC16-48	ENABLED

To display an ICL license on a Brocade DCX 8510-8:

```
switch:admin> licenseshow  
X3ffNTZM9CNmM4SKFLYTGS4WmCRCgAZZBJDTB:  
Inter Chassis Link (2nd POD) license
```

To display an ICL license on a Brocade DCX before and after a firmware upgrade to Fabric OS v7.0.0.

```
switch:admin> licenseshow  
X3ffNTZM9CNmM4SKFLYTGS4WmCRCgAZZBJDTB:  
Inter Chassis Link (16 link) license
```

To display the WAN Rate upgrade licenses on Brocade 7840 switch:

```
switch:admin> licenseshow  
gFEfTam4YHDLGXZBZ7RHHMBGmrrS3aNWgANKggEAGAJB:  
WAN Rate Upgrade 1 license  
ARSNJE4GC9aJ4Y7FrBgYaEWWBfKK3EMRFHSBhtHAEERB:  
WAN Rate Upgrade 2 license
```

SEE ALSO [licenseAdd](#), [licenseIdShow](#), [licenseRemove](#)

licenseSlotCfg

Configures and displays slot-based licensed features.

Synopsis

```
licenseslotcfg --add feature slot
licenseslotcfg --remove feature slot
licenseslotcfg --show
licenseslotcfg --help
```

Description

Use this command to configure and manage licenses for the Brocade FX8-24 extension blade on the slot where the blade is installed.

Slot-based licenses allow you to select the slots the license will enable up to the purchased capacity and thereby increase existing capacity without disrupting the slots for which licensed features are already enabled.

There is a separate slot-based license key for each licensed feature supported on the blade.

The Brocade FX8-24 supports slot-based license keys for each of the following features:

- 10 GbE license - Enables the two 10GbE ports on the Brocade FX8-24.
- Advanced Extension license - Enables FCIP Trunking and Adaptive Rate Limiting.
- Advanced FICON Acceleration license - Accelerates FICON tape read and write and IBM Global Mirror data replication operations over distance.

The Brocade 7840 supports slot-based license keys for each of the following features:

- WAN Rate Upgrade 1 - Provides additional throughput up to 10 Gbps.
- WAN Rate Upgrade 2 - Provides unlimited throughput as supported by the hardware.

A license key with the specified capacity must be installed with the licenseAdd command before you can enable the feature on a specified slot with the licenseSlotCfg command. Refer to the Fabric OS Administrator's Guide for more information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands	<i>feature</i>	Specifies the licensed feature to be added at the specified slot. The feature is specified as a tag from the following set of licenses:
	FTR_AE	Advanced Extension license
	FTR_AFA	Advanced FICON Acceleration license
	FTR_10G	10 Gigabit Ethernet license

FTR_UPG1	WAN Rate Upgrade 1 license
FTR_UPG2	WAN Rate Upgrade 2 license
slot	Specifies the slot number for the Brocade FX8-24 extension blade. This number corresponds to the physical blade slot number on the chassis.
--add	Adds a slot-based license to the specified slot.
--remove	Removes a slot-based license from the specified slot. This operation frees up the license to be assigned to another slot. You must disable the applications that use the license on this slot before you can deactivate the license.
--show	Displays slot assignments for all slot-based licenses in the chassis.
--help	Displays the command usage.

Examples

To configure the blade slots 3, 4, 11, and 12 to enable the license on these slots:

```
switch:admin> licenseslotcfg --add FTR_AE 3
Blade slot-3 added to FTR_AE slot-based license configuration
Remaining capacity for FTR_AE slot-based license = 7

switch:admin licenseslotcfg --add FTR_AE 4
      Blade slot-4 added to FTR_AE slot-based license configuration
Remaining capacity for FTR_AE slot-based license = 6

switch:admin> licenseslotcfg --add FTR_AE 11
      Blade slot-11 added to FTR_AE slot-based license configuration
Remaining capacity for FTR_AE slot-based license = 5

switch:admin> licenseslotcfg --add FTR_AE 12
Blade slot-12 added to FTR_AE slot-based license configuration
Remaining capacity for FTR_AE slot-based license = 4
```

To display the enabled licenses:

```
switch:admin> licenseslotcfg --show
FTR_10G license - blade slots configured = 1,3,5,12
FTR_AE license - blade slots configured = 3,4,11,12
FTR_AFA license - blade slots configured = 3,4
```

To deactivate the Advanced Extension license on slots 3 and 12, and to display the results:

```
switch:admin> licenseslotcfg --remove FTR_AE 3
Blade slot-3 removed from FTR_AE slot-based
license configuration

switch:admin> licenseslotcfg --show
FTR_10G license - blade slots configured = 1,3,5,12
FTR_AE license - blade slots configured = 12
```



```
FTR_AFA license - blade slots configured = 3,4

switch:admin> licenseslotcfg --remove FTR_AE 12
Blade slot-12 removed from FTR_AE slot-based license configuration

switch:admin> licenseslotcfg --show
FTR_10G license - blade slots configured = 1,3,5,12
FTR_AFA license - blade slots configured = 3,4
```

To view the WAN Rate Upgrade licenses:

```
switch:admin> licenseslotcfg --show
licenseslotcfg: Command is not supported on this platform
```

SEE ALSO [licenseAdd](#), [licenseIdShow](#), [licenseRemove](#)

linkCost

Sets or displays the Fabric Shortest Path First (FSPF) cost of a link.

Synopsis **linkcost** *[[slot/]port [cost]]*

Description Use this command to set or display the cost of an interswitch link (ISL). The cost of a link is a dimensionless positive number. The Fabric Shortest Path First (FSPF) protocol compares the cost of various paths between a source switch and a destination switch by adding the costs of all the ISLs along each path. FSPF chooses the path with minimum cost. If multiple paths exist with the same minimum cost, FSPF distributes the load among these paths. The default link cost value is 500.

When executed without operands, the command displays the current cost of each port on the switch, including non-ISLs. An E_PORT suffix is appended to the interface number of active ISLs. If a static cost is assigned to a port, a STATIC suffix is appended to the link cost. In this case, only the current link cost displays. Use `interfaceShow` to display both the default and current link costs.

Notes This command sets a non-default, "static" cost for any port except EX/VEX ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command cannot be executed on a logical ISL (LISL).

Link cost cannot be configured on the AE_Ports. Static link costs configured on ports prior to the port becoming an AE_Port are cleared and reset to the default link cost of 7000 when the AE_Port comes online.

Operands This command has the following operands

slot

For bladed systems only, specifies the slot number for which to set or display the cost, followed by a slash (/).

port

Specifies the port number for which to set or display the cost, relative to its slot for bladed systems. Use `switchShow` to list of valid ports.

cost

Specifies the static cost of the link connected to the specified port. Recommended cost values are 0 through 32765. Setting static link cost values above 32765 will cause access problems. When you set a link cost value between 32766 and 65534, some parts of the fabric may become inaccessible. When you set the maximum link cost value of 65535, the port will become unusable. In either case, the command displays an appropriate warning message, and you are prompted to continue or to cancel and reissue the command with a lower link cost value. A value of 0 removes the static cost and the port reverts to its default link cost. If cost is not specified, the command displays the current cost of the specified port.

Examples To display the link costs for all ports on a switch:

```
switch:admin> linkcost
      Port          Cost
-----
1/0   (E_PORT)     500
1/1           500
1/2           500
1/3           500
1/4           500
1/5           500
1/6           500
1/7           500
1/8           500
1/9   (E_PORT)     500
1/10          500
1/11          500
1/12          500
1/13          500
1/14          500
1/15          500
Type <CR> to continue, Q<CR> to stop:
```

To set the ISL cost on a port:

```
switch:admin> linkcost 1/9 1000
```

To display the new cost value on the same port:

```
switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost    1000 (STATIC)
```

To delete the cost value and reset to default:

```
switch:admin> linkcost 1/9 0
```

To display the change:

```
switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost    500
```

To set the ISL cost to a value outside of the recommended range:

```
switch:admin> linkcost 1/9 32766
The link cost entered may prevent some parts of the fabric
from being accessible. If you do not want this to happen, choose n|no
and run 'linkcost' again with a value lower than 32766.
Do you want to continue? (yes, y, no, n): [no]y

switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost    32766 (STATIC)
```

To set the ISL cost to the maximum value:

```
switch:admin> linkcost 1/9 65535  
The link cost entered will cause the port to become unusable.  
If you do not want this to happen, choose n|no  
and run 'linkcost' again with a value lower than 65535.  
Do you want to continue? (yes, y, no, n): [no] n
```

SEE ALSO [interfaceShow](#), [lsDbShow](#), [topologyShow](#), [uRouteShow](#)

logicalGroup

Creates and manages groups of monitored elements.

Synopsis

```
logicalgroup --create group_name -type group_type
  [-feature feature_name -pattern value | -members member_list]

logicalgroup --delete group_name [-force]

logicalgroup --addmember group_name -members member_list

logicalgroup --delmember group_name -members member_list

logicalgroup --clone existing_group_name
  -name new_group_name

logicalgroup --update group_name -feature feature_name -pattern value

logicalgroup --restore group_name

logicalgroup --show [group_name] [-details]

logicalgroup --help
```

Description

Use this command to create and modify groups of elements that are to be monitored using the same set of thresholds. For example, you can create a group of ports that behave in a similar manner, such as UNIX ports or long-distance ports.

The elements in a group must be the same type: ports, circuits, or SFP transceivers. By creating a group of similar elements, you can manage these elements as a single entity.

The maximum number of user-defined groups is 64 per logical switch.

Notes

This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

group_name

Specifies the name of the group to be configured. The name for the group must be unique; it is not case-sensitive and can contain up to 32 characters.

member_list

Specifies the elements in the group. The member list must be enclosed in double quotation marks and can consist of the following:

Port and SFP groups:

- A single port, for example, "8" or "2/8" on bladed systems.
- A port range where the beginning and end port are separated by a dash, for example, "8-13" or "2/8-13" on bladed systems.
- A set of ports and port ranges separated by commas, for example, "3,5,7-10,15" or "2/3,2/5,3/7-10,4/15" on bladed systems.

Circuit groups:

- A single circuit in VE_Port/circuit format, for example, "33/5".
- A circuit range in VE_Port/circuit format, for example, "33/1-3".
- A set of circuits separated by commas, for example, "33/1-3,33/5".

--create *group_name*

Creates a group of monitored elements.

-type *group_type*

Specifies the type of elements present in the group. Valid types include the following:

port

The elements are FC ports.

circuit

The elements are FCIP circuits.

sfp

The elements are SFP transceivers.

-feature *feature_name*

Specifies the existing feature name for the group. Valid feature names are PORTNAME and NODEWWN.

-pattern *value*

Specifies the wildcard characters while defining the feature characteristics. The wildcard characters "" for any string, "?" for any single character, "[expr]" for one character from the set specified in the expression, or "!" for negation of the string, are supported. If "!" is specified in the pattern, the pattern must be in single quotes.

-members *member_list*

Specifies the elements that are to be in the group.

--delete *group_name* [-force]

Deletes a logical group of monitoring elements. You cannot delete a predefined group. You cannot delete a group that is used by any rules. The -force option overrides the default behavior. If a logical group is present in user-defined rules, the -force option deletes all the rules that are configured with the given group and then deletes the group.

--addmember *group_name*

Adds members to the group.

-members *member_list*

Specifies the elements that are to be added to the group.

- delmember** *group_name*
Deletes members from the group.
- members** *member_list*
Specifies the elements that are to be deleted from the group.
- clone**
Creates a replica of an existing group. The new group has all of the members of the existing group. You can further modify the newly created group. The following operands are required:
- existing_group_name*
Specifies the name of an existing group. The group can be a predefined group or a user-defined group.
- name** *new_group_name*
Specifies the name of the group to be created.
- update**
Changes the characteristic string of an existing group.
- feature** *feature_name*
Specifies the existing feature name for the group. Valid feature names are PORTNAME and NODEWWN.
- pattern** *value*
Specifies the wildcard characters while defining the feature characteristics. The wildcard characters "" for any string, "?" for any single character, "[expr]" for one character from the set specified in the expression, or '!' for negation of the string, are supported. If '!' is specified in the pattern, the pattern must be in single quotes.
- restore**
Restores the membership entries for the group.
- group_name*
Restores entries for a single specified group. The name can be a predefined or a user-defined group created with feature option.
- show**
Displays detailed information for a single group or all groups in MAPS. For each group, the group name, predefined flow, type, member count, and group members are displayed.
- group_name*
Displays information for a single specified group. The name can be a predefined or a user-defined group.
- [-details]**
Displays detailed information for each group. This operand is optional.
- help**
Displays the command usage.

Examples

To create a group with three port members:

```
switch:admin> logicalgroup --create CRITICAL_PORTS
               -type port -members "2, 10, 22"
```

To add members to a group:

```
switch:admin> logicalgroup --addmember CRITICAL_PORTS
                 -members "4, 5"
```

To delete members from a group:

```
switch:admin> logicalgroup --delmember CRITICAL_PORTS
                 -delmember "5"
```

To clone a group:

```
switch:admin> logicalgroup --clone CRITICAL_PORTS
                 -name LONG_DISTANCE_PORTS
```

To display the members of a group:

```
switch:admin> logicalgroup --show CRITICAL_PORTS
Group Name      |Predefined |Type |Member Count |Members
-----
CRITICAL_PORTS  No         Port  9           2,4,10,22
```

To delete a group:

```
switch:admin> logicalgroup --delete CRITICAL_PORTS
```

To update a group:

```
switch:admin> logicalgroup --update dynGroup -feature portname -pattern "port1*"
```

To restore a group:

```
switch:admin> logicalgroup --restore ALL_HOST_PORTS
```

To display detailed information about the group:

```
switch:admin> logicalgroup --show group1 -details
GroupName       : group1
Predefined      : No
Type            : Port
MemberCount     : 6
Members         : 2,11,20-23
Added Members   : 11
Deleted Members : 1
Feature         : PORTNAME
Pattern         : port2*
```

SEE ALSO [mapsConfig](#), [mapsDb](#), [mapsPolicy](#), [mapsRule](#), [mapsSam](#)

login

Logs in as new user.

Synopsis **login**

Description Use this command to log in to the switch with another user name and password, without first logging out from the original session. If you originally connected through a Telnet or rlogin session, that session is left open.

This command allows you to access commands that you cannot access at your current user level.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To log in as admin from the login user:

```
switch:user> login
login: admin
Password: *****
```

SEE ALSO [logout](#)

logout

Logs out from a shell session.

Synopsis **logout**

Description Use this command to log out from a shell session. Remote login connections are closed and the local serial connections return to the login prompt.

The exit command is accepted as a synonym for logout, as is Ctrl-D at the beginning of a line.

Operands None

Examples To log out from an rlogin session:

```
switch:admin> logout
```

SEE ALSO [login](#)

IsanZoneShow

Displays logical SAN zone information.

Synopsis

**lsanzoneshow [-s] [-f *fabricid*] [-w *wwn*] [-z *zonename*] [-d | -deviceinfo]
[-o | -sort] [-m | --maxcapacity] [-r | --remove]**

Description

Use this command to display the inter-fabric zones or LSA zones. These zones are normal WWN zones created in FC Router EX_Port-connected fabrics and backbone fabrics. The LSA zones are identified by the text string "lsan_" in the zone name. Note that the string is case insensitive so "LSAN_" also is valid. The FC Router uses these zones to establish the inter-fabric device import and export policy. The LSA zones are established by zoning administration in each EX_Port-attached fabric and backbone fabric. Inter-fabric device sharing is allowed between two devices if the LSA zones defined in their respective fabrics both allow the two devices to communicate; for example, the intersection of LSA zones in two fabrics define the device sharing policy.

The LSAN zones are listed by fabric. Zone membership information (information about the devices in the zone) is provided for each LSAN zone. The default output displays only WWNs of the zone members.

Search parameters -f, -w, and -z allow searching for LSAN zones based on fabric ID, WWN of an LSAN zone member, or LSAN zone name.

"No LSAN zone found" is displayed if there is no LSAN zone information available at this FC Router.

Each LSAN zone entry displays the following:

Fabric ID

The ID of the fabric in which the LSAN zone was created.

Zone Name

The zone name.

Zone Members

The zone members or devices. The default output displays the WWN of the zone members.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s state

Displays state information for the device and the LSAN zone information. Valid states include the following:

Configured

Device is configured to be in an LSAN, but the device is neither imported nor exists in this fabric.

Initializing

Device is in an intermediate state. It is not yet imported into the fabric.

EXIST

Device exists in this fabric (the fabric of the zone entry).

Imported

Device has been imported (proxy created) into this fabric.

-f fabricid

Displays LSAN zones in the specified fabric.

-w wwn

Displays LSAN zones containing the specified port WWN. The WWN format is xx:xx:xx:xx:xx:xx:xx.

-z zonename

Displays LSAN zones with the specified zone name. The database for zones is displayed per switch, which can differ from the database stored on the other FCR switches.

-d | -deviceinfo

Displays the fabric IDs of the LSAN devices. This command displays fabric IDs for Imported and EXIST devices. The devices that do not exist in the corresponding edge fabrics are displayed as configured.

-o | -sort

Displays the WWNs of the zone members in ascending order.

-m | --maxcapacity

Displays the list of LSAN zones and LSAN devices to be removed before downgrading to firmware version earlier than Fabric OS 8.1.0.

-r | --remove

Displays the list of configuration scripts that can be used to remove LSAN zones and LSAN devices before downgrading to firmware version earlier than Fabric OS 8.1.0.

Examples

To display the LSAN zones:

```
switch:admin> lsanzoneshow
Fabric ID: 4 Zone Name: lsan_fcr10_0
50:05:07:65:05:84:0b:83
50:05:07:65:05:84:09:0e
10:00:00:00:c9:2b:6a:68
21:00:00:20:37:18:22:55
Fabric ID: 5 Zone Name: lsan_fcr11_0
10:00:00:00:c9:2b:6a:68
21:00:00:20:37:18:22:55
50:05:07:65:05:84:0b:83
50:05:07:65:05:84:09:0e
switch#
```

To display the LSAN zones with device information:

```
switch:admin> lsanzoneshow -d
Fabric ID: 10 Zone Name: LSAN_10
30:02:00:05:1e:61:23:8f EXIST in FID 10
30:02:01:05:1e:61:23:8f EXIST in FID 10
30:00:00:05:1e:61:23:8f Configured
30:06:00:05:1e:61:23:8f Imported from FID 20
30:06:01:05:1e:61:23:8f Imported from FID 20
Fabric ID: 20 Zone Name: LSAN_20
30:02:00:05:1e:61:23:8f Imported from FID 10
```

```

30:02:01:05:1e:61:23:8f Imported from FID 10
30:01:00:05:1e:61:23:8f Configured
30:06:00:05:1e:61:23:8f EXIST in FID 20
30:06:01:05:1e:61:23:8f EXIST in FID 20

```

To display state information for the device and sort the WWNs in ascending order:

```

switch:admin> lsanzoneshow -s -sort
Fabric ID: 12 Zone Name: lsan_zone1
30:06:00:05:1e:61:23:8f EXIST
30:0c:00:05:1e:61:23:8f Imported
Fabric ID: 16 Zone Name: lsan_zone1
30:06:00:05:1e:61:23:8f Imported
30:0c:00:05:1e:61:23:8f EXIST
Fabric ID: 20 Zone Name: lsan_bb
10:06:00:01:1e:61:23:8f Configured
10:06:00:05:1e:61:23:8f Configured
20:03:00:05:1e:61:23:8f Configured
20:06:00:05:1e:61:23:8f Configured

```

To display the list of LSAN zones to be removed before downgrading to pre-FOS v8.1.0:

```

switch:admin> lsanzoneshow -m
List of LSAN Zones need to be removed before downgrade to pre-FOS v8.1.0:
Fabric_ID   Zone_Name
-----
30         lsan_5
60         lsan_6
Total unsupported LSAN Zones: 2

```

List of LSAN Devices need to be removed before downgrade to pre-FOS v8.1.0:

```

-----
Fabric ID   Port           State      Imported   Zone Name
          WWN                Fabric ID
-----
30  30:08:03:05:1e:61:28:22  EXIST      -          lsan_4
30  30:0c:03:05:1e:61:28:22  Imported    60         lsan_4
60  30:08:00:05:1e:61:28:22  Configured  -          lsan_1
60  30:0c:00:05:1e:61:28:22  EXIST      -          lsan_1
60  30:08:02:05:1e:61:28:22  Imported    30         lsan_3
Total unsupported LSAN Devices: 5

```

To display the list of configuration scripts to remove LSAN zones and LSAN devices:

```

switch:admin> lsanzoneshow -r
List of LSAN Zones need to be removed before downgrade to pre-FOS v8.1.0:
-----
---- LSAN Zones need to be removed from fabric: 30 ----
cfgremove "<active_cfg_name>","lsan_5"
---- LSAN Zones need to be removed from fabric: 60 ----
cfgremove "<active_cfg_name>","lsan_6"
Total unsupported LSAN Zones: 2

List of LSAN Devices need to be removed before downgrade to pre-FOS v8.1.0:
-----
---- LSAN Devices need to be removed from fabric 30 ----
zoneremove "lsan_4","30:08:03:05:1e:61:28:22"
zoneremove "lsan_4","30:0c:03:05:1e:61:28:22"

```

```
---- LSAN Devices need to be removed from fabric 60 ----
zoneremove "lsan_1","30:08:00:05:1e:61:28:22"
zoneremove "lsan_1","30:0c:00:05:1e:61:28:22"
zoneremove "lsan_3","30:08:02:05:1e:61:28:22"
Total unsupported LSAN Devices: 5
```

SEE ALSO [fcrFabricShow](#), [fcrPhyDevShow](#), [fcrProxyDevShow](#), [fcrRouteShow](#), [switchShow](#)

IsCfg

Configures and manages a logical switch

Synopsis

```

IsCfg --create FID [[-b | -base] | -lisldisable |
  [-n | -ficon]] [-f | -force]

IsCfg --delete FID [-f | -force]

IsCfg --config FID [-slot slot1[-slot2]]
  [-port [ port1[-port2]] [-q | -qsfp]
  [-f | -force]

IsCfg --restore_to_default FID

IsCfg --restore_slot_to_default slot

IsCfg --change FID [[-newfid FID] | [-base]] [-force]
  [-ficon]

IsCfg --show [-ge] [-provision] [-n | -name]
  [-instance]

IsCfg --help

```

Description Use this command to create a logical switch and to modify logical switch configurations.

The logical switch feature provides the ability to partition a single physical switch into multiple switch instances. Each of these switch partitions is referred to as a logical switch (LS). The logical switch feature allows you to configure multiple logical fabrics on top of a base (physical) fabric. Each logical fabric is made up of logical switches that share the physical resources of the base fabric, for example, interswitch link (ISL) connectivity. At the same time, protocol and management isolation of each logical fabric is maintained, and each logical fabric can scale independently.

The Brocade Analytics Monitoring Platform supports creation of 4 partitions. However, it is recommended not to create a base switch on Brocade Analytics Monitoring Platform because it is not needed for IO Analytics.

The Default Logical Switch is created by the system and cannot be deleted. All switch ports not explicitly assigned to a logical switch are part of the default logical switch.

The Virtual Fabric (VF) feature must be enabled on the switch before you can configure a logical switch. Use the `fosconfig --enable vf` command to enable the feature. Use the `fosconfig --show` command to determine whether the VF feature is enabled or disabled on the switch.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Not all commands that support the `-force` option will prompt for user input when used without the `-force` option.

Operands

This command has the following operands:

--create

Creates a logical switch instance. The following operands are supported.

FID

Specifies the Fabric ID. Each logical switch in a chassis is assigned a unique fabric identifier. The FID address space is shared between logical switches and EX_Ports. Valid FID values are integers between 1 and 128. The default logical switch is assigned FID 128 by default. This operand is required.

-b | -base

Creates a base logical switch on the chassis. A base logical switch communicates among different logical switches. Legacy switches can be connected to the base logical switch through EX_Ports, and interswitch links (ISLs) between base logical switches enable communication among different logical switches. This operand is optional.

-lislisable

Configures the LISL ports to remain in the offline state after the logical switch is created. By default, LISL ports are created and set to online state after the logical switch is created. This option provides the capability to override the default behavior. Use the `lscfg --lislenable` command to enable the LISL ports manually. This operand is optional.

-n | -ficon

Creates a logical switch with FICON configurations on the chassis. This option automatically enables configuration attributes such as IDID, fabric binding, high integrity fabric mode, DBR routing policy, 256-Area limited addressing mode, and so on. This operand is optional.

-f | -force

Executes the command without confirmation. This operand is optional.

--delete

Deletes a logical switch with the specified fabric ID. The specified logical switch must exist and no ports should be configured on this partition. You must remove all ports from the logical switch before deleting the logical switch instance. Use the `lscfg --config` command to remove the ports.

FID

Specifies the Fabric ID of the logical switch. This operand is required.

-f | -force

Executes the command without confirmation. This operand is optional.

--config

Configures the specified logical switch. This command assigns ports to the logical switch specified by a given FID. The ports are removed from the partition on which they are currently configured. This command prompts for confirmation, indicating that the specified ports will be disabled. The following operands are supported:

FID

Specifies the fabric ID of the logical switch. This operand is required.

- slot *slot1*[-*slot2*]**
Specifies the slot number or a range of slot numbers separated by a dash, for example -slot 3-5. This operand is required.
- port *port1*[-*port2*]**
Specifies the ports to be assigned to the logical switch. Provide a valid port, or a range of ports separated by a dash, for example -port 3-8. This operand is optional; if omitted, all ports on the specified slots are assigned.
- q | -qsfp**
Moves all ports in a quad small form-factor pluggable (QSFP) group to be assigned to the logical switch. This operand is optional.
- f | -force**
Executes the command without confirmation. This operand is optional.
- restore_to_default *FID***
Moves all vacant ports in the logical switch specified by *FID* to the default switch. Use this command when IsCfg --show displays no ports, but the switch continues to generate errors indicating that there are ports on the switch.
- restore_slot_to_default *slot***
Moves all ports on a specified slot to the default switch.
- change**
Changes the fabric ID of a logical switch, creates a base logical switch out of an existing logical switch, or removes base switch properties. The -newfid and -base operands are exclusive and may not be combined. The following operands are supported:
- FID***
Specifies the Fabric ID of the logical switch. This operand is required.
- n | -newfid *FID***
Changes the fabric ID of an existing logical switch. This command effectively removes the logical switch from a given logical fabric and makes it part of another logical fabric.
- b | -base**
Turns an existing logical switch into a base switch. When this command is issued on a switch that is already a base switch, this command removes the base switch properties. This command disables the current logical switch. After making the change, you must re-enable the switch.
- ficon**
Turns an existing logical switch into a FICON mode logical switch. This command fails when it is issued on a switch that is already a FICON mode logical switch. This command disables the current logical switch. After making the change, you must re-enable the switch.
- f | -force**
Executes the command without confirmation. This operand is optional.

--show

Displays the partition configuration on a switch or chassis. Without any operands, the command displays all logical switches and the FC ports assigned to them. For each switch, the FID, switch role, and domain ID are displayed: base switch (bs) or default switch (ds). The following operands are optional with the --show option.

-ge

Displays partition configuration information for GbE ports. This operand is valid on the Brocade 7840 switch, Brocade FX8-24 and Brocade SX6 blades.

-provision

Displays the partition configuration for all slots, regardless of the slot's status. This operand is valid only on a chassis and can be used with or without the -ge option.

-n | -name

Displays fabric ID, switch type, domain ID, switch name, and fabric name of the logical switch. This operand can be used with the -n or -name option.

-instance

Displays the switch instance number of the logical switch.

--help

Displays the command usage.

Examples

To create a base switch:

```
switch:admin> lscfg --create 1 -base
Creation of a base switch requires that the proposed
  new base switch on this system be disabled.
Would you like to continue [y/n]?: y
About to create switch with fid=1. Please wait...

Switch successfully created.

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
```

To create a logical switch identified by fabric ID 2:

```
switch:admin> lscfg --create 2
A Logical switch with FID 2 will be created with default configuration.
Would you like to continue [y/n]?: y
About to create switch with fid=2. Please wait...
switch1 Updating flash ...
2013/05/02-10:13:59, [ZONE-1034], 373, SLOT 4 | FID 2, INFO, switch_2, \
  A new zone database file is created.
2013/05/02-10:14:15, [FSSM-1002], 374, SLOT 5 | CHASSIS, INFO, switch, \
  HA State is in sync.
All service instances in sync
2013/05/02-10:14:15, [FSSM-1002], 375, SLOT 4 | CHASSIS, INFO, switch, \
  HA State is in sync.
Logical Switch with FID (2) has been successfully created.
```

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch and protocol settings before activating the Logical Switch.
2013/05/02-10:14:17, [PMGR-1001], 376, SLOT 4 | CHASSIS, INFO, switch, \
Attempt to create switch 2 succeeded.

To create a base switch with FID 2 without confirmation:

```
switch:admin> lscfg --create 2 -base -force
About to create switch with fid=2. Please wait...
Switch successfully created.
```

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch and protocol settings before activating the Logical Switch.

To delete a logical switch:

```
switch:admin> lscfg --delete 2
The Logical switch with FID 2 will be deleted.
Would you like to continue [y/n]?: y
2013/05/02-10:18:08, [FW-1424], 387, SLOT 4 | FID 2, WARNING, switch_2, \  
Switch status changed from HEALTHY to MARGINAL.
2013/05/02-10:18:08, [FW-1439], 388, SLOT 4 | FID 2, WARNING, switch_2, \  
Switch status change contributing factor Switch offline.
All active login sessions for FID 2 have been terminated.
Switch successfully deleted.
2013/05/02-10:18:29, [PMGR-1003], 389, SLOT 4 | CHASSIS, INFO, pluto_19, \  
Attempt to delete switch 2 succeeded.
```

To assign ports to a logical switch:

```
switch:admin> lscfg --config 2 -port 10-12
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Making this configuration change. Please wait...
Configuration change successful.
Please enable your ports/switch when you are ready to continue.
```

To assign ports to a logical switch without confirmation:

```
switch:admin> lscfg --config 2 -port 0-4 -force
Configuration change successful.
Making this configuration change. Please wait...
Please enable your ports/switch when you are ready to continue.
```

To move all ports in a QSFP group to a logical switch:

```
switch:admin> lscfg --config 10 -slot 5 \  
-port 0-20 -qsfp
This operation requires that the affected ports be disabled and will move all \  
ports(0-23) in qsfp to fid 10.
Would you like to continue [y/n]?: y

Making this configuration change. Please wait...
Dispatch a request to kernel-land component: swc
Dispatch a request to kernel-land component: swc
Configuration change successful.
Please enable your ports/switch when you are ready to continue.
```

To display the logical switch configuration for :FC ports only:

```
switch:admin> lscfg --show
```

```
Created switches FIDs(Domain IDs): 128(ds)(10) 1(bs)(1) 2(1)
Port   0      1      2      3      4      5      6      7      8      9
-----
FID    1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2
-----
Port  10     11     12     13     14     15     16     17     18     19
-----
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128
-----
Port  20     21     22     23     24     25     26     27     28     29
-----
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128
-----
Port  30     31     32     33     34     35     36     37     38     39
-----
FID  128 | 128 | 128 | 2 | 2 | 2 | 128 | 128 | 128 | 128
```

To display the logical switch configuration for GbE ports only (in the example, all GbE ports are in logical switch 2):

```
switch:admin> lscfg --show -ge
```

```
Created switches FIDs(Domain IDs): (ds) 2(bs)(1) 1(1)
Slot   1      2      3      4      5      6      7      8
-----
Port
0      |      | 2 |      |      |      |      |      |
1      |      | 2 |      |      |      |      |      |
2      |      | 2 |      |      |      |      |      |
3      |      | 2 |      |      |      |      |      |
4      |      | 2 |      |      |      |      |      |
5      |      | 2 |      |      |      |      |      |
6      |      | 2 |      |      |      |      |      |
7      |      | 2 |      |      |      |      |      |
8      |      | 2 |      |      |      |      |      |
9      |      | 2 |      |      |      |      |      |
10     |      | 2 |      |      |      |      |      |
11     |      | 2 |      |      |      |      |      |
```

To display the partition configuration for all slots with the -ge option:

```
switch:admin> lscfg --show -provision -ge
```

```
Created switches FIDs(Domain IDs): 128(ds)(118) 2(bs)(1) 1(1)
Slot   1      2      3      4      5      6      7      8
-----
Port
0      | 128 | 2 |      |      |      |      | 128 | 128 |
1      | 128 | 2 |      |      |      |      | 128 | 128 |
2      | 128 | 2 |      |      |      |      | 128 | 128 |
3      | 128 | 2 |      |      |      |      | 128 | 128 |
4      | 128 | 2 |      |      |      |      | 128 | 128 |
5      | 128 | 2 |      |      |      |      | 128 | 128 |
6      | 128 | 2 |      |      |      |      | 128 | 128 |
```

7	128	2					128	128	
8	128	2					128	128	
9	128	2					128	128	
10	128	2					128	128	
11	128	2					128	128	

To change the fabric ID for a logical switch:

```
switch:admin> lscfg --change 1 -newfid 2
Changing of a switch fid requires that the switch be disabled.
Would you like to continue [y/n]? y
Disabling switch...
All active login sessions for FID 2 have been terminated.
Checking and logging message: fid = 2.
Please enable your switch.
```

To display the change:

```
switch:admin> lscfg --show

Created switches FIDs(Domain IDs): 128(ds)(118) 1(1) 2(bs)(1)

Port   0     1     2     3     4     5     6     7     8     9
-----
FID    1 | 1 | 1 | 1 | 1 | 128 | 128 | 128 | 128 | 128 |
-----
Port  10    11    12    13    14    15    16    17    18    19
-----
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
-----
Port  20    21    22    23    24    25    26    27    28    29
-----
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
-----
Port  30    31    32    33    34    35    36    37    38    39
-----
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
-----
```

To make logical switch FID 1 the base switch without confirmation:

```
switch:admin> lscfg --change 1 -base -force
Disabling the current base switch...
Disabling switch fid 1
Disabling the proposed new base switch...
Disabling switch fid 1
Please enable your switches when ready.
```

To make logical switch FID 1 the base switch with confirmation:

```
switch:admin> lscfg --change 1 -base
Creation of a base switch requires that the proposed new base switch on this
system be disabled.

Would you like to continue [y/n]? y
Disabling the proposed new base switch...
Disabling switch fid 1
Please enable your switches when ready.
```

To display the logical switch details with the FID name:

```
switch:admin> lscfg --show -n
```

```
-----  
Switch Information  
-----
```

```
FID: 30  
SwitchType: DS  
DomainID: 3  
SwitchName: Pluto2  
FabricName: thor2fab  
-----
```

```
FID: 2  
SwitchType: BS  
DomainID: 1  
SwitchName: switch_2  
FabricName: base_switch
```

To display the switch instance number of the logical switch:

```
switch:admin> lscfg --show -instance
```

```
Switch Instance           : 0  
Created switches FIDs(Domain IDs): 128(ds)(1)
```

SEE ALSO [setContext](#)

IsDbShow

Displays the Fabric Shortest Path First (FSPF) link state database.

Synopsis **Isdbshow** [*domain*]

Description Use this command to display an FSPF link state database record for switches in the fabric or for a specified domain.

There are two types of database entries:

- The link state database entry, which is permanently allocated.
- The link state record (LSR), which is allocated when a switch is connected to the fabric.

The LSR describes the links between connected domains in a fabric. For a link to be reported in the LSR, the neighbor for that link must be in NB_ST_FULL state.

This command displays the content of both types of database entries, if both are present, as shown below:

Domain	Domain ID described by this LSR. A (self) keyword after the domain ID indicates that LSR describes the local switch.
IsrP	Pointer to LSR.
earlyAccLSRs	Number of LSRs accepted, even though they were not sufficiently spaced apart.
ignoredLSRs	Number of LSRs not accepted because they were not sufficiently spaced apart.
lastIgnored	Last time an LSR was ignored.
installTime	Time this LSR was installed in the database, in seconds since boot.
lseFlags	Internal variable.
uOutlfsP	Internal variable.
uAllOutlfsP	Internal variable.
uPathCost	Internal variable.
uOldHopCount	Internal variable.
uHopsFromRoot	Internal variable.

uPathCount	The number of currently available paths to the remote domain.
mOutIfsP	Internal variable.
parent	Internal variable.
mPathCost	Internal variable.
mHopsFromRoot	Internal variable.
Link State Record pointer	Pointer to LSR. The same as lsrP.
lsAge	Age, in seconds, of this LSR. An LSR is removed from the database when its age exceeds 3,600 seconds.
reserved	Reserved for future use.
type	Type of the LSR. Always 1.
options	Always 0.
lsId	ID of this LSR. It is identical to the domain ID.
advertiser	Domain ID of the switch that originated this LSR.
incarn	Incarnation number of this LSR.
length	Total length, in bytes, of this LSR. Includes header and link state information for all links.
chksum	Checksum of total LSR, with exception of lsAge field.
linkCnt	Number of links in this LSR. Each link represents a neighbor in NB_ST_FULL state.
flags	Always 0.
LinkId	ID of this link. It is the domain ID of the switch on the other side of the link.
out port	Port number on the local switch.

rem port	Port number of the port on the other side of the link.
cost	Cost of this link. The default cost for a 1 Gbps link is 1,000.
bw	The rounded bandwidth of the output link, in Gbps.
type	Always 1.

Notes Beginning Fabric OS v7.3.0, the output displays only the lines with a bit set. If a port bitmap does not have any bits set, the output displays as "None" for the first line of the bitmap.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

<i>domain</i>	Specifies the domain ID of the LSR to be displayed. This operand is optional; if omitted, the entire link state database is displayed.
---------------	--

Examples To display the link state record for a switch:

```
switch:admin> lsdbshow 1

Domain = 1 (self), Link State Database Entry pointer = 0x1096da60
lsrP           = 0x109784b0
earlyAccLSRs   = 0
ignoredLSRs    = 0
lastIgnored    = Never
installTime    = Aug 26 18:20:41.451
lseFlags       = 0xa
uAllOutIfsP[4] = 0x00000001
uPathCost      = 0
uOldHopCount   = 0
uHopsFromRoot  = 0
uPathCount     = 1
mOutIfsP[0]    = 0x10000000
parent         = 0xf0
mPathCost      = 0
mHopsFromRoot  = 0

Link State Record:
Link State Record pointer = 0x109784b0
lsAge          = 321
reserved       = 0
type           = 1
options        = 0x0
lsId           = 1
advertiser     = 1
incarn         = 0x80000185
```

```
length          = 60
chksum          = 0x168a
linkCnt = 2,    flags = 0x0
LinkId = 91, out port = 28, rem port = 28, cost = 500, bw = 16G, type = 1
LinkId = 91, out port = 29, rem port = 29, cost = 500, bw = 48G, type = 1
```

SEE ALSO [interfaceShow](#), [nbrStateShow](#)

mapsConfig

Sets MAPS configurations.

Synopsis

```
mapsconfig --config pause -type member_type
           -members member_list

mapsconfig --config continue -type member_type
           -members member_list

mapsconfig --actions actions_list

mapsconfig --emailcfg -address email_address

mapsconfig --testmail [-subject subject] [-message msg]

mapsconfig --import flow_name [-force]

mapsconfig --deimport flow_name [-force]

mapsconfig --purge

mapsconfig --show

mapsconfig --help
```

Description

Use this command to perform the following Monitoring and Alerting Policy Suite (MAPS) functions:

- Pause or continue monitoring specific elements.
- Define the list of allowable actions that can be taken on the switch when a threshold is triggered.
- Configure e-mail address to which the alerts must be delivered.
- Import a flow.
- Remove the imported flow from MAPS configuration.
- Delete all user-defined MAPS configurations related to rules, groups, policies, and so on.
- Display MAPS settings.

Notes

This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config pause

Stops monitoring specific elements. The active policy is still in effect.

--config continue

Resumes monitoring specific elements on which monitoring was previously paused.

-type *member_type*

Specifies the type of elements on which to pause monitoring. Valid types include the following:

port

The elements are FC ports.

circuit

The elements are FCIP circuits.

sfp

The elements are SFP transceivers.

-members *member_list*

Specifies the specific elements on which to pause or continue monitoring. The member list must be enclosed in double quotation marks and can consist of the following:

Port and SFP groups:

- A single port, for example, "8" or "2/8" on bladed systems.
- A port range where the beginning and end port are separated by a dash, for example, "8-13" or "2/8-13" on bladed systems.
- A set of ports and port ranges separated by commas, for example, "3,5,7-10,15" or "2/3,2/5,3/7-10,4/15" on bladed systems.

Circuit groups:

- A single circuit in VE_Port/circuit format, for example, "33/5".
- A circuit range in VE_Port/circuit format, for example, "33/1-3".
- A set of circuits separated by commas, for example, "33/1-3,33/5".

--actions *actions_list*

Specifies a comma-separated list of all of the actions that are allowed globally on the switch. Any actions listed for a specific rule must also be listed here to take effect. Valid actions include the following:

raslog

Generates a RASLog message.

decom

Decommissions the port. Use this action along with fence.

fence

Fences the port, if port fencing is enabled. Port fencing takes the ports offline if the rule thresholds are exceeded. This action is valid only on conditions that are evaluated on ports.

snmp

Generates an SNMP trap.

email

Sends information about a switch event to a specified e-mail address.

sfp_marginal

Sets the state of the affected SFP transceiver to marginal. This action is valid only if the monitoring system (specified by the monitor operand in the mapsRule command) is one of the switch policy status monitoring systems: CURRENT, RXP, TXP, VOLTAGE, SFP_TEMP.

sddq	Isolates the slow-drain flows to a low priority VC from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. The slow drain device quarantine (SDDQ) feature is not supported in the Access Gateway mode. The port toggling (PT) action and the SDDQ action are mutually exclusive. You cannot enable SDDQ and PT actions at the same time.
fms	Notifies the configured MAPS threshold events to the FICON Management Server (FMS).
toggle	Enables port toggling to recover a port from bottleneck condition caused by the target device. Port toggle is supported only for the F_Ports. The port toggling (PT) action and the SDDQ action are mutually exclusive. You cannot enable SDDQ and PT actions at the same time.
unquar	Releases the previously quarantined ports.
uninstall_vtap	Uninstalls vTAP feature if the mirrored frame count exceeds 250K IOPS and encryption is enabled on the 16 Gbps-capable ASIC. If encryption is not enabled on the ASIC, vTAP is not uninstalled.
none	No actions are allowed on the switch. Specifying this option allows you to turn off all notifications. The actions SW_CRITICAL and SW_MARGINAL are always enabled and cannot be turned off.
--emailcfg	Specifies the configuration for e-mail notifications, if email is a triggered action. You can configure a relay host IP address using the relayConfig command.
-address <i>email_address</i>	Specifies the e-mail address to which the notifications are sent. You can configure up to 5 e-mail addresses as the alert message's receiver. Multiple e-mail addresses must be separated by a comma and each e-mail address can be up to a maximum length of 128 bytes. The e-mail address must conform to standard syntax: string@domain.suffix. Invalid e-mail addresses are rejected. "NONE" is the default address and a valid input parameter.
--testmail	Sends the test e-mail with the default subject and message along with the switch name in the message. The command fails if the e-mail address is not configured.
-subject <i>subject</i>	Specifies the user-defined subject line for the test e-mail. This operand is optional.
-message <i>msg</i>	Specifies the user-defined message for the test e-mail. This operand is optional.
--import	Imports a flow from Flow Vision into MAPS.

flow_name

Specifies the name of a flow to be imported. The flow name must be defined in Flow Vision. This operand is required.

-force

Imports a flow with the same name as the previously imported flow. This operand is optional. When a flow that was imported into MAPS is deleted in Flow Vision, all members of the group corresponding to that flow are automatically deleted from MAPS. If the same flow is created again, it will not automatically be reimported into MAPS, and importing this flow using the --import option fails unless you use the -force option.

--deimport

Removes a flow from MAPS. The following operand is required:

flow_name [-force]

Specifies the name of the flow to be removed from MAPS. The -force operand is optional. You cannot remove a flow that is used by any rules. The -force option overrides the default behavior. If a flow is present in user-defined rules, the -force option deletes all the rules that are configured with the given flow and then removes the flow.

--purge

Deletes all user-defined MAPS configurations on the switch (groups, rules, and policies). This command does not delete the predefined groups and policies. Enables dflt_conservative_policy after successful purge.

--show

Displays the MAPS global configuration settings.

--help

Displays the command usage.

Examples

To stop monitoring on three ports:

```
switch:admin> mapsconfig --config pause -type port
               -members "3/1,3/2,3/3"
```

To resume monitoring on two ports:

```
switch:admin> mapsconfig --config continue -type port
               -members "3/1,3/3"
```

To specify that generating a RASLog and sending an e-mail message are the only allowed notification actions on this switch:

```
switch:admin> mapsconfig --actions raslog,email
```

To configure the e-mail address to which notifications are sent:

```
switch:admin> mapsconfig --emailcfg -address admin@mycompany.com
```

To send a test e-mail:

```
switch:admin> mapsconfig --testmail
MAPS test welcome mail sent successfully
```

To import a flow:

```
switch:admin> mapsconfig --import fmFlow1
```

To delete all of the user-defined groups, policies, and rules:

```
switch:admin> mapsconfig --purge  
WARNING: This command will clear all the user-defined MAPS \  
         configurations and activate the factory defined policy \  
         and rules.  
Do you want to continue? (yes, y, no, n): [no] yes
```

To display the global MAPS configuration:

```
switch:admin> mapsconfig --show  
Configured Notifications: RASLOG,EMAIL,FENCE,SW_CRITICAL,SW_MARGINAL,SDDQ  
Mail Recipient:          admin@myCompany.com  
=====
```

PORT :	3/25,8/5-9
CIRCUIT :	
SFP :	

SEE ALSO [logicalGroup](#), [mapsDb](#), [mapsPolicy](#), [mapsRule](#), [mapsSam](#), [relayConfig](#)

mapsDb

Displays or clears the dashboard showing an at-a-glance snapshot of switch health status.

Synopsis

mapsdb --show [all | history | details [-day *mm/dd/yyyy* | -hr *hour_of_day*]]

mapsdb --clear [all | history | summary]

mapsdb --help

Description

Use this command to view the summary of the events or rules triggered and the objects on which the rules were triggered over a specified period of time, and to clear the dashboard data. When used with the --show option, this command displays the following information:

Dashboard Information

Displays the dashboard start time, active policies, configured alerts, fenced ports, decommissioned ports, fenced circuits, quarantined ports, and the ports with highest zoned device ratio.

Switch Health Report

Displays the overall status of the switch. If the overall status is not healthy, the contributing factors and the fenced ports are listed.

Summary Report

Displays the status of the monitoring categories needed to determine the current health of the switch. The health state of each category is contributed to by a group of monitoring systems or error counters, and the rules configured in the active policy. The summary view displays the following information for each category: information collected since midnight of the current day and the historical information collected over the last 7 days.

The health state can be one of the following:

No Error

No error has occurred.

In operating range

The errors are within the thresholds configured in the active policy.

Out of operating range

The errors are above the configured thresholds and this triggers the rules configured in the active policy. This indicates that some attributes of the switch are operating out of the configured range.

Rules Affecting Health

Displays the conditions that contributed to the current switch status. The following information is displayed: number of rules triggered in a category, repeat count, triggered rules, execution time, the elements for which rules were triggered, and the triggered value.

History Data

Displays the following historical data for a specific time window: the monitoring system, the current value that triggered the rule, and the elements for which rules were triggered.

History Data for Backend ports

Displays the error statistics for the backend ports for a specific time window.

If no operands are specified, this command displays the usage.

Notes

This command requires a Fabric Vision license. Without Fabric Vision license, this command displays the summary of only the unlicensed features.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays a summary of the data collected since midnight of the current day. The following operands are supported with the --show command.

all

Displays a summary and historical data of the errors for 5 rules and last 5 ports.

history

Displays the historical data only.

details

Displays detailed data in addition to the summary. The following operands are supported with the details command.

-day mm/dd/yyyy

Displays the dashboard data for a specific day.

mm

Specifies the month. Valid values are 01 through 12.

dd

Specifies the date. Valid values are 01 through 31.

yyyy

Specifies the year.

-hr hour_of_day

Displays the dashboard data for a specific hour of the day. The valid values for hour are 0 through 23. For example, if you specify 17, the dashboard data is displayed for the time window of 5:00 PM to 5:59 PM.

--clear

Clears the dashboard data. This command clears all database data except the History Data of the current day because it is directly displayed from hardware. The following operands are supported with the --clear command.

all

Clears all dashboard data.

history

Clears the dashboard history data.

summary

Clears the dashboard summary data.

--help

Displays the command usage.

Examples

To display the dashboard with summary information:

```
switch:admin> mapsdb --show all
1 Dashboard Information:
=====

DB start time:           Mon Jan  5 08:36:08 2015
Active policy:           dflt_aggressive_policy
Configured Notifications: RASLOG,SW_CRITICAL,SW_MARGINAL,SDDQ
Fenced Ports :           None
Decommissioned Ports :   None
Fenced circuits :        38/0,38/1,38/2,38/3,38/4,38/5
Quarantined Ports :      8/0,8/4
Ports with highest Zoned device ratio: 1,2,3
```

```
2 Switch Health Report:
=====
```

Current Switch Policy Status: HEALTHY

```
3.1 Summary Report:
=====
```

Category	Today	Last 7 days	
Port Health	No Errors	In operating range	|
BE Port Health	No Errors	No Errors	|
Fru Health	In operating range	In operating range	|
Security Violations	No Errors	No Errors	|
Fabric State Changes	No Errors	In operating range	|
Switch Resource	In operating range	In operating range	|
Traffic Performance	In operating range	In operating range	|
FCIP Health	Not applicable	Not applicable	|
Fabric Performance Impact	In operating range	In operating range	|

Conditions contributing to health:

```
3.2 Rules Affecting Health:
=====
```

Category(Rule Count)	RepeatCount	Rule Name	Execution Time	Object	Triggered
----------------------	-------------	-----------	----------------	--------	-----------

```

Value(Units) |
-----
-----

4 History Data:
=====

Stats(Units)      Current    01/05/15   --/--/--   --/--/--   --/--/--
                  Port(val)  Port(val)
-----
CRC(CRCs)         -          -          -          -          -
ITW(ITWs)         -          10(95)     -          -          -
LOSS_SYNC(SyncLoss) -          -          -          -          -
LF                -          10(4)      -          -          -
LOSS_SIGNAL(LOS)  -          10(48)     -          -          -
PE(Errors)        -          -          -          -          -
STATE_CHG         -          10(48)     -          -          -
LR                -          10(32)     -          -          -
C3TXTO(Timeouts) -          -          -          -          -
RX(%)             -          -          -          -          -
TX(%)             -          -          -          -          -
UTIL(%)           -          -          -          -          -
CRED_ZERO(Million) -          10(4)     -          -          -
BN_SECS(Seconds)  -          -          -          -          -

5 History Data for Backend ports:
=====

Stats(Units)      Current    01/05/15   --/--/--   --/--/--   --/--/--
-----
CRC(CRCs)         -          -          -          -          -
ITW(ITWs)         -          -          -          -          -
LR                -          -          -          -          -
BAD_OS(Errors)    -          -          -          -          -
FRM_LONG(Errors)  -          -          -          -          -
FRM_TRUNC(Errors) -          -          -          -          -

```

To display the dashboard with summary information on the Brocade Analytics Monitoring Platform:

```

switch:admin> mapsdb --show all
1 Dashboard Information:
=====

DB start time:      Mon Jun 5 08:36:08 2015
Active policy:      dflt_aggressive_policy
Configured Notifications: RASLOG
Fenced Ports :      None
Decommissioned Ports : None
Quarantined Ports : None

2 Switch Health Report:
=====

Current Switch Policy Status: HEALTHY

3.1 Summary Report:
=====

Category           |Today           |Last 7 days      |
-----
IO Latency Impact  |In operating range |In operating range |

```

IO Performance Impact	Out of operating range	In operating range	|
IO SCSI Health	No Errors	No Errors	|
AMP Health	Out of operating range	In operating range	|
Port Health	In operating range	No Errors	|
BE Port Health	In operating range	No Errors	|
Fru Health	In operating range	In operating range	|
Security Violations	No Errors	No Errors	|
AMP Resource	In operating range	In operating range	|

3.2 Rules Affecting Health:

=====

Category(Rule Count)	RepeatCount	Rule Name	\
IO Latency Impact(1)	1	defIOA_RCT8K_IO	\
IO Performance Impact(1)	1	defIOA_RD_PENDING_IO_8K	\
|Execution Time	|Object		|Triggered
Value(Units)|			

|02/23/15 22:11:57	|Flow (sys_mon_analytics:SID=030300,DID=030000,VTAP=30300)		
|750 us			
|02/23/15 22:11:57	|Flow (sys_mon_analytics:SID=030300,DID=030000,VTAP=30300)	|10	
(output truncated)			

To display the dashboard with summary information and historical data for a specific day:

```
switch:admin> mapsdb --show details -day 01/06/2015
```

1 Dashboard Information:

=====

```
DB start time:      Mon Jan  5 08:36:08 2015
Active policy:      dflt_aggressive_policy
Configured Notifications: RASLOG,SW_CRITICAL,SW_MARGINAL,SDDQ
Fenced Ports :      None
Decommissioned Ports : None
Fenced circuits :    38/0,38/1,38/2,38/3,38/4,38/5
Quarantined Ports :  8/0,8/4
Ports with highest Zoned device ratio: 1,2,3,4
```

2 Switch Health Report:

=====

Current Switch Policy Status: HEALTHY

3.1 Summary Report:

=====

Category	Today	Last 7 days	|
Port Health	No Errors	In operating range	|
BE Port Health	No Errors	No Errors	|
Fru Health	In operating range	In operating range	|
Security Violations	No Errors	No Errors	|
Fabric State Changes	No Errors	In operating range	|
Switch Resource	In operating range	In operating range	|

```

Traffic Performance      |In operating range |In operating range |
FCIP Health              |Not applicable      |Not applicable      |
Fabric Performance Impact|In operating range  |In operating range  |
Conditions contributing to health:
3.2 Rules Affecting Health:
=====

```

```

Category(Rule Count)|RepeatCount|Rule Name  |Execution Time |Object  |Triggered
Value(Units)|
-----

```

```

4 History Data:
=====

```

Stats(Units)	Current	01/05/15	--/--/--	--/--/--	--/--/--
	Port(val)	Port(val)			
CRC(CRCs)	-	-	-	-	-
ITW(ITWs)	-	10(95)	-	-	-
LOSS_SYNC(SyncLoss)	-	-	-	-	-
LF	-	10(4)	-	-	-
LOSS_SIGNAL(LOS)	-	10(48)	-	-	-
PE(Errors)	-	-	-	-	-
STATE_CHG	-	10(48)	-	-	-
LR	-	10(32)	-	-	-
C3TXTO(Timeouts)	-	-	-	-	-
RX(%)	-	-	-	-	-
TX(%)	-	-	-	-	-
UTIL(%)	-	-	-	-	-
CRED_ZERO(Million)	-	10(4)	-	-	-
BN_SECS(Seconds)	-	-	-	-	-

```

5 History Data for Backend ports:
=====

```

Stats(Units)	Current	01/05/15	--/--/--	--/--/--	--/--/--
CRC(CRCs)	-	-	-	-	-
ITW(ITWs)	-	-	-	-	-
LR	-	-	-	-	-
BAD_OS(Errors)	-	-	-	-	-
FRM_LONG(Errors)	-	-	-	-	-
FRM_TRUNC(Errors)	-	-	-	-	-

To display the dashboard information without Fabric Vision license:

```

switch:admin> mapsdb --show
1 Dashboard Information:
=====

DB start time:          Wed Oct  1 06:04:33 2014
Active policy:          dflt_base_policy
Configured Notifications: SW_CRITICAL,SW_MARGINAL

2 Switch Health Report:
=====

Current Switch Policy Status: MARGINAL

```

```
Contributing Factors:
-----
*FAULTY_BLADE (MARGINAL).
*HA_SYNC (MARGINAL).
```

3.1 Summary Report:
=====

Category	Today	Last 7 days	
Fru Health	Out of operating range	No Errors	
Switch Resource	No Errors	No Errors	

3.2 Rules Affecting Health:
=====

Category(Rule Count)	RepeatCount	Rule Name	
Fru Health(1)	1	defALL_SLOTSBLADE_STATE_IN	
Execution Time	Object	Triggered Value(Units)	
10/01/14 06:09:42	Blade 8	IN	

MAPS is not Licensed. MAPS extended features are available ONLY with License

To clear the history data:

```
switch:admin> mapsdb --clear history
```

SEE ALSO [logicalGroup](#), [mapsConfig](#), [mapsPolicy](#), [mapsRule](#), [mapsSam](#), [portStatsClear](#)

mapsHelp

Displays MAPS command information.

Synopsis **mapshelp**

Description Use this command to display a listing of Monitoring and Alerting Policy Suite (MAPS) commands with short descriptions for each command. MAPS commands require a Fabric Vision license.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display MAPS command help information:

```
switch:admin> mapshelp
mapsRule          Use this command to create threshold monitoring rules
mapsPolicy        Manage policies using this command
logicalGroup      Create and manage user-defined logical groups
mapsdb            Display MAPS Dashboard to see the summary of the \
                  violations triggered due to current active policy.
mapsConfig        MAPS configuration command eg: use this to enable MAPS
relayConfig       Configure e-mail server information to receive email \
                  notifications
mapssam           Show availability monitor information
mapsHelp          Display all the MAPS commands
```

SEE ALSO None

mapsPolicy

Creates and manages MAPS policies.

Synopsis

```
mapspolicy --create policy_name

mapspolicy --addrule policy_name -rulename rule_name

mapspolicy --delrule policy_name -rulename rule_name

mapspolicy --enable policy_name

mapspolicy --clone existing_policy_name -name new_policy_name

mapspolicy --delete policy_name

mapspolicy --show policy_name | -summary | -all [-concise]

mapspolicy --help
```

Description

Use this command to create and manage monitoring policies. A MAPS policy is a set of rules that define thresholds for measures and actions to take when a threshold is triggered. When you enable a policy, all of the rules in the policy are in effect. A switch can have multiple policies.

Notes

This command requires a Fabric Vision license.

Any change to a policy affects only the information stored on the switch. Consequentially, if an active policy is modified, it has to be re-enabled for the modifications to be effective.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create

Creates a monitoring policy.

policy_name

Specifies the name of the policy to be created. The name for the policy must be unique; it is case-sensitive and can contain up to 31 characters.

--addrule *policy_name*

Adds a rule to the specified user-defined policy. You cannot add a rule to the preconfigured policies.

-rulename *rule_name*

Specifies the name of the rule to be added to the policy.

--delrule *policy_name*

Deletes a rule from the specified user-defined policy. You cannot delete a rule from the preconfigured policies.

-rulename *rule_name*

Specifies the name of the rule to be deleted from the policy.

--enable

Activates a policy on the switch. The dashboard data will be cleared after the policy is activated.

policy_name

Specifies the name of the policy to be enabled. The name can be a predefined or a user-defined policy. If another policy is already enabled, that policy is disabled and the specified policy is enabled instead. The predefined policies are as follows:

dflt_conservative_policy

Contains rules with more lenient thresholds that allow a buffer and do not immediately trigger actions. Use this policy in environments where the elements are resilient and can accommodate errors.

dflt_aggressive_policy

Contains rules with very strict thresholds. Use this policy if you need a pristine fabric (for example, FICON fabrics).

dflt_moderate_policy

Contains rules with thresholds values between the aggressive and conservative policies.

dflt_base_policy

Contains rules based on the features which can be monitored without a license.

--clone

Creates a replica of an existing predefined or user-defined policy. The new policy has all of the rules of the existing policy. You can further modify the newly created policy. The following operands are required:

existing_policy_name

Specifies the name of an existing policy. The policy can be a predefined policy or a user-defined policy.

-name new_policy_name

Specifies the name of the policy to be created.

--delete

Deletes a user-defined policy.

policy_name

Specifies the name of the user-defined policy to be deleted. You cannot delete the predefined policies.

--show

Displays the rules in a policy.

policy_name

Specifies the name of the policy to display. The name can be a predefined or a user-defined policy.

-summary

Displays all existing policies and the number of rules present in them.

-all

Displays the rules in all of the policies.

-concise

Displays legends instead of the complete action names in the output. The legends for the action names are as follows: RS (RASLOG), PF (FENCE), EML (EMAIL), SN (SNMP), PT (TOGGLE), PD (DECOM), FMS (FMS), SDDQ (SDDQ), SWD (SW_CRITICAL), SWM (SW_MARGINAL), and SFPM (SFP_MARGINAL). This operand is optional.

--help

Displays the command usage.

Examples

To create a policy named "aggressive_policy":

```
switch:admin> mapspolicy --create aggressive_policy
```

To add a rule to a policy:

```
switch:admin> mapspolicy --addrule aggressive_policy \
               -rulename CRIT_PORT_CRC_GE_2
```

To delete a rule from a policy:

```
switch:admin> mapspolicy --delrule aggressive_policy \
               -rulename CRIT_PORT_CRC_GE_2
```

To clone a policy:

```
switch:admin> mapspolicy --clone dflt_conservative_policy \
               -name my_conservative_policy
```

To delete a policy:

```
switch:admin> mapspolicy --delete my_conservative_policy
```

To display a policy:

```
switch:admin> mapspolicy --show Policy1
Policy Names  Rule Names  Action  Condition
-----
Policy1      Rule1      RASLOG  Switch(SEC_IDB/Min>0)
              Rule2      RASLOG  Switch(SEC_IDB/Min>1)
Active Policy: Policy2
```

To display a summary of policies:

```
switch:admin> mapspolicy --show -summary
Policy Names      Number of Rules
-----
Policy1           :          125
Policy2           :          130
Policy3           :          135
Policy4           :          150
Active Policy: Policy2
```

To enable a policy:

```
switch:admin> mapspolicy --enable aggressive_policy
```

To display the details of a policy:

```
switch:admin> mapspolicy --show dflt_base_policy -concise
Policy Name: dflt_base_policy
```

Rule Name	Condition	Actions
defALL_TTEMP_OUT_OF_RANGE	| ALL_TS (TEMP/NONE==OUT_OF_RANGE)	
| RS, SN, EML		
defCHASSISFLASH_USAGE_90	| CHASSIS (FLASH_USAGE/NONE>=90)	
| RS, SN, EML		
defCHASSISMEMORY_USAGE_75	| CHASSIS (MEMORY_USAGE/NONE>=75)	
| RS, SN, EML		
defCHASSISCPU_80	| CHASSIS (CPU/NONE>=80)	
| RS, SN, EML		
defCHASSISBAD_TEMP_MARG	| CHASSIS (BAD_TEMP/NONE>=1)	
| SWM, SN, EML		
defCHASSISBAD_TEMP_CRIT	| CHASSIS (BAD_TEMP/NONE>=2)	
| SWD, SN, EML		
defCHASSISBAD_PWR_CRIT	| CHASSIS (BAD_PWR/NONE>=2)	
| SWD, SN, EML		
defCHASSISBAD_FAN_MARG	| CHASSIS (BAD_FAN/NONE>=1)	
| SWM, SN, EML		
defCHASSISBAD_FAN_CRIT	| CHASSIS (BAD_FAN/NONE>=2)	
| SWD, SN, EML		
defALL_PSPS_STATE_FAULTY	| ALL_PS (PS_STATE/NONE==FAULTY)	
| RS, SN, EML		
defALL_PSPS_STATE_ON	| ALL_PS (PS_STATE/NONE==ON)	
| RS, SN, EML		
defALL_PSPS_STATE_OUT	| ALL_PS (PS_STATE/NONE==OUT)	
| RS, SN, EML		
defALL_FANFAN_STATE_FAULTY	| ALL_FAN (FAN_STATE/NONE==FAULTY)	
| RS, SN, EML		
defALL_FANFAN_STATE_ON	| ALL_FAN (FAN_STATE/NONE==ON)	
| RS, SN, EML		
defALL_FANFAN_STATE_OUT	| ALL_FAN (FAN_STATE/NONE==OUT)	
| RS, SN, EML		
*defALL_PORTSSFP_STATE_FAULTY	| ALL_PORTS (SFP_STATE/NONE==FAULTY)	
| RS, SN, EML		
*defALL_PORTSSFP_STATE_OUT	| ALL_PORTS (SFP_STATE/NONE==OUT)	
| RS, SN, EML		
*defALL_PORTSSFP_STATE_IN	| ALL_PORTS (SFP_STATE/NONE==IN)	
| RS, SN, EML		
defCHASSISETH_MGMT_PORT_STATE_DOWN	| CHASSIS (ETH_MGMT_PORT_STATE/NONE==DOWN)	
| RS, SN, EML		
defCHASSISETH_MGMT_PORT_STATE_UP	| CHASSIS (ETH_MGMT_PORT_STATE/NONE==UP)	
| RS, SN, EML		

Active Policy is 'dflt_base_policy'.

Unmonitored Rules are prefixed with "*"

Legends:

RS: RASLOG SN: SNMP EML: EMAIL PF: FENCE PL: PORTLOG PD: DECOM FMS: FMS PT: TOGGLE
SDDQ: SDDQ SWD: SW_CRITICAL

SEE ALSO [logicalGroup](#), [mapsConfig](#), [mapsDb](#), [mapsRule](#), [mapsSam](#)

mapsRule

Creates and manages monitoring rules.

Synopsis

```
mapsrule --create rule_name rule_parameters [-policy policy_name]

mapsrule --createRoR rule_name rule_parameters [-group group_name]
[-policy policy_name]

mapsrule --config rule_name rule_parameters

mapsrule --clone existing_rule_name -rulename new_rule_name
rule_parameters [-policy policy_name]

mapsrule --cloneByGroup existing_group -frompolicy policy_name
-newpolicy new_policy_name -newgroup group [-tag rule_tag]

mapsrule --delete rule_name [-force]

mapsrule --show rule_name | -all [-concise]

mapsrule --help
```

Description Use this command to configure and manage MAPS monitoring rules and to display the configured rules. A rule associates a condition with actions that must be triggered when the specified condition is evaluated to be true. When you modify a rule, the rule does not take effect until you enable the policy. If the rule is part of the enabled policy, you must re-enable the policy for the rule to take effect.

For a monitoring rule created with an imported flow group, MAPS monitors the paused members.

Notes The port fence and port decommission actions are not supported on an E_Port for a C3TXTO monitoring system. The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--create

Creates a monitoring rule and adds it to a specified policy.

--createRoR

Creates a Rule-on-Rule (RoR) to monitor a user-defined base rule. The following restrictions apply when you create an ROR:

- To create an ROR, the base rule must be present.
- To add an ROR to a given policy, the base rule must be present and added to that policy.
- You can define an ROR with any time base greater than the time base of the base rule. The time base 'none' is not supported.
- You cannot create an ROR based on another ROR.
- You can create up to 50 RORs per logical switch.

--config

Modifies the specified monitoring rule. You cannot modify a default rule.

--clone

Creates a replica of an existing rule. Specify only the rule parameters that you want to modify. If no operand is specified, an exact copy is created. The following operands are required:

existing_rule_name

Specifies the name of the exiting rule to be copied.

-rulename *new_rule_name*

Specifies the name of the new rule. The name for the new rule must be unique; it is case-sensitive and can contain up to 40 characters.

--cloneByGroup

Clones all the rules associated with the specified group and adds the rules to a new policy. The following operands are required:

existing_group

Specifies the name of an existing group to be copied.

-frompolicy *policy_name*

Specifies the name of an existing policy containing the rules to be copied.

-newpolicy *new_policy_name*

Specifies the name of a new policy to which you want to add the rules.

-newgroup *group*

Specifies the name of a new group. The name for the new group must be unique.

-tag *rule_tag*

Specifies the tag to add to the name of cloned rules. If the tag is not specified, all the cloned rule names are prefixed with the default tag name "clone_".

--delete *rule_name* **[-force]**

Deletes a user-defined monitoring rule. The -force option provides the capability to override the default behavior and this option fails if you try to delete a default rule.

--show

Displays the condition, actions, and the associated policies for the given rule or all rules. Specify -all to display all rules configured on the switch.

-concise

Displays legends instead of the complete action names in the output. The legends for the action names are as follows: RS (RASLOG), PF (FENCE), EM (EMAIL), SN (SNMP), PT (TOGGLE), PD (DECOM), FM (FMS), SQ (SDDQ), SC (SW_CRITICAL), SM (SW_MARGINAL), and SFPM (SFP_MARGINAL). This operand is optional.

rule_name

Specifies the name of the rule to be configured. The name for the rule must be unique; it is case-sensitive and can contain up to 40 characters.

rule_parameters

-group *group_name*

Specifies a pre-defined or user-defined group containing the elements on which the specified condition is to be evaluated.

-monitor *ms_name*

Specifies the monitoring system (MS). Refer to the description of the *ms_name* option for the list of supported monitoring systems.

-timebase *time_base*

Specifies the time interval between two samples to be compared. Valid time base values include the following:

min	Samples are compared every minute.
hour	Samples are compared once an hour.
day	Samples are compared once a day.
none	Time base is not applicable.

-op *comparison_operator*

Specifies the relational operation to be used in evaluating the condition. Valid operators include the following:

l	Less than
le	Less than or equal to
g	Greater than
ge	Greater than or equal to
eq	Equal to

-value *value*

Specifies the threshold value. Valid values include the following:

- For numerical values: 0-999999999. The upper limit may vary depending on the monitoring system category.
- For percentage values: 0-100.
- For FRU states: ON, OFF, IN, OUT, or FAULTY.
- For temperature monitoring: IN_RANGE or OUT_OF_RANGE.
- For FPI states: IO_FRAME_LOSS, IO_PERF_IMPACT, IO_LATENCY_CLEAR.
- For Ethernet port state: UP or DOWN

-action *action*

Specifies a comma-separated list of actions to be taken if the specified condition is evaluated to be true. The action is not taken unless it is also specified globally, using the `mapsconfig --actions` command. Valid actions include the following:

raslog	Generates a RASLog message.
---------------	-----------------------------

decom	Decommissions the port. Use this action along with fence.
fence	Fences the port, if port fencing is enabled. Port fencing takes the ports offline if the user-defined thresholds are exceeded. This action is valid only on conditions that are evaluated on ports.
snmp	Generates an SNMP trap.
email	Sends information about a switch event to a specified e-mail address.
sw_critical	Sets the state of the affected switch to critical. This action is valid only if the monitor operand is one of the switch policy status monitoring systems.
sw_marginal	Sets the state of the affected switch to marginal. This action is valid only if the monitor operand is one of the switch policy status monitoring systems.
sfp_marginal	Sets the state of the affected SFP transceiver to marginal. This action is valid only if the monitor operand is one of the switch policy status monitoring systems.
sddq	Isolates the slow-drain flows to a low priority VC from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. The slow drain device quarantine (SDDQ) feature is not supported in the Access Gateway mode. The port toggling (PT) action and the SDDQ action are mutually exclusive. When using the mapsConfig command, you cannot enable SDDQ and PT actions at the same time.
fms	Notifies the configured MAPS threshold events to the FICON Management Server (FMS).
toggle	Enables port toggling to recover a port from bottleneck condition caused by the target device. Port toggle is supported only for the F_Ports. The port toggling (PT) action and the SDDQ action are mutually exclusive. When using the mapsConfig command, you cannot enable SDDQ and PT actions at the same time.
unquar	Releases the previously quarantined ports.
uninstall_vtap	Uninstalls vTAP if the mirrored frame count exceeds 250K IOPS and encryption is enabled in the 16 Gbps-capable ASIC. If encryption is not enabled in the ASIC, vTAP is not uninstalled.
none	No actions are allowed on the switch. Specifying this option allows you to turn off all notifications.

The actions SW_CRITICAL and SW_MARGINAL are always enabled and cannot be turned off.

-tt timeout

Specifies the time window in seconds over which the port is disabled and re-enabled by MAPS to recover from bottleneck condition. The valid range is from 2 to 3600 seconds. This parameter is valid with only the toggle alert option.

-qt quiet_time [-unit min | hour | day]

Specifies the time interval, in units of minutes, hours, or days, between consecutive alerts. This parameter is valid with only the raslog and email alert options.

-qtclear

Clears the configured quiet time for the RASLog and e-mail alerts.

-uqrt unquarantine_time [-uqrt_unit min | hour | day]

Specifies the time, in units of hours or days, after which the previously quarantined ports are automatically released. This parameter is valid with only the unquar alert option.

-uqrt_clear

Clears the configured un-quarantine timeout value. This parameter is valid with only the unquar alert option.

-severity

Specifies the severity level. Valid values include info, warning, error, critical, and default.

-policy policyname

Specifies the user-defined policy. You cannot add a rule to a predefined policy.

ms_name

Specifies the monitoring system. Valid monitoring systems for each category include the following:

I/O Latency Stats

Monitors I/O latency statistics. This monitoring system is supported only on the Brocade Analytics Monitoring platform. Valid values for the I/O latency statistics category include the following:

RD_STATUS_TIME_LT_8K

Read Completion Time (RCT) for lesser than 8k size IOs

RD_STATUS_TIME_8_64K

RCT for 8k to less than 64k size IOs

RD_STATUS_TIME_64_512K

RCT for 64k to less than 512k size IOs

RD_STATUS_TIME_GE_512K

RCT for greater than or equal to 512k size IOs

WR_STATUS_TIME_LT_8K

Write completion time (WCT) for lesser than 8k flows

WR_STATUS_TIME_8_64K

WCT for 8k to less than 64k flows

WR_STATUS_TIME_64_512K

WCT for 64k to less than 512k flows

WR_STATUS_TIME_GE_512K

WCT for greater than or equal to 512k size IOs

RD_1STDATA_TIME_LT_8K

Read first response time for lesser than 8k size IOs

WR_1STXFER_RDY_LT_8K

Write first response time for lesser than 8k size IOs

RD_1STDATA_TIME_8_64K

Read first response time for 8k to less than 64k size IOs

WR_1STXFER_RDY_8_64K

Write first response time for 8k to less than 64k size IOs

RD_1STDATA_TIME_64_512K

Read first response time for 64k to less than 512k size IOs

WR_1STXFER_RDY_64_512K

Write first response time for 64k to less than 512k size IOs

RD_1STDATA_TIME_GE_512K

Read first response time for greater than or equal to 512k size IOs

WR_1STXFER_RDY_GE_512K

Write first response time for greater than or equal to 512k size IOs

RD_PENDING_IO_LT_8K

Read pending IOs for lesser than 8k size flows

WR_PENDING_IO_LT_8K

Write pending IOs for lesser than 8k size flows

RD_PENDING_IO_64K

Read pending IOs for 8k to 64k size flows

WR_PENDING_IO_8_64K

Write pending IOs for 8k to 64k size flows

RD_PENDING_IO_64_512K

Read pending IOs for 64k to 512k size flows

WR_PENDING_IO_64_512K

Write pending IOs for 64k to 512k size flows

RD_PENDING_IO_GE_512K

Read pending IOs for greater than or equal to 512k size flows

WR_PENDING_IO_GE_512K

Write pending IOs for greater than or equal to 512k size flows

MISC_PENDING_IOs

Miscellaneous pending IOs

MISC_CMD_TIME

Other command completion time

FRT_FAB_LATENCY

Write fabric latency

CMD_STATUS_FAB_LATENCY

Read fabric latency

FAB_LATENCY_TO_TARGET

Fabric frame latency to target

FAB_LATENCY_TO_INITIATOR

Fabric frame latency to initiator

Performance Stats

Monitors performance statistics. This monitoring system is supported only on the Brocade Analytics Monitoring platform. Valid values for the performance statistics category include the following:

RD_IOPS_LT_8K

Read IOPS for lesser than 8k size flows

RD_IOPS_8_64K

Read IOPS for 8k to less than 64k size flows

RD_IOPS_64_512K

Read IOPS for 64k to less than 512k size flows

RD_IOPS_GE_512K

Read IOPS for greater than or equal to 512k size flows

WR_IOPS_LT_8K

Write IOPS for lesser than 8k size flows

WR_IOPS_8_64K

Write IOPS for 8k to less than 64k size flows

WR_IOPS_64_512K

Write IOPS for 64k to less than 512k size flows

WR_IOPS_GE_512K

Write IOPS for greater than or equal to 512k size flows

RD_RATE_LT_8K

Read Data Rate (RDR) for lesser than 8k size flows

RD_RATE_8_64K

RDR for 8k to less than 64k size flows

RD_RATE_64_512K

RDR for 64k to less than 512k size flows

RD_RATE_GE_512K

RDR for greater than or equal to 512k size flows

WR_RATE_LT_8K

Write Data Rate (WDR) for lesser than 8k size flows

WR_RATE_8_64K

WDR for 8k to less than 64k size flows

WR_RATE_64_512K

WDR for 64k to less than 512k size flows

WR_RATE_GE_512K

WDR for greater than or equal to 512k size flows

I/O SCSI Health

Monitors I/O SCSI statistics. This monitoring system is supported only on the Brocade Analytics Monitoring platform. Valid values for the I/O SCSI health category include the following:

SCSI_TO

SCSI error timeouts

SCSI_ABTS

SCSI aborts

AMP Health

Monitors analytics switch statistics. This monitoring system is supported only on the Brocade Analytics Monitoring platform. Valid values for the analytics switch health category include the following:

RX_IOPS

AE_Port receive IOPS

AMP_RX_IOPS

Brocade Analytics Monitoring Platform receive IOPs across all AE_Ports.

FLOW_COUNT

IO analytics flow count

IT_COUNT

Initiator Target (IT) flow count

ITL_COUNT

Initiator Target LUN (ITL) flow count

FRAME_DROP

Dual processor frame drops due to flow control

RX

Receive bandwidth usage %

Port health

Monitors port statistics. Valid values for the port health category include the following:

CRC

Cyclic redundancy check errors

ITW

Invalid transmit words

LOSS_SYNC

Loss of synchronization

LF

Link failure

LOSS_SIGNAL

Loss of signal

PE

Protocol errors

LR

Link reset

C3TXTO

Class 3 timeouts

STATE_CHG

State changes

CURRENT

SFP current

RXP

SFP receive power

TXP

SFP transmit power

VOLTAGE

SFP voltage

SFP_TEMP

SFP temperature

PWR_HRS

SFP power on hours

Backend Port Health

Monitors backend port statistics. Valid values for the port health category include the following:

CRC

Cyclic redundancy check errors

ITW

Invalid transmit words

LR

Link reset

BAD_OS

Invalid ordered set

FRAME_TRUNC

The frame is too short (less than 36 bytes).

FRAME_LONG

The frame is longer than expected (greater than 2148 bytes).

Extension GE Port Health

Monitors backend port statistics. Valid values for the port health category include the following:

GE_CRC	Cyclic redundancy check errors
GE_INV_LEN	Invalid length
GE_LOS_OF_SIG	Loss of signal

AMP Resource

Monitors the field-replaceable units, including ports, power supplies, and flash memory. Valid values for the FRU health category include the following:

PS_STATE	Power supply state has changed
FAN_STATE	Fan state has changed
BLADE_STATE	Blade state has changed
SFP_STATE	SFP state has changed
WWN	WWN card state has changed

Security health

Monitors security violations on the switch. Valid values for the security health category include the following:

SEC_HTTP	HTTP violations
SEC_LV	Login violations
SEC_TELNET	Telnet violations
SEC_TS	Time Server (TS) out of sync
DAYS_TO_EXPIRE	Days to expire
EXPIRED_CERTS	Expired certificates

Switch status policy

Monitors the health of the switch. Valid values for the switch policy change category include the following:

BAD_PWR

Absent or faulty power system

BAD_TEMP

Temp Sensors outside range

BAD_FAN

Absent or faulty fans

FLASH_USAGE

Flash usage

MARG_PORTS

Percentage of marginal ports

FAULTY_PORTS

Percentage of faulty ports

MISSING_SFP

Percentage of missing SFP transceivers

ERR_PORTS

Percentage of error ports

WWN_DOWN

World Wide Name card down

DOWN_CORE

Core blade monitoring

FAULTY_BLADE

Faulty blades

HA_SYNC

High Availability monitoring

FAN_AIRFLOW_MISMATCH

Monitors the air flow direction of the power supply fan FRUs and blower FRUs and generates an alert if there is a mismatch in the air flow direction of any two power supply fans or any two blowers. The mismatch event is followed by a match event, when the air flow direction in all the fans and blowers is back to normal.

Switch resource

Monitors system RAM, flash, memory, and CPU. Valid values for the switch resource category include the following:

TEMP

Temperature sensor

FLASH_USAGE

Flash usage

MARG_PORTS

Percentage of marginal ports

FAULTY_PORTS

Percentage of faulty ports

MISSING_SFP

Percentage of missing SFPs

ERR_PORTS

Percentage of error ports

WWN_DOWN

WWN card state has changed

DOWN_CORE

Core blade monitoring

FAULTY_BLADE

Faulty blades

HA_SYNC

HA monitoring

FAN_AIRFLOW_MISMATCH**ETH_MGMT_PORT_STATE**

Ethernet management port state

VTAP_IOPS

Traffic IOPS per ASIC chip

VTAP_IOPS

Traffic IOPS per ASIC chip

RD_STATUS_TIME_LT_8K

Read Completion Time (RCT) for lesser than 8k size IOs

RD_STATUS_TIME_8_64K

RCT for 8k to less than 64k size IOs

RD_STATUS_TIME_64_512K

RCT for 64k to less than 512k size IOs

RD_STATUS_TIME_GE_512K

RCT for greater than or equal to 512k size IOs

WR_STATUS_TIME_LT_8K

Write completion time (WCT) for lesser than 8k flows

WR_STATUS_TIME_8_64K

WCT for 8k to less than 64k flows

WR_STATUS_TIME_64_512K

WCT for 64k to less than 512k flows

WR_STATUS_TIME_GE_512K

WCT for greater than or equal to 512k size IOs

RD_1stDATA_TIME_LT_8K

Read first response time for lesser than 8k size IOs

RD_1stDATA_TIME_8_64K

Read first response time for 8k to less than 64k size IOs

RD_1stDATA_TIME_64_512K

Read first response time for 64k to less than 512k size IOs

RD_1stDATA_TIME_GE_512K

Read first response time for greater than or equal to 512k size IOs

WR_1stXFER_RDY_LT_8K

Write first response time for less than 8k size IOs

WR_1stXFER_RDY_8_64K

Write first response time for 8k to less than 64k size IOs

WR_1stXFER_RDY_64_512K

Write first response time for 64k to less than 512k size IOs

WR_1stXFER_RDY_GE_512K

Write first response time for greater than or equal to 512k size IOs

RD_PENDING_IO_LT_8K

Read pending IOs for less than 8k size flows

RD_PENDING_IO_8_64K

Read pending IOs for 8k to 64k size flows

RD_PENDING_IO_64_512K

Read pending IOs for 64k to 512k size flows

RD_PENDING_IO_GE_512K

Read pending IOs for greater than or equal to 512k size flows

WR_PENDING_IO_LT_8K

Write pending IOs for less than 8k size flows

WR_PENDING_IO_8_64K

Write pending IOs for 8k to 64k size flows

WR_PENDING_IO_64_512K

Write pending IOs for 64k to 512k size flows

WR_PENDING_IO_GE_512K

Write pending IOs for greater than or equal to 512k size flows

--help

Displays the command usage.

Examples

To create a rule for monitoring the number of CRC errors every hour on critical ports and generating a RASlog if the number of CRC errors is greater than 10:

```
switch:admin> mapsrule --create check_crc -monitor crc \
    -group CRITICAL_PORTS -timebase hour -op g -value 10 \
    -action raslog
```


To create an ROR rule:

```
switch:admin> mapspolicy --create test_policy1

switch:admin> mapsrule --create test_CRC_min -group ALL_PORTS -monitor CRC \
    -timebase min -op g -value 12 -action raslog,snmp,email -policy test_policy1

switch:admin> mapsrule --createRoR test_ror_CRC_min -group test_ports_1 -monitor
    test_CRC_min \
    -timebase hour -op g -value 5 -action raslog,snmp,email,fence -policy
    test_policy1

switch:admin> mapspolicy -show test_policy1
Policy Name: test_policy1
```

Rule Name	Condition	Actions
test_CRC_min	ALL_PORTS(CRC/min>12)	raslog, snmp, email
test_ror_CRC_min	test_ports_1(test_CRC_min/hour>5)	raslog, snmp, email, fence

Active Policy is 'test_policy1'

To modify a rule to change the action to generate a RASlog message and fence the port:

```
switch:admin> mapsrule --config check_crc -monitor crc \
    -group CRITICAL_PORTS -timebase hour -op g -value 10 \
    -action raslog,fence
```

To delete a rule:

```
switch:admin> mapsrule --delete New_Cntr_High
```

To clone a rule with a modified timebase:

```
switch:admin> mapsrule --clone Rule1 -rulename NewRule2
    -timebase Hour
```

To clone all rules associated with a group:

```
switch:admin> mapsrule --cloneByGroup ALL_E_PORTS -newgroup admin_CBG_E_PORTS \
    -frompolicy dflt_aggressive_policy -newpolicy admin_CBG -tag cl
```

To display a single rule:

```
switch:admin> mapsrule --show defRuleITWAboveHighPF
Rule Data:
-----
RuleName: defRuleITWAboveHighPF
Actions: Raslog
Condition: ALL_PORTS(ITW/MIN>25)
Policies Associated: none
```

To display all of the rules configured on a switch:

```

switch:admin> maprule --show -all
Rule Name                                     |Condition                                     |Actions
-----
defNON_E_F_PORTSCRC_0                       |NON_E_F_PORTS(CRC/MIN>0)
|RASLOG,SNMP,EMAIL
defNON_E_F_PORTSCRC_2                       |NON_E_F_PORTS(CRC/MIN>2)
|FENCE,SNMP,EMAIL
defNON_E_F_PORTSCRC_10                     |NON_E_F_PORTS(CRC/MIN>10)
|RASLOG,SNMP,EMAIL
defNON_E_F_PORTSCRC_20                     |NON_E_F_PORTS(CRC/MIN>20)
|FENCE,SNMP,EMAIL
defNON_E_F_PORTSCRC_21                     |NON_E_F_PORTS(CRC/MIN>21)
|RASLOG,SNMP,EMAIL
defALL_10GSWL_SFPVOLTAGE_3600              |ALL_10GSWL_SFP(VOLTAGE/NONE>=3600)
|SFP_MARGINAL,RASLOG,SNMP,EMAIL
|AIL
defALL_10GSWL_SFPRXP_1999                  |ALL_10GSWL_SFP(RXP/NONE>=1999)
|SFP_MARGINAL,RASLOG,SNMP,EMAIL
|AIL
defALL_PORTS_IO_PERF_IMPACT
|ALL_PORTS(DEV_LATENCY_IMPACT/NONE==IO_PERF_IMPACT)|RASLOG,SNMP,EMAIL,SDDQ,TOGG|LE
tt=2
defALL_PORTS_IO_FRAME_LOSS                  |ALL_PORTS(DEV_LATENCY_IMPACT/NONE==IO_FRAME_LOSS)
|RASLOG,SNMP,EMAIL,SDDQ,TOGG|LE
tt=2
defALL_PORTS_IO_LATENCY_CLEAR
|ALL_PORTS(DEV_LATENCY_IMPACT/NONE==IO_LATENCY_CLEA|RASLOG,SNMP,EMAIL

```

To display all of the rules configured on a switch with legends for action names:

```

switch:admin> mapsrule --show -all -concise
Rule Name                                     |Condition                                     |Actions
|
-----
defNON_E_F_PORTSCRC_0                       |NON_E_F_PORTS(CRC/MIN>0)
|RS,SN,EM
defNON_E_F_PORTSCRC_2                       |NON_E_F_PORTS(CRC/MIN>2)
|PF,SN,EM
defNON_E_F_PORTSCRC_10                      |NON_E_F_PORTS(CRC/MIN>10)
|RS,SN,EM
defNON_E_F_PORTSCRC_20                      |NON_E_F_PORTS(CRC/MIN>20)
|PF,SN,EM
defNON_E_F_PORTSCRC_21                      |NON_E_F_PORTS(CRC/MIN>21)
|RS,SN,EM
defALL_10GSWL_SFPVOLTAGE_3600               |ALL_10GSWL_SFP(VOLTAGE/NONE>=3600)
|SFP,RS,SN,EM
defALL_10GSWL_SFPRXP_1999                   |ALL_10GSWL_SFP(RXP/NONE>=1999)
|SFP,RS,SN,EM
defALL_PORTS_IO_PERF_IMPACT                 |ALL_PORTS(DEV_LATENCY_IMPACT/NONE==IO_PERF_IMPACT)
|RS,SN,EM,SQ,PT tt=2

```

mapsRule

```
defALL_PORTS_IO_FRAME_LOSS      | ALL_PORTS (DEV_LATENCY_IMPACT/NONE==IO_FRAME_LOSS)
| RS,SN,EM,SQ,PT tt=2          |
defALL_PORTS_IO_LATENCY_CLEAR    | ALL_PORTS (DEV_LATENCY_IMPACT/NONE==IO_LATENCY_CLEA
| RS,SN,EM                      |
```

Legend:

RS:RASLOG, EM:EMAIL, PD:DECOM, PF:FENCE, SC:SW_CRITICAL SM:SW_MARGINAL, FM:FMS,
PT:TOGGLE, SQ:SDDQ SN:SNMP

SEE ALSO [logicalGroup](#), [mapsConfig](#), [mapsDb](#), [mapsPolicy](#), [mapsSam](#)

mapsSam

Generates or clears reports to display CPU, RAM, and flash memory usage, and the port status for every physical and virtual Fibre Channel port on the switch.

Synopsis **mapssam --show[cpu | memory | flash]**

mapssam --clear

mapssam --help

Description Use this command to generate the reports to display CPU, RAM, and flash memory usage, and the port status for every physical and virtual Fibre Channel port on the switch. This command provides an option to clear the reports. This report displays uptime and downtime for each port and enables you to check if a particular port is failing more often than the others. When issued with the --show option, the report displays with the following information:

Port

Port number on the local switch.

Type

Port type, such as the following: E (E_Port), F (F_Port), U (U_Port), D (disable port), AE (AE_Port), AF (AF_Port), T (E Trunk ports), VE (VE_Port), G (G_Port), DP (persistently disable port), DIA (D_Port), VEX (VEX_Port), or TF (F Trunk ports).

Total Up Time

Percent of time the port was up.

Total Down Time

Percent of time the port was faulty.

Down Occurrence

Number of times the port was faulty.

Total Offline Time

Percent of time the port was offline.

Notes This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--show

Displays the MAPS Service Availability Module (SAM) report.

cpu

Displays system CPU usage.

memory

Displays system memory usage.

flash

Displays system flash usage.

--clear

Clears the SAM report.

--help

Displays the command usage.

Examples

To generate a port availability monitor report:

```
switch:admin> mapssam --show
```

Port	Type	Total Up Time (Percent)	Total Down Time (Percent)	Down Occurrence (Times)	Total Offline Time (Percent)
0	U	0	0	0	100
1	U	0	0	0	100
2	U	0	0	0	100
3	F	100	0	0	0
4	U	0	0	0	100
5	U	0	0	0	100
6	U	0	0	0	100
7	U	0	0	0	100
8	U	0	0	0	100
9	E	0	0	0	0
10	U	0	0	0	100

(output truncated)

To display CPU usage:

```
switch:admin> mapssam --show cpu
Showing Cpu Usage:
CPU Usage      : 2.0%
```

To display memory usage:

```
switch:admin> mapssam --show memory
Showing Memory Usage:
Memory Usage   : 51.0%
Used Memory    : 257207k
Free Memory    : 247121k
Total Memory   : 504328k
```

To display system flash usage:

```
switch:admin> mapssam --show flash
Showing Flash Usage:
Flash Usage    : 42%
```

To clear the report:

```
switch:admin> mapssam --clear
```

SEE ALSO [logicalGroup](#), [mapsConfig](#), [mapsDb](#), [mapsPolicy](#), [mapsRule](#)

memShow

Displays the amounts of free and used memory in a switch.

Synopsis **memshow [-b | -k | -m]**

Description Use this command to display free and used memory in the switch, as well as the shared memory and buffers used by the kernel.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- b** Specify to display memory usage in bytes.
- k** Specify to display memory usage in kilobytes.
- m** Specify to display memory usage in megabytes. By default, memory usage is displayed in bytes.

Examples To view the memory usage:

```
switch:admin> memshow
              total      used      free   shared   buffers   cached
Mem:    129740800 112562176 17178624         0    139264 30396416
Swap:           0         0         0

switch:admin> memshow -m
              total      used      free   shared   buffers   cached
Mem:         123        107        16         0         0        28
Swap:         0         0         0
```

SEE ALSO [supportSave](#)

motd

Sets the banner on the chassis.

Synopsis **motd --set *string***

motd --show

Description Use this command to set the banner on the chassis.

The banner is a string of alphanumeric characters. It is displayed before you log in to a switch. This banner is shown only in the Fabric OS CLI prompt and it is not shown in Web Tools.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operands:

--set *string*

Specify a text string of alphanumeric characters to be displayed before login. The string must be enclosed in double quotation marks. Spaces are allowed. The maximum length is 116 characters.

The message displays either before or after the login prompt, depending on the SSH client implementation. Fabric OS does not control when the MOTD displays.

--show

Displays the chassis-wide banner.

--help

Displays the command usage.

Examples To set a chassis-level banner for the switch:

```
switch:admin> motd --set "This is a \
chassis-level banner. It displays before the login."
```

To display the banner:

```
switch:admin> motd --show
This is a chassis-level banner. It displays before the login.
```

SEE ALSO [bannerSet](#), [bannerShow](#)

mgmtApp

Manages the sessions from the switch management applications.

Synopsis `mgmtapp --unbind`

Description Use this command to remove Brocade Network Advisor binding and collection configuration from Brocade Analytics Monitoring Platform.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

--unbind Clears binding of the switch to the management application and thus allowing a different instance of management application to manage the switch. In addition, the command clears the collection configuration created by the application.

Examples To unbind Brocade Network Advisor from Brocade Analytics Monitoring Platform:

```
switch:admin> mgmtapp --unbind
Application unbind success
```

SEE ALSO None

msCapabilityShow

Displays the Management Server (MS) capabilities.

Synopsis **mscapabilityshow**

Description Use this command to display the supported capabilities of the Management Server for each switch in the fabric. An asterisk displays next to the name of the local switch.

Notes Reliable commit service (RCS) is a fabric-wide capability and is supported only if all the switches in the fabric support the service.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the supported MS capabilities for each switch in the fabric:

```
switch:admin> mscapabilityshow
Switch WWN          Capability  Switch Name
=====
10:00:00:60:69:20:15:71  0x0000008f  "switch1" *
10:00:00:60:69:00:30:05  0x0000008f  "switch2"

Capability Bit Definitions:
  Bit 0: Basic Config Service Supported.
  Bit 1: Platform Management Service Supported.
  Bit 2: Topology Discovery Service Supported.
  Bit 3: Unzoned Name Service Supported.
  Bit 4: Fabric Zone Service Supported.
  Bit 5: Fabric Lock Service Supported.
  Bit 6: Time Service Supported.
  Bit 7: RSCN Small Payload Supported.
  Bit 8: Reliable Commit Service(RCS) Supported.
  Bit 9: Access Gateway Registration/Discovery Supported.
  Bit 10: Administrative Domains(AD) Supported.
  Others: Reserved.
```

SEE ALSO [msPIMgmtActivate](#), [msPIMgmtDeactivate](#)

msConfigure

Configures the Management Server (MS) access control list (ACL).

Synopsis **msconfigure**

Description Use this command to configure the MS Access Control List (ACL). The MS allows a Storage Area Network (SAN) management application to retrieve and administer the fabric and Interconnect Elements, such as switches. This application is located at the Fibre Channel well-known address, 0xFFFFFA.

If the MS ACL is empty (default), The MS is available to all systems connected to the fabric. By populating the MS ACL with one or more world wide names (WWNs), you can restrict access to MS to the specified WWNs.

This command is interactive and provides the following choices:

- 0** Done
- 1** Display the access list
- 2** Add member based on its port/node WWN
- 3** Delete member based on its port/node WWN

When changing the MS ACL by adding or deleting WWNs, you are prompted to save the new configuration to nonvolatile storage. The saved MS ACL becomes effective upon reboot.

The MS ACL is implemented on a per-switch basis and should be configured on the switch to which the management application is directly connected.

Notes When an FCS policy is enabled, the MS ACL is not used. In such a case, access to MS is controlled by security by way of the MS_POLICY configuration.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the MS ACL:

```
switch:admin> msconfigure

0      Done
1      Display the access list
2      Add member based on its Port/Node WWN
3      Delete member based on its Port/Node WWN
select : (0..3) [1] 1

MS Access List consists of (5): {
20:01:00:60:69:00:60:10
20:02:00:60:69:00:60:10
```

msConfigure

```
20:03:00:60:69:00:60:10
20:02:00:60:69:00:60:03
20:02:00:60:69:00:60:15

0      Done
1      Display the access list
2      Add member based on its Port/Node WWN
3      Delete member based on its Port/Node WWN
select : (0..3) [1] 0

done ...
```

SEE ALSO [msCapabilityShow](#), [msPlatShow](#), [msPIClearDB](#), [msPIMgmtActivate](#), [msPIMgmtDeactivate](#), [msTdDisable](#), [msTdEnable](#), [msTdReadConfig](#), [secPolicyShow](#)

msPlatShow

Displays the Management Server (MS) platform database.

Synopsis **msplatshow**

Description Use this command to display information from the MS platform database. This command displays the name of each platform object with the platform type (GATEWAY, HOST_BUS_ADAPTER, and so forth), associated management addresses, and associated node names.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the MS platform database for a fabric:

```
switch:admin> msplatshow
-----
Platform Name: [9] "first obj"
Platform Type: 5 : GATEWAY
Number of Associated M.A.: 1
Associated Management Addresses:
[35] "http://java.sun.com/products/plugin"
Number of Associated Node Names: 1
Associated Node Names:
10:00:00:60:69:20:15:71
-----
Platform Name: [10] "second obj"
Platform Type: 7 : HOST_BUS_ADAPTER
Number of Associated M.A.: 1
Associated Management Addresses:
[30] "http://java.sun.com/products/1"
Number of Associated Node Names: 2
Associated Node Names:
10:00:00:60:69:20:15:79
10:00:00:60:69:20:15:75
```

SEE ALSO [msCapabilityShow](#), [msPIMgmtActivate](#), [msPIMgmtDeactivate](#)

msPlatShowDBCB

Displays the Management Server (MS) platform service database control block.

Synopsis **msplatshowdbcb**

Description Use this command to display the control block fields associated with the platform database.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the MS platform service database control block:

```
switch:admin> msplatshowdbcb
Domain   Worldwide Name      Retry Count Exchange Status
-----
3: 10:00:00:60:69:51:10:e6      0              0x2
-----

msPlDBCB.peerWwn == 00:00:00:00:00:00:00:00.
msPlDBCB.psPeerWwn == 00:00:00:00:00:00:00:00.
msPlDBCB.replicate == 0.
msPlDBCB.fabMaySeg == 255.
msPlDBCB.enabled == 1.
```

SEE ALSO [msCapabilityShow](#), [msConfigure](#), [msPlatShow](#), [msPIClearDB](#), [msPIMgmtActivate](#), [msPIMgmtDeactivate](#)

msPIClearDB

Clears the Management Server (MS) platform database on all switches in the fabric.

Synopsis **msplcleardb**

Description Use this command to clear the MS platform database in the entire fabric. Because this operation cannot be undone, it should not be performed unless it is intended to resolve a database conflict between two joining fabrics or to establish an entirely new fabric with an empty database.

Notes This command is not supported on the Brocade Analytics Monitoring Platform.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To clear the MS platform database:

```
switch:admin> msplcleardb

MS Platform Service is currently enabled.
This will erase MS Platform Service Database in the\
entire fabric.

Would you like to continue this operation?
(yes, y, no, n): [no] y

Request to MS Platform DB Clear operation in progress...

*Completed clearing MS Platform Service Database!!
```

SEE ALSO [msCapabilityShow](#), [msConfigure](#), [msPlatShow](#), [msPlatShowDBCB](#), [msPIMgmtActivate](#), [msPIMgmtDeactivate](#)

msPIMgmtActivate

Activates the Management Server (MS) platform service.

Synopsis **msplmgmtactivate**

Description Use this command to activate the MS platform service throughout the fabric. This command attempts to activate the MS platform service for each switch in the fabric. The change takes effect immediately and is committed to the configuration database of each affected switch. MS activation is persistent across power cycles and reboots.

Notes By default, the MS platform service is disabled.

Before issuing this command, run `msCapabilityShow` to verify that all switches in the fabric support the MS platform service; if one switch does not support the service, the command fails.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To activate the MS platform service:

```
switch:admin> msplmgmtactivate

Request to activate MS Platform Service in progress.....

*Completed activating MS Platform Service in the fabric!
```

SEE ALSO [msCapabilityShow](#), [msPlatShow](#), [msPIMgmtDeactivate](#)

msPIMgmtDeactivate

Deactivates the Management Server (MS) platform service.

Synopsis **msplmgmtdeactivate**

Description Use this command to deactivate the MS platform service throughout the fabric. This command deactivates the MS platform service for each switch in the fabric and commits the change to nonvolatile storage.

Notes When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To deactivate the MS platform service on all switches in the fabric:

```
switch:admin> msplmgmtdeactivate

MS Platform Service is currently enabled.

This will erase MS Platform Service configuration
information as well as database in the entire fabric.

Would you like to continue this operation?
  (yes, y, no, n): [no] y

Request to deactivate MS Platform Service in progress...

*Completed deactivating MS Platform Service in the fabric!
```

SEE ALSO [msCapabilityShow](#), [msPlatShow](#), [msPIMgmtActivate](#)

msTdDisable

Disables the Management Server (MS) topology discovery service.

Synopsis **mstdisable** ["ALL"]

Description Use this command to disable the management server topology discovery service on a local switch or an entire fabric. This change takes effect immediately and commits to the configuration database for all affected switches. The change is persistent across power cycles and reboots.

Notes Topology Discovery Management requires the attached devices (including attached switches) to support request node identification data (RNID) extended link service (ELS).

When an FCS policy is enabled, and this command is issued with the "ALL" operand, it can be issued only from the primary FCS.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operand is optional:

"ALL"

Disables the MS topology discovery service throughout the entire fabric. This operand must be enclosed in double quotation marks.

Examples To disable the MS topology discovery service on the local switch only:

```
switch:admin> mstdisable
This may erase all NID entries. Are you sure?
(yes, y, no, n): [no] y

Request to disable MS Topology Discovery Service
in progress....
done.
*MS Topology Discovery disabled locally.
```

To disable MS topology discovery on all the switches in the fabric:

```
primaryfcs:admin> mstdisable "ALL"
This may erase all NID entries. Are you sure?
(yes, y, no, n): [no] y

Request to disable MS Topology Discovery Service
in progress....
done.
*MS Topology Discovery disabled locally.
*MS Topology Discovery Disable Operation Complete!!
```

SEE ALSO [msTdEnable](#), [msTdReadConfig](#)

msTdEnable

Enables the Management Server (MS) topology discovery service.

Synopsis **mstdenable** ["ALL"]

Description Use this command to enable the MS topology discovery service on the local switch or throughout the fabric. The change takes effect immediately and commits to the configuration database for all affected switches. The change is persistent across power cycles and reboots.

Notes Topology Discovery Management requires the attached devices (including attached switches) to support request node identification data (RNID) extended link service (ELS).

When an FCS policy is enabled, and this command is issued with the "ALL" operand, it can be issued only from the primary FCS.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operand is optional:

"ALL"

Enables the MS topology discovery service throughout the fabric. This operand must be enclosed in double quotation marks.

Examples To enable the MS topology discovery service on the local switch:

```
switch:admin> mstdenable
```

```
Request to enable MS Topology Discovery Service
in progress....
done.
*MS Topology Discovery enabled locally.
```

To enable MS topology discovery on all switches in the fabric:

```
switch:admin> mstdenable "ALL"
```

```
Request to enable MS Topology Discovery Service
in progress....
done.
*MS Topology Discovery enabled locally.
*MS Topology Discovery Enable Operation Complete!!
```

SEE ALSO [msTdDisable](#), [msTdReadConfig](#)

msTdReadConfig

Displays the status of The Management Server (MS) topology discovery service.

Synopsis **mstdreadconfig**

Description Use this command to check whether or not the management server topology discovery service is enabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the status of the topology discovery service:

```
switch:admin> mstdreadconfig
```

```
*MS Topology Discovery is enabled.
```

SEE ALSO [msCapabilityShow](#), [msConfigure](#), [msPIMgmtActivate](#), [msPIMgmtDeactivate](#), [msTdDisable](#), [msTdEnable](#)

myId

Displays the current login session details.

Synopsis **myid**

Description Use this command to display the status of the system and the login session details. This includes IPv4 or IPv6 addresses associated with the login session.

The login session gives details of the following:

- CP/switch (or console/serial port) used to log in.
- The IP address of the current login session for Telnet or the name of the current console port or the serial port (if modem login used).
- The current CP mode (Active, Standby, or N/A).
- The current system status (Redundant, Nonredundant, or N/A).

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display current login information:

```
switch:admin> myid
Current Switch: switch
Session Detail: switch (123.123.123.123) Active Redundant

switch:admin> myid
Current Switch: sw0
Session Detail: sw0 (123.123.123.123) N/A HA-Status-N/A
```

SEE ALSO [version](#)

nbrShow

Displays FSPF protocol information.

Synopsis **nbrshow** [*slot*][*port*]

Description Use this command to display FSPF protocol statistics and information about the link between the local and remote switches, including the current synchronization state of the two switches connected through the link. This information is used when debugging FSPF related link protocol issues. The displayed information is a subset of that shown in the interfaceShow command, which also includes interface and port information for the local port.

The following fields are displayed:

state	Current state of this interface. This E_Port is used to route traffic to other switches only if the state is NB_ST_FULL.
lastTransition	Time the last state changed on this interface.
nghbCap	Neighbor capabilities. Should be 0.
nghbld	Domain ID of the neighbor (adjacent) switch.
idbNo	IDB number. Should be equal to port.
remPort	Port number on the remote switch connected to this port.
nflags	Internal FSPF flags.
initCount	Number of times this neighbor was initialized without the interface going down.
lastInit	Time of the last initializing state, NB_ST_INIT, on this interface.
firstHlo	Time of the first hello sent on this interface.
nbstFull	Time of the last finishing state, NB_ST_FULL, on this interface.
&dbRetransList	Pointer to the database retransmission list.
&lsrRetransList	Pointer to the link state records (LSR) retransmission list.
&lsrAckList	Pointer to the link state acknowledgements (LSA) retransmission list.

inactTID	Inactivity timer ID.
helloTID	Hello timer ID.
dbRtxTID	Database retransmission timer ID.
lsrRtxTID	LSR retransmission timer ID.
inactTo	Inactivity timeout value, in milliseconds. When this timeout expires, the adjacency with the neighbor switch is broken and new paths are computed to all possible destination switches in the fabric.
helloTo	Hello timeout value, in milliseconds. When this timeout expires, a Hello frame is sent to the neighbor switch through this port.
rXmitTo	Retransmission timeout value, in milliseconds. It is used to transmit topology information to the neighbor switch. If no acknowledgement is received within this value, the frame is retransmitted.
nCmdAcc	Total number of commands accepted from the neighbor switch. Number includes Hellos, Link State Updates (LSUs), and LSAs.
nInvCmd	Number of invalid commands received from the neighbor switch. Usually commands with an FSPF version number higher than the one running on the local switch.
nHloIn	Number of Hello frames received from the neighbor switch.
nInvHlo	Number of invalid Hello frames (Hello frames with invalid parameters) received from the neighbor switch.
nLsuIn	Number of LSUs received from the neighbor switch.
nLsaIn	Number of LSAs received from the neighbor switch.
attHloOut	Number of attempted transmissions of Hello frames to the neighbor switch.
nHloOut	Number of Hello frames transmitted to the neighbor switch.
attLsuOut	Number of attempted transmissions of LSUs to the neighbor switch.

nLsuOut	Number of LSUs transmitted to the neighbor switch.
attLsaOut	Number of attempted transmissions of LSAs to the neighbor switch.
nLsaOut	Number of LSAs transmitted to the neighbor switch.
StuckCnt	Number of HLO timeouts that occurred before the port changed to the NB_ST_FULL state.
state	Substate of the port. The port can be in one of the following 12 substates:
INIT (0)	The port is initializing.
ROUTABLE (1)	The port is ready to receive frames.
ROUTABLE_WAIT (2)	The port is waiting for notification from the neighbor.
ROUTABLE_SEND (3)	The port is preparing for local route update; negotiates for the necessary locks before updating the routes.
ROUTABLE_TIMER (4)	The request for one or more locks failed; delay for a short interval before retrying.
DONE (5)	The port is online and in use.
DECOM_START (6)	The decommissioning request is sent to the neighbor and waiting for a response.
DECOM_WAIT (7)	Waiting for neighbor to remove routes using the interswitch link (ISL).
DECOM_SEND (8)	Preparing to update routes of the local port; negotiates for the necessary before updating the routes.
DECOM_TIMER (9)	The request for one or more locks failed; delay for a short interval before retrying.
DECOM_DONE (10)	The local routes are updated; waiting for acknowledgement from the neighbor.
DECOM_BLOCK (11)	The local routes are updated; the neighbor sent acknowledgement.
chassis_lock	Internal variable

lock_request	Internal variable
nbr_lock_lock	Internal variable
r_rdy_rcvd	Indicates if the neighbor has reported as ready to receive frames.
nbr r_rdy flags	Internal flags reported by the neighbor.
lock_busy_cnt	Number of times a lock has reported as busy.
decom_active	Indicates if a decommissioning request is active on the port.
decom_initiator	Indicates if the local port is the decommissioning request initiator.
decom_active_port	Indicates the port for which the decommissioning request is active.
decom_trunk_member	Indicates if decommissioning request is for a multi-link trunk.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

<i>slot</i>	For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).
<i>port</i>	Specify the number of the port to be displayed, relative to its slot for bladed systems. Use switchShow for a list of valid ports. This operand is optional; if omitted, the interface information for all ports is displayed.

Examples To display FSPF protocol statistics and information:

```
switch:admin> nbrshow 1/19
lastTransition   = Jun  04 05:05:02.592
nghbCap         = 0x0
nghbId          = 188
idbNo           = 131
remPort         = 243
nflags          = 0xf
initCount       = 0
lastInit        = Jun  04 05:05:02.592
firstHlo        = Jun  04 05:05:21.474
nbstFull        = Jan  01 00:00:00.000
&dbRetransList  = 0x10b96928
&lsrcRetransList = 0x10b96930
&lsrcAckList     = 0x10b96938
```


nbrShow

```
inactTID      = 0x10b96b08
helloTID      = 0x10b97cb8
dbRtxTID      = 0x10b98e68
lsrRtxTID     = 0x10b9b1c8
inactTo       = 160000
helloTo       = 20000
rXmitTo       = 5000
nCmdAcc       = 38
nInvCmd       = 0
nHloIn        = 35
nInvHlo       = 0
nLsuIn        = 2
nLsaIn        = 1
attHloOut     = 35
nHloOut       = 35
attLsuOut     = 1
nLsuOut       = 1
attLsaOut     = 2
nLsaOut       = 2
StuckCnt      = 0
```

```
Port Sub-State Data:
state         = DONE (5)
chassis_lock  = 0
lock_request  = 0
nbr_lock_lock = 0
r_rdy_rcvd   = 0
nbr r_rdy flags = 0x0
lock_busy_cnt = 0
decom_active  = 0
decom_initiator = 0
decom_active_port = -1
decom_trunk_member = 0
```

SEE ALSO [interfaceShow](#)

nbrStateShow

Displays the state of FSPF neighbors.

Synopsis **nbrstateshow** [*slot*][*port*]

Description Use this command to display information about fabric shortest path first (FSPF) neighbors to the local switch or information about a neighbor to a specified port. FSPF defines a neighbor as a remote E_Port interface that is directly attached to the local switch. However, if ports are trunked, the command displays data only about the trunk master.

This command displays the following fields:

Local Domain ID	Domain ID of the local switch.
Local Port	E_Port interface on the local switch. This value is typically equal to the Index field reported in the switchShow command.
Domain	Domain ID of the remote switch.
Remote Port	E_Port interface on the remote switch.
State	State of the neighbor. The neighbor can be in one of the following five states: 0 NB_ST_DOWN - The neighbor is down. 1 NB_ST_INIT - The neighbor is initializing. 2 NB_ST_DB_EX - The neighbor and the switch are exchanging data from their Link State Records (LSR) databases. 3 NB_ST_DB_ACK_WT -The neighbor is waiting for the switch to acknowledge the LSR database. 4 NB_ST_DB_WT - The LSR Database is in waiting state; synchronization is in process. 5 NB_ST_FULL - The neighbor is in the last, finishing state. The E_Port can route frames only if the neighbor is in full state.
Sub-State	Substate of the port. The port can be in one of the following 12 substates: INIT The port is initializing.

ROUTABLE

The port is ready to receive frames.

ROUTABLE_WAIT

The port is waiting for notification from the neighbor.

ROUTABLE_SEND

The port is preparing for local route update; negotiates for the necessary locks before updating the routes.

ROUTABLE_TIMER

The request for one or more locks failed; delay for a short interval before retrying.

DONE

The port is online and in use.

DECOM_START

The decommissioning request is sent to the neighbor and waiting for a response.

DECOM_WAIT

Waiting for neighbor to remove routes using the interswitch link (ISL).

DECOM_SEND

Preparing to update routes of the local port; negotiates for the necessary before updating the routes.

DECOM_TIMER

The request for one or more locks failed; delay for a short interval before retrying.

DECOM_DONE

The local routes are updated; waiting for acknowledgement from the neighbor.

DECOM_BLOCK

The local routes are updated; the neighbor sent acknowledgement.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

Specify the port number to display, relative to its slot for bladed systems. Use switchShow to list valid ports. This operand is optional; if omitted, all neighbor states are displayed.

Examples To display information about a neighbor directly connected to the local switch:

```
switch:user> nbrstateshow 2/0
Local Domain ID: 1

Local Port   Domain   Remote Port   State   Sub-State
-----
      16         2         48   NB_ST_FULL  DONE
```

SEE ALSO [interfaceShow](#)

nbrStatsClear

Resets FSPF interface counters.

Synopsis **nbrstatsclear** [*slot*]/[*port*]

Description Use this command to reset the counters of fabric shortest path first (FSPF) frames transmitted and received on all interswitch links (ISLs) or on a specified ISL. Use this command without operands to reset counters on all interfaces. Use interfaceShow to view the FSPF counters.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

Specify the port number to display, relative to its slot for bladed systems. Use switchShow to list valid ports. This operand is optional; if omitted, FSPF statistics are reset.

Examples To display the counters on a port:

```
switch:admin> interfaceshow 1/0
```

```
idbP                = 0x10050a38
```

```
Interface 0 data structure:
```

```
nghbP              = 0x1004ce68
ifNo               = 0
masterPort         = 0 (self)
defaultCost        = 500
cost               = 500
delay             = 1
```

```
(output truncated)
```

```
nCmdAcc           = 37
nInvCmd           = 0
nHloIn            = 10
nInvHlo           = 0
nLsuIn            = 17
nLsaIn            = 10
attHloOut         = 11
nHloOut           = 11
attLsuOut         = 12
nLsuOut           = 12
attLsaOut         = 17
nLsaOut           = 17
```

To reset the counters on a port:

```
switch:admin> nbrstatsclear 1/0
```

To verify the changes:

```
switch:admin> interfaceshow 1/0
```

```
idbP          = 0x10050a38
```

```
Interface 0 data structure:
```

```
nghbP         = 0x1004ce68
```

```
ifNo          = 0
```

```
masterPort    = 0 (self)
```

```
defaultCost   = 500
```

```
cost          = 500
```

```
(output truncated)
```

SEE ALSO [interfaceShow](#), [portShow](#), [switchShow](#)

nodeFind

Displays all device Name Server (NS) entries matching a given WWN, device PID, or alias.

Synopsis **nodefind** *WWN* | *PID* | *ALIAS*

Description Use this command to display the NS information for all devices in the fabric that have either a port world wide name (WWN) or a node WWN matching the given WWN; or have a device PID matching the given PID; or have a defined configuration alias to which the device belongs matching the given alias.

If there is no device matching the given WWN, PID, or alias, the message "No device found" is displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

WWN* | *PID* | *ALIAS

Specify the WWN, device PID, or alias that can be used to match the real device's data. The WWN must be specified as a hexadecimal value or a colon-separated value with eight fields, each consisting of one or two hexadecimal numbers between 0 and ff. The PID usually begins with 0x or 0X. If the PID does not begin with 0x or 0X, it is interpreted as an alias. If an alias is not found, the argument is checked for other PIDs.

Examples To display all the device information matching the WWN "20:00:00:e0:8b:01:ce:d3":

```
switch:user> nodefind 200000e08b01ced3
Remote:
  Type Pid      COS      PortName      NodeName
  NL 020eef;3;20:00:00:e0:8b:01:ce:d3;20:00:00:e0:8b:01:ce:d3;
    Fabric Port Name: 20:0e:00:60:69:51:0b:ba
    Permanent Port Name: 20:00:00:e0:8b:01:ce:d3
Device type: Physical Target
Port Index: 14
Share Area: No
Device Shared in Other AD: No
Aliases:
```

To display all the device information matching the PID "0x020eef":

```
switch:user> nodefind 0x020eef
Remote:
  Type Pid      COS      PortName      NodeName
  NL 020eef; 3;20:00:00:e0:8b:01:ce:d3;20:00:00:e0:8b:01:ce:d3;
    Fabric Port Name: 20:0e:00:60:69:51:0b:ba
    Permanent Port Name: 20:00:00:e0:8b:01:ce:d3
Device type: Physical Target
Port Index: 14
Share Area: No
Device Shared in Other AD: No
Aliases:

No match:
```

To display device information for a string for which there is no match:

```
switch:user> nodefind abcd
No device found.
```

To display all the device information matching the alias "a320":

```
switch:user> nodefind a320
Local:
  Type Pid      COS      PortName      NodeName      SCR
NL 0314d9;3;22:00:00:04:cf:5d:dc:2d;20:00:00:04:cf:5d:dc:2d; 0
    FC4s: FCP [SEAGATE ST318452FC      0001]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:5d:dc:2d
    Device type: Physical Target
    Port Index: 20
    Share Area: No
    Device Shared in Other AD: No
    Aliases: a320
NL 0314d6; 3;22:00:00:04:cf:9f:78:7b;20:00:00:04:cf:9f:78:7b; 0
    FC4s: FCP [SEAGATE ST336605FC      0003]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:9f:78:7b
    Device type: Physical Target
    Port Index: 20
    Share Area: No
    Device Shared in Other AD: No
    Aliases: a320
NL 0314d5;3;22:00:00:04:cf:9f:7d:e0;20:00:00:04:cf:9f:7d:e0; 0
    FC4s: FCP [SEAGATE ST336605FC      0003]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:9f:7d:e0
    Device type: Physical Target
    Port Index: 20
    Share Area: No
    Device Shared in Other AD: No
    Aliases: a320
NL 0314d4;3;22:00:00:04:cf:9f:26:7e;20:00:00:04:cf:9f:26:7e; 0
    FC4s: FCP [SEAGATE ST336605FC      0003]
    Fabric Port Name: 20:14:00:60:69:80:04:79
    Permanent Port Name: 22:00:00:04:cf:9f:26:7e
    Device type: Physical Target
    Port Index: 20
    Share Area: No
    Device Shared in Other AD: No
    Aliases: a320
```

SEE ALSO [aliShow](#), [nsAllShow](#), [nsCamShow](#), [nsShow](#)

nsAliasShow

Displays local Name Server (NS) information, with aliases.

Synopsis **nsaliasshow** [-r][-t] | **-domain** *domain_id* | **--help**

Description Use this command to display local name server information with the added feature of displaying the defined configuration aliases to which the device belongs. If there are no defined configuration aliases for that device, no alias is displayed. If there is no information in this switch, the following message is displayed: "There is no entry in the Local Name Server." Use the -domain domainid option to display the remote device details for a specific domain in the fabric.

The information displayed for each device is the same that is displayed by the nsShow command with the exception of the additional display of the alias to which the device belongs. Refer to the nsShow help page for a description of these displays. Use nsCamShow to display information from all switches.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operands:

-r	Replaces the time-to-live (TTL) attribute output with state change registration (SCR) information. This value indicates what type of RSCN a device registers to receive. Values include the following:
SCR=0	Reserved.
SCR=1	Fabric detected registration. Register to receive all RSCN requests issued by the fabric controller for events detected by the fabric.
SCR=2	NX_Port detected registration. Register to receive all RSCN requests issued for events detected by the affected NX_Port.
SCR=3	Register to receive all RSCN requests issued. The RSCN request returns all effected N_Port_ID pages.

-t

Displays the device type. The device type is defined in terms of two attributes. The first attribute indicates the origination of the device as one of the following:

- Physical -The device is connected to the NX_Port, using FLOGI to log in to the switch.
- Virtual -The device is contrived by the switch.
- NPV -The device is connected to the NX_Port, using FDISC to log in to the switch.
- iSCSI Device is connected to the iSCSI port.

The second attribute indicates the role of the device. Valid role attributes include the following:

- Unknown (initiator/target) - Device role is not detected
- Initiator - An iSCSI initiator.
- Target - An iSCSI target.
- Initiator+Target - Both an iSCSI initiator and an iSCSI target.

-domain *domain_id*

Displays the remote device details for a specific domain.

--help

Displays the command usage.

Examples

To display local NS information with aliases:

```
switch:user> nsaliasshow
{
  Type Pid      COS   PortName      NodeName      TTL(sec)
  N 010600;3;20:06:00:05:1e:38:81:71;10:00:00:05:1e:38:81:71; na
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Port Index: 6
    Share Area: No
    Device Shared in Other AD: No
    Redirect: No
    Partial: No
    Aliases: MyAlias1 MyAlias2
  N 010601;3;23:0d:00:05:1e:38:81:71;50:00:51:e3:88:17:10:0d; na
    FC4s: FCP
    PortSymb: [44] "Brocade Ioblaster Port Entity #00,pid#10601."
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Port Index: 6
    Share Area: No
    Device Shared in Other AD: No
    Redirect: No
    Partial: No
    Aliases:
  N 010602;3;10:00:00:00:00:00:00:01;10:00:00:00:00:00:00:01; na
    FC4s: FCP
    PortSymb: [41] "Brocade Ioblaster Initiator#00,pid#10602."
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Port Index: 6
    Share Area: No
```

```

Device Shared in Other AD: No
Redirect: No
Partial: No
Aliases: DeviceAlias
The Local Name Server has 3 entries }

```

To display local NS information with aliases with the -r option:

```

switch:user> nsaliasshow -r
{
  Type Pid  COS      PortName                NodeName                SCR
N 010600;3;20:06:00:05:1e:38:81:71;10:00:00:05:1e:38:81:71; 0
  Fabric Port Name: 20:06:00:05:1e:7a:7a:00
  Permanent Port Name: 20:06:00:05:1e:38:81:71
  Port Index: 6
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases: MyAlias1 MyAlias2
N 010601; 3;23:0d:00:05:1e:38:81:71;50:00:51:e3:88:17:10:0d; 3
  FC4s: FCP
  PortSymb: [44] "Brocade Ioblaster Port Entity #00,pid#10601."
  Fabric Port Name: 20:06:00:05:1e:7a:7a:00
  Permanent Port Name: 20:06:00:05:1e:38:81:71
  Port Index: 6
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases:
N 010602;3;10:00:00:00:00:00:00:01;10:00:00:00:00:00:00:01; 3
  FC4s: FCP
  PortSymb: [41] "Brocade Ioblaster Initiator#00,pid#10602."
  Fabric Port Name: 20:06:00:05:1e:7a:7a:00
  Permanent Port Name: 20:06:00:05:1e:38:81:71
  Port Index: 6
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases: DeviceAlias
The Local Name Server has 3 entries }

```

To display local NS information with aliases with the -rand -t options:

```

switch:admin> nsaliasshow -r -t
{
  Type Pid  COS      PortName                NodeName                SCR
N 010600; 3;20:06:00:05:1e:38:81:71;10:00:00:05:1e:38:81:71; 0
  Fabric Port Name: 20:06:00:05:1e:7a:7a:00
  Permanent Port Name: 20:06:00:05:1e:38:81:71
  Device type: Physical Unknown(initiator/target)
  Port Index: 6
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases: MyAlias1 MyAlias2

```

```

N 010601;3;23:0d:00:05:1e:38:81:71;50:00:51:e3:88:17:10:0d; 3
  FC4s: FCP
  PortSymb: [44] "Brocade Ioblaster Port Entity #00,pid#10601."
  Fabric Port Name: 20:06:00:05:1e:7a:7a:00
  Permanent Port Name: 20:06:00:05:1e:38:81:71
  Device type: NPIV Unknown(initiator/target)
  Port Index: 6
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases:
N 010602; 3;10:00:00:00:00:00:00:01;10:00:00:00:00:00:00:01; 3
  FC4s: FCP
  PortSymb: [41] "Brocade Ioblaster Initiator#00,pid#10602."
  Fabric Port Name: 20:06:00:05:1e:7a:7a:00
  Permanent Port Name: 20:06:00:05:1e:38:81:71
  Device type: NPIV Initiator
  Port Index: 6
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases: DeviceAlias
The Local Name Server has 3entries }

```

To display remote device details for a specific domain:

```

switch:admin> nsaliasshow -domain 92
{
  Type Pid      COS      PortName      NodeName
N 5c1000; 3;23:06:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:06;
  FC4s: FCP
  PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#03."
  Fabric Port Name: 20:10:00:05:1e:53:e3:8a
  Permanent Port Name: 23:06:00:05:1e:53:e3:8a
  Port Index: 16
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases: MyAlias1
N 5c1200;3;23:04:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:04;
  FC4s: FCP
  PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#02."
  Fabric Port Name: 20:12:00:05:1e:53:e3:8a
  Permanent Port Name: 23:04:00:05:1e:53:e3:8a
  Port Index: 18
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  Aliases: MyAlias1
N 5c1300; 3;23:02:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:02;
  FC4s: FCP
  PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#01."
  Fabric Port Name: 20:13:00:05:1e:53:e3:8a
  Permanent Port Name: 23:02:00:05:1e:53:e3:8a
  Port Index: 19
  Share Area: No

```

```
Device Shared in Other AD: No
Redirect: No
Partial: No
Aliases:
N 5c1700; 3;23:00:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:00;
FC4s: FCP
PortSymb: [34] "Brocade DPC Entity-Slot#00,DPC#00."
Fabric Port Name: 20:17:00:05:1e:53:e3:8a
Permanent Port Name: 23:00:00:05:1e:53:e3:8a
Port Index: 23
Share Area: No
Device Shared in Other AD: No
Redirect: No
Partial: No
Aliases:
The Remote Name Server has 4 entries }
```

SEE ALSO [nsAllShow](#), [nsShow](#), [switchShow](#)

nsAllShow

Displays global name server information.

Synopsis **nsallshow** [*type*]

Description Use this command to display the 24-bit Fibre Channel addresses of all devices in all switches in the fabric. When used with the type operand, the command displays only devices of the specified FC-4 type. FC-4 type codes are referenced in the Fibre Channel Framing and Signaling (FC-FS) standards documentation (see "TYPE codes - FC-4"). When used without operand, all devices are displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

type

Specifies the FC-4 type code to filter the command output. Valid values are 0 to 255. Only the following two FC-4 device type codes are applicable to the Brocade environment:

- 8 - FCP type device
- 5 - FC-IP type device

For all other codes, entries are summarized in the format "x ports supporting FC4 type", where x is the number of ports and type is the user-specified FC-4 type code in hexadecimal format.

Examples To display all devices in the fabric, followed by all type 8 (SCSI-FCP) devices, and all type 5 (SCSI-FCIP) devices:

```
switch:admin> nsAllShow
{
  011000 011200 0118e2 0118e4 0118e8 0118ef 021200 021300
  0214e2 0214e4 0214e8 0214ef
  12 Nx_Ports in the Fabric }
```

```
switch:admin> nsAllShow 8
{
  0118e2 0118e4 0118e8 0118ef 0214e2 0214e4 0214e8 0214ef
  8 FCP Ports }
```

```
switch:admin> nsAllShow 5
{
  011200 021200
  2 FC-IP Ports }
```

To display a device type of 255:

```
switch:admin> nsAllShow 255
{
  010100 020a00
  2 Ports supporting FC4 0xff }
```

SEE ALSO [nsShow](#), [switchShow](#)

nsCamShow

Displays information about remote devices in the Name Server (NS) cache.

Synopsis `nscamshow [-t]`

Description Use this command to display the local NS cache information about the devices discovered in the fabric by the NS cache manager.

If the NS cache manager does not discover new switches or new devices in the fabric, the command displays the message "No Entry is found!"

For each discovered remote switch, this command displays the following information:

Switch entry for *N*

Displays the remote domain ID for the switch.

state

Displays one of the following values:

known

The local domain is aware of all the devices from this remote domain.

unknown

The local domain is unaware of devices from this remote domain.

ERROR

The information for this remote domain is unreliable.

rev

Fabric OS firmware version of the remote switch. For switches running firmware other than Fabric OS, a string of question marks ("????") is displayed.

owner

Displays the owner of the NSCAM database entry. The value displayed is a domain ID (domain address). For example, 0xffffc02 indicates domain 2 and is the domain on which the command has been executed. This is the local domain and the information is stored locally by this switch.

cap_available

Each switch in the fabric exchanges information regarding its capabilities (for example, firmware level, feature support, etc.). When the cap_available value is 1, it indicates that the local domain has received the capabilities of the remote domain that is being displayed. When the value is 0 capability information has not been received.

The remaining information displayed for each device is the same that is displayed by the nsShow command. Refer to the nsShow help page for a description of these displays.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operand is optional:

-t

Displays the device type. The device type is defined in terms of two attributes. The first attribute indicates the origination of the device as one of the following:

Physical

The device is connected to the NX_Port, using FLOGI to log in to the switch.

Virtual

The device is contrived by the switch.

NPV

The device is connected to the NX_Port, using FDISC to log in to the switch.

iSCSI

Device is connected to the iSCSI port.

iSCSI

The second attribute indicates the role of the device. Valid role attributes include the following:

Unknown (initiator/target)

Device role is not detected

Initiator

An iSCSI initiator.

Target

An iSCSI target.

Initiator+Target

Both an iSCSI initiator and an iSCSI target.

Examples To display all switch and device entries discovered by the Name Server in the fabric:

```
switch:user> nscamshow
nscam show for remote switches:
Switch entry for 92
state rev owner cap_available
known v640 0xffffc23 1
Device list: count 8
Type Pid COS PortName NodeName
N 5c1000; 3;23:06:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:06;
FC4s: FCP
PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#03."
Fabric Port Name: 20:10:00:05:1e:53:e3:8a
Permanent Port Name: 23:06:00:05:1e:53:e3:8a
Port Index: 16
Share Area: No
Device Shared in Other AD: No
Redirect: No
Partial: No
N 5c1200;3;23:04:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:04;
FC4s: FCP
```



```

PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#02."
Fabric Port Name: 20:12:00:05:1e:53:e3:8a
Permanent Port Name: 23:04:00:05:1e:53:e3:8a
Port Index: 18
Share Area: No
Device Shared in Other AD: No
Redirect: No
Partial: No
Port Properties: SIM Port
N 5c1300; 3;23:02:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:02;
FC4s: FCP
PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#01."
Fabric Port Name: 20:13:00:05:1e:53:e3:8a
Permanent Port Name: 23:02:00:05:1e:53:e3:8a
Port Index: 19
Share Area: No
Device Shared in Other AD: No
Redirect: No
Partial: No
Port Properties: SIM Port
N 5c1700; 3;23:00:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:00;
FC4s: FCP
PortSymb: [34] "Brocade DPC Entity-Slot#00,DPC#00."
Fabric Port Name: 20:17:00:05:1e:53:e3:8a
Permanent Port Name: 23:00:00:05:1e:53:e3:8a
Port Index: 23
Share Area: No
Device Shared in Other AD: No
Redirect: No
Partial: No
Port Properties: SIM Port
(output truncated)

```

To display the output with the -t option:

```

switch:user> nscamshow -t
Switch entry for 92
state rev owner cap_available
known v640 0xffffc23 1
Device list: count 8
Type Pid COS PortName NodeName
N 5c1000;3;23:06:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:06;
FC4s: FCP
PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#03."
Fabric Port Name: 20:10:00:05:1e:53:e3:8a
Permanent Port Name: 23:06:00:05:1e:53:e3:8a
Device type: Virtual Unknown(initiator/target)
Port Index: 16
Share Area: No
Device Shared in Other AD: No
Redirect: No
Partial: No
N 5c1200; 3;23:04:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:04;
FC4s: FCP
PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#02."
Fabric Port Name: 20:12:00:05:1e:53:e3:8a
Permanent Port Name: 23:04:00:05:1e:53:e3:8a
Device type: Virtual Unknown(initiator/target)
Port Index: 18
Share Area: No

```

```
Device Shared in Other AD: No  
Redirect: No  
Partial: No  
Port Properties: SIM Port  
(output truncated)
```

SEE ALSO [nsAllShow](#), [nsAliasShow](#), [nsShow](#), [switchShow](#)

nsDevLog

Manages device history logging.

Synopsis

nsdevlog --show *[[--slot slot] -port port |
-pid pid | -wwpn *wwpn* | -wwnn *nwwn* | -event event]*

nsdevlog --enable

nsdevlog --disable

nsdevlog --clear

nsdevlog --help

Description

Use this command to manage Name Server (NS) device logging. By default, logging is enabled. The NS records the PortIndex, PID, world wide node name (WWNN), world wide port name (WWPN) and the event (login and logout).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show *options*

Displays the device logs.

-slot slot -port port

Displays device logs for the specified port or slot/port.

-pid pid

Displays device logs for the specified PID.

-wwpn *ppwn*

Displays device logs for the specified port WWN.

-wwnn *nwwn*

Displays device logs for the specified node WWN.

-event event

Displays device logs for the specified event. The events are the following:

- "Register": Entry created by explicit NS registration.
- "Deregister": Entry deleted by explicit NS deregistration.
- "Device Add": Entry created based on UPD Area.
- "Device Del": Entry deleted based on UPD Delete.
- "Device Add (Query)": Entry created by NS query from the device.
- "Port Del": Entries deleted based on DEL Area.
- "Dup WWN": Entry deleted based on Duplicate WWN.
- "Switch Offline": Entries deleted due to switch offline.
- "FPORT Entry": Entry created by F-Port SCN.

--enable

Enables NS device history logging.

--disable

Disables NS device history logging.

--clear

Clears the NS device history logs.

--help

Displays the command usage.

Examples

To enable device logging:

```
switch:admin> nsdevlog --enable
Device History Logging enabled
```

To disable device logging:

```
switch:admin> nsdevlog --disable
Device History Logging disabled
```

To display the NS device log for an event:

```
switch:admin> nsdevlog --show -event "FPORT Entry"
date/time          slot/port  PID      Port WWN          \
      Node WWN          event
=====
Wed Jun 27 11:24:33.608  2/12  0x034c00  30:11:00:05:1e:0f:9c:6a \
      20:11:00:05:1e:0f:9c:6a  FPORT Entry
Wed Jun 27 11:24:33.881  2/11  0x034b00  30:1c:00:05:1e:0f:9c:6a \
      20:1c:00:05:1e:0f:9c:6a  FPORT Entry
Wed Jun 27 11:24:34.028  7/28  0x039c00  20:0c:00:05:1e:06:c3:1a \
      10:00:00:05:1e:06:c3:1a  FPORT Entry
Wed Jun 27 11:24:34.048  7/29  0x039d00  20:08:00:05:1e:06:c3:1a \
      10:00:00:05:1e:06:c3:1a  FPORT Entry
Total number of Logged entries = 133
Total number of Entries displayed = 4
Max number of entries: 65536
Device Logging is currently disabled
```

To clear device logs:

```
switch:admin> nsdevlog --clear  
Device History logs cleared
```

To display device logs:

```
switch:admin> nsdevlog --show  
Total number of Logged entries = 0  
Total number of Entries displayed = 0  
Max number of entries: 65536  
Device Logging is currently disabled
```

SEE ALSO [nsAliasShow](#), [nsAllShow](#), [nsCamShow](#), [nsShow](#), [nsZoneMember](#)

nsShow

Displays local Name Server (NS) information.

Synopsis `nsshow [-r][-t]`

Description Use this command to display local NS information about devices connected to a switch. If no information is available for the switch, the command displays the following message: "There is no entry in the Local Name Server."

Use nsAllShow to display NS information for all switches in the fabric.

Each line of output displays the following information:

Type	Displays U for unknown, N for N_Port, NL for NL_Port.
PID	Displays the 24-bit Fibre Channel address of the device.
COS	Displays the Class of Service levels supported by the device. This can be class 1, class 2, or class 3. The command displays only the numeric values, 1, 2, and/or 3. A device can support multiple CoS levels.
PortName	Displays the device port world wide name (WWN).
NodeName	Displays the device node WWN.
TTL	Displays the time-to-live, in seconds, for cached entries or NA (not applicable) if the entry is local.
SCR	Displays the state change registration of the device. This field displays only with the -r option.
Device type	Displays the device type if -t is specified.
NodeSymb	Displays the symbolic node name.
Fabric Port Name	Displays the F_Port WWN to which the N_Port connects.
Permanent Port Name	Displays the physical N_Port or NL_Port WWN.
Port Index	Displays the index number of the physical N_Port to which the device connects.

Share Area

Displays "Yes" if the port shares an area; otherwise displays "No".

Redirect

Displays "Yes" if the device is involved in frame redirection; otherwise displays "No". The device involved in frame redirection is specified as either "virtual" , "host", or "target".

Partial

Displays "Yes" if the device entry is incomplete; otherwise displays "No". Devices that are incomplete are displayed by the nsShow and nsCamShow commands, and have routing established, but are not considered during device discovery (for example, during FC-GS Name Server Queries).

LSAN

Displays "Yes" if the device is currently part of an active LSAN zone; otherwise displays "No".

Device link speed

Displays the link speed of the device, for example: 4G, 8G, 16G and 32G. Link speed of end devices that log in to the edge fabric through F_Port trunk display the bandwidth of the F_Port trunk. For example, if an 8 Gbps host attached to AG login to fabric through a 32 Gbps F_Port trunk, the device link speed for the 8 Gbps host is displayed as 32G.

Connected through AG

Displays "Yes" if the devices in the fabric are connected through Access Gateway.

Real device behind AG

Displays "Yes" if any real device is connected behind the Access Gateway device.

Port Properties

Displays a list of port properties, for example: "SIM Port" for SIM ports. If no properties are assigned, the field is not displayed.

The following information is displayed only if the device has registered the information (for example, the switch automatically registers SCSI inquiry data for FCP target devices):

- FC4s supported
- IP address
- Port and node symbolic names
- Fabric Port Name. This is the WWN of the port on the switch to which the device is physically connected.
- Port address or port IP address

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operands:

-r

Replaces the time-to-live (TTL) attribute output with state change registration (SCR) information. This value indicates what type of RSCN a device registers to receive. Values include the following:

SCR=0x00000000

Reserved.

SCR=0x00000001

Fabric detected registration. Register to receive all RSCN requests issued by the fabric controller for events detected by the fabric.

SCR=0x00000002

NX_Port detected registration. Register to receive all RSCN requests issued for events detected by the affected NX_Port.

SCR=0x00000003

Register to receive all RSCN requests issued. The RSCN request returns all effected N_Port_ID pages.

The following SCR values use the 4th byte of the SCR value and can coexist with the SCR values of 0x00000000, 0x00000001, 0x00000002, and 0x00000003.

SCR=0x01000000

Principal switch RSCN registration. Register to receive proprietary RSCN (principal switch change).

SCR=0x02000000

AG_QOS RSCN registration.

-t

Displays the device type. The device type is defined in terms of two attributes. The first attribute indicates the origination of the device as one of the following:

Physical

The device is connected to the NX_Port, using FLOGI to log in to the switch.

Virtual

The device is contrived by the switch.

NPV

The device is connected to the NX_Port, using FDISC to log in to the switch.

iSCSI

The device is connected to the iSCSI port.

The second attribute indicates the role of the device. Valid role attributes include the following:

Unknown (initiator/target)

Device role is not detected

Initiator

An iSCSI initiator.

Target

An iSCSI target.

Initiator+Target

Both an iSCSI initiator and an iSCSI target.

Examples

To display local NS information:

```
switch:user> nsshow
{
  Type Pid      COS      PortName      NodeName      TTL(sec)
N 010600; 3;25:00:00:27:f8:fd:1f:80;10:00:00:27:f8:fd:1f:80; na
  NodeSymb: [78] "Brocade-AG | C3_CORE_AG | 118 | 10.17.31.174 | v8.1.0"
  Fabric Port Name: 2f:00:00:27:f8:fd:1c:cf
  Permanent Port Name: 25:00:00:27:f8:fd:1f:80
  Port Index: 8
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  LSAN: No
  Device link speed: 64G
  Connected through AG: Yes
  Real device behind AG: Yes
  The Local Name Server has 1 entry }
```

To display local name server information with the -r option.

```
switch:user> nsshow -r
{
  Type Pid      COS      PortName      NodeName      SCR
N 010600; 3;25:00:00:27:f8:fd:1f:80;10:00:00:27:f8:fd:1f:80; \
  0x00000000
  NodeSymb: [78] "Brocade-AG | C3_CORE_AG | 118 | 10.17.31.174 | v8.1.0"
  Fabric Port Name: 2f:00:00:27:f8:fd:1c:cf
  Permanent Port Name: 25:00:00:27:f8:fd:1f:80
  Port Index: 8
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
```

```

LSAN: No
Device link speed: 64G
Connected through AG: Yes
Real device behind AG: Yes
The Local Name Server has 1 entry }

```

To display local name server information with -r and -t options.

```

switch:user> nsshow -r -t
{
  Type Pid COS      PortName          NodeName          SCR
N 010600; 3;25:00:00:27:f8:fd:1f:80;10:00:00:27:f8:fd:1f:80; \
  0x00000000
  NodeSymb: [78] "Brocade-AG | C3_CORE_AG | 118 | 10.17.31.174 | v8.1.0"
  Fabric Port Name: 2f:00:00:27:f8:fd:1c:cf
  Permanent Port Name: 25:00:00:27:f8:fd:1f:80
  Device type: Physical Unknown(initiator/target)
  Port Index: 8
  Share Area: No
  Device Shared in Other AD: No
  Redirect: No
  Partial: No
  LSAN: No
  Device link speed: 64G
  Connected through AG: Yes
  Real device behind AG: Yes
The Local Name Server has 1 entry }

```

SEE ALSO [nsAllShow](#), [nsAliasShow](#), [nsCamShow](#), [switchShow](#)

nsZoneMember

Displays the information on online devices zoned with a specified device.

Synopsis **nszonemember** *pid* | *wwn*

nszonemember **-a** | **-n** | **-u**

nszonemember [**-domain** *domain*] [**-index** *index*]

nszonemember **--help**

Description Use this command to display information on all online devices zoned with the specified device. The device can be specified by WWN or Port ID (PID). Use this command with the **-u** option to display all unzoned devices in the entire fabric. Use the **-a** option to display online zoned device data for each local device. Use the **-domain** and **-index** options to display zoned device data for a device (either local or remote) in the fabric with the specified domain and port index combination. If a domain is not specified, device data for a local device with the specified port index is displayed.

The command output displays the following information:

Type	U - known, N - N_Port, NL - NL_Port.
Pid	The 24-bit Fibre Channel address.
COS	A list of classes of service supported by the device.
PortName	The device's port world wide name (WWN).
NodeName	The device's node WWN.
Permanent Port Name	The physical N_Port or NL_Port WWN.
DeviceType	The device type.
Port Index	The index of the port to which the device is attached.
Shared Area	Whether or not the device shares an area with other devices.
Device Shared in Other AD	Whether or not the device is shared in other Admin Domains.

Additional lines may display if the device has registered any of the following information (the switch automatically registers SCSI inquiry data for FCP target devices):

- FC4 supported
- IP address (node)
- IPA
- port and node symbolic name (local device only)
- fabric port name
- hard address or port IP address

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

<i>PID</i> | <i>WWN</i>	Specifies the port ID or WWN of the device for which to display zoned devices.
-a	Displays each local device's online zoned device data, including the device PID and zone alias.
-n	Displays each local device's online zoned device data including the device PID.
-u	Displays all unzoned devices in the entire fabric. The device data includes the device PID and zone alias.
-domain <i>domain</i>	Displays zoned device data for a device (either local or remote) with the specified domain.
-index <i>index</i>	Displays zoned device data for a device (either local or remote) with the specified port index.
--help	Displays the command usage.

Examples To display information about all the online devices zoned with the given device:

```
switch:admin> nszonemember 0x0416e2
3 local zoned members:

Type Pid COS      PortName                      NodeName                      SCR
NL 041901;2,3;10:00:00:00:c9:26:0e:ae;20:00:00:00:c9:26:0e:ae; 3
    Fabric Port Name: 20:09:00:60:69:50:06:78
    Permanent Port Name: 10:00:00:00:c9:26:0e:ae
    Device type: Physical Initiator
NL 0416e2;3;22:00:00:20:37:d9:6b:b3;20:00:00:20:37:d9:6b:b3; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Fabric Port Name: 20:06:00:60:69:50:06:78
    Permanent Port Name: 22:00:00:20:37:d9:6b:b3
    Device type: Physical Target
NL 0416e4; 3;22:00:00:20:37:d9:61:ac;20:00:00:20:37:d9:61:ac; 0
```

```

FC4s: FCP [SEAGATE ST318304FC      0005]
Fabric Port Name: 20:06:00:60:69:50:06:78
Permanent Port Name: 22:00:00:20:37:d9:61:ac
Device type: Physical Target

```

No remote zoned members

To display information about all the online devices zoned with the given WWN:

```

switch:admin> nszonemember 10:00:00:00:c8:23:0b:ad
3 local zoned members:

Type Pid  COS      PortName      NodeName      SCR
NL 041901;2,3;10:00:00:00:c9:26:0e:ae;20:00:00:00:c9:26:0e:ae;3
    Fabric Port Name: 20:09:00:60:69:50:06:78
    Permanent Port Name: 10:00:00:00:c9:26:0e:ae
    Device type: Physical Initiator
NL 0416e2; 3;22:00:00:20:37:d9:6b:b3;20:00:00:20:37:d9:6b:b3; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Fabric Port Name: 20:06:00:60:69:50:06:78
    Permanent Port Name: 22:00:00:20:37:d9:6b:b3
    Device type: Physical Target
NL 0416e4; 3;22:00:00:20:37:d9:61:ac;20:00:00:20:37:d9:61:ac; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Permanent Port Name: 22:00:00:20:37:d9:61:ac
    Device type: Physical Target

No remote zoned members

```

To display all the unzoned devices in the fabric:

```

switch:admin> nszonemember -u
Pid: 0xb01ea9;    Aliases: trimm32b_1
Pid: 0xb01eaa;    Aliases: trimm32b_2
Pid: 0xb01eab;    Aliases: trimm32b_3
Pid: 0xb01eac;    Aliases: trimm32b_4
Pid: 0xb01fad;    Aliases: trimm32a_5
Pid: 0xb01fae;    Aliases: trimm32a_6
Pid: 0xb01fb1;    Aliases: trimm32a_7
Pid: 0xb01fb2;    Aliases: trimm32a_8
Pid: 0xdc2800;    Aliases:
Totally 9 unzoned devices in the fabric.

```

To display each local device's online zoned device data:

```

switch:admin> nszonemember -a
Port: 4 Pid: 0xb00400    Aliases: ix360_131_201_6a
    Zoned Members: 2 devices
        Pid: 0xb00400    Aliases: ix360_131_201_6a
        Pid: 0xbalee8    Aliases: trimm101b_3

Port: 12 Pid: 0xb00c01    Aliases: dl360_130159a
    Zoned Members: 2 devices
        Pid: 0xb00c01    Aliases: dl360_130159a
        Pid: 0xbd1bef    Aliases: nstor4b_8

Port: 13 Pid: 0xb00d00    Aliases: ix360_131_196p5
    Zoned Members: 2 devices
        Pid: 0xb00d00    Aliases: ix360_131_196p5

```

```

Pid: 0xe07d00    Aliases: hds9200_6p4 hds9200_6p4

Port: 14  Pid: 0xb00e00    Aliases: dl360_130251a dl360_130251a
Zoned Members: 2 devices
Pid: 0xb00e00    Aliases: dl360_130251a dl360_130251a
Pid: 0xbalae4    Aliases: trimm100a_2

```

To display device data for a local device with the specified port index:

```

switch:admin> nszonemember -index 2
Port Index: 2  Pid: 0x015200
Zoned Members: 2 devices
Pid: 0x015200    Aliases: ali_b1
Pid: 0x03a840    Aliases: ali_b1

```

To display zoned device data for a device (either local or remote) in the fabric with the specified domain and port index:

```

switch:admin> nszonemember -domain 3 -index 168
Port Index: 168  Pid: 0x03a840
Zoned Members: 2 devices
Pid: 0x03a840    Aliases: ali_z1
Pid: 0x015200    Aliases: ali_z1

```

SEE ALSO [cfgShow](#), [nsCamShow](#), [nsShow](#)

nsZoneShow

Displays the zone names.

Synopsis

nszonestow -pid *pid*

nszonestow -wwn *wwn*

nszonestow -pid "*pid1,pid2*"

nszonestow -wwn "*wwn1,wwn2*"

Description

Use this command to display the zone names that a specified device or device-pair are part of. The devices can be zoned as part of regular zones, Traffic Isolation (TI) zones, or Frame Redirect (RD) zones.

- If you specify a single Port ID (PID) or world wide name (WWN), the command displays the names of the regular zones, RD zones, or TI zones that the devices belong to.
- If you specify a PID pair or WWN pair, the command displays the names of the common zones (regular, RD or TI zones) that the device pairs share.
- For devices zoned as part of an RD zone, the command displays the following information:
 - If you specify the PID or WWN pair for a given host and virtual target (VT) pair, the command displays the RD zone name.
 - If you specify the PID or WWN pair for a given virtual host (VI) and target pair, the command displays the RD zone name.
 - If you specify the PID or WWN for a given VI or VT, the command displays the RD zone name.
 - If you specify the PID or WWN pair for a given host and target pair, the command displays the regular zone name and the RD zone name.
 - If you specify the PID or WWN for a given host or target, the command displays the regular zone name and the RD zone name.

The host, target, VI and VT are specified while creating zones using the zone command. The RD zone names will start with the prefix 'red_O917'. You can use the `cfgshow` or the `zone --showcommand` to view the zone configuration information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-pid *pid*

Displays the zone names that the PID belongs to.

-wwn *wwn*

Displays the zone names that the WWN belongs to.

-pid "*pid1,pid2*"

Displays the zone names of the common zones where both PIDs are zoned together.

-wwn "*wwn1,wwn2*"

Displays the zone names of the common zones where both WWNs are zoned together.

Examples To display the zone names for a device with a specified PID:

```
switch:admin> nszoneshow -pid 0x010200
Zone Names
=====
zn_test1
zn_test2
=====
```

To display the common zone for two devices specified by a WWN pair:

```
switch:admin> nszoneshow \
wwn "20:08:00:05:1e:a3:01:d9,20:01:00:05:1e:a3:01:d9"
Zone Names
=====
zn_test2
=====
```

To display the RD zone name:

```
switch:admin> cfgshow
Defined configuration:
cfg: myHTcfg myHostTarget
cfg: r_e_d_i_r_c_fg
red_____base;
red_0917_00_3f_3f_23_24_25_26_3f_3f_30_32_00_00_00
zone: myHostTarget
00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00
zone:red_0917_00_3f_3f_23_24_25_26_3f_3f_30_32_00_00_00
00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00;
3f:3f:3f:30:30:00:00:00; 3f:3f:3f:30:31:00:00:00
zone: red_____base
00:00:00:00:00:00:00:01; 00:00:00:00:00:00:00:02;
00:00:00:00:00:00:00:03; 00:00:00:00:00:00:00:04
switch:admin> nszoneshow wwn 00:3f:3f:3f:23:24:25:26

Zone Names
=====
myHostTarget
red_0917_00_3f_3f_23_24_25_26_3f_3f_30_32_00_00_00
=====
```

SEE ALSO [cfgShow](#), [zone](#), [nsZoneMember](#)

openSource

Displays open-source licenses.

Synopsis **opensource**

Description Displays listing of open source elements, licenses, and code samples used in Fabric OS. Refer to the Linux documentation for more information on how to use this command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display open-source licenses:

```
switch:user> opensource
In compliance with open source licensing requirements Brocade
publishes open source information in the following location:
http://www.brocade.com/support/oscd
Also included in this file is a list of all open source licences
associated with this release of the Fabric Operating System.
=====
License Text for apache 1.3.31
Relative path to license text file: LICENSE
=====
/* =====
* The Apache Software License, Version 1.1
*
* Copyright (c) 2000-2002 The Apache Software Foundation. All rights
* reserved.
*
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*
Type <CR> or <SPACE BAR> to continue, <q> to stop
(output truncated)
```

SEE ALSO [aliShow](#)

passwd

Changes the password for a specified user.

Synopsis

```
passwd
  [user_account]
  [-old old_password]
  [-new new_password]
```

Description

Use this command to change a user account password.

Passwords can be changed locally on any switch. For the password database to be distributed to other switches in the fabric, the switches must be configured to accept the password database with the `fddCfg` command. The password database is distributed manually with the `distribute` command.

If RADIUS authentication is enabled, password change is blocked for users changing their own password. Administrators with the privilege to change passwords for other accounts may do so regardless of whether RADIUS authentication is enabled; all such password changes operate on the local password database.

The `passwd` command cannot be run on the Standby CP. When an admin account or a SecurityAdmin account changes the password for other accounts, it does not prompt for the current password, unless the target account is a factory or root account.

Any chosen password must satisfy the following password strength rules:

- Password contains the minimum required number of lowercase characters.
- Password contains the minimum required number of uppercase characters.
- Password contains the minimum required number of numeric characters.
- Password contains the minimum required number of punctuation characters.
- Password must be between `minlength` and 40 characters long. The `minlength` parameter is set with the `passwdCfg` command.
- Password may not contain the colon (:) character.
- Password must satisfy repeated and sequential character constraints.

The password history policy is enforced across all user accounts when the user is setting his own password. The password history policy is not enforced when an administrator sets a password for another user, but the user's password history is preserved and the password set by the administrator is recorded in the user's password history.

The passwd command behaves as follows:

- If you are changing your own password, you are prompted to enter the old password and, if your entry is valid, you are prompted to enter the new password. Alternately, you may specify the old and new password on the command line.
- If you are changing another user's password with greater privileges than your current login level, you are prompted to enter that user level's old password and, if your entry is valid, you are prompted for a new password.
- If you are changing another user's password, the target account's AD member list must be a subset of your account's AD member list.
- If you are logged in as the root user when changing another user's password, you are not prompted to enter the old password. If you are a factory account, an admin, or SecurityAdmin account, you are not prompted to enter the current password unless the target account is root.
- Changing the password of any user level causes the login session of that account (if logged in) to terminate.

When invoked without an operand, this command changes the password for the current user account.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

user_account

Specifies the user account for which the password is to be changed. The user account must be an existing account, either default or user-created. Only users with accounts of type "root", "factory", "SecurityAdmin", or "admin" can execute this operand and have permission to change passwords for accounts other than their own.

-old *old_password*

Specifies the old password. This operand is optional; if omitted, the command interactively prompts for the old password.

-new *new_password*

Specifies the new password. This operand is optional; if omitted and only the old password is specified on the command line, the command interactively prompts for the new password.

Diagnostics

The system may generate one or more of the following error messages. Refer to the Fabric OS Message Reference for more diagnostic information.

RADIUS enabled error

Password change disallowed, RADIUS authentication is enabled.

Password error

Password length, strength, or history policy not met.

"User" is not a valid user name

You have not specified a valid recognized user name on the system.

Permission denied

You do not have permission to change the password for the specified user.

Incorrect password

You have not entered the correct password when prompted for the old password.

Password unchanged

You have entered the carriage return special input case, choosing not to change the password.

Passwords do not match

You have not correctly verified the new password.

Invalid length of password

You have entered a password length that is not between minlength and 40.

Insufficient number of lower case letters

The password you entered contains less than the minimum required number of lowercase characters.

Insufficient number of upper case letters

The password you entered contains less than the minimum required number of uppercase characters.

Insufficient number of digits in password

The password you entered contains less than the minimum required number of numeric characters.

Insufficient number of punctuation characters

You have entered a password that contains less than the minimum required number of punctuation characters.

Password matches one of the previous passwords

The password you entered matches one of the previous passwords.

You must wait longer to change your password

You cannot change the password before the minimum aging period expires.

Password contains invalid characters

The password you entered contains invalid characters.

Examples

To change the password for the admin account while logged in as admin:

```
switch:admin> passwd
Changing password for admin
Enter new password:
Re-type new password:
Password changed.
Saving password to stable storage.
Password saved to stable storage successfully.
```

To change the password for user "admin" from an admin account noninteractively:

```
switch:admin> passwd -old password -new adminpass
Password changed.
Saving password to stable storage.
Password saved to stable storage successfully.
```

passwd

To change the password for user "brocadeUser" from an admin account noninteractively:

```
switch:admin> passwd brocadeUser -old brcdPasswd -new mynewPasswd  
Password changed.  
Saving password to stable storage.  
Password saved to stable storage successfully.
```

SEE ALSO [login](#), [logout](#), [passwdCfg](#)

passwdCfg

Manages the password policies.

Synopsis

```
passwdcfg --set options value
passwdcfg --setuser username options value
passwdcfg --disableadminlockout
passwdcfg --enableadminlockout
passwdcfg --setdefault
passwdcfg --showall
passwdcfg --showuser username
passwdcfg --deleteuser username
passwdcfg --deleteuser -all
passwdcfg --hash md5 | sha256 | sha512 [-manual]
passwdcfg --showhash [username | -all]
passwdcfg --help
```

Description

Use this command to manage password policies.

Use --set to configure the following password policies:

- Password strength policy
- Password history policy
- Password expiration policy
- Account lockout policy

Password Strength Policy

The password strength policy enforces a set of rules that new passwords must satisfy. Configurable rules include lowercase and uppercase characters, numbers, punctuation occurrences and minimum length values. It is enforced only when a new password is defined. The password strength policy is enforced cross all user accounts. When a password fails more than one of the strength attributes, an error is reported for only one of the attributes at a time.

Password History Policy

The password history policy prevents reuse of a recently used password. The password history policy is enforced across all user accounts when users are setting their own password. It is not enforced when an administrator sets a password for another user, but the user's password history is preserved and the password set by the administrator is recorded in the user's password history.

Password Expiration Policy

The password expiration policy forces expiration of a password after a specified period of time. When a user's password expires, the user must change the password to complete the authentication process. A warning that password expiration is approaching is displayed when the user logs in. The number of days prior to password expiration during which warnings commence is a configurable parameter. Password expiration does not disable or lock out the account. The password expiration policy is enforced across all user accounts except the root and factory accounts.

Account Lockout Policy

The account lockout policy disables a user account when the user exceeds a configurable number of failed login attempts. The mechanism can be configured to keep the account locked until explicit administrative action is taken to unlock the account or locked accounts can be automatically unlocked after a specified period. An administrator can unlock a locked account at any time. Note that the account locked state is distinct from the account disabled state. The account lockout policy is enforced across all user accounts except the root, factory, and SecurityAdmin role accounts. A separate configuration option, available to the SecurityAdmin and Admin role accounts, may be used to enable and disable applications of the account lockout policy to Admin role accounts.

A failed login attempt counter is maintained for each user on each switch instance. The counters for all user accounts are reset to zero when the account lockout policy is enabled. The counter for an individual account is reset to zero when the account is unlocked after the lock-out duration period expires.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as input an operand and its associated arguments. When invoked without operands, the command prints the usage.

--showall

Displays the password configuration parameters.

--showuser *username*

Displays the password configuration parameters for a specific user.

--setdefault

Resets all password policies to their default values.

--set

Configures a specified password policy.

-charset *value*

Specifies the minimum criteria on the character set (upper and lowercase letters and special characters) to be used in the password. The default value is 0. The maximum value must be less than or equal to the -minlength value.

-allowuser [yes|no]

Activates (no) or deactivates (yes) the validation check to determine if the username is used in the password. If activated, the username both in forward and reverse direction cannot be used in the password. For example, if username is "testuser", the password "testuser123" or "resutset567" is not allowed. The default value is "yes".

-lowercase value

Specifies the minimum number of lowercase alphabetic characters that must occur in the password. The default value is 0. The maximum value must be less than or equal to the -minlength value.

-uppercase value

Specifies the minimum number of uppercase alphabetic characters that must occur in the password. The default value is 0. The maximum value must be less than or equal to the -minlength value.

-digits value

Specifies the minimum number of numeric digits that must occur in the password. The default value is 0. The maximum value must be less than or equal to the -minlength value.

-punctuation value

Specifies the minimum number of punctuation characters that must occur in the password. All displayable, non-alphanumeric punctuation characters, except the colon (:), are allowed. The default value is 0. The maximum value must be less than or equal to the -minlength value.

-minlength value

Specifies the minimum length of the password. The minimum can be set anywhere between 8 and 40 characters. The default value is 8. The total of -lowercase, -uppercase, -digits, -punctuation must be less than or equal to the -minlength value. Also, the total of -digits and -charset must be less than or equal to the -minlength value.

-history value

Specifies the number of past password values that are disallowed when setting a new password. A value of 0 to 24 can be specified. The default value is 1.

-minpasswordage value

Specifies the minimum number of days that must elapse before a password can be changed. -minpasswordage can be set at 0 to 999. The default value is 0. Setting this parameter to a nonzero value discourages a user from rapidly changing a password in order to defeat the password history setting to reuse a recently used password. The minpasswordage policy is not enforced when an administrator changes the password for another user.

-maxpasswordage value

Specifies the maximum number of days that can elapse before a password must be changed. This is the password expiration period. -maxpasswordage can be set at 0 to 999. Setting this parameter to 0 disables password expiration. The default value is 0. When -maxpasswordage is set to a nonzero value, -minpasswordage must be set to a value less than or equal to -maxpasswordage.

-warning value

Specifies the number of days prior to password expiration that a warning of password expiration is displayed. The valid range for -warning is 0 to 999. The default value is 0.

-lockoutthreshold *value*

Specifies the number of times a user can specify an incorrect password during login before the account is locked. The number of failed login attempts is counted from the last successful login. Values for -lockoutthreshold range from 0 to 999. Setting this parameter to 0 disables the lockout mechanism. The default value is 0.

-lockoutduration *value*

Specifies the time, in minutes, after which a previously locked account automatically unlocks. lockoutduration values range from 0 to 99999. The default value is 30. Setting this parameter to 0 disables lockout duration, requiring an administrative action to unlock the account. The lockout duration begins with the first login attempt after the lockout threshold has been reached. Subsequent failed login attempts do not extend the lockout period.

-repeat *value*

Specifies the length of repeated character sequences that will be disallowed. For example, if the "repeat" value is set to 3, a password "passAAAword" is disallowed because it contains the repeated sequence "AAA". A password of "passAAAword" would be allowed because no repeated character sequence exceeds two characters. The range of allowed values is 1 to 40.

-sequence *value*

Specifies the length of sequential character sequences that will be disallowed. In a character sequence, the ASCII value of each contiguous character differs by one. The ASCII value for the characters in the sequence must all be increasing or decreasing. For example, if the "sequence" value is set to 3, a password "passABCword" is disallowed because it contains the sequence "ABC". A password of "passABword" would be allowed because no repeated character sequence exceeds two characters. The range of allowed values is 1 to 40. The default value is 1.

-reverse [1|0]

Activates (1) or deactivates (0) the validation check to determine whether the password is an exact reverse string of the username.

-oldpasswd [1|0]

Enables or disables old password check while changing password for the root account using the passwd command.

--setuser *username*

Configures the password policy for a specific user.

-minpasswordage *value*

Specifies the minimum number of days that must elapse before a password can be changed. -minpasswordage can be set at 0 to 999. The default value is 0. Setting this parameter to a nonzero value discourages a user from rapidly changing a password in order to defeat the password history setting to reuse a recently used password. The minpasswordage policy is not enforced when an administrator changes the password for another user.

-maxpasswordage *value*

Specifies the maximum number of days that can elapse before a password must be changed. This is the password expiration period. -maxpasswordage can be set at 0 to 999. Setting this parameter to 0 disables password expiration. The default value is 0. When -maxpasswordage is set to a nonzero value, -minpasswordage must be set to a value less than or equal to -maxpasswordage.

-warning *value*

Specifies the number of days prior to password expiration that a warning of password expiration is displayed. The valid range for -warning is 0 to 999. The default value is 0.

--enableadminlockout

Enables the admin lockout policy and sets the config parameter "passwdcfg.adminlockout" to 1. If the parameter "passwdcfg.lockoutthreshold" is set to greater than 0 and Admin Lockout policy is enabled, then, if the number of failed login attempts from the last successful login equals the "passwdcfg.lockoutthreshold", the account gets locked for the "passwdcfg.lockoutduration" duration. The particular account is unlocked manually using userconfig --change account_name -u or it is automatically unlocked after "passwdcfg.lockoutduration" duration.

--disableadminlockout

Disables the admin lockout policy if already enabled and sets the config parameter "passwdcfg.adminlockout" to 0. By default, admin lockout policy is disabled.

--deleteuser *username*

Removes the password expiration policies for a particular user account.

--deleteuser -all

Removes the password expiration policies of all users.

--hash md5 | sha256 | sha512

Sets the hash type. Valid values are "md5", "sha256", or "sha512". After password hash type is configured on switch, you will be prompted to change the passwords on the next login if hash type of password is different from the configured hash type on switch.

-manual

Requires manual password change.

--showhash [*username* | -all]

Displays password hash configuration for the given user or all users. When executed without optional parameters, this command displays the password hash configured in the system.

--help

Displays the command usage.

Diagnostics

The passwdCfg command may fail for any of the following reasons:

Permission failure

You not permitted to execute the command.

Invalid command line option

An unrecognized command line option was specified.

Minlength value out of range

The -minlength value must be between 8 and 40.

Lowercase value out of range

The -lowercase value specified must be greater than or equal to 0 and less than or equal to -minlength value.

Uppercase value out of range

The -uppercase value specified must be greater than or equal to 0 and less than or equal to -minlength value.

Digits value out of range

The -digits value specified must be greater than or equal to 0 and less than or equal to -minlength value.

Punctuation value out of range

The -punctuation value specified must be greater than or equal to 0 and less than or equal to -minlength value.

Total strength specification out of range

The total of -lowercase value, -uppercase value, -digits value, and -punctuation value must be less than or equal to -minlength value.

History value out of range

The -history value must be between 0 and 24.

Minpasswordage value out of range

The -minpasswordage value must be between 0 and 999.

Maxpasswordage value out of range

The -maxpasswordage value must be between 0 and 999.

Warning value out of range

The -warning value must be between 0 and 999.

Invalid password expiration specification

The -minpasswordage value or -warning value must be less than or equal to -maxpasswordage value when -maxpasswordage value is nonzero.

Lockoutthreshold value out of range

The -lockoutthreshold value must be between 0 and 999.

Lockoutduration value out of range

The -lockoutduration value must be between 0 and 99999.

Repeat value out of range

The -repeat value must be between 1 and 40.

Sequence value out of range

The -sequence value must be between 1 and 40.

Specified user account not exist

The user does not exist in the local switch.

Per user password expiration policy not configured

The password expiration policy is not configured for this user.

Not applicable for default account

The password expiration policy is not applicable for the root and factory accounts.

Password strength policy is allowed for per user password configurations

The password configuration is allowed only for the password expiration policy.

Examples

To display the current password configuration parameters:

```
switch:admin> passwdcfg --showall
passwdcfg.minlength: 8
passwdcfg.lowercase: 0
passwdcfg.uppercase: 0
passwdcfg.digits: 0
passwdcfg.punctuation: 0
passwdcfg.history: 1
passwdcfg.minpasswordage: 0
passwdcfg.maxpasswordage: 0
passwdcfg.warning: 0
passwdcfg.lockoutthreshold: 0
passwdcfg.lockoutduration: 30
passwdcfg.status: 0
passwdcfg.reverse: 0
```

To set password configuration parameters, specifying that a password must contain at least two uppercase characters, and that passwords expire in 90 days from the date they are defined:

```
switch:admin> passwdcfg --set -uppercase 2 \
-maxpasswordage 90
```

To set user password expiration policy parameters:

```
switch:admin> passwdcfg --setuser admin -minpasswordage 2 \
-maxpasswordage 5 -warning 3
```

To display the current user password expiration policy parameters:

```
switch:admin> passwdcfg --showuser admin
passwdcfg.maxpasswordage.admin: 5
passwdcfg.minpasswordage.admin: 2
passwdcfg.warning.admin: 3
```

To delete all password configurations:

```
switch:admin> passwdcfg --deleteuser -all
All user password configurations are removed
```

To delete password configurations of a specific user:

```
switch:admin> passwdcfg --deleteuser admin
The user(admin) password configurations are removed
```

To activate password reverse criterion check:

```
switch:admin> passwdcfg --set -reverse 1
```

SEE ALSO [passwd, userConfig](#)

pathBwConfig

Controls and displays information about ISL and ICL bandwidth relate features.

Synopsis

```
pathbwconfig
pathbwconfig --enable rebal
pathbwconfig --disable rebal
pathbwconfig --force rebal
pathbwconfig --show rebal [-domain domain_id]
pathbwconfig --clear rebal
pathbwconfig --help
```

Description

Use this command to enable or disable the Interchassis Link (ICL) bandwidth rebalancing and to display the current state of rebalancing.

Notes

ICL Bandwidth balancing is disabled by default. The ICL bandwidth balancing feature provides support to automatically select a set of ICL-based paths to achieve balanced or near balanced available bandwidth on the two core blades. The balancing of available bandwidth is necessary to increase internal resource performance.

Disabling or enabling the balancing feature is persistent across reboot.

ICL bandwidth balancing requires that Dynamic Load Sharing (DLS) is enabled on the switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command supports the following operands:

--enable rebal	Enables ICL path rebalancing.
--disable rebal	Disables ICL path rebalancing.
--force rebal	Forces the running ICL path rebalancing immediately.
--show rebal [-domain <i>domain_id</i>]	Displays whether ICL rebalancing is enabled or disabled.
--clear rebal	Resets the ICL bandwidth balancing counters.
--help	Displays command usage.

Examples To enable ICL bandwidth balancing:

```
switch:admin> pathbwconfig --enable rebal
Bandwidth balancing successfully enabled.
```

To force rebalancing:

```
switch:admin> pathbwcnfig --force rebal
Bandwidth balancing ran successfully
```

To display whether ICL rebalancing is enabled or disabled:

```
switch:admin> pathbwcnfig --show rebal
State:      Disabled
Last run:   ---
Duration:   ---
Run count:  0

Domain      Slot-5 BW      Slot-8 BW      State
=====
1           80           176           Unbalanced
3           176          176           Balanced
160         80           176           Unbalanced
```

To display whether ICL rebalancing is enabled or disabled for a single domain:

```
switch:admin> pathbwcnfig --show rebal -domain 1
Domain      Core-0 BW      Core-1 BW      State
=====
1           80           176           Unbalanced
```

To reset ICL bandwidth rebalancing counters:

```
switch:admin> pathbwcnfig --clear rebal
ICL bandwidth balancing counters reset successfully
```

SEE ALSO [dlsSet](#), [dlsShow](#), [lsDbShow](#)

pathInfo

Displays routing information and statistics along a path covering multiple switches.

Synopsis

pathinfo

```
pathinfo -f FID dest_switch_domain [source_port] [dest_port]  
[-sid source_pid] [-did dest_pid] [-r] [-t]
```

```
pathinfo dest_switch_domain [source_port] [dest_port]  
[-sid source_pid] [-did dest_pid] [-r] [-t]
```

pathinfo --help

Description

Use this command to display routing information from a source port on the local switch to a destination port on another switch. The command output describes the exact data path between these ports, including all intermediate switches.

When using pathInfo across fabrics connected through an FC Router, the command represents backbone information as a single hop. The command captures details about the FC Router to which ingress and egress EX_Ports are connected, but it hides the details about the path the frame traverses between the ingress EX_Ports to the egress EX_Ports in the backbone.

To use pathInfo across remote fabrics, you must specify both the fabric ID (FID) and the domain ID of the remote switch. You cannot use the command to obtain source port information across remote FCR fabrics. When obtaining path info across remote fabrics, the destination switch must be identified by its Domain ID. Identifying the switch by name or WWN is not accepted.

The command does not retry if there is a timeout or failure. It may fail if a switch along the path is busy or does not support this feature.

If the advanced performance tuning (APT) policy in effect on the intermediate switches is not a port-based policy, subsequent data streams may not take the same path as displayed in the pathInfo output. Refer to aptPolicy for more information on advanced performance tuning policies.

If you specify an inactive port or a path through a switch that does not have active routing tables to the destination, this command describes the path that would be taken if the ports were active. If you specify a destination port that is not active, this command uses the embedded port as the destination.

The ingress and egress points above 256 are specified as port index. Use switchShow for a listing of valid port index numbers.

To display the TI-enabled path across FCR, you must specify both source ID (SID) and destination ID (DID). The DID must be the proxy device ID and you can view the proxy device IDs using the nsAllShow command.

In addition, pathInfo can provide statistics on every traversed interswitch link (ISL) that is part of the path. This feature is available only in the interactive command mode.

The routing and statistics information are provided by every switch along the path, based on the current routing table information and statistics calculated continuously in real-time. Each switch represents one hop of the total path.

In a Virtual Fabric environment, pathInfo displays port numbers beyond physical port numbers while displaying information for a hop that corresponds to a path in the base fabric. The cost for this hop is the cost of the corresponding path in the base fabric plus a small offset. Refer to the Examples section for an illustration.

Other command options allow the collection of information on the reverse path, or on a user-selected path (source route).

For each hop, this command displays the following fields:

Hop

The hop number. The local switch is hop 0.

In Port

The port on which the switch receives frames. For hop 0, this is source_port, identified by the port index.

Domain ID

The domain ID of the switch.

Name

The name of the switch.

Out Port

The output port that the frames take to reach the next hop. For the last hop, this is destination_port identified by the port index.

BW

The bandwidth of the output interswitch link (ISL), in Gbps. This parameter does not apply to the embedded port. If the bandwidth is zero, it is displayed as 1 Gbps. For logical interswitch links (LISL) ports, the bandwidth displays as 8 Gbps, the maximum bandwidth on hardware platforms on which LISLs can be formed. In cases where the LISL bandwidth is zero, pathInfo displays a bandwidth of 4 Gbps.

Cost

The cost of the output link used by the fabric shortest path first (FSPF) routing protocol. This parameter applies only if the output link is recognized by FSPF.

You can request more detailed statistics for each hop in addition to the routing information. These statistics are presented for the input and output ports for both receive and transmit modes. You can select basic or extended statistics or both when running pathInfo in interactive mode. Statistics are not reported for the embedded port. Some throughput values are reported in multiple time intervals, to describe both current path utilization and the average throughput over a larger period of time.

To collect these statistics, this command uses a special pathInfo frame that is sent hop-by-hop from the source switch to the destination switch. To prevent such a frame to loop forever if an error occurs, a maximum number of hops for the frame to traverse is enforced. The hop count includes all hops in the direct path from source to destination, and also all the hops in the reverse path, if the tracing of the reverse path is requested. The default value for the maximum hop count is 25.

Basic statistics

Basic statistics report parameters that may indicate ISL congestion along the path. They include the following:

B/s

Bytes per second received or transmitted. This value is reported for multiple time periods displayed in parentheses.

Txcrdz

The length of time, in milliseconds, that the port was unable to transmit frames because the transmit BB credit was zero. The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at 1 millisecond intervals, and the counter is incremented if the condition is true. Each sample represents 1 ms of time with zero Tx BB Credit. An increment of this counter means that the frames could not be sent to the attached device for 1 ms, indicating degraded performance. This value reports for multiple time periods, displayed in parentheses. Note that other commands, such as portStatsShow, may express this value in units other than milliseconds.

Extended statistics

Extended statistics report variables of general interest. They include the following:

F/s

The number of frames received or transmitted per second. This value is reported for multiple time periods, displayed in parentheses.

Words

The total number of 4-byte Fibre Channel words.

Frames

The total number of frames.

Errors

The total number of errors that may have caused a frame not to be received correctly. This includes cyclic redundancy check (CRC) errors, bad end-of-frame (EOF) errors, frame truncated errors, frame-too-short errors, and encoding errors inside a frame.

Reverse path

The path from port A on switch X to port B on switch Y may be different from the path from port B to port A depending on the links traversed between a given sequence of switches, or the reverse path may involve different switches. The -r option displays routing and statistics information for the reverse path in addition to those for the direct path.

Source route

The source route option allows you to specify a sequence of switches or ports, which the pathInfo frame has to traverse to reach the destination. Therefore, the path specified may be different from the one used by actual traffic.

The source route is expressed as a sequence of switches, a sequence of output ports, or a combination of both. The next hop in the source route is described by either the output port to be used to reach the next hop, or the domain ID of the next hop.

The source route can specify a full route from source to destination or a partial route. In a partial route the remaining hops are chosen as the path from the input port on the first hop not listed in the source route to the destination. The maximum hop count is enforced in both cases.

If the source route does not specify all the switches along a section of the path, you can specify a strict or a loose path. A strict source route requires that only the specified switches are reported in the path description. If two switches are specified back-to-back in the source route descriptor but are not directly connected, the switches in-between are ignored. In a loose source route, the switches in-between are reported. The concepts of strict and loose route apply only to the portions of the path described by domains, not to the part described by output ports.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

dest_switch_domain

Specifies the destination switch. To obtain path info in a Layer 2 fabric, the destination switch can be identified by its Domain ID, by the switch WWN, or by the switch name. To obtain path info across remote fabrics connected through an FC Router, the destination switch must be identified by its Domain ID. Identifying the switch by name or WWN is not accepted. This operand is optional; if omitted, the command prompts for input interactively.

source_port

Specifies the port whose path to the destination domain is traced, specified as the port index. The embedded port (-1) is the default. The embedded port can be selected manually by entering the value of MAX_PORT. MAX_PORT stands for the maximum number of ports supported by the local switch.

dest_port

Specifies the port on the destination switch for the path being traced. This operand returns the state of this port. The embedded port (-1) is used by default, or if you specify a destination port that is not active. The destination is specified as the port index.

"-r"

Displays the reverse path in addition to the forward path. This operand is optional.

-t

Displays the command output in traceroute format. When this operand is used, only routing information is displayed. The output includes the time it takes, in microseconds, to reach each hop. Basic and extended statistics are not available in the traceroute format.

-sid source_pid

Specifies the source ID of the originator device in "OxDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID.

-did dest_pid

Specifies the destination ID of the proxy device in "OxDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID. You can view the proxy device IDs using the nsAllShow command.

--help

Displays the command usage.

When executed without operands, pathInfo runs interactively. Specifying a destination switch is required; the values for the source and destination ports can be -1 to indicate the embedded port. You must specify the source and destination PID to display the correct TI-enabled path information across the FCR. Reverse-path tracing is optional. In addition, this command prompts for the following parameters:

Max hops

The maximum number of hops that the pathInfo frame is allowed to traverse; the default is 25.

Fabric Id

Specifies the Fabric ID. If unspecified, the value defaults to -1 (Default switch FID 128)

Domain|Wwn|Name

Specifies the domain ID or WWN.

Source port

Specifies the port whose path to the destination domain is traced, specified as the port index. If unspecified, the value defaults to -1 (embedded port).

Destination port

Specifies the port on the destination switch for the path being traced. If unspecified, the value defaults to -1 (embedded port)

Source pid

Specifies the source ID of the originator device in hexadecimal format.

Destination pid

Specifies the destination ID of the proxy device in hexadecimal format.

Basic stats

Whether basic statistics are generated on every link; the default is no.

Extended stats

Whether extended statistics are generated on every link; the default is no.

Trace reverse path

Specifies the path information in reverse direction; the default is no.

Source route

Specifies a sequence of switches or ports that the pathInfo frame should traverse; the default is no. If an output port to the next hop is specified, you are not prompted for the domain of the next switch. The domain is determined by the port.

Timeout

The maximum time allowed waiting for the response in milliseconds. The default is 10000 milliseconds.

Examples To display basic path information to a specific domain in command line mode:

```
switch:admin> pathinfo 91
Target port is Embedded
Hop  In Port  Domain ID (Name)      Out Port  BW      Cost
-----
0      E        9 (web226)             2         1G     1000
1      3        10 (web229)            8         1G     1000
2      8        8 (web228)             9         1G     1000
3      6        91 (web225)            E         -       -
```

To display basic path information in traceroute format:

```
switch:admin> pathinfo 91 -t
traceroute to domain 91(web225) , 25 hops
Hop  Domain ID (Name)      time taken for the hop
-----
1    10 (web229)           0.0331 us
```

To display basic path information in traceroute format with reverse path option:

```
switch:admin> pathinfo 4 -r -t

Target port is Embedded

Hop      Domain ID (Name)      Time/hop
-----
1         11 (mps_daz_1)      32882 usec
2          4 (METEOR)      32882 usec
3         11 (mps_daz_1)      32882 usec
4         97 (pulsar055)     32882 usec
```

To display path information when source port and destination port are provided along with the traceroute option:

```
switch:admin> pathinfo 6 12 13 -t

Target port is F_Port

Hop      Domain ID (Name)      Time/hop
-----
6 (Stealth_I)           108186 usec
```

To display basic path information to a specific domain in a Virtual Fabric environment (the cost for this hop is the cost of the corresponding path in the base fabric):

```
switch:admin> pathinfo 13 4

Target port is Embedded

Hop  In Port  Domain ID (Name)      Out Port  BW      Cost
-----
0      4        9                    2009*    -       1500
1    2015*    10                    8        1G     1000
2      6      13                    E         -       -
```

To display basic and extended statistics in interactive mode:

```
switch:admin> pathinfo
Max hops: (1..127) [25]
Fabric Id: (1..128) [-1]
Domain|Wwn|Name: [] 8
Source port: (0..200) [-1]
Destination port: (0..1800) [-1]
Source pid: (0x0..0xffff00) [ffffffff]
Destination pid: (0x0..0xffff00) [ffffffff]
Basic stats (yes, y, no, n): [no] y
Extended stats (yes, y, no, n): [no] y
Trace reverse path (yes, y, no, n): [no]
Source route (yes, y, no, n): [no]
Timeout: (1000..30000) [5]
Target port is Embedded
```

Hop	In Port	Domain ID (Name)	Out Port	BW	Cost
0	E	9 (web226)	2	1G	1000

Port	E		2	
	Tx	Rx	Tx	Rx
B/s (1s)	-	-	0	0
B/s (64s)	-	-	1	1
Txcrdz (1s)	-	-	0	-
Txcrdz (64s)	-	-	0	-
F/s (1s)	-	-	0	0
F/s (64s)	-	-	2743	0
Words	-	-	2752748	2822763
Frames	-	-	219849	50881
Errors	-	-	-	0

Hop	In Port	Domain ID (Name)	Out Port	BW	Cost
1	3	10 (web229)	12	1G	1000

Port	3		12	
	Tx	Rx	Tx	Rx
B/s (1s)	36	76	0	0
B/s (64s)	5	-	0	-
Txcrdz (64s)	0	-	0	-
F/s (1s)	1	1	0	0
F/s (64s)	0	0	0	0
Words	240434036	2294316	2119951	2121767
Frames	20025929	54999	162338	56710
Errors	-	4	-	0

Hop	In Port	Domain ID (Name)	Out Pot	BW	Cost
2	14	8 (web228)	E	-	-

(output truncated)

To display the TI-enabled path information over an FCR in interactive mode:

```
switch:admin> pathinfo
Max hops: (1..127) [25]
Fabric Id: (1..128) [-1] 8
Domain|Wwn|Name: [] 5
Source port: (0..400) [-1] 2
Destination port: (0..400) [-1] 24
Source pid: (0x0..0xffff00) [ffffff] 0x061600
Destination pid: (0x0..0xffff00) [ffffff] 0x01f001
Basic stats (yes, y, no, n): [no]
Extended stats (yes, y, no, n): [no]
Trace reverse path (yes, y, no, n): [no] y
Source route (yes, y, no, n): [no]
Timeout: (1000..30000) [10000]

Target port is Embedded
```

Hop	In Port	Domain ID (Name)	Out Port	BW	Cost
0	2	1 (web228)	6	4G	500
1	23	2 (web228)	8	4G	500
2	4	3 (web228)	3	4G	500
3	2	4 (web228)	24	4G	10000
4	3	7 (switch_3)	2	4G	500
5	27	5 (switch_3)	24	-	-

Reverse path

6	24	5 (switch_3)	27	4G	500
7	2	7 (switch_3)	3	4G	500
8	24	4 (web228)	2	4G	500
9	3	3 (web228)	4	4G	10000
10	8	2 (web228)	23	4G	500
11	6	1 (web228)	2	-	-

SEE ALSO [portStatsShow](#), [switchShow](#)

pdShow

Displays data from a panic dump file.

Synopsis **pdshow** [*panic_dump_file*]

Description Use this command to display data from a panic dump file. The panic dump file contains information that might be useful to determine the cause of the system panic.

When executed without any arguments, this command displays output from the latest panic dump file available on the switch.

If a panic dump file is specified as an argument, the contents of that specific file are displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operand:

panic_dump_file

Specify the full path name of a panic dump file.

Examples To examine a panic dump file by the name panic_dump located under the directory /tmp:

```
switch:admin> pdshow /tmp/panic_dump
*** CAUTION ***
* Host PLATFORM (current) is: 'Unknown'
* PLATFORM got from pd file is: 'SW12000'
* Some results shown may be incorrect and/or missing
* It is best if this command is run on same \
  PLATFORM as that of pdfile
*****

*****
*   File   :/core_files/panic/core.pd1038932352   *
*   SECTION:PD_MISC                               *
-----*****-----
WatchDogRegister=0x0
Section=Startup time: Tue Dec  3 16:06:11 UTC 2002
Kernel=      2.4.19
Fabric OS=   v4.1.0_j_dist_1103
Made on=    Tue Dec 3 19:07:13 2002
Flash=      Tue Dec 3 13:19:06 2002
BootProm=   3.2.0
Section=HA show Output

(output truncated)
```

SEE ALSO [portLogDump](#), [supportSave](#)

portAddress

Assigns the lower 16 bits of the Fibre Channel Port ID.

Synopsis **portaddress --bind** [*slot*]/*port*[-*port*] [*16-bit_address*] [--auto]

portaddress --unbind [*slot*]/*port*[-*port*]

portaddress --show [[*slot*]/*port*]

portaddress --findPID *24-bit_Port_ID*

portaddress --help

Description Use this command to bind the 16-bit address to the lower two bytes of a port 24-bit Fibre Channel address, or to unbind the currently bound address for the specified port. Changes effected by this command are persistent across reboots and power cycles.

The port must be offline to bind an address and not currently bound to another address. If the port is currently bound to another address, use this command with the --unbind option to unbind the port.

This command returns an error if the chosen address is in use or is bound to another port. If the address is currently assigned to another port, use this command with the --findPID option to identify the port that is bound to that address, and then unbind the port.

The command provides a --show option that displays the currently bound address for a specified port or for all ports. Alternately, you can use the --findPID option to display the port currently bound to a specified port ID (PID).

Notes This command is supported on the Brocade DCX 8510-8 and DCX 8510-4 on all logical switches including the Default Switch. Virtual Fabrics must be enabled. It is also supported on the Brocade 6510, regardless of Virtual Fabrics status.

This command is not supported on embedded platforms and on the Brocade Analytics Monitoring Platform.

If a blade port is qualified to be in a user-created logical switch on a Brocade DCX 8510-4 or DCX 8510-8, this feature is supported on those ports. In the Default Switch, AP blades such as the Brocade FCOE10-24 or FS8-18 are not supported, when dynamic area mode is enabled. This is enforced by the software.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--bind

Assigns the lower two bytes of the Fibre Channel address to the specified port.

slot

Specifies the slot number on bladed systems, followed by a slash (/).

port[-*port*]

Specifies a port or a port range, relative to the slot number on bladed systems, for example, 12/O-2.

16-bit_address

Specifies the 16-bit address, in hexadecimal format, to be bound to the FC address. Leading zeros are optional in the hexadecimal value (for example, you can either specify 0x1a00 or 1a00). Note that only the upper 10 bits of the PID can be used for a unique route. Therefore, not all addresses in the 16-bit range are available.

--auto

Enables autobinding on the specified port. If the auto feature is enabled, the entire area field of the PID is bound to a single port. With 10-bit routing, up to 4 ports can share the same 8-bit area field of the PID. This address assignment mode dedicates all four unique routes to a single port. By default, auto is off. This operand is optional; if unspecified, the default is used.

--unbind

Removes both the address and any automode override configuration from the specified port.

--show

Displays the currently bound address attributes for the specified port. This command shows the lowest two bytes of the Fibre Channel address as well as the current setting for automode. If a port is not specified, the display shows the Partition Address Mode value (0, 1, or 2) and all ports on the current partition. A -1 is displayed for ports that have not been assigned an area. Areas are dynamically assigned an address as they are added to a partition. The Partition Address Mode value is set by the configure command (Enable a 256 Area Limit).

--findPID

Displays the port (slot and port offset) of the port that is currently assigned the provided address. This command applies the 10-bit area mask to the provided PID and returns the port that has been assigned the specified address. Therefore not all 24 bits are required to match exactly.

24-bit_Port_ID

Specifies the 24-bit Fibre Channel port address. This operand is required with the --findPID option. This command applies the 10-bit area mask to the provided PID and returns the port that has been assigned the specified address. Therefore not all 24 bits are required to match.

--help

Displays the command usage.

Examples

To bind a 16-bit address to the low two bytes of a port 24-bit Fibre Channel address:

```
switch:admin> portaddress --bind 5/18 1a00
```

To unbind a given address from a port:

```
switch:admin> portaddress --unbind 5/18
```

To display all port address bindings on the current partition:

```
switch:admin> portaddress --show
Partition Address Mode :0
Index Slot Port Area Mode User_bound
=====
384 5 0 0x0800 8 bit Y
385 5 1 0x0900 8 bit -
386 5 2 0x0a00 8 bit -
387 5 3 0x0b00 8 bit -
388 5 4 0x0c00 8 bit -
389 5 5 0x0d00 8 bit -
390 5 6 0x0e00 8 bit -
391 5 7 0x0f00 8 bit -
392 5 8 0x0000 8 bit -
393 5 9 0x0100 8 bit Y
394 5 10 0x0200 8 bit -
395 5 11 0x0300 8 bit -
396 5 12 0x0400 8 bit -
397 5 13 0x0500 8 bit -
398 5 14 0x0600 8 bit -
399 5 15 0x0700 8 bit -
400 5 16 0x1800 8 bit -
401 5 17 0x1900 8 bit -
402 5 18 0x1a00 8 bit -
403 5 19 0x1b00 8 bit -
404 5 20 0x1c00 8 bit -
405 5 21 0x1d00 8 bit -
406 5 22 0x1e00 8 bit -
407 5 23 0x1f00 8 bit -
408 5 24 0x1000 8 bit -
409 5 25 0x1100 8 bit -
410 5 26 0x1200 8 bit -
411 5 27 0x1300 8 bit -
412 5 28 0x1400 8 bit Y
413 5 29 0x1500 8 bit -
414 5 30 0x1600 8 bit -
415 5 31 0x1700 8 bit -
```

To display the port address binding for port 28:

```
switch:admin> portaddress --show 5/18

Index Slot Port Area Mode
=====
412 5 28 0x1400 8 bit
```

To display the port bound to a specified address.

```
switch:admin> portaddress --findPID 0x2400

Index Port Port ID
=====
36 36 0x 2400
```

SEE ALSO None

portAlpaShow

Displays the Arbitrated Loop Physical Addresses (AL_PAs) of devices attached to a port.

Synopsis **portalpashow** [*slot*]/*port*

Description Use this command to display the AL_PAs of devices connected to a port, and whether these devices are public or private. If the specified port is not an active FL_Port or if no AL_PAs are present, this command prints an error.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- slot*

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).
- port*

Specify the port number to display, relative to its slot for bladed systems. Use switchShow to list valid ports.

Examples To display the AL_PAs of a port:

```
switch:user> portalpashow 4/14
AL_PA   type      AL_PA   type      AL_PA   type
0xe2    public    0xe4    public
```

SEE ALSO [switchShow](#)

portBeacon

Sets port beaconing mode.

Synopsis

portbeacon --enable *[slot/]port*

portbeacon --disable *[slot/]port*

portbeacon --show *[slot/]port*

portbeacon --show -all

portbeacon --help

Description

Use this command to enable or disable beaconing mode on a specified port.

When beaconing mode is enabled on a port, the port LED flashes amber and green for 2.5 seconds each in an alternating pattern. The beaconing mode continues until you turn it off. Beaconing mode is useful if you are trying to locate a specific port.

Beaconing mode takes over the port LEDs. The normal flashing LED pattern associated with an active, faulty, or disabled port is suppressed, and only the beaconing pattern is shown. Other commands are still executable and functional. However, if diagnostic frame-based tests such as portLoopbackTest are executed, the diagnostic LED pattern is interleaved with the beaconing pattern. Running switch beaconing or HBA- side (E2E) beaconing also overwrites the pattern.

The portBeacon command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The portBeacon command enables or disables beaconing on a specified port.
- The switchBeacon command enables or disables beaconing on all ports in the current logical switch.
- The chassisBeacon command enables or disables beaconing on all ports in the chassis.
- The portPeerBeacon command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. Existing portBeacon settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

Issue the portBeacon --show *[slot/]port* command to display beaconing for a specific port. The switchShow command displays the status of the switchBeacon command only.

Notes

Beaconing of Inter Chassis Link (ICL) ports, GE ports, FCoE ports, 10G ports, and embedded internal ports is not allowed.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

<i>slot</i>	For bladed systems only, specifies the slot number of the port group to display, followed by a slash (/).
<i>port</i>	Specifies the number of the port to be configured, relative to its slot for bladed systems. Use switchShow for a listing of valid ports.
--enable	Enables beaconing mode on the specified port.
--disable	Disables beaconing mode on the specified port.
--show	Displays the port beaconing mode on the specified port as ON or OFF.
--show -all	Displays the beaconing ports in slot/port format on the chassis and index format on switches, in logical switch order.
--help	Displays the command usage.

Examples To enable beaconing mode on a port and verify the configuration:

```
switch:admin> portbeacon --enable 2/1

switch:admin> portbeacon --show 2/1
PortBeacon status of : slot 2, port 1 is ON
```

To disable beaconing mode on a port and verify the configuration:

```
switch:admin> portbeacon --disable 2/1

switch:admin> portbeacon --show 2/1
PortBeacon status of : slot 2, port 1 is OFF
```

To display the beaconing ports on a chassis:

```
switch:admin> portbeacon --show -all
In FID: 128
PortBeacon enabled port(s):
12/23 12/26
```

SEE ALSO [chassisBeacon](#), [portPeerBeacon](#), [switchBeacon](#)

Synopsis **portbuffercalc** [*slot*]/*port* [-**distance** *distance*]
[-**speed** *speed*] [-**framesize** *framesize*]

Description Use this command to calculate how many buffers are required for a given distance, speed, and framesize. If no options are specified, then the current port's configuration is considered to calculate the number of buffers required.

- 1 buffer is required for 1 km at 2G (2048 framesize).
- 8 buffers are required for 1 km at 16G (2048 framesize).

Displays command usage.

portBufferCalc

Examples To calculate the buffers required per port:

```
switch:admin> portbuffercalc 9/4 \  
-distance 100 -speed 8 -framesize 512  
1606 buffers required for 100km at 8G and framesize  
of 512 bytes
```

SEE ALSO None

portBufferShow

Displays the buffer usage information for a port group or for all port groups in the switch.

Synopsis `portbuffershow [[slot/]port]`

Description Use this command to display the current long distance buffer information for the ports in a port group. The port group can be specified by giving any port number in that group. If no port is specified, then the long distance buffer information for all of the port groups of the switch is displayed.

The following long distance information is displayed:

User Port

Index number of the port.

Port Type

E (E_Port), F (F_Port), G (G_Port), L (L_Port), or U (U_Port).

Lx Mode

Long distance mode.

L0

Link is not in long distance mode.

LE

Link is up to 10 km.

LD

Distance is determined dynamically.

LS

Distance is determined statically by user input.

Max/Resv Buffers

The maximum or reserved number of buffers that are allocated to the port based on the estimated distance. If the port is not configured in long distance mode, certain systems might reserve buffers for the port. This field then displays the number of buffers reserved for the port.

Avg Buffer Usage & FrameSize

The average buffer usage and average frame size for Tx and Rx.

Buffer Usage

The actual number of buffers allocated to the port. In LD mode, the number is determined by the actual distance and the user-specified desired distance.

Needed Buffers

The number of buffers needed to utilize the port at full bandwidth (depending on the port configuration). If the number of Buffer Usage is less than the number of Needed Buffers, the port is operating in the buffer limited mode.

Link Distance

For LO (not in long distance mode), the command displays the fixed distance based on port speed, for instance: 10 km (1 Gbps), 5 km (2 Gbps), 2 km (4 Gbps), or 1 km (8 Gbps). For static long distance mode (LE), the fixed distance of 10 km displays. For LD mode, the distance in kilometers displays as measured by timing the return trip of a MARK primitive that is sent and then echoed back to the switch. LD mode supports distances up to 500 km. Distance measurement on a link longer than 500 km might not be accurate. If the connecting port does not support LD mode, is shows "N/A".

Remaining Buffers

The remaining (unallocated and reserved) buffers in a port group.

A hyphen in one of the display fields indicates that no relevant information is available; there may be no connection to a port, or the port is disabled, or the port is not an E_Port.

When invoked without operands, this command displays the long distance buffer information for all the port groups of the switch.

On Gen6 platforms, each void port is allocated 105 buffers and this buffer allocation is shown on the external encryption enabled ports. When encryption configuration is disabled, one of the void ports is disabled and buffer is deallocated for the port. The number of unused buffers in the chip adds up by 105 each time the encryption configuration is disabled and is reduced by 105 each time encryption is configured. The buffer requirement for the ports is as follows:

- A non-encryption, non-QoS online E_Port needs 70 buffers.
- A non-encryption, QoS online E_Port needs 105 buffers.
- Encryption port needs extra 105 buffers.

For example, the required buffers for an online non-encryption, non-QoS online E_Port link is 175 buffers (70+105) and for an online non-encryption, QoS online E_Port is 210 (105+105) buffers.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operands are optional:

slot For bladed systems only, specifies the slot number of the port group to display, followed by a slash (/).

port Specifies the number of a port associated with the port group, relative to its slot for bladed systems. Use switchShow for a list of valid ports.

Examples To display the port buffer information:

```
switch:admin> portbuffershow 17
User  Port  Lx   Max/Resv  Avg Buffer Usage & FrameSize\
Port  Type  Mode  Buffers   Tx          Rx          \
-----
                        Buffer Needed  Link      Remaining
                        Usage  Buffers  Distance  Buffers
                        -----
64          -      8          - ( - )  - ( - )\
```

				0	-	-	
65		-	8	-	(-)	- (-)\	
				0	-	-	
66		-	8	-	(-)	- (-)\	
				0	-	-	
67		-	8	-	(-)	- (-)\	
				0	-	-	
68	E	LS	806	197(2012)		201(2044)\	
				206	206	100km	
69	E	-	8	1(2016)		1(2020)	
				26	26	2km	
70	E	-	8	1(2012)		1(2036)\	
				26	26	2km	
71	E	-	8	1(2008)		2(2052)\	
				26	26	2km	
192		-	8	-	(-)	- (-)\	
				0	-	-	
193		-	8	-	(-)	- (-)\	
				0	-	-	
194		-	8	-	(-)	- (-)	
				0	-	-	
195		-	8	-	(-)	- (-)\	
				0	-	-	
196		-	8	-	(-)	- (-)\	
				0	-	-	
197		-	8	-	(-)	- (-)\	
				0	-	-	
198		-	8	-	(-)	- (-)\	
				0	-	-	
199		-	8	-	(-)	- (-)\	
				0	-	-	4556

SEE ALSO None

portCamShow

Displays port-based filter CAM utilization.

Synopsis `portcamshow [slot/]port`

Description Use this command to display the current filter Content-Addressable Memory (CAM) utilization of a specified port.

The command displays the following information:

SID used

Total number of CAM entries used by this port. Note that each CAM entry, either source ID (SID) or destination ID (DID) CAM, can be shared among a certain number of ports, depending on the ASIC.

DID used

Total number of CAM entries used by this port. Note that each CAM entry (either SID or DID CAM) can be shared among a certain number of ports, depending on the ASIC.

SID entries

All existing source ID entries within the CAM for this port. Note that each CAM entry (either SID or DID CAM) can be shared among a certain number of ports, depending on the ASIC.

DID entries

All existing destination ID entries within the CAM for this port. Note that each CAM entry (either SID or DID CAM) can be among a certain number of ports, depending on the ASIC.

SID free

The total number of free SID CAM entries available for use by this port.

DID free

The total number of free DID CAM entries available for use by this port.

Notes This command cannot be executed on a logical port.

Ports that support shared areas are divided into two ports: primary and secondary ports. Primary and secondary ports share the same area. Port CAM entries displayed on the primary ports also consist of all the secondary port SIDs and DIDs as well, when both the ports are F_Ports. This is because the primary port acts as a proxy for the CAM entries of the secondary port, in this case using redirect filters.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

This command cannot be executed on a logical port.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

port Specifies the port number to display, relative to its slot for bladed systems. Use switchShow to list valid ports. This operand is required.

Examples To display the filter CAM utilization for a single port on a switch:

```
switch:user> portcamshow 3/2

-----
Area  SID used  DID used  SID entries  DID entries
 34      3        1    350400    2b2200
                2b1200
                220400
-----
SID Free, DID Free: (61, 511)
```

To display port CAM entries on shared ports (in the example, port 7/31 and 7/39 are shared ports and 7/31 is the primary port):

```
switch:user> portcamshow 7/39

-----
Area  SID used  DID used  SID entries  DID entries
207      3        1    03b380    03cf80
                034100
                03cf00
-----
SID free, DID free: (2044, 1020)

switch:admin> portcamshow 7/31

-----
Area  SID used  DID used  SID entries  DID entries
207      4        2    03b380    03cf80
                034100    03cf00
                03cf00
                03cf80
-----
SID free, DID free: (2044, 1020)
```

The SID entry 03cf00 and DID entry 03cf80 on port 7/31 belong to port 7/39.

SEE ALSO [switchShow](#)

portCfg

portCfg

Manages port configuration parameters for FC ports, VE_ports, and GbE/10GbE/40GbE ports.

Synopsis

portcfg *action* [*slot*] *port arguments*

portcfg *action* [*slot*] **ge_port** *arguments*

portcfg *action* [*slot*] **ve_port** *options arguments*

portcfg *action* [*slot*][**ge_port** *options arguments*]

Description Use this command to manage port configuration parameters on FC ports as well as on Gigabit Ethernet (GbE) ports on the Brocade 7840 switch and on the Brocade FX8-24 and Brocade SX6 blades.

You must use this command in a manner that honors the platform-specific differences in command syntax and behavior. Some command options are not available on all platforms. Others behave differently depending on the platform on which they are executed. Use the following section headings to navigate this page.

Commands supported on all platforms

- portcfg mirrorport - Configure a mirror port on the local FC port.
- portcfg rscnsupr - Manage registered state change notification (RSCN) suppression on the local port.

Configure IP interfaces on the Brocade 7840 switch, Brocade FX8-24 and Brocade SX6 blades.

- portcfg ipif - Configure the local IP interfaces.
- portcfg iproute - Configure a static route on the IP interface.
- portcfg vlantag - Manage the IP interface VLAN configuration for FCIP. This command is supported on Brocade FX8-24 blade.
- portcfg ipsec-policy - Include the IPsec policy. Currently supported on the Brocade 7840 switch and Brocade SX6 blade only.
- portcfg lag - Configure a link aggregation group (LAG) for a GE LAN port. Supported on the Brocade 7840 switch and Brocade SX6 blade only.
- portcfg tcl - Configure the Traffic Control List (TCL). Supported on the Brocade 7840 switch and Brocade SX6 blade only.
- portcfg mgmtif - Creates the inband management interfaces.
- portcfg mgmtroute - Creates the routes for the inband management interfaces.
- portcfg autoneg - Configure autonegotiation settings for 1 GbE ports.
- portcfg sla - Configure an Service Level Agreement (SLA) session. Supported on the Brocade 7840 switch and Brocade SX6 blade only.
- filter-set - Configure a static filter-set. A filter-set can be used to filter the portShow output for ipif, iproute, tcl, lan-stats, and other extension objects.
- app-type - Creates a user-defined application type.

Configure tunnels, circuits, and management interfaces on the Brocade 7840 switch, and Brocade FX8-24 and Brocade SX6 blades.

- portcfg fcipunnel - Create, modify, and delete Fibre Channel over IP (FCIP) tunnels
- portcfg fcipcircuit - Create, modify, and delete FCIP circuits.

To display the command usage on the switch, execute portcfg action without any further arguments.

Notes IPv6 addresses are supported except for inband management. IP Security enabled FCIP Tunnels cannot use IPv6 circuits on FX8-24 blade.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Some of the features supported by this command may require a license.

The Fabric OS port configuration commands are not supported on FCoE ports.

Function Commands supported on all platforms

Synopsis **portcfg** *action* [*slot*]/*port arguments*

Description Use this command to configure the following parameters on a local FC port.

- portcfg mirrorport - Configure a mirror port on the local port.
- portcfg rscnsupr - Manage registered state change notification (RSCN) suppression on the local port.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port[-*port*]

Specifies a single port or a range of ports, for example, 3-22 or 1/3-8. port ranges are supported only with the rscnsupr option.

rscnsupr

Manages Registered State Change Notification (RSCN) suppression on the local port. RSCN suppression is configurable only on FC ports. The syntax for portCfg rscnsupr is as follows:

portcfg rscnsupr [*slot*/]*port*[-*port*] *mode*

The following modes are supported with the rscnsupr option:

--disable

Disables the configuration. When disabled, device changes on the port generate an RSCN to all other end devices that are zoned with this one. By default, RSCN suppression is disabled on all ports.

--enable

Enables the configuration. When enabled, any device changes on the port will not generate an RSCN to any other end device.

mirrorport

Configures a mirror port on the local port. The port mirroring feature reroutes data frames between two devices to the mirror port. Port mirroring can aid in troubleshooting common FC end-to-end communication problems. The command prompts for confirmation that the specified port be enabled as a mirror port. Once a port is configured as a mirror port, the port can only be used as part of a mirror connection. Port Mirroring is not supported over FCIP links (VE tunnels). The port mirroring feature is not supported on the Gen6 platforms.

The syntax for portCfg mirrorport is as follows:

portcfg mirrorport [*slot*/]*port* *mode*

Valid modes for mirrorport include the following:

--disable [analytics]

Disables the configuration. When disabled, a port cannot be a mirror port. Specify analytics to remove the analytics configuration. The analytics option is supported only on Brocade Analytics Monitoring Platform.

--enable [analytics]

Enables the configuration. When the mirror port feature is enabled to a port, a mirror connection can use this port to mirror traffic. Specify analytics to configure port as analytics port. The analytics option is supported only on Brocade Analytics Monitoring Platform.

Examples

To enable a mirror port configuration:

```
switch:admin> portcfg mirrorport 2/4 --enable
Please confirm enable of Mirror Port (Y,y,N,n):[n] y
```

To configure a range of ports as RSCN-suppressed:

```
switch:admin> portcfg rscnsupr 2/4-7 --enable
```

Function

Configure extension-related parameters on the Brocade 7840 switch, and Brocade FX8-24 and Brocade SX6 blades.

Synopsis

portcfg *action* [*slot*] **ge_port** | *name arguments*

Description Use this command to configure the local IP interfaces and static routes on the Brocade 7840 switch, and Brocade FX8-24 and Brocade SX6 blades. You must configure the local IP interfaces before you can create and configure FCIP tunnels. You can also create a VLAN configuration at the IP interface on the Brocade 7840 switch, and Brocade FX8-24 and Brocade SX6 blades.

- portcfg ipif- Configure the local IP interfaces.
- portcfg iproute - Configure a static route on the IP interface.
- portcfg vlantag - Manage the IP interface VLAN configuration for FCIP. This command is supported on Brocade FX8-24 blade.
- portcfg ipsec-policy - Include the IPsec policy. Currently supported on the Brocade 7840 switch and Brocade SX6 blade only.
- portcfg lag - Configure a link aggregation group (LAG) for a GE LAN port. Supported on the Brocade 7840 switch and Brocade SX6 blade only.
- portcfg tcl - Configure the Traffic Control List (TCL). Supported on the Brocade 7840 switch and Brocade SX6 blade only.
- portcfg mgmtif - Creates the inband management interfaces.
- portcfg mgmtroute - Creates the routes for the inband management interfaces.
- portcfg autoneg - Configure autonegotiation settings for 1 GbE ports.
- portcfg sla - Configure an Service Level Agreement (SLA) session. Supported on the Brocade 7840 switch and Brocade SX6 blade only.
- filter-set - Configure a static filter-set. A filter-set can be used to filter the portShow output for ipif, iproute, tcl, lan-stats, and other extension objects.
- app-type - Creates a user-defined application type.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

ge_port

Specifies the number of the GbE port to be configured. The GbE ports are numbered ge0 - ge9 on the Brocade FX8-24 blade and ge0 - ge17 on Brocade 7840 switch and Brocade SX6 extension blade.

The two 10GbE ports on the Brocade FX8-24 blade are numbered xge0 and xge1.

The Brocade 7840 switch and the Brocade SX6 extension blade has two 40GbE ports labeled ge0 and ge1, and 16 1GbE or 10GbE ports labeled ge2-ge17. For Brocade 7840 switch and the Brocade SX6 extension blade, specify GbE port number along with the DP number, for example, portcfg ipif ge0.dp0. The valid DP numbers are dp0 and dp1.

For Brocade 7840 and the Brocade SX6 extension blade, specify the switch virtual interface (SVI) LAN port in "lan.dp#" format, for example, portcfg ipif lan.dp0.

Use the switchShow command for a list of valid ports.

ipif

Defines the IP interface for both ports of a tunnel.

The IP network connection is configured by defining IP interfaces for origin and destination virtual ports, and then defining one or more IP routes to connect them. The syntax for portCfg ipif is as follows:

portcfg ipif [slot/]ge_port option args [optional_args]

Valid options and arguments for ipif include the following:

create src_ipaddr netmask mtu [mask] mtu_size vlan [vlan_id]

Creates IP interfaces. Specify the following:

src_ipaddr

Specifies source IP address in either IPv6 or IPv4 format:

src_IPv6_addr/prefix_len

Specifies the source IPv6 address of the port if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. This is used for IPv6 addresses instead of a netmask. The prefix_len operator is required. Refer to the Fabric OS Extension Administrator's Guide for more information on IPv6 rules and restrictions.

src_IPv4_addr netmask [mask]

Specifies the source IPv4 address of the port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well (in a.b.c.d. format). The CIDR notation for IPv4 addresses can also be used.

mtu [mtu_size]

Specifies the maximum transmission unit size. The permitted range is 1260 Bytes to 1500 Bytes for Brocade 7800 switch and FX8-24 blade, and 1280 Bytes to 9216 Bytes or 'auto' to enable PMTU discovery for Brocade 7840 switch and the Brocade SX6 extension blade. This operand is optional.

vlan [vlan_id]

Specifies the VLAN ID. This operand is optional and currently supported on the Brocade 7840 and the Brocade SX6 extension blade only.

-x | --crossport

Configures an interface for a failover crossport. A crossport is defined as the nonlocal (secondary) XGE port to a VE_Port group that provides failover capabilities for the tunnel configured on the local XGE port. For VE_Ports 12-21, xge1 is the local XGE port and xge0 is the crossport. For VE_Ports 22-31, xge0 is the local XGE port and xge1 is the crossport. This operand is optional and supported only on the Brocade FX8-24 XGE ports.

delete ipaddr

Deletes IP interfaces. Specify the IPv6 or IPv4 address of the virtual port.

iproute

Defines static IP routes on a GbE port or on a 10GbE port. After defining the IP interface on the remote switch, you can define destination routes for an interface. You cannot use this command to configure routes for inband management; use portCfg mgmtroute instead.

The syntax for portcfg iproute is as follows:

portcfg iproute [slot/]ge_port option args [optional_args]

Valid options and arguments for `iproute` include the following:

create *dest_ipaddr netmask [mask] [gateway_router]*

Creates an IP route. Specify the following:

dest_ipaddr

Specifies the destination IP address in either IPv6 or IPv4 format:

dest_IPv6_addr/prefix_len

Specifies the destination IPv6 address of the port, if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. This is used for IPv6 addresses instead of a netmask. The `prefix_len` operand is required.

dest_IPv4_addr netmask [mask]

Specifies the destination IPv4 address of the port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well. Use a.b.c.d. format. The CIDR notation for IPv4 addresses can also be used.

gateway_router

Specifies the IP address of an IP router that can route packets to the destination virtual port IP address. The gateway address must be on the same IP subnet as one of the port IP addresses. This operand is optional with IPv6 addresses. If not specified, the `gateway_router` learned from the Neighbor Discovery protocol is used.

-x | --crossport

Configures an IP route for a failover crossport. A crossport is defined as the nonlocal (secondary) XGE port to a `VE_Port` group that provides failover capabilities for the tunnel configured on the local XGE port. For `VE_Ports` 12-21, `xge1` is the local XGE port and `xge0` is the crossport. For `VE_Ports` 22-31, `xge0` is the local XGE port and `xge1` is the crossport. This operand is optional and supported only on the Brocade FX8-24 XGE ports.

delete *ipaddr*

Deletes IP routes for a specified IPv4 or IPv6 address. Valid `ipaddr` values include the following:

ipaddr

Specifies IP address in either IPv6 or IPv4 format:

IPv6_addr/prefix_len

Specifies the IPv6 address of the virtual port, if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. The `prefix_len` operand is required.

dest_IPv4_addr netmask

Specifies the destination IPv4 address of the virtual port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well. Use a.b.c.d. format or the CIDR notation for IPv4 addresses.

vlantag

Use this command to maintain the VLAN tag table associated with a particular network interface. This command is supported on Brocade FX8-24 blade. This table is mainly used during ingress processing to filter VLAN tagged frames. You can configure multiple VLAN IDs per IP interface; however, if you provide a destination address, there cannot be two entries to the same destination, including 0.0.0.0. Egress frames already marked as VLAN tagged (FCIP circuit-level tagging) take precedence over entries in this table.

This command supports add and delete options only. To modify a table entry, it must first be deleted, then added with different configuration parameters. The syntax for portcfg vlantag is as follows:

portcfg vlantag [slot/]ge_port mode arguments

Valid modes for vlantag include the following:

add *ipif_addr* *vlan_id* *l2cos* [*dst_ipaddr*][*optional_args*]

Adds an entry to the VLAN tag table.

delete *ipif_addr* *vlan_id* [*dst_ipaddr*]

Deletes an entry from the VLAN tag table. Valid arguments for add and delete include the following:

ipif_addr

Specifies the locally defined interface address in IPv6 or IPv4 format.

vlan_id

Specifies the VLAN ID used for this tag. The range is 1 to 4094.

l2cos

Specifies Layer 2 Class of Service/Priority, as defined in the IEEE 802.1p specification. The range is 0 to 7. Valid only with the add option.

dst_ipaddr

Specifies an optional destination IP address (IPv4 or IPv6). All packets destined for this IP address are tagged accordingly. If a destination IP address is not specified, all packets not already tagged will be tagged. The default is 0.0.0.0.

optional_args

Optional VLAN tagging parameters include the following:

-x | --crossport

>Applies the VLAN tag to a crossport interface. Specifying this parameter allows the VE_Ports 12-21 to use the IP interface with this vlantag. This operand is optional and valid only and supported only on the Brocade FX8-24 XGE ports.

-m | --mgmt

Specifying this parameter applies the VLAN tag to the inband management interface.

ipsec-policy

Creates an IPsec policy. This option is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

This command supports create, modify, and delete options only. The syntax for portcfg ipsec-policy is as follows:

portcfg ipsec-policy name option [args]

Valid options and arguments for ipsec-policy include the following:

create *name* [-k | --preshared-key *key*] [--key-pair *name*]

Creates the IPsec policy.

name

Specifies the name for the IPsec policy. The IPsec policy name can be up to 31 characters long and cannot contain special characters and keywords such as "all" and "none".

-p | --profile *name*

Specifies the profile to use with the IPsec policy. Valid values for name are pre-shared and pki.

-k | --preshared-key *key*

Specifies the preshared key to be used for authentication. This operand is required with shared-key authentication.

-K | --key-pair *name*

Sets the local key pair name to use for IKE authentication. This operand is required with PKI profile.

-l | --legacy

Configures the IPsec policy to use the old configuration database format for downgrading to firmwversion versions earlier than Fabric OS 8.1.0.

modify *name* [-k | --preshared-key *key*] [--key-pair *name*]

Modifies the IPsec policy.

name

Specifies the name for the IPsec policy.

-k | --preshared-key *key*

Specifies the preshared key to be used for authentication. This operand is required with shared-key authentication.

--key-pair *name*

Sets the local key pair name to use for IKE authentication. This operand is required with PKI profile.

restart *name*

Restarts all inactive IKE sessions for the IPsec policy.

name

Specifies the name for the IPsec policy.

delete *name*

Deletes the IPsec policy.

name

Specifies the name for the IPsec policy.

lag *name*

Configures a link aggregation group (LAG) for a GE LAN port, modifies a LAG, and displays LAG status. The syntax for portcfg lag is as follows:

```
portcfg lag lag_name [arguments]
```

Valid options and arguments for lag include the following:

--create [*ge_port*]

Creates a LAG. You can specify a single port or a range of ports, for example, ge2 or ge2-ge4 or ge2,ge4. Use the switchShow command for a list of valid ports.

--add [*ge_port*]

Adds the specified GE ports to the LAG. You can specify a single GE port or a range of GE ports to be added to the LAG, for example, ge2 or ge2-ge4 or ge2,ge4.

--remove [*ge_port*]

Removes the specified GE ports from the LAG. You can specify a single port or a range of ports to be removed from the LAG, for example, ge2 or ge2-ge4 or ge2,ge4.

--delete

Deletes the specified LAG.

--set -speed *speed*

Configures port speed for the LAG port members. The valid speeds are 1G and 10G.

--enable -autoneg

Enables the auto negotiation mode for the LAG port members.

--disable -autoneg

Disables the auto negotiation mode for the LAG port members.

tcl

Creates a TCL.

This command supports create, modify, and delete options only. The syntax for portcfg tcl is as follows:

```
portcfg tcl name option [args]
```

Valid options and arguments for tcl include the following:

name

Specifies the name of the TCL. The TCL name can be up to 31 characters long and cannot contain special characters.

create *name* [*args*]

Creates a TCL.

modify *name* [*args*]

Modifies a TCL.

-p | --priority *value*

Sets the priority ID for the TCL. The range is from 1 through 65534.

--admin-status **enable | disable**

Enables or disables the TCL.

--action allow | deny | [slot/]dp#-deny

Specifies the permit or deny action associated with the TCL.

-t | --target VE[-pri]

Sets the target virtual interface and priority for the TCL.

-S | --src-addr ipaddr[/prefix_len]

Sets the source IP address input filter for the specified TCL.

--src-mask ipaddr

Sets the source IP address mask input filter for the specified TCL.

-D | --dst-addr ipaddr[/prefix_len]

Sets the destination IP address input filter for the specified TCL.

--dst-mask ipaddr

Sets the destination IP address mask input filter for the specified TCL.

--proto-port ipaddr

Sets the protocol port input filter for the specified TCL.

--proto-app app_name

Sets the application input filter for the specified TCL.

--dscp value

Set the DSCP input filter for the specified TCL. The range is from 0 through 63.

-v | --vlan value

Set the VLAN input filter for the specified TCL. The range is from 0 to 4095.

--l2cos value

Sets the Layer 2 CoS input filter for the specified TCL.

--l4proto num | name

Sets the Layer 4 protocol input filter for the specified TCL. Valid values for name are TCP, UDP, ICMP, VRRP and the valid range for num is from 0 through 255, or 'none' to clear the Layer 4 protocol input filter.

--rst-propagation enable | disable

Enables or disables end-to-end RST propagation for the specified TCL.

--segment-preservation enable | disable

Enables or disables segment preservation for the specified TCL.

--non-terminated enable | disable

Enables or disables non-terminate traffic handling for the specified TCL.

mgmtif

Configures an inband management interface. A maximum of one interface is supported per GbE Port. Up to a total of 11 interfaces for the Brocade FX8-24 (depending on blade operating mode). The interfaces must each exist on a unique network, separate from the other inband management interfaces and from all other interfaces on the CP. The syntax for mgmtifs as follows:

mgmtif ge_port [options] arguments

Valid options and arguments for mgmtif include the following:

create

Creates a specified IP Address for the inband management interface. The IP address must be unique.

IPv4_address

Specifies an IP address for the inband management interface in IPv4 format, followed by the subnet mask.

netmask

Specifies the subnet mask for the IPv4 address in a.b.c.d format.

MTU

Specifies the MTU for the inband management interface. The valid range is 1260 to 1500. This operand is optional.

delete

Deletes the specified IP Address for the inband management interface.

IPv4_address

Specifies the IP address to be deleted.

disable

Disables the inband management interface at the specified GbE Port.

enable

Re-enables the inband management interface at the specified GbE Port after it has been disabled. The interface is by default enabled when it is created.

mgmtroute

Configures the management route for the inband management interface (needed only if the management interfaces are on different subnets). The syntax for mgmtroute is as follows:

mgmtroute ge_port [options] destination_ip_address

Valid options and arguments for mgmtroute include the following:

create

Creates a management route for a specified destination IP Address. The following operands are required:

dest_IPv4_addr

Specifies the destination IP address for the management route in IPv4 format.

netmask

Specifies the subnet mask for the IPv4 address in a.b.c.d format.

gateway

Specifies the IP address of an IP router that can route packets to the destination IP address.

delete

Deletes a management route for a specified destination IP Address. The following operands are required.

dest_IpV4_addr

Specifies the destination IP address for the management route in IPv4 format.

netmask

Specifies the subnet mask for the IPv4 address in a.b.c.d format.

sla

Creates, modifies, or deletes an SLA session. For more information on the SLA feature, refer to the Fabric OS Extension Administration Guide.

This command supports create, modify, and delete options only. The syntax for portcfg sla is as follows:

portcfg sla name option [args]

Valid options and arguments for sla include the following:

create

Creates an SLA session with the specified name. You must create an SLA session at each end of the circuit, but the session names need not match.

modify

Modifies the specified SLA session.

name

Specifies the name of the SLA.

--loss percentage

Sets the packet-loss percentage. The valid range is from 0.05 through 5.0 percentage.

--runtime min

Sets duration time for the test to run. The valid range is from 1 through 1440 minutes. The default value is 5 minutes.

--timeout min | none

Sets the timeout duration for the test. If the timeout value is reached during the SLA session, the session is terminated and the circuit is put into service. Specify none to run the test until the runtime and packet-loss values are met. The valid range is from 1 through 2880 minutes.

delete name

Deletes the specified SLA session.

filter-set

Creates, modifies, or deletes filter-sets.

This command supports create, modify, and delete options only. The syntax for portcfg filter-set is as follows:

portcfg filter-set name option [args]

Valid options and arguments for filter-set include the following:

create

Creates a filter-set.

modify

Modifies the specified filter-set.

name

Specifies the name of the filter-set.

--port [*slot*]/*port*

Specifies the port number.

--slot *slot*

Specifies the slot number.

--ipaddr *ip_address*[/*prefix*]

Specifies the IPv4 address and prefix. The IP address is represented by a dotted decimal number, followed by a slash and a prefix.

--dp [*slot*]/**dp**#

Specifies the dual processor ID.

--circuit *cid*

Specifies the ID of FCIP circuits within the tunnel.

--priority *value*

Specifies the priority ID. Valid values for value are control, high, medium, low, ip-high, ip-medium, and ip-low.

--ha-type *type*

Specifies the HA type. Valid values for type are main, local-backup, and remote-backup.

--tcp-port *value* | *app*

Specifies a single or range of TCP ports or application type. The valid range for value is from 0 through 65535. Use the portshow lan-stats --known-apps for the list of supported application types.

--retransmits *value*

Specifies the retransmits value. This operand is used to filter the output based on the retransmits exceeding specified value.

--rtt *value*

Specifies the circuit round trip time in milliseconds. This operand is used to filter the output based on the round trip time exceeding specified value.

--bytes *bytes* [**k** | **m** | **g**]

Specifies the bandwidth (bytes per second) value. Specify k for KBps, m for MBps, and g for Gbps. This operand is used to filter the output based on bandwidth exceeding specified value.

--conn-cnt *value*

Specifies the connected count value. This operand is used to filter the output based on the connected count exceeding specified value.

--vlan *vlan_id*

Specifies the VLAN ID.

--oper-status *oper*

Specifies the operation status of a tunnel. You can specify the exact operation string or the states such as active, inactive, healthy, and unhealthy.

--default-behavior **show | hide**

Sets the default display action if the specified filter statement is not supported. The default action is hide.

--show

Displays the parameters matching the filter criteria.

--hide

Hides the parameters matching the filter criteria.

--and

The logical OR operator.

--or

The logical AND operator.

delete *name*

Deletes the specified filter-set.

app-type

Creates, modifies, or deletes application types.

This command supports create, modify, and delete options only. The syntax for portcfg app-type is as follows:

portcfg app-type name option [args]

Valid options and arguments for app-type include the following:

create

Creates an application type.

--portrange *value*

Specifies a single port or a range of ports separated by a dash character or a combination of both. For example, "18", "21500-21600", and "21500-21600,680".

--description

Specifies a description for the application type.

modify *name* **--portrange** *value*

Modifies the specified application type.

delete *name*

Deletes the specified application type.

Examples

To create an IP interface using IPv4:

```
switch:admin> portcfg ipif ge0 create \
    192.169.0.20 netmask 255.0.0.0 mtu 1500
Operation Succeeded
```

To create an SVI LAN port on a DP:

```
switch:admin> portcfg ipif lan.dp0 create 10.0.0.1/24 vlan 100
Operation Succeeded.
```

```
switch:admin> portcfg ipif lan.dp0 create 10.0.1.1/24 vlan 200
Operation Succeeded.
```

```
switch:admin> portshow ipif
```

Port	IP Address	/ Pfx	MTU	VLAN	Flags
ge4.dp0	192.168.60.20	/ 24	1500	0	U R M
ge17.dp0	192.168.10.107	/ 24	1500	0	U R M
lan.dp0	10.0.0.1	/ 24	1500	100	U R M
lan.dp0	10.0.1.1	/ 24	1500	200	U R M

Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport

To create an IP interface using IPv6 with a prefix:

```
switch:admin> portcfg ipif ge0 create 2000::22/64 1500
Operation Succeeded
```

```
switch:admin> portshow ipif ge0
```

Port	IP Address	/ Pfx	MTU	VLAN	Flags
ge0	192.180.0.20	/ 24	1500	n/a	U R M
ge0	192.168.0.21	/ 24	1500	n/a	U R M
ge0	2000::10	/ 64	1500	n/a	U R M

Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport

To create an interface for a failover crossport on a Brocade FX8-24:

1. Configure the interface for the local XGE port (xge0).

```
switch:admin> portcfg ipif 8/xge0 create \
192.169.0.20 netmask 255.255.255.0 mtu 1500
Operation Succeeded
```

2. Configure the interface for the nonlocal XGE port (xge1).

```
switch:admin> portcfg ipif 8/xge1 create \
192.169.0.20 netmask 255.255.255.0 -x
Operation Succeeded
```

3. The IP address 192.168.11.20 will be available for circuits on VE_Ports 22-31 on the Brocade FX8-24 extension blade. The output from portshow ipif for the same address shows the crossport tag.

```
switch:admin> portshow ipif 8/xge0
```

Port	IP Address	/ Pfx	MTU	VLAN	Flags
8/xge0	192.168.10.20	/ 24	1500	n/a	U R M
8/xge0	192.168.11.21	/ 24	1500	n/a	U R M X

```
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

To delete an IP interface:

```
switch:admin> portcfg ipif ge0 delete 192.168.10.20
Operation Succeeded
```

To delete an IP interface for a failover crossport:

```
switch:admin> portcfg ipif 8/xge0 delete 192.168.11.20 -x
Operation Succeeded
```

To create a static IP route using an IPv4 destination address, a netmask, and a gateway address:

```
switch:admin> portcfg iproute ge0 create \
192.42.0.0 netmask 255.255.255.0 192.168.0.250
Operation Succeeded
```

To create a static IP route using IPv6:

```
switch:admin> portcfg iproute ge0 create \
2010::/64 2000::1:250
Operation Succeeded
```

```
switch:admin> portshow iproute ge0
```

Port	IP Address	/ Pfx	Gateway	Flags
ge0	192.168.0.0	/ 24	*	U C
ge0	2000::	/ 64	*	U C
ge0	2000::10	/ 128	*	U H L

```

ge0          2000::1:250          / 128  *          U H L
ge0          2010::              / 64   2000::1:250    U G S
-----

```

```

Flags: U=Usable G=Gateway H=Host C=Created(Interface)
       S=Static L=LinkLayer X=Crossport

```

To create an IP route for a failover crossport on a Brocade FX8-24:

1. Configure the iproute for the local XGE port (xge0).

```

switch:admin> portcfg iproute 8/xge0 create 2.2.2.0 \
               netmask 255.255.255.0 192.168.11.250
Operation Succeeded

```

2. Configure the interface for the non-local XGE port (xge1).

```

switch:admin> portcfg ipif 8/xge1 create 1.1.1.0 \
               netmask 255.255.255.0 192.168.11.250 -x
Operation Succeeded

```

3. The IP route will be available for circuits on VE ports 22-31. The output from portshow iproute for the same route shows the crossport tag.

```

switch:admin> portshow iproute 8/xge0

```

Port	IP Address	/ Pfx	Gateway	Flags
8/xge0	192.168.0.0	/ 24	*	U C
8/xge0	192.168.0.111	/ 32	*	U H L
8/xge0	192.168.1.0	/ 24	*	U C X
8/xge0	192.168.1.111	/ 32	*	U H L X

```

-----
Flags: U=Usable G=Gateway H=Host C=Created(Interface)
       S=Static L=LinkLayer X=Crossport

```

To delete the crossport IP route:

```

switch:admin> portcfg iproute 8/xge1 delete \
               1.1.1.0 netmask 255.255.255.0 -x
Operation Succeeded

```

To delete a static IP route using an IPv4 address:

```

switch:admin> portcfg iproute ge0 delete \
               172.16.0.0 netmask 255.255.0.0
Operation Succeeded

```

To create a network-wide permanent VLAN tag entry with a VLAN ID of 200 and an L2 CoS value of 5 (no destination address):

```

switch:admin> portcfg vlantag ge2 add \
               192.168.2.10 200 5
Operation Succeeded

```

To display the VLAN tag configuration (for an explanation of the flags, refer to portShow):

```
switch:admin> portshow vlantag ge2
```

Port: ge2	Interface Address	Destination Address	VlanId	L2CoS	Flags
192.168.2.10			200	5	Perm Net
		0.0.0.0			
192.168.0.20		192.168.0.10	100	0	Perm
192.168.0.21		192.168.0.11	200	0	Perm
2000::20		2000::10	300	0	Perm
2000::21			400	0	Perm
2000::11					

To create a VLAN tag entry for a failover crossport interface with a VLAN ID of 200 and an L2 CoS value of 1 and to display the configuration:

```
switch:admin> portcfg vlantag 8/xge0 add 192.168.11.20 200 1 -x
Operation Succeeded
switch:admin> portshow vlantag 8/xge0
```

Port: 8/xge0	Interface Address	Destination Address	VlanId	L2CoS	Flags
192.168.11.20			200	1	Perm Net (crossport)
		0.0.0.0			

To delete a VLAN tag entry:

```
switch:admin> portcfg vlantag ge2 delete 192.168.2.10 200
Operation Succeeded
```

To delete a VLAN tag entry for a crossport:

```
switch:admin> portcfg vlantag 8/xge0 delete 192.168.11.20 200 -x
Operation Succeeded
```

To create an IPsec policy for the Brocade 7840 switch:

```
switch:admin> portcfg ipsec-policy myPolicy1 create -k "some test key"
Operation Succeeded
```

To view the IPsec policy status for the Brocade 7840 switch and the Brocade SX6 extension blade:

```
switch:admin> portshow ipsec-policy all --ike
```

IPsec Policy	OpStatus	IKECnt	Pre-Shared Key	
IKE-ID	OpStatus	RefCnt	Local IP Address	Remote IP Address
myPolicy1	NotInUse	0	some test key	

To create an IPsec policy and set encryption profile:

```
switch:admin> portcfg ipsec-policy pki_pol0 create --profile pki
Operation Succeeded
```

To restart all inactive IKE sessions under an IPSec policy:

>

```
switch:admin> portcfg ipsec-policy psk_pol0 restart
Operation Succeeded
```

To create a LAG:

```
switch:admin> portcfg lag lag0 --create
Operation Succeeded
```

To add ports to a LAG and verify the configuration:

```
switch:admin> portcfg lag lag0 --add ge2-ge4,ge7
Operation Succeeded
switch:admin> portshow lag
LAG Name   State      Port Count  Member Ports
-----
lag0       Online     4           GE2,GE3,GE4,GE7
-----
```

To remove a port from a LAG:

```
switch:admin> portcfg lag lag0 --remove ge7
Operation Succeeded
```

To create a TCL:

```
switch:admin> portcfg tcl hostAtoB create --admin enable \
--target 24 --src-addr 10.0.0.0/8 --priority 10
Operation Succeeded
```

To delete an inband management interface:

```
switch:admin> portcfg mgmtif ge0
delete 192.168.3.10 255.255.255.0
```

To delete a management route:

```
switch:admin> portcfg mgmtroute ge0 delete 192.168.3.0 255.255.255.0
192.168.2.250
```

To disable and re-enable an inband management interface:

```
switch:admin> portcfg mgmtif ge0 disable
switch:admin> portcfg mgmtif ge0 enable.
```

To configure a VLAN tag for an inband management port:

```
switch:admin> portcfg vlantag 10/xge0 add 172.16.30.40 30 0 --mgmt
Operation Succeeded
```


To configure VLAN tags for all ports on a switch:

```
switch:admin> portshow vlantag all
Port: 10/xge0
Interface Address          Destination Address      VlanId  L2CoS  Flags
-----
172.16.30.80              172.16.50.80           30      0      Perm
172.16.30.40              0.0.0.0                 30      0      Perm Net Mgmt
```

To enable the autonegotiation of a 1GbE port:

```
switch:admin> portcfg autoneg 1/ge2 --enable
Operation Succeeded

switch:admin> portshow autoneg 1/ge2
Auto-Negotiation Configuration:
Port: 1/ge2
Auto-Negotiate: Enabled
```

To create an SLA session:

```
switch:admin> portcfg sla netA create --loss 0.5 \
--runtime 15 --timeout 60
Operation Succeeded
```

To configure a filter-set:

```
switch:admin> portcfg filter-set tcpErrors create \
--retransmits 100 --and --bytes 1000000
```

To create application type:

```
switch:admin> portcfg app-type TELNET create \
--portrange 18 --description "Includes telnets connections"
Operation Succeeded
```

Function Configure tunnels, circuits, and management interfaces on the Brocade 7840 switch and Brocade FX8-24 and Brocade SX6 extension blades.

Synopsis **portcfg** action [slot/]ve_port options arguments

Description Use this command to configure FCIP tunnels and FCIP circuits on the Brocade 7840 switch, and the Brocade FX8-24 and Brocade SX6 extension blades only. The FCIP tunnels on the local and remote ports act as Virtual E_Ports (VE_Ports) connecting the local and remote fabrics. The following operations can be performed with this command:

- portcfg fciptunnel - Create, modify, and delete Fibre Channel over IP (FCIP) tunnels.
 - Configure a tunnel with the FCIP FastWrite feature.
 - Enable or disable Tape Pipelining.
 - Configure the compression options.
 - Configure an IPsec-enabled tunnel.
 - Configure VLAN tagging on the default FCIP circuit. This option is supported on Brocade FX8-24 blade only.
 - Configure Differentiated Services Code Point (DSCP) markings.
 - Set the committed rate or minimum and maximum rates for the default circuit.
 - Configure a tunnel for FICON emulation.
- portcfg fcipcircuit - Create, modify, and delete additional FCIP circuits.
 - Set or modify the committed rate or minimum and maximum rates for the circuit.
 - Configure or change VLAN tagging on the default circuit.
 - Set or modify additional circuit parameters.

Notes You can configure up to 20 tunnels on the Brocade 7840 switch, and on the Brocade FX8-24 and Brocade SX6 extension blades.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

ve_port

Specifies the number of the VE_Port associated with the tunnel. The VE_Ports are numbered 24-43 on the Brocade 7840, 16-35 on the Brocade SX6, and 12-31 on the Brocade FX8-24.

fciptunnel

Creates, modifies, or deletes an extension tunnel.

Note the following port mapping rules:

	7840	SX6	FX8-24
DP0 ports	24-33	16-25	22-31 (xge0)
DP1 ports	34-43	26-35	12-21 (ge0-ge9, xge1)

The valid VE ports on the Brocade 7840 switch are VE_Ports 24-43. In 10VE mode, only VE_Ports 24-28 and VE_Ports 34-38 are supported. In 20VE mode all VE ports are supported.

The syntax for portcfg fciptunnel is as follows:

```
portcfg fciptunnel [slot/]ve_port options [tunnel_arguments] [circuit_arguments]
```

The following options are supported with fciptunnel:

create [*tunnel_arguments*][*circuit_arguments*]

Creates an extension tunnel and, optionally a single default circuit. If no circuit arguments are specified, no extension circuit will be created. While it is possible to create a tunnel without a default circuit, it is an unlikely scenario (for example, for configuration staging purposes). In most cases, you will create a tunnel with at least one configured circuit. In this case, you must specify a remote and local IP address for the circuit as well as a committed rate (or alternately, a minimum and maximum committed rate) to configure the default circuit. The default circuit created with the tunnel is automatically assigned the circuit ID 0. You can modify the default circuit with the fciptunnel modify command. To add additional circuits to an existing tunnel, use the fcipcircuit create command.

modify [*tunnel_arguments*][*circuit_arguments*]

Modifies the properties of an existing extension tunnel. To modify a tunnel, you must specify at least one of the tunnel or circuit parameters for the command to be effective. Any circuit attribute you change with the fciptunnel modify command affects only the circuit 0. All other circuits remain unchanged. To modify a circuit other than circuit 0, you must use the fcipcircuit modify command.

In order to create a default circuit 0 with the tunnel, you must at least specify the following circuit arguments with fciptunnel create:

-D | --remote-ip-address *remote_ip_address*

Specifies the IP address for the remote end of the extension circuit.

-S | --local-ip-address *local_ip_address*

Specifies the IP address for the local end of the extension circuit.

-b | --min-comm-rate *value* **-B | --max-comm-rate** *value*

You may set a minimum and a maximum for the committed rate to configure the tunnel for Adaptive Rate Limiting (ARL), which allows for a more effective sharing of bandwidth between applications. For Brocade FX8-24, the valid range is 10,000 Kbps to 1,000,000 Kbps for 1G ports and 10,000 Kbps to 10,000,000 Kbps for 10G ports. For Brocade 7840, the valid range is 20,000 Kbps to 10,000,000 Kbps. The maximum committed rate can be no larger than five times the minimum committed rate.

In the previous releases, the maximum and minimum rates had to be configured to the same value for circuits using the XGE ports on the FX8-24 blade. You can configure different values for minimum and maximum rates for each circuit of a tunnel using the XGE ports.

Optional tunnel_arguments for fciptunnel create and modify include the following. Tunnel parameters are by default disabled. To change the default (for example, enabling FastWrite) with fciptunnel create, specify the parameter only. To modify any of these parameters with fciptunnel modify, specify the parameter and one of the values in square brackets.

-f | --fastwrite[*disable* | *enable*]

Disables or enables the FCIP FastWrite on the specified extension tunnel.

-t | --tape-pipelining [disable | enable | write-only]

Configures Open Systems Tape Pipelining on the specified extension tunnel. By default, OSTP is disabled .

When using this operand with fcipunnel create, specify one or more of the following operands:

-t | --tape-pipelining

Enables write-read Tape Pipelining (FCIP FastWrite must also be enabled.)

-N | --no-read-pipelining

Disables tape read-pipelining. This operand is valid only with fcipunnel create and -t must be specified enabling the feature. The combination of -t and -N effectively enables tape write-pipelining. This operand is supported on the Brocade FX8-24 blade only.

When using this operand with fcipunnel modify, specify one or more of the following:

-t | --tape-pipelining *mode*

Modifies the Open System Tape Pipelining configuration. Specify one of the following modes:

disable

Disables Tape Pipelining

enable

Enables write-read Tape Pipelining (FCIP FastWrite must also be enabled).

write-only

Enables write-only Tape Pipelining (FCIP FastWrite must also be enabled).

-c | --compression *compression_level*

Configures compression on the specified FCIP tunnel. By default, compression is disabled. Specify one of the following values on the FX8-24 blades:

none

Compression disabled

hardware

Enable standard compression.

moderate

Enable moderate compression.

aggressive

Enable aggressive compression.

auto

enable auto compression. Automatically adjusts compression level based on the maximum configured tunnel bandwidth. To enable this feature upgrade both ends of the tunnel to Fabric OS v7.0.0. Based on total effective tunnel bandwidth, the compression level will be adjusted as follows:

Aggressive

Bandwidth less than 512 Mbps

Moderate

Bandwidth more than 512 Mbps and less than 2 Gbps.

Standard

Bandwidth more than 2Gbps.

Specify one of the following values on the Brocade 7840 switch and the Brocade SX6 extension blade:

none

Compression disabled.

fast-deflate

Enable fast-deflate compression.

deflate

Enable deflate compression.

aggr-deflate

Enable aggressive deflate compression level.

--fc-compression *compression_level*

Configures FC compression on the specified FCIP tunnel. By default, compression is disabled. This operand is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only. Specify one of the following values for *compression_level*:

aggr-deflate

Enable aggressive deflate compression level.

default

Enable default compression level.

deflate

Enable deflate compression.

fast-deflate

Enable fast-deflate compression.

none

Compression disabled.

--ip-compression *compression_level*

Configures IP compression on the specified FCIP tunnel. By default, compression is disabled. This operand is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only. Specify one of the following values for *compression_level*:

aggr-deflate

Enable aggressive deflate compression level.

default

Enable default compression level.

deflate

Enable deflate compression.

none

Compression disabled.

--ipext enable | disable

Enables or disables IP Extension capability to a tunnel. This parameter is supported only on Brocade 7840 switch and the Brocade SX6 extension blade.

-T | --tperf [0|1]

Disables (0) or enables (1) TPerf test mode. Refer to portCmd help for more information regarding TPerf monitoring. This operand is supported on the Brocade FX8-24 blade only.

-n | --remote-wwn *remote-wwn*

Specifies the WWN of the remote FC entity.

-d | --description *string*

Specifies a description for the specified tunnel.

-i | --ipsec [disable | enable]

Disables or enables Internet Protocol Security (IPsec) on the specified tunnel. Circuits that fall underneath a tunnel inherit the IPsec tunnel attributes. IPsec uses a predefined policy with IKEv2 for key negotiation, ESP transport mode for IPsec, and AES with 256-bit keys for Encryption (AES-GCM-ESP). You must specify a key with this option. On the Brocade FX8-24, IPsec is supported only on VE_Ports 12-21. This operand is supported on the Brocade FX8-24 blade only.

-K | --key *preshared_key*

Specifies the preshared key to be used for authentication. Specify a string of alphanumeric characters 32 bytes in length. This argument must be used together with --ipsec. This argument is supported on the Brocade FX8-24 blade only.

-i | --ipsec [*policy_name* | none]

Sets the Internet Protocol Security (IPsec) on the specified tunnel to use the specified IPsec Policy, or to disable IPsec for the tunnel if the 'none' operand is used. This argument is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

-p | --distribution *mode[,ratio,...]*

Sets tunnel bandwidth distribution mode. The valid modes are protocol, priority, and default. Optionally, you can change the default bandwidth allocation ratio for Fibre Channel (FC) and IP Extension (IP) traffic in the tunnel. This operand is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

-Q | --fc-qos-ratio *high,med,low*

Sets QoS percentages for FC priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. This operand is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

-I | --ip-qos-ratio *high,med,low*

Sets QoS percentages for IP priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. This operand is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

-q | --qos-bw-ratio *high,med,low* | default

Sets QoS percentages for all QoS priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. Both ends of the tunnel must have the same QoS priority settings.

-F | --ficon [disable | enable]

Enables or disables FICON emulation on the specified extension tunnel. Optional FICON arguments for fcipunnel create allow you to control specific features. Use the [0|1] options only with fcipunnel modify.

--ficon-tera-read [disable | enable]

Enables or disables FICON Read Emulation for a Teradata server on the specified extension tunnel.

--ficon-tera-write [disable | enable]

Enables or disables FICON Write Emulation for a Teradata server on the specified extension tunnel.

--ficon-xrc [disable | enable]

Enables or disables FICON XRC emulation. FICON XRC Emulation allows XRC (IBM eXtendedRemote Copy, also known as IBM z/OS Global Mirroring) to operate effectively at extended distances.

--ficon-tape-write [disable | enable]

Enables or disables FICON Tape Write Pipelining. This feature improves the performance of certain applications when writing to tape over extended distances.

--ficon-tape-read [disable | enable]

Enables or disables FICON Tape Read Pipelining. This feature improves performance for certain applications when reading from FICON tape over extended distances.

--ficon-tin-tir [disable | enable]

Enables or disables FICON TIN/TIR emulation. This feature enhances recovery when a TIN/TIR exchange occurs as part of a channel recovery operation during tape emulation. This feature is enabled by default (recommended setting).

--ficon-dvcack [disable | enable]

Enables or disables FICON Device Level Acknowledgement emulation. This feature is applicable to both FICON Disk and Tape configurations. The feature removes one network round trip for exchanges that end with a Device Level Acknowledgement frame from the device. This feature is enabled by default (recommended setting).

--ficon-read-blk [disable | enable]

Enables or disables FICON read Tape Read Block ID emulation. This feature permits FICON write channel programs containing embedded read block ID commands (CCWs) with a byte count of exactly four bytes to be processed as emulated commands during write emulation processes.

--ficon-print [disable | enable]

Enables or disables FICON printer emulation on the specified FCIP tunnel. This command is valid only with the modify option.

--max-read-pipe *value*

Defines the maximum number of tape read channel commands (CCWs) that can enter the read pipeline for a single device whether all the CCWs are bundled in a single channel program or in multiple channel programs. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached at the opposite side. Too small of a value will result in poor performance. The value should be chosen based upon the typical tape channel program that requires optimum performance. The default value is 32 (recommended setting). The range is 1 to 100.

--max-write-pipe *value*

Defines the maximum number of tape write channel commands (CCWs) that can enter the write pipeline for a single device whether all the CCWs are bundled in a single channel program or in multiple channel programs. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached at the opposite side. Too small of a value will result in poor performance. The value should be chosen based upon the typical tape channel program that requires optimum performance. The default value is 32 (recommended setting). The range is 1 to 100.

--max-read-devs *value*

Defines the maximum number of concurrent emulated tape read operations. As concurrency increases, the value of emulation decreases. Excessive concurrency has the potential to oversubscribe packet data memory. The setting has significance only for host (channel) initiated operations at this side and will not affect tape read operations initiated by hosts (channels) attached at the opposite side. The default value is 16. The range is 1 to 32.

--max-write-devs *value*

Defines the maximum number of concurrent emulated tape write operations. As concurrency increases, the value of emulation decreases. Excessive concurrency has the potential to oversubscribe packet data memory. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached. The default value is 16. The range is 1 to 32.

--write-timer *value*

Defines a time limit for pipelined write chains. This value is specified in milliseconds (ms). If a pipelined write chain takes longer than this value to complete, the ending status for the next write chain will be withheld from the channel. This limits processing to what the network and device can support. Too small a value limits pipelining performance. Too large a value results in too much data being accepted for one device on a path. The default value is 300 milliseconds (ms). The range is 100 to 1500.

--write-chain *value*

Defines the maximum amount of data that can be contained in a single CCW chain. If this value is exceeded, emulation is suspended. The default value is 3.2 MB (3200000 bytes). The range is 1 MB to 5 MB.

--oxid-base *value*

Defines the base value of an entry pool of 256 OXIDs supplied to emulation-generated exchanges. It should fall outside the range used by FICON channels and devices to avoid conflicts. The default value is 0x8000 (recommended setting). The range is 0x0000 to 0xF000.

--ficon-debug *value*

Defines optional debug flags. The default value is 0xF7C80000. This parameter is primarily for use by technical support personnel.

--arl-algorithm

Sets the ARL algorithm. Valid values for mode are auto, reset, step-down, timed-step-down. This option is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

--legacy-qos-mode *enable | disable*

Enables or disables legacy QoS mode. This option is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

--decrypt-cfgdb

Modifies a tunnel to the unencrypted configuration database format for downgrading to firmware version earlier than Fabric OS 8.1.0. This option is supported on Brocade FX8-24 blade only.

Optional FCIP circuit arguments for fciptunnel create and modify include the following.

-a | --admin-status [*disable | enable*]

Enables or disables the circuit. Admin status is enabled by default.

-S | --local-ip *ipaddress | none*

Sets the local IP address to use for the circuit. The none option is supported only on the Brocade 7840 switch and the Brocade SX6 extension blade.

-D | --remote-ip *ipaddress | none*

Sets the remote IP address to use for the circuit. The none option is supported only on the Brocade 7840 switch and the Brocade SX6 extension blade.

--local-ha-ip *ipaddress | none*

Sets the local HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch and the Brocade SX6 extension blade only.

--remote-ha-ip *ipaddress | none*

Sets the remote HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch and the Brocade SX6 extension blade only.

-C | --connection-type [*default | listener | initiator*]

Specifies whether the circuit is the listener or the initiator. In default mode, the initiator and listener are automatically chosen based on the lower and higher-order IP address. This can cause a problem in Network Address Translation (NAT) environments, if both sides of the circuit have lower-order addresses.

-L | --load-leveling [*default | failover | spillover*]

Configures spillover or failover load-balancing method. The default load-balancing method is failover. This argument is applicable on the Brocade 7840 switch and the Brocade SX6 extension blade only.

-s | --sack [disable | enable]

Disables or enables selective acknowledgement code (SACK) on the extension circuit. SACK is enabled by default. Use `-s | --sack` to disable the feature when you create a circuit. Use `-s | --sack disable | enable` to disable or enable SACK when you modify a circuit. This operand is supported on the Brocade FX8-24 blade only.

-k | --keepalive-timeout *timeout*

Specifies the keep alive timeout in milliseconds. The valid range is 500 ms to 7200000 ms. If the tunnel does not already have FICON Emulation enabled, circuits created on the tunnel default to the the keep alive timeout of 10000 ms (10 seconds) for Brocade FX8-24 blade and 6000 ms (6 seconds) for Brocade 7840 switch and the Brocade SX6 extension blade. If FICON emulation is enabled on the extension tunnel when a circuit is created, the keep alive timeout defaults to 1000 ms (1 seconds).

-x | --metric *metric*

Specifies the metric for the configured circuit. The valid range is 0 to 1. The default value is 0. A lower metric assigns a higher priority to the circuit. As data is flowing through the extension tunnel, it automatically traverses the lowest metric cost circuits. For example, if a tunnel has four circuits, three of which are set to a metric of 0 and one is set to a metric of 1, all data will flow over the metric 0 circuits. This parameter is meaningful only, if you configure more than one circuit.

-g | --failover-group *failover_group_ID*

Specifies the failover group ID for the configured circuit. The valid range is 0 to 9, where 0 is the default failover group. The circuit failover groups must be defined at both ends of the extension tunnel and each failover group should include at least one metric 0 and one metric 1 circuit. If all metric 0 circuits in the failover group go down, the transmission fails over to the metric 1 circuits in the group. If all metric 0 circuits in a tunnel go down, by default the traffic will run over the metric 1 circuits.

-m | --min-retrans-time *time*

Specifies the minimum time interval in milliseconds between retransmits. The valid range is 20 ms to 5000 ms. The default value is 100 ms. This operand is supported on the Brocade FX8-24 blade only.

-r | --max-retransmits *retransmissions*

Specifies the maximum number of retransmissions. The valid range is 1 to 16. The default value is 8. This operand is supported on the Brocade FX8-24 blade only.

-v | --vlan-tagging *vlan_id*

Creates an extension tunnel with VLAN Tagging and Class of Service (CoS). Specify a *vlan_id* in the range between 1 and 4094. If any other VLAN option is specified, the VLAN ID must also be specified. Refer to the IEEE 802.1p specification for more information.

You can configure VLAN tags when you create a circuit or after the fact by modifying a circuit. Note that adding or modifying the VLAN configuration after a circuit has been created is a disruptive operation. This operand is supported on the Brocade FX8-24 blade only.

You may also specify VLAN tagging per IP interface with the portCfg vlantag command. The VLAN configuration at the IP interface level is for non-data path traffic only. If the data path traffic is to be tagged, it must be done through the VLAN tagging option with the fcipcircuit createor modify command. Note that the circuit VLAN configuration takes priority over the IP interface VLAN configuration.

--l2cos-f-class *l2cos*

Specifies the Layer 2 Class of Service (L2CoS) value for F-Class Traffic. This priority setting controls connections between switches. The range is 0 to 7. The default is 0.

--l2cos-high *l2cos*

Specifies the L2CoS value for FC High Priority Traffic. The range is 0 to 7. The default is 0.

--l2cos-medium *l2cos*

Specifies the L2CoS value for FC Medium Priority Traffic. The range is 0 to 7. The default is 0.

--l2cos-low *l2cos*

Specifies the L2CoS value for FC Low Priority Traffic. The range is 0 to 7. The default is 0.

--l2cos-ip-high *l2cos*

Specifies the L2CoS value for IP High Priority Traffic. The range is 0 to 7. The default is 0. This parameter is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

--l2cos-ip-medium *l2cos*

Specifies the L2CoS value for IP Medium Priority Traffic. The range is 0 to 7. The default is 0. This parameter is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

--l2cos-ip-low *l2cos*

Specifies the L2CoS value for IP Low Priority Traffic. The range is 0 to 7. The default is 0. This parameter is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.

--dscp-f-class *dscp*

Specifies the DSCP value for F-Class Traffic. The range is 0 to 63. The default value is 0.

--dscp-high *dscp*

Specifies the DSCP value for FC High Priority. The range is 0 to 63. The default value is 0.

--dscp-medium *dscp*

Specifies the DSCP value for FC Medium Priority. The range is 0 to 63. The default value is 0.

--dscp-low *dscp*

Specifies the DSCP value for FC Low Priority. The range is 0 to 63. The default value is 0.

--dscp-ip-high *dscp*

Specifies the DSCP value for IP High Priority. The range is 0 to 63. The default value is 0. This parameter is supported only on Brocade 7840 switch and the Brocade SX6 extension blade.

--dscp-ip-medium *dscp*

Specifies the DSCP value for IP Medium Priority. The range is 0 to 63. The default value is 0. This parameter is supported only on Brocade 7840 switch and the Brocade SX6 extension blade.

--dscp-ip-low *dscp*

Specifies the DSCP value for IP Low Priority. The range is 0 to 63. The default value is 0. This parameter is supported only on Brocade 7840 switch and the Brocade SX6 extension blade.

delete *tunnel_ID*

Deletes the specified extension tunnel. This command deletes all associated circuits created with the fcipunnel or fcipcircuit commands. Use the portShow command to display all tunnels and their associated circuits.

fcipcircuit

Creates an extension circuit on an existing tunnel. Use this command to configure additional circuits. The circuit-specific parameters are optional. The syntax for portcfg fcipcircuit is as follows:

```
portcfg fcipcircuit [slot/]ve_port option circuit_ID options [arguments] [optional_arguments]
```

The following options and arguments are supported with fcipcircuit:

create *circuit_ID* -D | --remote-ip *remote_ip_addr* -S | --local-ip *local_ip_addr* -b | --min-comm-rate *value in kbps* -B | --max-comm-rate *value in kbps* [*circuit_arguments*]

Creates an extension circuit. You must specify the following parameters when creating an additional circuit:

circuit_ID

Specifies a numeric identifier for the circuit. The circuit ID is an integer value between 0-9 for both the Brocade FX8-24, and 0-7 for the Brocade 7840 switch.

-D | --remote-ip *remote_ip_addr*

Specifies the IP address for the remote end of the circuit.

--local-ha-ip *ipaddress* | none

Sets the local HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch and the Brocade SX6 extension blade only.

--remote-ha-ip *ipaddress* | none

Sets the remote HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch and the Brocade SX6 extension blade only.

-S | --local-ip *local_ip_addr*

Specifies the IP address for the local end of the circuit.

-b | --min-comm-rate *value in kbps* **-B | --max-comm-rate** *value in kbps*

You can set a minimum and a maximum for the committed rate to configure the tunnel for Adaptive Rate Limiting (ARL), which allows for a more effective sharing of bandwidth between applications. For Brocade FX8-24, the valid range is 10,000 Kbps to 1,000,000 Kbps for 1G ports and 10,000 Kbps to 10,000,000 Kbps for 10G ports. For Brocade 7840 and the Brocade SX6 extension blade, the valid range is 20,000 Kbps to 10,000,000 Kbps. The maximum committed rate can be no larger than five times the minimum committed rate, and both sides of the circuit must have matching configurations.

modify [*circuit_ID*] [*circuit_arguments*]

Modifies the properties of an existing extension circuit. To modify a circuit, you must specify at least one of the optional circuit parameters for the command to be effective. Any circuit attribute you change with the fcipcircuit modify command affects only the specified circuit. All other circuits remain unchanged.

--sla *sla_name* | **none**

Assigns an SLA to a circuit. Make sure to configure the other end of the circuit with a matching SLA. Specify none to remove the SLA for a circuit.

Refer to fciptunnel create and modify for a listing of other optional circuit arguments and their descriptions.

delete *circuit_ID*

Deletes the specified extension circuit.

Examples

To create a FICON-enabled tunnel, first create an empty extension tunnel without any circuits:

```
switch:admin> portcfg fciptunnel 1/12 create
Operation succeeded
```

To enable FICON and compression on the tunnel (this sets the keepalive timeout value to 1000 ms, which is the default for FICON-enabled tunnels):

```
switch:admin> portcfg fciptunnel 1/12 modify -c hardware -F enable
Operation succeeded
```

To create two circuits (circuit 0 and circuit 1) on the tunnel (these circuits will be created with the FICON-compatible keepalive timeout value):

```
switch:admin> portcfg fcipcircuit 1/12 create \
0 192.168.51.61 192.168.50.68 -b 300000 -B 500000
Operation succeeded

switch:admin> portcfg fcipcircuit 1/12 create
1 192.168.50.61 192.168.51.68 -b 300000 -B 500000
Operation succeeded
```

To display circuit 1:

```
switch:admin> portshow fcipcircuit 1/12 1
-----
Circuit ID: 1/12.1
Circuit Num: 1
Admin Status: Enabled
```

```

Oper Status: In Progress
Remote IP: 192.168.51.61
Local IP: 192.168.51.68
Metric: 0
Failover Group ID: (Not Config/Active)
Min Comm Rt: 300000
Max Comm Rt: 500000
SACK: On
Min Retrans Time: 100
Max Retransmits: 8
Keepalive Timeout: 1000
Path MTU Disc: 0
VLAN ID: (Not Configured)
L2CoS: (VLAN Not Configured)
DSCP: F: 0 H: 0 M: 0 L: 0
Flags: 0x00000000

```

To set the compression rate to 'moderate' on the tunnel:

```

switch:admin> portcfg fciptunnel 1/12 modify -c moderate
Operation succeeded

```

To enable FICON XRC and Teradata emulation on the tunnel:

```

switch:admin> portcfg fciptunnel 1/12 modify \
--ficon-xrc enable --ficon-tera-read enable --ficon-tera-write enable
Operation succeeded

```

To enable printer emulation on the tunnel:

```

switch:admin> portcfg fciptunnel 1/12 modify \
--ficon-print enable
Operation succeeded

```

To configure FCIP FastWrite and Tape Pipelining on the tunnel:

```

switch:admin> portcfg fciptunnel 1/12 modify -f enable -t enable
Operation succeeded

```

To set the bandwidth distribution mode to "protocol" and adjust the FC and IP bandwidth ratios for an IP-Extension enabled tunnel on a Brocade 7840 switch:

```

switch:admin> portcfg fciptunnel 24 create --distribution protocol,60,40
Operation succeeded

```

To create a circuit on the tunnel with the failover group ID and verify the configuration (in this example, the OpStatus "FGrpWrn" indicates that the failover group is defined but there is not at least one metric 0 and one metric 1 circuit as part of the failover group):

```
switch:admin> portcfg fcipcircuit 1/22 create 2 \
--remote-ip 1.42.128.93 --local-ip 1.42.128.23 --min-comm-rate 500000
--max-comm-rate 500000 -x 1 -g 1
Operation succeeded
switch:admin> portshow fciptunnel all -c
```

Tunnel	Circuit	OpStatus	Flags	Uptime	TxMBps	RxMBps	ConnCnt	CommRt	Met/G
1/22	-	FGrpWrn	cft----	20m26s	0.00	0.00	1	-	-/-
1/22	0 1/xge0	Up	---4--s	20m26s	0.00	0.00	1	3000/5000	0/-
1/22	1 1/xge0	Up	---4--s	3s	0.00	0.00	2	3000/5000	0/-
1/22	2 1/xge0	Up	---4--s	2m7s	0.00	0.00	1	5000/5000	1/1

To set the failover group for circuit 1 and verify the configuration:

```
switch:admin> portcfg fcipcircuit 1/12 modify 1 -g 1
Operation succeeded
switch:admin> portshow fciptunnel all -c
```

Tunnel	Circuit	OpStatus	Flags	Uptime	TxMBps	RxMBps	ConnCnt	CommRt	Met/G
1/22	-	Up	cft----	26m51s	0.00	0.00	1	-	-/-
1/22	0 1/xge0	Up	---4--s	20m26s	0.00	0.00	1	3000/5000	0/-
1/22	1 1/xge0	Up	---4--s	3s	0.00	0.00	2	3000/5000	0/1
1/22	2 1/xge0	Up	---4--s	2m7s	0.00	0.00	1	5000/5000	1/1

To delete circuit 1:

```
switch:admin> portcfg fcipcircuit 1/12 delete 1
Operation succeeded
```

To create a tunnel with VLAN tagging:

1. Create a tunnel with VLAN tagging set.

```
switch:admin> portcfg fciptunnel 16 create \
-D 192.168.2.10 -S 192.168.2.10 -b 2500000 -B 2500000 -v 100
Operation Succeeded
```

2. Create a circuit with VLAN tagging set.

```
switch:admin> portcfg fcipcircuit 16 create 1 \
-D 192.168.2.11 -S 192.168.2.11 -b 2500000 -B 2500000 -v 200
Operation Succeeded
```

3. Modify an existing circuit to change the VLAN tag and L2 CoS levels.

```
switch:admin> portcfg fcipcircuit 16 modify \
0 -v 300 --l2cos-f 7 --l2cos-h 5 \
--l2cos-m 3 --l2cos-l 1
!!!! WARNING !!!!
Modify operation can disrupt the traffic on the
fcipcircuit specified for a brief period of time. This
```

operation will bring the existing circuit down
(if circuit is up) before applying new configuration.

Continue with Modification (Y,y,N,n): [n] **y**
Operation Succeeded

4. Modify existing circuit to change DSCP marking values

```
switch:admin> portcfg fcipcircuit 16 modify 0 \
--dscp-f 32 --dscp-h 16 --dscp-m 8 --dscp-l 4
Operation Succeeded
```

5. Display the tunnel configuration and circuit values.

```
switch:admin> portshow fciptunnel 24 -c
-----
Tunnel: VE-Port:24 (idx:0, DP0)
=====
Oper State           : Online
TID                  : 24
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Disabled
Tape Pipelining      : Disabled
IPSec                : Enabled
IPSec-Policy         : myPolicy1
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN            : 10:00:00:05:33:65:82:c8
Peer WWN             : 10:00:00:05:33:65:84:08
RemWWN (config)      : 00:00:00:00:00:00:00:00
cfgmask              : 0x0000001f 0x4000020c
Flow Status          : 0
ConCount/Duration    : 2 / 2h41s
Uptime               : 1h31m59s
Stats Duration       : 1h31m59s
Receiver Stats       : 1020072 bytes / 6534 pkts / 210.00 Bps Avg
Sender Stats         : 835204 bytes / 6535 pkts / 173.00 Bps Avg
TCP Bytes In/Out     : 28609996 / 35324148
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)    : 1 / 1 / 1 ms
Wan Util              : 0.0%
TxQ Util             : 0.0%

Circuit 24.0 (DP0)
=====
Admin/Oper State     : Enabled / Online
Flags                : 0x00000000
IP Addr (L/R)        : 10.1.8.77 ge8 <-> 10.1.8.76
HA IP Addr (L/R)     : 0.0.0.0 ge0 <-> 0.0.0.0
Configured Comm Rates: 1000000 / 1000000 kbps
Peer Comm Rates      : 1000000 / 1000000 kbps
Actual Comm Rates    : 1000000 / 1000000 kbps
Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
Metric               : 0
Connection Type      : Default
ARL-Type             : Auto
PMTU                 : Disabled
SLA                  : (none)
```



```

Failover Group      : 0
VLAN-ID             : NONE
L2Cos (FC:h/m/l)    : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)     : 0 / 0 / 0
DSCP (FC:h/m/l)     : 16 / 8 / 4 (Ctrl:32)
DSCP (IP:h/m/l)     : 0 / 0 / 0
cfgmask             : 0x40000000 0x01e10c2f
Flow Status         : 0
ConCount/Duration   : 2 / 2h42s
Uptime              : 1h31m59s
Stats Duration      : 1h31m59s
Receiver Stats      : 515664 bytes / 3307 pkts / 97.00 Bps Avg
Sender Stats        : 415636 bytes / 3269 pkts / 77.00 Bps Avg
TCP Bytes In/Out    : 19805096 / 23191360
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)   : 1 / 1 / 1 ms
Wan Util            : 0.0%

```

Circuit 24.1 (DP0)

=====

```

Admin/Oper State    : Enabled / Online
Flags               : 0x00000000
IP Addr (L/R)       : 192.168.0.20 ge6 <-> 192.168.0.10
HA IP Addr (L/R)    : 0.0.0.0 ge0 <-> 0.0.0.0
Configured Comm Rates: 1000000 / 1000000 kbps
Peer Comm Rates     : 1000000 / 1000000 kbps
Actual Comm Rates   : 1000000 / 1000000 kbps
Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
Metric              : 0
Connection Type     : Default
ARL-Type            : Auto
PMTU                 : Disabled
SLA                  : (none)
Failover Group      : 0
VLAN-ID             : NONE
L2Cos (FC:h/m/l)    : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)     : 0 / 0 / 0
DSCP (FC:h/m/l)     : 16 / 8 / 4 (Ctrl:32)
DSCP (IP:h/m/l)     : 0 / 0 / 0
cfgmask             : 0x40000000 0x01e00c2f
Flow Status         : 0
ConCount/Duration   : 2 / 1h48m37s
Uptime              : 1h31m59s
Stats Duration      : 1h31m59s
Receiver Stats      : 504408 bytes / 3227 pkts / 103.00 Bps Avg
Sender Stats        : 419568 bytes / 3266 pkts / 88.00 Bps Avg
TCP Bytes In/Out    : 16794424 / 20191296
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)   : 1 / 1 / 1 ms
Wan Util            : 0.0%

```

To enable legacy QoS mode for a FCIP tunnel:

```
switch:admin> portcfg fciptunnel 24 modify --legacy-qos-mode enable
Operation Succeeded
switch:admin> portshow fciptunnel
```

Tunnel	Circuit	OpStatus	Flags	Uptime	TxMBps	RxMBps	ConnCnt	CommRt	Met/G
24	-	Degrade	l-----I	1h21m16s	0.00	0.00	3	-	-
25	-	Up	-----I	1h21m16s	0.00	0.00	1	-	-
26	-	Degrade	--i-----	1h21m24s	0.00	0.00	2	-	-
34	-	Degrade	--i-----	1h21m23s	0.00	0.00	2	-	-
35	-	Up	--i-----	1h21m20s	0.00	0.00	2	-	-
36	-	Up	-----I	1h21m11s	0.00	0.00	1	-	-

```
-----
Flags (tunnel): l=Legacy QoS Mode
                 i=IPSec f=Fastwrite T=TapePipelining F=FICON r=ReservedBW
                 a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                 I=IP-Ext
```

To modify an existing circuit so it becomes the listener:

```
switch:admin> portcfg fcipcircuit 16 modify 2 -C 1

!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fcipcircuit specified \
for a brief period of time. This operation will bring the existing \
circuit down (if circuit is up) before applying new configuration.

Continue with Modification (Y,y,N,n): [n]y
Operation Succeeded
```

To modify an existing circuit so it becomes the initiator (the following example uses the string option):

```
switch:admin> portcfg fcipcircuit 16 \
               modify 2 --connection-type initiator

!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fcipcircuit specified \

for a brief period of time. This operation will bring the existing \
circuit down (if circuit is up) before applying new configuration.

Continue with Modification (Y,y,N,n): [n]y
Operation Succeeded
```

To configure an IPSec-enabled tunnel to connect with an IPSec-configured tunnel in legacy mode:

```
switch:admin> portcfg fciptunnel 8/12 modify --legacy enable

!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fciptunnel specified \
for a brief period of time. This operation will bring the existing \
tunnel down (if tunnel is up) before applying new configuration.\
Continue with Modification (Y,y,N,n): [n]y
Tunnel 8/12 modify: Operation Succeeded
```

SEE ALSO [configure](#), [portCfgShow](#), [portShow](#), [switchShow](#)

portCfgAlpa

Configures the AL_PA offset on a specified port or range of ports.

Synopsis **portcfgalpa** [*slot*]/*port*, *mode*

Description Use this command to set the Arbitrated Loop Physical Address (AL_PA) offset on a port or a range of ports to either 0x0 (default) or 0x13.

Changes made by this command are persistent across switch reboots and power cycles.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands When invoked without operands, this command displays the usage. The following operands are supported:

slot

For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

port

Specify the number of the port to be configured, relative to its slot for bladed systems. Use the switchShow command for a list of valid ports.

mode

Specify a value of 1 to set the AL_PA to 0x13. A value of 0 sets the default AL_PA to 0x0. This operand is required.

Examples To configure a port with AL_PA 0x0 (default):

```
switch:admin> portcfgalpa 1/3 0
```

To configure a port with AL_PA 0x13:

```
switch:admin> portcfgalpa 1/3 1
```

SEE ALSO [portCfgShow](#)

portCfgAutoDisable

Manages the port autodisable configuration.

Synopsis

```

portcfgautodisable --enable [slot]/port[-port]
portcfgautodisable --disable [slot]/port[-port]
portcfgautodisable --add option [slot]/port[-port]
portcfgautodisable --remove option [slot]/port[-port]
portcfgautodisable --addall [slot]/port[-port]
portcfgautodisable --removeall [slot]/port[-port]
portcfgautodisable --addexcept option [slot]/port[-port]
portcfgautodisable --show [slot]/port[-port]
portcfgautodisable --suspend
portcfgautodisable --resume
portcfgautodisable --help

```

Description Use this command to enable or disable the autodisable feature for a specified port or a range of ports and to manage the configuration. If the ports are already in the requested configuration, no action is taken. If a range of ports is specified, some of which are already in the requested configuration, no action is taken for those ports. All other ports in the specified range are updated. Execution of this command is nondisruptive.

The autodisable feature is by default disabled for all ports.

Use the `--suspend` and `--resume` options respectively to temporarily suspend and resume the configuration in the current logical switch. These states are persistent across reboots and HA failover.

The port autodisable feature minimizes traffic disruption introduced in some instances of automatic port recovery. When the autodisable flag is set, you can specify the conditions that will prevent the port to reinitialize. Such conditions include loss of sync, loss of signal, OLS, NOS, and LIP. Refer to the operand section for an explanation of these conditions. Note that a link reset does not cause a port autodisable. When a port is in FICON Management Server (FMS) mode, an autodisable port remains persistently disabled across High Availability (HA) failover. In all cases, you can bring the automatically disabled port back into service using the `portEnable` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on GbE ports, VE_Ports, logical interswitch links (LISLs), or FCoE ports.

Operands This command has the following operands:

slot

Specifies the slot number on bladed systems, followed by a slash (/).

<i>port[-port]</i>	Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29.
--enable	Enables the autodisable feature on the specified ports.
--disable	Disables the autodisable feature on the specified ports.
--add	Specifies one or more trigger conditions that will disable the specified ports. Trigger conditions must be separated by a space, for example, LOSN OLS LIP. Trigger conditions are case insensitive.
--remove	Removes one or more trigger conditions from the port autodisable configuration.
--addall	Adds all supported trigger conditions to the port autodisable configuration.
--removeall	Removes all supported trigger conditions from the port autodisable configuration. This command removes the triggers only; it does not disable the port autodisable flag.
--addexcept	Adds all supported trigger conditions to the port autodisable configuration except the one specified .
--show	Displays the port autodisable configuration.
--suspend	Suspends the current port autodisable configuration temporarily.
--resume	Resumes the suspended port autodisable configuration.
--help	Displays command usage.
<i>option</i>	Specify one or more the following options (supported with the --add, --remove, and --addexcept operands):
LOSN	Loss of Sync
LOSNG	Loss of Signal
OLS	Offline Primitive Sequence
NOS	Not Operational Primitive Sequence

LIP

Loop Initialization Primitive Sequence

Examples To disable the port autodisable feature on single port:

```
switch:admin> portcfgautodisable --disable 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: OFF
Configured Option(s):No events configured. Port will
not be automatically disabled.
```

To enable the port autodisable feature on a single port:

```
switch:admin> portcfgautodisable --enable 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE                : RESUME
Configured Option(s):No events configured. Port will
not be automatically disabled.
```

To add multiple trigger conditions to the port autodisable configuration on a single port:

```
switch:admin> portcfgautodisable --add losn lip ols 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE                : RESUME
Configured Option(s): LOSN OLS LIP
```

To add all trigger conditions except the LOSN condition:

```
switch:admin> portcfgautodisable --addexcept LOSN 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE                : RESUME
Configured Option(s): LOSG OLS NOS LIP
```

To attempt to enable and configure the port autodisable feature on a port for which the feature is already activated (the configuration is not updated):

```
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE                : RESUME
Configured Option(s): LOSG OLS NOS LIP
switch:admin> portcfgautodisable --enable 18
Same configuration for port 18
switch:admin> portcfgautodisable --addexcept LOSN 18
Same configuration for port 18
```

To enable the port autodisable feature on a range of ports:

```
switch:admin> portcfgautodisable --enable 0-2
switch:admin> portcfgautodisable --show 0-2
Port Auto Disable: ON
MODE                : RESUME
Configured Option(s):No events configured.
Port will not be automatically disabled.

Port Auto Disable: ON
```

```

MODE                : RESUME
Configured Option(s): No events configured.
Port will not be automatically disabled.

Port Auto Disable: ON
MODE                : RESUME
Configured Option(s): No events configured.
Port will not be automatically disabled.

```

To enable the port autodisable feature for a range of ports, some of which were previously enabled (the configuration is applied only to those ports, for which an update is necessary, that is, port 3 in the following example):

```

switch:admin> portcfgautodisable --enable 0-3
Same configuration for port 0
Same configuration for port 1
Same configuration for port 2

```

To suspend the port autodisable configurations:

```

switch:admin> portcfgautodisable --suspend
Suspending Port Auto Disable will de-activate the triggers \
  for all ports configured with Port autodisable conditions on this Logical Switch.
Would you like to continue [y/n]?: y
PAD option is set to 'SUSPEND'
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE                : SUSPEND
Configured Option(s): LOSG  OLS  NOS  LIP

```

To resume the suspended port autodisable configurations:

```

switch:admin> portcfgautodisable --resume
PAD option is set to 'RESUME'
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE                : RESUME
Configured Option(s): LOSG  OLS  NOS  LIP

```

SEE ALSO [portCfgShow](#), [portEnable](#)

portCfgCompress

Configures a port for compression.

Synopsis **portcfgcompress --enable** [*slot*]/*port*
portcfgcompress --disable [*slot*]/*port*
portcfgcompress --help

Description Use this command to configure a port for compression. This command enables or disables the compression configuration on the specified port, and saves the configuration persistently.

Configuring a port for compression is disruptive. You must disable the port before you can enable compression on the port. This command fails on an enabled port.

The number of configurable ports is limited per ASIC. A message will be displayed once the maximum number is exceeded. Use the portEncCompShow for a listing of configurable ports per ASIC.

Notes This command is supported only on E_Ports. An E_Port can be enabled for compression and for encryption at the same time.

When you move a configured port to another logical switch, you are informed that the operation requires the port configuration to be disabled. You are given the choice to cancel the move or to continue. If you want to go ahead with the move and the port is configured for encryption or compression, you must disable the configuration prior to moving the port. You must reconfigure the port on the target switch if you want to use compression or encryption on that port.

This command is supported on 16 Gbps-capable platforms (running Fabric OS v7.0.0 or later with the exception of the Brocade 6505 switch and the Brocade FC8-32E and Brocade FC8-48E port blades) and on 32 Gbps-capable platforms (running Fabric OS v8.0.1 or later with the exception of the Brocade G610 switch).

Compression feature is not supported on Inter Chassis Link (ICL) ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

<i>slot</i>	On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).
<i>port</i>	Specifies the port to be configured.
--enable	Enables the compression configuration on the specified port.
--disable	Disables the compression configuration on the specified port.

--help

Displays the command usage.

Examples

To enable the compression configuration:

```
switch:admin> portcfgcompress --enable 2

switch:admin> lscfg --config 15 -port 2
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]? y
Checking for cap port 2
After Checking for cap port 2
val 1 port 2
lscfg: The port cannot be moved to the requested switch because
port or ports have Encryption/Compression enabled. Please disable
the Encryption/Compression configuration.
      FID:      15
      Slot:      0
      Port:      2
```

To disable the compression configuration:

```
switch:admin> portcfgcompress --disable 2
```

To enable compression configuration when maximum number is reached:

```
switch:admin> portcfgcompress --enable 2
Configuration is not allowed. Maximum number of ports is
already configured for Encryption/Compression.
```

SEE ALSO [portCfgEncrypt](#), [portEncCompShow](#)

portCfgCreditRecovery

Enables or disables credit recovery on a port.

Synopsis **portcfgcreditrecovery --enable** *[slot/]port*
portcfgcreditrecovery --disable *[slot/]port*
portcfgcreditrecovery --help *[slot/]port*

Description Use this command to enable or disable credit recovery on a port.

The credit recovery feature enables credits or frames to be recovered. The default credit recovery configuration is enabled.

Notes This command is supported in Access Gateway mode.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands This command has the following operands:

--disable Disables credit recovery configuration on the specified port.

--enable Enables credit recovery configuration on the specified port.

--help Displays the command usage.

Examples To enable credit recovery on a port:

```
switch:admin> portcfgcreditrecovery --enable 3/15
```

To disable credit recovery on a port:

```
portcfgcreditrecovery --disable 3/15
```

SEE ALSO [portCfgShow](#)

portCfgDefault

Resets the port configuration to factory default value.

Synopsis **portcfgdefault** [*slot*]/[*ge*]*port*

portcfgdefault --help

Description Use this command to reset all configuration values on a specified port to their factory defaults. This command persistently disables ports capable of routing, which is the factory default value. Use the portCfgShow command to display the port configuration.

This command does not change the state of a port. To change the state of an E_Port, use either switchDisable/switchEnable or portDisable/portEnable.

When this command is used to reset an F_Port in an Access Gateway, that F_Port is unmapped from its mapping to an N_Port.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is blocked if encryption is enabled on a 32 Gbps-capable port.

This command should be used with caution on Embedded switches, as it can alter the factory default settings. In addition, not all Embedded switches provide the same support for this command.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be reset, followed by a slash (/).

port

Specifies the number of the port to be reset, relative to its slot for bladed systems. Use switchShow to list of valid ports.

--help

Displays the command usage.

Examples To reset a port to factory defaults:

```
switch:admin> portcfgdefault 1/3
```

To reset a GbE port to factory defaults:

```
switch:admin> portcfgdefault 8/ge1
```

SEE ALSO [portCfgPersistentDisable](#), [portCfgPersistentEnable](#), [portCfgShow](#), [portCfgSpeed](#), [portCfgTrunkPort](#)

portCfgDPort

Configures a port as a D_Port.

Synopsis

```
portcfgdport --enable [-dwdm] [slot/]port_list
portcfgdport --disable [-dwdm] [slot/]port_list
portcfgdport --provision [-add] [-dwdm] [slot/]port_list
portcfgdport --provision [-delete] [-dwdm] [slot/]port_list
portcfgdport --provision [-show] [slot/]port_list
portcfgdport --help
```

Description Use this command to configure a diagnostic port (D_Port). The D_Port is not part of the fabric. It does not carry any interswitch traffic or data traffic. The D_Port is used solely for the purpose of running link-level diagnostics between two switches, switch-HBA, AG-AG, or AG-HBA and to isolate link level fault on the port, in the small form factor pluggable (SFP), or in the cable.

You must configure both ends of the link between a given pair of switches, and you must disable the port before you can configure a D_Port. Re-enabling the D_Ports will automatically start the diagnostics when the ports come online.

The D_Port test performs the following diagnostics:

- An electrical loopback test (supported only on 16 Gb and 32 Gb SFPs capable of electrical loopback)
- An optical loopback test (supported only on 16 Gb and 32 Gb SFPs capable of optical loopback)
- A link traffic test
- A link distance measurement

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on Fibre Channel ports. SFPs must be 10 Gb or 16 Gb Brocade-branded SFPs and run Fabric OS v7.0.0 or later on 16 Gb-capable platforms.

Beginning with Fabric OS v7.2.1 or later, the command is also supported on 8 Gb LWL/ELWL Brocade-branded SFPs, QSFPs or QSFP+ on 16 Gb-capable platforms.

D_Port configuration is not supported on EX_Ports, SIM-Ports, and ports configured in encryption mode or compression mode.

Links with mismatched D_Port configuration will be segmented or disabled.

Forward Error Correction (FEC) is not supported on D_Ports configured with Dense Wavelength Division Multiplexing (DWDM).

On-Demand D_Port test must not be run on the links having DWDM as it can cause D_Port test to stuck in progress. If DWDM is present in between, configure the static D-Port test with -dwdm option.

Do not run D_Port tests on more than eight links at a time for normal (not long distance) links on FC16-64 blade. On a FC 16-64 blade, do not enable the On-Demand D_Port with bladeInsert or slotPowerOn.

Run D_Port test on one link at a time for 100 Km long distance ports on FC 16-64 blade. D_Port tests on other long distance links must be started only after the D_Port test completes on the previous long distance link.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port_list

Specifies one or more ports, relative to the slot on bladed systems. Use switchShow for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following:

- A single port, for example, "8" or "5/8" on blades systems.
- A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots.
- A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems.
- A wildcard * indicates all ports. The wildcard can be represented as '*' or '*'.

--enable

Configures the specified port(s) as D_Port. You cannot configure the port as a D_Port while Dynamic D_Port tests are in progress on the port. The operation fails with an error message.

-dwdm

Skips the optical loopback test when you run the D_Port diagnostics over a Dense Wavelength Division Multiplexing (DWDM) link or any third party equipment that connects two switches. This operand is optional.

--disable

Clears the D_Port configuration on the specified ports.

-dwdm

Disables DWDM mode on the port. This operand is optional.

--provision

List of ports that are marked to be set as D_Ports. Use the --enable command to configure one or more ports from the list as D_Ports.

-add

Adds the ports on the provision list to be configured as D_Ports.

-dwdm

Provisions the specified ports for DWDM. This operand is optional.

-delete

Removes the ports from the provision list.

-dwdm

Disables DWDM provisioning on the specified ports. This operand is optional.

-show

Lists all the ports in the provision list.

If the port range is specified, the status of each port on the provision list displays. Displays ON if the port is in the provision list or OFF if the port is not in the provision list.

--help

Displays the command usage.

Examples

To configure a single port as a D_Port:

```
switch:admin> portdisable 42
```

```
switch:admin> portcfgdport --enable 42
```

Caution: D_Port functionality is only available on 16Gb-capable platforms \ with 16Gb FC SFPs, 10Gb FC SFPs, or 8Gb LWL/ELWL FC SFPs, QSFPs or QSFP+.

```
switch:admin> portenable 42
```

To clear the D_Port configuration:

```
switch:admin> portdisable 42
```

```
switch:admin> portcfgdport --disable 42
```

```
switch:admin> portenable 42
```

To add a port to the D_Port provision list:

```
switch:admin> portcfgdport --provision -add 7/16
```

Caution: D_Port functionality is only available on 16Gb-capable platforms \ with 16Gb FC SFPs, 10Gb FC SFPs, 8Gb LWL/ELWL FC SFPs, QSFPs or QSFP+.

To add a port to the D_Port provision list and enable DWDM mode on the port:

```
switch:admin> portcfgdport --provision -add -dwdm 7/16
```

Caution: D_Port functionality is only available on 16Gb-capable platforms \ with 16Gb FC SFPs, 10Gb FC SFPs or 8Gb LWL/ELWL FC SFPs.

To remove a port from the provision list:

```
switch:admin> portcfgdport --provision -delete 4/12
```

To list all the ports in the provision list:

```
switch:admin> portcfgdport --provision -show
```

```
Slot Port D-Port provision DWDM
=====
```

7	16	ON	ON
7	17	ON	OFF
7	18	ON	ON

SEE ALSO

[fabricLog](#), [portCfg](#), [portDPortTest](#), [portShow](#), [switchShow](#)

portCfgEncrypt

Configures a port for encryption.

Synopsis **portcfgencrypt --enable** *[slot]/port*
portcfgencrypt --disable *[slot]/port*
portcfgencrypt --help

Description Use this command to configure a port for encryption. This command enables or disables the encryption configuration on the specified port and saves the configuration persistently.

Before you can configure a port for encryption, you must configure the port for authentication. When disabling encryption, you must disable the encryption configuration before you can disable authentication. Refer to the Fabric OS Encryption Administrator's Guide for more information.

Configuring a port for encryption is disruptive. You must disable the port before you can enable encryption on the port. This command fails on an enabled port.

The number of configurable ports is limited per ASIC. Use the portEncCompShow for a listing of configurable ports per ASIC.

Notes This command is supported on E_Ports. An E_Port can be enabled for compression and for encryption at the same time.

When you move a configured port to another logical switch, you are informed that the operation requires that the port configuration be disabled. You are given the choice to cancel the move or to continue. If you want to go ahead with the move and the port is configured for encryption or compression, you must disable the configuration prior to moving the port. You must reconfigure the port on the target switch if you want to use compression or encryption on that port.

This command is supported on 16 Gbps-capable platforms (running Fabric OS v7.0.0 or later with the exception of the Brocade 6505 switch and the Brocade FC8-32E and Brocade FC8-48E port blades) and on FC32-48 port blades in 32 Gbps-capable platforms (running Fabric OS v8.1.0 or later). This command is not supported on Brocade G610, Brocade G620, and Brocade SX6 blade.

Encryption feature is not supported on Inter Chassis Link (ICL) ports.

On Gen6 platforms, encryption port needs extra 105 buffers. If enough buffers are not available, the port cannot be configured for encryption. Use the portBufferShow command to map the buffer allocation and deallocation for the ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

<i>port</i>	Specifies the port to be configured.
--enable	Enables the encryption configuration on the specified port.
--disable	Disables the encryption configuration on the specified port.
--help	Displays the command usage.

Examples To enable the encryption configuration:

```
switch:admin> portcfgencrypt --enable 2
```

To attempt to move a configured port to another logical switch:

```
switch:admin> lscfg --config 15 -port 2
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Checking for cap port 2
After Checking for cap port 2
val 1 port 2
lscfg: The port cannot be moved to the requested switch because
port or ports have Encryption/Compression enabled. Please disable
the Encryption/Compression configuration.
      FID:      15
      Slot:      0
      Port:      2
```

To disable the encryption configuration:

```
switch:admin> portcfgencrypt --disable 2
```

SEE ALSO [authUtil](#), [portCfgCompress](#), [portEncCompShow](#), [secAuthSecret](#)

portCfgEport

Enables or disables E_Port capability on a port or locks down a port as an E_Port.

Synopsis **portcfgeport** [*slot*]/*port mode*

portcfgeport -i [*index1*[-*index2*] [...]] [-f] *mode*

portcfgeport -slot [*slot1*[-*slot2*] [...]]

portcfgeport -h

Description Use this command to enable or disable E_Port capability on a port or to lock down a port as an E_Port. E_Port capability is enabled by default. When an interswitch link (ISL) is connected to a port and the port's E_Port capability is disabled, the ISL is segmented, and all traffic between the switches stops. Fabric management data, such as zoning information, can no longer be exchanged through this port.

You can identify a single port to be configured by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use `switchShow` for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

Specifying multiple ports with the index (-i) or slot (-s) option is supported only if `portSwap` is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index argument to display the `portSwap` status or alternately use `portSwapShow`.

Changes made by this command are persistent across switch reboots or power cycles.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Regardless of how many E_Ports are connected between two switches, the maximum routing paths are limited to 16 E_Ports.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

slot	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
port	Specifies the number of the port to be configured, relative to its slot for bladed systems. Use <code>switchShow</code> to display a listing of valid ports.
-i index1[-index2]	Specifies a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, -i 33-38 40-60.

-f	Ignores nonexistent ports. This operand is valid only with the -i option.
-slot [<i>slot1</i> [- <i>slot2</i>]	Specifies all ports on a slot or on a range of slots, for example, -s 3-5 . You may specify multiple slot ranges separated by a space, for example, -s 3-5 8-10 .
mode	Specifies the E_Port configuration as one of the following:
0	Disables E_Port capability for the specified ports.
1	Enables the ports as E_Ports. This is the default port state.
2	Locks down the ports as E_Ports. This command effectively disables the port's F_Port capability.
-h	Displays the command usage.

Examples To disable E_Port capability on a port:

```
switch:admin> portcfgeport 1/3 0
```

To enable E_Port capability on a port:

```
switch:admin> portcfgeport 1/3 1
```

To lock down the port as an E_Port.

```
switch:admin> portcfgeport 1/3 2
```

To disable E_Port capability on a range of ports specified by their index number:

```
switch:admin> portcfgeport -i 12-18 0
```

To enable E_Port capability on all ports of slot 3-5:

```
switch:admin> portcfgeport -s 3-5 1
```

SEE ALSO [portCfgEportCredits](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portCfgEportCredits

Configures normal distance E_Port buffer allocation.

Synopsis **portcfgportcredits --enable** [*slot*]*port credits*

portcfgportcredits --disable [*slot*]*port*

portcfgportcredits --show [*slot*]*port*

portcfgportcredits --help

Description Use this command to change the default credit allocation for a normal distance E_Port or EX_Port by allocating the specified number of credits to the port. When port credit allocation is enabled, the number of credits specified overrides the default E_Port credit allocation; that is, a new credit model is constructed based on the user-configured credits value. When the configuration is disabled, the default credit allocation (default credit model) is restored. Only a normal distance E_Port and EX_Port can utilize the new credit model constructed by this command, and the allocated credits are reserved only for that port.

ICL ports are supported and are used in conjunction with 2 km ICL QSFPs.

The E_Port credit configuration is persistent across system reboots and High Availability (HA) failover.

Use the portcfgportcredits --show command to display the configured credits.

Use the portBufferShow command to determine current port buffer allocations.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The E_Port credits feature does not support ports configured as F_Ports, Mirror Ports, L_Ports, and Trunk Areas. If E_Port credits are configured on ports, moving the ports from one logical switch to another logical switch is not permitted.

The Fabric OS port configuration commands are not supported on FCoE ports.

The E_Port credits are mutually exclusive with F_Port buffers, longdistance, ISL R_RDY, and Buffer Optimized mode.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

--enable

Enables the E_Port credit configuration on a specified port. A port and credits allocation must be specified with this option.

--disable

Disables the E_Port credit configuration on a specified port.

--show

Displays the credits configured on a specified port.

<i>slot</i>	Specifies the slot number on bladed systems, followed by a slash (/).
<i>port</i>	Specifies the port number.
<i>credits</i>	Specifies the number of credits to be allocated to the specified port. The specified credit allocation takes effect when the E_Port comes online. This operand is required with the --enable option. The minimum credit allocation is 5 and the maximum is 40 for Gen5 platform (16Gbps-capable blades). For ICL ports of Gen5 platform, the valid range is from 5 through 16. For Gen 6 platform, the credit allocation is allowed in the range between 5 to 160 for both ICL ports and normal ISL and EX Port links. In Gen 6 platform, if the specified credit allocation is less than the default allocation, the default allocation scheme is enforced (in Gen 6 platform, 32 Gbps links are reserved 20 credits per VC). The configured credits will be allocated for each of the medium virtual channels (VCs) for the non-QoS ports. For QoS ports, after sharing, both the medium and high VCs will have the configured credits allocated.
--help	Displays the command usage.

Examples

To allocate 10 credits to an E_Port:

```
switch:admin> portcfgeportcredits --enable 12/6 10
Success.
```

To display the configured credits for an E_Port:

```
switch:admin> portcfgeportcredits --show 12/6
E-Port Credit Configured : 10
Success.
```

To disable the credit configuration and return to the default credit allocation:

```
switch:admin> portcfgeportcredits --disable 12/6
Success.
```

SEE ALSO

[portBufferShow](#)

portCfgEXPort

Sets a port to be an EX_Port, and sets and displays EX_Port configuration parameters.

Synopsis **portcfgexport** [*slot*]/*port* [-*port*]
portcfgexport [-**a** *admin*]
portcfgexport [-**f** *fabricid*]
portcfgexport [-**r** *ratov*]
portcfgexport [-**e** *edtov*]
portcfgexport [-**d** *domainid*]
portcfgexport [-**p** *pidformat*]
portcfgexport [-**t** *fabric_parameter*]
portcfgexport [-**m** *port mode*]
portcfgexport [-**i** *mode*]
portcfgexport --help

Description Use this command to allow a port to be configured as an EX_Port, to display the port's EX_Port configuration, or to change the configuration. If no optional parameter is specified, the command displays the currently configured values; otherwise, it sets the specified attribute to its new value. The port must be disabled prior to setting EX_Port attributes. The port must be enabled before the port can become active following EX_Port parameter changes. Use portDisable and portEnable to disable or enable the port.

IPFC over FCR allows the routing of IPFC traffic between different EX_Ports where EX_Ports are connected to an edge fabric that has IPFC-capable devices. IPFC traffic is routed between EX and VEX Ports. IPFC traffic can be related to the same edge fabric or to different edge fabrics.

When the port is not active, the preferred domain ID is configurable. The preferred domain ID is used by the EX_Port's front phantom domain to request a domain ID from the principal switch. The domain ID received becomes the subsequent preferred domain ID, which is persistent and is displayed.

FCR supports Network OS edge (NOS) fabric connectivity when the EX_Port is set to Brocade Network OS fabric mode. No Integrated Routing License is required to support Network OS fabric connectivity, and selective device sharing will be allowed even when a license is not present.

This command is also used to configure the Inter-Chassis Link (ICL) ports to be EX_Ports. The ICL EX_Port is supported only on the VF-enabled 16 Gbps-capable chassis. Setting ICL EX_Port configuration in a non-VF switch or non-base switch will display an error.

All EX_Ports within a quad small form-factor pluggable (QSFP) must be present in the base switch and in disabled state for configuring ICL EX_Ports. If an EX_Port within the same QSFP is moved from the base switch to a logical switch, EX_Port configuration cannot be applied to any of the ports in the QSFP. When specifying an ICL port, all four E_Ports of the QSFP will be configured with the same EX_Port parameters.

Encryption and compression are not supported on an ICL EX_Ports. When this command is executed on ICL EX_Port without optional parameters, encryption and compression states are not displayed.

Notes The fabric ID must be the same for every router port connected to the same edge fabric, and different for every edge fabric. If two ports are connected to the same fabric but have been assigned different fabric IDs, one of them will be disabled due to a fabric ID oversubscription. If two fabrics have been assigned the same fabric ID, one of them will be disabled due to a fabric ID conflict.

When a port is changed from FL_Port to EX_Port, the topology is implicitly changed to point-to-point.

The front domain WWN field displays the WWN of the front domain. If the port is enabled and the state is "OK", the edge fabric principal switch domain ID and WWN also are displayed.

If the Fabric Parameter value is "Auto Negotiate", the port ID format, R_A_TOV, and E_D_TOV values display the negotiated values indicated by "(N)" next to them. The negotiated values are what the edge switch specifies in the ELP request. If the state is "Not OK", the R_A_TOV and E_D_TOV display "Not Applicable". By default, all EX_Ports are auto-ELP enabled.

If the Fabric Parameter attribute value is "User configured", the port ID format R_A_TOV and E_D_TOV values display the configured values.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands When invoked without operands, this command displays the usage. The following operands are supported:

- slot** On bladed systems only, specifies the slot number followed by a slash (/).
- port[-port]** Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Use switchShow for a list of valid ports. When executed with [slot/]port [-port] only, the command displays the current port configuration.
- a admin** Enables or disables the specified port as an EX_Port. Valid values are 1 (enable as EX_Port), 2 (disable as EX_Port and enable as non-EX_Port). portCfgDefault may also be used to disable EX_Ports.
- f fabricid** Specifies the fabric ID. The valid values for FID are from 1 through 128 or the alias name of the fabric. The alias name is displayed, only if alias name exists for the corresponding Edge Fabric ID. Execute fcrconfigure --show to view the alias name configuration.
- r ratov** Specifies the R_A_TOV used for port negotiation. Valid values are 2000 to 120000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".
- e edtov** Specifies the E_D_TOV used for port negotiation. Valid values are 1000 to 60000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".

-d <i>domainid</i>	Specifies the preferred domain ID. For Brocade native mode (-m 0), valid values are 1 to 239.
-p <i>pidformat</i>	Specifies the Port ID format. Valid values are 0-native, 1-core, 2-extended edge. This operand is applicable only when port mode is set to 0 (native mode). If port mode is not "Brocade Native", the Port ID format displays as "Not applicable".
-t <i>fabric_parameter</i>	Enables or disables negotiation of the fabric parameters. Valid values are 1 for enable and 2 for disable.
-m <i>port mode</i>	Specifies the port mode. The -m option enforces the same port mode for all the ports connected to the same edge fabric. If this option is selected, the port mode is compared against the online ports. If the modes are different, an error message is posted, and the command fails. Valid values are as follows:
0	Brocade Native mode.
5	Brocade Network OS fabric mode.
-i <i>mode</i>	Enables or disables Insistent Domain Id (IDID) for the specified EX_Port. Specify 1 to enable IDID, specify 2 to disable IDID. This command must be issued from a McDATA edge switch attached to a single or dual FCR configuration.
-- help	Displays the command usage.

Examples

To set the fabric ID of port 2/1 to 5 and the port ID format to core:

```
switch:admin> portcfgexport 2/1 -f 5 -p 1
```

To configure port 2/0 to be an EX_Port and set the fabric ID to 4:

```
switch:admin> portcfgexport 2/0 -a 1 -f 4
```

To disable fabric parameter negotiation on port 2/0 of an EX_Port:

```
switch:admin> portcfgexport 2/0 -t 2
```

To enable IDID on port 2:

```
switch:admin> portcfgexport 2 -i 1
```

To enable Brocade Network OS (NOS) fabric mode on port 1/5:

```
switch:admin> portcfgexport 1/5 -a 1 -m 5
```

To enable Brocade Network OS (NOS) fabric mode using alias name:

```
switch:admin> portcfgexport 1/5 -a 1 -f Red_fabric
```

To view the configuration of an EX_Port:

```
switch:admin> portcfgexport 1/5
Port      1/5    info
Admin:           enabled
State:           OK
Pid format:      core(N)
Operate mode:    Brocade Native
Edge Fabric ID:  128
Alias name:      Red_fabric
Preferred Domain ID: 160
Front WWN:       50:00:51:e4:44:40:0e:80
Fabric Parameters: Auto Negotiate
R_A_TOV:         10000(N)
E_D_TOV:         2000(N)
Authentication Type: DHCHAP
DH Group: 4
Hash Algorithm:  SHA-1
Encryption:      ON
Compression:     ON
Forward Error Correction: ON
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

To view the configuration of an ICL EX_Port:

```
switch:admin> portcfgexport 5/12
Port      5/12    info
Admin:           enabled
State:           OK
Pid format:      core(N)
Operate mode:    Brocade Native
Edge Fabric ID:  11
Alias name:      orange_fabric
Front Domain ID: 160
Front WWN:       50:00:51:e4:8f:80:2e:0b
Principal Switch: 1
Principal WWN:    10:00:00:05:1e:48:f8:03
Fabric Parameters: Auto Negotiate
R_A_TOV:         10000(N)
E_D_TOV:         2000(N)
Authentication Type: None
DH Group: N/A
Hash Algorithm:  N/A
Forward Error Correction: ON
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

SEE ALSO [portCfgVEXPort](#), [portDisable](#), [portEnable](#), [portShow](#), [portCfgDefault](#), [fcrBcastConfig](#), [fcrConfigure](#)

portCfgFaultDelay

Configures the fault delay for a single FC port.

Synopsis **portcfgfaultdelay** [*slot*]/*port* *delay*

portcfgfaultdelay --help

Description Use this command to configure the fault delay of an FC port.

In the event that the link is noisy after a host power cycle, the switch may go into a soft fault state, which means a delay of R_A_TOV. Setting the mode value to 1 reduces the fault delay value to 1.2 seconds. The configuration is stored in nonvolatile memory and is persistent across switch reboots and power cycles.

Use the portCfgShow command to display the user-configured fault delay settings.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is applicable only to Fibre Channel ports.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the number of the port to be configured, relative to its slot for bladed systems. Use switchShow for a listing of valid ports.

delay

Specifies the fault delay value for the port number. This operand is required. Valid values are one of the following:

0

Sets the fault delay to R_A_TOV (default).

1

Sets the fault delay to 1.2 seconds.

---help

Displays the command usage.

Examples To set the fault delay of a port to 1.2 seconds:

```
switch:admin> portcfgfaultdelay 2/3 1
```

To display the configuration

```
switch:admin> portcfgshow 2/3
```

```
Area Number:                21
Octet Speed Combo:          1(16G|8G|4G|2G)
Speed Level:                 AUTO(SW)
AL_PA Offset 13:            OFF
Trunk Port                   ON
Long Distance                OFF
VC Link Init                 OFF
Locked L_Port                OFF
Locked G_Port                OFF
Disabled E_Port              OFF
Locked E_Port                OFF
ISL R_RDY Mode               OFF
RSCN Suppressed              OFF
Persistent Disable            OFF
LOS TOV enable               OFF
NPIV capability              ON
QOS E_Port                   AE
Port Auto Disable:           OFF
Rate Limit                   OFF
EX Port                      OFF
Mirror Port                  OFF
Credit Recovery              ON
F_Port Buffers               OFF
Fault Delay:                  1(1.2sec)
NPIV PP Limit:               126
CSCTL mode:                   OFF
D-Port mode:                 OFF
D-Port over DWDM             OFF
Compression:                  OFF
Encryption:                   OFF
FEC:                          Active
```

```
switch:admin> portcfgshow
```

```
Ports of Slot 2  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Speed          AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
Fill Word(On Active)0 0 0 0  0 0 0 0  0 0 0 0  0 0 0 0
Fill Word(Current)0 0  0 0  0 0 0 0  0 0 0 0  0 0 0 0
AL_PA Offset 13 .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Trunk Port      ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Long Distance   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
VC Link Init    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked L_Port   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked G_Port   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Disabled E_Port .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
ISL R_RDY Mode  .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
RSCN Suppressed .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
LOS TOV enable  .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
NPIV capability ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
QOS E_Port      AE AE AE AE  AE AE AE AE  AE AE AE AE  .. .. .. ..
EX Port         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Mirror Port     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Rate Limit      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Credit Recovery ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
```

portCfgFaultDelay

```
Fport Buffers      .. .. .
Port Auto Disable. .. .. .
CSCTL mode         .. .. .
D-Port mode        .. .. .
D-Port over DWDM   .. .. .
Compression        .. .. .
Encryption         .. .. .
FEC                .. .. .
Fault Delay        0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0
                    where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF,
                        -:NotApplicable, ?:INVALID
(output truncated)
```

SEE ALSO [portCfgShow](#)

portCfgFec

Enables or disables Forward Error Correction (FEC) or FEC through Transmitter Training Signal (TTS) on 16 Gbps and 10 Gbps Fibre Channel links.

Synopsis

portcfgfec --enable [-FEC] [-TTS] [-force | -f] [slot/port [-port]]

portcfgfec --disable [-FEC] [-TTS] [-force | -f] [slot/port [-port]]

portcfgfec --show [slot/port [-port]]

portcfgfec --help

Description

Use this command to enable or disable Forward Error Correction (FEC) or Transmitter Training Signal (TTS) on a specified port or on a range of ports, or to display the configuration.

FEC provides a mechanism for reducing error rates during data transmissions over 16 Gbps Fibre Channel links. When FEC is enabled on a port, the sender adds systematically generated error-correcting code (ECC) to its data transmission. This mechanism allows the receiver to detect and correct errors without needing to get additional information from the sender.

If the TTS mode is enabled, the port negotiates FEC through TTS. TTS and 64B/66B are mutually exclusive. At fixed speed, TTS is not compatible with 64B/66B at the peer port and the final port state will be "No_Sync". In auto negotiation, the local port will try the TTS encoding; if the other end is not compatible, then the local port will try the 8B/10B encoding and the port will settle in "N8" port speed if the peer port also supports 8B/10B encoding. Thus, the TTS mode should only be enabled if a similarly TTS-capable and enabled device is connected to the port.

The Brocade implementation of FEC is supported on 16 Gbps platforms and enables the switch to recover bit errors in 16 Gbps and 10 Gbps data streams. The FEC encoding can correct one burst of up to 11 error bits in every 2,112-bit transmission. The error correction covers both frames and primitives. There is no loss of bandwidth or added transmission data rate overhead to the 16 Gbps FC link.

By default, FEC without TTS is enabled switch-wide on all 16 Gbps platforms but FEC via TTS is not enabled. If FEC is already enabled on the ports, enabling FEC has no effect. If a range of ports is specified, some of which are already in the requested configuration, a notification is generated, and no action is taken for those ports only. All other ports in the specified range are updated. Enabling or disabling FEC is disruptive to traffic. The command prompts for confirmation to continue with enabling or disabling TTS or FEC via TTS for the online ports. You can override the prompt for confirmation with the -force option.

When used with the --show option, the command displays the following information for the specified ports:

Port

The port index number

FEC Capable

Displays YES if the port supports FEC. Displays NO if the port does not support FEC.

FEC Configured

Displays ON if FEC is enabled on the port (default). Displays OFF if the feature is disabled.

FEC via TTS Configured

Displays OFF if TTS is disabled on the port (default). Displays ON if the FEC negotiation via TTS feature is enabled.

FEC State

The FEC state can be active or inactive. An active FEC state indicates that FEC is enabled and actually running. An inactive state can indicate two conditions: FEC is enabled, but not running due to some error condition (for example, FEC may not be enabled on both ends of the link). Or FEC is disabled and therefore inactive.

Use the portCfgShow command to display the FEC configuration along with other port parameters. Use the islShow command to view interswitch link-level FEC configurations. Use the portErrshow and portStatShowhow commands to monitor data transmission errors. You should see a significant reduction in CRC errors on FEC-enabled links.

Note that FEC is negotiated at ELP while FEC TTS is negotiated during speed negotiation.

Except for transparent DWDM, FEC is not supported over Dense Wavelength Division Multiplexing (DWDM) because non-transparent DWDM recognizes FC protocol and only transmits the frames. FEC is in unused signaling bits which are not replicated by non-transparent DWDM. ISL links that are extended across DWDM therefore should have FEC disabled.

Notes

FEC is supported on the following links:

- Between E_Ports on all 16 Gbps platforms running Fabric OS v7.0.0 or later. Both sides of the link must be configured with port speeds of 10 Gbps and 16 Gbps.
- Between F_Ports and N_Ports in Access Gateway mode (requires Fabric OS v7.1.0 and later on the AG and the switch).
- Between Brocade 16 Gbps capable HBAs (Catapult2) Host Bus Adapters and an F_Port. The HBA must be running v3.2 or later and the switch must be running Fabric OS v7.1.0.

FEC is compatible with QoS, Credit Recovery, and Fabric-Assigned Port WWM (FA-PWWN).

FEC is not supported on D_Ports configured with Dense Wavelength Division Multiplexing (DWDM).

Starting from Fabric OS v7.3.0, the TTS mode is supported only for F_Ports. If a port initializes as an E_Port, it is disabled with a warning message and its peer port will be in "No_Light". status.

The TTS mode is not supported for ICL ports, EX_Ports, D_Ports, SIM ports, Mirror ports, Software ASN, fixed 1 Gbps, fixed 2 Gbps, fixed 4 Gbps, or fixed 8 Gbps ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port[-port]

Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Multiple port ranges are not supported with this command.

--enable [-FEC] [-TTS]

Enables FEC, FEC through TTS or both on the specified ports. Use the -FEC option to enable FEC only, use the -TTS option to enable TTS only, or use both -FEC and -TTS options together to enable FEC through TTS.

--disable [-FEC] [-TTS]

Disables FEC, FEC through TTS on the specified ports. Use the -FEC option to disable FEC only, use the -TTS option to disable TTS only, or use both -FEC and -TTS options together to disable FEC through TTS.

-force | -f

Enables or disables FEC or FEC through TTS without prompting for a confirmation.

--show

Displays the FEC and TTS configurations on the specified ports.

--help

Displays the command usage.

Examples

To enable FEC on a single port and to display the configuration:

```
switch:admin> portcfgfec --enable -FEC 5/28
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
switch:admin> portcfgfec --show 5/28
Port: 412
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Active
```

To enable FEC on a port:

```
switch:admin> portcfgfec --enable -FEC 18
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
```

To enable FEC on a port range:

```
switch:admin> portcfgfec --enable -FEC 0-8
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
```

```

FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been enabled.

```

To enable the FEC feature on a range of ports, some of which were previously enabled (the following example enables port 4):

```

switch:admin> portcfgfec --enable -FEC 2-4
Warning : FEC changes will be disruptive to the traffic
Same configuration for port 2
Warning : FEC changes will be disruptive to the traffic
Same configuration for port 3
Warning : FEC changes will be disruptive to the traffic
Same configuration for port 4

```

To disable the FEC feature on a port range:

```

switch:admin> portcfgfec --disable -FEC 0-8
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.
Warning : FEC changes will be disruptive to the traffic
FEC has been disabled.

```

To enable TTS on a port:

```

switch:admin> portcfgfec --enable -TTS 7
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
TTS has been enabled.

```

To display the TTS on a port:

```

switch:admin> portcfgfec --show 7
Port: 7
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: ON
FEC State: Active

```

To disable TTS on a port:

```
switch:admin> portcfgfec --disable -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
          Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
TTS has been disabled.
```

To enable both FEC and TTS on a port:

```
switch:admin> portcfgfec --enable -FEC -TTS 2
WARNING: 16G FEC with TTS is only supported on F-Ports. \
          Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
FEC & TTS have been enabled for port 2.
```

To disable both FEC and TTS on a port:

```
switch:admin> portcfgfec --disable -FEC -TTS 2
WARNING: 16G FEC with TTS is only supported on F-Ports. \
          Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
FEC & TTS have been disabled for port 2.
```

To enable TTS on a port range using the force option:

```
switch:admin> portcfgfec --enable -TTS 1-5 -f
FEC & TTS have been enabled for port 1.
FEC & TTS have been enabled for port 2.
FEC & TTS have been enabled for port 3.
FEC & TTS have been enabled for port 4.
FEC & TTS have been enabled for port 5.
```

To enable TTS feature on a range of ports, which were previously enabled using the force option:

```
switch:admin> portcfgfec --enable -TTS 16-21 -f
Same configuration for port 16
Same configuration for port 17
Same configuration for port 18
TTS has been enabled.
TTS has been enabled.
TTS has been enabled.
```

To enable FEC and TTS feature when FEC is previously enabled:

```
switch:admin> portcfgfec --enable -FEC -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
          Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same FEC configuration; and TTS has been enabled for port 1.
```


To enable FEC and TTS feature when TTS is previously enabled:

```
switch:admin> portcfgfec --enable -FEC -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
          Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same TTS configuration; and FEC has been enabled for port 1.
```

To disable FEC and TTS feature when FEC is previously disabled and TTS is enabled:

```
switch:admin> portcfgfec --disable -FEC -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
          Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same FEC configuration; and TTS has been disabled for port 1.
```

To disable FEC and TTS feature when TTS is previously disabled and FEC is enabled:

```
switch:admin> portcfgfec --disable -FEC -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
          Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same TTS configuration; and FEC has been disabled for port 1.
```

To display the FEC and TTS configuration on range of ports:

```
switch:admin> portcfgfec --show 7-10
Port: 7
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: ON
FEC State: Active

Port: 8
FEC Capable: YES
10G/16G FEC Configured: OFF
16G FEC via TTS Configured: OFF
FEC State: Inactive

Port: 9
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Inactive

Port: 10
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Inactive
```

SEE ALSO [is1Show](#), [portCfgShow](#), [portErrShow](#), [portStatsShow](#)

portCfgFillword

Configures the fill word for a single 8G FC port.

Synopsis `portcfgfillword [slot]/port, mode [passive]`

portcfgfillword --help

Description Use this command to configure the fill word of an 8G FC port. By default, this command disables and re-enables the port and the port comes online with the new fill word setting. When passive option 1 is used after the mode, the new settings are not applied until the next time the port goes offline and comes back online. When passive option 0 is used after the mode, the new settings are applied immediately. The configuration is stored in nonvolatile memory and is persistent across switch reboots or power cycles.

Notes This command is applicable only to 8Gbps FC ports on the FC8-64 and FX8-24 blades in DCX8510 directors.

This configuration cannot be set on VE_Ports or VEX_Ports.

Use the portCfgShow command to display user-configured fill word settings.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the number of the port to be configured, relative to its slot for bladed systems. Use switchShow for a listing of valid ports.

mode

Specifies the fill word for the port number. This operand is required. Valid values are one of the following:

0 | -idle-idle

Sets IDLE mode in the Link Init and IDLE as the fill word (default).

1 | -arbff-arbff

Sets ARB(ff) in the Link Init and ARB(ff) as the fill word.

2 | -idlef-arbff

Sets IDLE mode in the Link Init and ARB(ff) as the fill word.

3 | -aa-then-ia

Attempts hardware arbff-arbff (mode 1) first. If the attempt fails to go into active state, this command executes software idle-arb (mode 2). Mode 3 is the preferable to modes 1 and 2 as it captures more cases.

passive

Specifies the fill word configuration changes to take effect immediately or next port toggle. This operand is optional. Valid values are one of the following:

0

Specify 0 for the new settings to take effect immediately.

1

Specify 1 to postpone the new settings to take effect only after the next time the port goes offline and comes back up. It prevents immediate application of the new settings through a disruptive portDisable and portEnable operation.

Examples

To set the fill word of a port to ARBFF-ARBFF using the numeric mode notation:

```
switch:admin> portcfgfillword 2/3, 1
```

To set the fill word of a port to ARBFF-ARBFF using the -arbff-arbff option:

```
switch:admin> portcfgfillword 2/3, -arbff-arbff
```

To set the fill word of a port to IDLE-ARBFF using the -idle-arbff option:

```
switch:admin> portcfgfillword 27, -idle-arbff
switch:admin> portcfgshow 27
Area Number:                27
Speed Level:                 AUTO(HW)
Fill Word(On Active)         2(SW Idle-Arbff)
Fill Word(Current)           2(SW Idle-Arbff)
(output truncated)
```

To set the fill word of a port using the passive option:

```
switch:admin> portcfgfillword 10/2 2 1

switch:admin> portcfgshow 10/2
Area Number:                82
Speed Level:                 AUTO(HW)
Fill Word(On Active)         2(SW Idle-Arbff)
Fill Word(Current)           1(Arbff-Arbff)
(output truncated)

switch:admin> portdisable 10/2; portenable 10/2
switch:admin> portcfgshow 10/2
Area Number:                82
Speed Level:                 AUTO(HW)
Fill Word(On Active)         2(SW Idle-Arbff)
Fill Word(Current)           2(SW Idle-Arbff)
AL_PA Offset 13:             OFF

switch:admin> portcfgfillword 10/2 3 0
switch:admin> portcfgshow 10/2
Area Number:                82
Speed Level:                 AUTO(HW)
Fill Word(On Active)         3(A-A then SW I-A)
```

Fill Word(Current)	3(A-A then SW I-A)
AL_PA Offset 13:	OFF
Trunk Port	OFF
Long Distance	OFF

SEE ALSO [portCfgShow](#)

portCfgFlogiLogout

Enables the Base Device Logout functionality on the port.

Synopsis **portcfgflogilogout --enable [slot/]port | -all**
portcfgflogilogout --disable [slot/]port | -all
portcfgflogilogout --help

Description Use this command to enable or disable Base Device Logout functionality on a specified port or port range. By default, the functionality is disabled on all the ports.

This functionality allows NPIV devices to remain logged in even after the base device logs out.

A base device is a device on a F_Port which has the base PID. The base device logs in with a FLOGI.

The execution of this command is disruptive. The online ports will toggle with this command but prompts for user confirmation if any port is online.

You cannot configure the Base Device Logout functionality if the standby device is running on a lower version of the firmware.

The feature is not supported on ICL ports. You cannot enable this feature on the ports that do not support NPIV capability or if NPIV is disabled by configuration.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

[slot/]port | -all	Specifies a port number. You can specify a port or range of ports. You can use -all to include all ports on the logical switch.
--enable	Enables Base Device Logout functionality on the specified port.
--disable	Disables Base Device Logout functionality on the specified port.
--help	Displays the command usage.

Examples To enable Base Device Logout functionality on a port:

```
switch:admin> portcfgflogilogout --enable 2/1
```

To disable Base Device Logout functionality on a port:

```
switch:admin> portcfgflogilogout --disable 2/1
```

SEE ALSO [portCfgNPIVPort](#)

portCfgFportBuffers

Configures F_Port buffer allocation.

Synopsis **portcfgfportbuffers --enable** [*slot*]/*port* *buffers*

portcfgfportbuffers --disable [*slot*]/*port*

Description Use this command to change the default buffer allocation for an F_Port and to allocate a specified number of buffers to the port. When port buffer allocation is enabled, the number of buffers specified override the default F_Port buffer allocation. When the configuration is disabled, the default buffer allocation is restored. Only an F_Port can utilize the buffers allocated by this command, and the allocated buffers are reserved only for this port.

The F_Port buffer configuration is persistent across system reboots.

Use the portBufferShow command to determine current port buffer allocations.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The F_Port buffer feature does not support ports configured as EX_Ports, Mirror Ports, Long Distance Ports, L_Ports, QoS Ports, Fast Write, and Trunk Areas.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

--enable

Enables the F_Port buffer configuration on a specified port. A port and buffer allocation must be specified with this option.

--disable

Disables the F_Port buffer configuration on a specified port.

slot

Specifies the slot number on bladed systems, followed by a slash (/).

buffers

Specifies the number of buffers to be allocated to the specified port. The specified buffer allocation takes effect when the F_Port comes online. This operand is required with the --enable option. The minimum buffer allocation is the default number of buffers plus 1. The maximum is determined by the remaining buffer allocations in the port's port group. Use portBufferShow to determine the number of remaining free buffers.

Examples To allocate 12 buffers to an F_Port:

```
switch:admin> portcfgfportbuffers --enable 2/44 12
```

portCfgFportBuffers

To disable the port buffer configuration and return to the default buffer allocation:

```
switch:admin> portcfgfportbuffers --disable 2/44 12
```

SEE ALSO [portBufferShow](#)

portCfgGE

Manages the port configuration of the GbE/10GbE ports.

Synopsis

```
portcfgge [slot/] port --set -speed speed
portcfgge [slot/] port --set -mediatype media
portcfgge [slot/] port --set -channel channel_num
portcfgge [slot/] port --set -lan
portcfgge [slot/] port --set -wan
portcfgge [slot/] port --enable -autoneg
portcfgge [slot/] port --disable -autoneg
portcfgge [slot/][ port] --show [-lmac]
portcfgge --help
```

Description Use this command to manage the port configuration of the GbE/10GbE ports. This command switches the port speed between 1G and 10G or switch the auto-negotiate mode. The auto-negotiate option allows to control auto-negotiate on the PHY for 1G mode.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
port	Specifies the number of the GbE port to be configured. On the Brocade FX8-24 blade, the GbE ports are numbered ge0 - ge9 and 10 GbE ports are numbered xge0 - xge1. On the Brocade 7840 switch and the Brocade SX6 extension blade, 40 GbE ports are numbered ge0 - ge1 and 1G/10GbE ports are numbered ge2 - ge17. Use the switchShow command for a list of valid ports.
--set	Configures the GE ports.
-speed speed	Configures the port speed for the GE ports. The valid speeds are 1G or 10G.

- mediatype *media***
Specifies transmit mode for the GE ports. The valid types are optical or copper. Specifying optical selects the optical mode for the GbE port. Specifying copper selects a copper mode for the GbE port.
- channel *channel_num***
Configures the tunable small form-factor pluggable (TSFP) channel ID for the 10 GE ports. The valid channel ID range is 1 through 102. This option is supported only on the Brocade 7840 switch and the Brocade SX6 extension blade.
- lan**
Configures a GE port as a LAN port. This option is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
- wan**
Configures a GE port as a WAN port. This option is supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
- enable -autoneg**
Enables the auto negotiation mode for the GE port.
- disable -autoneg**
Disables the auto negotiation mode for the GE port.
- show**
Displays the current GE port configurations.
- lmac**
Displays the local MAC address. This operand is optional.
- help**
Displays the command usage.

Examples To display the current GE port configurations:

```
switch:admin> portcfgge --show
```

Port	Speed	Flags	LAG-ID
ge0	40G	A----	-
ge1	40G	A----	-
ge2	10G	A-LG-	lag0
ge3	10G	A-LG-	lag0
ge4	10G	A----	-
ge5	10G	A----	-
ge6	10G	A----	-
ge7	1G	--LG-	edgeSw1
ge8	10G	A----	-
ge9	10G	A----	-
ge10	10G	A----	-
ge11	10G	A----	-
ge12	10G	A----	-
ge13	10G	A----	-
ge14	10G	A----	-
ge15	10G	A----	-
ge16	10G	A----	-
ge17	10G	A----	-

To configure the port speed to 1G for ge8 and verify the configuration:

```
switch:admin> portcfgge ge8 --set -speed 1G
switch:admin> portcfgge --show
```

Port	Speed	Flags	LAG-ID
ge0	40G	A----	-
ge1	40G	A----	-
ge2	10G	A-LG-	lag0
ge3	10G	A-LG-	lag0
ge4	10G	A----	-
ge5	10G	A----	-
ge6	10G	A----	-
ge7	1G	--LG-	edgeSw1
ge8	1G	A----	-
ge9	10G	A----	-
ge10	10G	A----	-
ge11	10G	A----	-
ge12	10G	A----	-
ge13	10G	A----	-
ge14	10G	A----	-
ge15	10G	A----	-
ge16	10G	A----	-
ge17	10G	A----	-

To configure a GE port for LAN operation and verify the configuration:

```
switch:admin> portcfgge ge10 --set -lan
Operation Succeeded.
SB118:FID128:root> portcfgge --show
```

Port	Speed	Flags	LAG-ID
ge0	40G	A----	-
ge1	40G	A----	-
ge2	10G	A-LG-	lag0
ge3	10G	A-LG-	lag0
ge4	10G	A----	-
ge5	10G	A----	-
ge6	10G	A----	-
ge7	1G	--LG-	edgeSw1
ge8	10G	A----	-
ge9	10G	A----	-
ge10	10G	A-L--	-
ge11	10G	A----	-
ge12	10G	A----	-
ge13	10G	A----	-
ge14	10G	A----	-
ge15	10G	A----	-
ge16	10G	A----	-
ge17	10G	A----	-

```
Flags: A:Auto-Negotiation Enabled  C:Copper Media Type
       L:LAN Port  G=LAG Member
```

SEE ALSO [portCfg](#), [portCfgDefault](#), [portShow](#)

portCfgGeMediaType

Sets the selected mode for the ge0 and ge1 ports on the Brocade 7840.

Synopsis **portcfggemediatype** *ge_port* [optical | copper]

portcfggemediatype --help

Description Use this command to set the mode for ge0 and ge1 ports on the Brocade 7840.

Each of the ge0 and ge1 ports on the Brocade 7840 can be configured as a copper port (RJ45) or an optical port (SFP). The copper ports (RJ45) can only accept copper connections. The optical ports can accept any Brocade-branded SFP, optical or copper. Each of the ge0 and ge1 ports can be configured either as a copper port or an optical port, but not both.

The following configurations are possible:

Default

- ge0 (RJ45) - active and ge0 (SFP) - inactive
- ge1 (RJ45) - active and ge1 (SFP) - inactive

One copper and one optical port active

- ge0 (RJ45) - active and ge0 (SFP) - inactive
- ge1 (RJ45) - inactive and ge1 (SFP) - inactive

Or:

- ge1 (RJ45) - inactive and ge1 (SFP) - active
- ge0 (RJ45) - active and ge0 (SFP) - active

Both copper ports inactive. Both optical SFP ports active

- Ge0 (RJ45) - inactive and Ge0 (SFP) - active
- Ge1 (RJ45) - inactive and Ge1 (SFP) - active

The copper-only GbE ports are selected by default. To select ge0 or ge1 as optical mode specify the operand as optical. Specify copper to re-select the default copper port.

When used with the *ge_port* operand only, this command displays the currently selected GbE port and media type.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on the Brocade 7840 and only on ge1 and ge0 ports. On all other platforms or ports, this command returns a "not supported message."

Operands This command has the following operands:

ge_Port

Specifies the GbE port to be selected. Valid ports are ge0 and ge1. This operand is required.

optical | copper

Specifies which mode to select. Specifying optical selects the optical mode for the GbE port. Specifying copper selects a copper mode for the GbE port. This operand is optional; if omitted, the current media type is displayed for the specified GbE port.

--help

Displays the command usage.

Examples

To select an optical mode for ge0:

```
switch:admin> portcfggemediatype ge0 optical
```

To display the current configuration:

```
switch:admin> portcfggemediatype ge0  
Port ge1 is configured in optical mode
```

To restore the default configuration (copper only ports are selected):

```
switch:admin> portcfggemediatype ge0 copper  
switch:admin> portcfggemediatype ge0  
Port ge0 is configured in copper mode
```

SEE ALSO [portCfgShow](#)

portCfgGport

Designates a port as a G_Port; removes G_Port designation.

Synopsis **portcfggport** [*slot*]/*port*,*mode*

Description Use this command to designate a port as a G_Port. After successful execution of this command, the switch attempts to initialize the specified port as an F_Port only, and does not attempt loop initialization (FL_Port) on the port. A port designated as a G_Port can become an E_Port. This configuration can be cleared but not set on VE/VEX_Ports. Changes made by this command are persistent across switch reboots or power cycles.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

port

Specify the port to be configured, relative to its slot for bladed systems. Use switchShow to display a list of valid ports.

mode

Specify a value of 1 to designate the port as a G_Port or specify a value of 0 to remove the G_Port designation from the port. A value of 0 is the default port state. Mode must be preceded by a comma. This operand is required.

Examples To configure port as a locked G_Port:

```
switch:admin> portcfggport 1/3, 1
```

SEE ALSO [configure](#), [portCfgLport](#), [portShow](#), [switchShow](#)

portCfgISLMode

Enables or disables ISL R_RDY mode on a port.

Synopsis **portcfgislmode** [*slot*]/*port*,*mode*

Description Use this command to enable or disable interswitch link read-ready (ISL R_RDY) mode on a port. Use the portCfgShow command to determine whether ISL R_RDY mode is enabled on a port.

In ISL R_RDY mode, the port sends a primitive signal that the port is ready to receive frames. The port sends an exchange link parameter (ELP) with flow control mode O2. If a port is ISL R_RDY enabled, it can only receive an ELP with flow control mode O2. A received ELP with flow control mode O1 will segment the fabric.

This mode cannot detect any inconsistencies in fabric operating mode parameters, such as the PID format of connected ports. Before enabling ISL R_RDY mode, ensure that all fabric-wide parameters are consistent for every switch in the fabric.

Use configShow fabric.ops to view a complete listing of fabric operating mode parameters on the switch.

The following E_Port configurations are not applicable to a port configured for ISL R_RDY mode. If configured, these port configuration parameters are ignored during E_Port initialization:

- Trunk port
- VC link init

The portCfgISLMode level LE, LD, or LS only can be enabled at the same time. Such an ISL uses R_RDY mode of flow control over the long distance link. This feature is not backward compatible with firmware versions that do not support it.

Notes Changes made by portCfgISLMode are persistent across switch reboots and power cycles.

This configuration can be cleared but not set on VE/VEX_Ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

Specify the port to display, relative to its slot for bladed systems. Use switchShow to list valid ports.

mode

Specify 1 to enable ISL R_RDY mode. Specify 0 to disable ISL R_RDY mode.

portCfgISLMode

Examples To enable ISL R_RDY mode on a port:

```
switch:admin> portcfgislmode 1/3, 1
ISL R_RDY Mode is enabled for port 3. Please make sure
the PID formats are consistent across the entire fabric.
```

To disable ISL R_RDY mode on a port:

```
switch:admin> portcfgislmode 1/3, 0
```

SEE ALSO [configure](#), [portCfgShow](#)

portCfgLongDistance

Configures a port to support long distance links.

Synopsis **portcfglongdistance** [*slot*]/*port*
 [*distance_level*]
 [*vc_translation_link_init*]
 [**-distance** *distance*] | [**-buffer** *buffers*]
 [**-framesize** *frame_size*]
 [**-fecenable** | **-fecdisable**]

Description Use this command to allocate frame buffer credits to a port or to configure a specified long distance link. The port can only be used as an E_Port. Changes made by this command are persistent across switch reboots and power cycles. This configuration can be cleared but not set on VE/VEX_Ports.

Long distance configuration allows native FC ports to run WAN/LAN connections. It ensures that the full bandwidth of a link or trunk can be utilized for a particular long distance configuration. The receiving port must have sufficient buffers available, so that the transmitting port can stuff the link with enough frames to fill the entire length of the link. As the distance between switches and the link speed increases, additional buffer-to-buffer credits are required to maintain maximum performance. If a port is configured as a long distance port, the remaining ports of that port group could be disabled, fail to initialize, or move to "buffer limited" mode due to a lack of frame buffer credits.

The number of credits reserved for a port depends on the switch model and on the extended fabric mode for which it is configured. Not all distance modes are supported by all platforms. Refer to the Fabric OS Administrator's Guide for details on platform-specific buffer credit models, long distance mode support, and maximum distance supported for specific hardware configurations.

Notes This command requires an Extended Fabrics license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

A long-distance link can also be configured to be part of a trunk group. Refer to portCfgTrunkPort help for details.

When a port is configured as a long-distance port, the output of portShow and switchShow displays the long-distance level. Refer to portShow help and switchShow help for details.

The portCfgISLMode and portCfgLongDistance LE, LD, or LS levels can be enabled at the same time. Such an ISL uses the R_RDY mode of flow control over the long distance link. While using R_RDY mode flow control, an E_Port cannot form trunk groups of long-distance links even if the trunking is enabled. This feature is not backward compatible with firmware versions that do not support it.

Ctrl-D cancels the configuration update.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

slot

Specifies the slot number (for bladed systems only), followed by a slash (/).

port

Specifies the number of the port to be configured relative to its slot for bladed systems. Use switchShow to display a list of valid ports. This operand is required.

distance_level

Specifies the long distance level as one of the following (the numerical value representing each distance_level is shown in parentheses):

L0 (0)

Specifies L0 to configure the port as a regular port. A total of 20 full-size frame buffers are reserved for data traffic, regardless of the port's operating speed; therefore, the maximum supported link distance is up to 5 km at 2 Gbps, up to 2 km at 4 Gbps and up to 1 km at 8, 10, and 16 Gbps.

LE (3)

Specifies LE mode to configure an E_Ports distance greater than 5 km and up to 10 km. A total of 5, 10, 20, 40, 50, and 80 full-size frame buffers are reserved for data traffic at port speeds of 1 Gbps, 2 Gbps, 4 Gbps, 8, 10, and 16 Gbps. LE does not require an Extended Fabrics license. If a port in LE mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

LD (5)

Specifies LD for automatic long-distance configuration. The buffer credits for the given E_Port are automatically configured based on the actual link distance. Up to a total of 1452 full-size frame buffers are reserved depending on the distance measured during E_Port initialization. The desired_distance is used as the upper limit to the measured distance. When the desired_distance is less than the measured distance, the port will come up in "Buffer Limited" mode and the port takes the buffers calculated from the desired distance. If a port in LD mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

LS (6)

Specifies LS mode to configure a static long distance link with a fixed buffer allocation greater than 10 km. Up to a total of 1452 full-size frame buffers are reserved for data traffic, depending on the specified desired_distance value. If a port in LS mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

vc_translation_link_init

Specifies the fill words used on long distance links. When set to 1, the link uses ARB fill words (default). When set to 0, the link uses IDLE fill words. The IDLE fill word option is not compatible with QoS configured links and Credit Recovery enabled links. You must disable these features before configuring long distance IDLE fill words.

-distance *distance*

This parameter is required when a port is configured as an LD or an LS mode link. In LD mode, the value of `desired_distance` is the upper limit of the link distance and is used to calculate buffer availability for other ports in the same port group. When the measured distance exceeds the value of `distance`, this value is used to allocate the buffers. In this case, the port operates in degraded mode instead of being disabled due to insufficient buffers. In LS mode, the actual link distance is not measured, instead the distance is used to allocate the buffers required for the port.

-framesize *frame_size*

Specifies the average frame size for LD and LS Mode.

-buffer *buffers*

Specifies the desired buffer for LD and LS mode.

-fcenable

Enables Forward Error Correction on 10 Gbps and 16 Gbps speed ports.

-fecdisable

Disables Forward Error Correction on 10 Gbps and 16 Gbps speed ports.

FEC via TTS is always enabled on 32 Gbps speed ports.

Examples

To configure a switch port 118 to support a 100 km link and be initialized using the long distance link initialization protocol:

```
switch:admin> portcfglongdistance 12/6 LS 1 -distance 100
switch:admin> portshow 12/6
portIndex: 118
portName: slot12 port6
portHealth: No Fabric Watch License

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x103 PRESENT ACTIVE E_PORT G_PORT U_PORT \
    SEGMENTED LOGIN
LocalSwcFlags: 0x0
portType: 24.0
portState: 1 Online
Protocol: FC
portPhys: 6 In_Sync portScn: 64 Segmented Flow control \
    mode 0
port generation number: 14
state transition count: 12

portId: 017600
portIfId: 43c2001e
portWwn: 20:76:00:05:1e:e5:cb:00
portWwn of device(s) connected:

Distance: static (desired distance = 100 Km)
portSpeed: N8Gbps

FEC: Inactive
Credit Recovery: Inactive
LE domain: 0
```

portCfgLongDistance

```
FC Fastwrite: OFF
Interrupts:    0      Link_failure: 0      Frjt: 0
Unknown:      0      Loss_of_sync: 0      Fbsy: 0
Lli:          70      Loss_of_sig: 0
Proc_rqrd:    205     Protocol_err: 0
Timed_out:    0      Invalid_word: 0
Tx_unavail:   0      Invalid_crc: 0
Delim_err:    0      Address_err: 0
Lr_in:        0      Ols_in: 0
Lr_out:       0      Ols_out: 0
```

To configure desired buffers:

```
switch:admin> portcfglongdistance 2/35 \
               LS 1 -buffers 400
Reserved Buffers = 420
```

To configure average frame size:

```
switch:admin> portcfglongdistance 2/35 \
               LS 1 -distance 100 -framesize 1024
```

SEE ALSO [configure](#), [portCfgTrunkPort](#), [portCfgShow](#), [portShow](#), [switchShow](#)

portCfgLossTov

Enables or disables de-bouncing of signal loss for front end ports.

Synopsis **portcfglosstov** [*slot*]/*port* [-**disable** | **0**]
portcfglosstov [*slot*]/*port* [-**enable_fixed** | **1**]
portcfglosstov [*slot*]/*port* [-**enable_all** | **2**]
portcfglosstov -help

Description Use this command to enable or disable the de-bouncing of loss of signal for 100 ms for front end ports. Use portCfgShow to display the current setting.

If executed without operands, the command prints the usage.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

On a chassis, this command must be executed on the active CP.

Operands This command has the following operands:

<i>slot</i>	For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).
<i>port</i>	Specifies the port to be configured, relative to its slot for bladed systems. Use switchShow to list valid ports.
-disable | 0	Disables the configuration.
-enable_fixed | 1	Enables the configuration on fixed speed ports.
-enable_all | 2	Enables the configuration on autonegotiated and fixed speed ports.
-help	Displays the command usage.

Examples To enable the configuration on fixed speed port 1/5 and to display the configuration:

```
switch:admin> portcfglosstov 1/5 1

switch:admin> portcfgshow 1/5
Area Number:          5
Speed Level:          AUTO (HW)
Fill Word(On Active):  0 (Idle-Idle)
Fill Word(Current):    0 (Idle-Idle)
AL_PA Offset 13:      OFF
```

portCfgLossTov

Trunk Port	ON
Long Distance	OFF
VC Link Init	OFF
Locked L_Port	OFF
Locked G_Port	OFF
Disabled E_Port	OFF
Locked E_Port	OFF
ISL R_RDY Mode	OFF
RSCN Suppressed	OFF
Persistent Disable	OFF
LOS TOV mode	1(ON:FixSpd)
(Output truncated)	

To disable the configuration on port 1/5:

```
switch:admin> portcfglosstov 1/5 0
```

SEE ALSO [portCfgShow](#)

portCfgLport

Configures a port as an L_Port.

Synopsis

portcfglport
 [[*slot*]/*port*] *locked_mode*
 [*private_mode*] [*duplex_mode*]

Description

Use this command to designate a port as an L_Port, and to configure its behavior. When a port is designated as an L_Port, the switch attempts to initialize that port as a fabric L_Port (FL_Port). The switch will never attempt a point-to-point (F_Port) initialization on the port. By default the L_Port will be a public L_Port. It can be configured as a private L_Port, in which case it will reject fabric login (FLOGI).

Notes

This configuration can be cleared but not set on VE/VEX_Ports.

VE_Ports on the Brocade FX8-24 platforms do not support Arbitrated Loops. If one of the virtual FC ports (16-31) is preconfigured as an L_Port, and a Brocade FX8-24 Extension blade is inserted into the slot, the configuration is not honored. The system logs a RASLOG error and the port defaults back to a G_Port. Attempts to configure a VE_Port as an L_Port are rejected with a corresponding system message.

The Fabric OS port configuration commands are not supported on FCoE ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command reports the L_Port conditions for all ports present. The following operands are supported:

slot

For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

port

Specify a port number to be configured, relative to its slot for bladed systems. Use switchShow to display a list of valid ports. This operand is optional; if omitted, this command displays the L_Port conditions for all ports.

locked_mode

Specify 1 to configure the specified port as a locked L_Port. Specify 0 to remove the locked L_Port configuration from the port (default). This operand is required, if a port is specified.

private_mode

Specify 1 to configure the L_Port as a private L_Port. Specify 0 to configure the L_Port as a public L_Port. This operand is optional; if omitted, the default value of 0 is used. On unsupported platforms, this command is blocked and returns an appropriate message.

duplex_mode

Specify 2 to configure the specified port as a full-duplex L_Port with fairness. Specify 0 to configure the L_Port as a full-duplex L_Port. This operand is optional; if omitted, the default value of 0 is used.

Examples To configure ports 8, 14, and 15 as locked L_Ports:

```
switch:admin> portcfglport 4/8 4/14-15, 1
```

To display the L_Port conditions:

```
switch:admin> portcfglport
[...]
```

Ports of Slot	4	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Locked L_Port	ON	..	..	..	..	..	ON	ON
Private L_Port
Locked Loop HD
Loop Fairness

[...]
(output truncated)

SEE ALSO [configure](#), [portCfgShow](#), [portShow](#), [switchShow](#)

portCfgNonDfe

Enables or disables non-Decision Feedback Equalization (DFE) mode on 8 Gbps Fibre Channel links.

Synopsis

```
portcfgnondfe --enable [slot/]port[-port]
portcfgnondfe --disable [slot/]port[-port]
portcfgnondfe --show [slot/]port[-port]
portcfgnondfe --help
```

Description Use this command to enable or disable non-DFE mode on a specified port or on a range of ports, or to display the configuration and state.

Active receiver DFE uses sophisticated algorithms to automatically adjust the receiver to compensate for signal distortions.

If enabled, this command disables the active receiver DFE and instead uses a fixed receiver equalization. The enabled mode is further indicated by the suffix of "Static" in the --show option.

If the non-DFE enabled port is connected to a port that does not require fixed receiver equalization, CRC errors may be detected on the port and the link may toggle.

By default, non-DFE mode is disabled, which means that automatic receiver adjustment through DFE is activated. Even if disabled, non-DFE is still automatically activated if both of the following conditions are met:

- Port speed is 8G or N8; and
- The received fillword is IDLE.

The disabled mode is further indicated by the suffix of "Auto" in the --show option.

If non-DFE is already enabled on the ports, enabling non-DFE has no effect. If a range of ports is specified, some of which are already in the requested configuration, a notification is generated, and no action is taken for those ports only. All other ports in the specified range are updated. Enabling or disabling non-DFE is disruptive to traffic. Auto non-DFE mode works in both AN and fixed 8 Gbps speeds.

When used with the --show option, the command displays the following information for the specified ports:

Port

The port index number.

8G Non-DFE Configured

Displays ON (Static) if non-DFE is enabled on the port.

Displays OFF (Auto) if the feature is disabled (default).

8G Non-DFE State

Displays Active if non-DFE is activated on the port.

Displays Inactive if non-DFE is not activated.

Use the portCfgShow command to display the non-DFE configuration along with other port parameters.

Notes This command is applicable only on the fixed 8 Gbps link on Gen5 switches.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

<i>slot/</i>	Specifies the slot number to be configured on bladed systems.
<i>port[-port]</i>	Specifies a port or a port range, relative to the slot number on bladed systems. This command does not support multiple port ranges.
--enable	Enables non-DFE statically on the specified ports.
--disable	Disables non-DFE which allows automatic activation on the specified ports.
--show	Displays the non-DFE configuration and state on the specified ports.
--help	Displays the command usage.

Examples To enable non-DFE on a single port:

```
switch:admin> portcfgnondfe --enable 4/28
```

To enable non-DFE on a port range:

```
switch:admin> portcfgnondfe --enable 0-8
```

To enable the non-DFE feature on a range of ports (in this example, non-DFE is already enabled on ports 2 and 3):

```
switch:admin> portcfgnondfe --enable 2-4
Same configuration for port 2
Same configuration for port 3
```

To disable the non-DFE feature on a port range:

```
switch:admin> portcfgnondfe --disable 0-8
```

To display non-DFE configuration on a single port:

```
switch:admin> portcfgnondfe --show 7
Port: 7
8G Non-DFE Configured: OFF (Auto)
8G Non-DFE State: Active

switch:admin> portcfgnondfe --show 8
Port: 8
8G Non-DFE Configured: OFF (Auto)
```

```
8G Non-DFE State: Inactive
```

```
switch:admin> portcfnondfe --show 9
```

```
Port: 9
```

```
8G Non-DFE Configured: ON (Static)
```

```
8G Non-DFE State: Active
```

SEE ALSO [portCfgShow](#)

portCfgNPIVPort

Enables or disables N_Port ID virtualization (NPIV) functionality on a port and sets the per-port login limit.

Synopsis

portcfgnpivport

portcfgnpivport --disable [*slot*]/*port*

portcfgnpivport --help

Description

Use this command to disable NPIV functionality on a port. Changes made by this command are persistent across switch reboots and power cycles.

N_Port ID Virtualization (NPIV) enables a single Fibre Channel protocol port to appear as multiple, distinct ports, providing separate port identification within the fabric for each operating system image behind the port as if each operating system image had its own unique physical port. NPIV assigns a different virtual port ID to each Fibre Channel protocol device without impacting your existing hardware implementation. The virtual port has the same properties as an N_Port and is therefore capable of registering with all fabric services.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When using portCfgNPIVPort --disable on trunked ports, you must disable all trunk member ports before changing the NPIV capability on a trunk member and then re-enable the trunked ports to ensure that the configuration changes take effect.

Use the portCfgShow command to determine whether NPIV is enabled on a port and to display the maximum logins configured for that port. Use the portCfgDefault command to reset all port configurations, including the NPIV configuration of a port.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the number of the port to be configured, relative to its slot for bladed systems. Use switchShow for a listing of valid ports.

--disable

Disables NPIV on the specified port. This command can be executed only in switch mode.

--help

Displays the command usage.

mode

Enables or disables NPIV on the specified port. Specify 1 to enable or 0 to disable the feature. The mode operand is a legacy command; it will be deprecated in a future Fabric OS release.

Examples To display the current NPIV port configuration:

```
switch:admin> portcfgshow
Ports of Slot 0    0  1  2  3    4  5  6  7    8  9 10 11    12 13 14 15
-----+-----+-----+-----+-----+-----+-----+-----+
Speed              AN AN AN AN    AN AN AN AN    AN AN AN AN    AN AN AN AN
Fill Word(On Active) 0 0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
Fill Word(Current)  0  0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
Fil  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
AL_PA Offset 13    .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Trunk Port          ON ON ON ON    ON ON ON ON    ON ON ON ON    ON ON ON ON
Long Distance       .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
VC Link Init        .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Locked L_Port       .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Locked G_Port       .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Disabled E_Port     .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Locked E_Port       .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
ISL R_RDY Mode      .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
RSCN Suppressed     .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Persistent Disable.. .. ON ON    .. .. .. ..    .. .. .. ..    .. .. .. ..
LOS TOV enable      .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
NPIV capability     ON ON ON ON    ON ON ON ON    ON ON ON ON    ON ON ON ON
NPIV PP Limit       80 80 80 80    80 80 80 80    95 95 95 95    95 95 95 95
(output truncated)
```

To disable NPIV functionality on port 7 and to display the change:

```
switch:admin> portcfgnpiport --disable 7
switch:admin> portcfgshow 0/7
Area Number:          7
Speed Level:          AUTO(HW)
Fill Word(On Active): 0(Idle-Idle)
Fill Word(Current):   0(Idle-Idle)
AL_PA Offset 13:      OFF
Trunk Port            ON
Long Distance         OFF
VC Link Init          OFF
Locked L_Port         OFF
Locked G_Port         OFF
Disabled E_Port       OFF
Locked E_Port         OFF
ISL R_RDY Mode        OFF
RSCN Suppressed       OFF
Persistent Disable    OFF
LOS TOV enable        OFF
NPIV capability       OFF
QOS E_Port            AE
Port Auto Disable:    OFF

Rate Limit            OFF
EX Port               OFF
Mirror Port           OFF
Credit Recovery       ON
F_Port Buffers        12
```

portCfgNPIVPort

Fault Delay:	0(R_A_TOV)
NPIV PP Limit:	126
CSCTL mode:	OFF
Frame Shooter Port	OFF
D-Port mode:	OFF

SEE ALSO [configure](#), [portCfgDefault](#), [portCfgShow](#)

Synopsis

Notes NPIV capability must be enabled on the ports connected to the Access Gateway. By default, NPIV is enabled. Use `portcfgnpivport --enable` to enable NPIV capability on a port, if it was previously disabled. Note that enabling or disabling NPIV capability is not supported in Access Gateway mode.

Operands This command has the following optional operands:

Examples

To enable N_Port functionality for a port:

To enable N_Port functionality for a set of ports in a specific range:

To display the N_Port configuration for all ports:

```
switch:admin> portcfgshow
Ports of Slot 0      0  1  2  3      4  5  6  7      8  9 10 11      12 13 14 15
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Speed               AN  AN  AN  AN  AN      AN  AN  AN  AN      AN  AN  AN  AN      AN  AN  AN  AN
Fill Word(On Active)0  0  0  0  0      0  0  0  0      0  0  0  0      0  0  0  0
```

portCfgNPort

```
Fill Word(Current )0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0  0
Trunk Port          ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Locked N_Port       .. .. ON ON .. .. .. .. .. .. .. .. .. ..
Persistent Disable.. .. .. .. .. .. .. .. .. .. .. .. .. .. ..
(output truncated)
```

SEE ALSO [portCfgShow](#)

portCfgOctetSpeedCombo

Sets port speed combination for a port octet.

Synopsis **portcfgoctetspeedcombo** [*slot*]*port combo*

portcfgoctetspeedcombo [*slot*]*port* -default

Description Use this command to configure the speed for a port octet. Each port octet contains eight ports. You can configure any one of three different speed combinations. When you configure a given port, the combination applies to all ports in the octet. You can specify the octet by any port within the octet. To change the first octet, for example, you can specify any port from 0 through 7 as a port argument value. The following speed combinations are supported:

- Autonegotiated or fixed port speeds of 32Gbps, 16 Gbps, 8 Gbps, 4 Gbps, and 2 Gbps (1)
- Autonegotiated or fixed port speeds of 10 Gbps, 8 Gbps, 4 Gbps, and 2 Gbps (2)
- Autonegotiated or fixed port speeds of 16 Gbps and 10 Gbps (3)

A port octet can be set to any of the three octet combinations, and the ports in the octet can run on any speed supported by its octet combination. This applies to both autonegotiated and fixed speeds.

Before you change the octet speed combination, make sure that the following conditions are met:

- All fixed speed ports are configured at a speed supported by the new combination.
- All online ports in autonegotiation mode have a negotiated speed supported by the new combination.
- If a port is running at a speed not supported in the new combo, you must disable the port or change the speed to a supported fixed speed before you can set the combo.

If any of the ports does not meet the conditions, the operation fails with an appropriate error message. You can change the port speed or disable the ports and retry the command.

The octet combination default is 1. Use the portCfgOctetSpeedCombo port -default command to reset the octet combination to its default value.

Notes This command is supported only on 16 Gbps-capable and 32 Gbps-capable platforms. This command is not supported on Brocade 6505, Brocade 7840, and Brocade G610 switches.

The operation of the portCfgOctetSpeedCombo can be disruptive.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

On bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Sets the speed combination for the specified port and all other ports in the octet port group.

combo

Specifies the speed combination for the ports in the octet. The following speed combinations are supported:

1

Supports autonegotiated or fixed port speeds of 32 Gbps, 16 Gbps, 8 Gbps, 4 Gbps, and 2 Gbps. 2 Gbps speed is not supported on Brocade G620 switch.

2

Supports autonegotiated or fixed port speeds of 10 Gbps, 8 Gbps, 4 Gbps, and 2 Gbps. 2 Gbps speed is not supported on Brocade G620 switch.

3

Supports autonegotiated or fixed port speeds of 16 Gbps and 10 Gbps. Not supported on Brocade G620 switch.

-default

Sets all octet combination values back to the default value of 1.

Examples

To configure the ports in the first octet for combination 3 on a Brocade 6510:

```
switch:admin> portcfgoctetspeedcombo 3 3
```

To reset the combination to default:

```
switch:admin> portcfgoctetspeedcombo 3 -default
```

To switch from combo 3 to combo 2 and there are online ports running at 16G speed.:

```
switch:admin> portcfgoctetspeedcombo 2 2
```

The following ports must be disabled or \

speed configuration needs to be change.

Please retry the operation after taking appropriate action.

Speeds supported for octet combo 2 - [10G,8G,4G,2G,AN]

```
Port Index  Speed
=====
```

```
0          16*
1          N16+
2          N16+
3          N16+
4          N10+
5          N16+
6          N16+
7          N16+
```

* Port speed configuration must be changed

+ Port must be disabled

Setting octet speed combo failed

SEE ALSO [portCfgSpeed](#), [switchCfgSpeed](#)

portCfgPersistence

Sets or removes the persistent disable flag on a port or a range of ports.

Synopsis **portcfgpersistence --set [-persistentenable | -pe] [-persistentdisable | -pd] [slot/port1[-port2] [...]]**
portcfgpersistence --set [-persistentenable | -pe] [-persistentdisable | -pd] -i [index1[-index2] [...]] [-f]
portcfgpersistence --set [-persistentenable | -pe] [-persistentdisable | -pd] -x [index1[-index2] [...]] [-f]
portcfgpersistence --set [-persistentenable | -pe] [-persistentdisable | -pd] -slot [slot1[-slot2] [...]]
portcfgpersistence -h

Description Use this command to set or remove the persistent disable flag on a port or a range of ports.

You can identify a single port to be configured by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (-i), (-x), or slot (-s) option is supported only if portSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -ioption without a port index argument to display the portSwap status, or alternately use portSwapShow.

This command only sets or removes the flag for persistent disabling of the port. The switch still runs power-on diagnostics and initializes a persistently disabled port. The portEnable, switchEnable, andbladeEnable commands do not enable a specific port or ports alone, but these commands succeed on a switch with one or more persistently disabled ports.

The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch.

Because ports are by default persistently enabled, the persistently disabled state of a port is cleared by the portCfgDefault command.

Notes This command is blocked if the persistent disable flag is set when the port is currently enabled.

This command is blocked if the switch is operating in the FICON Management Server mode (fmsmode); instead, use portDisable with Active=Saved mode enabled.

This command is not supported on FCoE ports. To disable an FCoE port, use fcoe --disable.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to set the flag, followed by a slash (/).

<i>port1</i> [- <i>port2</i>]	Sets the flag for a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port range pairs separated by a space, for example 3/1-4 4/7-9.
-f	Ignores nonexistent ports.
-i <i>index1</i> [- <i>index2</i>]	Sets the flag for a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, -i 33-38 40-60.
-x <i>index1</i> [- <i>index2</i>]	Sets the flag for a port or a range of ports identified by index number in hexadecimal format. You can specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-slot [<i>slot1</i> [- <i>slot2</i>]	Sets the flag on all ports on a slot or on a range of slots, for example, -s 3-5. You can specify multiple slot ranges separated by a space, for example, -s 3-5 8-10.
-h	Displays the command usage.

Examples

To set the persistentenable flag on a port:

```
switch:admin> portcfgpersistence --set -pe 2
```

To set the persistentdisable flag on a port:

```
switch:admin> portcfgpersistence --set -pd 0
```

SEE ALSO

[portCfgDefault](#), [portDisable](#), [portEnable](#), [portCfgPersistentDisable](#), [portCfgPersistentEnable](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portCfgPersistentDisable

Persistently disables a port or a range of ports.

Synopsis

portcfgpersistentdisable

portcfgpersistentdisable [*slot*]/*port1*[-*port2*] [...]

portcfgpersistentdisable -i [*index1*[-*index2*] [...]] [-*f*]

portcfgpersistentdisable -x [*hex1*[-*hex2*] [...]] [-*f*]

portcfgpersistentdisable -slot [*slot1*[-*slot2*] [...]]

portcfgpersistentdisable [*slot*]/*port* -*r* *disable_reason_string*

portcfgpersistentdisable -h

Description

Use this command to persistently disable a port or a range of ports. Persistently disabled ports remain disabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently, unless the port is capable of routing. The change in configuration is effective immediately.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use `switchShow` for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

Specifying multiple ports with the index number (-i or -x) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -ioption without a port index argument to display the portSwap status, or alternately use `portSwapShow`.

The persistent disable configuration overrides existing port configurations, but it does not change these configurations. Use the `portCfgPersistentEnable` command to enable a port persistently and to restore all previously set port configurations for that port. The switch still runs power-on diagnostics and initializes a persistently disabled port. The `portEnable`, `switchEnable`, and `bladeEnable` commands do not enable a specific port or ports alone, but these commands succeed on a switch with one or more persistently disabled ports. The `portEnable` command fails when issued on persistently disabled ports.

The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch.

Because ports are by default persistently enabled, the persistently disabled state of a port is cleared by the `portCfgDefault` command.

Notes

This command is blocked if the switch is operating in the FICON Management Server mode (fmsmode); instead, use `portDisable` with Active=Saved mode enabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports. To disable an FCoE port, use `fcoe --disable`.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be disabled persistently, followed by a slash (/).

port1[-port2]

Persistently disables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example 3/1-4 4/7-9.

-i *index1[-index2]*

Persistently disables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, -i 33-38 40-60.

-x [*hex1* [-*hex2*]]

Persistently disables a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-f

Ignores nonexistent ports. This operand is valid only with the -i and -x options.

-slot [*slot1*[-*slot2*]]

Persistently disables all ports on a slot or on a range of slots, for example, -s 3-5. You may specify multiple slot ranges separated by a space, for example, -s 3-5 8-10.

-r *disable_reason_string*

Specifies the reason for disabling the port persistently. The string can be up to 16 characters long and must be enclosed in double quotation marks.

-h

Displays the command usage.

Examples

To disable a single port persistently:

```
switch:admin> portcfgpersistentdisable 2/4
```

To disable a range of ports persistently:

```
switch:admin> portcfgpersistentdisable 2/4-8
```

To disable multiple port ranges persistently:

```
switch:admin> portcfgpersistentdisable 2/12 \
-15 3/10-12 4/3-4
```

To display the portSwap status:

```
switch:admin> portcfgpersistentdisable -i
portcfgpersistentdisable: portSwap feature enabled.
'-i' option not supported.
```

To disable a port persistently by specifying its index number:

```
switch:admin> portcfgpersistentdisable -i 176
```

To disable a range of ports persistently by specifying the corresponding port index range:

```
switch:admin> portcfgpersistentdisable -i 17-18
```

To disable multiple ports persistently by specifying multiple port index ranges:

```
switch:admin> portcfgpersistentdisable -i 17-18 30-39
```

To disable all ports on slots 3-5 persistently:

```
switch:admin> portcfgpersistentdisable -s 3-5
```

To disable all ports on slots 3-5 and 8-10 persistently:

```
switch:admin> portcfgpersistentdisable -s 3-5 8-10
```

To display the persistently disabled ports on the switch:

```
switch:admin> portcfgpersistentdisable
-----+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
Disabled -   -   -   -   -   -   -   -   -   -   -   -   -   -   -
Slot 0  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31
-----+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
Disabled - YES YES  -   -   -   -   -   -   -   -   -   -   -   YES YES
Slot 0    32  33  34  35  36  37  38  39
-----+---+---+---+---+---+---+---+---+
Disabled YES YES YES YES YES YES YES YES
```

To disable a port persistently with a disable reason:

```
switch:admin> portcfgpersistentdisable 3/3 -r "bad SFP"
```

SEE ALSO [portCfgDefault](#), [portDisable](#), [portEnable](#), [portCfgPersistentEnable](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portCfgPersistentEnable

Persistently enables a port or a range of ports.

Synopsis **portcfgpersistentenable**

portcfgpersistentenable [*slot*]*port1*[-*port2*] [...]

portcfgpersistentenable -i [*index1*[-*index2*] [...]] [-**f**]

portcfgpersistentenable -x [*hex1*[-*hex2*] [...]] [-**f**]

portcfgpersistentenable -s[**lot**] [*slot1*[-*slot2*]]

portcfgpersistentenable -h

Description

Use this command to persistently enable a port or a range of ports. If the port is connected to another switch when this command is issued, the fabric may reconfigure. After the port is persistently enabled, devices connected to the port can again communicate with the fabric.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use `switchShow` for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently enabled ports on the switch.

Specifying multiple ports with the index number (-i or -x) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index argument to display the portSwap status, or alternately use `portSwapShow`.

For ports that come online after being persistently enabled, the following indications may be sent to indicate a state transition: RSCN, SNMP trap, Web pop-up window.

Persistently enabled ports remain enabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently, unless the port is capable of routing. The change in configuration is effective immediately.

This command re-enables all previously set port configurations of a specified port. You can temporarily disable a persistently enabled port with the `portDisable` or `switchDisable` commands. The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch. The configuration commands `configDefault` and `portCfgDefault` do not modify the persistent enable attribute of a port.

Notes

This command is blocked if the switch is operating in the FICON Management Server mode (`fmsmode`). Instead use `portEnable` with `Active=Saved` Mode enabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports. To enable an FCoE port, use `fcoe --enable`.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be enabled persistently, followed by a slash (/).

port1[port2]

Persistently enables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example 3/1-4 4/7-9.

-i *index1[-index2]*

Persistently enables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, 33-38 40-60.

-x [*hex1* [-*hex2*]]

Persistently enables a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-f

Ignores nonexistent ports. This operand is valid only with the -i and -x options.

-slot [*slot1*[-*slot2*]]

Persistently enables all ports on a slot or on a range of slots, for example, -s 3-5. Multiple slot ranges are not supported with this command.

-h

Displays the command usage.

Examples

To enable a single port persistently:

```
switch:admin> portcfgpersistentenable 2/4
```

To enable a range of ports persistently:

```
switch:admin> portcfgpersistentenable 2/4-8
```

To enable multiple port ranges persistently:

```
switch:admin> portcfgpersistentenable 2/24-26 3/10-12 4/3-4
```

To enable a port persistently by specifying its index number:

```
switch:admin> portcfgpersistentenable -i 176
```

To enable a range of ports persistently by specifying the corresponding port index range:

```
switch:admin> portcfgpersistentenable -i 17-18
```

To enable multiple ports persistently by specifying multiple port index ranges:

```
switch:admin> portcfgpersistentenable -i 17-18 30-39
```


portCfgPersistentEnable

To enable all ports on slots 3-5 persistently:

```
switch:admin> portcfgpersistentenable -s 3-5
```

To display the persistently enabled ports on the switch:

```
switch:admin> portcfgpersistentenable

Slot 9  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
-----+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
Enabled YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES
(output truncated)
```

SEE ALSO [portDisable](#), [portEnable](#), [portCfgPersistentDisable](#), [portCfgShow](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portCfgQoS

Enables or disables QoS, sets the default configuration, and sets and resets the ingress rate limit.

Synopsis

```
portcfgqos --disable | --enable [slot/]port

portcfgqos --setratelimit [slot/]port ratelimit

portcfgqos --resetratelimit [slot/]port

portcfgqos --enable | --disable [slot/]port[-port] csctl_mode

portcfgqos --default [slot/]port

portcfgqos --help
```

Description

Use this command to configure traffic prioritization on a port. Two alternate modes of traffic prioritization are supported by this command: Adaptive Networking/Quality of Service (AN/QoS) or Class-Specific Control (CS_CTL):

- The Adaptive Networking with QoS feature allows latency-sensitive applications to share storage resources alongside throughput-intensive applications. You can enable or disable Adaptive Networking/Quality of Service (AN/QoS) on a port, set or reset the ingress rate limit for the specified port, and set the default behavior. Ingress Rate Limiting delays the return of BB credits to the external device. By limiting the throughput on the ingress side of a port, existing congestion can be removed or avoided.
- In Fabric OS v7.0.0 and later, an alternate method of traffic flow prioritization based on the CS_CTL bits of a Fibre Channel frame is provided through this command. This feature uses the value of the CS_CTL bit of the frame to determine the virtual channel (VC), so each frame can be prioritized based on the value of the CS_CTL bit.

CS_CTL flow prioritization is independent of traffic prioritization based on QoS zones; and both methods are mutually exclusive. If CS_CTL VC mode is enabled on an F/FL_Port, QoS-based traffic flow prioritization cannot be used between any two devices connected to these F/FL_Ports in that fabric and vice versa.

If both QoS-based and CS_CTL-based traffic prioritization are enabled on the same F/FL_Port, the CS_CTL-based method takes priority over the QoS zones. When QoS is enabled on an F/FL_Port and you enable CS_CTL VC mode on the same port, the command displays a message stating that QoS zones will lose priority to CS_CTL-based traffic prioritization. When you disable CS_CTL mode on a given F/FL port, the QoS zones, if already enabled, become the effective frame classification method for all devices connected to that F/FL_Port.

On 16 Gbps-capable Inter Chassis Link (ICL) ports, QoS is not configurable and it is always enabled internally.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Enabling and disabling QoS is potentially disruptive to the I/O on the affected port.

This command is not supported on all platforms. Refer to the Fabric OS Administrator's Guide for more information.

The configuration changes effected by this command are persistent across system reboots.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to configure, followed by a slash (/).

port[-port]

Specifies the port or port range to be configured, relative to the slot for bladed systems. Use `switchShow` for a listing of valid ports.

--disable

Disables the current configuration on the specified ports. When issued with the `csctl_mode` operand, this command disables traffic prioritization based on CS_CTL. If QoS was enabled before you enabled `csctl_mode`, this command restores QoS-based traffic prioritization.

--enable

Enables QoS or CS_CTL mode. When issued with the `csctl_mode` operand, this command enables traffic prioritization based on CS_CTL. When you enable `csctl_mode`, the command displays a message stating that QoS zones will lose priority to CS_CTL-based traffic prioritization.

--resetratelimit

Turns off the ingress rate limiting feature on the specified ports.

--setratelimit *ratelimit*

Sets an ingress rate limit to reduce traffic from the specified port. This configuration is applicable only to F/FL_Ports. For E/EX_Ports, this configuration would not be effective. The ingress rate limit is enforced only when a given port can run at a speed higher than the speed specified in the configuration. For example if the rate limit is set at 4 Gbps and the port comes online only at 2 Gbps, no enforcement is needed. Specify an ingress rate in Mbps. Supported values for `ratelimit` are: 200, 400, 600, 800, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 5000, 6000, 7000, and 8000, 9000, 10000, 11000, 12000, 13000, 14000, 15000, 16000. This operand is not supported on Brocade G610 switch, Brocade G620 switch, Brocade X6-4 Director, and Brocade X6-8 Director.

--default

Applies the default configuration to the specified port. This command attempts to re-enable QoS; success depends on availability of buffers. If CS_CTL was enabled on the port, this command disables the configuration.

--help

Displays the command usage.

Examples

To enable QoS on a range of ports:

```
switch:admin> portcfgqos --enable 1/15-18
```

To disable QoS on a port:

```
switch:admin> portcfgqos --disable 1/15
```

To set the default QoS configuration on a port:

```
switch:admin> portcfgqos --default 12/41
```

To set the ingress rate limit on a port to 2 Gbps:

```
switch:admin> portcfgqos --setratelimit 12/41 2000
```

To reset the ingress rate limit on a port:

```
switch:admin> portcfgqos --resetratelimit 12/41
```

To enable CS_CTL VC mode on a port when QoS is enabled:

```
switch:admin> portcfgqos --enable 1/10-16 csctl_mode
```

Enabling CSCTL mode flows causes QoS zone flows to \

lose priority on such ports

Do you want to proceed?(y/n): y

```
switch:admin> portcfgshow -slot 1
```

Index:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Speed	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN
Fill Word(On Active)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fill Word(Current)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AL_PA Offset 13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trunk Port	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Long Distance	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
VC Link Init	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked L_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked G_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Disabled E_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked E_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ISL R_RDY Mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
RSCN Suppressed	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Persistent Disable	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LOS TOV enable	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
NPIV capability	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
NPIV PP Limit	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126
QOS Port	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE
EX Port	ON	ON	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mirror Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rate Limit	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Credit Recovery	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Fport Buffers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Port Auto Disable	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
CSCTL mode	..	..	..	..	..	..	..	..	..	ON	ON	ON	ON	ON	ON	ON
D-Port mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fault Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

(output truncated)

To disable CS_CTL VC mode on a port range:

```
switch:admin> portcfgqos --disable 1/10-16 csctl_mode
```

SEE ALSO [portCfg](#), [portCmd](#), [portShow](#), [switchShow](#), [configure](#)

portCfgShow

Displays port configuration settings.

Synopsis

portcfgshow

portcfgshow [*slot*]/*port*

portcfgshow -i [*index1*[-*index2*] [...] [-*f*]]

portcfgshow -slots*slot1*[-*slot2*] [...]

portcfgshow [*option*] [*slot*]/**ge**_*port*

portcfgshow [**fciptunnel** | **fcipcircuit**]
[**all** | [*slot*]/*veport*] [*optional_argument*]

portcfgshow ipsec-policy

portcfgshow lag

portcfgshow tcl

portcfgshow sla

Description

Use this command to display the current configuration of a port. The behavior of this command is platform-specific; output varies depending on port type and platform, and not all options are supported on all platforms.

Non-GbE port displays

When used without operands, this command displays port configuration settings for all ports on a switch, except Gigabit Ethernet (GbE) ports.

Displays supported only on the Brocade 7840 switch, and Brocade FX8-24 and Brocade SX6 blades

Use this command with optional arguments to display the following parameters configured for a GbE port on the Brocade 7840 switch and on the Brocade FX8-24 and Brocade SX6 blades.

- IP interfaces on the GbE port
- Static routes on the IP interfaces
- Address resolution protocol (ARP) entries
- VLAN tag configuration
- Fibre Channel over IP (FCIP) tunnel configuration settings
- IPSec configuration
- Inband Management IP addresses and routes.
- Display IPsec policy. Currently supported on the Brocade 7840 and Brocade SX6 blade only.

Non-GbE port displays

The following information is displayed when the command is issued for all ports, for a single port, or for one or more port ranges specified by their port index numbers or slot numbers:

Area Number

Displays the port area number. This field is displayed only when portCfgShow is executed for a single port.

Octet Speed Combo

Displays the speed configuration for a port octet. This value is set by the portCfgOctetSpeedCombo command. Port octet speed configuration is supported only on 16 Gbps-capable platforms. On unsupported platforms the Octet Speed Combo field is suppressed. Valid Octet Combo values include the following:

- | | |
|----------|---|
| 1 | Autonegotiated or fixed port speeds of 16 Gbps, 8 Gbps, 4 Gbps, and 2 Gbps. |
| 2 | Autonegotiated or fixed port speeds of 10 Gbps, 8 Gbps, 4 Gbps, and 2 Gbps. |
| 3 | Autonegotiated or fixed port speeds of 16 Gbps and 10 Gbps. |

Speed

Displays Auto for auto speed negotiation mode, or a specific speed of 1 Gbps, 2 Gbps, 4 Gbps, 8 Gbps, or 16 Gbps, and soft, 10, or AX on 8 Gbps. This value is set by the portCfgSpeed command.

Fill Word (On Active)

Displays the fill word setting that will take effect after the next time the port goes offline and comes back. Possible values are 0(Idle-Idle), 1(arbff-arbff), 2(Idle-arbff), or 3(A-A then SW I-A). This parameter is set by the portcfgFillword command.

Fill Word (Current)

Displays the currently effective fill word setting. Possible values are 0(Idle-Idle), 1(arbff-arbff), 2(Idle-arbff), or 3(A-A then SW I-A). This parameter is set by the portcfgFillword command.

AL_PA Offset 13

Displays (..) or OFF when the arbitrated loop physical address (AL_PA) on the port is configured to use a 0x0 AL_PA address (default). Displays ON when the address configuration is 0x13 AL_PA. This value is set by the portCfgAlpa command.

Trunk Port

Displays ON when port is set for trunking. Displays (..) or OFF when trunking is disabled on the port. This value is set by the portCfgTrunkPort command.

Long Distance

Displays (..) or OFF when long distance mode is off; otherwise, displays long distance levels. This value is set by the portCfgLongDistance command. Values are as follows:

LE

The link is up to 10 km.

LD

The distance is determined dynamically.

LS

The distance is determined statically by user input.

VC Link Init

Displays (..) or OFF when the long distance link initialization option is turned off. Displays ON when it is turned on for long distance mode. This value is set by the portCfgLongDistance command.

Desired Distance

Displays the desired distance of the port. This field is displayed only when portCfgShow is executed for a single port and would only display for LS and LD long distance mode.

Reserved Buffers

Displays the reserved buffers for the port. This field is displayed only when portCfgShow is executed for a single port and would only display for LS and LD long distance mode.

Locked L_Port

Displays ON when the port is locked to L_Port only. Displays (..) or OFF when L_Port lock mode is disabled and the port behaves as a U_Port). This value is set by the portCfgLport command.

Locked G_Port

Displays ON when the port is locked to G_Port only. Displays (..) or OFF when G_Port lock mode is disabled and the port behaves as a U_Port. This value is set by the portCfgGport command.

Disabled E_Port

Displays ON when the port is not allowed to be an E_Port. Displays (..) or OFF when the port is allowed to function as an E_Port. This value is set by the portCfgEport command.

ISL R_RDY Mode

Displays ON when ISL R_RDY mode is enabled on the port. Displays (..) or OFF when ISL R_RDY mode is disabled. This value is set by the portCfgISLMode command.

RSCN Suppressed

Displays ON when RSCN suppression is enabled on the port. Displays (..) or OFF when RSCN suppression is disabled. This value is set by the portCfg rscnsupr command.

Persistent Disable

Displays ON when the port is persistently disabled; otherwise displays (..) or OFF. This value is set by the portCfgPersistentDisable command.

LOS TOV mode

Displays 1 (ON:FixSpd) or 2 (ON:AN&FixSpd) when LOS TOV is enabled on the port; otherwise displays (..) or 0 (OFF). This value is set by the portCfgLossTov command.

NPIV capability

Displays ON when N_Port ID Virtualization (NPIV) is enabled on the port (default). Displays (..) or OFF when NPIV capability is disabled. This value is set by the portCfgNPIVPort command.

NPIV PP Limit

Displays the maximum number of allowed logins for the port. Displays the default of 126 or the configured maximum. This parameter is set with the portCfgNPIVPort --setloginlimitcommand.

NPIV FLOGI Logout

Displays ON when the Base Device Logout feature is enabled and the base device can logout without disrupting the NPIV devices on the same port. Displays (..) when the base device log out causes the NPIV devices on the same port to log out.

QOS E_Port

Displays ON when Quality of Service (QoS) is enabled on the E_Port (or EX_Port) when QoS is enabled in an FCR deployment scenario. Displays (..) or OFF when QoS is disabled. By default, QoS is enabled if sufficient buffers are available. Displays AE when QoS is configured as Auto Enabled. In the AE state, QoS is enabled based on the availability of buffers.

Use islShow to determine the current status of QoS (on or off) in the AE state. This value is set by the portCfgQos command.

EX_Port

Displays ON when the port is configured as an EX_Port. Otherwise displays (..) or OFF. This value is set by the portCfgExPort command.

Mirror Port

Displays ON when Mirror Port is enabled on the port. Displays (..) or OFF when Mirror Port is disabled. This value is set by the portCfg mirrorport command.

SIM Port

Displays ON when SIM Port is enabled on the port. Displays (..) or OFF when SIM Port is disabled. This value is set by the flow --control flow_name -simport command.

FC Fastwrite

Displays ON when FC FastWrite is enabled on the port or (..) or OFF when disabled. FastWrite is disabled by default. This value is set by the portCfg fastwrite FC Fastwrite is no longer supported as of Fabric OS v7.0.0.

Rate Limit

Displays ON when ingress rate limit is set on the port or (..) or OFF when the ingress rate limiting feature is disabled. This value is set by the portCfgQos --setratelimit command. The default value is OFF.

Credit Recovery

Displays ON when Credit Recovery is enabled on the port. Displays (..) or OFF when the feature is disabled. This value is set by the portCfgCreditRecovery command. The credit recovery feature is enabled by default.

Port Auto Disable

Displays On when the Auto Disable feature is enabled on a port. Displays (..) or OFF when the feature is disabled. This feature causes ports to become disabled when they encounter an event that would cause them to reinitialize. This feature is enabled by the portCfgAutoDisable command. The feature is disabled by default. In the single port view, the configured trigger conditions are displayed when the feature is disabled. Refer to the example section for an illustration.

F_Port Buffers

Displays the number of configured F_Port buffers. Displays (..) or OFF if no buffers are configured. The buffer value is set by the portCfgfPortbuffers command.

E_Port Credits

Displays the number of configured E_Port credits. Displays (..) or OFF if no credits are configured. The credit value is set by the portCfgEportCredits command.

CSCTL mode

Displays ON if CSCTL mode is enabled on the port. Displays (..) or OFF if the feature is disabled. This parameter is set with the portCfgQos command.

TDZ mode

Displays ON when Target Driven Zoning (TDZ) is enabled on a port and the port is online or offline. Displays (..) or OFF when the configuration is disabled. TDZ is enabled by the portCfgTdz command; it is disabled by default.

D_Port mode

Displays ON when the port is configured as a D_Port; otherwise displays (..) or OFF. Refer to the portCfgDPort command for more information. This parameter is displayed only on on 16 Gbps-capable blades that support D_Port capability.

D_Port over DWDM

Displays ON when dwdm is enabled on that port using the portcfgdport command. This option is used to set if the link connecting two switches is a DWDM (Dense Wavelength Division Multiplexing) link. However, it can be set on normal links also.

Fault Delay

Displays the Fault delay value. Displays 0 if the value is R_A_TOV. This is the default. Displays 1 if the value is 1.2 seconds. This value is set by the portCfgFaultDelaycommand. valid for FC ports only.

Compression

Displays ON when compression is enabled on a port. Displays (..) or OFF when the configuration is disabled. Compression is enabled by the portCfgCompress command; it is disabled by default.

Encryption

Displays ON when encryption is enabled on a port. Displays (..) or OFF when the configuration is disabled. Encryption is enabled by the portCfgEncrypt command; it is disabled by default.

10G/16G FEC

Displays ON when Forward Error Correction (FEC) is enabled on a port and the port is online. Displays (..) or OFF when the configuration is disabled. FEC is enabled by the portCfgFec command; it is enabled by default.

16G FEC via TTS

Displays ON when control of the Forward Error Correction (FEC) state is permitted via TTS by an externally attached host or device. Displays (..) or OFF when the external control of FEC is disabled. Refer to the portCfgFec command for additional information.

AF-Port

Displays ON when the port is configured as analytics port. Displays (..) or OFF when the analytics port configuration is disabled. Refer to the portCfg command for additional information.

When portCfgShow is issued for a single FCoE port, only the following fields are displayed: Area Number, Speed Level, AL_PA Offset, RSCN Suppressed, and NPV PP Limit. If the command is issued without operands on a DCX with one or more FCOE10-24 blades, the port parameters that are not valid on the FCoE ports are marked with a dash (-). Refer to the example section for an illustration.

You can identify a single port to be displayed by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

Specifying multiple ports with the index (-i) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -ioption without a port index argument to display the portSwap status, or alternately use portSwapShow.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the number of the port to be displayed, relative to its slot for bladed systems. Use switchShow for a listing of valid port numbers.

-i index1[-index2]

Specifies a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, -i 33-38 40-60.

-f

Ignores nonexistent ports. This operand is valid only with the -i option.

-slot slot1[-slot2]

Specifies a slot or a range of slots. You can specify multiple slot ranges separated by a space, for example, -s 1-3 5-7.

ge_port

Specifies the number of the GbE Port to be displayed. The GbE ports are numbered ge0 - ge9 on the Brocade FX8-24 blade. The 10GbE ports on the Brocade FX8-24 blade are numbered xge0 and xge1. Use the switchShow command for a list of valid ports.

Use portCfgShow with a GbE port or with one of the optional arguments to display specific FCIP-related parameters.

Displays supported on the Brocade 7840 switch, and Brocade FX8-24 and Brocade SX6 blades

When issued on the Brocade 7840 switch, and Brocade FX8-24 and Brocade SX6 blades, tunnels and parameters not applicable to these platforms are not displayed. Use the portShow command to display FCIP tunnel and circuit parameters on the Brocade FX8-24 blade.

ipif

Displays the IP interface configurations. IPv6 addresses are supported.

arp

Displays the address resolution protocol (ARP) table. This option is supported on Brocade FX8-24 and Brocade SX6 extension blades.

iproute

Displays the IP route on the specified GbE port. IPv6 addresses are supported.

vlan tag

Displays the VLAN tagging configuration. For each entry, the output displays the IP interface address, the destination IP address, the VLAN ID, and the L2 CoS priority. This display includes permanent entries only. Permanent entries are configured at the IP interface level with the portCfg vlan tag command. To view VLAN tagged tunnels and circuits along with permanent entries, use the portShow vlan tag command. This option is supported on Brocade FX8-24 platforms

mgmtif ge_port

Displays the inband management interfaces configured for a specified GbE Port. The display includes the interface status (enabled or disabled), the interface IPv4 Address, the netmask, effective MTU, and annotated port flags. This option is supported on Brocade FX8-24 and Brocade SX6 extension blades.

mgmtroute ge_port

Displays the management routes configured for a specified GbE Port. The display includes the destination IPv4 Address, the netmask, the gateway address, and annotated port flags. This option is supported on Brocade FX8-24 and Brocade SX6 extension blades

fcipcircuit

Displays FCIP circuits and related parameters.

fciptunnel

Displays FCIP tunnels and related parameters.

The following options are supported with fcipcircuit and fciptunnel:

all

Displays information for all FCIP tunnels.

ve_port

Displays information for the specified FCIP tunnel. To display the tunnel, specify the VE_Port number associated with the tunnel configured on one of the GbE ports. VE_Ports are numbered 16-23.

optional_argument

The following optional argument is supported with fciptunnel:

-ipsec

Displays whether IPsec is enabled or disabled. If enabled, the key is displayed. If IPsec is enabled and configured in legacy mode, the mode is displayed as "legacy". The mode information is displayed whether or not you issue the -ipsec option.

ipsec-policy

Displays the IPsec policy. This option is supported on the Brocade 7840 switch only.

lag

Displays the static link aggregation group (LAG) information.

tcl

Displays the Traffic Control List (TCL) information.

sla

Displays the Service Level Agreement (SLA) information.

Examples

To display the port configuration settings for a single port on a Brocade DCX 8510-8:

```
switch:admin> portcfgshow 10/38
Area Number:                222
Octet Speed Combo:          1(16G|8G|4G|2G)
Speed Level:                 AUTO(HW)
AL_PA Offset 13:             OFF
Trunk Port                   ON
Long Distance                LS
VC Link Init                 OFF
Desired Distance             10 Km
Reserved Buffers             86
Locked L_Port                OFF
Locked G_Port                OFF
Disabled E_Port              OFF
Locked E_Port                OFF
ISL R_RDY Mode               OFF
RSCN Suppressed              OFF
Persistent Disable           OFF
LOS TOV mode                 2(ON:AN&FixSpd)
NPIV capability              ON
NPIV FLOGI Logout            ON
QOS E_Port                   AE
Port Auto Disable:           ON   LOSG   OLS   NOS   LIP
Rate Limit                   OFF
EX Port                      OFF
Mirror Port                   OFF
SIM Port                     ON
```

```

Credit Recovery          ON
F_Port Buffers          OFF
E_Port Credits          OFF
Fault Delay:            0(R_A_TOV)
NPIV PP Limit:          126
CSCTL mode:             OFF
TDZ mode:               OFF
D-Port mode:            ON
D-Port over DWDM:       ON
Compression:            OFF
Encryption:             OFF
10G/16G FEC:            ON
16G FEC via TTS:        ON

```

To display the port configuration settings on a Brocade 7840 for a range of ports specified by their index numbers:

```

switch:admin> portcfgshow -i 24-31
Index:          24  25  26  27      28  29  30  31
-----+-----+-----+-----+-----+-----+-----+-----
Speed          AN  AN  AN  AN      AN  AN  AN  AN
Fill Word(On Active) 0   0   0   0      0   0   0   0
Fill Word(Current)  0   0   0   0      0   0   0   0
AL_PA Offset 13    ..  ..  ..  ..      ..  ..  ..  ..
Trunk Port        ..  ..  ..  ..      ..  ..  ..  ..
Long Distance     ..  ..  ..  ..      ..  ..  ..  ..
VC Link Init      ..  ..  ..  ..      ..  ..  ..  ..
Locked L_Port     ..  ..  ..  ..      ..  ..  ..  ..
Locked G_Port     ..  ..  ..  ..      ..  ..  ..  ..
Disabled E_Port   ..  ..  ..  ..      ..  ..  ..  ..
Locked E_Port     ..  ..  ..  ..      ..  ..  ..  ..
ISL R_RDY Mode    ..  ..  ..  ..      ..  ..  ..  ..
RSCN Suppressed   ..  ..  ..  ..      ..  ..  ..  ..
Persistent Disable ..  ..  ..  ..      ..  ..  ..  ..
LOS TOV mode      0   0   0   0      0   0   0   0
NPIV capability    ON  ON  ON  ON      ON  ON  ON  ON
NPIV PP Limit     126 126 126 126    126 126 126 126
NPIV FLOGI Logout  ..  ..  ..  ..      ..  ..  ..  ..
QOS Port          ..  ..  ..  ..      ..  ..  ..  ..
EX Port          ..  ..  ..  ..      ..  ..  ..  ..
Fport Buffers     ..  ..  ..  ..      ..  ..  ..  ..
Eport Credits     ..  ..  ..  ..      ..  ..  ..  ..
Port Auto Disable  ..  ..  ..  ..      ..  ..  ..  ..

Fault Delay       0   0   0   0      0   0   0   0
SIM Port         ..  ..  ..  ..      ..  ..  ..  ..
TDZ mode         ..  ..  ..  ..      ..  ..  ..  ..

```

where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF,
 -:NotApplicable, ?:INVALID,

To display the port configuration settings for all ports on slot 1 on a Brocade DCX 8510-4:

```

switch:admin> portcfgshow -slot 1
Index:          0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
-----+-----+-----+-----+-----+-----+-----+-----
Octet Speed Combo 1   1   1   1   1   1   1   1   1   1   1   1   1   1   1   1
Speed            AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
AL_PA Offset 13    ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..  ..
Trunk Port        ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON

```

Long Distance	..	..	..	..	..	..	..	..	..	..	..	..	..	..
VC Link Init	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked L_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked G_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Disabled E_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked E_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ISL R_RDY Mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..
RSCN Suppressed	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Persistent Disable..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LOS TOV mode	0	2	2	1	2	1	1	0	0	0	0	0	0	0
NPIV capability	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
NPIV PP Limit	90	90	90	90	90	90	90	90	90	90	90	90	90	90
NPIV FLOGI Logout	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
QOS E_Port	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	..	..
EX Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mirror Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rate Limit	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Credit Recovery	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Fport Buffers	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Port Auto Disable	..	..	..	..	..	..	..	..	..	..	..	..	..	..
CSTCTL mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TDZ mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..
D-Port mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..
D-Port over DWDM	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Compression	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Encryption	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10G/16G FEC	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
16G FEC via TTS	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fault Delay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SIM Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Index:	16	17	18	19	20	21	22	23	24	25	26	27	28	29
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+														
Octet Speed Combo	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Speed	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN	AN
AL_PA Offset 13	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trunk Port	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Long Distance	..	..	..	..	..	..	..	..	..	..	..	..	..	..
VC Link Init	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked L_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked G_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Disabled E_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locked E_Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ISL R_RDY Mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..
RSCN Suppressed	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Persistent Disable..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LOS TOV mode	0	2	2	1	2	1	1	0	0	0	0	0	0	0
NPIV capability	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
NPIV PP Limit	90	90	90	90	90	90	90	90	90	90	90	90	90	90
NPIV FLOGI Logout	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
QOS E_Port	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	..	..
EX Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mirror Port	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rate Limit	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Credit Recovery	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Fport Buffers	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Port Auto Disable	..	..	..	..	..	..	..	..	..	..	..	..	..	..
CSTCTL mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TDZ mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..
D-Port mode	..	..	..	..	..	..	..	..	..	..	..	..	..	..

```

D-Port over DWDM    .. .. .
Compression         .. .. .
Encryption          .. .. .
10G/16G FEC         ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON ON
16G FEC via TTS     .. .. .
Fault Delay         0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
SIM Port            .. .. .

```

where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF, NA:NotApplicable,
?:INVALID,

To display the configuration settings for a single port on a switch with Access Gateway enabled:

```

switch:admin> portcfgshow 8
Area Number:      8
Speed Level:      AUTO(HW)
Fill Word(On Active) 0(Idle-Idle)
Fill Word(Current) 0(Idle-Idle)
Trunk Port        ON
Locked N_Port     OFF
Persistent Disable OFF
NPIV capability   ON
NPIV FLOGI Logout ON
QOS Port          AE
Port Auto Disable: OFF
Rate Limit        OFF
F_Port Buffers    OFF
NPIV PP Limit:    126
Fault Delay:      0(R_A_TOV)
NPIV PP Limit:    126
D-Port mode:      OFF
Compression:      OFF
Encryption:       OFF
10G/16G FEC:      ON
16G FEC via TTS:  ON

```

To display port configuration settings on a Gen6 switch with a Brocade SX6 blade in Slot 4:

```

switch:admin> portcfgshow -slot 12
Index:      64  65  66  67      68  69  70  71 [truncated]
-----+-----+-----+-----+-----+-----+-----+-----+
Octet Speed Combo  1   1   1   1       1   1   1   1
Speed              AN  AN  AN  AN       AN  AN  AN  AN
AL_PA Offset 13    ..  ..  ..  ..       ..  ..  ..  ..
Trunk Port         ON  ON  ON  ON       ON  ON  ON  ON
Long Distance      ..  ..  ..  ..       ..  ..  ..  ..
VC Link Init       ..  ..  ..  ..       ..  ..  ..  ..
Locked L_Port      ..  ..  ..  ..       ..  ..  ..  ..
Locked G_Port      ..  ..  ..  ..       ..  ..  ..  ..
Disabled E_Port    ..  ..  ..  ..       ..  ..  ..  ..
Locked E_Port      ..  ..  ..  ..       ..  ..  ..  ..
ISL R_RDY Mode     ..  ..  ..  ..       ..  ..  ..  ..
RSCN Suppressed    ..  ..  ..  ..       ..  ..  ..  ..
Persistent Disable ..  ..  ..  ..       ..  ..  ..  ..
LOS TOV mode       0   0   0   0       0   0   0   0
NPIV capability    ON  ON  ON  ON       ON  ON  ON  ON
NPIV PP Limit      126 126 126 126     126 126 126 126
NPIV FLOGI Logout  ..  ..  ..  ..       ..  ..  ..  ..

```

QOS Port	AE	AE	AE	AE	AE	AE	AE	AE
EX Port	..	..	..	..	..	..	..	..
Mirror Port	..	..	..	..	..	..	..	..
Credit Recovery	ON	ON	ON	ON	ON	ON	ON	ON
Fport Buffers	..	..	..	..	..	..	..	..
Eport Credits	..	..	..	..	..	..	..	..
Port Auto Disable	..	..	..	..	..	..	..	..
CSCTL mode	..	..	..	..	..	..	..	..
D-Port mode	..	..	..	..	..	..	..	..
D-Port over DWDM	..	..	..	..	..	..	..	..
Compression	..	..	..	..	..	..	..	..
10G/16G FEC	ON	ON	ON	ON	ON	ON	ON	ON
16G FEC via TTS	..	..	..	..	..	..	..	..
Fault Delay	0	0	0	0	0	0	0	0
SIM Port	..	..	..	..	..	..	..	..
TDZ mode	..	..	..	..	..	..	..	..

[output truncated]

To display port configuration settings for a single port on a Gen6 switch with a Brocade SX6 blade:

```
switch:admin> portcfgshow 4/4
Area Number: 68
Octet Speed Combo: 1(32G|16G|8G|4G)
Speed Level: AUTO(HW)
AL_PA Offset 13: OFF
Trunk Port: ON
Long Distance: OFF
VC Link Init: OFF
Locked L_Port: OFF
Locked G_Port: OFF
Disabled E_Port: OFF
Locked E_Port: OFF
ISL R_RDY Mode: OFF
RSCN Suppressed: OFF
Persistent Disable: OFF
LOS TOV mode: 0(OFF)
NPIV capability: ON
QOS Port: AE
Port Auto Disable: OFF
EX Port: OFF
Mirror Port: OFF
SIM Port: OFF
Credit Recovery: ON
F_Port Buffers: OFF
E_Port Credits: OFF
Fault Delay: 0(R_A_TOV)
NPIV PP Limit: 126
NPIV FLOGI Logout: OFF
CSCTL mode: OFF
TDZ mode: OFF
D-Port mode: OFF
D-Port over DWDM: OFF
Compression: OFF
10G/16G FEC: ON
16G FEC via TTS: OFF
```


To display the QoS configuration for an EX_Port (QoS over FCR deployment):

```
switch:admin> switchshow | grep EX-Port
 16 16 id N4 Online FC EX-Port \
    10:00:00:05:1e:41:4a:45 "Tom_100"
(fabric id = 25 )(Trunk master)
```

```
switch:admin> portcfgshow 16
Area Number: 11
Octet Speed Combo: 1(16G|8G|4G|2G)
Speed Level: AUTO(HW)
Fill Word(On Active) 0(Idle-Idle)
Fill Word(Current) 0(Idle-Idle)
AL_PA Offset 13: OFF
Trunk Port ON
Long Distance LS
VC Link Init OFF
Desired Distance 10 Km
Reserved Buffers 86
Locked L_Port OFF
Locked G_Port OFF
Disabled E_Port OFF
ISL R_RDY Mode OFF
RSCN Suppressed OFF
Persistent Disable OFF
LOS TOV mode 0(OFF)
NPIV capability ON
NPIV FLOGI Logout ON
QOS E_Port AE
Port Auto Disable: OFF
Rate Limit OFF
EX Port ON
Mirror Port OFF
Credit Recovery ON
F_Port Buffers OFF
NPIV PP Limit: 126
CSCTL mode: OFF
TDZ mode: OFF
Fault Delay 1(1.2sec)
D-Port mode: ON
D-Port over DWDM: ON
10G/16G FEC: ON
16G FEC via TTS: ON
```

To display an FCIP Tunnel on a Brocade FX8-24 with and without IPsec information (In the following examples, IPsec is in legacy mode):

```
switch:admin> portcfgshow fcipunnel 1/12 -ipsec
-----
Tunnel ID: 1/12
Tunnel Description:
Compression: Off
Fastwrite: Off
Tape Acceleration: Off
TPerf Option: Off
IPSec: Enabled (legacy)
IPSec Key: '12345678901234567890123456789012'
QoS Percentages: High 50%, Med 30%, Low 20%
Remote WWN: Not Configured
```

```
Local WWN: 10:00:00:05:1e:52:fe:00  
Flags: 0x00000000  
FICON: Off
```

```
switch:admin> portcfgshow fcipunnel 1/12
```

```
-----  
Tunnel ID: 1/12  
Tunnel Description:  
Compression: Off  
Fastwrite: Off  
Tape Acceleration: Off  
TPerf Option: Off  
IPSec: Enabled (legacy)  
QoS Percentages: High 50%, Med 30%, Low 20%  
Remote WWN: Not Configured  
Local WWN: 10:00:00:05:1e:52:fe:00  
Flags: 0x00000000  
FICON: Off
```

SEE ALSO [portCfg](#), [portCfgAutoDisable](#), [portCfgCreditRecovery](#), [portCfgFec](#), [portCfgOctetSpeedCombo](#), [portCfgSpeed](#), [portCfgTrunkPort](#), [switchShow](#)

portCfgSpeed

Configures the speed for a port or a range of ports.

Synopsis **portcfgspeed** [*slot*]/*port* *speed*

portcfgspeed -i *index1*[-*index2*] [-**f**] *speed* [-**m**] *max_auto_speed*

portcfgspeed -x *hex1*[-*hex2*] [...] *speed*

portcfgspeed -slot *slot1*[-*slot2*] [...] *speed* [-**m**] *max_auto_speed*

portcfgspeed -h

Description Use this command to set the speed on a specified port or port range. This command disables and then re-enables the ports, and the ports come online with the new speed setting. The configuration is saved in nonvolatile memory and is persistent across switch reboots or power cycles. Use the portShow command to display supported port speed levels. Use the portCfgShow command to display configured speed settings.

On 16 Gbps-capable and 32 Gbps-capable platforms, the portCfgSpeed command checks if the requested speed is allowed, based on the combination configured for the octet that contains the port. If the speed is not supported by the current octet speed combination, this command exits with a warning message that displays the combination compatible with desired speed . Use the portCfgOctetSpeedCombo command to the set the suggested combination before re-executing the portCfgSpeed command.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (-i) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -ioption without a port index argument to display the portSwap status, or alternately use portSwapShow.

Notes This configuration cannot be set on VE/VEX_Ports. For a virtual FC port, the speed is always 10 GbE and port speed autonegotiation is not possible.

Speed configuration is not applicable to FCoE ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot For bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port Configures a single port identified by the port number relative to the slot on bladed systems.

-i <i>index1</i> [- <i>index2</i>]	Configures a port or a range of ports identified by port index numbers. Multiple port ranges are not supported with this command.
-f	Ignores nonexistent ports. This operand is valid only with the -i option.
-x <i>hex1</i> [- <i>hex2</i>]	Configures a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-slot <i>slot1</i> [- <i>slot2</i>]	Configures all ports on a slot or on a range of slots, for example, -s 3-5. You may specify multiple slot ranges separated by a space, for example, -s 3-5 8-10.
speed	Sets speed for the specified ports. This operand is required. Valid values are one of the following.
0	Autosensing mode (hardware). The port automatically configures for maximum speed.
ax	Autosensing mode (hardware). The port automatically configures for maximum speed with enhanced retries (not supported on 16G and 32G platforms).
s	Auto-sensing mode (software). The port automatically configures for maximum speed with enhanced retries (not supported on 32G platforms).
1	The port is set at a fixed speed of 1 Gbps (not supported on 10G, 16G, and 32G platforms).
2	The port is set at a fixed speed of 2 Gbps (not supported on 32G platforms).
4	The port is set at a fixed speed of 4 Gbps.
8	The port is set at a fixed speed of 8 Gbps.
10	The port is set at a fixed speed of 10 Gbps (not supported on 8G platforms).
16	The port is set at a fixed speed of 16 Gbps (not supported on 8G platforms).
32	The port is set at a fixed speed of 32 Gbps (not supported on 8G and 16G platforms).

-m	Sets auto-negotiation maximum speed. This operand is optional. Valid values are one of the following.
2	Sets the maximum auto-negotiation speed to 2 Gbps (not supported on 32G platforms).
4	Sets the maximum auto-negotiation speed to 4 Gbps.
8	Sets the maximum auto-negotiation speed to 8 Gbps.
16	Sets the maximum auto-negotiation speed to 16 Gbps.
32	Sets the maximum auto-negotiation speed to 32 Gbps.
-h	Displays the command usage.

Examples

To set the speed of a port to 10 Gbps:

```
switch:admin> portcfgspeed 2/3 10
```

To set the speed of a port using the port index:

```
switch:admin> portcfgspeed -i 78 16
```

To set the speed of a port range using the port index:

```
switch:admin> portcfgspeed -i 24-38 8
```

To set all ports on slots 2 and 3 to 8 Gbps:

```
switch:admin> portcfgspeed -s 2-3 8
```

To set all ports on slots 2-3 and 9-12 to 10 Gbps:

```
switch:admin> portcfgspeed -s 2-3 9-12 10
```

To set the speed of all ports in a range:

```
switch:admin> portcfgspeed -x 1d-1e 8
```

To set the maximum auto-negotiation speed:

```
switch:admin> portcfgspeed 17 0 -m 4
```

SEE ALSO

[portCfgOctetSpeedCombo](#), [portCfgShow](#), [portShow](#), [switchCfgSpeed](#), [portSwapDisable](#), [switchCfgSpeed](#), [portSwapShow](#), [switchShow](#)

portCfgTdz

Configures a port for Target Driven Zoning (TDZ).

Synopsis **portcfgtdz --enable** [*slot*]/*port_list*

portcfgtdz --disable [*slot*]/*port_list*

portcfgtdz --show [*slot*]/*port_list*

portcfgtdz --help

Description Use this command to configure a port to support Target Driven Zoning. This command enables or disables the Target Driven Zoning configuration on the specified port and saves the configuration persistently. Target Driven Zoning can be configured on E_Ports, F_Ports, and L_Ports that are online or offline and it does not toggle the port to apply the configuration. After Target Driven Zoning is configured on the specified port, it allows the connected target device to configure Target Driven Peer Zones to be enabled and committed to the switch fabric.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port on which the Target Driven Zoning configuration must be enabled or disabled, followed by a slash (/).

port_list

Specifies one or more ports, relative to the slot on bladed systems. Use switchShow for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following:

- A single port, for example, "8" or "5/8" on blades systems.
- A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots.
- A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems.
- A wildcard * indicates all ports. The wildcard can be represented as "*" or "***".

--enable

Enables the Target Driven Zoning configuration on the specified port.

--disable

Disables the Target Driven Zoning configuration on the specified port.

--show

Displays the current Target Driven Zoning configuration status (ON or OFF) for the specified port.

--help

Displays the command usage.

Examples To enable Target Driven Zoning configuration on a port:

```
switch:admin> portcfgtdz --enable 8
```

To display Target Driven Zoning configuration status for a specific port:

```
switch:admin> portcfgtdz --show 8
Port      Mode
=====
8         ON
```

To enable Target Driven Zoning configuration on a range of ports:

```
switch:admin> portcfgtdz --enable 8-18
```

To enable Target Driven Zoning configuration on all ports:

```
switch:admin> portcfgtdz --enable "**"
```

To disable Target Driven Zoning configuration on a port:

```
switch:admin> portcfgtdz --disable 8
```

SEE ALSO [portCfgShow](#), [switchShow](#), [zoneShow](#)

portCfgTrunkPort

Enables or disables trunking on a port.

Synopsis **portcfgtrunkport** [*slot*]/*port*[,] *mode*

Description Use this command to enable or disable trunking on a port. Use switchCfgTrunk to enable or disable trunking on all ports of a switch.

When the command is executed to update the trunking configuration, the port to which the configuration applies is disabled and subsequently re-enabled with the new trunking configuration. Traffic through the ports may be temporarily disrupted.

Disabling trunking fails if a Trunk Area (TA) is enabled on the port.

Notes Enabling trunking requires an ISL Trunking license. You may disable trunking without a license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Virtual FC Ports do not support frame-based trunking . If trunking is enabled for one of these ports in a slot, and a Brocade FX8-24 Extension blade is inserted into the slot, the configuration is not honored and the system logs a RASLOG error. An attempt to enable trunking for a Virtual FC port in a slot that contains a Brocade FX8-24 is rejected.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the port to be configured, relative to its slot for bladed systems. Use switchShow to display a listing of valid ports.

mode

Specify 1 to enable trunking on the specified port. Specify 0 to disable trunking on the port. This operand is required. Trunking is enabled by default, when a trunking license is present on the switch.

Examples To enable a port for trunking:

```
switch:admin> portcfgtrunkport 1/3, 1
```

SEE ALSO [portCfgShow](#), [portShow](#), [switchCfgTrunk](#), [switchShow](#)

portCfgVEXPort

Configures a port as a VEX_Port connected to an FC-IP and sets and displays VEX_Port configuration parameters.

Synopsis **portcfgvexport** [*slot*]/*port* [-*port*]
portcfgvexport [-*a admin*]
portcfgvexport [-*f fabricid*]
portcfgvexport [-*r ratov*]
portcfgvexport [-*e edtov*]
portcfgvexport [-*d domainid*]
portcfgvexport [-*p pidformat*]
portcfgvexport [-*t fabric_parameter*]
portcfgvexport [-*m portmode*]

Description Use this command to configure a port as a VEX_Port, to display the port's VEX_Port configuration, or to change the configuration. If no optional parameter is specified, the command displays the currently configured values; otherwise, it sets the specified attribute to its new value. The port must be disabled prior to setting VEX_Port attributes. The port must be enabled before the port can become active following VEX_Port parameter changes. Use portDisable and portEnable to disable or enable the port.

When the port is not active, the preferred domain ID is configurable. The preferred domain ID is used by the VEX_Port's front phantom domain to request a domain ID from the principal switch. The domain ID received becomes the subsequent preferred domain ID, which is persistent and is displayed.

Notes In FOS v7.1.0 and later, both Open(IM1) and McDATA(IM2 and IM3) interop modes are not supported.

The fabric ID must be the same for every router port connected to the same edge fabric, and different for every edge fabric. If two ports are connected to the same fabric but have been assigned different fabric IDs, one of them will be disabled due to a fabric ID oversubscription. If two fabrics have been assigned the same fabric ID, one of them will be disabled due to a fabric ID conflict.

The front domain WWN field displays the WWN of the front domain. If the port is enabled and the state is "OK", the edge fabric principal switch domain ID and WWN also are displayed.

If the Fabric Parameter value is "Auto Negotiate", the port ID format, R_A_TOV, and E_D_TOV values display the negotiated values indicated by "(N)" next to them. The negotiated values are what the edge switch specifies in the ELP request. If the state is "Not OK", R_A_TOV and E_D_TOV display "Not Applicable". By default, all VEX_Ports are auto-ELP enabled.

If the Fabric Parameter attribute value is "User configured", port ID format, R_A_TOV, and E_D_TOV display the configured values.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number followed by a slash (/).

port[-port]

Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Use switchShow for a list of valid ports. When executed with [slot/]port [-port] only, the command displays the current VEX_Port configuration.

-a admin

Enables or disables the specified port as a VEX_Port. Valid values are 1 (enable as VEX_Port), 2 (disable as VEX_Port and enable as non-VEX_Port). portCfgDefault may also be used to disable VEX_Ports.

-f fabricid

Specifies the fabric ID. Valid values are 1-128.

-r ratov

Specifies the R_A_TOV used for port negotiation. Valid values are 2000 to 120000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".

-e edtov

Specifies the E_D_TOV used for port negotiation. Valid values are 1000 to 60000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".

-d domainid

Specify the preferred domain ID. For Brocade native mode (-m 0). Valid values are 1 to 239.

-p pidformat

Specifies the Port ID format. Valid values are 0-native, 1-core, 2-extended edge. This operand is applicable only when port mode is set to 0 (native mode). If port mode is not "Brocade Native", the Port ID format displays as "Not applicable".

-t fabric_parameter

Enables or disables negotiation of the fabric parameters. Valid values are: 1-enable, 2-disable.

-m port mode

Specifies the Port mode. The -m option enforces the same port mode for all the ports connected to the same edge fabric. If the -m option is selected, the port mode is compared to the online ports. If the modes are different, an error message is displayed, and the command fails. Valid values are as follows:

0

Brocade Native mode.

Examples To display the VEX_Port configuration of port 2/16:

```
switch:admin> portcfgvexport 2/16

      Port   2/16   info
Admin:                enabled
State:                OK
Pid format:           core(N)
Edge Fabric ID:       16
Front Domain ID:      160
Front WWN:             50:06:06:9e:20:9f:ce:10
Principal Switch:      7
principal WWN:         10:00:00:60:69:c0:05:8a
Fabric Parameters:     Auto Negotiate
R_A_TOV:              9000(N)
E_D_TOV:              2000(N)
Authentication Type:  DHCHAP
DH Group: 4
Hash Algorithm: SHA-1
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

To set the fabric ID of port 2/21 to 5 and the port ID format to core:

```
switch:admin> portcfgvexport 2/21 -f 5 -p 1
```

To configure port 2/20 as a VEX_Port and set the fabric ID to 4:

```
switch:admin> portcfgvexport 2/20 -a 1 -f 4
```

To disable fabric parameter negotiation on port 2/20 of a VEX_Port:

```
switch:admin> portcfgvexport 2/20 -t 2
```

SEE ALSO [portCfgEXPort](#), [portDisable](#), [portEnable](#), [portShow](#)

portChannelShow

Displays the port channels from a domain to the remote domains.

Synopsis **portchannelshow** [*domain*]

portchannelshow --help

Description Use this command to display information about port channels from a domain to one or all reachable remote domains. The command output includes the following information:

domain(s) in the fabric

Total number of domains in the fabric.

Local Domain ID

The domain number of local switch.

Domain

The domain number of destination switch.

Name

The name of the destination switch.

WWN

The world wide name (WWN) of the destination switch.

Port Channel

The list of port-channel interfaces. For each trunk, only the port number of the master port is displayed. This field displays "None" during the following conditions:

- Policy-Based Routing (PBR) is enabled on the switch.
- Traffic Isolation (TI) zone is applied on the egress port.
- Port channel is used by 8 Gbps-capable ingress ports.
- Port channel contains ICL ports or it is used by other ICL ingress ports.
- Port channel is not used by any ingress port.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

domain

Specifies the remote domain to display port channels between the switch in which command is executed to the specified remote domain. You can specify domain in one of the following formats:

domain_id

Specifies the domain number of destination switch.

name

Specifies the name of destination switch.

wwn

Specifies the WWN of destination switch.

--help

Displays the command usage.

Examples

To display port channels for all reachable domains:

```
switch:admin> portchannelshow
6 domain(s) in the fabric; Local Domain ID: 4

Domain:      1
Name:        sw0
WWN:         10:00:00:05:33:c1:26:00
Port Channel: None

Domain:      2
Name:        DCX_35_F_128
WWN:         10:00:00:05:1e:38:e5:23
Port Channel:
    Ports:   384, 385, 386, 387, 400, 401, 402, 403,
             417, 418, 419, 432, 433, 434, 435

Domain:      3
Name:        SW_122_F_128
WWN:         10:00:00:05:1e:9b:10:5b
Port Channel:
    Ports:   111, 248

Domain:      5
Name:        SW_65_F128
WWN:         10:00:00:05:1e:5c:f6:fd
Port Channel:
    Ports:   384, 385, 386, 387, 400, 401, 402, 403,
             417, 418, 419, 432, 433, 434, 435

Domain:      6
Name:        SW_121_F_128
WWN:         10:00:00:05:1e:9c:32:cc
Port Channel: None
```

To display port channels for a specific remote domain:

```
switch:admin> portchannelshow 10:00:00:05:1e:38:e5:23
Domain:      2
Name:        DCX_35_F_128
WWN:         10:00:00:05:1e:38:e5:23
Port Channel:
    Ports:   384, 385, 386, 387, 400, 401, 402, 403,
             417, 418, 419, 432, 433, 434, 435
```

SEE ALSO [islShow](#), [trunkShow](#)

portCmd

Diagnoses intelligent ports.

Synopsis

```
portcmd --ping [slot][slot]ge port
  -s src_ip -d dst_ip [-x | -crossport]
  [-n num_requests][-q service_type] [-t ttl][-w wait_time]
  [-z size][-v vlan_id [-c L2 Class-of-Service]]

portcmd --traceroute [slot][slot]ge port
  -s src_ip -d dst_ip [-x | -crossport]
  [-m max_hops][-f first_ttl][-q type_of_service][-w timeout]
  [-z size] [-v vlan_id [-c L2 Class-of-Service]]

portcmd --tperf [slot]veport -sink | -source
  [-high | -medium | -low][-time duration] [-unidirectional]
  [-random] [-pattern pattern] [-size pdu_size]
  [-interval interval]

portcmd --pmtu [slot] ge port -s src_ip -d dst_ip
  -q DSCP -c L2 Class-of-Service -v -y

portcmd --wtool wt-id | all action port arguments

portcmd --help
```

Description

Use this command to ping or trace a route to a destination IP host from an intelligent GbE port, or to determine the path characteristics between a local data source and a remote data sink.

When issued with the --tperf option, this command determines the path characteristics to a remote host or tunnel destination. TPerf generates statistics every 30 seconds by default unless you specify a different value for -interval. The output displays the following information:

Tunnel ID	Numeric identifier for the TPerf tunnel.
Traffic Priority	High, Medium, or Low.
bytes tx	Number of bytes transmitted.
bytes rx	Number of bytes received.
PDUs tx	Number of protocol data units transmitted.
PDUs rx	Number of protocol data units received.
bad CRC headers rx	Number of bad CRC headers received.

bad CRC payloads rx

Number of bad CRC payloads received.

out of seq PDUs rx

Number of out-of-sequence PDUs received.

flow control count

Flow control count.

last rtt

Last Round trip in milliseconds (RT traffic only).

VLAN tagging ensures that test traffic traverses the same path as real FCIP traffic. A VLAN tag entry must exist prior to issuing the `--ping` or `--traceroute` commands; this includes both the local and remote sides.

Notes

End-to-end path characterization is not supported if an IPSec-enabled tunnel exists that uses the same source/local IP address.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

ge port

Specifies the port number of the GbE port on the blade. For the Brocade 7840 switch and the Brocade SX6 extension blade, specify GbE port number along with the DP number, for example, `portcfg ipif geO.dpO`. The valid DP numbers are `dpO` and `dp1`.

--ping

Pings a destination IP address from one of the source IP interfaces on the GbE port. Valid arguments and their values include the following:

-s src_ip

Specifies the source IP address that originates the ping request. IPv6 addresses are supported.

-d dst_ip

Specifies the destination IP address to which to target the ping request. IPv6 addresses are supported.

-x | -crossport

Specifies the source IP address as a crossport. A crossport is the nonlocal (secondary) XGE port to a VE_Port group that provides failover capabilities for the tunnel configured on the local XGE port. This operand is optional and supported only on the Brocade FX8-24 XGE ports.

-n num_requests

Specifies the number of ping requests. Valid values are 1 to 255. The default is 4. This operand is optional.

-q service_type	Specifies the type of service in the ping request. The default is 0 and service_type can be hex (0x0-0xFF) or decimal (0-255). This operand is optional.
-t ttl	Specifies the time to live. Valid values are 1 to 255. The default is 100. This operand is optional.
-w wait_time	Specifies the time to wait for the response of each ping request in seconds. The default is 5 seconds and the maximum wait time is 9 seconds. This operand is optional.
-z size	Specifies the default packet size to a fixed size in bytes. The default is 64 bytes. In an IPv4 environment, the ICMP/IP header occupies 28 bytes. In an IPv6 environment it occupies 48 bytes. The total size, including ICMP/IP headers (28 or 48 bytes without IP options) cannot be greater than the IP MTU configured on the interface. This operand is optional.
-v vlan_id	Specifies the VLAN ID. Values must be in the range between 1 and 4094. There is no default value. Note that a VLAN tag entry must exist on the local and remote sides prior to issuing the -v option. A VLAN Tag table entry is dynamically maintained by the ipperf application. See the portCfg help page for details on creating a VLAN tag table. This option is supported on Brocade FX8-24 blade only.
-c L2 Class-of-Service	Specifies Class of Service/Priority, as defined by IEEE 802.1p. Values must be in the range between 0 and 7. The default is 0. This operand is optional with the -v option.
--traceroute	Traces the IP router hops used to reach the host dst_ip from one of the source IP interfaces on the GbE port. Valid arguments include the following:
-s src_ip	Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.
-d dst_ip	Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.
-x | -crossport	Specifies the source IP address as a crossport. A crossport is the nonlocal (secondary) XGE port to a VE_Port group that provides failover capabilities for the tunnel configured on the local XGE port. This operand is optional and supported only on the Brocade FX8-24 XGE ports.
-m max_hops	Specifies the maximum hop limit used in the outgoing probe packets. The default value is 30 hops. This operand is optional.

- f first_ttl**
Specifies the starting point for the "time to live" parameter. The default is 1. The command skips processing for those intermediate gateways that are less than the first_ttl hops. This operand is optional.
- q service_type**
Specifies the type of service in the traceroute request. The default is 0 and service_type must be an integer from 0 to 255. This operand is optional.
- w wait_time**
Sets the time, in milliseconds, to wait for a response to a probe. The default is 5000 milliseconds. The maximum wait time is 9000 milliseconds (9 seconds). This operand is optional.
- z size**
Specifies the size, in bytes, of the trace route packet to use. The default is 64 bytes. In an IPv4 environment, the ICMP/IP header occupies 28 bytes. In an IPv6 environment, it occupies 48 bytes. The total size, including ICMP/IP headers (28 or 48 bytes without IP options), cannot be greater than the IP MTU configured on the interface. This operand is optional.
- v vlan_id**
Specifies the VLAN ID. Values must be in the range between 1 and 4094. There is no default value. Note that a VLAN tag entry must exist on the local and remote sides prior to issuing the -v option. See the portCfg help page for details on creating a VLAN tag table. This option is supported on Brocade FX8-24 blade only.
- c L2 Class-of-Service**
Specifies Class of Service/Priority, as defined by the IEEE 802.1p specification. Values must be in the range between 0 and 7. The default value is 0. This operand is optional with the -v option.
- help**
Displays command usage.
- tperf**
Determines the path characteristics to a remote host or tunnel destination. The -tperf option requires two separate Brocade FX8-24 blades to function. One blade plays the role of a data sink and the other blade plays the role of the data source. TPerf also requires that you define a tunnel as a TPerf tunnel. Refer to portCfg fcipunnel for more information. This option is supported on Brocade FX8-24 blade only.
- sink | -source**
Designates the switch to function either as a data sink or a data source. This operand is required.
- When -sink is specified, TPerf begins to respond to traffic sent by the switch acting as the data source. The process continues to run until it is either terminated by user intervention (Ctrl +C) or, if a value for duration is specified with the -t option, until the process completes the set time frame.

The following optional arguments are ignored on the data sink, because it services all requests from the data source: -high, -medium, -low, -unidirectional, -random, -pattern, and -size.

When -source is specified, TPerf generates traffic until it is interrupted by user intervention (Ctrl + c) or, if a value for duration is specified with the -t option, until the process completes the set time frame. The TPerf module on the remote host will immediately begin generating traffic; it is therefore imperative that the data sink has been started on the opposing switch before the data source is started on the local switch.

The following arguments are optional:

-high

Generates high priority traffic.

-medium

Generates medium priority traffic.

-low

Generates low priority traffic.

If no traffic priority is specified only medium priority traffic is generated.

-time *duration*

Specifies the duration of the TPerf traffic flow in seconds. If a value for duration is not specified, the process continues to run until it is terminated with Ctrl + C.

-unidirectional

Generates traffic in one direction only. The default is round-trip.

-random

Specifies a random protocol data unit (PDU) size between 2048 and the size of the send request. Refer to -size below.

-pattern *pattern*

Specifies the test data pattern for the payload as one of the following values:

0 | notspecified

No pattern is specified. TPerf applies whatever is already set or in memory. This is the default value.

1 | allzeros

The specified pattern is "all zeros".

2 | allones

The specified pattern is "all ones".

3 | incrementingbyte

The specified pattern is "incrementing byte".

4 | random

The specified pattern is "random".

5 | jitter

The specified pattern is "jitter".

-size pdu_size

Specifies the PDU size to use (not including headers). The valid range is between 2048 and 10112 bytes. The default is equivalent to the maximum segment size (MSS). This is the maximum size if the -random option is specified.

-interval interval

Specifies the interval at which the statistics display is refreshed, in seconds. The default is 30 seconds.

--pmtu

Generates the ICMP messages to discover the maximum MTU available on a specific network path. It is represented as the maximum number of bytes that can traverse the network path. This option is supported only on Brocade 7840 switch and the Brocade SX6 extension blade. Valid arguments include the following:

-s src_ip

Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.

-d dst_ip

Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.

-c L2 Class-of-Service

Specifies Class of Service/Priority, as defined by IEEE 802.1p. Values must be in the range between 0 and 7. The default is 0.

-q DSCP

Specifies the DSCP marking. Values must be in the range between 0 and 63.

-v

Displays verbose output.

-y

Displays the short output with summary lines at the beginning and end.

--wtool

Generates traffic over a pair of IP addresses to test the link for any network issues. Determines the health of a network link before deploying it for use in a circuit. This option is supported only on Brocade 7840 switch and the Brocade SX6 extension blade.

The syntax for portcmd --wtool is as follows:

```
portcmd --wtool wt-id | all action port arguments
```

This command supports following actions and arguments:

create

Creates a WAN test session. This command supports following options:

-a | --admin-status enable | disable

Enables or disables the WAN test session.

-s | --src src_ip

Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.

- d | --dst *dst_ip***
Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.
- r | --rate *rate***
Specifies the test rate in kbps.
- t | --time *time***
Specifies the test time in minutes.
- i | --ipsec-policy *ip-sec_policy***
Specifies the policy name for an ipsec configuration.
- b | --bi-directional**
Specifies the test session is running on bi-directional traffic. By default, the WAN test session is configured for uni-directional traffic.
- u | --uni-directional**
Specifies the test session is running on uni-directional traffic.
- C | --connection-type**
Specifies the connection type. Valid values are default, listener, and initiator.
- dscp *dscp***
Sets Differentiated Services Code Point (DSCP) markings for the WAN test session.
- l2cos *l2cos***
Sets the Layer 2 Class of Service (L2CoS) value for the WAN test session.

modify

Modifies an established WAN test session. This command supports following options:

- r *rate***
Specifies the test rate in kbps.
- t *time***
Specifies the test time in minutes.
- b**
Specifies the test session is running on bi-directional traffic. By default, the WAN test session is configured for uni-directional traffic.
- c**
Clears the statistics associated with the WAN test.

show

Displays the WAN test session statistics. This command supports following options:

- summary**
Displays statistics for active WAN test sessions.
- connection**
Displays statistics for established WAN test sessions.
- detail**
Displays detailed statistics for active WAN test sessions.

--historical	Displays statistics for past WAN test sessions.
--all-ls	Displays statistics for all configured WAN test sessions from all logical switches.
--peer	Displays statistics for the local and peer WAN test sessions.
start	Starts the WAN test session associated with the test ID. This command supports following option:
-t	Specifies the test time in seconds. Use this option if the test time is not configured with create or modify options.
stop	Stops the WAN test session associated with the test ID. Use all to stop all WAN test sessions.
delete	Deletes the WAN test session associated with the test ID. Use all to delete all WAN test sessions.
--help	Displays command usage.

Examples

To verify if packets can be sent to the destination IP address with maximum wait_time specified:

```
switch:admin> portcmd --ping 12/ge0 \
-s 2007:7:30:32:227:138:10:120 \
-d 2007:7:30:32:227:77:0:60 -w 29000
Pinging 2007:7:30:32:227:77:0:60 from ip interface \
2007:7:30:32:227:138:10:120 on 12/ge0 with 64

bytes of data
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=1ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255

Ping Statistics for 2007:7:30:32:227:77:0:60:
Packets: Sent = 4, Received = 4, Loss = 0 ( 0 percent loss)
Min RTT = 0ms, Max RTT = 1ms Average = 0ms
```

To trace the IP router hops used to reach the remote (with packet size specified):

```
switch:admin> portcmd --traceroute 12/ge0 \
-s 2007:7:30:32:227:138:10:120 \
-d 2007:7:30:32:227:77:0:60 -z 1452
Traceroute to 2007:7:30:32:227:77:0:60 from IP interface
2007:7:30:32:227:138:10:120 on 12/0, 30

hops max
1 1 ms 0 ms 0 ms
Traceroute complete.
```

To verify if packets can be sent to the destination IP address using VLAN tagging with the -c option.

```
switch:admin> portcmd --ping 8/ge0 \
-s 192.168.10.1 -d 192.168.20.1 -v 10 -c 3
```

To trace the IP router hops used to reach the remote host using VLAN tagging with the -c option.

```
switch:admin> portcmd --traceroute 8/ge0 \
-s 192.168.10.1 -d 192.168.20.1 -v 10
```

To ping a failover crossport:

```
switch:admin> portcmd --ping 8/xge0 \
192.168.11.20 -d 1.1.1.1 -x
```

To trace the route to a failover crossport:

```
switch:admin> portcmd --traceroute 8/xge0 \
192.168.11.20 -d 1.1.1.1 -x
```

To set the path characteristic to source mode on the remote host using VLAN tagging with the -c option.

```
switch:admin> portcmd --iperf 8/ge0 \
-s 192.168.10.1 -d 192.168.20.1 -S -v 10 -c 3
```

To create a TPerf data sink on VE_Port 16:

```
switch:admin> portcmd --tperf 16 -sink
```

```
TPerf has been configured successfully for 16
TPerf is servicing requests on 16 priority: high
TPerf is servicing requests on 16 priority: medium
TPerf is servicing requests on 16 priority: low
Tperf data source can now be started
```

To configure a Brocade FX8-24 blade as a TPerf data source (this example generates round-trip high, medium, and low priority traffic with a fixed PDU size of 2048 bytes. The payload pattern is a jitter pattern and the checksum is checked by the sink):

```
switch:admin> portcmd --tperf 16 -source \
-size 2048 -pattern 5
```

```
TPerf has been configured successfully for 16
TPerf is generating traffic on 16 priority: medium
*****
Tunnel ID: 16
```

	High Priority	Medium Priority	Low Priority
bytes tx	0	5280520	0
bytes rx	0	407240	0
PDUs tx	0	10183	0
PDUs rx	0	10182	0
out of seq PDUs rx	0	0	0
flow control count	0	0	0
last rtt	0	5	0

```
*****
```

To configure a TPerf source so it generates round-trip high and low priority traffic with a random PDU size from 2048 to 10112 bytes (1 MSS) and with a payload pattern determined by previous settings saved in memory:

```
switch: admin> portcmd --tperf 16 -source -high -low -random
TPerf has been configured successfully for 16
TPerf is generating traffic on 16 priority: high
TPerf is generating traffic on 16 priority: low
*****
Tunnel ID: 16
```

	High Priority	Medium Priority	Low Priority
bytes tx	19800708	0	19168848
bytes rx	187200	0	183640
PDUs tx	4686	0	4598
PDUs rx	4685	0	4597
out of seq PDUs rx	0	0	0
flow control count	0	0	0
last rtt	5	0	5

```
*****
```

To configure a TPerf source to generate one-way low priority traffic with a random PDU size from 2048 to 4000 bytes and a payload pattern of ones.

```
switch:admin> portcmd --tperf 16 -source -low \
-size 4000 -random -unidirectional -pattern 2

TPerf has been configured successfully for 16
TPerf is generating traffic on 16 priority: low
*****
Tunnel ID: 16
```

	High Priority	Medium Priority	Low Priority
bytes tx	0	0	19800708
bytes rx	0	0	0
PDUs tx	0	0	1434686
PDUs rx	0	0	0
out of seq PDUs rx	0	0	0
flow control count	0	0	0
last rtt	N/A	N/A	N/A

```
*****
```

To specify test data patterns for the source payload:

```
switch:admin> portcmd --tperf 16 -source -pattern random
switch:admin> portcmd --tperf 16 -source -pattern 4

switch:admin> portcmd --tperf 16 -source -pattern jitter
switch:admin> portcmd --tperf 16 -source -pattern 5
```

To discover the maximum MTU available on a switch:

```
switch:admin> portcmd --pmtu ge3.dp0 -s 192.168.0.30 -d 192.168.0.130
Path MTU detection from 192.168.0.30 to 192.168.0.130
Note: a response can take up to 32 seconds

Path MTU returned:1500
```

To create a WAN test session:

```
switch:admin> portcmd --wtool 0 create -d 76.196.3.76 -s 77.195.3.77 -r 5000000
Operation Succeeded
```

To start a WAN test session:

```
switch:admin> portcmd --wtool 0 start -t 1200
Operation Succeeded
```

To display WAN test session for a specified session:

```
switch:admin> portcmd --wtool 0 show
wantool-id: (0)
=====
State                : Established
Up Time              : 1m6s
Run Time             : 0s
Time remaining       : 0s
IP Addr (L/R)        : 76.196.3.76 - 77.195.3.77
PMTUD                : Disabled
Comm Rate             : 5000000 Kbps (610.35 MB/s)
Tx rate              : 114.06 Kbps (0.01 MB/s)
Rx rate              : 102.66 Kbps (0.01 MB/s)
Tx Utilization        : 0.00%
Rx Utilization        : 0.00%
RTT (Min/Max)        : 0.10ms/0.28ms
RTT VAR (Min/Max)    : 0.09ms/0.28ms
Local Session Statistics
Tx pkts              : 0
Peer Session Statistics
Rx pkts              : 0
Ooo pkts             : 0
Drop pkts            : 0 (0.00%)
Drop% (Overall/5s)   : 0.00% / 0%
```

To display active WAN test sessions:

```
switch:admin> portcmd --wtool show --d
WTool Session: 24.0 (DP0)
=====
Admin / Oper State    : Enabled / Running
Up Time               : 1m24s
Run Time              : 1m23s
Time Out              : 3m50s
Time Remaining        : 13m37s
IP Addr (L/R)         : 192.168.3.20 ge3 <-> 192.168.3.10
IP-Sec Policy         : (none)
PMTU Discovery (MTU)   : disabled (1500)
Bi-Directional       : disabled
L2CoS / DSCP          : (none) / (none)
Configured Comm Rate   : 5000000 kbps
Peer Comm Rate        : 5000000 kbps
Actual Comm Rate       : 5000000 kbps
Tx rate               : 5000000.00 Kbps ( 610.00 MB/s)
Rx rate               : 5000000.00 Kbps ( 610.00 MB/s)
Tx Utilization         : 100.00%
Rx Utilization         : 100.00%
```



```

RTT (Min/Max)          : 1 ms/1 ms
RTT VAR (Min/Max)      : 1 ms/1 ms
Local Session Statistics
Tx pkts                : 810024
Peer Session Statistics
Rx pkts                : 792029
Ooo pkts               : 0
Drop pkts              : 0 (0.00%)
Drop% (Overall/5s)     : 0.00% / 0%
(output truncated)

```

To display local and remote WAN test sessions:

```

switch:admin> portcmd --wtool 2 show --peer
WTool Session: 2          (Local)          (Remote)
=====
Admin / Oper State       : Enabled / Online : Enabled / Online
Up Time                  : 6s                : 6s
Run Time                 : 0s                : 0s
Time Remaining           : 10m0s             : 10m0s
Port                    : ge8.dp0            : ge8.dp0
IP Addr                  : 2002:1000:0000:1111 : 2002:1011:1111:1110
IP-Sec Policy            : (none)            : (none)
Configured Comm Rate     : 1000000 kbps       : 1000000 kbps
Actual Comm Rate         : 1000000 kbps       : 1000000 kbps
PMTU Discovery (MTU)     : disabled (9216)    : disabled (9216)
Bi-Directional           : disabled           : disabled
L2CoS / DSCP             : (none) / (none)    : (none) / (none)
Tx rate                  : 2992.14 Kbps       : 2992.14 Kbps
Rx rate                  : 2976.47 Kbps       : 2976.47 Kbps
Tx Utilization           : 0.30%             : 0.30%
Rx Utilization           : 0.30%             : 0.30%
RTT (Min/Max)            : 1 ms/1 ms         : 1 ms/1 ms
RTT VAR (Min/Max)        : 1 ms/1 ms         : 1 ms/1 ms
Tx pkts                  : 0                  : 0
Rx pkts                  : 0                  : 0
Ooo pkts                 : 0                  : 0
Drop pkts                : 0                  : 0
Drop % (Overall/5s)      : 0.00% / 0.00%    : 0.00% / 0.00%

```

To modify a WAN test session:

```

switch:admin> portcmd --wtool 0 modify --bi
Operation Succeeded

```

To stop a WAN test session:

```

switch:admin> portcmd --wtool 0 stop
Operation Succeeded

```

SEE ALSO [portCfg](#), [portShow](#)

portDebug

Sets debug level and verbose level of port modules.

Synopsis **portdebug** *dbg_lvl*, *vbs_lvl*

Description Use this command to set the debug level and verbose level of port modules.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

dbg_lvl Specify the debug level to be set for port modules; valid values are 1 to 5.

vbs_lvl Specify the verbose level to be set for port modules; valid values are 1 to 5.

Examples To set debug level and verbose level of port modules:

```
switch:admin> portdebug 3 4
```

SEE ALSO [dbgShow](#)

portDecom

Decommissions and disables an E_Port without frame loss.

Synopsis

portdecom

portdecom [*slot*]/*port*

portdecom --help

Description

Use this command to disable an E_Port without frame loss. The E_Port can either be a single redundant E_Port or an E_Port which is part of a trunk group. The port must be an operational E_Port with at least one other redundant E_Port available to reach all domains that the E_Port can reach. Or the port must be an operational E_Port which is part of a trunk group with at least one other member in the trunk. The last member of the trunk group may also be decommissioned, if there are other available redundant E_Ports.

Upon successful completion of the command all traffic flows on the port will have been moved to other redundant paths and the port will be placed in a persistently disabled state. To bring the port back online use the portCfgPersistentEnable command.

Notes

The execution of this command requires that the lossless feature is enabled on both the local switch and the remote switch on the other end of the E_Port. This command will fail for online ports, if the port is not a fully operational E_Port or trunk port, lossless is not enabled on the local or remote switch, or no alternate redundant path is available to route the traffic. A redundant path must be an E_Port connection between the same pair of switches as the E_Port that is being decommissioned. Use the topologyShow command to verify that alternate paths are available to reach all domains.

When decommissioning the member of a trunk group, all members must have an equal link cost. If a member does not have an equal cost, the cost of the trunk as a whole may change after decommissioning the port and cause routes to be changed. Refer to the linkCost command for more information.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the ports to be disabled, followed by a slash (/).

port

Specifies the E_Port to be decommissioned.

Examples

To decommission a port

```
switch:user> portdecom 2/5
```

The port has been decommissioned and persistently disabled.

SEE ALSO

[dlsShow](#), [linkCost](#), [portCfgPersistentEnable](#), [topologyShow](#)

portDisable

Disables a port or a range of ports.

Synopsis **portdisable** [*slot*]/*port1*[-*port2*] [...]
portdisable -i [*index1*[-*index2*] [...]] [-f]
portdisable -x [*hex1*[-*hex2*] [...]]
portdisable -slot [*slot1*[-*slot2*] [...]]
portdisable [*slot*]/*port* -r *disable_reason_string*
portdisable -h

Description Use this command to disable a port or a range of ports. If the port is connected to another switch when disabled, the fabric may reconfigure. Devices connected to this port can no longer communicate with the fabric.

You can identify a single port to be disabled by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (-i) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index argument to display the portSwap status, or alternately use portSwapShow.

The front panel LED of a disabled port flashes amber in a two-second cycle. If the port was online before being disabled, a state transition will be indicated in one of the following ways: RSCN, SNMP trap, or Web pop-up window.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports. To disable an FCoE port, use fcoe --disable.

Operands This command has the following operands:

<i>slot</i>	On bladed systems only, specifies the slot number of the ports to be disabled, followed by a slash (/).
<i>port1</i> [- <i>port2</i>]	Disables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example, 3/1-4 4/7-9.
-i <i>index1</i> [- <i>index2</i>]	Disables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, -i33-38 40-60.
-f	Ignores nonexistent ports. This operand is valid only with the -i option.

-x [*hex1* [-*hex2*]]

Disables a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot [*slot1*[-*slot2*]]

Disables all ports on a slot or on a range of slots, for example, -s 3-5. You may specify multiple slot ranges separated by a space, for example, -s 3-5 8-10.

-r *disable_reason_string*

Specifies the reason for disabling the port. The string can be up to 16 characters long and must be enclosed in double quotation marks.

-h

Displays the command usage.

Examples

To disable a single port.

```
switch:admin> portdisable 2/4
```

To disable a range of ports:

```
switch:admin> portdisable 2/4-8
```

To disable multiple port ranges:

```
switch:admin> portdisable 2/24-26 3/10-12 4/3-4
```

To disable a port by specifying its index number:

```
switch:admin> portdisable -i 176
```

To disable a range of ports by specifying the corresponding port index range:

```
switch:admin> portdisable -i 170-176
```

To disable multiple ports by specifying multiple port index ranges:

```
switch:admin> portdisable -i 30-36 170-176
```

To disable range of ports by specifying port index numbers in hexadecimal format:

```
switch:admin> portdisable -x 1d-1e
```

To disable all ports on slots 3-5:

```
switch:admin> portdisable -s 3-5
```

To disable all ports on slots 3-5 and 9-12:

```
switch:admin> portdisable -s 3-5 9-12
```

To disable a port with a disable reason:

```
switch:admin> portdisable 2/2 -r "laser fault"
```

SEE ALSO

[portCfgPersistentDisable](#), [portCfgPersistentEnable](#), [portEnable](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portDPortTest

Initiates or terminates a D_Port test, or displays D_Port test results.

Synopsis

```
portdporttest --start | --setarg [-nframes number | -time time]
[-framesize size] [-pattern pat_name |
-payload payload_pattern] [-fec] [-cr] [slot]/port_list
```

```
portdporttest --stop [slot]/port_list
```

```
portdporttest --restart [slot]/port_list
```

```
portdporttest --set [ewrap | owrap] [slot]/port
```

```
portdporttest --clear [ewrap | owrap | all] [slot]/port
```

```
portdporttest --show [slot]/port_list | -detail [slot]/port_list | all
```

```
portdporttest --exit [slot]/port_list
```

```
portdporttest --help
```

Description

Use this command to manually terminate, re-initiate test, or stop test on a diagnostic port (D_Port). The portdporttest --show command displays the result of the D_Port tests. The port must be configured as a D_Port and physically connected to a second D_Port on a remote switch. Refer to the portCfgDPort command for more information. The portdporttest --start command only needs to be issued on one end of the link.

The D_Port test performs the following diagnostics:

- An electrical loopback test (supported only on 16Gb and 32Gb SFPs capable of electrical loopback)
- An optical loopback test (supported only on 16Gb and 32Gb SFPs capable of optical loopback)
- A link traffic test
- A link distance measurement

Use the --setarg option to set the test parameters and exit. Use the --restart option to restart the test with the already configured parameters.

Use the --show option with a port operand to display the test status for the specified ports at any time during the test or after the diagnostics has completed. The command output includes the following information for each configured D_Port:

Slot

The slot number on the local side of the link.

Port

The port number on the local side of the link

Remote WWNN

The world wide node name of the switch on the remote side of the link.

Remote WWPNN

The world wide port name of the Host Bus Adapter (HBA) or device port on the remote side of the link.

Remote port index

The port number on the remote side of the link

Mode

The testing mode: Automatic (initiated due to port online event) or Manual (manually restarted using this command).

No. of test frames

Number of frames sent for link traffic test.

Test frame size

The test frame size in bytes.

Pattern

The predefined pattern name.

Payload

The user-defined payload pattern.

FEC (enabled/option/active)

The forward error correction (FEC) status. This option is not supported for D_Port HBA.

CR (enabled/option/active)

The credit recovery (CR) status. This option is not supported for D_Port HBA.

Start time

Date and time of test start

End time

Date and time of test completion

Status

On the link initiator, this field displays the overall test status as PASSED, FAILED, SKIPPED, IN PROGRESS, NOT STARTED, or STOPPED. On the link responder, the status displays PASSED, FAILED, STOPPED, or RESPONDER.

Test

For each sub-test, the command displays the Start time, test result (PASSED, FAILED, IN PROGRESS, NOT STARTED, STOPPED, or RESPONDER), estimated time in seconds, and diagnostic comments. Comments include the following:

No SFP or chip support

The test result is skipped because the SFP or port is not capable of D_Port functionality.

See remote port results

The test result related to this comment is RESPONDER. The port is in responder state and test results will be available at the initiator port on the remote side of the link.

Remote port is not ready to start the test

The test failed because the remote port is not ready to start the D_Port test.

No remote SFP or chip support

The test is skipped because the D_Port test is run between a QSFP and SFP port connected through break-out cable or when the remote SFP is not capable of running the optical loopback test.

Roundtrip link latency

Displays roundtrip link latency in nanoseconds or unknown when the test is in progress. Roundtrip link latency is the time required for the light to travel from a given port to the port at the remote side of the link and back again.

Estimated cable distance

The estimated physical distance of the interswitch link in meters. The Link distance for SFPs or ICL ports which do not support E_WRAP and O_WRAP have a precision of +/- 50 meters for 8 Gbps LWL SFPs, 8 Gbps ELWL SFPs, 10 Gbps SFPs, ICL ports, and QSPF ports and +/- 5 meters for 16 Gbps SFPs.

Buffers required

The number of buffers required for the given distance and speed. Irrespective of test frame size, the number of buffers required is calculated for 2112-byte frames.

Failure report

Displays details on the local port and remote port errors, if any, when the D_Port test fails.

Use the --show all command to display the following test summary information:

Port

The port number on the local side of the link

State

The port state: OFFLINE or ONLINE

SFP Capabilities

Electrical loopback (E) or optical loopback (O), or both (E, O)

Test Result

PASSED, FAILED, or STOPPED

Egress power

The power values and power loss in the transmit path. The following values are displayed: power transmitted from the local side of the link (Tx), power received on the remote side of the link (Rx), the power loss, that is, the relative difference in power (Diff), and the status of the power loss (No Loss, within tolerable limits, and outside tolerable limits).

Ingress power

The power values and power loss in the receive path. The following values are displayed: power received on the local side of the link (Rx), power transmitted from the remote side of the link (Tx), the power loss, that is, the relative difference in power (Diff), and the status of the power loss (No Loss, within tolerable limits, and outside tolerable limits).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on Fibre Channel ports. SFPs must be Brocade-branded and run Fabric OS v7.0.0 or later. This command skips the optical loopback test for loopback plugs or when the port loops back to another D_Port in the same switch.

The port error statistics may show incremented values after D_Port tests are successful due to port toggle operation at the end of the D_Port test.

The approximate cable distance is calculated and displayed instead of estimated cable distance if the "electrical loopback" and "optical loopback" tests statuses are SKIPPED. The associated value of Approximate/Estimated cable distance will be UNKNOWN if the "electrical loopback" and "optical loopback" tests statuses are "SKIPPED" and the link distance is less than 150 meters.

The D_Port long duration test can be run on only one port at a time.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port_list

Specifies one or more ports, relative to the slot on bladed systems. Use switchShow for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following:

- A single port, for example, "8" or "5/8" on blades systems.
- A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots.
- A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems.
- A wildcard '*' indicates all ports. The wildcard can be represented as '*', or '*'.

--start

Initiates the diagnostics on the specified D_Ports.

-nframes *number*

Specifies the number of frames to send in millions. The default value is 1 for 1 million frames. The maximum value is 2147483647 million frames. If the number of frames exceeds the maximum value, the test proceeds with the initial 2147483647 million frames.

-time *time*

Specifies the time duration in HH:MM format for which the frame traffic test will run.

-framesize *size*

Specifies the size of test frames that are generated to run the test. The range for the framesize is 36 to 2112 bytes. The size of the frames can be specified in multiples of 4; otherwise the nearest higher multiple of 4 value will be taken as frame size. Default value is 1024.

-pattern *pat_name*

Specifies the name of the predefined pattern to be used in the payload. Valid patterns are BYTE_NOT, QUAD_NOT, WORD_NOT, BYTE_RAMP, QUAD_RAMP, WORD_RAMP, BYTE_LFSR, RANDOM, CRPAT, CSPAT, CHALF_SQ, CQTR_SQ, RDRAM_PAT, jCRPAT, jCJTPAT, jCSPAT, PRED_RAND, SMI_TEST, CJPAT, QUAD_NOTP, JSPAT, JTSPAT. Use the dataTypeShow command to get the list of frame patterns.

-payload *payload_pattern*

Specifies the user defined payload pattern in hexadecimal.

-fec

Enables the forward error correction (FEC) during D_Port test. This sub-option is not supported on D_Ports configured with Dense Wavelength Division Multiplexing (DWDM).

-cr	Enables the credit recovery (CR) during D_Port test.
--setarg	Sets the D_Port test parameters and exits. The sub-options of --setarg are same as --start. This option is not supported for D_Port HBA connections.
--stop	Terminates the diagnostics on the specified D_Ports. Brocade recommends that you execute this command on both the local port and the remote port to properly terminate the D_Port tests.
--restart	Restarts the D_Port diagnostic tests with the configured parameters. This option is not supported for D_Port HBA connections.
--show	Displays runtime status and results of the diagnostics.
-detail	Displays the current detailed D_Port test results and statistics. This option provides extra details in case of test failure.
--exit	Exits the on-demand or Dynamic D_Ports to normal mode. The static D_Ports are retained in D_Port mode.
--help	Displays the command usage.

Examples

To initiate the D_Port test on a single port:

```
switch:admin> portdporttest --start
```

To terminate the D_Port test on a single port:

```
switch:admin> portdporttest --stop
```

To display the D_Port test results for a port while the test is in progress or after the test has completed:

```
switch:admin> portdporttest --show 16
D-Port Information:
=====
Port: 16
Remote WWNN: 10:00:00:27:f8:f0:21:60
Remote port index: 8
Mode: Manual
No. of test frames: 1 Million
Test frame size: 1024 Bytes
FEC (enabled/option/active): Yes/No/Yes
CR (enabled/option/active): Yes/No/No
Start time: Sun Sep 27 17:15:09 2015
End time: Sun Sep 27 17:15:27 2015
```

```

Status:                                     PASSED
=====
Test           Start time   Result      EST(HH:MM:SS)  Comments
=====
Electrical loopback 17:15:11     PASSED      -----
Optical loopback   17:15:18     PASSED      -----
Link traffic test  17:15:23     PASSED      -----
=====
Roundtrip link latency: 1061 nano-seconds
Estimated cable distance: 1 meters
Buffers required:      1 (for 2112 byte frames at 32Gbps speed)
Egress power:          Tx: -1.0 dBm, Rx: -0.9 dBm, Diff: 0.0 dBm (No Loss)
Ingress power:         Rx: -1.3 dBm, Tx: -1.4 dBm, Diff: 0.0 dBm (No Loss)

```

To display D_Port summary information:

```

switch:admin> portdporttest --show all
Port  State      SFP Capabilities  Test Result
=====
24    ONLINE     E,O               PASSED
26    ONLINE     E,O               PASSED
33    OFFLINE    ---               FAILED

```

To display the D_Port test results for a port when the test has failed:

```

switch:admin> portdporttest --show 3/20
D_Port Information:
=====
Slot:          3
Port:          20
Remote WWNN:    10:00:00:05:33:7e:69:c4
Remote port index: 28
Mode:          Manual
No. of test frames: 1 Million
Test frame size: 1024 Bytes
FEC (enabled/option/active): Yes/No/No
CR (enabled/option/active): Yes/No/No
Start time:     Mon Apr 8 12:16:12 2013
End time:       Mon Apr 8 12:16:29 2013
Status:         FAILED
=====
Test           Start time   Result      EST(HH:MM:SS)  Comments
=====
Electrical loopback 12:16:13     PASSED      -----
Optical loopback   12:16:18     PASSED      -----
Link traffic test  12:16:29     FAILED      -----      Remote port is not ready to
start the test
=====
Roundtrip link latency: unknown

Failure report:
Remote port error(s): GENERIC, BAD_EOF, UNREACHABLE, SIGNAL_LOSS

Use "portdporttest --show -detail" for more details

```

To display the detailed D_Port test results for a port when the test has failed:

```
switch:admin> portdporttest --show -detail 1
*****
1. Current D-Port test results:
*****
Port: 1
Remote WWNN:10:00:00:05:33:7e:97:e9
Remote port index:2
Mode: Automatic
No. of test frames:1 Million
Test frame size:1024 Bytes
FEC (enabled/option/active):Yes/No/No
CR (enabled/option/active):No/No/No
Start time:Wed Feb 12 05:57:41 2014
End time:Wed Feb 12 05:57:48 2014
Status:FAILED
=====
Test      Start timeResultEST(HH:MM:SS)Comments
=====
Electrical loopback05:57:42PASSED -----
Optical loopback  -----FAILED -----Remote port is not ready to start the
test
Link traffic test  -----NOT STARTED-----
=====
Roundtrip link latency:unknown

Failure report:

*****
2. Current Port statistics:
*****
portstatsshow 1:
=====
stat_wtx          1000436935  4-byte words transmitted
stat_wrx          1000437023  4-byte words received
stat_ftx          3775241    Frames transmitted
stat_frx          3775241    Frames received
stat_c2_frx       0          Class 2 frames received
stat_c3_frx       3775233    Class 3 frames received
stat_lc_rx        4          Link control frames received
stat_mc_rx        0          Multicast frames received
stat_mc_to        0          Multicast timeouts
stat_mc_tx        0          Multicast frames transmitted
tim_rdy_pri       0          Time R_RDY high priority
tim_txcrd_z       3489       Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc 0- 3: 3489       0          0          0
tim_txcrd_z_vc 4- 7: 0        0          0          0
tim_txcrd_z_vc 8-11: 0        0          0          0
tim_txcrd_z_vc 12-15: 0       0          0          0
er_enc_in         0          Encoding errors inside of frames
er_crc            0          Frames with CRC errors
er_trunc          0          Frames shorter than minimum
er_toolong        0          Frames longer than maximum
er_bad_eof        0          Frames with bad end-of-frame
er_enc_out        0          Encoding error outside of frames
er_bad_os         0          Invalid ordered set
er_pcs_blk        0          PCS block errors
er_rx_c3_timeout  0          Class 3 receive frames discarded due to timeout
er_tx_c3_timeout  0          Class 3 transmit frames discarded due to timeout
```

```

er_unroutable      0      Frames that are unroutable
er_unreachable     0      Frames with unreachable destination
er_other_discard   0      Other discards
er_type1_miss      0      frames with FTB type 1 miss
er_type2_miss      0      frames with FTB type 2 miss
er_type6_miss      0      frames with FTB type 6 miss
er_zone_miss       0      frames with hard zoning miss
er_lun_zone_miss   0      frames with LUN zoning miss
er_crc_good_eof    0      Crc error with good eof
er_inv_arb         0      Invalid ARB
er_single_credit_loss0  Single vcrdy/frame loss on link
er_multi_credit_loss0 Multiple vcrdy/frame loss on link

```

porterrshow:

=====

	frames	enc	crc	crc	too	too	bad	enc	disc	link	
loss	loss	frjt	fbsy	c3timeout	pcs						
	tx	rx	in	err	g_eof	shrt	long	eof	out	c3	fail
sync	sig			tx	rx	err					
1:	3.7m	3.7m	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0						

3. Port statistics prior to the port was set to D-Port:

portstatsshow 1

=====

```

stat_wtx      353      4-byte words transmitted
stat_wrx      444      4-byte words received
stat_ftx      8        Frames transmitted
stat_frxx     8        Frames received
stat_c2_frxx  0        Class 2 frames received
stat_c3_frxx  0        Class 3 frames received
stat_lc_rx    4        Link control frames received
stat_mc_rx    0        Multicast frames received
stat_mc_to    0        Multicast timeouts
stat_mc_tx    0        Multicast frames transmitted
tim_rdy_pri   0        Time R_RDY high priority
tim_txcrd_z   1892     Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc 0- 3: 1892 0 0 0
tim_txcrd_z_vc 4- 7: 0 0 0 0
tim_txcrd_z_vc 8-11: 0 0 0 0
tim_txcrd_z_vc 12-15: 0 0 0 0
er_enc_in     0        Encoding errors inside of frames
er_crc        0        Frames with CRC errors
er_trunc      0        Frames shorter than minimum
er_toolong    0        Frames longer than maximum
er_bad_eof    0        Frames with bad end-of-frame
er_enc_out    0        Encoding error outside of frames
er_bad_os     0        Invalid ordered set
er_pcs_blk    0        PCS block errors
er_rx_c3_timeout 0      Class 3 receive frames discarded due to timeout
er_tx_c3_timeout 0      Class 3 transmit frames discarded due to timeout
er_unroutable 0        Frames that are unroutable
er_unreachable 0      Frames with unreachable destination
er_other_discard 0      Other discards
er_type1_miss 0        frames with FTB type 1 miss
er_type2_miss 0        frames with FTB type 2 miss
er_type6_miss 0        frames with FTB type 6 miss
er_zone_miss  0        frames with hard zoning miss

```

```
er_lun_zone_miss      0          frames with LUN zoning miss
er_crc_good_eof       0          Crc error with good eof
er_inv_arb            0          Invalid ARB
er_single_credit_loss0 Single vcrdy/frame loss on link
er_multi_credit_loss0 Multiple vcrdy/frame loss on link
```

```
porterrshow
=====
      frames      enc   crc   crc   too   too   bad   enc   disc   link   loss
loss  frjt  fbsy  c3timeout  pcs
      tx    rx    in   err  g_eof shrt  long  eof   out   c3   fail  sync
sig
1:    4     4     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0
11:   0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0
21:   0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0
31:   0     0     0     0     0     0     0     0     0     0     0     0
0     0     0     0     0     0     0     0     0     0     0     0
41:   8.6k  8.6k  0     0     0     0     0     0     0     0     1     1
0     0     0     0     0     0     0     0     0     0     0     0
```

SEE ALSO [dataTypeShow](#), [fabricLog](#), [portCfg](#), [portCfgDPort](#), [portShow](#), [switchShow](#)

portEnable

Enables a port or a range of ports.

Synopsis **portenable** [*slot*]/*port1*[-*port2*] [...]
portenable -i [*index1*[-*index2*] [...]] [-**f**]
portenable -x [*hex1*[-*hex2*] [...]]
portenable -slot [*slot1*[-*slot2*]]
portenable -h

Description Use this command to enable a port or a range of ports. If a port is connected to another switch when this command is issued, the fabric may reconfigure. After the port is enabled, devices connected to the port can again communicate with the fabric. The front panel LED of a port that is enabled and online is green.

You can identify a single port to be enabled by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (-i) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index argument to display the portSwap status, or alternately use portSwapShow.

For ports that come online after being enabled, the following indications might be sent to indicate a state transition: RSCN, SNMP trap, Web pop-up window.

This command fails if the switch is disabled, the port's blade is not fully enabled (faulted, powered off, or disabled), or if the port is persistently disabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports. To enable an FCoE port, use fcoe --enable.

Operands This command has the following operands:

slot	On bladed systems only, specifies the slot number of the ports to be enabled, followed by a slash (/).
port1 [- port2]	Enables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges separated by a space, for example 3/1-4 4/7-9.
-i index1 [- index2]	Enables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, 33-38 40-60.

- f**
Ignores nonexistent ports. This operand is valid only with the **-i** option.
- x** [*hex1* [-*hex2*]]
Enables a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, **-x 21-26 28-3c**.
- slot** [*slot1*[-*slot2*]]
Enables all ports on a slot or on a range of slots, for example, **-s 3-5**. Multiple slot ranges are not supported with this command.
- h**
Displays the command usage.

Examples

To enable a single port:

```
switch:admin> portenable 2/4
```

To enable a range of ports:

```
switch:admin> portenable 2/4-8
```

To enable multiple port ranges:

```
switch:admin> portenable 2/24-26 3/10-12 4/3-4
```

To enable a port by specifying its index number:

```
switch:admin> portenable -i 176
portenable: portSwap feature enabled.
```

To enable a range of ports by specifying the corresponding port index range:

```
switch:admin> portenable -i 170-176
portenable: portSwap feature enabled.
```

To enable multiple ports by specifying multiple port index ranges:

```
switch:admin> portenable -i 30-36 170-176
portenable: portSwap feature enabled.
```

To enable a range of ports by specifying port index number in hexadecimal format:

```
switch:admin> portenable -x 1d-1e
```

To enable all ports on slot 3-5.

```
switch:admin> portenable -s 3-5
```

SEE ALSO

[portCfgPersistentDisable](#), [portCfgPersistentEnable](#), [portDisable](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portEncCompShow

Displays encryption and compression port configuration details.

Synopsis **portenccompshow**

Description Use this command to display a list of ports that can be configured for encryption or compression. The command displays one section per ASIC and the ports configurable for that ASIC. The output includes the following information:

User Port

The port index number of the port to be configured. Use the switchShow command to identify the corresponding slot and port number.

Encryption configured

Displays "Yes" if encryption is enabled on the port. Displays "No" if encryption is disabled. This parameter is configured with the portCfgEncrypt command.

Encryption active

Displays the port's runtime status. "Yes" indicates that the port is online and enabled for encryption. "No" indicates that the port is enabled for encryption but offline, or not enabled for encryption.

Compression configured

Displays "Yes" if compression is enabled on the port. Displays "No" if compression is disabled. This parameter is configured with the portCfgCompress command.

Compression active

Displays the port's runtime status. "Yes" indicates that the port is online and enabled for compression. "No" indicates that the port is enabled for compression but offline, or not enabled for compression.

Speed

Displays the speed of the port and link speed of the online ports. If the speed is configured as AUTO NEG, the speed of the port is taken as the maximum speed of the port.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the port configuration and runtime status of the ports configurable for encryption or compression on a DCX 8510-8:

```
switch:admin> portenccompshow
User      Encryption      Compression      Config
Port      Configured      Active           Configured      Active           Speed
-----
17         No              No               No              No
18         No              No               No              No
19         No              No               No              No
20         No              No               No              No
21         No              No               No              No
```

portEncCompShow

22	No	No	No	No	
23	No	No	No	No	
144	Yes	Yes	Yes	No	16G
145	No	No	No	No	
146	No	No	No	No	
147	No	No	No	No	
148	No	No	No	No	
149	Yes	No	Yes	No	16G
150	No	No	No	No	
151	No	No	No	No	

88	No	No	No	No	
89	No	No	No	No	
90	No	No	No	No	
91	No	No	No	No	
92	No	No	No	No	
93	No	No	No	No	
94	No	No	No	No	
95	No	No	No	No	
208	No	No	No	No	
209	No	No	No	No	
210	No	No	No	No	
211	No	No	No	No	
212	No	No	No	No	

SEE ALSO None

portErrShow

Displays a port error summary.

Synopsis

porterrshow

porterrshow *[[slot/]port1[-[slot/]port2]]*

porterrshow -i | -index *[index1[-index2]]*

porterrshow -x *[hex1[-hex2]]*

porterrshow --help

Description

Use this command to display an error summary for a port or a range of ports. Counts are reported on frames transmitted by the port (Tx) or on frames received by the port (Rx). The display contains one output line per port. Numeric values exceeding 999 are displayed in units of thousands (k), millions (m), or giga (g) if indicated.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays error summary for all ports on the switch.

Specifying multiple ports with the index number (-i or -x) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -ioption without a port index argument to display the portSwap status, or alternately use portSwapShow.

Values for the following parameters are displayed:

frames tx

Number of frames transmitted (Tx).

frames rx

Number of frames received (Rx).

enc in

Number of encoding errors inside frames received (Rx).

crc err

Number of frames with CRC errors received (Rx).

crc g_eof

Number of frames with CRC errors with good EOF received (Rx).

too shrt

Number of frames shorter than minimum received (Rx).

too long

Number of frames longer than maximum received (Rx).

bad eof

Number of frames with bad end-of-frame delimiters received (Rx).

enc out

Number of encoding error outside of frames received (Rx).

disc c3

Number of Class 3 frames discarded (Rx). This counter includes the sum of the following class 3 discard counters reported by the portStatsShow command: er_rx_c3_timeout, er_tx_c2_timeout, er_c2_dest_unreach, and er_other_disc. Refer to portStatsShow help for a description of these counters.

link fail

Number of link failures (LF1 or LF2 states) received (Rx).

loss sync

Number of times synchronization was lost (Rx).

loss sig

Number of times a loss of signal was received (increments whenever an SFP is removed) (Rx).

frjt

Number of transmitted frames rejected with F_RJT (Tx).

fbsy

Number of transmitted frames busied with F_BSY (Tx).

c3-timeout tx

The number of transmit class 3 frames discarded at the transmission port due to timeout (platform- and port-specific).

c3-timeout rx

The number of receive class 3 frames received at this port and discarded at the transmission port due to timeout (platform- and port-specific).

pcs err

The number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10 Gbps or 16 Gbps ports.

uncor err

The number of uncorrectable forward error corrections (FEC).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following optional operands:

[slot/]port1[-[slot/]port2]

Displays port error summary for a single port or for a range of ports, relative to the slot number on bladed systems. Port numbers in a range must be separated by a dash (-), for example, 3-5, or 2/0-2/15. Port ranges cannot span slots. Use switchShow to display a listing of valid ports. Port operands are optional; if omitted, information for all ports is displayed.

-i | -index [index1[-index2]]

Displays port error summary for a single port or for a range of ports identified by port index numbers. You may specify index ranges separated by "-", for example, -i 33-47.

-x [*hex1* [-*hex2*]]

Displays port error summary for a port or a range of ports identified by port index numbers in hexadecimal format. You may specify port ranges separated by "-", for example, -x 21-26.

--help

Displays the command usage.

Examples To display error counters for ports on a switch:

```
switch:admin> porterrshow
```

	frames tx	enc rx	crc in	crc err	too g_eof	too shrt	bad long	enc eof	\ out	
0:	0	0	0	0	0	0	0	0	0	\
1:	2.5g	73m	0	0	0	0	0	0	1.2k	\
2:	0	0	0	0	0	0	0	0	0	\
3:	0	0	0	0	0	0	0	0	667	\

	disc c3	link fail	loss sync	loss sig	frjt	fbsy	c3-timeout tx	rx	pcs err	uncor err
0	0	0	2	4	0	0	0	0	0	0
563.2k	0	0	0	0	1	0	0	415.2k	0	0
0	0	0	1	0	0	0	0	0	0	0
0	21	4	8	0	0	0	0	0	0	0

(output truncated)

SEE ALSO [portShow](#), [portStatsShow](#)

portFlagsShow

Displays the port status bitmaps for all ports in a switch.

Synopsis portflagsshow

Description Use this command to display the following status for a port:

- SNMP Displays whether the port is online or offline.
- Physical Displays the port physical status. Valid values are In_Sync, No_Light (8 Gbps-capable ports only), and No_SigDet (quad small form-factor pluggables (QSFPs) installed without cables). Refer to switchShow help for more information on these states.
- Flags Displays whether there is an SFP inserted in the port, whether the port is active, and the port type.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the port status for all ports in the switch:

```
switch:user> portflagsshow
Port SNMP      Physical  Flags
-----
  0 Online      In_Sync   PRESENT ACTIVE F_PORT G_PORT \
U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
  1 Online      In_Sync   PRESENT ACTIVE E_PORT G_PORT \
U_PORT SEGMENTED CBL_LB LOGIN LED
  2 Offline     No_Module PRESENT U_PORT LED
  3 Offline     No_Light  PRESENT U_PORT LED
  4 Offline     No_Module PRESENT U_PORT LED
  5 Offline     No_Module PRESENT U_PORT LED
  6 Offline     No_Module PRESENT U_PORT LED
  7 Offline     No_Module PRESENT U_PORT LED
  8 Offline     No_Module PRESENT U_PORT LED
  9 Offline     No_Module PRESENT U_PORT LED
10 Online      In_Sync   PRESENT ACTIVE F_PORT G_PORT \
U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
11 Offline     No_Module PRESENT U_PORT LED
12 Offline     No_Module PRESENT U_PORT LED
13 Offline     No_Module PRESENT U_PORT LED
14 Offline     No_Module PRESENT U_PORT LED
15 Offline     No_Module PRESENT U_PORT LED
16 Online      In_Sync   PRESENT ACTIVE F_PORT G_PORT \
U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
17 Online      In_Sync   PRESENT ACTIVE F_PORT G_PORT \
U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
18 Offline     No_Module PRESENT U_PORT LED
```

```

19 Offline    No_Module  PRESENT U_PORT LED
20 Offline    No_Module  PRESENT U_PORT LED
21 Offline    No_Module  PRESENT U_PORT LED
22 Offline    No_Module  PRESENT U_PORT LED
(output truncated)

```

To display the port status for QSFPs installed without cables (partial output) :

```

6   16 Offline    No_SigDet  PRESENT U_PORT LED
6   17 Offline    No_SigDet  PRESENT U_PORT LED
6   18 Offline    No_SigDet  PRESENT U_PORT LED
6   19 Offline    No_SigDet  PRESENT U_PORT LED

```

To display the port status for QSFPs installed and connected with cables (partial output) :

```

6   28 Online      In_Sync    PRESENT ACTIVE E_PORT \
T_PORT T_MASTER G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
6   29 Online      In_Sync    PRESENT ACTIVE E_PORT T_PORT \
T_MASTER G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
6   30 Online      In_Sync    PRESENT ACTIVE E_PORT \
T_PORT T_MASTER G_PORT U_PORT

```

SEE ALSO [portShow](#), [switchShow](#)

portLedTest

Cycles user port LEDs.

Synopsis

```
portledtest
  [--slot slot_number]
  [-ports itemlist]
  [-uports itemlist]
  [-npass count]
  [-action value]
```

Description

Use this command to exercise the user port LEDs in the current switch. When used without a port specifier, all user ports are tested.

For each port, the command cycles through the ON and OFF state by setting the ATTN LEDs to green for the ON condition and unlighted for the OFF condition. The SPEED LEDs are initially set to black before the test starts. The SPEED LEDs turn green while the test is running.

This diagnostic cannot be run on an operational switch. You must disable the switch using the chassisDisable command before you can run this test. After the command completes, the ATTN LEDs flash amber, indicating that the command has finished and exited. Enable the switch using the chassisEnable command to set the ATTN LEDs back to black.

The port LED behavior varies depending on the platform.

Notes

You cannot interrupt the test by pressing the return key (<cr>).

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot *slot*

Specifies the slot number on bladed systems. When used without the port option, this option exercises all user ports in the specified slot. When used with the port option, only the ports specified for the specified slot are tested.

-ports *itemlist*

Specifies a list of front-end blade ports to test. When a specific port is specified, the blade port reference is used. If you want to test a specific user port, you will need root access to the bladePortMap command to map the specified blade port to the desired user port. You can also use the -uports option to specify the user ports. Refer to itemList for more information on the itemlist parameter. When specifying ports on a chassis, the -ports operand must be preceded by the --slot operand.

-uports *itemlist*

Specifies a list of user ports to test. If this operand is omitted, by default the test will run on all valid blade ports in the slot. Refer to itemList for more information on the itemlist parameter. This option is not supported on Brocade FX8-24 blade.

-npass *count*

Specify the number of times to perform this test. The default value is 10.

-action action

Specifies the LED color. Valid values include the following:

0	This is the default action. Cycle all Port LEDs. C3 cycles are faster than C2 cycles.
1	Turn Port status LED off.
2	Turn Port status LED amber.
3	Turn Port status LED green.
4	Blink Port status LED Green. Supported only on C4 platforms.
5	Blink Port status LED Amber. Supported only on C4 platforms.
16	Not supported for C2, C3, and C4 platforms.
17	Not supported for C2, C3, and C4 platforms. Supported for the C3 core, and the port status LED blinks amber.

Examples

To test port LEDs on user port 1 use the corresponding value in the "BPt" column of the bladePortMap command (requires root permission):

```
switch:admin> portledtest --slot 1 -ports 213
```

```
Running portledtest .....
```

```
WARNING:
```

```
This test should NOT be aborted in the middle. If aborted, current  
blade or the switch (in-case of Pizza box) may become unusable.  
Reset the blade or the switch to recover.
```

```
PASSED.
```

SEE ALSO [chassisDisable](#), [chassisEnable](#), [fcipLedTest](#), [itemList](#), [switchDisable](#), [switchEnable](#)

portLogClear

Clears the port log.

Synopsis **portlogclear**

Description Use this command to clear the port log. It is recommended that you clear the port log before triggering an activity so that the log displays only the log events related to that activity.

If the port log is disabled, portLogClear enables it. The port log is disabled automatically when certain errors occur to allow the collection of all the information needed to understand the cause of the error. When the port log is disabled, the events already present in the log are preserved, but new events are not collected.

The following errors disable the port log:

- FCPH, EXCHBAD
- FCPH, EXCHFREE
- NBFMS, DUPEPORTSCN
- UCAST, RELICPDB

Refer to the Fabric OS Message Reference for more information on these errors.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To clear the port log:

```
switch:admin> portlogclear
switch:admin> portlogshow
port log is empty
```

SEE ALSO [portLogDump](#), [portLogShow](#)

portLogConfigShow

Displays the current port log configuration.

Synopsis **portlogconfigshow**

Description Use this command to display the current port log configuration.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the current port log configuration:

```
switch:admin> portlogconfigshow
max portlog entries = 16384
```

SEE ALSO [portLogResize](#)

portLogDisable

Disables the port log facility.

Synopsis **portlogdisable**

Description Use this command to disable the port log facility.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the port log facility:

```
switch:admin> portlogdisable
```

SEE ALSO [portLogEnable](#)

portLogDump

Displays the port log without page breaks.

Synopsis **portlogdump** [*count*[, *saved*]]

Description Use this command to display the port log, listing all entries in the log without page breaks. This command displays the same information as portLogShow, but portLogShow prompts you to press Enter between each page.

For an explanation of the information displayed by this command, refer to the portLogShow command.

If the port log is disabled while this command is executed, a warning message is displayed. Refer to the portLogClear command for more information.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

count

Specifies the maximum number of lines to be displayed. Only the most recent count entries are displayed. This operand is optional.

saved

Specify a nonzero value to display the saved port log from the last switch fault. Refer to upTime for conditions that cause a fault. The operand count is ignored when displaying the saved log. This operand is optional.

Examples To display 10lines of the portlog on a Brocade DCX:

```
switch:user> portlogdump 10
time          task          event    port cmd  args
-----
Mon Nov 16 21:52:15 2009
21:52:15.214 FCPH          seq      106  7f0
ed210000,00000000,000073ee,10010082,00008000
21:52:15.214 PORT          Tx3      106  2032 \
02ffffffd,00ffffffd,0701ffff,13010000
21:52:15.216 FCPH          read     106  2032
03ffffffd,00ffffffd,00000000,00008000,07010000
21:52:15.216 FCPH          seq      106  7f0
ed980000,07010000,00004143,0004001c,00008000
21:52:15.216 FCPH          write    106  2032
00ffffffd,00ffffffd,00000000,00008000,00000000
21:52:15.216 FCPH          seq      106  7f0
ed210000,00000000,000073ee,10010082,00008000
21:52:15.216 PORT          Tx3      106  2032 \
02ffffffd,00ffffffd,06ffffff,13010000
21:52:15.218 FCPH          read     106  2032
```

portLogDump

```
03ffffffd,00ffffffd,00000000,00008000,06fe0000
21:52:15.218 FCPH      seq      106  7f0 \
ed980000,06fe0000,00004143,0004001c,00008000
21:52:15.220 FCPH      seq      106  7f0
ed980000,06fc0000,00004143,0004001c,00008000
```

SEE ALSO [portLogClear](#), [portLogShow](#), [upTime](#)

portLogDumpPort

Displays the port log of a specified port without page breaks.

Synopsis **portlogdumpport** *port_index*

Description Use this command to display the port log for a single port specified by its port index number. The command displays all entries in the log without any page breaks. This command is identical to portLogShowPort, except that portLogShowPort prompts you to press Enter to display the next page.

Port logs are circular log files in the switch firmware, which can save up to 65,536 entries depending on the hardware platform. Use portLogConfigShow to display the current size of the port log. Once the log has reached its maximum size, new entries displace the oldest ones. Port logs capture switch-to-device, device-to-switch, switch-to-switch, some device-to-device1, and control information

If the port log is disabled while this command is executed, a warning message is displayed. Refer to portLogClear command for more information.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

port_index

Displays the port log for the a single port specified by its port index number. Use switchShow for a listing of valid port index numbers.

Examples To display the port log dump for a port:

```
switch:user> portlogdumpport 14
time          task          event port  cmd  args
-----
08:35:27.899  tShell          pstate  14    OL1
08:35:27.899  tReceive        pstate  14    LR2
08:35:27.916  tReceive        pstate  14    AC
08:35:28.416  interrupt       scn     14    1
08:35:28.433  tFabric         ioctl1  14    90  \
101d9910,0
08:35:28.433  tFabric         Tx      14    164 \
02fffffd,00fffffd,0005ffff,10000000
08:35:28.433  tReceive        Rx      14    0  \
c0fffffd,00fffffd,00050006
08:35:28.433  tReceive        Rx      14    164 \
03fffffd,00fffffd,00050006,02000000
08:35:28.433  tTransmit       Tx      14    0  \
c0fffffd,00fffffd,00050006
08:35:28.433  tFabric         ioctl1  14    91  \
103646d8,0
08:35:28.466  tFabric         ioctl1  14    a7  3c,1
(output truncated)
```

SEE ALSO [portLogDump](#), [portLogClear](#), [portLogShow](#), [upTime](#)

portLogEnable

Enables the port log facility.

Synopsis **portogenable**

Description Use this command to enable the port log facility.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable the port log facility:

```
switch:admin> portlogenable
```

SEE ALSO [portLogDisable](#)

portLogEventShow

Displays information about port log events.

Synopsis **portlogeventshow**

Description Use this command to display information about the ID associated with the various port log events. The Disabled field indicates whether the port log for that event ID is disabled (1) or enabled (0).

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display information about port log events:

```
switch:admin> portlogeventshow
ID      Event-Name      Disabled
-----
1       start           0
2       disable         0
3       enable          0
4       ioctl           0
5       Tx              0
6       Tx1             0
7       Tx2             0
8       Tx3             0
9       Rx              0
10      Rx1             0
11      Rx2             0
12      Rx3             0
13      stats           0
14      scn             0
15      pstate          0
16      reject          0
17      busy            0
18      ctin            0
19      ctout           0
20      errlog          0
21      loopscn         0
22      create          0
23      debug           1
24      nbrfsm          0
25      timer           0
(output truncated)
```

SEE ALSO [portLogTypeDisable](#), [portLogTypeEnable](#)

portLoginShow

Displays port login status of devices attached to the specified port and the details of the last logged out device.

Synopsis portloginshow [*slot*]/*port* [-history]

Description Use this command to display port login status received from devices attached to the specified port. For each login, this command displays the following fields:

Type	Type of login can display one of the following:
fd	FDISC, Discover F_Port Service Parameters or Virtual N_Port login.
fe	FLOGI, Fabric Login to Fabric F_Port.
ff	PLOGI, Port Login to specific N_Ports or well-known addresses like Name Server.
PID	The 24-bit Port ID of the attached device.
WorldWideName	The port's world wide name.
credit	The credit for this login as appropriate. This is BB (buffer-to-buffer) credit for Flogs and EE (end-to-end) credit for PLOGIs.
df_sz	The default frame size for this login.
cos	Class of Services supported. This can be a combination of the following bits:
4	Class 2 is supported.
8	Class 3 is supported.
logout time	Timestamp when the device is logged out from a port.

Further information about each login is displayed after these columns, including the Port ID of the well-known address or N_Port that was the target of the PLOGI, if applicable.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not applicable to embedded FCoE ports. Use fcoeLoginShow.

Operands This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).

port

Specify the port for which to display login status information, relative to its slot for bladed systems. Use switchShow for a list of valid ports.

-history

Displays the details of the last logged out device on a port for the login types "fe" and "fd". The time stamp displayed under the column "logout time" is in the UTC format.

Examples To display the logins received by Port 23 (revealing one FLOGI (type fe) and two PLOGIs):

```
switch:admin> portloginshow 23
Type  PID      World Wide Name      credit df_sz cos
=====
fe  201700  21:00:00:e0:8b:05:a3:c9  3   2048   8  scr=1
ff  201700  21:00:00:e0:8b:05:a3:c9  0     0   8  d_id=FFFC20
ff  201700  21:00:00:e0:8b:05:a3:c9  0     0   8  d_id=FFFFFC
```

To display the last logged out device on a port:

```
switch:admin> portloginshow 1/0 -history
Type  PID      World Wide Name      logout time
=====
fd  550002  30:0c:02:05:1e:61:23:8f  09/17/2014 13:56:01
fd  550001  30:0c:01:05:1e:61:23:8f  09/17/2014 13:56:02
fe  550000  30:0c:00:05:1e:61:23:8f  09/17/2014 13:56:02
fd  550001  30:0c:01:05:1e:61:23:8f  09/18/2014 05:49:37
```

SEE ALSO [fcProbeShow](#), [portShow](#)

portLogPdisc

Sets or clears the debug_pdisc_flag.

Synopsis **portlogpdisc 0 | 1**

Description Use this command to set or clear the debug_pdisc_flag. This command is part of the environmental monitor. A setting of 1 enables logging of Port Discovery parameters. The PDISC log is disabled by default.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

0 | 1 Specify 0 to clear or 1 to set the debug_pdisc_flag. The default is 0.

Examples To set the debug_pdisc_flag:

```
switch:admin> portlogpdisc 1  
PDISC log setting = 1
```

SEE ALSO None

portLogReset

Enables the port log facility.

Synopsis **portlogreset**

Description Use this command to enable the port log facility.

Notes Refer to portLogClear for events that may disable the port log facility.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable the port log:

```
switch:admin> portlogreset
```

SEE ALSO None

portLogResize

Resizes the port log to include a specified number of entries.

Synopsis **portlogresize** *num_entries*

Description Use this command to resize the port log to include a specified number of entries. If the specified number of entries is less than the already configured port log size, there is no change.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

num_entries Specifies the number of port log entries. The valid range of values is 16,384 to 32,768.

Examples To resize the portlog:

```
switch:admin> portlogresize 17288
```

SEE ALSO [portLogConfigShow](#)

portLogShow

Displays the port log with page breaks.

Synopsis **portlogshow** [*count*[, *saved*]]

Description Use this command to display the port log with page breaks. This command displays the same information as portLogDump, but one page at a time.

The port log is a circular log file in the switch firmware which can save up to 65,536 entries depending on the hardware platform. Use portLogConfigShow to display the current port log size. Once the log has reached the maximum size, new entries replace the oldest ones. The port log captures switch-to-device, device-to-switch, switch-to-switch, some device-to-device, and control information.

If the command is executed while the port log is disabled, a warning message is displayed. Refer to the portLogClear command for more information.

For each log entry, the following information is displayed:

Time

Displays the event date and time in milliseconds. The clock resolution is 16 milliseconds.

Task

Displays the name of the task that logged the event or "interrupt" if the event was logged in interrupt context, or "unknown" if the task no longer exists.

Event

Displays the task event that generated the log entry. Possible events include the following:

start

A switch start or restart event.

disable

A port is disabled.

enable

A port is enabled.

ioctl

A port I/O control is executed.

Tx

A frame is transmitted (class is indicated).

Rx

A frame is received (class is indicated).

scn

A state change notification is posted.

pstate

A port changes physical state.

reject

A received frame is rejected.

busy	A received frame is busy.
ctin	A CT based request is received.
ctout	A CT based response is transmitted.
errlog	A message is added to the error log.
loopscn	A loop state change notification is posted.
create	A task is created.
debug	Indicates a debug message.
nbrfsm	Indicates a neighbor state transition.
sn	Indicates a speed negotiation state.
fcin	Indicates an incoming Fibre Channel information unit.
fcout	Indicates an outgoing Fibre Channel information unit.
read	Indicates an information unit header log from a read operation.
write	Indicates an information unit header log from a write operation.
err	Indicates an information unit header log of an FC error frame.
frame	Indicates a Fibre Channel frame payload.
nsRemQ	Indicates an interswitch name server query.
rscn	Indicates a Registered State Change Notification.
xalloc	Allocates an exchange.
xfree	Frees an exchange.
xerr	Indicates an exchange error.

xstate	Indicates an exchange state.
payload	Indicates a frame payload.
Port	Displays the port number that logged the event.
Cmd	Defined by the event. Displays a value defined by the event as follows:
ioctl	I/O control command code.
Tx & Rx	Frame payload size.
scn	New state (see state codes below).
pstate	New physical state (see pstate codes below).
ctin	The CT-subtype:
fc	Simple Name Server.
f8	Alias Server.
ctout	The same as ctin.
errlog	Error level (refer to errShow).
loopscn	The current loop state during loop initialization. Possible values areas follows:
OLP	Offline (disconnected or nonparticipating).
LIP	FL_Port entered INITIALIZING or OPEN_INIT state.
LIM	LISM completed, FL_Port became the loop master.
BMP	Loop init completed, FL_Port in MONITORING state.
OLD	Port transitioned to the OLD_PORT state.
TMO	Loop init times out.

Args

Displays additional information about the event as follows:

start

Start type: 0 = enable ports, 100 = disable ports.

disable

State (refer to state codes).

enable

Mode: 0 normal; nonzero loopback.

Tx & Rx

Header words 0,1,4 (R_CTL,D_ID,S_ID,OX_ID,RX_ID) and the first payload word.

reject

FC-PH reject reason.

busy

FC-PH busy reason.

ctin

Argument 0 is divided into two 16-bit fields: [A] A bit map indicating whether subsequent arguments are valid (0001 means argument 1 is valid, 0003 means arguments 1 and 2 are valid). [B] The CT-based service command code.

Argument 1 is the first word of the CT payload, if applicable (as specified in [A]). Argument 2 is the second word of the CT payload, if applicable (as specified in [A]).

ctout

Argument 0 is also divided into two 16-bit fields: [A] a bit map indicating whether subsequent arguments are valid (0001 means argument 1 is valid, 0003 means arguments 1 and 2 are valid). [B] the CT command code indicating whether an accept (8002) or a reject (8001). If [B] is an accept, argument 1 and 2 represents the first and second words of the CT payload, if applicable (as specified in [A]). If [B] is a reject, argument 1 contains the CT reject reason and explanation code.

errlog

Error type (refer to errShow).

loopscn

The meaning further depends on each loop state:

OLP

Offline reason code, usually zero.

LIP

Reason code for LIPs initiated by FL_Port, if the code value is 800x (x = [1,0xc], see below), or the lower two bytes of the LIP received, if the code value is other than 800x.

LIM

Usually zero.

BMP

Memory address for the loop bitmap.

OLD	Usually zero.
TMO	Encoded value of the state when loop initialization timed out This value is usually equal to the first word of a loop init frame payload. Other possible values include the following:
2	LIP (req. INITIALIZING) timeout.
94	FOFO ARB(FO) timeout.
40	CLS timeout.

Codes used in various fields are as follows:

state	Valid state values include the following:
1	Online
2	Offline
3	Testing
4	Faulty
5	E_Port
6	F_Port
7	Segmented
pstate	Valid pstate values include the following:
AC	Active State
LR1	Link Reset: LR Transmit State
LR2	Link Reset: LR Receive State
LR3	Link Reset: LRR Receive State
LF1	Link Failure: NOS Transmit State

LF2
Link Failure: NOS Receive State

OL1
Offline: OLS Transmit State

OL2
Offline: OLS Receive State

OL3
Offline: Wait for OLS State

LIP reason

Valid LIP reason codes include the following:

8001
Retry loop init.

8002
Start loop after gaining sync.

8003
Restart loop after port reset.

8004
LIP when a loop hangs.

8005
Restart loop if LIP received when sending out ARB(FO).

8006
LIP when an OPN returns.

8007
Restart loop when LIPs received in OLD_PORT AC state.

8008
Restart loop if loop not empty but E_Port loopback.

8009
LIP as requested by the LINIT ELS received.

800a
LIP as requested by the LPC ELS received.

Speed Negotiation States

Valid states include the following:

INIT
Start negotiation.

NM
Negotiate master.

WS
Wait for signal.

NF
Negotiation follows.

NC

Negotiation complete.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

count

Specifies the maximum number of lines to display. Only the most recent count entries are displayed. This operand is optional.

saved

Specifies a nonzero value to display the saved port log from the last switch fault. Refer to upTime for a list of conditions that cause a fault. The count is ignored when the saved log is displayed. This operand is optional.

Examples To view the port log for a port:

```
switch:user> portlogshow 24
time          task event port cmd  args
-----
17:05:30.384  PORT Rx      0  40  02ffffffd,00ffffffd,08fbffff,14000000
17:05:30.384  PORT Tx      0   0  c0ffffffd,00ffffffd,08fb0e02
17:05:30.384  PORT debug    0      00c0ffee,00fd0118,00000000,00000001
17:05:30.389  PORT Rx      1  40  02ffffffd,00ffffffd,08fdffff,14000000
17:05:30.389  PORT Tx      1   0  c0ffffffd,00ffffffd,08fd0e03
17:05:30.389  PORT debug    1      00c0ffee,00fd013c,00000000,00000001
17:05:30.504  PORT Rx      2  40  02ffffffd,00ffffffd,08feffff,14000000
17:05:30.504  PORT Tx      2   0  c0ffffffd,00ffffffd,08fe0e04
17:05:30.504  PORT debug    2      00c0ffee,00fd0182,00000000,00000001
17:05:30.507  PORT Rx      3  40  02ffffffd,00ffffffd,08ffffff,14000000
17:05:30.507  PORT Tx      3   0  c0ffffffd,00ffffffd,08ff0e05
17:05:30.508  PORT debug    3      00c0ffee,00fd0148,00000000,00000001
17:05:31.081  PORT Tx      0  40  02ffffffd,00ffffffd,0e06ffff,14000000
17:05:31.082  PORT debug    0      00c0ffee,00fd0188,14000000,00000001
17:05:31.084  PORT Rx      0   0  c0ffffffd,00ffffffd,0e060902
17:05:31.772  PORT Tx      1  40  02ffffffd,00ffffffd,0e07ffff,14000000
17:05:31.772  PORT debug    1      00c0ffee,00fd014a,14000000,00000001
17:05:31.774  PORT Rx      1   0  c0ffffffd,00ffffffd,0e070906
17:05:31.775  PORT Tx      2  40  02ffffffd,00ffffffd,0e08ffff,14000000
17:05:31.775  PORT debug    2      00c0ffee,00fd015c,14000000,00000001
17:05:31.777  PORT Rx      2   0  c0ffffffd,00ffffffd,0e080907
17:05:31.778  PORT Tx      3  40  02ffffffd,00ffffffd,0e09ffff,14000000
17:05:31.779  PORT debug    3      00c0ffee,00fd015e,14000000,00000001
17:05:31.782  PORT Rx      3   0  c0ffffffd,00ffffffd,0e090908
```

SEE ALSO [portLogClear](#), [portLogDump](#), [upTime](#)

portLogShowPort

Displays the port log of a specified port with page breaks.

Synopsis **portlogshowport** *port_index*

Description Use this command to display the port log of a specified port with page breaks. This command displays the same information as portLogDumpPort, except that portLogDumpPort does not prompt you to press Enter to display the next page.

If the command is executed while the port log is disabled, a warning message is displayed. Refer to the portLogClear command for more information.

Notes Refer to the portLogShow command for a description of the data returned by this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

port_index Displays the port log for a single port specified by its port index number. Use switchShow for a listing of valid port index numbers.

Examples To display the port log for port 14:

```
switch:user> portlogshowport 14
time      task      event port  cmd  args
-----
08:35:28.483  tFabric    scn    14    0
08:35:27.899  tShell     pstate 14    OL1
08:35:27.899  tReceive   pstate 14    LR2
08:35:27.916  tReceive   pstate 14    AC
08:35:28.416  interrupt  scn    14    1
08:35:28.433  tFabric    ioctl  14    90  101d9910,0
08:35:28.433  tFabric    Tx     14    164 \
        02fffffd,00fffffd,0005ffff,10000000
08:35:28.433  tReceive   Rx     14    0  \
        c0fffffd,00fffffd,00050006
08:35:28.433  tReceive   Rx     14    164 \
        03fffffd,00fffffd,00050006,02000000
08:35:28.433  tTransmit  Tx     14    0  \
        c0fffffd,00fffffd,00050006
08:35:28.433  tFabric    ioctl  14    91  103646d8,0
08:35:28.433  tFabric    ioctl  14    92  103646d8,0
08:35:28.466  tFabric    ioctl  14    a7  3c,1
08:35:28.466  tFabric    pstate 14    LR1
08:35:28.466  tReceive   pstate 14    LR3
08:35:28.466  tReceive   pstate 14    AC
(output truncated)
```

SEE ALSO [portLogClear](#), [portLogDumpPort](#), [portLogShow](#), [upTime](#)

portLogTypeDisable

Disables the port log of a specified type.

Synopsis **portlogtypedisable** *id*

Description Use this command to disable the port log for a specified port log type.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

id

Specifies a nonzero value that corresponds to the port log type to be disabled. Use portLogEventShow for a listing of values corresponding to supported log types.

Examples To disable logging of type 2 port log events:

```
switch:admin> portlogtypedisable 2
```

SEE ALSO [portLogDisable](#), [portLogEventShow](#), [portLogTypeEnable](#)

portLogTypeEnable

Enables the port log of a specified port log type.

Synopsis **portlogtypeenable** *id*

Description Use this command to enable the port log for a specified port log type.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

id Specifies a nonzero value that corresponds to the port log type to be enabled. Use portLogEventShow for a listing of values corresponding to supported log types.

Examples To enable logging of type 2 port log events:

```
switch:admin> portlogtypeenable 2
```

SEE ALSO [portLogEventShow](#), [portLogTypeDisable](#)

portLoopbackTest

Performs a functional test of port N->N path.

Synopsis **portloopbacktest**
 [--slot *slot***]**
 [-nframes *count***]**
 [-lb_mode *mode***]**
 [-spd_mode *mode***]**
 [-ports *itemlist***]**
 [-uports *itemlist***]**

Description Use this command to verify the functional operation of the switch by exercising the blade ports of the switch.

This test sends frames from a given port's transmitter and loops them back into the same port's receiver. The loopback is done at the parallel loopback path. The path traversed in this test does not include the media or the fiber cable. Only one frame is transmitted and received at any given time.

The port LED blinking pattern depends on the hardware platform on which the test is run. On 8 Gbps-capable platforms, the LEDs flicker green rapidly while the test is running. Only the ports on which the test is running flicker green. On 16 Gbps-capable platforms, the LEDs on all ports will flash amber, then turn to green, and then return to amber. After the test completes the lights turn to the expected switch disabled pattern. This difference in LED patterns is due to a difference in the ASIC design. Refer to the "Supported hardware and software" section in the Fabric OS Command Reference for a mapping of ASIC types to switch models.

The test performs the following operations:

1. Sets all ports for parallel loopback.
2. Creates a frame F of maximum data size (2,112 bytes).
3. Transmits the frame F through port N.
4. Picks up the frame from the same port N.
5. Checks if any of the following eight statistic error counters report nonzero values:
 ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3
6. Checks whether the transmit, receive, or class 3 receiver counters are stuck at some value.
7. Checks whether the number of frames transmitted is not equal to the number of frames received.
8. Repeats Steps two through seven for all ports until one of the following conditions is met:
 - a. The number of frames (or pass count) requested is reached.
 - b. All ports are marked bad.

At each pass, the frame is created from a different data type of a palette of seven. If seven passes are requested, seven different data types are used in the test. If eight passes are requested, the first seven frames use unique data types, and the eighth is the same as the first. The seven data types are:

```

CSPAT: 0x7e, 0x7e, 0x7e, 0x7e, ...
BYTE_LFSR: 0x69, 0x01, 0x02, 0x05, ...
CHALF_SQ: 0x4a, 0x4a, 0x4a, 0x4a, ...
QUAD_NOT: 0x00, 0xff, 0x00, 0xff, ...
CQTR_SQ: 0x78, 0x78, 0x78, 0x78, ...
CRPAT: 0xbc, 0xbc, 0x23, 0x47, ...
RANDOM: 0x25, 0x7f, 0x6e, 0x9a, ....

```

Notes Do not abort this test prematurely, using CTRL-C or q to quit. Doing so may cause the test to report unexpected errors. Errors may vary depending on the hardware platform.

You cannot interrupt the test by pressing the return key (<cr>).

This command does not support High Availability (HA).

The following restrictions apply on the Brocade G620 switch:

- 32 Gbps SFPs supports 32G/16G/8G speeds
- 16 Gbps SFPs supports 16G/8G/4G speeds
- 10 Gbps SFPs supports only 10G speed
- 10 Gbps spd_mode works only with lb_mode 2 with 10 Gbps SFP only and does not work with lb_mode 1
- 16 Gbps and 32 Gbps SFPs do not support 10G speed in lb_mode 1 or 2

The Brocade 8510/DCX series cannot negotiate speeds of 1 Gbps.

This diagnostic cannot be run on an operational switch. You must disable the switch using the chassisDisable command before you can run this test. After the test completes, re-enable the switch using the chassisEnable command. Do not use the switchDisable command followed by manually shutting down the ports before running the test. This will not work because executing switchEnable after the test completes will leave the ports in the same state as before. The only way to bring the ports down before running the test and back up after the test completes is by using the chassisDisable command followed by the chassisEnable command.

The 32 Gbps-capable platforms support only lb_mode 1 and 2.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--slot *slot*

Specifies the number of the slot on which to run the diagnostics. All eligible ports relative to the slot number are tested. The default is 0 and designed to operate on fixed-port-count products.

-nframes *count*

Specifies the number of frames to send. The test progresses until the specified number of frames has been transmitted on each port. The default value is 1. The maximum number of frames sent is limited to 1000 on 16 Gbps-capable platforms and to 2000 on 32 Gbps-capable platforms. If the number of frames exceeds maximum limit, the test proceeds with the initial maximum limit of frames (for example, 1000 on 16 Gbps-capable platforms) and displays a warning message.

-lb_mode mode

Specifies the loopback mode for the test. By default, this test uses the internal loopback. Valid values depend on the platform on which the command is executed. Unsupported values are rejected with an appropriate message. To run this test with mode values of 1 and 7, loopback cables must be connected to all front end ports or the test will fail.

1

Port Loopback (loopback plugs)

2

External (SERDES) loopback

5

Internal (parallel) loopback. This parameter is not supported in 16 Gbps-capable platforms.

7

Backend bypass & port loopback. This parameter is supported on Brocade FX8-24 blade only.

8

Backend bypass & SERDES loopback

-spd_mode mode

Specifies the speed mode for the test. This parameter controls the speed at which each port is operated. The speed option chosen or defaulted to must not exceed the speed capability of the SFP device or the test results will be unpredictable. For example, if you use an 8 Gbps SFP in a 16 Gbps-supported slot, you must use spd_mode 8 option to specify 8 Gbps speed. The speed modes 8, 10, 16, and 32 are supported in 32 Gbps-capable platforms.

2

Runs test at 2 Gbps.

4

Runs test at 4 Gbps.

8

Runs test at 8 Gbps (Default for 8 Gbps platforms).

10

Runs test at 10 Gbps (Default for 10 Gbps platforms). This speed mode is not supported on 16 Gbps core blades.

16

Runs test at 16 Gbps (Default for 16 Gbps platforms).

32

Runs test at 32 Gbps (Default for 32 Gbps platforms). This speed mode is not supported in 8 Gbps-capable and 16 Gbps-capable platforms.

-ports itemlist

Specifies a list of blade ports to test. By default, all of the blade ports in the specified slot (--slot) are used. You must have root access to the bladePortMap command if you want to map a specific front-end blade port to a user port. You can also use the -uports option to specify the user ports. Refer to itemList for more information on the itemlist parameter.

portLoopbackTest

-uports *itemlist*

Specifies a list of user ports to test. If this operand is omitted, by default the test will run on all valid blade ports in the slot. Refer to `itemList` for more information on the `itemlist` parameter. This option is not supported on Brocade FX8-24 blade.

Diagnostics

When it detects failures, the test may report one or more of the following error messages. If errors persist, contact Technical Support.

DATA

Data received does not match the data sent.

ERRSTAT

Errors were found in the ASIC statistics.

INIT

Port failed to initialize.

PORTDIED

A previously initialized port went to an uninitialized state.

STATS

Errors were found in the ASIC statistics.

TIMEOUT

Did not receive a frame in the given timeout period.

XMIT

Frame transmission failure.

Examples

To run a functional test in default mode:

```
switch:admin> portloopbacktest

Running portloopbacktest .....

PASSED.
```

SEE ALSO

[itemList](#)

portName

Assigns or displays port names.

Synopsis

portname

portname [*slot*]/*port* [-**n** *name*]

portname -i [*index1*[-*index2*][...]][-**f**] [-**n** *name*]

portname -x [*hex1*[-*hex2*] [...]][-**f**] [-**n** *name*]

portname -slot *slot1*[-*slot2*] [...][-**n** *name*]

portname -d [*format_string* | **-default** | **-help**]

portname -h

Description

Use this command to assign a port name to a specified port or to a range of ports. The port name is included in the portShow output; it should not be confused with the world wide port name.

When a port name is not configured, the portName command displays a default name in the portShow output. The format of the default name is as follows:

- On standalone platforms, the default port name displays as portportnumber, for example, "port10."
- On enterprise-class platforms, the default port name displays as slotslotnumber portportnumber, for example, "slot1 port5."

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers. When issued without the name operand, this command displays the names of the specified ports or of all ports, if no port is specified.

Specifying multiple ports with the index (-i or -x) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index argument to display the portSwap status, or alternately use the portSwapShow command. When Ficon Management Server (FMS) mode is enabled, specifying a port range will fail. This is because FMS does not permit multiple ports to have the same port name. The first port in the range gets the port name, all other ports in the range will fail. Multiple ports can have the same port name in non-FMS mode.

Like all other configurable port attributes, port names persists across reboots and power cycles. They are not affected by the configDefault command, but they are cleared by portCfgDefault.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port

Assigns a name to a single port identified by its port number.

-i *index1*[-*index2*]

Assigns a name to a single port or to a range of ports identified by port index numbers, for example, -i 1/3-8 -n backup. You may specify multiple index ranges separated by a space, for example, -i 35-45 61-68 -n backup.

-x [*hex1* [-*hex2*]]

Specifies a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-f

Ignores nonexistent ports. This operand is valid only with the -i and -x options.

-slot [*slot1*[-*slot2*]]

Assigns a name to all ports on a slot or on a range of slots, for example, -s 3-5 -n backup. Multiple slot ranges are not supported with this command.

-n *name*

Specifies the name to be assigned to the ports. The port name is a character string up to 128 characters, including spaces and characters, and excluding commas (,), semicolons (;), backslashes (\), and the at sign (@). When FICON Server Management mode is enabled, the port name character string can only be up to 24 characters in length. To erase a port name, execute the port name operand as an empty string in double-quotation marks (-n ""). This operand is optional; if omitted, the current port name is displayed.

Some characters require a qualifier or double quotation marks when used with a bash shell; for example, enter a single quotation mark as \', enter an exclamation mark as \!, or enter a pipe (|) as "|".

The empty string operand for port name (-n "") will not be effective if the default configuration parameter for "Disable Default PortName" is set to N or enabled. Use the configure command to set this parameter to Y or disabled so that -n "" can be effective.

-d

Configures or displays the dynamic port name format. When executed without optional parameters, this command displays the configured dynamic port name format.

format_string

Specifies the dynamic port name format. The following control keys and their corresponding port name fields are supported:

- S - Switch name
- T - Port type
- I - Port index
- C - Slot number/port number
- A - Alias name
- F - FDMI hostname
- R - Remote switch name

The control keys for port name fields must be separated using periods (.), dashes (-), or underscores (_). Control keys are case-sensitive. The *format_string* must be enclosed in double quotes.

-default

Sets the dynamic port name format to the default format string "S.T.I.A".

-help

Displays the syntax and usage guidelines for the -d operand.

-h

Displays the command usage.

Examples

To name a port tape drive 8:

```
switch:admin> portname 1/3 -n "Tape drive 8"
switch:admin> portname 1/3
Tape drive 8
```

To assign a name to a range of ports specified by port index numbers:

```
switch:admin> portname -i 22-26 -n backup
switch:admin> portname -i 22-26
port 22: backup
port 23: backup
port 24: backup
port 25: backup
port 26: backup
```

To assign a name to all ports on slot 1 and 2:

```
switch:admin> portname -s 1-2 -n backup
switch:admin> portname -s 1-2
port 416: backup
port 417: backup
port 418: backup
port 419: backup
port 420: backup
port 421: backup
(output truncated)
```

To configure dynamic port name format:

```
switch:admin> portname -d "S.T.I.R.A"
```

To display the configured dynamic port name format:

```
switch:admin> portname -d
S.T.I.R.A
```

SEE ALSO [configDefault](#), [configure](#), [portCfgDefault](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portPeerBeacon

Sets the port peer beaconing to physically identify the interconnections between ports.

Synopsis

```
portpeerbeacon --enable [slot/]port
portpeerbeacon --disable [slot/]port
portpeerbeacon --show -all
portpeerbeacon --help
```

Description Use this command to turn on or off the port peer beaconing to physically identify the interconnections between ports.

Using this command, the administrator can turn on the beaconing on both ends of the link and physically search the other switches or devices for the beacon pattern to find the peer port. The beaconing pattern is alternating green and amber LEDs every 1.2 seconds.

In the case of the trunk ports, the entire trunk group will be beaconed. This command is supported for more than one port or one trunk group. Newly added trunk ports are automatically included to beacon. Similarly, disabling the portpeerbeacon on a trunk port disables beaconing on the entire trunk group.

Port peer beaconing is supported on N_Ports, E_Ports, EX_Ports, F_Ports, AE_Ports, and trunk ports. The command is not supported on ICL ports.

Port peer beaconing is not supported if diagnostic tests are running on the port. Port peer beaconing is not supported with spinFab and is mutually exclusive of all the diagnostic commands.

Port peer beaconing remain unaffected when a port or trunk group is disconnected, toggled, or disabled.

The portPeerBeacon command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The portBeacon command enables or disables beaconing on a specified port.
- The switchBeacon command enables or disables beaconing on all ports in the current logical switch.
- The chassisBeacon command enables or disables beaconing on all ports in the chassis.
- The portPeerBeacon command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive except that the portPeerBeacon command overrides the portBeacon settings on a port, but portBeacon does not override port peer beaconing on a port. For example, if you enabled beaconing on the logical switch and you want to enable beaconing on the entire chassis, you must first disable switch beaconing with the switchBeacon command before you can use the chassisBeacon command to enable beaconing on the entire chassis. Likewise, existing portBeacon settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

To determine whether or not beaconing is enabled or disabled on the switch or chassis, use the switchBeacon or chassisBeacon command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the portBeacon --show -all command to display beaconing status. The switchShow command displays the status of the switchBeacon command only.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

<i>slot</i>	Specifies the slot number on which the port peer beaconing is available.
<i>port</i>	Specifies the number of the port to be configured, relative to its slot for bladed systems. Use switchShow for a list of valid ports.
--enable	Enables the port peer beaconing on a particular port.
--disable	Disables the port peer beaconing on a particular port even when the port is disabled or offline.
--show -all	Displays the ports on which the Port Peer Beaconing is active. It helps to find the ports that receive the ELS and start beaconing. The administrator can verify the connectivity from the Telnet instead of physically verifying the connection.
--help	Displays the command usage.

Examples To enable the port peer beacon on a port:

```
switch:admin> portpeerbeacon --enable 2/15
```

To disable the port peer beacon on a port:

```
switch:admin> portpeerbeacon --disable 15
```

To display the status of the port peer beacon on a chassis:

```
switch:admin> portpeerbeacon --show -all
PortPeerBeacon enabled port(s):
FID 128:
3/27, 3/28, 3/30, 3/31,
FID 10:
3/16, 3/17,
FID 20:
3/24, 3/25
```

portPeerBeacon

To display the trunk port port peer beacon information (in this example, 2/4, 2/8, and 3/4 are the master ports of their trunking group, and the other ports are the slave ports in their trunking group):

```
switch:admin> portpeerbeacon --show -all
PortPeerBeacon enabled port(s):
FID 128:
Trunk-2/4, 2/5, 2/7, 2/0, 2/1, 2/3, 2/2, 2/6,Trunk-2/8, 2/9, 2/10, 2/11,
FID 10:
Trunk-3/4, 3/5, 3/6, 3/7,
```

SEE ALSO [chassisBeacon](#), [portBeacon](#), [switchBeacon](#)

portPerfShow

Displays port throughput performance.

Synopsis

portperfshow

portperfshow *[[slot/]port1[-[slot/]port2]]*
[-tx -rx | -tx | -rx] [-t interval]

portperfshow -x *hex1[-hex2]*

portperfshow --help

Description

Use this command to display throughput information for all ports on a switch or chassis or to display the information for a specified port or port range. You can display throughput information about a single port identified by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range.. Output includes the number of bytes received and transmitted per interval. Throughput values are displayed as either bytes, kilobytes (k), megabytes (m), or gigabytes (g). Values are rounded down.

The data is displayed one column per port plus one column that displays the total for these ports. Results display every second or over a specified interval. Press Enter, Ctrl-c, or Ctrl-d to terminate the command. To run this command one time only, specify an interval of zero.

When executed with the command line arguments -tx, -rx, or -tx -rx, this command displays the transmitter throughput, the receiver throughput, or both. For ports with status of "No_Module," "No_Light," "No_SigDet," or "Loopback" throughput is displayed as 0.

An asterisk (*) in the output indicates a SIM port that is generating or receiving traffic.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When FastWrite or Tape Pipelining is enabled, the portPerfShow VE link output is different. The acceleration entity (FastWrite or Tape Pipelining) responds by sending XFER_RDY and status well ahead of the actual device's response to the host. The host sends data which is stored near the device and is delivered to the device only when the device is ready. Consequently, the data may be stored near the target for some brief period of time. In this case, the portPerfShow output on the VE link may not match the output on the device port.

Operands

This command has the following optional operands:

[slot/]port1[-[slot/]port2]

Displays throughput information for a single port or for a range of ports, relative to the slot number on bladed systems. Port numbers in a range must be separated by a dash (-), for example, 3-5, or 2/0-2/15. Port ranges cannot span slots. Use switchShow to display a listing of valid ports. Port operands are optional; if omitted, information for all ports is displayed.

-t *time_interval*

Specifies the interval, in seconds, between each sample. The default interval is one second. If no interval is specified, the default is used. To run this command one time only, specify an interval of zero.

-tx

Displays the transmitter throughput.

-rx

Displays the receiver throughput.

-tx -rx

Displays the transmitter and receiver throughput.

-x *hex1* [-*hex2*]

Accepts an index number or a range of index numbers within the same slot in hexadecimal format as input and displays the output in slot and port number format for chassis and index number format on switches.

Examples

To display performance information for all ports at a one second (default) interval:

```
switch:user> portperfshow
  0    1    2    3    4    5    6    7    8    9    10    11    12    13    14    15
=====
630.4m 0    0    0    0    0    0    0    0    0    0 630.4m 0    0    0    0    0

16    17    18    19    20    21    22    23    24    25    26    27    28    29    30    31
=====
0 210.1m 840.5m 210.1m 0    0    0    0    0    0    0    0    0    0    0    0

32    33    34    35    36    37    38    39    Total
=====
0    0    0    0    0    0    0    0    2.5g

  0    1    2    3    4    5    6    7    8    9    10    11    12    13    14    15
=====
630.4m 0    0    0    0    0    0    0    0    0    0 630.4m 0    0    0    0    0

16    17    18    19    20    21    22    23    24    25    26    27    28    29    30    31
=====
0 210.1m 840.6m 210.1m 0    0    0    0    0    0    0    0    0    0    0    0

32    33    34    35    36    37    38    39    Total
=====
0    0    0    0    0    0    0    0    2.5g
(output stopped)
```

To display port performance for all ports with an interval of 5 seconds:

```
switch:user> portperfshow -t 5

  0    1    2    3    4    5    6    7    8    9    10    11    12    13    14    15
=====
630.4m 0    0    0    0    0    0    0    0    0 112 630.4m 0    0    0    0    0
```

```

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
=====
0 210.1m 840.6m 210.1m 0 112 0 0 0 0 0 0 0 0 0 0

32 33 34 35 36 37 38 39 Total
=====
0 0 0 0 0 0 0 0 2.5g

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
=====
630.4m 0 0 0 0 0 0 0 0 0 630.4m 0 0 0 0 0

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
=====
0 210.1m 840.5m 210.1m 0 0 0 0 0 0 0 0 0 0 0 0

32 33 34 35 36 37 38 39 Total
=====
0 0 0 0 0 0 0 0 2.5g
(output truncated)

```

To display performance on a single port with at a 5 second interval:

```

switch:user> portperfshow 0 -t 5
0      Total
=====
630.4m 630.4m

0      Total
=====
630.3m 630.3m
(output truncated)

```

To display transmitter throughput for a single port at a 5 second interval:

```

switch:user> portperfshow 0 -tx -t 5
0
=====
210.1m
0
=====
210.1m
(output truncated)

```

To display receiver throughput for a single port at a 5 second interval:

```

switch:user> portperfshow 0 -rx -t 5
0
=====
420.3m
0
=====
420.2m
(output truncated)

```

To display port performance on a chassis for range of ports ('*' indicates a SIM port):

```
switch:user> portperfshow 0-2
 0      1      2      Total
=====
*      0      *      0
```

To display port performance on a chassis for range of ports at an interval of 5 seconds:

```
switch:user> portperfshow 12/0-12/6 -t 5
      0      1      2      3      4      5      6      Total
=====
slot 12: 840.6m 0      0      0      0      0      0 630.4m 1.4g
 0      1      2      3      4      5      6      Total
=====
slot 12: 840.6m 0      0      0      0      0      0 630.4m 1.4g
 0      1      2      3      4      5      6      Total
=====
slot 12: 840.6m 0      0      0      0      0      0 630.4m 1.4g
(output truncated)
```

To display performance information for a range of ports:

```
switch:user> portperfshow -x a-b
      10      11      Total
=====
      0      0      0
```

SEE ALSO [portStatsShow](#)

portRouteShow

Displays routing tables for the specified port.

Synopsis **portrouteshow** [*slot*]/*port*

Description Use this command to display the port address ID for a specified port and the contents of the following port routing tables:

External unicast routing table
Displays how the specified port forwards unicast frames to remote domains in the following format: domain_number: ports_bitmap

domain_number
The remote domain ID to which frames are ultimately routed.

ports_bitmap
The port number on the ASIC pair to which frames for the domain ID forward in bitmap hex format; for example, 0x0100 indicates port 8 on the ASIC pair. The arrangement of ports on an ASIC pair is specific to the system type. For any active port, this table contains at least one entry, which routes unicast frames destined to the embedded port (value 0x10000) of the local domain.

Internal unicast routing table
Displays how the specified port forwards unicast frames to a locally attached NX_Port in the following format: area_number: ports_bitmap

area_number
The area number of a device (or set of looped devices) attached to the local switch.

ports_bitmap
The format of ports_bitmap is the same as the one used in the external unicast routing table.

Broadcast routing table
Displays how the specified port forwards broadcast frames. There is one bit map entry in this table, similar to the bit maps in the other tables; however, this table typically has only Bit 16 set (value 0x10000), indicating this port always routes broadcast frames to the embedded port, for handling by the firmware.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot
For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

port
Specifies the number of the port to display, relative to its slot for bladed systems.

Examples To display the routing tables for a port:

```
switch:user> portrouteshow 4/15  
port address ID: 0x02bf00  
external unicast routing table:  
  1: 0x4 (vc=3)  
  2: 0x10000 (vc=0)  
  
internal unicast routing table:  
  60: 0x8000 (vc=2)  
  63: 0x1000 (vc=5)  
broadcast routing table:  
  0x10000
```

SEE ALSO [bcastShow](#), [fabricShow](#), [switchShow](#), [topologyShow](#), [uRouteShow](#)

portShow

Displays status and configuration parameters for ports and GbE ports.

Synopsis

portshow [*slot*][*ge*]*port*

portshow [*slot*]*port* **-link** [**-force**]

portshow -i [*index1* [*-index2*] [...]] [**-f**]

portshow -pid *pid*

portshow -x [*hex1* [*-hex2*] [...]]

portshow *option* [*slot*]*ge_port* [*optional_args*] [**--filter** *filter_args*]

portshow *option* [**all** | *ve_port*] *arguments*
[*optional_arguments*] [**--filter** *filter_args*]

portshow *option* [**all** | *ge_port*] *arguments*
[*optional_arguments*] [**--filter** *filter_args*]

Description

Use this command to display general port status and specific configuration parameters for a specified port, GbE port, or VE_Port.

If this command is executed for a specified port with no additional options, it displays general status and configuration for that port. If executed with optional arguments for a Gigabit Ethernet (GbE) port or VE_Port, the command displays extension-related port configuration parameters specific to the Brocade 7840 switch, and the Brocade FX8-24 and the Brocade SX6 extension blades.

The behavior of this command is platform-specific. Some command options are not available on all platforms. Use the following section headings to navigate this page.

- Display general port status information on all platforms
- Display IP Interface configurations on the Brocade 7840, SX6, or FX8-24 platforms:
 - portshow ipif - Displays the local IP interfaces.
 - portshow arp - Displays the content of the address resolution protocol (ARP) table.
 - portshow iproute - Displays static routes on the IP interface.
 - portshow vlantag - Displays the IP interface VLAN configuration. Supported on the Brocade FX8-24 only.
 - portshow autoneg - Displays autonegotiation status.
 - portshow ipsec-policy - Displays the IPSEC Policy information. Supported on Brocade 7840 switch and the Brocade SX6 extension blade only.
 - portshow mgmtif - Displays the inband management interfaces. Supported on the Brocade FX8-24 only.
 - portshow mgmtroute - Displays the routes for the inband management interfaces. Supported on the Brocade FX8-24 only.
 - portshow lag - Displays the static link aggregation group (LAG) information. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
 - portshow tcl - Displays the Traffic Control List (TCL) information. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
 - portshow lan-stats - Displays the LAN statistics. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
 - portshow sla - Displays the Service Level Agreement (SLA) statistics. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
 - portshow filter-set - Displays the details of the configured filter-sets.
 - portshow app-type - Displays the details of the configured application types.
- Display extension tunnels, circuits, management interfaces and FICON statistics on the Brocade 7840, SX6, or FX8-24 platforms:
 - portshow fcipunnel - Displays extension tunnels.
 - portshow fcipcircuit - Displays extension circuits.
 - portshow xtun - Displays FICON and FCP emulation statistics and current runtime conditions.

To display the command usage on the switch, use portShow [action].

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Some of the features supported by this command may require a license.

In an AD context, if one of the L_Ports or NPIV ports is a part of the current AD, the complete device information attached to the port is shown in the output.

Function General port status display commands supported on all platforms

Synopsis **portshow** [*slot*][*ge*]*port*

portshow -i [*index1*[-*index2*] [...]] [-*f*]

portshow -x [*hex1*[-*hex2*] [...]]

portshow -pid *pid*

Description

Use this command to display general port status and configuration parameters for the specified port. This command is valid on all platforms, but the output is platform-specific and not all fields are displayed on all platforms.

The following general information is displayed when the command is issued for a non-GbE port without additional arguments:

portIndex	Index number assigned to the port.
portName	Name assigned to the port by the portName command. On standalone platforms, the default port name is the port number, for example, "port5". On enterprise-class platforms, the default port name is a combination of the slot number and the port number, for example, "slot1port5".
portHealth	Current health of the port (requires a Fabric Vision license).
Authentication	Authentication type and associated parameters (if applicable) used on the port at port online.
None	No authentication was performed.
FCAP	FCAP authentication was performed.
DHCHAP	DHCHAP authentication was performed. Also displays DH group and hash type used for authentication.
portDisableReason	Provides an explanation for the port's disabled status.
portCFlags	Port control flags.
portFlags	A bit map of port status flags, including information on the type of port, whether it is fully online, and whether logins have been accepted. The port flags display ENCRYPT if the port has been enabled for encryption. The port flags display COMPRESS if the port has been enabled for compression. The port flags display D_PORT if the port has been enabled as a diagnostic port. The port flags display FLOGI_LOGO if the base device logs out and at least one NPIV is online.
portType	The port's type and revision numbers.
POD Port	Ports on Demand License status.

portState

The port's SNMP state:

Online

Up and running.

Offline

Not online, see portPhys for more detail.

Testing

Running diagnostics.

Faulty

Failed diagnostics.

Persistently Disabled

Persistently disabled.

Protocol

Protocol used by the port: FC or FCoE.

portPhys

The port's physical state:

No_Card

No interface card present.

No_Module

No module (GBIC or other) present.

No_Light

Module is not receiving light (8 Gbps-capable ports only).

No_SigDet

No signal detected; displays when a quad small form-factor pluggables (QSFPs) is installed without cables).

Mod_Inv

Incompatible vendor or module speed mismatch.

No_Sync

Receiving light but out of sync.

In_Sync

Receiving light and in sync.

Laser_Flt

Module is signaling a laser fault.

Port_Flt

Port marked faulty.

Lock_Ref

Locking to the reference signal.

portScn

The port's last State Change Notification.

port generation number

The port's generation number for the last offline state change.

portId

The port's 24-bit port ID.

portIfId

The user port's interface ID.

portWwn

The port's world wide name.

portWwn of devices(s) connected

The World Wide Port Names of connected devices. If the base device logs out and one or more NPIVs are online, the PWWN of the NPIVs online are displayed.

Distance

The port's long-distance level. In the case of LD mode, the user configured distance and actual distance also are displayed.

Port part of other AD

Yes or No.

portSpeed

The port's fixed speed (1, 2, 4, or 8 Gbps) or negotiated speed (N1 Gbps, N2 Gbps, N4 Gbps, N8 Gbps or AN).

FEC

Forward error correction (FEC) status: displays "active" if FEC is enabled on the port and the port is online; displays "inactive" if the feature is disabled. Refer to the portCfgFec command for more information.

LE domain

The LE domain ID.

FC FastWrite

The status of FC FastWrite (ON or OFF) (Deprecated).

If the port is configured as an EX_Port, the following additional port information is displayed:

EX_Port Mode

The port is configured as an EX_Port.

Fabric ID

The fabric ID assigned to this EX_Port; this is the fabric ID of the edge fabric attached to this EX_Port.

Front Phantom

Information on the front phantom domain presented by this EX_Port. Includes the preferred (if not active) or actual (if active) domain ID for the front domain and the WWN of the front domain.

Pr Switch Info

Information on the principal switch of the edge fabric attached to this EX_Port. Includes the domain ID and WWN of the principal switch.

BB XLate

Information on the xlate (translate) phantom domain presented at this port. Includes the preferred (if not active) or actual (if active) domain ID for the xlate phantom domain and the WWN of the xlate phantom domain. The xlate phantom domain connected at this port is in the same fabric as the router and represents the edge fabric connected to the EX_Port.

Authentication Type

Displays NONE or DH-CHAP. DH-CHAP is the only authentication type supported on EX_Ports.

DH Group

Displays DH group [0-4] if DH-CHAP authentication is used. Otherwise displays N/A.

Hash Algorithm

Displays hash type (MD5 or SHA-1) if DH-CHAP authentication is used. Otherwise, displays N/A.

Edge fabric's primary WWN

If the EX_Port is connected to an edge switch with FCS policy enforcement, the WWN of the primary FCS is displayed when the edge fabric is secure and the primary FCS is online. Otherwise, displays "No Primary".

Edge fabric's version stamp

If the EX_PORT is connected to an edge switch with FCS policy enforcement, the version of the security database is displayed. Otherwise displays N/A.

The portShow command displays FCoE ports with "Protocol: FCoE" and "portSpeed: 10Gbps". Only a subset of information is displayed. Refer to the Examples section for an illustration. Use `fcoe --cfgshow` and `fcoe --loginshow` to display FCoE-specific configuration details.

Following the general information, the command displays three columns of counters. The first column shows interrupt statistics:

Interrupts

Total number of interrupts.

Unknown

Interrupts that are not counted elsewhere.

Lli

Low-level interface (physical state, primitive sequences).

Proc_rqrd

Frames delivered for embedded N_Port processing.

Timed_out

Frames that have timed out.

Tx_unavail

Frames returned from an unavailable transmitter.

Delim_err

Number of invalid frame delimiters received.

Lr_in

Link reset on the remote switch.

Lr_out	Link reset on the local switch.
Link_failure	Number of link failures.
Loss_of_sync	Number of instances of synchronization loss detected.
Loss_of_sig	Number of instances of signal loss detected.
Protocol_err	Number of primitive sequence protocol errors detected.
Invalid_word	Number of invalid transmission words received.
Invalid_crc	Number of frames received with invalid CRC.
Address_err	Number of frames received with unknown addressing.
Ols_in	Number of Offline Primitive OLS received.
Ols_out	Number of Offline Primitive OLS transmitted.
Frjt	Number of transmitted frames rejected with F_RJT.
Fbsy	Number of transmitted frames busied with F_BSY.
FEC Corrected Blocks	FEC corrected block errors.
FEC Uncorrected Blocks	FEC uncorrected block errors.

The second column displays link error status block counters.

The third column shows the number of F_RJTs and F_BSYs generated. For L_Ports, the third column also displays the number of loop initialization protocols (LIPs) received, number of LIPs transmitted, and the last LIP received.

Operands

This command has the following port operands:

<i>slot</i>	For bladed systems only, specifies the slot number of the port to be displayed, followed by a slash (/).
<i>port</i>	Specifies the number of the port to be displayed, relative to its slot for bladed systems. Use switchShow for a listing of valid port numbers.

-link [-force]

Displays the diagnostic information from cached data for a local switch port and the peer port. The -force option displays the real-time diagnostic information from the registers for a port.

-i *index1*[-*index2*]

Specifies a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, 33-38 40-60. Port indexes are supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index argument to display the portSwap status, or alternately use portSwapShow.

-x [*hex1* [-*hex2*]]

Specifies a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-pid *pid*

Specifies the diagnostics information of a remote switch port along with its peer port.

Examples

To display the current state of a D_Port:

```
switch:admin> portshow 28
portName: port28
portHealth: Fabric vision license not present

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x10004103    PRESENT ACTIVE E_PORT \
    G_PORT D_PORT U_PORT LOGIN LED
LocalSwcFlags: 0x0
portType: 24.0
POD Port: Port is licensed
portState: 1    Online
Protocol: FC
portPhys: 6 In_Sync    portScn: 0    Flow control mode 4
port generation number:    0
state transition count:    1

portId:    2d1c00
portIfId:    43020028
portWwn:    20:1c:00:05:33:13:2f:b3
portWwn of device(s) connected:

Distance:    normal
portSpeed:    8Gbps

FEC: Inactive
LE domain: 0
FC Fastwrite: OFF
Interrupts:    0    Link_failure: 0    Frjt:    0
Unknown:    0    Loss_of_sync: 1    Fbsy:    0
Lli:    14    Loss_of_sig: 2
Proc_rqrd:    4    Protocol_err: 0
```

```

Timed_out:      0      Invalid_word: 0
Tx_unavail:     0      Invalid_crc:  0
Delim_err:      0      Address_err:  0
Lr_in:          2      Ols_in:        0
Lr_out:         0      Ols_out:       1

```

To display the current state of a port with encryption enabled:

```

switch:admin> portshow 10/44
portIndex: 348
portName: slot10port44
portHealth: Fabric vision license not present

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x10000103      PRESENT ACTIVE E_PORT T_PORT\
      T_MASTER G_PORT U_PORT ENCRYPT LOGIN
LocalSwcFlags: 0x0
portType: 24.0
portState: 1 Online
Protocol: FC
portPhys: 6 In_Sync portScn: 1 Online Trunk master port
port generation number: 44
state transition count: 12

```

To display the state of a VE_Port on a chassis with an FX8-24 blade:

```

switch:admin> portshow 7/12
portIndex: 140
portName: slot7port12
portHealth: Fabric vision license not present

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x490b PRESENT ACTIVE VIRTUAL E_PORT \
      G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
portType: 12.0
portState: 1 Online
Protocol: FC
portPhys: 255 N/A portScn: 16 E_Port
port generation number: 1048
state transition count: 26

portId: 018c00
portIfId: 43720806
portWwn: 20:8c:00:05:1e:7a:7a:00
portWwn of device(s) connected:

Distance: normal

```

To display port status for a GbE port on a Brocade 7840:

```
switch:admin> portshow ge2
Eth Mac Address: 00.05.33.65.82.ca
Port State: 1   Online
Port Phys: 6   In_Sync
Port Flags: 0x3 PRESENT ACTIVE
Port Speed: 10G
```

To display an FCoE port:

```
switch:admin> portshow 8
portIndex: 8
portName:
portHealth: HEALTHY

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x2cb03 PRESENT ACTIVE F_PORT G_PORT U_PORT\
          LOGICAL_ONLINE LOGIN NOELP LED NSREG ACCEPT FLOGI
portType: 17.0
POD Port: Port is licensed
portState: 1   Online
Protocol: FCoE
portPhys: 6   In_Sync   portScn: 32   F_Port
port generation number: 0
state transition count: 1

portId: 850800
portIfId: 43020028
portWwn: 20:08:00:05:1e:76:60:80
portWwn of device(s) connected:

Distance: normal
portSpeed: 10Gbps
```

To display the cached data for a port:

```
switch:admin> portshow 32
portIndex: 32
portName: port32
portHealth:
Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x18024b03 PRESENT ACTIVE T_FPORT T_FMASTER F_PORT G_PORT U_PORT
          LOGICAL_ONLINE LOGIN NOELP LED ACCEPT FLOGI
LocalSwcFlags: 0x0
portType: 24.0
POD Port: Port is licensed
portState: 1   Online
Protocol: FC
portPhys: 6   In_Sync   portScn: 32   F_Port   Trunk master port
port generation number: 22
state transition count: 1
portId: 323600
portIfId: 43020027
portWwn: 20:20:00:27:f8:81:85:69
```

```

Logical portWwn: 50:02:7f:88:18:58:60:32
portWwn of device(s) connected:
25:00:00:27:f8:65:02:3e
Distance: normal
portSpeed: N8Gbps
FEC: Inactive
Credit Recovery: Inactive
Aoq: Inactive
FAA: Inactive
F_Trunk: Active
LE domain: 0
FC Fastwrite: OFF
Interrupts: 0      Link_failure: 0      Frjt: 0
Unknown: 0      Loss_of_sync: 0      Fbsy: 0
Lli: 28      Loss_of_sig: 0
Proc_rqrd: 24868 Protocol_err: 0
Timed_out: 0      Invalid_word: 0
Tx_unavail: 0      Invalid_crc: 0
Delim_err: 0      Address_err: 0
Lr_in: 4      Ols_in: 1
Lr_out: 2      Ols_out: 4
nodeWwn: 20:20:00:27:f8:81:85:69
PN_PORT Phy Type: PN Port/PF Port [PN Port/PF Port, lossless Ethernet MAC]
FEC Corrected Blocks: 0
FEC Uncorrected Blocks: 0

PEER PORT

portWwn: 20:20:00:27:f8:81:85:69
nodeWwn: 20:20:00:27:f8:81:85:69
PN_PORT Phy Type: PN Port/PF Port [PN Port/PF Port, lossless Ethernet MAC]
Link_failure: 0      Loss_of_sync: 0      Loss_of_sig: 0
Protocol_err: 0      Invalid_word: 0      Invalid_crc: 0
FEC Corrected Blocks: 0
FEC Uncorrected Blocks: 0

```

To display the information of a remote switch port:

```

switch:admin> portshow -pid 0x010500
SWITCH PORT0xDDAA00

portWwn: 20:20:00:27:f8:81:85:69
nodeWwn: 20:20:00:27:f8:81:85:69
PN_PORT Phy Type: PN Port/PF Port
Link_failure: 0      Loss_of_sync: 0      Loss_of_sig: 0
Protocol_err: 0      Invalid_word: 0      Invalid_crc: 0

PEER PORT 0xDDAAxx

portWwn: 20:20:00:27:f8:81:85:69
nodeWwn: 20:20:00:27:f8:81:85:69
PN_PORT Phy Type: PN Port/PF Port
Link_failure: 0      Loss_of_sync: 0      Loss_of_sig: 0
Protocol_err: 0      Invalid_word: 0      Invalid_crc: 0

```

Function Display IP Interface configurations on the Brocade 7840, SX6, or FX8-24 platforms

Synopsis **portshow** *option* [*slot*]*ge_port* [*optional_args*] [--filter *filter_args*]

Description Use this command to display FCIP-related configuration parameters on the Brocade 7840 switch, on the Brocade SX6 extension blade, and on the Brocade FX8-24 blade. The parameters displayed by this command are set with the portCfg command. The following displays are supported with this command:

- portshow ipif - Displays the local IP interfaces.
- portshow iproute - Displays static routes on the IP interface.
- portshow arp - Displays the content of the address resolution protocol (ARP) table.
- portshow vlantag - Displays the IP interface VLAN configuration. Supported on the Brocade FX8-24 only.
- portshow autoneg - Displays autonegotiation status.
- portshow ipsec-policy - Displays IPSEC Policy information. Supported on Brocade 7840 switch and the Brocade SX6 extension blade only.
- portshow mgmtif - Displays the inband management interfaces.
- portshow mgmtroute - Displays the routes for the inband management interfaces.
- portshow lag - Displays the static link aggregation group (LAG) information. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
- portshow tcl - Displays the Traffic Control List (TCL) information. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
- portshow lan-stats - Displays the LAN statistics. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
- portshow sla - Displays the SLA statistics. Supported on the Brocade 7840 switch and the Brocade SX6 extension blade only.
- portshow filter-set - Displays the details of the configured filter-sets.
- portshow app-type - Displays the details of the configured application types.

Notes IPv6 addresses are supported.

Operands This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be displayed, followed by a slash (/).

ge_port

Specifies the number of the GbE port to be displayed relative to the slot number. The GbE ports are numbered ge0 - ge9 on the Brocade FX8-24 blade. The 10GbE ports on the Brocade FX8-24 blade are numbered xge0 and xge1. Brocade 7840 switch and the Brocade SX6 extension blade have two 40GbE ports labeled ge0 and ge1, and 16 1 or 10GbE ports labeled ge2-ge17. Use the switchShow command for a listing of valid ports

ipif

Displays the IP interface ID, IP address, netmask, and MTU for IPv4 addresses. Displays the prefix instead of the netmask for IPv6 addresses. Flags are explained in the command output (refer to the example below).

--link-local	Displays the link-local interface addresses.
iproute	Displays the IP address, netmask, gateway, metrics, and flags. Displays the prefix instead of the netmask for IPv6 addresses.
--link-local	Displays the link-local interface routes. This operand is optional.
arp	Displays the address resolution protocol (ARP) and IPv6 neighbor discovery table. You can display the content of the ARP table, but you cannot modify its contents.
--link-local	Displays the neighbor discovery entries for the link-local addresses. This operand is optional.
-lmac	Displays the local MAC address. This operand is optional.
vlan tag	Displays the VLAN Tagging configuration. For each entry, the output displays the IP interface address, the destination IP address, the VLAN ID, the L2 CoS priority, and a flag. This display includes tunnel- and IPIF-level configurations. The following flags indicate the type of configuration:
Perm	Permanent entry. Permanent entries are configured at the IP interface level with the portCfg vlan tag command.
Perm Net	Network-wide permanent entry. The same as the permanent entry except that no destination address was defined (defaults to 0.0.0.0), so traffic to all destinations is tagged.
App	Application layer VLAN configuration defined at the circuit level.
autoneg	Displays the auto-negotiation status.
ipsec-policy	Displays IPSEC Policy information. Currently supported on Brocade 7840 switch only.
mgmtif	Displays the inband management interfaces configured for a specified GbE Port or for all GbE Ports. For each GbE Port, the display includes the interface status (enabled or disabled), the interface IPv4 Address, the netmask, effective MTU, and annotated port flags.
mgmtroute	Displays the management routes configured for a specified GbE Port or for all GbE Ports. For each GbE Port, the display includes the destination IPv4 Address, the netmask, the gateway address, and annotated port flags.

lag

Displays the static LAG information. For each entry, the output displays the LAG name, state, port count, and member ports.

--detail

Displays a full view configuration details for all LAGs. The output displays the operational state of LAG, port count, and the admin state, operational state, speed, and autonegotiation status for the port members.

tcl

Displays TCL information. The following options are supported:

-s | --summary

Displays summary view of all the TCLs.

-d | --detail

Displays detailed view of all the TCLs.

-p | --priority

Sorts the TCL list based on the priority.

-s | --sort *sort_field*

Sorts the TCL list based on specified sort field. Valid values for *sort_field* are name (TCL name), priority (priority ID of the TCL), src-addr (source IP address), and dst-addr (destination IP address).

portshow lan-stats *actions [args]*

Displays the LAN IP extension statistics.

--per-flow

Displays the details of the LAN connections based on the throughput. If the number of connections is more than 25, the top 25 throughput connections are displayed. If the number of connections is less than 25, all the available connections are displayed.

-top *count*

Displays the specified number of top throughput connections.

-bottom *count*

Displays the specified number of bottom throughput connections.

-tcp

Displays the TCP error counter values for the LAN connections. Use this operand with -top or -bottom to display TCP error counter values for the specified number of top or bottom throughput connections.

-application [*app_name* | *port*]

Displays aggregate throughput of the well-known applications.

app_name

Displays the aggregation throughput and individual connection information which contributes towards the aggregated throughput for the specified application.

port

Displays the aggregation throughput and individual connection information which contributes towards the aggregated throughput for the specified port number.

--per-flow -compression

Displays the details of the LAN connections based on compression. If the number of connections is more than 25, the top 25 throughput connections are displayed. If the number of connections is less than 25, all the available connections are displayed.

-top count

Displays the specified number of top compression connections.

-bottom count

Displays the specified number of bottom compression connections.

-tcp

Displays the TCP error counter values for the LAN connections. Use this operand with -top or -bottom to display TCP error counter values for the specified number of top or bottom compression connections.

--known-apps

Displays the list of supported well-known applications for the aggregation statistics.

--global

Displays the global LAN statistics for the switch.

-dp

Displays the global LAN statistics of each dual processor within the switch.

-reset

Resets the global LAN statistics.

-lifetime

Displays the entire lifetime global LAN statistics even after the statistics are reset.

--hist-stats

Displays the most recently closed per-flow LAN statistics.

-all

Displays a summary view of the per-flow LAN statistics. The following operand is required:

-index

Specifies a port identified by port index number.

-detail

Displays details about the LAN statistics including TCP flags used to close the connection. The following operands are required:

-dp

Displays the global LAN statistics of each dual processor within the switch.

-index

Specifies a port identified by port index number.

-freeze

Freezes the LAN connection statistic table.

-thaw

Clears the static LAN connection statistic table.

sla [*name* | **all**]

Displays the configuration parameters for a specific SLA or all SLAs. The following optional arguments are supported:

-s | --summary

Displays a summary view of the configuration parameters for a specific SLA or all SLAs.

-d | --detail

Displays a detailed view of the configuration parameters for a specific SLA or all SLAs.

filter-set

Displays the name, default action, and filter statement of the configured filter-sets.

app-type

Displays the application name, port ranges, and description of the configured application types.

--filter *filter_args*

Filters the portShow output based on the specified filter arguments. The filter arguments can be specified in any combination or as a conditional statement using the logical AND or OR operator. A conditional statement can have up to 30 conditions. This operand is supported with ipif, iproute, tcl, and lan-stats options. The following filter arguments are supported:

--set *name*

Specifies the filter-set name that is configured using the portcfg filter-set command. Use portshow filter-set to list the details of the configured filter-sets.

-port [*slot*]/*port*

Filters the output based on the specified port number.

--slot *slot*

Filters the output based on the specified slot number.

-ipaddr *ip_address*

Filters the output based on the specified IP address.

-dp [*slot*]/*dp#*

Filters the output based on the specified dual processor ID.

--circuit *cid*

Filters the output based on the specified FCIP circuit ID within the tunnel.

--priority *value*

Filters the output based on the specified priority ID. Valid values for value are control, high, medium, low, ip-high, ip-medium, and ip-low.

--ha-type *type*

Filters the output based on the HA type. Valid values for type are main, local-backup, and remote-backup.

-tcp-port *value* | *app*

Filters the output based on the specified TCP port number. The valid range for value is from 0 through 65535. Use the portshow lan-stats --known-apps for the list of supported application types.

- retransmits *value***
Filters the output based on the retransmits exceeding specified value.
- rtt *ms***
Filters the output based on the specified circuit round trip time in milliseconds.
- bytes *bytes[k | m | g]***
Filters the output based on bandwidth (bytes per second) exceeding the specified value.
Specify k for KBps, m for MBps, and g for Gbps.
- connect-count *value***
Filters the output based on the connected count exceeding specified value.
- vlan *vlan_id***
Filters the output based on VLAN ID.
- oper-status *oper***
Filters the output based on the specified operation status of a tunnel. You can specify the exact operation string or the states such as active, inactive, healthy, and unhealthy.
- default show | hide**
Sets the default display action if the specified filter statement is not supported. The default action is hide.
- show**
Displays the objects matching the filter criteria.
- hide**
Hides the objects matching the filter criteria.
- or**
The logical OR operator.
- and**
The logical AND operator.

Examples

To display the IP interface and static route configured for failover crossports on the Brocade FX8-24:

```
switch:admin> portshow ipif 8/xge0
Port          IP Address          / Pfx  MTU   VLAN  Flags
-----
8/xge0        192.168.10.20        / 24   1500  n/a   U R M
8/xge0        192.168.11.21        / 24   1500  n/a   U R M X
-----
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
       N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport

switch:admin> portshow iproute 8/xge0
Port          IP Address          / Pfx  Gateway  Flags
-----
8/xge0        192.168.0.0          / 24   *         U C
8/xge0        192.168.0.111        / 32   *         U H L
8/xge0        192.168.1.0          / 24   *         U C X
8/xge0        192.168.1.111        / 32   *         U H L X
-----
Flags: U=Usable G=Gateway H=Host C=Created(Interface)
       S=Static L=LinkLayer X=Crossport
```

To display the IP interface and static route configured on Brocade 7840:

```
switch:admin> portshow iproute -l
```

Port	IP Address	/ Pfx	Gateway	Flags
ge0.dp0	192.168.0.0	/ 24	*	U C
ge0.dp0	192.168.0.1	/ 32	*	U H L
ge0.dp0	192.168.2.0	/ 24	192.168.0.1	U G S
ge0.dp0	fe80::	/ 64	*	U C
ge0.dp0	fe80::5:33ff:f065:7b08	/ 128	*	U H L
ge0.dp0	ff01::	/ 32	*	U C
ge0.dp0	ff02::	/ 32	*	U C
ge0.dp1	192.168.0.0	/ 24	*	U C
ge0.dp1	fe80::	/ 64	*	U C
ge0.dp1	fe80::5:33ff:f165:7b08	/ 128	*	U H L
ge0.dp1	ff01::	/ 32	*	U C
ge0.dp1	ff02::	/ 32	*	U C
ge1.dp0	192.168.1.0	/ 24	*	U C
...				
ge17.dp1	fe80:11::5:33ff:f165:7b19	/ 128	*	U H L
ge17.dp1	ff01:11::	/ 32	*	U C
ge17.dp1	ff02:11::	/ 32	*	U C

```

Flags: U=Usable G=Gateway H=Host C=Created(Interface)
       S=Static L=LinkLayer X=Crossport

```

To display the IP interfaces configured on Brocade 7840:

```
switch:admin> portshow ipif -l
```

Port	IP Address	/ Pfx	MTU	VLAN	Flags
ge0.dp0	fe80::5:33ff:f065:7b08	/ 64	1500	0	U R M
ge0.dp0	192.168.0.10	/ 24	1500	0	U R M
ge0.dp1	fe80::5:33ff:f165:7b08	/ 64	1500	0	U R M
ge0.dp1	192.168.0.11	/ 24	1500	0	U R M
ge1.dp0	fe80:1::5:33ff:f065:7b09	/ 64	1500	0	U R M
ge1.dp0	192.168.1.10	/ 24	1236	100	U R M
ge1.dp1	fe80:1::5:33ff:f165:7b09	/ 64	1500	0	U R M
ge1.dp1	2000::10	/ 64	1500	0	U R M
ge2.dp0	fe80:2::5:33ff:f065:7b0a	/ 64	1500	0	U R M
ge2.dp1	fe80:2::5:33ff:f165:7b0a	/ 64	1500	0	U R M
ge3.dp0	fe80:3::5:33ff:f065:7b0b	/ 64	1500	0	U R M
ge3.dp1	fe80:3::5:33ff:f165:7b0b	/ 64	1500	0	U R M
ge4.dp0	fe80:4::5:33ff:f065:7b0c	/ 64	1500	0	U R M
ge4.dp1	fe80:4::5:33ff:f165:7b0c	/ 64	1500	0	U R M
...					
ge11.dp1	fe80:b::5:33ff:f165:7b13	/ 64	1500	0	U R M
ge12.dp0	fe80:c::5:33ff:f065:7b14	/ 64	1500	0	U R M
ge12.dp1	fe80:c::5:33ff:f165:7b14	/ 64	1500	0	U R M
ge13.dp0	fe80:d::5:33ff:f065:7b15	/ 64	1500	0	U R M
ge13.dp1	fe80:d::5:33ff:f165:7b15	/ 64	1500	0	U R M
ge14.dp0	fe80:e::5:33ff:f065:7b16	/ 64	1500	0	U R M
ge14.dp1	fe80:e::5:33ff:f165:7b16	/ 64	1500	0	U R M
ge15.dp0	fe80:f::5:33ff:f065:7b17	/ 64	1500	0	U R M
ge15.dp1	fe80:f::5:33ff:f165:7b17	/ 64	1500	0	U R M
ge16.dp0	fe80:10::5:33ff:f065:7b18	/ 64	1500	0	U R M
ge16.dp1	fe80:10::5:33ff:f165:7b18	/ 64	1500	0	U R M
ge17.dp0	fe80:11::5:33ff:f065:7b19	/ 64	1500	0	U R M

```

ge17.dp1      fe80:11::5:33ff:f165:7b19      / 64  1500  0      U R M
-----
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
      N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport

```

To display the ARP tables on the Brocade 7840:

```
switch:admin> portshow arp
```

Port	IP Address	MAC Address	Flags
ge6.dp0	77.195.6.1	00:00:00:00:00:00	Dynamic
ge6.dp0	192.168.0.10	00:05:33:65:84:0e	Dynamic Resolved
ge8.dp0	10.1.8.76	00:05:33:65:84:10	Dynamic Resolved

```
switch:admin> portshow arp ge6
```

Port	IP Address	MAC Address	Flags
ge6.dp0	77.195.6.1	00:00:00:00:00:00	Dynamic
ge6.dp0	192.168.0.10	00:05:33:65:84:0e	Dynamic Resolved

To display the auto-negotiation of 1GbE port:

```
switch:admin> portshow autoneg 1/ge2
```

```

Auto-Negotiation Configuration:
Port: 1/ge2
Auto-Negotiate: Enabled

```

To display the IPSEC policy for a Brocade 7840 switch:

```
switch:admin> portshow ipsec-policy --ike
```

IPSec Policy	Key							
IKE-ID	Oper	Flg	Local-Addr	Remote-Addr	IKE Rekey		ESP Rekey	
policy1			123456789012					
dp0.0	UP	R	192.168.0.20	192.168.0.120	-	-	-	-
dp0.1	UP	I	192.168.0.20	192.168.0.121	2h44m4s	0	3h41m1s	1
dp1.0	UP	I	192.168.0.21	192.168.0.120	2h43m58s	0	41m16s	0

```
Flags: *=Name Truncated I=Initiator R=Responder
```

To display the LAG information:

```
switch:admin> portshow lag
```

LAG Name	State	Port Count	Member Ports
lag0	Online	3	ge2,ge3,ge4
edgeSw1	Online	2	ge7,ge8

To display detailed LAG information:

```
switch:admin> portshow lag --detail
LAG: lag0
-----
Oper State:  Online
Port Count:  3
Port   AdminSt  OperState  Speed   AutoNeg
ge2    Enabled   Online     10G     Enabled
ge3    Enabled   Online     10G     Enabled
ge4    Enabled   Online     10G     Enabled

LAG: edgeSw1
-----
Oper State:  Online
Port Count:  2
Port   AdminSt  OperState  Speed   AutoNeg
ge7    Enabled   Online     1G      Disabled
ge8    Enabled   Online     1G      Disabled
```

To display detailed output of all the TCLs:

```
switch:admin> portshow tcl -d
TCL: hostAtoB
=====
Admin Status:      Enabled
Priority:           10
Target:            24-Medium (tid:9)
VLAN:              ANY
L2COS:             ANY
DSCP:              ANY
Source Address:    10.0.0.0/8
Destination Address: ANY
L4 Protocol:       ANY
Protocol Port:     ANY
Segment Preservation: Disabled
Action:            Allow
Cfgmask:           0x085c3a27
Hit Count:         0

TCL: default
=====
Admin Status:      Enabled
Priority:           65535
Target:            -
VLAN:              ANY
L2COS:             ANY
DSCP:              ANY
Source Address:    ANY
Destination Address: ANY
L4 Protocol:       ANY
Protocol Port:     ANY
Segment Preservation: Disabled
Action:            Deny
Cfgmask:           0x08c9007
Hit Count:         0
```

To display the LAN connections based on the throughput (in the following example, the number of connections is more than 25):

```
switch:admin> portshow lan-stats --per-flow
***Displaying Top 25 connections by throughput***
```

Src-Address	Dst-Address	Sport	Dport	Pro	Tx(B/s)	Rx(B/s)
192.168.20.223	192.168.10.225	49678	49864	TCP	10.5m	10.5m
192.168.20.223	192.168.10.225	49695	49864	TCP	10.5m	10.5m
192.168.20.223	192.168.10.225	49672	49864	TCP	10.5m	10.5m
192.168.20.223	192.168.10.225	49687	49864	TCP	10.5m	10.5m
192.168.20.223	192.168.10.225	49690	49864	TCP	10.5m	10.5m
192.168.20.223	192.168.10.225	49689	49864	TCP	10.5m	10.5m
192.168.20.223	192.168.10.225	49693	49864	TCP	10.5m	10.5m
192.168.20.223	192.168.10.225	49683	49864	TCP	10.4m	10.4m
192.168.20.223	192.168.10.225	49679	49864	TCP	10.4m	10.4m
192.168.20.223	192.168.10.225	49674	49864	TCP	10.4m	10.4m
192.168.20.223	192.168.10.225	49694	49864	TCP	10.4m	10.4m
192.168.20.223	192.168.10.225	49671	49864	TCP	10.4m	10.4m
192.168.20.223	192.168.10.225	49691	49864	TCP	10.4m	10.4m
192.168.20.223	192.168.10.225	49670	49864	TCP	10.3m	10.3m
192.168.20.223	192.168.10.225	49675	49864	TCP	10.3m	10.3m
192.168.20.223	192.168.10.225	49680	49864	TCP	10.3m	10.3m
192.168.20.223	192.168.10.225	49676	49864	TCP	10.3m	10.3m
192.168.20.223	192.168.10.225	49686	49864	TCP	10.3m	10.3m
192.168.20.223	192.168.10.225	49673	49864	TCP	10.0m	10.0m
192.168.20.223	192.168.10.225	49681	49864	TCP	10.0m	10.0m
192.168.20.223	192.168.10.225	49688	49864	TCP	9.9m	9.9m
192.168.20.223	192.168.10.225	49696	49864	TCP	9.9m	9.9m
192.168.20.223	192.168.10.225	49692	49864	TCP	9.9m	9.9m
192.168.20.223	192.168.10.225	49677	49864	TCP	9.8m	9.8m
192.168.20.223	192.168.10.225	49669	49374	TCP	9.7m	9.7m

Sport=Source-Port Dport=Destination-Port Pro=Protocol

To display the specified number of top throughput connections:

```
switch:admin> portshow lan-stats --per-flow -top 5
```

Src-Address	Dst-Address	Sport	Dport	Pro	Tx(B/s)	Rx(B/s)
192.168.20.223	192.168.10.225	49695	49864	TCP	15.7m	15.7m
192.168.20.223	192.168.10.225	49678	49864	TCP	15.7m	15.7m
192.168.20.223	192.168.10.225	49672	49864	TCP	15.7m	15.7m
192.168.20.223	192.168.10.225	49690	49864	TCP	15.6m	15.6m
192.168.20.223	192.168.10.225	49689	49864	TCP	15.6m	15.6m

Sport=Source-Port Dport=Destination-Port Pro=Protocol

To display the TCP error counter values:

```
switch:admin> portshow lan-stats --per-flow -tcp
***Displaying Top 1 connections by throughput***
```

Src-Address	Dst-Address	Sport	Dport	Pro	Tx(B/s)	Rx(B/s)
TCP TxPkt RxPkt	TxDrp RxDrp	ReTx	DpAck	OOO	RTT	FlwCtrl
192.168.20.223	192.168.10.225	49679	49864	TCP	17.4m	17.4m

```

0      1.2m    0      0      0      0      0      42      0
-----
Sport=Source-Port Dport=Destination-Port Pro=Protocol
TxPkt=Tx-Packets Rxpkt=Rx-Packets
TxDrp=TX-Drops RxDrp=RX-Drops
ReTx=ReTransmission OOO=out-of-order
DpAck=Duplicate-Acks RTT=Round-Trip-Time(milliseconds)
FlwCtrl=Number of Flow-controls

```

To display the specified number of bottom compression connections:

```

switch:admin> portshow lan-stats --per-flow -compression -bottom 5
Src-Address      Dst-Address      Sport  Dport  Pro CTx(B) CRx(B)  CR
-----
192.168.10.225   192.168.20.223   51300  53086  TCP 104      8    0.00:1
192.168.20.223   192.168.10.225   53087  49374  TCP 239     143   0.00:1
192.168.20.223   192.168.10.225   53094  51301  TCP 195.2m  217.7m 10.3:1
192.168.20.223   192.168.10.225   53099  51301  TCP 197.3m  220.2m 10.4:1
192.168.20.223   192.168.10.225   53097  51301  TCP 159.4m  177.8m 10.4:1
-----
Sport=Source-Port Dport=Destination-Port Pro=Protocol
CTx(B)=Post-Compression bytes Rx(B)=Pre-Compression bytes
CR=Compression-Ratio

```

To display aggregate throughput of well-known applications:

```

switch:admin> portshow lan-stats --per-flow -application
Aggregate Info:
Port      APP      TX(B/s)      RX(B/s)
-----
80        HTTP     145.5m       120.1m
8080      HTTP     100.2m       112.1m
69        TFTP     601.0m       423.3m
-         Unknown  406.5m       406.5m
-----
Sport=Source-Port Dport=Destination-Port Pro=Protocol
App=Application Name

```

To display the supported well-known applications:

```

switch:admin> portshow lan-stats --known-apps
App      Port-Id(s)
-----
CIFS     139,445
FCIP     3225-3226
FTP      20-21,989-990,115
HTTP     80,8080,8000-8001,3128
HTTPS    443
iSCSI    3260
Isilon-SyncIQ 5666-5667
LDAP     389,8404,636
MS-SQL   1443
MySQL    3306
NETAPP-SNAP-MIRROR 10566
NFS      2049
ORACLE-SQL 66,1525,1521
RSYNC    873
SRDF     1748
SSH      22

```

```

SSL-SHELL          614
TELNET             23,107,513,992
TFTP               69
VERITAS-BACKUP     6101-6102,6106,3527,1125
VTS-GRID Control   1415-1416
VTS-GRID Data      350
-----

```

To display the global LAN statistics:

```

switch:admin> portshow lan-stats --global
LAN Global stats

```

```

-----
Active TCP conn          :25
Establish TCP conn       :116
Closed TCP conn          :91
TCP Tx-Bytes             :50.3m
TCP Rx-Bytes             :24.4m
TCP Tcl-Deny conn        :0
TCP Tcl lookup fail      :0
Sync-Recv               :111
Sync-fail               :0
Drop-Bytes              :0
Drop-Pkts               :0
Stale Reset from Host    :0
Number of times
Max TCP conn exceeded as client :0
Number of times
Max TCP conn exceeded as server :0
Number of times Max TCP conn
per second exceeded as client :0
Number of times Max TCP conn
per second exceeded as server :0
Number of times
Max UDP conn exceeded     :7
Number of times
TX PDU preserve ON        :0
Number of times
RX PDU preserve ON        :0
Total IPV6 pkts           :1012
FlowControl on            :0
FlowControl off           :0
Active UDP conn           :0
Establish UDP conn        :619
Closed UDP conn           :619
UDP route lookup fail     :586
UDP PDU drops due to
PKO flow control          :12800
TX UDP PDUs               :22919200
TX UDP PDU drops          :13386
RX UDP PDUs               :1991
RX UDP Tcl lookup fail PDUs :85
RX UDP Tcl-Deny PDUs      :1012
Total RX UDP PDU drops    :1104
RX UDP PDU drops due to
stream flow control       :0
TX ICMP PDUs              :0
TX ICMP PDU drops         :0
RX ICMP PDUs              :3
RX ICMP Tcl lookup fail PDUs :3

```



```

RX ICMP Tcl-Deny PDUs           :0
Total RX ICMP PDU drops         :3
RX ICMP PDU drops due to
stream flow control             :0
TX ASIS IP PDUs                 :0
TX ASIS IP PDU drops            :0
RX ASIS IP PDUs                 :36
RX ASIS IP Tcl lookup fail PDUs :20
RX ASIS IP Tcl-Deny PDUs        :8
Total RX ASIS IP PDU drops      :28
RX ASIS IP PDU drops due to
stream flow control             :0
RX Error IP Checksum            :0
RX Error TCP Checksum           :0
RX Error MAC                    :0
RX Error CRC                    :0
RX Error Parity                 :0
RX Error Length                 :0
TX UDP pkts < 64 bytes          :0
TX UDP pkts < 128 bytes         :0
TX UDP pkts < 256 bytes        :0
TX UDP pkts < 512 bytes        :0
TX UDP pkts < 1024 bytes        :22919200
TX UDP pkts < 1500 bytes        :0
TX UDP pkts < 3000 bytes        :0
TX UDP pkts < 4500 bytes        :0
TX UDP pkts < 6000 bytes        :0
TX UDP pkts < 9000 bytes        :0
RX UDP pkts < 64 bytes          :79
RX UDP pkts < 128 bytes         :992
RX UDP pkts < 256 bytes         :80
RX UDP pkts < 512 bytes         :0
RX UDP pkts < 1024 bytes        :840
RX UDP pkts < 1500 bytes        :0
RX UDP pkts < 3000 bytes        :0
RX UDP pkts < 4500 bytes        :0
RX UDP pkts < 6000 bytes        :0
RX UDP pkts < 9000 bytes        :0
-----

```

To display detailed LAN connection statistics:

```

switch:admin> portshow lan-stats --hist-stats -detail \
               -dp dp0 -index 17

```

Warning: It is recommended to freeze the table when using detailed stats.

DP0 Connection Detail:(Thawed)

```

-----
Slot/DP | Connection:  DP0 | 5
Src IP Address: 192.78.10.242
Src Port:      53795
Dst IP Address: 192.79.10.243
Dst Port:      59039
Start time:    08/18/15 21:17:26 UTC
End time:      08/18/15 21:17:59 UTC
Close reason/Flag: Remote LAN / TX FIN
Current/Previous State: Time-Wait / FIN-Wait-2
Last 5 Connection States:
State/Reason Code 1: SYN-Sent / User Connect
State/Reason Code 2: Established / Connection Success

```

```

State/Reason Code 3:  FIN-Wait-1 / User Close
State/Reason Code 4:  FIN-Wait-2 / RX ACK for FIN
State/Reason Code 5:  Time-Wait / Timer Cleanup
L4 Protocol/MSS:      TCP / 1460
TX Stats
TX Bytes/Packets:     710717432 / 542617
Slow Starts:          0
FastRetrans/RetransTO: 0 / 0
Initial/Max Send Seq: 1490083657 / 2179096399
RX Stats
RX Bytes/Packets:     689012740 / 504638
Out of Orders/Dup Ack: 0 / 0
Initial Receive Seq:  1799596954

```

To freeze the LAN statistic table:

```
portshow lan-stats --hist-stats -freeze
```

DP0 Connection Summary:(Frozen)

Idx	Src-Address	Dst-Address	Sport	Dport	Pro	Tx(B)	Rx(B)
First 5 Connections:							
0	192.78.10.242	192.79.10.243	53786	49374	TCP	271	72
1	192.78.10.242	192.79.10.243	53785	59038	TCP	120	8
2	192.78.10.242	192.79.10.243	53788	59039	TCP	711.1m	689.4m
3	192.78.10.242	192.79.10.243	53787	59039	TCP	712.3m	690.5m
4	192.78.10.242	192.79.10.243	53791	59039	TCP	713.0m	691.2m
Last 5 Connections:							
27	192.78.10.242	192.79.10.243	53816	59039	TCP	697.2m	675.9m
28	192.78.10.242	192.79.10.243	53814	59039	TCP	701.1m	679.7m
29	192.78.10.242	192.79.10.243	53815	59039	TCP	700.4m	679.0m
30	192.78.10.242	192.79.10.243	53810	59039	TCP	707.7m	686.1m
31	192.78.10.242	192.79.10.243	53817	59039	TCP	691.0m	669.9m
Total Connection count: 32							
Oldest Entry: 08/18/15 21:17:59							
Newest Entry: 08/18/15 21:17:59							
Close RX/TX FIN: 1 / 31							
Close RX/TX RST: 0 / 0							
Total TX Errors							
Slow Starts: 0							
FastRetrans/RetransTO: 0 / 0							
Total RX Errors							
Out of Orders/Dup Ack: 0 / 0							

To thaw the LAN statistic table:

```
portshow lan-stats --hist-stats -thaw
```

DP0 Connection Summary:(Thawed)

Idx	Src-Address	Dst-Address	Sport	Dport	Pro	Tx(B)	Rx(B)
First 5 Connections:							
0	192.78.10.242	192.79.10.243	53786	49374	TCP	271	72
1	192.78.10.242	192.79.10.243	53785	59038	TCP	120	8
2	192.78.10.242	192.79.10.243	53788	59039	TCP	711.1m	689.4m
3	192.78.10.242	192.79.10.243	53787	59039	TCP	712.3m	690.5m
4	192.78.10.242	192.79.10.243	53791	59039	TCP	713.0m	691.2m
Last 5 Connections:							

27	192.78.10.242	192.79.10.243	53816	59039	TCP	697.2m	675.9m
28	192.78.10.242	192.79.10.243	53814	59039	TCP	701.1m	679.7m
29	192.78.10.242	192.79.10.243	53815	59039	TCP	700.4m	679.0m
30	192.78.10.242	192.79.10.243	53810	59039	TCP	707.7m	686.1m
31	192.78.10.242	192.79.10.243	53817	59039	TCP	691.0m	669.9m

```

-----
Total Connection count: 32
Oldest Entry: 08/18/15 21:17:58
Newest Entry: 08/18/15 21:17:58
Close RX/TX FIN: 1 / 31
Close RX/TX RST: 0 / 0
Total TX Errors
  Slow Starts: 0
  FastRetrans/RetransTO: 0 / 0
Total RX Errors
  Out of Orders/Dup Ack: 0 / 0

```

To display the SLA statistics:

```

switch:admin> portshow sla
Name      PktLoss  Runtime  Timeout
-----
netA      0.50%    15m      1h
-----

```

To display the details of the configured filter-sets:

```

switch:admin> portshow filter-set
Name      ACT/DEF  Filter Statement
-----
tcpErrors  SHOW/HIDE (retx:100 && bytes:1000000)
-----

ACT: Action for objects matching filter
DEF: Default behavior for objects where filter doesn't apply

```

To display all tunnels and only circuits using IP address 10.0.0.1:

```

switch:admin> portshow fciptunnel -c
--filter -ipaddr 10.0.0.1 --default show

```

To display only per-flow statistics that use both IP address 192.168.0.10 AND TCP port 336:

```

switch:admin> portshow lan-stats --per-flow -all
--filter -ipaddr 192.168.0.10 -tcp-port 336 -and

```

To display tunnels based on the operational status:

```

switch:admin> portshow fciptunnel -c
Tunnel Circuit OpStatus  Flags      Uptime  TxMBps  RxMBps  ConnCnt  CommRt  Met/G
-----
24      -          Up        -----I   5m30s   0.00    0.00    6        -        -
24      0 ge2     Up        ----ah--4  5m31s   0.00    0.00    6  1000/1000  0/-
25      -          Up        -----I   5m27s   0.00    0.00    6        -        -
25      0 ge3     Up        ----ah--4  5m27s   0.00    0.00    6  1000/1000  0/-
34      -          InProg    -----I    0s      0.00    0.00    0        -        -
34      0 ge2     InProg    ----ah--4    0s      0.00    0.00    0  2500/5000  0/-
-----

Flags (tunnel): i=IPSec f=Fastwrite T=TapePipelining F=FICON r=ReservedBW
a=FastDeflate d=Deflate D=AggrDeflate P=Protocol

```

```

I=IP-Ext
(circuit): h=HA-Configured v=VLAN-Tagged p=PMTU i=IPSec 4=IPv4 6=IPv6
ARL a=Auto r=Reset s=StepDown t=TimedStepDown S=SLA

switch:admin> portshow fciptunnel -c --filter --oper-status unhealthy
Tunnel Circuit OpStatus Flags Uptime TxMBps RxMBps ConnCnt CommRt Met/G
-----
34 - InProg -----I 0s 0.00 0.00 0 - -
34 0 ge2 InProg ----ah--4 0s 0.00 0.00 0 2500/5000 0/-
-----
Flags (tunnel): i=IPSec f=Fastwrite T=TapePipelining F=FICON r=ReservedBW
a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
I=IP-Ext
(circuit): h=HA-Configured v=VLAN-Tagged p=PMTU i=IPSec 4=IPv4 6=IPv6
ARL a=Auto r=Reset s=StepDown t=TimedStepDown S=SLA

```

To display the list of configured application types:

```

switch:admin> portshow app-type
Application Port Ranges Description
-----
Data-Domain 2051 Brocade Data Domain
FTP 20-21,989-990,115 Includes Control data FTPS and
Simple FTP
LDAP 389,8404,636 Includes LDAP secure
TELNET 23,107,513,992 Includes Telnet connections
TFTP 69 TFTP File Transfer
-----

```

Function Display FCIP tunnels, circuits, management interfaces and FICON statistics on the Brocade 7840, SX6, or FX8-24 platforms:

Synopsis **portshow** *option* [**all** | [*slot*]/*ve_port*] *arguments* [*optional_arguments*]

Description

Use this command to display configuration parameters and status information for FCIP tunnels and FCIP circuits on the GbE/10GbE ports on the Brocade 7840, Brocade SX6, and FX8-24 platforms. The FCIP tunnels on the local and remote GbE ports act as Virtual E_Ports (VE_Ports) connecting the local and remote fabrics. The following display options are supported on these platforms:

- **portShow fcipunnel** - Displays Fibre Channel over IP (FCIP) tunnels including the following:
 - Additional performance information
 - FICON configuration parameters
 - IPSec status (enabled or disabled), mode (legacy if configured) and key
 - Circuits with the tunnel
 - QoS statistics including performance for each priority
 - FCIP Tunnel hierarchy listing circuit IDs and TCP connection information for the tunnel
- **portShow fcipcircuit** - Displays status and configuration for FCIP circuits:
 - TCP statistics for the circuit
 - Circuit-level VLAN tagging configuration
 - Circuit-level Differentiated Services (DSCP) markings
- **portShow xtun** - Displays FICON and FCP emulation statistics and current runtime conditions.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the VE_Port to be displayed, followed by a slash (/).

ve_port

Displays information for a single specified FCIP tunnel. On the Brocade 7840, SX6, or FX8-24, specify the VE_Port number associated with the tunnel configured on one of the GbE ports. VE_Ports are numbered 12-31 on the Brocade FX8-24 blade.

all

Displays information for all configured FCIP tunnels.

fcipunnel

Displays configuration and status per FCIP tunnel. The following operands are supported with fcipunnel and fcipcircuit.

-c | --circuit

Displays the FCIP circuits within the tunnel. This operand can be used with any other operand to include circuit displays.

-t | --tcp

Displays the TCP statistics for the circuit. The -c option must be specified with this option.

--reset

Displays time based set of statistics.

--lifetime

Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the --reset option.

-p | --perf

Displays additional performance information for the specified FCIP tunnels.

--lifetime

Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the --reset option.

-q | --qos

Displays the QoS statistics including performance for each priority. This operand is optional with the --perf option.

-C | --config

Displays only the configuration information

-i | --ipsec

Displays IPsec status (enabled or disabled) and key if enabled. If IPsec is enabled and configured in legacy mode, the mode information is displayed in parenthesis. This option is valid for portShow fcip tunnel only. This option is deprecated but still recognized. Use the -C | --config option instead.

-h | --hier

Displays the FCIP tunnel hierarchy listing basic circuit IDs and TCP connection information for the tunnel.

-s | --summary

Displays a summary view of the tunnel configuration parameters for a specific VE_Port. You can use the summary option with the -perf and the -qos option. When used with the -perf option, the summary option forces the --circuit option. Flags indicate ipsec-configured tunnels, legacy ipsec tunnels, and compression mode. Circuit flags indicate vlan tagging, crossport configuration, and ipv4 or ipv6 configuration.

-d | --detail

Displays a full view configuration details for all configured tunnels when used with the all port specifier. This view provides an alternative to specifying a specific VE_Port or to using the --perf option for a comprehensive view.

-l | --ip-address

Displays the IP addresses configured the specified circuits. You must use this option with either the --summary or the --circuit option. This option is deprecated but still recognized. Use the -C | --config option instead.

--hcl-status

Displays the HA status of the FCIP tunnel.

fcipcircuit

Displays FCIP circuit configuration and status. The following operands are supported with portShow fcipcircuit:

circuit_ID

Specifies a single circuit within the FCIP tunnel. The circuit ID is an integer value between 1 and 19 on the Brocade FX8-24. This operand is required.

-t | --tcp

Displays the TCP statistics for the specified circuit.

--reset	Displays time based set of statistics.
--lifetime	Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the --reset option.
-p | --perf	Displays additional performance information for the specified FCIP circuit.
--lifetime	Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the --reset option.
-q | --qos	Displays the QoS statistics including performance for each priority. This operand is optional with the --perf option.
-C | --config	Displays only the configuration information
xtun	Displays FICON and FCP emulation statistics and current runtime conditions for a specified set of parameters. The following arguments are supported:
-fcp	Displays the SCSI FastWrite/Tape Pipelining command sub-menu when issued with a VE_Port number. The syntax for -fcp is as follows: portshow xtun [slot/]\ve_port -fcp [level] [command] [param] [options] The following optional operands are supported with -fcp to display FCP emulation statistics and status information:
-help	Displays the command usage. You must specify a VE_Port number to display the help functions, for example: portshow xtun 7/12 -fcp -help.
level	Specifies the level for which information is displayed. You can specify one or more of the following levels. With each additional level, this command generates progressively more information.
-port	Displays data at the port level.
-it	Displays data at the Initiator Target (SID/DID) FCP level.
-itn	Displays data at the Initiator Target nexus (SID/DID) level.
-itl	Displays data at the Initiator Target LUN (SID/DID/LUN) level.

-twb	Displays data at the Exchange (SID/DID/LUN/Exchange) level.
<i>command</i>	Specifies the type of information to be displayed. This operand is optional; if omitted, the default (-stats) is used. You can specify more than one command option. Valid commands include the following:
-stats	Displays FCP emulation statistics. This is the default display.
-info	Displays general FCP emulation information.
-cfg	Displays the FCP emulation configuration.
-dump	Displays a raw data dump including data for all information types.
<i>param</i>	Limits output to one or more of the following parameters, given the commands and levels specified with this command. This operand is optional; if omitted, output for all parameters is displayed. There is no default parameter.
-sid <i>SID</i>	Displays output for the specified SID only.
-did <i>DID</i>	Displays output for the specified DID only.
-lun <i>LUN</i>	Displays output for the specified LUN only.
-timer	Displays timer information only.
<i>options</i>	Affects all levels and commands globally. Only one option is supported.
-zero	Displays zero-valued statistics. Note that some commands may show zero-valued information regardless of whether or not this option is specified.
-ficon	<p>Displays sub-menu for FICON emulation display commands when issued with a VE_Port number. The syntax for -ficon is as follows:</p> <pre>portshow xtun [slot/]ve_port -ficon [command] [options]</pre> <p>The following optional commands are supported with -ficon; if omitted, the usage for all parameters is displayed. The xtun -ficon command options include displays for all types of FICON Emulation.</p>
-help	Displays the command usage. You must specify a VE_Port number to display the help functions, for example, portshow xtun 7/12 -ficon -help.

-stats	Displays global FICON Emulation statistics for the tunnel including FICON XRC Emulation, FICON Tape Write, FICON Tape Read, FICON Teradata Write, and FICON Teradata Read statistics.
-fdpb <i>adrs</i>	Displays FICON ports or a specific FICON Device Path Block.
-fchb <i>adrs</i>	Displays FICON logical partitions (LPARs) or a specific FICON Channel Control Block.
-fcub <i>adrs</i>	Displays FICON images (the same output as with -images) or a specific FICON Control Unit Block.
-images	Displays FICON images.
-fdcb <i>adrs</i>	Displays FICON devices or specific FICON Device Control Block.
-tapeperf	<p>Starts the emulated Tape Read and Write performance monitor or displays the performance statistics.</p> <p>when you first issue this command or any other performance monitor commands after a reboot, the command starts the performance monitor, takes a snapshot of current statistics, and saves them with a time stamp. When you issue the command again, it displays the time elapsed between the two iterations of the command and the average time delta statistics. A new time stamp and current statistics are saved as a basis for the next iteration.</p>
-teraperf	Starts the emulated Teradata performance monitor or displays the performance statistics.
-printperf	Starts the emulated Printer performance monitor or displays the performance statistics.
-xrcperf	Starts the emulated XRC performance monitor or displays the performance statistics.
-structs	Displays FICON control block sizes.
-emul	Displays comprehensive FICON emulation statistics. Use one of the following options to display emulation statistics about a specific component.
-emulxrc	Displays FICON XRC emulation statistics.
-emultape	Displays FICON Tape emulation statistics.

-emultera	Displays FICON Teradata emulation statistics.
-emulprint	Displays FICON Printer emulation statistics.
-act	Displays the current Active Exchange information.
options	The following additional option is supported.
-clear	Resets the specified statistics. This operand is optional; it requires a preceding command.
-mem <i>adrs length</i>	Specifies the SE memory length in words to display. The valid range for length is 0 to 1024.
-dram2	Display the current usage of the dynamic memory allocator.
-pools	Display the current free pool allocation (FPA) buffer usage.
-tcb	Displays tunnel statistics.
-drshow	Displays the current Descriptor Ring status
-smem	Displays the current Shadow Memory data.
-rte	Displays the current Routing Info SE memory.
--filter <i>filter_args</i>	Filters the portShow output based on the specified filter arguments. The filter arguments can be specified in any combination or as a conditional statement using the logical AND or OR operator. A conditional statement can have up to 30 conditions. The following filter arguments are supported:
-ipaddr <i>ip_address</i>	Filters the output based on the specified IP address.
-port [<i>slot</i>]<i>port</i>	Filters the output based on the specified port number.
-tcp-port <i>port</i>	Filters the output based on the specified TCP port number.
-dp [<i>slot</i>]<i>dp#</i>	Filters the output based on the specified dual processor ID.
-retransmits <i>value</i>	Filters the output based on the retransmits exceeding specified value.

- rtt *ms***
Filters the output based on the specified circuit round trip time in milliseconds.
- connect-count *value***
Filters the output based on the connected count exceeding specified value.
- bps *value*[*k* | *m*]**
Filters the output based on bandwidth (bytes per second) exceeding the specified value.
Specify k for KBps and m for MBps.
- or**
The logical OR operator.
- and**
The logical AND operator.
- default show | hide**
Sets the default display action if the specified filter statement is not supported. The default action is hide.

Examples To display FCIP tunnel configuration parameters on the Brocade SX6 blade with Ficon enabled:

```
switch:admin> portshow fciptunnel 8/27 -d

Tunnel: VE-Port:8/27 (idx:11, DP1)
=====
Oper State           : Online
TID                  : 219
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Enabled
Tape Pipelining      : Read/Write
IPSec                : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN            : 10:00:00:05:33:e7:d2:13
Peer WWN             : 10:00:00:05:33:65:a8:05
RemWWN (config)      : 00:00:00:00:00:00:00:00
FICON                : Enabled
  XRC                 : Enabled
  Tape Pipelining     : Read/Write
  Read Block id       : Enabled
  Tin Tir             : Enabled
  DevAck              : Enabled
  Tera Read           : Disabled
  Tera Write          : Disabled
  Print               : Disabled
FICON Max Read Pipe  : 32
FICON Max Write Pipe : 32
FICON Max Read Devs  : 16
FICON Max Write Devs : 16
FICON Write Timer    : 300
FICON Write Chain    : 3200000
FICON OXID Base      : 0x8000
FICON Debug Flags    : 0x77c90000
cfgmask              : 0x003fc7ff 0x40000208
Flow Status          : 0
ConCount/Duration    : 1 / 35m19s
```

```

Uptime           : 50m13s
Stats Duration   : 35m19s
Receiver Stats   : 846212584 bytes / 4594438 pkts / 560.99 KBps Avg
Sender Stats     : 216803637504 bytes / 29122536 pkts / 144.36 MBps Avg
TCP Bytes In/Out : 3135072280 / 223666014748
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max) : 1 / 1 / 1 ms
Wan Util         : 26.3%
TxQ Util         : 0.0%

```

To display an FCIP tunnel with FICON disabled:

```

switch:admin> portshow fciptunnel 8/26 -d

Tunnel: VE-Port:8/26 (idx:10, DP1)
=====
Oper State           : Disabled
TID                  : 218
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Disabled
Tape Pipelining      : Disabled
IPSec                : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN             : 10:00:00:05:33:e7:d2:11
Peer WWN              : 00:00:00:00:00:00:00:00
RemWWN (config)      : 00:00:00:00:00:00:00:00
cfgmask              : 0x000004ff 0x40000208
Flow Status          : 0
ConCount/Duration    : 0 / 1h6m7s
Uptime               : 0s
Stats Duration       : 0s
Receiver Stats       : 0 bytes / 0 pkts / 0.00 Bps Avg
Sender Stats         : 0 bytes / 0 pkts / 0.00 Bps Avg
TCP Bytes In/Out     : 0 / 0
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)    : 0 / 0 / 0 ms
Wan Util              : 0.0%
TxQ Util             : 0.0%

```

To display an FCIP tunnel with additional circuit information:

```

switch:admin> portshow fciptunnel 8/27 -d

Tunnel: VE-Port:8/27 (idx:11, DP1)
=====
Oper State           : Online
TID                  : 219
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Enabled
Tape Pipelining      : Read/Write
IPSec                : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN             : 10:00:00:05:33:e7:d2:13

```

```

Peer WWN           : 10:00:00:05:33:65:a8:05
RemWWN (config)    : 00:00:00:00:00:00:00:00
FICON              : Enabled
  XRC               : Enabled
  Tape Pipelining   : Read/Write
  Read Block id     : Enabled
  Tin Tir           : Enabled
  DevAck            : Enabled
  Tera Read         : Disabled
  Tera Write        : Disabled
  Print             : Disabled
FICON Max Read Pipe : 32
FICON Max Write Pipe : 32
FICON Max Read Devs : 16
FICON Max Write Devs : 16
FICON Write Timer   : 300
FICON Write Chain   : 3200000
FICON OXID Base     : 0x8000
FICON Debug Flags   : 0x77c90000
cfgmask             : 0x003fc7ff 0x40000208
Flow Status         : 0
ConCount/Duration   : 1 / 35m19s
Uptime              : 50m13s
Stats Duration      : 35m19s
Receiver Stats      : 846212584 bytes / 4594438 pkts / 560.99 KBps Avg
Sender Stats        : 216803637504 bytes / 29122536 pkts / 144.36 MBps Avg
TCP Bytes In/Out    : 3135072280 / 223666014748
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)   : 1 / 1 / 1 ms
Wan Util            : 26.3%
TxQ Util            : 0.0%

```

To display additional performance parameters on tunnel 1/12 (add -c to display all circuits):

```
switch:admin> portshow fciptunnel 8/27 -c
```

```

Tunnel: VE-Port:8/27 (idx:11, DP1)
=====
Oper State          : Online
TID                 : 219
Flags               : 0x00000000
IP-Extension        : Disabled
Compression         : None
QoS BW Ratio        : 50% / 30% / 20%
Fastwrite           : Enabled
Tape Pipelining     : Read/Write
IPSec               : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN           : 10:00:00:05:33:e7:d2:13
Peer WWN            : 10:00:00:05:33:65:a8:05
RemWWN (config)     : 00:00:00:00:00:00:00:00
FICON               : Enabled
  XRC                : Enabled
  Tape Pipelining    : Read/Write
  Read Block id      : Enabled
  Tin Tir            : Enabled
  DevAck             : Enabled
  Tera Read          : Disabled
  Tera Write         : Disabled
  Print              : Disabled

```

```

FICON Max Read Pipe : 32
FICON Max Write Pipe : 32
FICON Max Read Devs : 16
FICON Max Write Devs : 16
FICON Write Timer : 300
FICON Write Chain : 3200000
FICON OXID Base : 0x8000
FICON Debug Flags : 0x77c90000
cfgmask : 0x003fc7ff 0x40000208
Flow Status : 0
ConCount/Duration : 1 / 33m59s
Uptime : 48m53s
Stats Duration : 33m59s
Receiver Stats : 811663752 bytes / 4406845 pkts / 554.94 KBps Avg
Sender Stats : 207944106140 bytes / 27935226 pkts / 143.31 MBps Avg
TCP Bytes In/Out : 3005648720 / 214490692956
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max) : 1 / 1 / 1 ms
Wan Util : 24.3%
TxQ Util : 0.0%

```

Circuit 8/27.0 (DP1)

```

=====
Admin/Oper State : Enabled / Online
Flags : 0x00000000
IP Addr (L/R) : 192.168.2.170 8/ge2 <-> 192.168.2.164
HA IP Addr (L/R) : 192.168.2.70 8/ge2 <-> 192.168.2.64
Configured Comm Rates: 2000000 / 5000000 kbps
Peer Comm Rates : 2000000 / 5000000 kbps
Actual Comm Rates : 2000000 / 5000000 kbps
Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
Metric : 0
Connection Type : Default
ARL-Type : Reset
PMTU : Disabled
SLA : (none)
Failover Group : 0
VLAN-ID : NONE
L2Cos (FC:h/m/l) : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l) : 0 / 0 / 0
DSCP (FC:h/m/l) : 0 / 0 / 0 (Ctrl:0)
DSCP (IP:h/m/l) : 0 / 0 / 0
cfgmask : 0x40000000 0x00013c2f
Flow Status : 0
ConCount/Duration : 1 / 33m59s
Uptime : 48m53s
Stats Duration : 33m59s
Receiver Stats : 405802244 bytes / 2203254 pkts / 277.42 KBps Avg
Sender Stats : 103969139456 bytes / 13967446 pkts / 71.69 MBps Avg
TCP Bytes In/Out : 1502340852 / 107217064500
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max) : 1 / 1 / 1 ms
Wan Util : 24.5%

```

Circuit 8/27.1 (DP1)

```

=====
Admin/Oper State : Enabled / Online
Flags : 0x00000000
IP Addr (L/R) : 192.168.3.170 8/ge3 <-> 192.168.3.164
HA IP Addr (L/R) : 192.168.3.70 8/ge3 <-> 192.168.3.64

```

```

Configured Comm Rates: 2000000 / 5000000 kbps
Peer Comm Rates       : 2000000 / 5000000 kbps
Actual Comm Rates     : 2000000 / 5000000 kbps
Keepalive (Cfg/Peer)  : 1000 (1000 / 1000) ms
Metric                 : 0
Connection Type       : Default
ARL-Type              : Reset
PMTU                   : Disabled
SLA                    : (none)
Failover Group        : 0
VLAN-ID               : NONE
L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)      : 0 / 0 / 0
DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
DSCP (IP:h/m/l)       : 0 / 0 / 0
cfgmask               : 0x40000000 0x00013c2f
Flow Status           : 0
ConCount/Duration     : 1 / 33m59s
Uptime                : 48m53s
Stats Duration        : 33m59s
Receiver Stats        : 405861508 bytes / 2203591 pkts / 277.52 KBps Avg
Sender Stats          : 103974966684 bytes / 13967780 pkts / 71.62 MBps Avg
TCP Bytes In/Out      : 1503305492 / 107273625304
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)     : 1 / 1 / 1 ms
Wan Util              : 24.1%

```

To display TCP connections for the circuits on the tunnel:

```
switch:admin> portshow fcipunnel 8/27 -circuit
```

```

Tunnel: VE-Port:8/27 (idx:11, DP1)
=====
Oper State           : Online
TID                  : 219
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Enabled
Tape Pipelining      : Read/Write
IPSec                : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN            : 10:00:00:05:33:e7:d2:13
Peer WWN             : 10:00:00:05:33:65:a8:05
RemWWN (config)      : 00:00:00:00:00:00:00:00
FICON                : Enabled
  XRC                 : Enabled
  Tape Pipelining     : Read/Write
  Read Block id       : Enabled
  Tin Tir             : Enabled
  DevAck              : Enabled
  Tera Read           : Disabled
  Tera Write          : Disabled
  Print               : Disabled
FICON Max Read Pipe  : 32
FICON Max Write Pipe : 32
FICON Max Read Devs  : 16
FICON Max Write Devs : 16
FICON Write Timer    : 300

```

```

FICON Write Chain      : 3200000
FICON OXID Base        : 0x8000
FICON Debug Flags      : 0x77c90000
cfgmask                 : 0x003fc7ff 0x40000208
Flow Status            : 0
ConCount/Duration      : 1 / 36m53s
Uptime                  : 51m46s
Stats Duration         : 36m52s
Receiver Stats         : 888449704 bytes / 4823789 pkts / 518.43 KBps Avg
Sender Stats           : 227615878740 bytes / 30565366 pkts / 133.07 MBps Avg
TCP Bytes In/Out       : 3293193644 / 234818572912
ReTx/OOO/SloSt/DupAck : 0 / 0 / 0 / 0
RTT (min/avg/max)      : 1 / 1 / 1 ms
Wan Util                : 31.1%
TxQ Util                : 0.0%

```

Circuit 8/27.0 (DP1)

```

=====
Admin/Oper State       : Enabled / Online
Flags                  : 0x00000000
IP Addr (L/R)          : 192.168.2.170 8/ge2 <-> 192.168.2.164
HA IP Addr (L/R)       : 192.168.2.70 8/ge2 <-> 192.168.2.64
Configured Comm Rates : 2000000 / 5000000 kbps
Peer Comm Rates        : 2000000 / 5000000 kbps
Actual Comm Rates      : 2000000 / 5000000 kbps
Keepalive (Cfg/Peer)  : 1000 (1000 / 1000) ms
Metric                 : 0
Connection Type        : Default
ARL-Type               : Reset
PMTU                   : Disabled
SLA                    : (none)
Failover Group         : 0
VLAN-ID                : NONE
L2Cos (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)       : 0 / 0 / 0
DSCP (FC:h/m/l)        : 0 / 0 / 0 (Ctrl:0)
DSCP (IP:h/m/l)        : 0 / 0 / 0
cfgmask                 : 0x40000000 0x00013c2f
Flow Status            : 0
ConCount/Duration      : 1 / 36m53s
Uptime                  : 51m47s
Stats Duration         : 36m53s
Receiver Stats         : 444186300 bytes / 2411679 pkts / 259.59 KBps Avg
Sender Stats           : 113803731376 bytes / 15282510 pkts / 66.53 MBps Avg
TCP Bytes In/Out       : 1646503476 / 117412356592
ReTx/OOO/SloSt/DupAck : 0 / 0 / 0 / 0
RTT (min/avg/max)      : 1 / 1 / 1 ms
Wan Util                : 31.4%

```

TCP Connection 8/27.0 HA-Type:Local-Backup Pri:Low Conn:0x055665f4

```

=====
Local / Remote Port    : 3225 / 55379
Duration               : 36m52s
MSS                    : 1460 bytes
ARL Min / Cur / Max    : 33328 / 33328 / 833328
ARL Reset Algo         : Reset
Send Window
Size / Scale           : 20832256 / 9
Slow Start Threshold   : 16777216
Congestion Window      : 16778676

```



```

      Pkts InFlight           : 0
Recv Window
  Size / Scale               : 20832768 (Max:20832768) / 9
SendQ Next / Min / Max      : 0x8e5c8b31 / 0x8e5c8b31 / 0x8e5c8b31
RecvQ Next / Min / Max      : 0x0e776252 / 0x0e776252 / 0x0fb54402
RecvQ Pkts                   : 0
Sender Stats
  Sent Bytes / Pkts          : 510608 / 5742
  Unacked Data               : 0
  Retransmits Slow / Fast    : 0 / 0 (High:0)
  SlowStart                   : 0
Receiver Stats
  Recv Bytes / Pkts          : 536792 / 5742
  Out-of-Order               : 0 (High:0)
  Duplicate ACKs              : 0
  RTT / Variance (High)      : 0 ms (0 ms) / 0 ms (0 ms)
[output truncated]

```

To display the time based set of statistics:

```
switch:admin> portshow fciptunnel 8/27 -cp
```

```

Tunnel: VE-Port:8/27 (idx:11, DP1)
=====
Oper State           : Online
TID                  : 219
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Enabled
Tape Pipelining      : Read/Write
IPSec                : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN            : 10:00:00:05:33:e7:d2:13
Peer WWN             : 10:00:00:05:33:65:a8:05
RemWWN (config)      : 00:00:00:00:00:00:00:00
FICON                : Enabled
  XRC                 : Enabled
  Tape Pipelining     : Read/Write
  Read Block id       : Enabled
  Tin Tir             : Enabled
  DevAck              : Enabled
  Tera Read           : Disabled
  Tera Write          : Disabled
  Print               : Disabled
FICON Max Read Pipe  : 32
FICON Max Write Pipe : 32
FICON Max Read Devs  : 16
FICON Max Write Devs : 16
FICON Write Timer    : 300
FICON Write Chain    : 3200000
FICON OXID Base      : 0x8000
FICON Debug Flags    : 0x77c90000
cfgmask              : 0x003fc7ff 0x40000208
Flow Status          : 0
ConCount/Duration    : 1 / 38m38s
Uptime               : 53m32s
Stats Duration       : 38m38s
Receiver Stats        : 4495871308 bytes / 5361838 pkts / 88.46 MBps Avg

```

```

Sender Stats          : 230389776820 bytes / 31031771 pkts /   14.02 MBps Avg
TCP Bytes In/Out      : 7012468568 / 237786788876
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)     : 1 / 1 / 1 ms
Wan Util              : 3.2%
TxQ Util              : 0.0%

```

Circuit 8/27.0 (DP1)

```

=====
Admin/Oper State      : Enabled / Online
Flags                 : 0x00000000
IP Addr (L/R)         : 192.168.2.170 8/ge2 <-> 192.168.2.164
HA IP Addr (L/R)      : 192.168.2.70 8/ge2 <-> 192.168.2.64
Configured Comm Rates: 2000000 / 5000000 kbps
Peer Comm Rates       : 2000000 / 5000000 kbps
Actual Comm Rates     : 2000000 / 5000000 kbps
Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
Metric                : 0
Connection Type       : Default
ARL-Type              : Reset
PMTU                  : Disabled
SLA                   : (none)
Failover Group        : 0
VLAN-ID               : NONE
L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)      : 0 / 0 / 0
DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
DSCP (IP:h/m/l)       : 0 / 0 / 0
cfgmask               : 0x40000000 0x00013c2f
Flow Status           : 0
ConCount/Duration     : 1 / 38m38s
Uptime                : 53m33s
Stats Duration        : 38m38s
Receiver Stats        : 2250048596 bytes / 2680666 pkts /   44.28 MBps Avg
Sender Stats          : 115191206632 bytes / 15515761 pkts /    7.02 MBps Avg
TCP Bytes In/Out      : 3497989220 / 118885996076
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)     : 1 / 1 / 1 ms
Wan Util              : 3.2%

```

Circuit 8/27.1 (DP1)

```

=====
Admin/Oper State      : Enabled / Online
Flags                 : 0x00000000
IP Addr (L/R)         : 192.168.3.170 8/ge3 <-> 192.168.3.164
HA IP Addr (L/R)      : 192.168.3.70 8/ge3 <-> 192.168.3.64
Configured Comm Rates: 2000000 / 5000000 kbps
Peer Comm Rates       : 2000000 / 5000000 kbps
Actual Comm Rates     : 2000000 / 5000000 kbps
Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
Metric                : 0
Connection Type       : Default
ARL-Type              : Reset
PMTU                  : Disabled
SLA                   : (none)
Failover Group        : 0
VLAN-ID               : NONE
L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)      : 0 / 0 / 0
DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)

```

```

DSCP (IP:h/m/l)      : 0 / 0 / 0
cfgmask              : 0x40000000 0x00013c2f
Flow Status          : 0
ConCount/Duration    : 1 / 38m38s
Uptime               : 53m33s
Stats Duration       : 38m38s
Receiver Stats       : 2245929472 bytes / 2681187 pkts / 44.17 MBps Avg
Sender Stats         : 115198570188 bytes / 15516010 pkts / 7.00 MBps Avg
TCP Bytes In/Out     : 3514474436 / 118900788176
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)    : 1 / 1 / 1 ms
Wan Util              : 3.2%

```

To display the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections:

```
switch:admin> portshow fciptunnel 8/27 -ctL
```

```

Tunnel: VE-Port:8/27 (idx:11, DP1)
=====
Oper State           : Online
TID                  : 219
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Enabled
Tape Pipelining      : Read/Write
IPSec                : Disabled
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN            : 10:00:00:05:33:e7:d2:13
Peer WWN             : 10:00:00:05:33:65:a8:05
RemWWN (config)     : 00:00:00:00:00:00:00:00
FICON                : Enabled
  XRC                : Enabled
  Tape Pipelining    : Read/Write
  Read Block id      : Enabled
  Tin Tir            : Enabled
  DevAck             : Enabled
  Tera Read          : Disabled
  Tera Write         : Disabled
  Print              : Disabled
FICON Max Read Pipe  : 32
FICON Max Write Pipe : 32
FICON Max Read Devs  : 16
FICON Max Write Devs : 16
FICON Write Timer    : 300
FICON Write Chain    : 3200000
FICON OXID Base      : 0x8000
FICON Debug Flags    : 0x77c90000
cfgmask              : 0x003fc7ff 0x40000208
Flow Status          : 0
ConCount/Duration    : 2 / 1h15m52s
Uptime               : 54m58s
Stats Duration       : 54m58s
Receiver Stats       : 12183885664 bytes / 7267213 pkts / 86.35 MBps Avg
Sender Stats         : 272470084404 bytes / 37117428 pkts / 13.91 MBps Avg
TCP Bytes In/Out     : 15336120428 / 281269480752
ReTx/OOO/SloSt/DupAck: 35 / 0 / 20 / 0
RTT (min/avg/max)    : 1 / 1 / 11 ms
Wan Util              : 3.2%

```

TxQ Util : 0.0%

Circuit 8/27.0 (DP1)

```

=====
Admin/Oper State      : Enabled / Online
Flags                 : 0x00000000
IP Addr (L/R)         : 192.168.2.170 8/ge2 <-> 192.168.2.164
HA IP Addr (L/R)      : 192.168.2.70 8/ge2 <-> 192.168.2.64
Configured Comm Rates: 2000000 / 5000000 kbps
Peer Comm Rates       : 2000000 / 5000000 kbps
Actual Comm Rates     : 2000000 / 5000000 kbps
Keepalive (Cfg/Peer)  : 1000 (1000 / 1000) ms
Metric                : 0
Connection Type       : Default
ARL-Type              : Reset
PMTU                  : Disabled
SLA                   : (none)
Failover Group        : 0
VLAN-ID               : NONE
L2Cos (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)     : 0 / 0 / 0
DSCP (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
DSCP (IP:h/m/l)      : 0 / 0 / 0
cfgmask               : 0x40000000 0x00013c2f
Flow Status           : 0
ConCount/Duration     : 2 / 1h15m52s
Uptime                : 54m59s
Stats Duration        : 54m59s
Receiver Stats        : 6093629652 bytes / 3633882 pkts / 43.17 MBps Avg
Sender Stats          : 136234172252 bytes / 18558931 pkts / 6.94 MBps Avg
TCP Bytes In/Out      : 9506571664 / 191565449080
ReTx/OOO/SloSt/DupAck: 33 / 0 / 18 / 0
RTT (min/avg/max)     : 1 / 1 / 11 ms
Wan Util              : 3.2%

```

TCP Connection 8/27.0 HA-Type:Local-Backup Pri:Low Conn:0x055665f4

```

=====
Local / Remote Port    : 3225 / 55379
Duration               : 46m42s
MSS                    : 1460 bytes
ARL Min / Cur / Max    : 33328 / 33328 / 833328
ARL Reset Algo         : Reset
Send Window
  Size / Scale         : 20832256 / 9
  Slow Start Threshold : 16777216
  Congestion Window    : 16778676
  Pkts InFlight        : 0
Recv Window
  Size / Scale         : 20832768 (Max:20832768) / 9
SendQ Next / Min / Max : 0x8e5cea51 / 0x8e5cea51 / 0x8e5cea51
RecvQ Next / Min / Max : 0x0e77cb0a / 0x0e77cb0a / 0x0fb5acba
RecvQ Pkts             : 0
Sender Stats
  Sent Bytes / Pkts    : 650880 / 7292
  Unacked Data        : 0
  Retransmits Slow / Fast : 0 / 0 (High:0)
  SlowStart           : 0

```

```

Receiver Stats
Recv Bytes / Pkts      : 682504 / 7292
Out-of-Order           : 0 (High:0)
Duplicate ACKs         : 0
RTT / Variance (High)  : 0 ms (0 ms) / 0 ms (0 ms)

```

To display IPSec parameters on an IPSec-enabled tunnel:

```

switch:admin> portshow fciptunnel 24 -i

Tunnel: VE-Port:24 (idx:0, DP0)
=====
Oper State           : Enabled
TID                  : 24
Flags                : 0x00000000
IP-Extension         : Disabled
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Disabled
Tape Pipelining      : Disabled
IPSec                : Enabled
IPSec-Policy         : myPolicy1
Load-Level (Cfg/Peer): Failover (Failover / Failover)
Local WWN            : 10:00:00:05:33:65:82:c8
Peer WWN             : 10:00:00:05:33:65:84:08
RemWWN (config)      : 00:00:00:00:00:00:00:00
cfgmask              : 0x0000001f 0x4000020c
Flow Status          : 0
ConCount/Duration    : 2 / 29m9s
Uptime               : 26s
Stats Duration       : 26s
Receiver Stats       : 28260 bytes / 164 pkts / 941.00 Bps Avg
Sender Stats         : 28096 bytes / 165 pkts / 935.00 Bps Avg
TCP Bytes In/Out     : 190584 / 236132
ReTx/000/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)    : 1 / 1 / 1 ms
Wan Util              : 0.0%
TxQ Util             : 0.0%

```

To display the FCIP tunnel hierarchy on the Brocade FX8-24:

```

switch:admin> portshow fciptunnel 1/12--hier
FCIP Tunnel 1/12
| High Level Tunnel Stats:
|   Operational Status: Up
|   Connected Count: 1
|   Max Comm Rate: 2500000
|   Compression Ratio: 1 : 1
|   Compressed Bytes: 0
|   Uncompressed Bytes: 0
|   Bytes In: 68942140
|     Bytes In Avg: 85
|   Bytes Out: 30983544
|     Bytes Out Avg: 16
|   Packets In: 92126
|     Packets In Avg: 0
|   Packets Out: 70728
|     Packets Out Avg: 0
| Aggregate TCP Stats:

```

```

| TCP Bytes In: 842506236
| TCP Bytes Out: 1446465008
| TCP Packets In: 16072571
| TCP Packets Out: 16063156
| Retransmits: 0
| Longest RTT: 0 ms
| Out Of Sequence: 0
| Slow Starts: 0
| Circuit Count: 2
| TCP Count: 24
| Circuits:
--> Circuit 1/12.1
|   High Level Circuit Stats:
|   Operational Status: Up
|   Connected Count: 1
|   Max Comm Rate: 2500000
|   Bytes In: 712
|   Bytes In Avg: 0
|   Bytes Out: 700
|   Bytes Out Avg: 0
|   Packets In: 4
|   Packets In Avg: 0
|   Packets Out: 5
|   Packets Out Avg: 0
|   Aggregate TCP Stats:
|   TCP Bytes In: 68632640
|   TCP Bytes Out: 174210892
|   TCP Packets In: 2639463
|   TCP Packets Out: 2639467
|   Retransmits: 0
|   Longest RTT: 0 ms
|   Out Of Sequence: 0
|   Slow Starts: 0
|   TCP Count: 12
|   TCP Connections:
| ---> TCP Conn 1/12.1:15240914
| ---> TCP Conn 1/12.1:15240915
| ---> TCP Conn 1/12.1:15240916
| ---> TCP Conn 1/12.1:15241504
| ---> TCP Conn 1/12.1:15241505
| ---> TCP Conn 1/12.1:15241506
| ---> TCP Conn 1/12.1:15241307
| ---> TCP Conn 1/12.1:15241308
| ---> TCP Conn 1/12.1:15241309
| ---> TCP Conn 1/12.1:15241111
| ---> TCP Conn 1/12.1:15241111
| ---> TCP Conn 1/12.1:15241112
--> Circuit 1/12.0
|   High Level Circuit Stats:
|   Operational Status: Up
|   Connected Count: 1
|   Max Comm Rate: 2500000
|   Bytes In: 68941428
|   Bytes In Avg: 82
|   Bytes Out: 30982844
|   Bytes Out Avg: 11
|   Packets In: 92122
|   Packets In Avg: 0
|   Packets Out: 70723
|   Packets Out Avg: 0

```

```

| Aggregate TCP Stats:
|   TCP Bytes In: 773873596
|   TCP Bytes Out: 1272254116
|   TCP Packets In: 13433108
|   TCP Packets Out: 13423689
|   Retransmits: 0
|   Longest RTT: 0 ms
|   Out Of Sequence: 0
|   Slow Starts: 0
|   TCP Count: 12
|   TCP Connections:
|---> TCP Conn 1/12.0:15240899
|---> TCP Conn 1/12.0:15240900
|---> TCP Conn 1/12.0:15240901
|---> TCP Conn 1/12.0:15241489
|---> TCP Conn 1/12.0:15241490
|---> TCP Conn 1/12.0:15241491
|---> TCP Conn 1/12.0:15241292
|---> TCP Conn 1/12.0:15241293
|---> TCP Conn 1/12.0:15241294
|---> TCP Conn 1/12.0:15241096
|---> TCP Conn 1/12.0:15241097
|---> TCP Conn 1/12.0:15241097

```

To display a tunnel on a Brocade FX8-24 with automatic compression enabled:

```

switch:admin> portshow fciptunnel 1/21
Tunnel ID: 1/21
  Tunnel Description:
  Admin Status: Enabled
  Oper Status: Up
  Compression: On (Auto-Mode)
  Fastwrite: Off
  Tape Acceleration: Off
  TPerf Option: Off
  IPSec: Disabled
  QoS Percentages: High 50%, Med 30%, Low 20%
  Remote WWN: Not Configured
  Local WWN: 10:00:00:05:1e:52:fe:00
  Peer WWN: 10:00:00:05:1e:39:a4:76
  Circuit Count: 2
  Flags: 0x00000000
  FICON: Off

```

To display a tunnel on a Brocade FX8-24 with automatic compression enabled in summary view (The "A" flag indicates Auto-Mode):

```

switch:admin> portshow fciptunnel 1/21 -s
-----
Tunnel Circuit OpStatus Flags Uptime TxMBps RxMBps ConnCnt CommRt Met/G
-----
1/21      -      Up      A----- 31m29s  0.00  0.00    2      -      -/-
1/21    0 1/xge1 Up      ---4--s 31m29s  0.00  0.00    2 2500/2500 0/-
1/21    1 1/xge0 Up      ---4-xs 31m29s  0.00  0.00    2 2500/2500 1/-
-----
Flags:  tunnel:  c=compression m=moderate compression

```

```

a=aggressive compression
A=Auto compression f=fastwrite t=Tapepipelining F=FICON
T=TPerf i=IPSec l=IPSec Legacy
Flags: circuit: s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
L=Listener I=Initiator

```

To display a tunnel on a Brocade FX8-24 with IPSec enabled in legacy mode:

```

switch:admin> portshow fciptunnel 1/12
-----
Tunnel ID: 1/12
  Tunnel Description:
  Admin Status: Enabled
  Oper Status: Up
  Compression: Off
  Fastwrite: Off
  Tape Acceleration: Off
  TPerf Option: Off
  IPSec: Enabled (legacy)
  QoS Percentages: High 50%, Med 30%, Low 20%
  Remote WWN: Not Configured
  Local WWN: 10:00:00:05:1e:52:fe:00
  Peer WWN: 10:00:00:05:1e:39:a4:76
  Circuit Count: 1
  Flags: 0x00000000
  FICON: Off

```

To display a summary view of the FCIP tunnel and circuits showing then legacy flag for the tunnel:

```

switch:admin> portshow fciptunnel 8/12 -s
-----
Tunnel Circuit OpStatus Flags Uptime TxMBps RxMBps ConnCnt CommRt Met/G
-----
8/12 - InProg cft--l- 3m3s 0.00 0.00 1 - -
8/12 0 8/xge1 InProg ---4v-s 3m3s 0.00 0.00 1 5000/5000 0/-
8/12 1 8/xge0 InProg ---4-xs 3m0s 0.00 0.00 1 1000/1000 0/-
8/12 2 8/xge1 InProg ---6--s 3m0s 0.00 0.00 1 2000/2000 0/-
-----
Flags: tunnel: c=compression m=moderate compression
a=aggressive compression
A=Auto compression f=fastwrite t=Tapepipelining F=FICON
T=TPerf i=IPSec l=IPSec Legacy
Flags: circuit: s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6

```

To display a summary view of an FCIP tunnel and its circuits on the Brocade FX8-24 with the --perf option :

```

switch:admin> portshow fciptunnel 7/12 --summary --perf
-----
Tunnel Circuit TxMBps RxMBps ComRatio RTT(ms) ReTx OutOfSeq SlowStart
-----
1/22 - 0.00 0.00 1.00:1 - 0 0 0
1/22 0 1/xge0 0.00 0.00 - 0 0 0
1/22 1 1/xge1 0.00 0.00 - 0 0 0
-----

```


To display a summary view of the QoS configuration on FCIP tunnels and circuits on the Brocade FX8-24:

```
switch:admin> portshow fciptunnel 7/12 --summary --qos
```

Tunnel	Circuit	Priority	Uptime	Tx Bps	Rx Bps	TxPkts/s	RxPkts/s
1/22	-	-	2d23h10m	0.00	0.00	0.00	0.00
1/22	-	F-Class	2d23h10m	0.00	0.00	0.00	0.00
1/22	-	High	2d23h10m	0.00	0.00	0.00	0.00
1/22	-	Medium	2d23h10m	0.00	0.00	0.00	0.00
1/22	-	Low	2d23h10m	0.00	0.00	0.00	0.00

```
switch:admin> portshow fciptunnel 7/12 --summary --qos --circuit
```

Tunnel	Circuit	Priority	Uptime	Tx Bps	Rx Bps	TxPkts/s	RxPkts/s
1/22	-	-	2d23h11m	0.00	0.00	0.00	0.00
1/22	-	F-Class	2d23h11m	0.00	0.00	0.00	0.00
1/22	-	High	2d23h11m	0.00	0.00	0.00	0.00
1/22	-	Medium	2d23h11m	0.00	0.00	0.00	0.00
1/22	-	Low	2d23h11m	0.00	0.00	0.00	0.00
1/22	0 1/xge0	-	2d23h11m	0.00	0.00	0.00	0.00
1/22	0 1/xge0	F-Class	2d23h11m	0.00	0.00	0.00	0.00
1/22	0 1/xge0	Medium	2d23h11m	0.00	0.00	0.00	0.00
1/22	0 1/xge0	Low	2d23h11m	0.00	0.00	0.00	0.00
1/22	1 1/xge1	-	2d23h11m	0.00	0.00	0.00	0.00
1/22	1 1/xge1	F-Class	2d23h11m	0.00	0.00	0.00	0.00
1/22	1 1/xge1	High	2d23h11m	0.00	0.00	0.00	0.00
1/22	1 1/xge1	Medium	2d23h11m	0.00	0.00	0.00	0.00
1/22	1 1/xge1	Low	2d23h11m	0.00	0.00	0.00	0.00

To display the IP addresses configured for the circuits on the Brocade FX8-24:

```
switch:admin> portshow fciptunnel --circuit --config
```

Tunnel	Circuit	AdminSt	Flags	Local IP	Remote IP
8/12	-	Enabled	-----		
8/12	0 8/xge1	Enabled	---4--s	192.168.0.16	192.168.0.116
8/24	-	Enabled	-----		
8/24	0 8/xge0	Enabled	---4--s	192.168.0.11	192.168.0.111

```
Flags (tunnel): c=compression m=moderate compression a=aggressive compression
A=Auto compression f=fastwrite t=Tapepipelining F=FICON
T=TPerf i=IPSec l=IPSec Legacy
(circuit): s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
L=Listener I=Initiator
```

To display all FCIP circuits on the Brocade FX8-24:

```
switch:admin> portshow fcipcircuit all
```

Tunnel	Circuit	OpStatus	Flags	Uptime	TxMBps	RxMBps	ConnCnt	CommRt	Met/G
1/12	0 1/xge1	Up	---4--s	3d2m	0.00	0.00	1	2500/2500	0/-
1/12	1 1/xge0	Up	---4-xs	3d2m	0.00	0.00	1	2500/2500	1/-
1/21	0 1/xge1	Up	---4--s	3d1m	0.00	0.00	1	2500/2500	0/-

```

1/21  1 1/xge0  Up    ---4-xs  3d2m  0.00  0.00   1  2500/2500  1/-
1/22  0 1/xge0  Up    ---4--s  3d1m  0.00  0.00   1  2500/2500  0/-
1/22  1 1/xge1  Up    ---4-xs  3d2m  0.00  0.00   1  2500/2500  1/-
1/31  0 1/xge0  Up    ---4--s  3d2m  0.00  0.00   1  2500/2500  0/-
1/31  1 1/xge1  Up    ---4-xs  3d2m  0.00  0.00   1  2500/2500  1/-
-----

```

```

Flags:circuit:s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
      T=Test(CPerf) L=Listener I=Initiator

```

```
switch:admin> portshow fciptunnel --hcl-status
```

Checking FCIP Tunnel HA Status.

```

Current Status      : Ready
CP Version          : v8.1.0
DP0 Status:
  State              : Online - Inactive
  Version            : v8.1.0
  Current FC HA Stage : IDLE
  Current IP HA Stage : IDLE
  IP SVI Swapped     : NO
DP1 Status:
  State              : Online - Inactive
  Version            : v8.1.0
  Current FC HA Stage : IDLE
  Current IP HA Stage : IDLE
  IP SVI Swapped     : NO

```

```

Tunnel 24 (FID:128) FC:HA Online IP:HA Online - Traffic will not be disrupted.
Tunnel 25 (FID:128) FC:HA Online IP:Disabled - Traffic will not be disrupted.
Tunnel 34 (FID:128) FC:HA Ready IP:HA Ready - FC and IP traffic will be disrupted.

```

To display the details for all FCIP circuits on the Brocade FX8-24 (Note that both circuits are configured as initiators):

```
switch:admin> portshow fcipcircuit all --detail
```

```

-----
Circuit ID: 1/12.0
  Circuit Num: 0
  Admin Status: Enabled
  Oper Status: Up
  Connection Type: Initiator
  Remote IP: 192.168.12.200
  Local IP: 192.168.12.100
  Metric: 0
  Failover Group ID: (Not Config/Active)
  Min Comm Rt: 2500000
  Max Comm Rt: 2500000
  SACK: On
  Min Retrans Time: 100
  Max Retransmits: 8
  Keepalive Timeout: 10000
  Path MTU Disc: 0
  VLAN ID: (Not Configured)
  L2CoS: (VLAN Not Configured)
  DSCP:  F:  0 H:  0 M:  0 L:  0

```

```

      Flags: 0x00000000
-----
Circuit ID: 1/12.1
  Circuit Num: 1
  Admin Status: Enabled
  Oper Status: Up
  Connection Type: Initiator
  Remote IP: 192.168.12.201
  Local IP: 192.168.12.101
  Metric: 1
  Failover Group ID: (Not Config/Active)
  Min Comm Rt: 2500000
  Max Comm Rt: 2500000
  SACK: On
  Min Retrans Time: 100
  Max Retransmits: 8
  Keepalive Timeout: 10000
  Path MTU Disc: 0
  VLAN ID: (Not Configured)
  L2CoS: (VLAN Not Configured)
  DSCP:  F:  0 H:  0 M:  0 L:  0
  Flags: 0x00000000
-----
Circuit ID: 1/21.0
  Circuit Num: 0
  Admin Status: Enabled
(Output truncated)

```

To display additional performance parameters for a circuit:

```

switch:admin> portshow fcipcircuit 1/12 0 --perf
-----
Tunnel ID: 1/12
  Tunnel Description:
  Admin Status: Enabled
  Oper Status: Up
  Compression: Off
  Fastwrite: Off
  Tape Acceleration: Off
  TPerf Option: Off
  IPsec: Disabled
  QoS Percentages: High 50%, Med 30%, Low 20%
  Remote WWN: Not Configured
  Local WWN: 10:00:00:05:1e:52:fe:00
  Peer WWN: 10:00:00:05:1e:39:a4:76
  Circuit Count: 2
  Flags: 0x00000000
  FICON: Off
  Oper Status: Up
  Flow Ctrl State: Off
  Connected Count: 1
  Tunnel Duration: 3 days, 19 hours, 54 minutes, 5 seconds
  Compression Statistics:
    0 Uncompressed Bytes
    0 Compressed Bytes
    1.00 : 1 Compression Ratio
  Performance Statistics: Overall Throughput
    31073824 Output Bytes
    16 Bps 30s Avg, 93 Bps Lifetime Avg
    70932 Output Packets

```

```

    0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
69170308 Input Bytes
    85 Bps 30s Avg, 209 Bps Lifetime Avg
92393 Input Packets
    0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
TCP Stats:
    1450493536 Output Bytes
    16107875 Output Packets
    844887492 Input Bytes
    16117320 Input Packets
    Retransmits: 0
    Round Trip Time: 0 ms
    Out Of Order: 0
    Slow Starts: 0

```

To display QoS prioritization for the default circuit:

```

switch:admin> portshow fcipcircuit 1/12 0 --perf --qos
-----
Circuit ID: 1/12.0
  Circuit Num: 0
  Admin Status: Enabled
  Oper Status: Up
  Connection Type: Default
  Remote IP: 192.168.12.200
  Local IP: 192.168.12.100
  Metric: 0
  Failover Group ID: (Not Config/Active)
  Min Comm Rt: 2500000
  Max Comm Rt: 2500000
  SACK: On
  Min Retrans Time: 100
  Max Retransmits: 8
  Keepalive Timeout: 10000
  Path MTU Disc: 0
  VLAN ID: (Not Configured)
  L2CoS: (VLAN Not Configured)
  DSCP:  F:  0 H:  0 M:  0 L:  0
  Flags: 0x00000000
  Flow Ctrl State: Off
  Connected Count: 1
  Circuit Duration: 3 days, 19 hours, 57 minutes, 42 seconds
  Performance Statistics - Priority: F-Class
    Oper Status: Up
    Flow Ctrl State: Off
    Connected Count: 1
    Duration: 3 days, 19 hours, 57 minutes, 42 seconds
    4732308 Output Bytes
      10 Bps 30s Avg, 14 Bps Lifetime Avg
    41359 Output Packets
      0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
    7223112 Input Bytes
      27 Bps 30s Avg, 21 Bps Lifetime Avg
    45277 Input Packets
      0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
    TCP Stats:
      318824216 Output Bytes
      3419555 Output Packets
      184935644 Input Bytes
      3419605 Input Packets

```

```

    Retransmits: 0
    Round Trip Time: 0 ms
    Out Of Order: 0
    Slow Starts: 0
Performance Statistics - Priority: High
  Oper Status: Up
  Flow Ctrl State: Off
  Connected Count: 1
  Duration: 3 days, 19 hours, 57 minutes, 41 seconds
  0 Output Bytes
    0 Bps 30s Avg, 0 Bps Lifetime Avg
  0 Output Packets
    0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
  0 Input Bytes
    0 Bps 30s Avg, 0 Bps Lifetime Avg
  0 Input Packets
    0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
TCP Stats:
  308550696 Output Bytes
  3310618 Output Packets
  176126080 Input Bytes
  3310620 Input Packets
  Retransmits: 0
  Round Trip Time: 0 ms
  Out Of Order: 0
  Slow Starts: 0
Performance Statistics - Priority: Medium
  Oper Status: Up
  Flow Ctrl State: Off
  Connected Count: 1
  Duration: 3 days, 19 hours, 57 minutes, 43 seconds
  26358236 Output Bytes
    17 Bps 30s Avg, 79 Bps Lifetime Avg
  29611 Output Packets
    0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
  61983140 Input Bytes
    298 Bps 30s Avg, 187 Bps Lifetime Avg
  47166 Input Packets
    0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
TCP Stats:
  340704236 Output Bytes
  3429074 Output Packets
  239375444 Input Bytes
  3438474 Input Packets
  Retransmits: 0
  Round Trip Time: 0 ms
  Out Of Order: 0
  Slow Starts: 0
Performance Statistics - Priority: Low
  Oper Status: Up
  Flow Ctrl State: Off
  Connected Count: 1
  Duration: 3 days, 19 hours, 57 minutes, 42 seconds
  0 Output Bytes
    0 Bps 30s Avg, 0 Bps Lifetime Avg
  0 Output Packets
    0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
  0 Input Bytes
    0 Bps 30s Avg, 0 Bps Lifetime Avg
  0 Input Packets

```

```

0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
TCP Stats:
308551588 Output Bytes
3310627 Output Packets
176126612 Input Bytes
3310630 Input Packets
Retransmits: 0
Round Trip Time: 0 ms
Out Of Order: 0
Slow Starts: 0

```

To display a summary view for the circuits on the Brocade 7840:

```
switch:admin> portshow fciptunnel --circuit
```

Tunnel	Circuit	OpStatus	Flags	Uptime	TxMBps	RxMBps	ConnCnt	CommRt	Met/G
24	-	Up	-----	36s	0.00	0.00	1	-	-/-
24	0 ge2	Up	---ah--4	36s	0.00	0.00	1	2500/5000	0/-
24	1 ge3	Up	---ah--4	10s	0.00	0.00	1	2500/5000	0/-
28	-	Up	-----	13s	0.00	0.00	1	-	-/-
28	0 ge4	Up	---a---4	13s	0.00	0.00	1	2500/5000	0/-
34	-	InProg	-----	0s	0.00	0.00	0	-	-/-
34	0 ge2	InProg	---ah--4	0s	0.00	0.00	0	2500/5000	0/-
34	1 ge3	InProg	---ah--4	0s	0.00	0.00	0	2500/5000	0/-

```

Flags (tunnel): i=IPSec f=Fastwrite T=TapePipelining F=FICON r=ReservedBW
a=FastDeflate d=Deflate D=AggrDeflate
(circuit): h=HA-Configured v=VLAN-Tagged p=PMTU 4=IPv4 6=IPv6
ARL a=Auto r=Reset s=StepDown t=TimedStepDown

```

To display the IP addresses configured for the circuits on the Brocade 7840:

```
switch:admin> portshow fciptunnel 24 --circuit
```

```

Tunnel: VE-Port:24 (idx:0)
=====
Oper State           : In Progress
TID                  : 24
Flags                : 0x00000000
Compression          : None
QoS BW Ratio         : 50% / 30% / 20%
Fastwrite            : Disabled
Tape Pipelining      : Disabled
IPSec                : Disabled
Local WWN            : 10:00:00:05:1e:65:7d:08
Peer WWN             : 00:00:00:00:00:00:00:00
RemWWN (config)      : 00:00:00:00:00:00:00:00
cfgmask              : 0x40000008 0x0000001f
Failover Count       : 0
Flow Status          : 0
ConCount/Duration    : 0 / 0s
Receiver Stats       : 0 bytes / 0 pkts / 0.00 Bps Avg
Sender Stats         : 0 bytes / 0 pkts / 0.00 Bps Avg
TCP Bytes In/Out     : 0 / 0
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)    : 0 / 0 / 0 ms

```

```

Circuit 24.0 (dp:0)
=====
Admin/Oper State      : Enabled / In Progress
Flags                 : 0x00000000
IP Addr (L/R)         : 192.168.2.20 ge2 - 192.168.2.10
HA IP Addr (L/R)      : 192.168.2.21 ge2 - 192.168.2.11
Configured Comm Rates: 2500000 / 5000000 kbps
Peer Comm Rates       : 0 / 0 kbps
Actual Comm Rates     : 2500000 / 5000000 kbps
Keepalive Timeout     : 6000 ms
Metric                : 0
Connection Type       : Default
ARL-Type              : Auto
PMTU                  : Disabled
Failover Group        : 0
VLAN-ID               : NONE
L2Cos (f/h/m/l)       : 0/0/0/0
DSCP (f/h/m/l)        : 0/0/0/0
cfgmask               : 0x00003c2f 0x40000000
Flow Status           : 1
ConCount/Duration     : 0 / 0s
Receiver Stats        : 0 bytes / 0 pkts / 0.00 Bps Avg
Sender Stats          : 0 bytes / 0 pkts / 0.00 Bps Avg
TCP Bytes In/Out      : 0 / 0
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)     : 0 / 0 / 0 ms

```

```

Circuit 24.1 (dp:0)
=====
Admin/Oper State      : Enabled / In Progress
Flags                 : 0x00000000
IP Addr (L/R)         : 192.168.3.20 ge3 - 192.168.3.10
HA IP Addr (L/R)      : 192.168.3.21 ge3 - 192.168.3.11
Configured Comm Rates: 2500000 / 5000000 kbps
Peer Comm Rates       : 0 / 0 kbps
Actual Comm Rates     : 2500000 / 5000000 kbps
Keepalive Timeout     : 6000 ms
Metric                : 0
Connection Type       : Default
ARL-Type              : Auto
PMTU                  : Disabled
Failover Group        : 0
VLAN-ID               : NONE
L2Cos (f/h/m/l)       : 0/0/0/0
DSCP (f/h/m/l)        : 0/0/0/0
cfgmask               : 0x00003c2f 0x40000000
Flow Status           : 1
ConCount/Duration     : 0 / 0s
Receiver Stats        : 0 bytes / 0 pkts / 0.00 Bps Avg
Sender Stats          : 0 bytes / 0 pkts / 0.00 Bps Avg
TCP Bytes In/Out      : 0 / 0
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)     : 0 / 0 / 0 ms

```

To display FCP emulation statistics using the command with two levels and a single command:

```
switch:admin> portshow xtun 1/13 -fcp -itl -itn -stats
```

To display FCP emulation statistics, information, and configuration information using the command with a single level and three commands:

```
switch:admin> portshow xtun 1/13 -fcp -itl -stats \
               -info -cfg
```

To display FICON statistics on the Brocade SX6 blade:

```
switch:admin> portshow xtun 8/27 -ficon -stats
```

FICON FCIP VePort=219 Statistics:

Emulation Common Statistical Counts (decimal)

=====

TotalIngressFrames	=	307196261		
TotalEgressFrames	=	21636019		
TotalFCEgressFrames	=	10323404		
TotalCmds	=	7420486		
TotalEmulDvcLvlAcks	=	734		
TotalEmulatedOps	=	1889025		
Idle Accepted Status	=	92		
Idle Not Acpt Status	=	14		
Idle Accepted ATTN	=	4		
MaxRetryQueueDepth	=	0	MaxEgressQueueDepth	= 3360
TotalCUBusyResponses	=	5	TotalCUEndResponses	= 5
TotalEmulatedCUBusys	=	5	TotalEmulCUEnd	= 5
WIRE Buffer Percentages LocalFree= 99 LocalLow= 99 PeerFree= 99 PeerLow=99				
XBAR Buffer Percentages LocalFree=100 LocalLow=100 PeerFree=100 PeerLow=100				

FICON Configuration Status:

FICON Host side Paths	=	0	Device Side Paths	=	0
FICON LPARS Connected	=	5	Curr LCUs	=	12
Current Egress Q Count	=	3360	RetryQCnt	=	0
Current Free Headers	=	348	HdrsInUse	=	0
Active Emulation Count	=	12			

No Emulated XRC Operations

Tape Write Emulation Statistical Counts (decimal)

Current Bytes in write pipe	=	0
Maximum Bytes in write pipe	=	14680064
Largest write chain processed	=	229377
Total number of emulated Write Bytes	=	249337825280
Number of emulated Write Chains	=	1086924
Total number of emulated Write CCWs	=	4348063
Average Emulated Writes Blocksize	=	57344
Average Writes in Emulated Chains	=	4
Write emulation slowdowns	=	30980
Slowdowns at Start of Chain	=	407
Slowdowns at End of chain	=	5291
Current Host side Write FDCB Count	=	0
Max Concurrent Write FDCB Count	=	8
Current Write Limited FDCB Count	=	0

Tape Read Emulation Statistical Counts (decimal)

Total number of emulated Read Bytes	=	73229283205
-------------------------------------	---	-------------


```

Total number of emulated Read Chains=          802101
Total number of emulated Read CCWs  =          1180476
Average Emulated Bytes per chain   =           91296
Average Emulated Read Blocksize    =           62033
Average CCWs in Emulated Chains    =              1
Current Read FDCBs Count           =              8
Max Concurrent Read FDCB Count     =              0
Current Read Limited FDCB Count     =              8

```

No Emulated Tera Operations

No Emulated Printer Operations

FICON Debug Flags (ftrace and others) = 0x77c90000 (Default = 0x77c90000)

```

Bit 31 [0x80000000] = 0 : TRIGGER_ON_SELRESET
Bit 30 [0x40000000] = 1 : TRIGGER_ON_PURGEPATH
Bit 29 [0x20000000] = 1 : TRIGGER_ON_RRS_MISS
Bit 28 [0x10000000] = 1 : TRIGGER_ON_LRJ

Bit 27 [0x08000000] = 0 : TRIGGER_ON_UNIT_CHECK
Bit 26 [0x04000000] = 1 : TRIGGER_ON_LOOKUP_FAIL
Bit 25 [0x02000000] = 1 : TRIGGER_ON_FDCB_ABORT
Bit 24 [0x01000000] = 1 : TRIGGER_ON_NOFDCB_ABORT

Bit 23 [0x00800000] = 1 : TRIGGER_ON_LINKDOWN
Bit 22 [0x00400000] = 1 : TRIGGER_ON_SENSE_CMD
Bit 21 [0x00200000] = 0 : TRIGGER_ON_BUSYATTN
Bit 20 [0x00100000] = 0 : TRIGGER_ON_XRCUNS

Bit 19 [0x00080000] = 1 : DISPLAY_FDCB_ON_ERROR
Bit 18 [0x00040000] = 0 : TRIGGER_ON_LOW_WIREPOOL
Bit 17 [0x00020000] = 0 : TRIGGER_ON_READ_UNITCHECK
Bit 16 [0x00010000] = 1 : TRIGGER_ON_STATE_SAVE

Bit 15 [0x00008000] = 0 : TRIGGER_ON_SUSPEND
Bit 14 [0x00004000] = 0 : MINIMIZE_RASLOGS
Bit 13 [0x00002000] = 0 : TRIGGER_ON_LONG_IO
Bit 12 [0x00001000] = 0 : FORCE_DISABLE_IDLE_STACC

Bit 11 [0x00000800] = 0 : FORCE_DISABLE_3203_PRINT
Bit 10 [0x00000400] = 0 : FORCE_DISABLE_3211_PRINT
Bit 9  [0x00000200] = 0 : FORCE_DISABLE_3800_PRINT
Bit 8  [0x00000100] = 0 : FORCE_DISABLE_3900_PRINT

Bit 5  [0x00000020] = 0 : DISABLE_TAPE_MULTIPATH_PROTECTION
Bit 4  [0x00000010] = 0 : ACCEPT_READTRACK_STATUS

Bit 3  [0x00000008] = 0 : FORCE_DISABLE_READ_PIPE
Bit 2  [0x00000004] = 0 : FORCE_DISABLE_WRITE_PIPE
Bit 1  [0x00000002] = 0 : FORCE_DISABLE_XRC_EMUL
Bit 0  [0x00000001] = 0 : DISABLE_PERSIST_IU_PACE

```

To display the FICON Device Path Blocks:

```
switch:admin> portshow xtun 23 -ficon -fdpb

FDPB (FICON Device Path Block - one per path) Count = 4
----- \
(0x)      Side Path:      Emul Type Tag      \
=====  =====  =====  =====  \
041004E000  H   0x1763016401***** Yes  Tape 0x14340000 \
flg=10 parms=2001F0 typ=002086 mod=A04 mfg=IBM plnt=02 \

0410062880  H   0x17630164FE***** No   FCUP 0x14FD0000 \
0410052000  H   0x1763086403***** Yes  Disk 0x14830000 \
flg=10 parms=2001F2 typ=002086 mod=A04 mfg=IBM plnt=02 \

0410084000  H   0x176308640E***** Yes  ESCN 0x14A40000 \
flg=10 parms=2001F2 typ=002086 mod=A04 mfg=IBM plnt=02 \

-----

EgrOx IngOx Valid VTN
=====
      0      1      Y      1
sq=00000000E77DF tg=80F0

      0      0      Y      1
      0      0      Y      1
sq=00000000E77DF tg=80F2

      1      1      Y      1
sq=00000000E77DF tg=80F2
(Output split)
```

To display the FICON Channel Blocks (all blocks and a specified block):

```
switch:admin> portshow xtun 16 -ficon -fchb 041055B680

FCHB (FICON CHannel Block - one per LPAR) Count = 1
-----
(0x)      Side Path:      CU Count  Emul ChTIN CuTIN
=====  =====  =====  =====  =====
041055B680  D   0x106301640106****   0x0004      0x0000 0x0000

FCHB Flags:
tinInProgress=N   emuTinAckPending=N   emuTirInProgress=N
emuTirAckPending=N emuTinLackPending=N   emuTirPending=N
emuTirReceived=N  emuTinFinalAckPend=N   emuTirPending=N
emuTinSuccessful=N emuTinReceived=N   emuTirSent=N
fcrPresent=N      fchbValid=Y

FCHB Control variables:
tinOrigOxid=0xFFFF tirOrigOxid=0xFFFF tinAckRxid=0xFFFF
tinAckOxid=0xFFFF allocChOxid=0xFFFF allocChOidx=0x0000
tinTirOxid=0xFFFF
```

To display FICON FCUB information (FICON Images accessed through the tunnel)

```
switch:admin> portshow xtun 23 -ficon -fcub
```

FCUB (FICON Control Unit Block) Count = 29

```

FC Egress parms:
(0x)      Side Path:      devRange DevCnt Model \
=====
0410083800 H 0x17630164010604** 00-0F 0x10 3490 \
0410047500 H 0x17630164010605** 00-0F 0x10 3490 \
0410048E80 H 0x17630164010606** 00-0F 0x10 3490 \
0410049700 H 0x17630164010607** 00-0F 0x10 3490 \
0410054000 H 0x17630164010004** - 0x00 0000 \
041006B100 H 0x17630864030600** 00-7F 0x80 3990 \
041006C000 H 0x17630864030601** 00-7F 0x80 3990 \
04100A4000 H 0x17630864030000** - 0x00 0000 \
0410072000 H 0x176308640E0600** - 0x00 0000 \
0410073100 H 0x176308640E0601** - 0x00 0000 \
0410075100 H 0x176308640E0602** - 0x00 0000 \
0410076880 H 0x176308640E0603** - 0x00 0000 \
0410078000 H 0x176308640E0604** - 0x00 0000 \
0410078880 H 0x176308640E0605** - 0x00 0000 \
041007A000 H 0x176308640E0606** - 0x00 0000 \

```

```

FC Egress parms:
Type  LPE BL CHPID      Tag V Ve P B P VC EGID
=====
TAPE  Yes  00F0 0x15698E1E Y Y 2 0 1 02 000D
TAPE  Yes  00F0 0x15B5E15F Y Y 2 0 2 02 000D
TAPE  Yes  00F0 0x15D1509C Y Y 2 0 4 02 000D
TAPE  Yes  00F0 0x150D3FDD Y Y 2 0 2 02 000D
UNKN  No   00F0 0x15CDB71F Y Y 2 0 1 02 000D
DISK  Yes  00F2 0x1538206F Y Y 2 0 4 02 0007
DISK  Yes  00F2 0x15E44F2E Y Y 2 0 1 02 0007
UNKN  No   00F2 0x159C196E Y Y 2 0 3 02 0007
UNKN  No   00F2 0x152D3BA3 Y Y 2 0 3 02 0007
UNKN  No   00F2 0x15F154E2 Y Y 2 0 4 02 0007
UNKN  No   00F2 0x1595E521 Y Y 2 0 4 02 0007
UNKN  No   00F2 0x15498A60 Y Y 2 0 3 02 0007
UNKN  No   00F2 0x155C86A7 Y Y 2 0 1 02 0007
UNKN  No   00F2 0x1580E9E6 Y Y 2 0 1 02 0007
UNKN  No   00F2 0x15E45825 Y Y 2 0 3 02 0007
(output split and truncated)

```

To reset the Device Path Block statistics:

```
switch:admin> portshow xtun 16 -ficon -fdpb -clear
```

To display a FICON Teradata, Tape, or XRC emulation statistics for a specified Device Control Block:

```

switch:admin> portshow xtun 16 -ficon -fdcb 0x041008B980
FDCB (FICON Device Control Block):Port=10 Side=Host Active=No
DeviceType=TERA
-----
FDCB

```

```

(0x)          hDom hPrt dDom dPrt lch  lcu  dev  state
=====
0x041008B980  63   04   64   02   02   08   03  0x00

```

CONTROL

=====

```

active          = No Send_SYR          = No crrSet          = No
xrcEstablished = No sssSet              = No dvcAckEmulInProg = No
discardIgrFrames= No resetEmulPending  = No interceptLack  = No
interceptLack2  = No onStartPendingQueue= No discardEgrFrames = No
deferDeviceType = No emulBaAcceptPending= No mappingOxid      = No
xrcEmulEnable   = Yes tapeWriteEmulEnable= Yes tapeReadEmulEnabled= Yes
dvcAckEmulEnable= Yes fdcbLocked        = Yes vtnValid       = Yes
fcrPresent      = No deviceNotInstalled = No onCuBusyQueue    = No
egressParmsSet  = Yes statusFlags       = 0x4000

```

QUEUE COUNTS

=====

```

fcEgressQueue   =          0 egressQMax =          0
ficonRetryQueue =          0 retryQMax  =          0
cmdHdrQueue     =          0 cmdHdrQMax =         32

```

MISC (hex)

=====

```

state          = 0x00    prevState      = 0x18    lastStateArray= 0x1C371415
statusFlags    = 0x4000
errorCode      = 0x00    ingressOxid   = 0xFFFF
egressOxid     = 0xFFFF  allocatedOxid= 0xFFFF  unsolIngrOxid = 0xFFFF
lastStatus     = 0x0C    lastCmd        = 0x00    tokenFlags    = 0x00
lastCmdArray= 0x773E3E64 lastStsArray= 0x08040C0C1 \
                                         astXprtArray=0x08040C0C
lastSeqId      = 0x00    curSeqId       = 0xB1
lastXportEmulMsg = 0x4F  statusFctlHi  = 0x18    curIuCnt       = 0x0001
token          = 0x00000000
endingChOxid   = 0xFFFF  endingCuOxid= 0xFFFF
emulDvcAckSeqs= 0x00000003 lastEvtFromCu= 0x00  priorEvtFrmCu = 0x85
abortOxid      = 0xFFFF  fdcbWorkSched = 0
deviceType     = 0x54455241

```

EMUL_HDR (hex)

=====

```

funct = 0x00 msg = 0x00
parm1 = 0x00 parm2 = 0x0000 parm3 = 0x00000000

```

STATS (dec)

=====

```

cmdCount        =      274865
emulatedOps     =      274565 resequencedIuCount =          0
cancelCount     =          0 selectiveResetCount =          1
purgePathCount  =          0 abortCount          =          0
normStatus      =      274408 attnStatus          =          0
attnBusyStatus  =          0 ceStatus              =          0
deStatus        =          0 retryStatus           =          0
immRetryStatus  =          0 devBusyStatus         =          0
cuBusyStatus    =          0 ceDeUxStatus          =          1
deUxStatus      =          0 pendDeStatus          =          0
deUcStatus      =          0 unusualStatus         =          0
chLinkBusyCount =          1 cuLinkBusyCount       =          0
unusualStsArray = 0x00000000
pGb             = 0x0000000000

```

```

tag                = 0x0285CF9E
senseDeviceType    = 0xFF30884000000000
ingressFrameCount= 0x000000000011ADCE
egressFrameCount   = 0x00000000000432AB

```

TERADATA CONTROL

=====

```

writeSuspendFlag    = OFF finalStatusPndg = OFF waitCuRsp      = OFF
cuBusyRsp           = OFF suspendCompleted= OFF rexmitPending  = OFF
synStatusSent       = OFF unitCheckPndg   = OFF unAnsweredExchg = OFF
queuedCntlFrame     = OFF controlFunctAc  = OFF controlFunctDon = OFF
unitChkPresented    = OFF senseDataSaved  = OFF snsDataPresente = OFF
waitingForSenseData = OFF lackOwed        = OFF rexmitLbySent   = OFF
readEmulAct         = OFF writeEmulAct     = OFF iuPacingNeeded  = ON

```

TERADATA MISC

=====

```

writeTrigger          = 0x0000          readBlkTrigger    = 0x0000
teraDhEndCount        = 0x0
teraEsCount           = 0x0000          writeOpsInPipe   = 0x00000000
maxWritePipe          = 0x0000          maxReadPipe      = 0x0002
teraCmdCode           = 0x64            teraStatus       = 0x0d
emulTeraWriteOps      = 0x00043085      emulTeraReadOps  = 0x00000000
emulTeraWrtBytes      = 0x00000001679cb8b0
emulTeraReadBytes     = 0x0000000000000000
emulTeraWriteCcws     = 0x00043085      emulTeraReadCcws = 0x00000000
multUnitCheckCnt      = 0x00000000
currentWriteChain     = 160
largestWriteChain     = 43936
bytesInWritePipe      = 0
atMaxWrtBytesCount    = 0

```

IU Pacing Values:ccrsIssued=0 creditsOutstanding=0 currentCreditBurst=0

Historic Emulation Headers:

=====

```

current index = 1
ToPeerEmulHdr[0]=funct=2:msg=1:p1=0x00:p2=0x0000:p3=0x0285cf9e
ToPeerEmulHdr[1]=funct=2:msg=7:p1=0x00:p2=0x3085:p3=0x00000000
ToPeerEmulHdr[2]=funct=2:msg=7:p1=0x00:p2=0x3085:p3=0x00000000
ToPeerEmulHdr[3]=funct=2:msg=18:p1=0x00:p2=0x3085:p3=0x00000000
current index = 0
FromPeerEmulHdr[0]=funct=2:msg=15:p1=0x0c:p2=0x3066:p3=0x00000003
FromPeerEmulHdr[1]=funct=7:msg=8:p1=0x5f:p2=0x0062:p3=0x00000000
FromPeerEmulHdr[2]=funct=7:msg=6:p1=0x00:p2=0x0000:p3=0x00000000
FromPeerEmulHdr[3]=funct=7:msg=8:p1=0x5f:p2=0x0062:p3=0x00000000
convIngressOxid      = 0xffff          convIngressOxid   = 0xffff
timedOps              = 0x00043066

```

TERA IO TIMING:

=====

```

last elapsedTime     = 0.397
maxElapsedTime       = 0.504
totalTime            = 145.132
longIOtimes          = 0x0000005D
startOfChainDelayCnt = 0x0000          endOfChainDelayCnt = 0x5B
readPacedCount       = 0x0000          writePacedCount    = 0x0000

```

Ave Chain SIO time = 0.000 seconds

ReadPipe Cntls:

=====

```

readBlkEmulation=OFF      entireCP=OFF      waitForAccept=OFF
      endOfCP=OFF      commandRetry=OFF      goToIdleState=OFF
      sentUExceptn=OFF      earlyEnd=OFF      dackPending=OFF
      sofCNReceived=OFF      noActiveIO=OFF      sendSOFRep=OFF
      blkIneligible=OFF      rdBlkValid1=OFF      rdBlkValid2=OFF
earlyIdleStatus=ON      reducePipe=OFF      doBSNoOp=OFF
      waitForDe=OFF      readCpLimited=OFF
statusFramesOnQueue = 0x0000      readBlocksSent = 0x0000
readBlocksRequested = 0x0000      readCpsRequested = 0x0000

```

To display FICON emulation statistics on the Brocade SX6 (as the following examples show, this command can display emulation statistics for Teradata, Tape, XRC, and Printer depending on the FICON devices and FICON Emulation Features that are enabled on the tunnel.):

switch:admin> **portshow xtun 8/27 -ficon -emultera**

TAPE EMULATION STATS

FDCB Ptr (0x)	Path (0x)	H	State	Emul Pipe	Emul Q'd	Rtry Qd	Emulated Tape Ops
0x8000000500EBC900	DB6841614D02030E	D	0x3C	0x11	0007	0000	149487
0x8000000500EC3400	DB6841614D020401	D	0x3C	0x11	0005	0000	149436

Emulated Read CCWs	RdAvg Size	Emulated Write CCWs	WtAvg Size
149487	65534	0	0
149436	65533	0	0

(Output split and truncated)

switch:admin> **portshow xtun 23 -ficon -emultape**

TAPE EMULATION STATS

FDCB Ptr (0x)	Path (0x)	H	State	Cmnds Qd	Cmd Max	Data Qd	Data Max	Emulated RRS Ops
0x8000000500C79C00	196300640006002B	H	0x00	0000	0072	0000	0001	2677
0x8000000500C22F00	1963006400060027	H	0x00	0000	0072	0000	0001	1850
0x8000000500C14D80	196300640006002F	H	0x00	0000	0072	0000	0001	2657
0x8000000500C1AD80	1963006400060023	H	0x00	0000	0072	0000	0001	3546

[...]

Avg RRS	RRS TLF	RRS Read	Large Chains
39	34819	9791	0
25	42323	6798	0
35	37134	7371	0
44	31723	8203	0

[...]

(Output split and truncated)

```
switch:admin> portshow xtun 23 -ficon -images
```

```
FCUB (FICON Control Unit Block) Count = 11
```

(0x)	Side Path:	devRange	DevCnt	Model
8000000500C82600	H 0x19630064000601**	-	0x00	3990
8000000500BFAB00	H 0x19630064000600**	20-BF	0x80	3990
8000000500C81F00	D 0x19640F63040601**	00-07	0x08	3088
8000000500C83300	H 0x196302640A0510**	00-0F	0x10	3590

FC Egress parms:

Type	LPE	BL	CHPID	Tag	V	Ve	P	B	P	VC	EGID	cbState
DISK	Yes		0000	0x02908700	Y	Y	2	0	0	05	0010	0
DISK	Yes		0000	0x0290E841	Y	Y	2	0	0	05	0010	0
FCTC	Yes		0000	0x02C4D969	Y	Y	2	0	0	15	0013	0
TAPE	Yes		0000	0x023D22B4	Y	Y	2	0	3	15	0012	0

(Output split and truncated)

To display FICON emulation statistics for the FCIP tunnel:

```
switch:admin> portshow xtun 23 -ficon -stats
```

FICON FCIP Tunnel=7 Statistics:

Emulation Common Statistical Counts (decimal)

```
=====
TotalIngressFrames      =          1824707656
TotalEgressFrames       =          1665499614
TotalFCEgressFrames     =          136476952
TotalCmds               =          152548501
TotalEmulDvcLvlAcks     =              81667
TotalEmulatedOps        =          23893981
Idle Accepted Status    =          8000016
Idle Not Accpt Status   =          11886003
MaxRetryQueueDepth      =          0
MaxEgressQueueDepth     =          2316
TotalCUBusyResponses    =          0
TotalCUEndResponses     =          0
TotalEmulatedCUBusys    =          0
TotalEmulCUEnd          =          0
TotalSelectiveResets     =          0
TotalChLinkBusy         =          0
TotalCancels            =          0
TotalAborts             =          0
TotalEmulErrors         =          0
TotalCuLinkBusy         =          0
TotalPurgePaths         =          0
Xport LRC CheckErrors   =          0
Generated Link Busys    =          0
Failed Generate Frame   =          0

WIRE Buffer Percentages LocalFree= 95 LocalLow= 94 PeerFree= 95 PeerLow=93
XBAR Buffer Percentages LocalFree= 98 LocalLow= 97 PeerFree= 98 PeerLow=97
```

FICON Configuration Status:

```
-----
FICON Host side Paths = 3 Device Side Paths= 1
FICON LPARS Connected = 5 Curr LCUs = 17 Total Devices= 200
Current Egress Q Count= 0 RetryQCnt = 0
Current Free Headers = 892 HdrsInUse = 0
Active Emulation Count= 4
```

XRC Emulation Statistical Counts (decimal)

```
-----
Total Emulated RRS Chains      =          1950996
Total Emulated RRS Commands    =          18732495
Total Received RRS Bytes       =          145156149548
Total XRC RRS Requests in Bytes =          315684784416
```

```

Average RRS Request BlkSize      =          7748
Average RRS Requests per Chain   =           9
Largest RRS Request Byte Count   =       12714240
Ratio of RRS Read Bytes to the
Requested Read bytes = 459 read : 1000 requested

```

Tape Write Emulation Statistical Counts (decimal)

```

-----
Current Bytes in write pipe      =          0
Maximum Bytes in write pipe      =       21359520
Largest write chain processed     =       4128769
Total number of emulated Write Bytes=    1374007085422
Number of emulated Write Chains   =       11665734
Total number of emulated Write CCWs =     39204146
Average Emulated Writes Blocksize =        35047
Average Writes in Emulated Chains =          3
Write emulation slowdowns        =       138931
Slowdowns at Start of Chain      =       83938
Slowdowns at End of chain        =       54993
Current Host side Write FDCB Count =          4
Max Concurrent Write FDCB Count   =         16
Current Write Limited FDCB Count  =          0

```

Tape Read Emulation Statistical Counts (decimal)

```

-----
Total number of emulated Read Bytes =    1299985900584
Total number of emulated Read Chains=     10277251
Total number of emulated Read CCWs  =     35565516
Average Emulated Bytes per chain    =     126491
Average Emulated Read Blocksize     =     36551
Average CCWs in Emulated Chains     =          3
Current Read FDCBs Count            =          0
Max Concurrent Read FDCB Count       =         16
Current Read Limited FDCB Count      =          0

```

Tera Write Emulation Statistical Counts (decimal)

```

-----
Current Bytes in write pipe      =          0
Maximum Bytes in write pipe      =       1405952
Largest write chain processed     =       43936
Total number of emulated Write Bytes=    19204226768
Number of emulated Write Chains   =       989882
Total number of emulated Write CCWs =     989882
Average Emulated Writes Blocksize =       19400
Average Writes in Emulated Chains =          1
Write emulation slowdowns        =        114
Slowdowns at Start of Chain      =          0
Slowdowns at End of chain        =        114
Single Chain Emulation Counter    =          0
Write Paced Count                 =          0
Current Host side Write FDCB Count =          1
Max Concurrent Write FDCB Count   =          1
Current Write Limited FDCB Count  =          0

```

Tera Read Emulation Statistical Counts (decimal)

```

-----
Total number of emulated Read Bytes =    17688908128
Total number of emulated Read Chains=     825572
Total number of emulated Read CCWs  =     825572
Average Emulated Bytes per chain    =     21426

```


Average Emulated Read Blocksize	=	21426
Average CCWs in Emulated Chains	=	1
Read Block Paced Count	=	0
Read Not Ready Situations Count	=	0
Current Read FDCBs Count	=	1
Max Concurrent Read FDCB Count	=	1
Current Read Limited FDCB Count	=	1

Printer Write Emulation Statistical Counts (decimal)

Current Bytes in write pipe	=	0
Maximum Bytes in write pipe	=	45627
Largest write chain processed	=	9150
Total number of emulated Write Bytes	=	27375500
Number of emulated Write Chains	=	3500
Total number of emulated Write CCWs	=	6500
Average Emulated Writes Blocksize	=	4211
Average Writes in Emulated Chains	=	1
Current Host side Write FDCB Count	=	1
Max Concurrent Write FDCB Count	=	1
Current Write Limited FDCB Count	=	1

FICON Debug Flags (ftrace and others) = 0xffc98030 (Default = 0xf7c90000)

Bit 31 [0x80000000]	= 1	: TRIGGER_ON_SELRESET
Bit 30 [0x40000000]	= 1	: TRIGGER_ON_PURGEPATH
Bit 29 [0x20000000]	= 1	: TRIGGER_ON_RRS_MISS
Bit 28 [0x10000000]	= 1	: TRIGGER_ON_LRJ
Bit 27 [0x08000000]	= 1	: TRIGGER_ON_UNIT_CHECK
Bit 26 [0x04000000]	= 1	: TRIGGER_ON_LOOKUP_FAIL
Bit 25 [0x02000000]	= 1	: TRIGGER_ON_FDCB_ABORT
Bit 24 [0x01000000]	= 1	: TRIGGER_ON_NOFDCB_ABORT
Bit 23 [0x00800000]	= 1	: TRIGGER_ON_LINKDOWN
Bit 22 [0x00400000]	= 1	: TRIGGER_ON_SENSE_CMD
Bit 21 [0x00200000]	= 0	: TRIGGER_ON_BUSYATTN
Bit 20 [0x00100000]	= 0	: TRIGGER_ON_XRCUNS
Bit 19 [0x00080000]	= 1	: DISPLAY_FDCB_ON_ERROR
Bit 18 [0x00040000]	= 0	: TRIGGER_ON_LOW_WIREPOOL
Bit 17 [0x00020000]	= 0	: TRIGGER_ON_READ_UNITCHECK
Bit 16 [0x00010000]	= 1	: TRIGGER_ON_STATE_SAVE
Bit 15 [0x00008000]	= 1	: TRIGGER_ON_SUSPEND
Bit 11 [0x00000800]	= 0	: FORCE_DISABLE_3203_PRINT
Bit 10 [0x00000400]	= 0	: FORCE_DISABLE_3211_PRINT
Bit 9 [0x00000200]	= 0	: FORCE_DISABLE_3800_PRINT
Bit 8 [0x00000100]	= 0	: FORCE_DISABLE_3900_PRINT
Bit 4 [0x00000010]	= 1	: ACCEPT_READTRACK_STATUS
Bit 3 [0x00000008]	= 0	: FORCE_DISABLE_READ_PIPE
Bit 2 [0x00000004]	= 0	: FORCE_DISABLE_WRITE_PIPE
Bit 1 [0x00000002]	= 0	: FORCE_DISABLE_XRC_EMUL
Bit 0 [0x00000001]	= 0	: DISABLE_PERSIST_IU_PACE

To display FICON Teradata Read and Write performance data:

```
switch:admin> portshow xtun 16 -ficon -teraperf
Tera Performance Monitor Data:
=====
      Sample Time Period in ms: 4318

Tera Write Performance Data:
-----
      Emulated Chains per sec: 1186
      Emulated CCWs per sec: 1186
      Ave Write Block Size: 22617
      Emulated Write BPS: 26831514

Tera Read Performance Data:
-----
      Emulated Chains per sec: 1069
      Emulated CCWs per sec: 1069
      Ave Read Block Size: 10780
      Emulated Read BPS: 11531104
```

To display FICON Printer performance data:

```
switch:admin> portshow xtun 23 -ficon -printperf

Printer Performance Monitor Data:
=====
      Sample Time Period in ms: 7460
-----
No Emulated Printer operations
-----
No Emulated Read operations
```

To display FICON tape performance data:

```
switch:admin> portshow xtun 23 -ficon -tapeperf

Tape Performance Monitor Data:
=====
      Sample Time Period in ms: 2461
Tape Write Performance Data:
-----
      Emulated Chains per sec: 480
      Emulated CCWs per sec: 3069
      Ave Write Block Size: 32760
      Emulated Write BPS: 100540440
-----
No Emulated Read operations
```

portShow

To display FICON XRC performance data:

```
switch:admin> portshow xtun 23 -ficon -xrcperf
```

```
XRC Performance Monitor Data:
=====
Sample Time Period in ms: 11340
Emulated Chains per sec: 16
Emulated RRS Cmds per sec: 16
Emulated RRS Bytes per sec: 640
Average RRS Update Size: 40
```

SEE ALSO [portCfg](#), [portLoginShow](#), [switchShow](#)

portStats64Show

Displays the 64-bit hardware statistics for a port.

Synopsis **portstats64show** [*slot*]/port [-long]

Description Use this command to display 64-bit hardware statistics for a specified port. When used without the -long option, two integers are reported for most values, the lower and upper 32-bits are reported as two separate numbers. In this case, the top word is the most significant. When issued with the -long option, the command displays the counters as one single 64-bit number.

stat64_wtx	Number of 4-byte words transmitted.
stat64_wrx	Number of 4-byte words received.
stat64_ftx	Number of frames transmitted.
stat64_frx	Number of frames received.
stat64_c2_frx	Number of class 2 frames received.
stat64_c3_frx	Number of class 3 frames received.
stat64_lc_rx	Number of link control frames received.
stat64_mc_rx	Number of multicast frames received.
stat64_mc_to	Number of multicast timeouts.
stat64_mc_tx	Number of multicast frames transmitted.
tim64_rdy_pri	Number of times R_RDY was high priority.
tim64_txcrd_z	Number of times that the TX BB_credit was at zero.
er64_enc_in	Number of encoding errors inside of frames.
er64_crc	Number of frames with CRC errors.
er64_trunc	Number of frames shorter than minimum.

er64_toolong	Number of frames longer than maximum.
er_bad_eof	Number of frames with bad end-of-frame.
er64_enc_out	Number of encoding error outside of frames.
er64_disc_c3	Number of class 3 frames discarded.
er64_pcs_blk	Number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10 Gbps or 16 Gbps ports.
stat64_fec_cor	The number of errors corrected by FEC. Displayed only on 16 Gbps-capable platforms and not on 32 Gbps-capable platforms.
stat64_fec_uncor	The number of errors left uncorrected by FEC.
stat64_rateTxFrame	Tx frame rate (frames/second).
stat64_rateRxFrame	Rx frame rate (frames/second).
stat64_rateTxPeakFrame	Tx peak frame rate (frames/second).
stat64_rateRxPeakFrame	Rx peak frame rate (frames/seconds).
stat64_rateTxWord	Tx Word rate (words/seconds).
stat64_rateRxWord	Rx Word rate (words/seconds).
stat64_rateTxPeakWord	Tx peak Word rate (words/sec).
stat64_rateRxPeakWord	Rx peak Word rate (words/sec).
stat64_aveTxFrameSize>	Average Tx Frame size
stat64_aveRxFrameSize	Average Rx Frame size
stat64_PRJTFramees	Number of P_RJT frames transmitted.
stat64_PBSYFrames	Number of P_BSY transmitted.

stat64_inputBuffersFull

Number of occasions on which input buffers are full.

stat64_rxClass1Frames

Number of class 1 frames received.

stat64_aveTxFrameSize

Average Tx Frame size, based on the word and frame counts during the last five seconds.

stat64_aveRxFrameSize

Average Rx Frame size, based on the word and frame counts during the last five seconds.

The following counters provided by SNMP are displayed with portStats64Show -long on switches running Fabric OS v6.4.0 or later:

swConnUnitZeroTenancy, zero_tenancy

Number of times a zero tenancy occurred.

swConnUnitFLNumOfTenancy, fl_tenancy

Number of times the FL_Port had a loop tenancy.

swConnUnitNLNumOfTenancy,, nl_tenancy

Number of times any NL_Port had a loop tenancy.

swConnUnitStopTenancyStarvation, Starve_stop

Number of loop tenancies stopped due to starvation.

swConnUnitOpend, opened

Number of times the FL_Port entered OPENED state.

swConnUnitTransferConnection, transfer

Number of times the FL_Port entered TRANSFER state.

swConnUnitOpen, open

Number of times the FL_Port entered OPEN state.

swConnUnitInvalidARB, er_inv_arb

Number of invalid arbitrated loops (ARBs).

The following counters are platform-specific and applicable only to 8 Gbps-capable ASICs only. Refer to the Fabric OS Troubleshooting and Diagnostics Guide, Appendix A, for a table that correlates ASIC type with switch models.

swConnUnitFTB1Miss, er_type1_miss

The number of FCR frames with transmit errors.

swConnUnitFTB2Miss, er_type2_miss

The number of frames with routing errors.

swConnUnitFTB6Miss, er_type6_miss

The number of FCR frames with receive errors.

swConnUnitZoneMiss, er_zone_miss

Number of frames with hard zoning miss

swConnUnitLunZoneMiss, er_lun_zone_miss

Number of frames with logical unit number (LUN) zoning miss.

swConnUnittStatRxMulticastToObjects, stat_mc_to

The number of multicast timeouts.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).

port

Specify a port number to be displayed, relative to its slot for bladed systems. Use switchShow to display a list of valid ports.

-long

Displays the counters as one single 64-bit number. This operand is optional; if omitted, the lower and upper 32-bits are reported as two separate numbers.

Examples To display the 64-bit hardware statistics for a port:

```
switch:user> portstats64show 4/15
```

```
stat64_wtx      0      top_int : 4-byte words transmitted
                21618 bottom_int : 4-byte words transmitted
stat64_wrx      0      top_int : 4-byte words received
                22492 bottom_int : 4-byte words received
stat64_ftx      0      top_int : Frames transmitted
                596   bottom_int : Frames transmitted
stat64_frx      0      top_int : Frames received
                614   bottom_int : Frames received
stat64_c2_frx   0      top_int : Class 2 frames received
                0      bottom_int : Class 2 frames received
stat64_c3_frx   0      top_int : Class 3 frames received
                0      bottom_int : Class 3 frames received
stat64_lc_rx    0      top_int : Link control frames received
                462   bottom_int : Link control frames received
stat64_mc_rx    0      top_int : Multicast frames received
                0      bottom_int : Multicast frames received
stat64_mc_to    0      top_int : Multicast timeouts
                0      bottom_int : Multicast timeouts
stat64_mc_tx    0      top_int : Multicast frames transmitted
                0      bottom_int : Multicast frames transmitted
tim64_rdy_pri   0      top_int : Time R_RDY high priority
                0      bottom_int : Time R_RDY high priority
tim64_txcrd_z   0      top_int : Time BB_credit zero
                34211 bottom_int : Time BB_credit zero
er64_enc_in     0      top_int : Encoding errors inside of frames
                0      bottom_int : Encoding errors inside of frames
er64_crc        0      top_int : Frames with CRC errors
                0      bottom_int : Frames with CRC errors
er64_trunc      0      top_int : Frames shorter than minimum
                0      bottom_int : Frames shorter than minimum
```

```

er64_toolong 0      top_int : Frames longer than maximum
                0      bottom_int : Frames longer than maximum
er64_bad_eof 0      top_int : Frames with bad end-of-frame
                0      bottom_int : Frames with bad end-of-frame
er64_enc_out 0      top_int : Encoding error outside of frames
                135762 bottom_int : Encoding error outside of frames
er64_disc_c3 0      top_int : Class 3 frames discarded
                0      bottom_int : Class 3 frames discarded
er64_pcs_blk 0      top_int : PCS block errors
                0      bottom_int : PCS block errors
stat64_fec_cor 0      top_int : FEC corrected errors detected
                0      bottom_int : FEC corrected errors detected
stat64_fec_uncor 0      top_int : FEC uncorrected errors detected
                0      bottom_int : FEC uncorrected errors detected
stat64_rateTxFrame 0      Tx frame rate (fr/sec)
stat64_rateRxFrame 0      Rx frame rate (fr/sec)
stat64_rateTxPeakFrame 9      Tx peak frame rate (fr/sec)
stat64_rateRxPeakFrame 9      Rx peak frame rate (fr/sec)
stat64_rateTxWord 0      Tx Word rate (words/sec)
stat64_rateRxWord 0      Rx Word rate (words/sec)
stat64_rateTxPeakWord 264 Tx peak Word rate (words/sec)
stat64_rateRxPeakWord 272 Rx peak Word rate (words/sec)
stat64_aveTxFrameSize 504 Average Tx Frame size
stat64_aveRxFrameSize 511 Average Rx Frame size
stat64_PRJTFFrames 0      top_int : 4-byte words transmitted
                0      bottom_int : 4-byte words transmitted
stat64_PBSYFFrames 0      top_int : 4-byte words transmitted
                0      bottom_int : 4-byte words transmitted
stat64_inputBuffersFull 0      top_int : 4-byte words transmitted
                0      bottom_int : 4-byte words transmitted
stat64_rxClass1Frames 0      top_int : 4-byte words transmitted
                0      bottom_int : 4-byte words transmitted
stat64_aveTxFrameSize 0      Average Tx Frame size
stat64_aveRxFrameSize 0      Average Rx Frame size

```

To display the counters as one single 64-bit number:

```

switch:admin> portstats64show 12 -long
zero64_tenancy 0 zero_tenancy
fl64_tenancy 0 number of times FL has the tenancy
nl64_tenancy 0 number of times NL has the tenancy
starve64_stop 0 tenancies stopped due to starvation
opened64 0 FL_Port opened
transfer64 0 loop_transfer
open64 0 loop_open
er64_inv_arb 0 Invalid ARB
er64_type1_miss 0 frames with FTB type 1 miss
er64_type2_miss 0 frames with FTB type 2 miss
er64_type6_miss 0 frames with FTB type 6 miss
er64_zone_miss 0 frames with hard zoning miss
er64_lun_zone_miss 0 frames with LUN zoning miss
lli64 0 Low level interrupts

```

SEE ALSO [portStatsClear](#), [portStatsShow](#)

portStatsClear

Clears port hardware statistics.

Synopsis **portstatsclear** [*slot*]/*port*

portstatsclear -i [*index1*[-*index2*] [...]] [**-f**]

portstatsclear -x [*hex1*[-*hex2*] [...]]

portstatsclear -slot [*slot1*[-*slot2*]] [...]

portstatsclear -h

Description Use this command to clear the hardware statistics for the specified ports. Including ALPA-based CRC monitor, End-to-End monitor, and Filter-based performance monitor statistics.

You can identify a single port to be cleared by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (-i) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index argument to display the portSwap status, or alternately use portSwapShow.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands This command has the following operands:

<i>slot</i>	For bladed systems only, specify the slot number of the port to be cleared, followed by a slash (/).
<i>port</i>	Clears a single port identified by the port number, relative to its slot on bladed systems. Port ranges are not supported with this command. Use switchShow for a listing of valid ports.
-i <i>index1</i> [- <i>index2</i>]	Clears a single port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, -i 33-47 65-73.
-f	Ignores nonexistent ports. This operand is valid only with the -i option.
-x [<i>hex1</i> [- <i>hex2</i>]]	Clears a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot [*slot1*[-*slot2*]

Clears all ports on a slot or on a range of slots, for example, -s 3-5. You may specify multiple slot ranges separated by a space, for example, -s 3-5 8-10.

-h

Displays the command usage.

Examples

To clear hardware statistics for a single port specified by its port number:

```
switch:admin> portstatsclear 4/15
```

To clear hardware statistics for a single port specified by its index number:

```
switch:admin> portstatsclear -i 25
```

To clear hardware statistics for a range of ports specified by their index numbers:

```
switch:admin> portstatsclear -i 32-40
```

To clear hardware statistics for multiple port ranges specified by their index numbers:

```
switch:admin> portstatsclear -i 32-40 50-56
```

To clear hardware statistics for all ports on slots 3-5:

```
switch:admin> portstatsclear -s 3-5
```

To clear hardware statistics for all ports on slots 3-5 and 7-10:

```
switch:admin> portstatsclear -s 3-5 7-10
```

To clear hardware statistics for range of ports specified in hexadecimal format:

```
switch:admin> portstatsclear -x 1d-1e
```

SEE ALSO [portStats64Show](#), [portStatsShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portStatsShow

Displays port hardware statistics.

Synopsis

```
portstatsshow [slot/]port
portstatsshow -i [index1[-index2][...] [-f]]
portstatsshow -x [hex1[-hex2] [...]]
portstatsshow -slot [slot1[-slot2][...]]
portstatsshow ge [slot/]ge port
portstatsshow ip [slot/]ge port [ip_address]
portstatsshow fcip [slot/]ge port [tunnel_number]
portstatsshow -h
```

Description Use this command to display port hardware statistics counters. Some counters are platform- or port-specific and display only on those platforms and ports. All statistics have a maximum 32-bit value of 4,294,967,295 except stat_wtx and stat_wrx. The stat_wtx and stat_wrx fields have a maximum 64-bit value of 18,446,744,073,709,551,615.

You can display statistics of a single port to be cleared by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use switchShow for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (-i) or slot (-s) option is supported only if PortSwap is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the -i option without a port index to display the portSwap status, or alternately use portSwapShow.

The command output may include the following fields (Tx indicates frames transmitted by the port; Rx indicates frames received by the port).

stat_wtx	The number of 4-byte words transmitted.
stat_wrx	The number of 4-byte words received.
stat_ftx	The number of class 2, class 3, and control frames transmitted.
stat_frx	The number of class 2, class 3, and control frames received.
stat_c2_frx	The number of class 2 frames received.
stat_c3_frx	The number of class 3 frames received.

stat_lc_rx	The number of link control frames received.
stat_mc_rx	The number of multicast frames received.
stat_mc_to	The number of multicast timeouts.
stat_mc_tx	The number of multicast frames transmitted.
tim_rdy_pri	The number of times that sending R_RDY or VC_RDY primitive signals was a higher priority than sending frames, due to diminishing credit reserves in the transmitter at the other end of the fiber. This parameter is sampled at intervals of 1.8 microseconds, and the counter is incremented by 1 if the condition is true.
tim_txcrd_z	The number of times that the port was unable to transmit frames because the transmit BB credit was zero. The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at intervals of 2.5 microseconds, and the counter is incremented if the condition is true. Each sample represents 2.5 microseconds of time with zero Tx BB Credit. An increment of this counter means that the frames could not be sent to the attached device for 2.5 microseconds, indicating degraded performance.
tim_txcrd_z_vc	The number of times that the port was unable to transmit frames because the transmit BB credit was zero for each of the port's 16 Virtual Channels (VC 0-15). The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at intervals of 2.5 microseconds (microseconds), and the counter is incremented if the condition is true. Each sample represents 2.5 microseconds of time with zero Tx BB Credit. An increment of this counter means that the frames could not be send to the attached device for 2.5 microseconds, indicating degraded performance (platform- and port-specific).
tim_latency_vc	TxQ latency monitor statistics. Displayed only on 16 Gbps-capable platforms and not on 32 Gbps-capable platforms.
lat_tot_pkt_vc	Total TxQ latency monitor statistics. Displayed only on 32 Gbps-capable platforms.
lat_hi_time_vc	High TxQ latency monitor statistics. Displayed only on 32 Gbps-capable platforms.
lat_lo_time_vc	Low TxQ latency monitor statistics. Displayed only on 32 Gbps-capable platforms.
latency_dma_ts	TXQ latency DMA timeStamp. Displayed only on 32 Gbps-capable platforms.
fec_cor_detected	The number of errors corrected by FEC. Displayed only on 16 Gbps-capable platforms and not on 32 Gbps-capable platforms.

fec_uncor_detected	The number of errors left uncorrected by FEC.
er_enc_in	The number of encoding errors inside frames.
er_crc	The number of frames with cyclic redundancy check (CRC) errors.
er_trunc	The number of frames shorter than the minimum frame length.
er_toolong	The number of frames longer than the maximum frame length.
er_bad_eof	The number of frames with bad end-of-frame.
er_enc_out	The number of encoding error outside frames.
er_bad_os	The number of invalid ordered sets (platform- and port-specific).
er_pcs_blk	The number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10 Gbps or 16 Gbps ports. This is applicable only on platforms that support 10 Gbps or 16 Gbps ports.
er_rx_c3_timeout	The number of receive class 3 frames received at this port and discarded at the transmission port due to timeout (platform-and port-specific).
er_tx_c3_timeout	The number of transmit class 3 frames discarded at the transmission port due to timeout (platform- and port-specific).
er_unroutable	The number of frames discarded because they cannot be routed.
er_unreachable	The number of frames discarded because the destination port cannot be reached. This field is specific to 16 Gbps-capable platforms.
er_c3_dest_unreach	The number of class 3 frames discarded because the destination cannot be reached. This field is specific to 8 Gbps-capable platforms.
er_other_discard	The number of other discarded due to route lookup failures or other reasons.
er_zone_discard	The number of class 3 frames discarded due to zone mismatch.
er_type1_miss	The number of FCR frames with transmit errors.

er_type2_miss	The number of frames with routing errors.
er_type6_miss	The number of FCR frames with receive errors.
er_zone_miss , er_lun_zone_miss	The number of frames discarded due to hard zoning miss or LUN zoning miss. If Rx port hard zoning is enabled, frames will be discarded at the Rx port. If TX port hard zoning is enabled, frames will be discarded at the TX port. If both RX and TX port hard zoning is enabled, frames will be discarded at the RX port. (LUN zoning is currently not supported.)
er_crc_good_eof	The number of CRC errors with good end-of-frame (EOF) (platform- and port-specific).
er_inv_arb	The number of invalid arbitrated loops (ARBs).
er_single_credit_loss	The number of times the port lost a single VC_RDY primitive signal or a single frame.
er_multi_credit_loss	The number of times the port lost multiple VC_RDY primitive signals or multiple frames.
other_credit_loss	The number of link timeout or complete credit loss errors.
er_encr_blk	The number of encryption block errors. Displayed only on 32 Gbps-capable platforms.
er_encr_short_frame	The number of encrypted frames that are too short. Displayed only on 32 Gbps-capable platforms.
er_encr_discard	The number of other encrypted frames that are discarded. Displayed only on 32 Gbps-capable platforms.
fec_corrected_rate	The number of FEC corrected blocks per second. Displayed only on 32 Gbps-capable platforms.
compression_ratio	The ratio based on the last 5 second sampled accumulated value. It is represented in percentage. If the port is configured for compression, this value is displayed. This field is not displayed on Brocade G610 switch.
open	The number of times the FL_Port entered OPEN state.
transfer	The number of times the FL_Port entered TRANSFER state.
opened	The number of times the FL_Port entered OPENED state.

starve_stop	The number of loop tenancies stopped due to starvation.
fl_tenancy	The number of times the FL_Port had a loop tenancy.
nl_tenancy	The number of times the NL_Port had a loop tenancy.
zero_tenancy	The number of times a zero tenancy occurred.
ge_stat_tx_frms	The number of frames transmitted on the GbE port.
ge_stat_tx_octets	The number of octets transmitted on the GbE port.
ge_stat_tx_ucast_frms	The number of unicast frames transmitted on the GbE port.
ge_stat_tx_mcast_frms	The number of multicast frames transmitted on the GbE port.
ge_stat_tx_bcast_frms	The number of broadcast frames transmitted on the GbE port.
ge_stat_tx_vlan_frms	The number of VLAN frames transmitted on the GbE port.
ge_stat_tx_pause_frms	The number of pause frames transmitted on the GbE port.
ge_stat_rx_frms	The number of frames received on the GbE port.
ge_stat_rx_octets	The number of octets received on the GbE port.
ge_stat_rx_ucast_frms	The number of unicast frames received on the GbE port.
ge_stat_rx_mcast_frms	The number of multicast frames received on the GbE port.
ge_stat_rx_bcast_frms	The number of broadcast frames received on the GbE port.
ge_stat_rx_vlan_frms	The number of VLAN frames received on the GbE port.
ge_stat_rx_pause_frms	The number of pause frames received on the GbE port.
ge_err_carrier	The number of times the GbE port lost carrier sense.
ge_err_length	The number of times an invalid length error was observed on the GbE port.

ge_err_crc	The number of CRC Errors received on the GbE port.
ge_err_abort	The number of frames aborted on the GbE port.
ge_err_overnun	The number of overruns observed on the GbE port.
ge_err_fifo_ovf	The number of times an overflow of the first in first out (FIFO) queue was observed on the GbE port.
ip_err_hdr_cksum	The number of checksum errors observed on the GbE port.
ip_err_tcp_data_chksum	The number of IP TCP data checksum errors observed on the GbE port.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands This command has the following operands:

slot	For bladed systems only, specifies the slot number of the port to be displayed, followed by a slash (/).
[ge]port	Displays statistics for a single port identified by the port number, relative to its slot on bladed systems. Specify the optional ge option to display the GbE port hardware statistics. Port ranges are not supported with this command. Use switchShow for a listing of valid ports.
-i index1[-index2]	Displays statistics for a single port or for a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, -i 33-47 65-73.
-f	Ignores nonexistent ports. This operand is valid only with the -i option.
-x [hex1 [-hex2]]	Specifies a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.
-slot [slot1[-slot2]]	Displays statistics for all ports on a slot or on a range of slots, for example, -s 3-5. You may specify multiple slot ranges separated by a space, for example, -s 3-5 8-10.
ge	Displays the GbE port statistics.
ip	Displays all GbE port statistics related to IP addresses that are not zero. This operand is not supported on the Brocade 7800 and FX8-24 platforms.

ip_address

Specifies an IP address to display statistics only for the specified IP address. This operand is optional and valid only with the ip option.

fcip

Displays the GbE statistics on all FCIP tunnels. This operand is not supported on the Brocade 7800 and FX8-24 platforms.

tunnel_number

Specifies a tunnel ID to display statistics only for the specified FCIP tunnel. This operand is optional and valid only with the fcip option.

-h

Displays the command usage.

Examples

To display the basic set of statistics for port 1/13 on a 16 Gbps-capable platform:

```
switch:admin> portstatsshow 1/13
stat_wtx          0          4-byte words transmitted
stat_wrx          0          4-byte words received
stat_ftx          0          Frames transmitted
stat_frx          0          Frames received
stat_c2_frx       0          Class 2 frames received
stat_c3_frx       0          Class 3 frames received
stat_lc_rx        0          Link control frames received
stat_mc_rx        0          Multicast frames received
stat_mc_to        0          Multicast timeouts
stat_mc_tx        0          Multicast frames transmitted
tim_rdy_pri       0          Time R_RDY high priority
tim_txcrd_z       0          Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc    0- 3: 0    0          0          0
tim_txcrd_z_vc    4- 7: 0    0          0          0
tim_txcrd_z_vc    8-11: 0    0          0          0
tim_txcrd_z_vc    12-15: 0   0          0          0
tim_latency_vc    0- 3: 1    1          1          1
tim_latency_vc    4- 7: 1    1          1          1
tim_latency_vc    8-11: 1    1          1          1
tim_latency_vc    12-15: 1   1          1          1
lat_tot_pkt_vc    0- 3: 1    1          1          1
lat_tot_pkt_vc    4- 7: 1    1          1          1
lat_tot_pkt_vc    8-11: 1    1          1          1
lat_tot_pkt_vc    12-15: 1   1          1          1
lat_hi_time_vc    0- 3: 0    0          0          0
lat_hi_time_vc    4- 7: 0    0          0          0
lat_hi_time_vc    8-11: 0    0          0          0
lat_hi_time_vc    12-15: 0   0          0          0
lat_lo_time_vc    0- 3: 1    1          1          1
lat_lo_time_vc    4- 7: 1    1          1          1
lat_lo_time_vc    8-11: 1    1          1          1
lat_lo_time_vc    12-15: 1   1          1          1
max_latency_vc    0- 3: 1    1          1          1
max_latency_vc    4- 7: 1    1          1          1
max_latency_vc    8-11: 1    1          1          1
max_latency_vc    12-15: 1   1          1          1
latency_dma_ts    05-11-2015 UTC Thu 02:19:16    TXQ Latency DMA TimeStamp
fec_cor_detected  0          Count of blocks that were corrected by FEC
fec_uncor_detected 0          Count of blocks that were left uncorrected by FEC
er_enc_in         0          Encoding errors inside of frames
```

er_crc	0	Frames with CRC errors
er_trunc	0	Frames shorter than minimum
er_toolong	0	Frames longer than maximum
er_bad_eof	0	Frames with bad end-of-frame
er_enc_out	0	Encoding error outside of frames
er_bad_os	0	Invalid ordered set
er_rx_c3_timeout	0	Class 3 receive frames discarded due to timeout
er_tx_c3_timeout	0	Class 3 transmit frames discarded due to timeout
er_c3_dest_unreach	0	Class 3 frames discarded due to destination
unreachable		
er_other_discard	0	Other discards
er_type1_miss	0	frames with FTB type 1 miss
er_type2_miss	0	frames with FTB type 2 miss
er_type6_miss	0	frames with FTB type 6 miss
er_zone_miss	0	frames with hard zoning miss
er_lun_zone_miss	0	frames with LUN zoning miss
er_crc_good_eof	0	Crc error with good eof
er_inv_arb	0	Invalid ARB
compression_ratio	6	Average compression ratio
open	0	loop_open
transfer	0	loop_transfer
opened	0	FL_Port opened
starve_stop	0	tenancies stopped due to starvation
fl_tenancy	0	number of times FL has the tenancy
nl_tenancy	0	number of times NL has the tenancy
zero_tenancy	0	zero tenancy
er_encr_blk	0	Encryption block errors
er_encr_short_frame	0	Encrypted frames that are too short
er_encr_discard	0	Other encrypted frames discard
phy_stats_clear_ts	04-22-2013 MDT Mon 17:08:41	Timestamp of phy_port stats clear
lgc_stats_clear_ts	04-22-2013 MDT Mon 17:08:41	Timestamp of lgc_port stats clear

To display the basic set of statistics using port index numbers:

```
switch:admin> portstatsshow -i 13
switch:admin> portstatsshow -i 13-23
switch:admin> portstatsshow -i 4-6 22-30
```

To display the basic set of statistics using slot numbers:

```
switch:admin> portstatsshow -s 3-5
switch:admin> portstatsshow -s 3-5 10-13
```

To display GbE port statistics for GbE1 on the Brocade 7800:

```
switch:admin> portstatsshow ge 8/ge1
ge_stat_tx_frms      1523916  GE transmitted frames
ge_stat_tx_octets    152411630 GE transmitted octets
ge_stat_tx_ucast_frms 1523907  GE transmitted unicast frames
ge_stat_tx_mcast_frms 0      GE transmitted multicast frames
ge_stat_tx_bcast_frms 9      GE transmitted broadcast frames
ge_stat_tx_vlan_frms 0      GE transmitted vlan frames
ge_stat_tx_pause_frms 0      GE transmitted pause frames
ge_stat_rx_frms      1512154  GE received frames
ge_stat_rx_octets    149255230 GE received octets
ge_stat_rx_ucast_frms 1512154  GE received unicast frames
ge_stat_rx_mcast_frms 0      GE received multicast frames
ge_stat_rx_bcast_frms 0      GE received broadcast frames
ge_stat_rx_vlan_frms 0      GE received vlan frames
```

portStatsShow

ge_stat_rx_pause_frms	0	GE received pause frames
ge_err_carrier	0	GE lost carrier sense
ge_err_length	0	GE invalid length
ge_err_crc	0	GE CRC Errors
ge_err_abort	0	GE abort frames
ge_err_overrun	0	GE overruns
ge_err_fifo_ovf	0	GE Fifo overflow

To display the basic set of statistics using port index number specified in hexadecimal format:

```
switch:admin> portstatsshow -x 11f
port: 287
=====
stat_wtx          422          4-byte words transmitted
stat_wrx          560          4-byte words received
stat_ftx          16           Frames transmitted
stat_frx          16           Frames received
(output is truncated)
```

SEE ALSO [portErrShow](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#)

portSwap

Swaps two ports or removes swapping of ports.

Synopsis **portswap** [*slot1*]/*port1* [*slot2*]/*port2*

portswap --restore

Description Use this command to swap the 24-bit port address (PID) for a pair of ports or to remove swapping of ports. When swapping both ports must be disabled prior to executing this command and the port-swapping feature must be enabled using portSwapEnable.

The result of this operation is persistent across reboots and power cycles. Use portSwapShow to display the swapped ports along with their new port address

Port swap information is kept in its own database; it cannot be manipulated by editing the configuration database displayed by configShow and configUpload. To undo a previous port swap, execute portSwap again on the same two ports.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

TI zoning is not supported on E_Ports or F_Ports that are configured as part of a TI Zone with ports swapped. To work around this issue, reconfigure TI zoning rather than swapping the ports.

This command is not allowed if one or both the ports are from a faulty blade.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command has the following operands:

<i>slot1</i>	For bladed systems only, specifies the slot number of the first port whose area number is to be swapped, followed by a slash (/).
<i>port1</i>	Specifies the number of the first port whose address is to be swapped, relative to its slot for bladed systems. Use switchShow to display a listing of valid ports.
<i>slot2</i>	For bladed systems only, specifies the slot number of the second port whose area number is to be swapped, followed by a slash (/).
<i>port2</i>	Specifies the number of the second port whose port address is to be swapped, relative to its slot for bladed systems.
--restore	Removes swapping of all ports.

Examples To swap area numbers between a pair of ports:

```
switch:admin> portswap 8/1 8/2
portswap done
```

```
switch:admin> portswapshow
```

PortSwap is enabled

Slot	Slotport	Swport	Address
=====			
8	1	193	0x01c200
8	2	194	0x01c100

To cancel the swapping of ports:

```
switch:admin> portswap --restore
portswap done
switch:admin>
```

SEE ALSO [portDisable](#), [portEnable](#), [portShow](#), [portSwapDisable](#), [portSwapEnable](#), [portSwapShow](#), [switchShow](#)

portSwapDisable

Disables the PortSwap feature.

Synopsis **portswapdisable**

Description Use this command to disable the PortSwap feature. The portSwap command cannot be used after this feature is disabled.

The disabled state of the PortSwap feature is persistent across reboots and power cycles.

Enabling or disabling the PortSwap feature does not affect previously performed PortSwap operations.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable the PortSwap feature:

```
switch:admin> portswapdisable
```

SEE ALSO [portSwap](#), [portDisable](#), [portEnable](#), [portShow](#), [portSwapEnable](#), [portSwapShow](#), [switchShow](#)

portSwapEnable

Enables the PortSwap feature.

Synopsis **portswapenable**

Description Use this command to enable the PortSwap feature. The portSwap command cannot be used unless the feature is first enabled with this command.

The enabled state of the PortSwap feature is persistent across reboots and power cycles.

Enabling or disabling the PortSwap feature does not affect previously performed PortSwap operations.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable the PortSwap feature:

```
switch:admin> portswapenable
```

SEE ALSO [portSwap](#), [portDisable](#), [portEnable](#), [portShow](#), [portSwapDisable](#), [portSwapShow](#), [switchShow](#)

portSwapShow

Displays the state of the PortSwap feature.

Synopsis **portswapshow**

Description Use this command to display the state of the PortSwap feature and information about swapped ports. If portSwap is enabled and ports have been swapped, the command displays the enabled status as well as the swapped ports and the new port address (the 24-bit PID) for these ports. If portSwap is disabled, the command shows the disabled status and indicates whether or not swapped ports exist on the switch.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display a switch with PortSwap enabled and information for swapped ports:

Console message:

```
2009/10/09-21:22:45, [PSWP-1001], 482, SLOT 6 | FID 51, INFO,
DCX_105_51, PID for port 12/0 and port 12/63 are swapped.
New PID for port 12/0 is 0x697000 and port 12/63 is 0x69e3c0.
```

```
switch:admin> portswapshow
```

PortSwap is enabled

Slot	Slotport	Swport	Address
12	0	112	0x697000
12	63	895	0x69e3c0

To display the portSwap status on a switch when the feature is disabled and no ports are swapped:

```
switch:admin> portswapshow
```

PortSwap is disabled.

Existing Portswap condition is still effective.

Only future Portswap operations are not allowed.

No ports have been swapped

SEE ALSO [portSwap](#), [portDisable](#), [portEnable](#), [portShow](#), [portSwap](#), [portSwapDisable](#), [portSwapEnable](#), [switchShow](#)

portTest

Performs a functional test of a switch in a live fabric.

Synopsis

porttest
[-ports *itemlist*]
[-iteration *count*]
[-userdelay *time*]
[-timeout *time*]
[-pattern *pattern*]
[-patsize *size*]
[-seed *seed*]
[-listtype *porttype*]

Description

Use this command to isolate problems in a single replaceable element and to trace problems to near-end terminal equipment, far-end terminal equipment, or the transmission line. You can perform this test on a daily basis or as needed to verify the persistence of failures detected earlier.

This command verifies the functional operation of the switch by sending frames from a port's transmitter, and looping the frames back through an external fiber cable into the port's receiver. The test exercises all switch components from the main board, to the fibre cable, to the media (of the devices and the switch), and back to the main board.

The cables and media connected should be of the same type: a short-wavelength media (switch) port should be connected to another short-wavelength media (device) port using a short-wavelength cable; a long-wavelength port should be connected to a long-wavelength port, and a copper port should be connected to a copper port.

Only one frame is transmitted and received at any given time. The port LEDs flicker green while the test is running.

This command supports E_Ports, F_Ports (must support ELS Echo), L_Port, and N->N loopback ports. In addition, on switches running Fabric OS v6.4.0 and later, you can now use portTest on port configurations that previously caused nonspecific test results or were skipped by portTest. The following ports are now support the portTest diagnostics.

- E_Ports
- Static D_Ports
- N->N Loopback Ports
- F_Ports connected to Brocade-branded HBA
- Ports with index numbers greater than 255.
- Ports with swapped areas.
- Ports in shared area regions.
- Ports in logical switches.
- Ports in Base Switches.
- Long Distance ports.

This command is currently not supported on the following ports or switch configurations:

- Interchassis links (ICL) ports
- F_Ports connected to non-Brocade-branded HBA
- F_Ports connected to an Access Gateway
- F_Ports on VF-enabled switch
- AE_Ports
- AF_Ports
- EX_Ports
- E_Ports connected to EX_Ports
- Dynamic D_Ports
- On-demand D_Ports
- The portTest diagnostics is not supported in Access Gateway mode.

This command performs the following operations:

1. Initiates tests on certain ports (portTest command).
2. Stops active tests on certain ports (stopPortTest command).
3. Takes a snapshot of the test result (portTestShow command).

Use the stopPortTest command to stop the test. Refer to the stopPortTest help page for more information.

Use the portTestShow command to view the current status of portTest. Refer to the portTestShow help page for more information.

If there is a port type change during portTest execution, the test continues on a given port as long as it can be supported and it is asked to do so. If a request was made to test all ports on a given switch, portTest starts a new test appropriate for the new port type.

Notes The test is skipped if the F_Ports are connected to non-Brocade-branded devices. The test is also skipped on F_Ports if Virtual Fabric is enabled on any platform.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- ports *itemlist***
Specifies the list of user ports to test. By default, all user ports in the switch are tested. Refer to the `itemList` help page for more information.
- iteration *count***
Specifies the number of times (or number of frames per port) to execute this test. Specify 0 to run the test in timeout mode, or specify -1 to run the test indefinitely. The default value is 20.
- userdelay *time***
Specifies the delay between frames sent by portTest, in milliseconds. The default value is 10 milliseconds.
- timeout *time***
Specifies the number of seconds to run the test. The timeout option goes into effect only if iteration is set to zero. The default value of timeout is 0.
- pattern *pattern***
Specifies the pattern of the test packet payload. The pattern is selected from the set of the first twenty predefined pattern types. Use the `dataTypeShow` command to view the patterns supported with portTest. For each pattern, the `dataTypeShow` command displays the name, the pattern type number, and an example. Specify the pattern by its type number. If pattern is not specified, it defaults to RANDOM (type=11).
- patsize *size***
Specifies the size of the pattern. The default pattern size is 1024 bytes. The range is 4 to 2048 bytes.
- seed *seed***
Specifies the seed value to be used with the pattern. The default seed value is 0xaa.
- listtype *porttype***
Specifies the type of ports on which to run portTest. Valid values for porttype include the following:
 - 1** All ports (default).
 - 2** All L_Ports.
 - 3** All F_Ports.
 - 4** All E_Ports.

-5

All N->N loopback ports.

Examples To run a functional test on an active switch:

```
switch:admin> porttest -ports 1/1-1/3
```

SEE ALSO [portLoopbackTest](#), [portTestShow](#), [spinFab](#), [stopPortTest](#)

portTestShow

Displays information from portTest.

Synopsis **porttestshow** [-ports *itemlist*]
porttestshow -i | **-index** [*index1*[-*index2*]]
porttestshow -x [*hex1*[-*hex2*]]

Description Use this command to display a snapshot of information from portTest. The command output displays statistical data about past test runs and values for parameters that were set when the test was run. Refer to the portTest help page for more information on the displayed parameters. The output includes the following information:

Port number	Displays test status for the port. Values are PASS or FAIL.
PortType	Type of port tested.
PortState	Current State of portTest. Values are NO TEST, TESTING, or TEST DONE.
PortTypeToTest	Groups of ports tested. Values are ALL_PORTS, ALL_E_PORTS, ALL_L_PORTS, ALL_F_PORTS, ALL_LB_PORTS, or SINGLE_PORT.
Pattern	The pattern of the test packets payload.
Seed	The seed value used with the selected pattern. The default seed value is Oxaa.
UserDelay	The delay between frames sent by portTest in milliseconds. The default value is 10 milliseconds (ms).
TotalIteration	Total number of test iterations.
CurrentIteration	Current test iteration.
TotalFail	Total number of failed tests.
ConsecutiveFail	Number of consecutive failed tests.
StartTime	portTest start time.
StopTime	portTest end time.

Timeout

Number of timed out tests.

ErrorCode

Error code, if any.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-ports *itemlist*

Displays test results for the specified ports. This operand is optional; if omitted, data for all ports are displayed. Refer to the itemList help page for further details.

-index | -i *indexlist*

Displays test results for a single port or for a range of ports identified by port index numbers. You may specify index ranges separated by "-", for example, -i 33-47. This operand is optional, if omitted data for all ports are displayed.

-x [*indexhexlist*]

Displays test results for a port or a range of ports identified by port index numbers in hexadecimal format. You may specify port ranges separated by "-", for example, -x 0x21-0x26. This operand is optional, if omitted data for all ports are displayed.

Examples

To display information from portTest:

```
switch:admin> porttestshow 1
Port 1 : PASS
PortType: OTHER          PortState: NO TEST
PortInternalState: INIT   PortTypeToTest: NO_TEST
Pattern: 0x0      Seed: 0x0      UserDelay: 0

TotalIteration: 0          CurrentIteration: 0
TotalFail: 0              ConsecutiveFail: 0
StartTime: NONE
StopTime:  NONE
Timeout: 0                ErrorCode: 0
```

To display information from portTest on a port specified by the index number:

```
switch:admin> porttestshow -index 32
Port 32 : PASS
PortType: E PORT          PortState: TEST DONE
PortInternalState: INIT   PortTypeToTest: NO_TEST
Pattern: 0xb      Seed: 0xaa      UserDelay: 10

TotalIteration: 20          CurrentIteration: 20
TotalFail: 0              ConsecutiveFail: 0
StartTime: Wed Aug 13 06:39:59 2014
StopTime:  Wed Aug 13 06:40:19 2014
Timeout: 0                ErrorCode: 0
```

portTestShow

To display information from portTest on a port specified by the index number in hexadecimal format:

```
switch:admin> porttestshow -x 0x21
Port 33 : PASS
PortType: E PORT          PortState: TEST DONE
PortInternalState: INIT   PortTypeToTest: NO_TEST
Pattern: 0xb              Seed: 0xaa          UserDelay: 10

TotalIteration: 20        CurrentIteration: 20
TotalFail: 0              ConsecutiveFail: 0
StartTime: Wed Aug 13 06:39:59 2014
StopTime:  Wed Aug 13 06:40:19 2014
Timeout: 0                ErrorCode: 0
```

SEE ALSO [portLoopbackTest](#), [portTest](#), [spinFab](#), [stopPortTest](#)

portTrunkArea

Assigns or removes a trunk area (TA) from a port or port trunk group; displays masterless F_Port trunking configuration.

Synopsis **porttrunkarea --enable** [*slot*]/*port1*[-*port2*] **-index** *port_index*

porttrunkarea --disable [*slot*]/*port1*[-*port2*]

porttrunkarea --disable all

porttrunkarea --show disabled | enabled | trunk | all

porttrunkarea --show *slot/port1*[-*port2*]

Description

Use this command to assign a static trunk area (TA) on a port or port trunk group, to remove a TA from a port or group of ports in a trunk, and to display masterless F_Port trunking information. The TA is identified by the port index number displayed in the output of the switchShow command.

Masterless F_Port trunking interoperates between the Access Gateway (AG) and Condor-based platforms. It is designed to (1) prevent reassignments of virtual addresses when F_Ports come back online after going offline and (2) to increase N_Port bandwidth.

Assigning a TA to a port or trunk group enables F_Port masterless trunking on that port or trunk group. When a TA is assigned to a port or trunk group, the ports immediately acquires the TA as the area of their process IDs (PID). Likewise, when a TA is removed from a port or trunk group, the ports reverts to the default area as their PID.

Use the --show option to obtain configuration details including the following information.

Slot

On enterprise-class platforms, displays the slot number.

Port

Displays the port number.

Type

Displays online masterless trunked F_Port or EX_Port if applicable. Otherwise displays --.

State

Displays Trunk Master, Slave, or --.

Master

Displays the master port of the trunk group.

TA

On standalone switches, displays the user assigned TA number.

DA

On standalone switches, displays the default port area. The default area can be a port swapped area.

TI

On enterprise-class platforms, displays the user-assigned TA port index.

DI

On enterprise-class platforms, displays the default port index. The default port index can be a port swapped area.

The --show trunk option displays the following information:

Trunk Index

Displays the trunk index.

ptA->ptB

ptA indicates the local user port; ptB indicates the remote user port.

sp

Port speed in Gbps.

Bandwidth

The bandwidth (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Values are displayed as either bits per second (Bps), kilobits per second (Kbps), megabits per second (Mbps), or gigabits per second (Gbps), rounded down to the next integer.

Throughput

Displays the throughput (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Results are displayed for the previous second. Values are displayed as either bits per second (Bps), kilobits per second (kbps), megabits per second (Mbps), or gigabits per second (Gbps), rounded down to the next integer.

%

Displays the percentage of link utilization (Rx, Tx, and the combined total for Tx+Rx) . Even when the link utilization is 100% , the throughput value will be lesser than the bandwidth value, due to the 8b/10b encoding and the control words transmitted. For example, the throughput for an 8 Gbps link at 100% utilization would be approximately 6.8 Gbps.

deskew

The time difference for traffic to travel over each F_Port trunk as compared to the F_Port trunk with the shortest travel time in the group. The value is expressed in nanoseconds divided by 10. The firmware automatically sets the minimum deskew value of the shortest F_Port trunk travel time to 15.

Master

Identifies the master port of the trunk group.

Execution of this command is subject to the following restrictions:

- Only F_Port trunk ports are allowed to be part of a TA. E/F/L/EX_Port will be persistently disabled. Private L_Ports remain online but will not run traffic.
- Only one trunk master per TA is permitted. The second trunk master is persistently disabled.
- The entire TA trunk group shares the same port WWN.
- The port must be disabled before a TA can be assigned to a port or removed from a trunk group.
- There is one port whose Default Area is the same as its Trunk Area. You cannot remove that port from the trunk group unless The TA is removed from all ports in the trunk group.
- You must enable trunking on all ports to be included in a TA before you can create a TA. Use portCfgTrunkPort or switchCfgTrunk to enable Trunking on a port or on all ports of a switch.
- N_Port ID Virtualization (NPIV) support is provided for up to 255 devices per TA. Note that this decreases the number of devices available per port, because all participating ports share the same area.
- F_Port trunking is only supported in CORE PID formats.
- Certain port configuration features are not supported within a TA and the command fails if one of these features is enabled on a port within the trunk group. These features include FastWrite, Port Swapping, Port Mirroring, Long Distance, Interchassis links (ICL), and FICON.
- Ports included in a TA share the same port index. The original port index may be removed in the process. This means that D, I zones referring to these indices are no longer part of the switch. For details and workarounds, refer to the Fabric OS Administrator's Guide.
- Device Connection Control (DCC) Policy must be removed from ports prior to creating a TA. You can re-enable DCC policy after creating the TA.
- You cannot assign a TA while AG mode is enabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Masterless F_Port trunking requires an ISL Trunking license.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands This command supports the following operands:

slot

On enterprise-class platforms, specifies the slot number, followed by a slash (/).

port1[-port2]

Specifies a single port or a port range, relative to its slot on bladed systems. For example, 9/8-15 on an enterprise-class platform indicates slot 9, ports 8 to 15. Port ranges should fall in the octet (8 port) trunk range starting from port 0 on a switch or blade.

--enable

Creates a TA assigned to the specified ports. Use this option with one of the following operands:

-area *area_number*

On single processor switches, specifies the port area number for the static TA to be created. The TA must fall within the 8 port trunk group starting from port 0 on a switch or blade. The TA must be a default area of an existing port in a given port group. However, you may add ports to the trunk group even when a trunk group has already been assigned by using the same area of the octet trunk group. Use `switchShow` for a list of valid port area or index numbers.

-index *port_index*

On enterprise-class platforms, specifies the port index for the static TA to be created. The port index must fall within the 8 port trunk group starting from port 0 on a switch or blade. The TA must be a default index of an existing port in a given port group. However, you may add ports to the trunk group even when a trunk group has already been assigned by using the same index of the octet trunk group. Use `switchShow` for a list of valid port indexes.

--disable

Removes specified ports from a TA. If a port with the same default area as the TA assigned for the trunk group is removed, all ports in the trunk group must be explicitly specified for removal.

all

Optionally removes all TA assigned ports on the switch. This option disables masterless F_Port trunking on all ports. All TA assigned ports must be disabled for this option to succeed.

--show

Displays masterless F_Port trunking information. When using this option, specify one of the following operands:

[*slot*]/*port1*[-*port2*]

Displays configuration for a specified port or port range.

trunk

Displays configuration details for the port trunk group, including user port, neighboring user port, and master port properties.

enabled

Displays configuration details for all ports included in a user assigned TA (all ports on which masterless F_Port trunking is enabled).

disabled

Displays configuration details for all ports not included in a user assigned TA (all ports on which masterless F_Port trunking is not enabled).

all

Displays configuration details for all ports on a switch.

Examples

To enable masterless F_Port trunking on a standalone switch:

1. Disable ports 10-11 by executing `portdisable port` for each port to be included in the TA.
2. Enable Trunk Area for ports 10-11 with area number 37:

```
switch:admin> porttrunkarea --enable 10-11 -index 11
2009/05/15-12:43:10, [SWCH-1012], 60, FID 128, INFO,
sw0, Trunk Area (11) has been enabled for one or more ports
Trunk area 11 enabled for ports 10 and 11.
```

3. Re-enable ports 10-11 by executing `portenable port` for each port in the TA.
4. Show switch/port information:

```
switch:admin> switchshow
[...]
Index Port Address Media Speed State      Proto
=====
[...]
11 10 030b00 id N4 No_Light FC
11 11 030b00 id N4 No_Light FC
[...]
```

5. Display TA-enabled port configuration:

```
switch:admin> porttrunkarea --show enabled

Port  Type   State  Master  TA  DA
-----
10   --      --      --      11  10
11   --      --      --      11  11
```

To disable masterless F_Port trunking on ports 10-11:

```
switch:admin> porttrunkarea --disable 10-11
ERROR: port 11 has to be disabled
```

Disable each port prior to removing ports from the TA. Then reissue the command:

```
switch:admin> porttrunkarea --disable 10-11
Trunk area 11 disabled for ports 10 and 11.
```

To display trunk details for a user assigned TA 25 that includes ports 24-25:

```
switch:admin> porttrunkarea --show trunk
Trunk Index 25: 25->0 sp: 8.000G \
bw: 16.000G skew 15 MASTER
Tx: Bandwidth 16.00Gbps, Throughput 1.63Gbps (11.84%)
Rx: Bandwidth 16.00Gbps, Throughput 1.62Gbps (11.76%)

Tx+Rx: Bandwidth 32.00Gbps, Throughput 3.24Gbps (11.80%)
24->1 sp: 8.000G bw: 8.000G skew 15
Tx: Bandwidth 16.00Gbps, Throughput 1.63Gbps (11.84%)
Rx: Bandwidth 16.00Gbps, Throughput 1.62Gbps (11.76%)
Tx+Rx: Bandwidth 32.00Gbps, Throughput 3.24Gbps (11.80%)
```

To configure a TA on an enterprise-class platform including ports 13 and 14 on slot 10 with port index of 125:

1. Disable the ports to be included in the TA.
2. Enable TA for ports 13 and 14 on slot 10 with port index of 125:

```
switch:admin> porttrunkarea --enable 10/13-14 -index 125
Trunk index 125 enabled for ports 10/13 and 10/14.
```

3. Show the TA port configuration (ports still disabled):

```
switch:admin> porttrunkarea --show enabled
Slot  Port  Type  State  Master  TI  DI
-----
10     13    --    --     --      125 125
10     14    --    --     --      125 126
-----
```

4. Enable ports 13 and 14:

```
switch:admin> portenable 10/13
switch:admin> portenable 10/14
```

5. Show the TA port configuration after enabling the ports:

```
switch:admin> porttrunkarea --show enabled
Slot  Port  Type  State  Master  TI  DI
-----
10     13   F-port  Master  10/13  125 125
10     14   F-port  Slave   10/13  125 126
```

SEE ALSO [portCfgTrunkPort](#), [portCfgShow](#), [portShow](#), [switchCfgTrunk](#), [switchShow](#)

portZoneShow

Displays the enforced zone type of the F_Ports and FL_Ports of a switch.

Synopsis **portzoneshow**

Description Use this command to display the enforced zone type of the F_Ports and FL_Ports of a switch.

Output shows virtual port number (decimal), physical port number (decimal), online status, and if online, port type. If the current zone configuration has been disabled by `cfgDisable`, the fabric is in non-zoning mode, in which all devices see each other. When default zoning is enabled with "No Access" mode, "No Effective configuration: (No Access)" is displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the zone membership information of ports:

```
switch:user> portzoneshow
[OUTPUT TRUNCATED]
PORT: 160 (160)   Offline
PORT: 161 (161)   Offline
PORT: 162 (162)   Offline
PORT: 163 (163)   Offline
PORT: 164 (164)   Offline
PORT: 165 (165)   Offline
PORT: 166 (166)   Offline
PORT: 167 (167)   Offline
PORT: 168 (168)   FL-Port  Enforcement: HARD WVN \
                    defaultHard: 0  IFID: 0x4332000a
PORT: 169 (169)   Offline
PORT: 170 (170)   Offline
PORT: 171 (171)   Offline
PORT: 172 (172)   Offline
PORT: 173 (173)   Offline
PORT: 174 (174)   Offline
PORT: 175 (175)   Offline
PORT: 176 (176)   F-Port  Enforcement: HARD WVN \
                    defaultHard: 0  IFID: 0x4342002a
PORT: 177 (177)   Offline
PORT: 178 (178)   Offline
PORT: 179 (179)   Offline
PORT: 180 (180)   Offline
(output truncated)
```

SEE ALSO [cfgShow](#), [switchShow](#)

powerOffListSet

Sets the order in which slots are powered off.

Synopsis **powerofflistset**

Description Use this command to modify the order in which slots are powered off. This command displays the current order, and then prompts you interactively to confirm or modify the power-off position for each slot.

Whenever a power supply goes out of service or a field-replaceable unit (FRU) is inserted, the system's available power is compared to the system's required power to determine if there is enough power to operate. If less than the required power is available, the power-off list is processed, until there is sufficient power for the system to operate.

If the system's power supply drops abruptly to insufficient levels, the power-off list cannot be processed. The sudden lack of power causes the CP board processors to cease executing the firmware.

For example, if only one power supply is available to power a fully loaded system and the power supply is removed from the chassis, all system operations terminate immediately, and the power-off list cannot be processed. However, if the system is running on two power supplies (this is not recommended) and one goes into a predicted fail state (in which the power supply is still supplying power), the power-off list is processed as described.

The power-off list does not affect the order, in which slots are powered on. On power-on or when an additional power supply is added, slots are processed sequentially, starting at slot 1.

Notes CP blade slots and Core blade slots are not included in the power-off list.

Command output may vary depending on the hardware platform.

Some FRUs may use significant power, but cannot be powered off by the software. For example a missing blower FRU may change the power computation enough to affect how many slot blades can be powered up.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To modify the power-off list order on a 16 Gbps-capable platform:

```
switch:admin> powerofflistset
Slot      Current POL
-----
12         1st
11         2nd
10         3rd
9          4th
4          5th
3          6th
2          7th
1          8th

1st slot to be power off: (1..12) [12] 1
2nd slot to be power off: (2..12) [11] 2
```

```

3rd slot to be power off: (3..12) [10] 3
4th slot to be power off: (4..12) [9] 4
5th slot to be power off: (9..12) [9] 9
6th slot to be power off: (10..12) [10] 10
7th slot to be power off: (11..12) [11] 11
8th slot to be power off: (12..12) [12] 12

```

Old POL	New POL	Power Off Order
12	1	1st
11	2	2nd
10	3	3rd
9	4	4th
4	9	5th
3	10	6th
2	11	7th
1	12	8th

```
Proceed to change the POL order? (yes, y, no, n): [no] y
```

To modify the power-off list order on a 32 Gbps-capable platform:

```
switch:admin> powerofflistset
```

Slot	Current POL
12	1st
11	2nd
10	3rd
9	4th
6	5th
5	6th
4	7th
3	8th

```

1st slot to be power off: (3..12) [12] 3
2nd slot to be power off: (4..12) [11] 4
3rd slot to be power off: (5..12) [10] 5
4th slot to be power off: (6..12) [9] 6
5th slot to be power off: (9..12) [9] 9
6th slot to be power off: (10..12) [10] 10
7th slot to be power off: (11..12) [11] 11
8th slot to be power off: (12..12) [12] 12

```

Old POL	New POL	Power Off Order
12	3	1st
11	4	2nd
10	5	3rd
9	6	4th
6	9	5th
5	10	6th
4	11	7th
3	12	8th

```
Proceed to change the POL order? (yes, y, no, n): [no] y
```

SEE ALSO [chassisShow](#), [powerOffListShow](#), [psShow](#), [slotPowerOff](#), [slotPowerOn](#), [slotShow](#)

powerOffListShow

Displays the order in which slots are powered off.

Synopsis **powerofflistshow**

Description Use this command to display the order in which the physical slots are powered off.

Whenever a power supply goes out of service or a field-replaceable unit (FRU) is inserted, the system's available power is compared to the system's required power to determine if there is enough power to operate. If less than the required power is available, the power-off list is processed, until there is sufficient power for the system to operate.

The following rules apply when the power-off list is processed:

- If a power supply starts predicting failure, so that there will not be enough power for all blades, the powered-up port blades are powered down in the order in which they appear on the power-off list.
- If you replace a failed power supply, or you remedy an existing power-supply shortage by inserting a new power supply, the previously powered-down blades are powered up in the reverse order of the power-on list. Note that this is different from the order in which the blades in the system usually come up. The original powering up of blades does not consult the power-off-list; it simply proceeds from the lower-numbered slots to the higher-numbered slots.
- If you add a new blade to the chassis, and there is not enough power available to operate the additional hardware (because you may only have one power supply) the newly inserted blade will be denied power and the existing powered-on blades stay powered on.
- If the system's power supply drops abruptly to insufficient levels, the power-off list cannot be processed. The sudden lack of power causes the CP board processors to cease executing the firmware. For example, if only two power supplies are available to power a fully loaded chassis that requires at least two power supplies, and one power supply is removed from the chassis, all system operations terminate immediately, and the power-off list cannot be processed. However, if the system is running on two power supplies (this is not recommended in this case) and one goes into a predicted fail state (in which the power supply is still supplying power), the power-off list is processed as described.

Notes Command output may vary depending on the hardware platform.

Control processor (CP) blades are not included in the power-off list.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the slot power off list order on a 16 Gbps-capable platform:

```
switch:admin> powerofflistshow

Slot  1 will be powered off 1st
Slot  2 will be powered off 2nd
Slot  3 will be powered off 3rd
Slot  4 will be powered off 4th
```

```
Slot 9 will be powered off 5th  
Slot 10 will be powered off 6th  
Slot 11 will be powered off 7th  
Slot 12 will be powered off 8th
```

To display the slot power off list order on a 32 Gbps-capable platform:

```
switch:admin> powerofflistshow
```

```
Slot 12 will be powered off 1st  
Slot 11 will be powered off 2nd  
Slot 10 will be powered off 3rd
```

```
Slot 9 will be powered off 4th  
Slot 4 will be powered off 5th  
Slot 3 will be powered off 6th  
Slot 6 will be powered off 7th  
Slot 5 will be powered off 8th
```

SEE ALSO [chassisShow](#), [powerOffListSet](#), [psShow](#), [slotPowerOff](#), [slotPowerOn](#), [slotShow](#)

psShow

Displays power supply status.

Synopsis **psshow**

Description Use this command to display the current status of the switch power supplies.

The status of each supply is displayed as:

OK	Power supply functioning correctly.
absent	Power supply not present.
unknown	Unknown power supply unit installed.
predicting failure	Power supply is present but predicting failure.
faulty	Power supply present but faulty (no power cable, power switch turned off, fuse blown, or other internal error).

For certain switch models, the OEM serial ID data displays after each power supply status line.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To view the status of the power supplies:

```
switch:admin> psshow

Power Supply #1 is OK
  DELTA DPS-1001AB-1E 230000000601 S1   IXD0111000088
Power Supply #2 is faulty
  DELTA DPS-1001AB-1E 230000000601 S1   IXD0111000162
Power Supply #3 is OK
  DELTA DPS-1001AB-1E 230000000601 S1   IXD0111000120
Power Supply #4 is absent
```

SEE ALSO [chassisShow](#), [fanShow](#)

rasAdmin

Configures RASlog message generation.

Synopsis

rasadmin --enable [-log *MSG-ID*] [-syslog *MSG-ID*]
[-module *MODULE-ID*]

rasadmin --disable [-log *MSG-ID*] [-syslog *MSG-ID*]
[-module *MODULE-ID*]

rasadmin --set -log *MSG-ID* **-severity** *value*

rasadmin --show [-log *MSG-ID*] [-severity *MSG-ID*]
[-module *MODULE-ID*] [-disabled] [-syslog] [-all]

rasadmin --quiet -enable *log_type* [-stime *HH:MM*]
[-etime *HH:MM*] [-dow *day_of_week*]

rasadmin --quiet -disable *log_type*

rasadmin --quiet -show

rasadmin --help

Description

Use this command to enable or disable RASlog message logging for selected messages or groups of messages (modules), to change the default severity level for a specified message, to display configured RASlog settings, and to enable or disable quiet time. The -log, -module, and -severity configuration and display options apply to external messages (Message ID 1001-4999) and are available to any user with admin privileges.

An INFO RASlog message is generated for every message that is enabled or disabled. In addition, the list of disabled RASlog messages are collected as part of the supportSave command

The changes made by this command are persistent across reboots, high availability failover, and firmware downloads.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command does not disable messages of type FFDC or AUDIT. When you disable logging for a message that has both AUDIT and LOG attributes, the message will not be logged as a RASlog message, but it will continue to be written to the Audit log.

Operands

This command has the following operands:

--disable

Disables logging for a specified RASlog message or for all messages grouped in a RASlog module.

--enable

Enables logging for a specified RASlog message or for all messages grouped in a RASlog module. Message logging is enabled by default. This command re-enables logging of messages that were previously disabled.

One of the following options must be specified when you disable or enable message logging:

- log *MSG-ID***
Enables or disables logging for the specified message.
- log *MODULE-ID***
Enables or disables logging for all message included in the specified module.
- syslog *MSG-ID***
Enables or disables logging for an internal message.
- set -log *MSG-ID***
Changes the default severity level of the specified message.
- severity *value***
Specifies a new severity level for the message. Valid values include INFO, WARNING, ERROR, CRITICAL, and DEFAULT.
- show -disabled**
Displays all messages that have been disabled.
- show -log *MSG-ID***
Displays the logging status of the specified message.
- show -module *MODULE-ID***
Displays the logging status of all messages included in the specified module.
- show -severity *MSG-ID***
Displays the severity of the specified messages.
- show -all**
Displays all external RASlog messages, their status (enabled or disabled), their configured severity and their default severity.
- show -syslog**
Displays the list of internal RASLog messages that are configured to display on the system console and the syslog server.
- quiet -enable *log_type***
Enables quiet time for the specified Log type. Valid values for *log_type* are 1 (audit messages), 2 (raslog messages), and 3 (both audit and raslog messages).

The following optional operands are supported with --quiet. If start time and end time are not specified, the quiet time is enabled for a duration of forever.
- stime *HH:MM***
Specifies the start time in HH:MM 24-hour clock format.
- etime *HH:MM***
Specifies the end time in HH:MM 24-hour clock format.
- dow *day_of_week***
Specifies the day of the week. You can specify a single day or a list of days separated by comma (1,3,7). Valid values are 1 (Monday), 2 (Tuesday), 3 (Wednesday), 4 (Thursday), 5 (Friday), 6 (Saturday), and 7 (Sunday).

--quiet -disable log_type

Disables quiet time for the specified message type. Valid values for log_type are 1 (audit messages), 2 (raslog messages), and 3 (both audit and raslog messages).

--quiet -show

Displays the quiet time configuration details for audit and raslog message types.

Examples

To disable logging of a single message:

```
switch:admin> rasadmin --disable -log NSM-1009
2012/07/20-13:30:41, [LOG-1005], 378, SLOT 4 | CHASSIS, INFO,
PLUTO_25, Log message NSM-1009 has been disabled.
```

To re-enable logging of a single message that was previously disabled:

```
switch:admin> rasadmin --enable -log NSM-1009
2012/07/20-13:30:41, [LOG-1005], 378, SLOT 4 | CHASSIS, INFO,
PLUTO_25, Log message NSM-1009 has been enabled.
```

To disable logging of all messages that belong to the NSM module:

```
switch:admin> rasadmin --disable -module NSM
2012/07/20-13:28:37, [LOG-1007], 375, SLOT 4 | CHASSIS, INFO,
PLUTO_25, Log Module NSM has been disabled.
```

To re-enable logging of all messages that belong to the NSM module:

```
switch:admin> rasadmin --enable -module NSM
2012/07/20-13:28:37, [LOG-1007], 375, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Log Module NSM has been enabled,
```

To change the severity level of a RASlog message:

```
switch:admin> rasadmin --set -log SEC-1203 -severity WARNING
Message      Severity
SEC-1203:    WARNING
```

To display a list of all messages that have been disabled:

```
switch:admin> rasadmin --show -disabled
Message      Status      Default Severity      Current Severity
IPAD-1002    DISABLED    INFO
IPAD-1003    DISABLED    INFO
```

To display the status and configuration of messages that belong to the specified module:

```
switch:admin> rasadmin --show -module RM
Message      Status      Default Severity      Current Severity
RM-1001      ENABLED     INFO
RM-1023      ENABLED     INFO
RM-1024      ENABLED     INFO
RM-1020      ENABLED     INFO
RM-1021      ENABLED     INFO
RM-1022      ENABLED     INFO
```

To display the status and configuration of a specified message.

```
switch:admin> rasadmin --show -log IPAD-1002
Message      Status      Default Severity  Current Severity
IPAD-1002    DISABLED    INFO              INFO
```

To display the status and configuration for all external messages:

```
switch:admin> rasadmin --show -all
Message      Status      Default Severity  Current Severity
FCIP-1000    ENABLED     CRITICAL          CRITICAL
FCIP-1001    ENABLED     INFO              ERROR
FCIP-1002    ENABLED     INFO              INFO
```

To enable an internal RASlog messages to be sent to syslog (this is done per instruction from support):

```
switch:admin> rasadmin --enable -syslog RAS-5001
2012/07/20-13:49:35, [LOG-1009], 385, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Internal Log message RAS-5001 has been enabled for syslog logging.
```

To disable an internal RASlog messages to be sent to syslog (this is done per instruction from support):

```
switch:admin> rasadmin --disable -syslog RAS-5001
2012/07/20-13:49:35, [LOG-1010], 385, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Internal Log message RAS-5001 has been disabled for syslog logging.
```

To configure quiet time for audit messages (in this example, the quiet time is enabled for a duration of forever):

```
switch:admin> rasadmin --quiet -enable 1
```

To configure quiet time for audit messages (in this example, the quiet time is automatically enabled at 22:00 daily and turns off on the next day at 02:00):

```
switch:admin> rasadmin --quiet -enable 1 -stime 22:00 -etime 02:00
```

To enable quiet time for raslog messages (in this example, quiet time is automatically enabled on Monday and Wednesday at 07:00 and turns off at 12:00):

```
switch:admin> rasadmin --quiet -enable 2 -stime 07:00 -etime 12:00 -dow 1,3
```

To disable quiet time for raslog messages:

```
switch:admin> rasadmin --quiet -disable 2
```

To display configured quiet time:

```
switch:admin> rasadmin --quiet -show
Type      QuietTime  StartTime  EndTime  DayOfWeek
-----
AUDIT     ON         22:00      02:00    EVERYDAY
RASLOG    ON         07:00      12:00    MON, WED
```

SEE ALSO [rasMan](#)

rasMan

Displays RASlog message text and documentation.

Synopsis **rasman** *message_id*

rasman --help

Description Use this command to display documentation for a specified RASlog message. The message is specified by its message ID. The command output is identical to the documentation provided in the Fabric OS Message Reference. For each message, the command displays the following information:

MESSAGE

Displays the message text.

MESSAGE TYPE

Displays the message type. The message type can be one or more of the following: LOG, FFDC, or AUDIT.

CLASS

A class value is displayed for audit messages only. Supported audit classes include SECURITY, FIRMWARE, FABRIC, LS (logical switch), CLI, MAPS, and RAS.

SEVERITY

Indicates the message severity as one of the following: INFO, ERROR, WARNING, CRITICAL.

PROBABLE CAUSE

Describes what may be causing the message.

RECOMMENDED ACTION

Describes the recommended action.

Notes This command is available to all supported Brocade roles, including root.

This command displays only external messages in the numeric range of 1000-4999.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

message_id

Specifies the message ID in the following format: <module ID>-<message number>. The message ID is case sensitive and should be entered exactly as shown in the RASlog message displayed on the console. For example, ZONE-3018 is a valid message ID, but zone-3018 is not valid.

--help

Displays the command usage.

Examples To display documentation for a ZONE audit message:

```
switch:admin> rasman ZONE-3018
Log Messages                                ZONE-3018 (7m)

MESSAGE
  ZONE-3018 - Event: <Event Name> Status:  success,
  Info:  <AD object type>  <AD object name>
  has been deactivated.

MESSAGE TYPE
  AUDIT

CLASS
  FABRIC

SEVERITY
  INFO

PROBABLE CAUSE
  Indicates that the specified Admin Domain  (AD)  object  has
  been deactivated.

RECOMMENDED ACTION
  Verify that the event was planned. If the event was planned,
  no action is required. If the event was not planned, take
  appropriate action as defined by your enterprise security
  policy.
```

SEE ALSO [rasAdmin](#)

reboot

Reboots the control processor (CP).

Synopsis **reboot [-f]**

Description Use this command to perform a "cold reboot" (power off/restart) of the control processor. This operation may be disruptive, and the command prompts for confirmation before executing. When you reboot a switch connected to a fabric, all traffic to and from that switch stops. All Fibre Channel ports on that switch including E_Ports become inactive until the switch comes back online.

The behavior of this command depends on the platform:

- When issued on a standalone (single-processor) switch, this command performs a cold reboot of the switch.
- When issued on an enterprise-class platform (Brocade X6-4 Director, Brocade X6-8 Director, DCX 8510-4, or DCX 8510-8) with two CPs (active and standby), the following rules apply:
 - When the Standby CP reboots, it goes down and there is no failover because there is no traffic on that switch. When the Standby CP comes up again, it is temporarily no longer in sync with the Active CP.
 - When the Active CP reboots, it fails over to the Standby CP. The Standby CP becomes the new Active CP and traffic is disrupted.
 - When HA is in sync, and reboot -f is issued on the Active CP of a director, the Standby CP takes over as the active CP without traffic disruption. If HA is not in sync, and reboot -f is issued on the Active CP, the Standby CP takes over as the Active CP and traffic is disrupted.
 - When HA is disabled and reboot or reboot -f is issued on the Active CP, both the Active and Standby CPs reboot with the original mastership retained. The original Active CP remains the Active CP after the reboot, and the original Standby CP remains the Standby CP. After the reboot, HA is enabled.
 - When HA is disabled and reboot or reboot -f is issued on the Standby CP, the Standby CP reboots without prompting. It boots up with the default switch only, even if the Active CP has multiple logical switches configured. After the Standby CP boots up, HA is still disabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands **-f**

Causes the CP to fail over to the Standby CP without affecting any of the Fibre Channel Ports. Note that the recommended way to force a failover without affecting any Fibre Channel ports is to issue the haFailover command.

Examples To reboot a standalone switch with a single CP:

```
switch:admin> reboot
Warning: This command would cause the switch to reboot
and result in traffic disruption.
Are you sure you want to reboot the switch [y/n]? y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...
The system is going down for reboot NOW !!
```

reboot

To reboot a CP on a DCX when HA is enabled:

```
switch:admin> reboot  
Warning: This command is being run on a control processor (CP)  
based system and will cause the active CP to reboot.  
Are you sure you want to reboot the active CP [y/n]? y  
  
Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...  
  
The system is going down for reboot NOW !!
```

To reboot a CP on a DCX when haFailover is disabled:

```
switch:admin> reboot  
  
This command is being run on a control processor (CP)  
based system. Because HA is disabled, it will cause both  
active CP and the standby CP to reboot. After reboot, the  
HA will be enabled.  
  
Do you want to continue [y/n] y  
  
Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...  
  
The system is going down for reboot NOW !!
```

SEE ALSO [fastBoot](#)

relayConfig

Sets and displays the relay host IP address.

Synopsis

```
relayconfig --config -rla_ip relay_ip
-rla_dname domain_name
```

relayconfig --delete

relayconfig --show

relayconfig --help

Description

Use this command to configure or display the relay host that is used to send the Monitoring and Alerting Policy Suite (MAPS) e-mail notifications. You can configure the e-mail recipients using the mapsConfig --emailcfg command.

For an e-mail alert to function correctly, add the CPO and CP1 IP addresses and host names to DNS and also set the domain name and name server. The ipAddrShow and dnsConfig commands can be used to set and verify this information.

Notes

This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config

Sets the relay host IP address and domain name.

-rla_ip relay_ip

Specifies the IP address of the relay host.

-rla_dname domain_name

Specifies the domain name of the relay host.

--delete

Deletes the relay host configuration.

--show

Displays the relay host configuration.

--help

Displays the command usage.

Examples

To set relay host IP address:

```
switch:admin> relayconfig --config -rla_ip 10.70.212.168 \
-rla_dname "mail.brocade.com"
```

relayConfig

To display the relay host configuration:

```
switch:admin> relayconfig --show  
Relay Host:          10.70.212.168  
Relay Domain Name:  mail.brocade.com
```

To delete the relay host configuration:

```
switch:admin> relayconfig --delete
```

SEE ALSO [mapsConfig](#)

roleConfig

Manages user-defined roles.

Synopsis

```
roleconfig --add role_name [-desc description]
                        [-class rbac_class_list] [-perm permission]

roleconfig --change role_name [-class rbac_class_list
                        -perm permission [-desc description]

roleconfig --delete role_name [-force]

roleconfig --copy new_role -role source_role

roleconfig --show role_name | -all [default]

roleconfig --help
```

Description

Use this command to create or modify user-defined roles, to define permissions for these roles based on role-based access control (RBAC) permissions and meta-object format (MOF) classes, and to display the configured roles. Two types of access control restriction exist in Fabric OS:

- Restriction by MOF class: A MOF class groups similar Fabric OS commands into feature sets that share the same access permissions. By assigning one or more MOF classes to a role, the account with the specified role can access all the commands included in these classes. For example, the predefined role ZoneAdmin can access the commands under the MOF class Zoning, but not those under the UserManagement class. With the roleConfig command you could define a special admin role called myzonesec and assign access to this role for both the zoning and the userManagement class.
- Restriction by RBAC access level: You can further restrict access by setting RBAC one of the following access levels for the role. The RBAC permissions are set per class.
 - O = observe
 - OM = observe-modify
 - N = none/not available

Use the --show option to display information about user-defined roles and default roles. Use the classConfig command to display information about MOF classes and associated commands. Note that you cannot modify the predefined Fabric OS roles.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add

Creates a role with the specified name and optional attributes. The new role is created with two default RBAC classes, "localuserenvironment" and "nocheck" and has the default permissions observe and modify ("OM"). A configuration download will always reset the permissions of these two default classes to "OM."

--change

Modifies an existing user-defined role.

role_name

Specifies the name for the role to be created or modified. The name must be unique; it is case-insensitive and can contain only alpha characters. The role name must be at least 4 characters long and cannot exceed 16 characters. The maximum number of user-defined roles allowed on a chassis is 150. This operand is required.

The following operands are optional with --add and --change:

-desc *description*

Specifies a description for the role of up to 63 characters. Colons (:) are not permitted.

-class *class_list*

Specifies one or more MOF classes to which the role should have access. Classes must be separated by commas. The requested class permissions cannot be higher than those of the Fabric OS Admin role.

-perm *permissions*

Specifies the RBAC permissions for the role. The RBAC permissions restrict what the user can do with the commands included in the classes to which the role has access. Valid RBAC permissions include the following:

OM

Observe and modify.

O

Observe only.

N

No access. This parameter is not valid with the --add option.

--delete *role_name* [**-force**]

Deletes the specified user-defined role. This command prompts for confirmation unless you use the -force option. The role must exist in the database and the role cannot currently be assigned to a user account. You cannot delete any of the predefined Fabric OS roles.

--copy

Clones an existing user-defined role by copying an existing role to a new role name. The new role inherits all the classes and permissions of the source role. You can further modify the newly created role. The following operands are required:

new_role

The name for the new role must be unique; it is case-insensitive and can contain only alpha characters. The role name must be at least 4 characters long and cannot exceed 16 characters.

-role *source_role*

Specifies the name of the existing role to be copied.

--show

Displays information about the specified roles. For each role, the command displays the role name, description, assigned classes and RBAC permissions for each class. The following displays options are exclusive:

role_name

Displays information about the specified user-defined role.

-all [default]

Displays a listing of all user-defined roles. When used together with the optional -default option, both the user-defined roles and the predefined Fabric OS roles are displayed.

--help

Displays the command usage.

Examples

To create a role with Zoning and SecurityAdmin permissions and OM access:

```
switch:admin> roleconfig --add myzonesec \
  -d "Zone and Security Admin" -c Security,zoning -p OM
```

To change the access permissions of the previously created role and to display the results:

```
switch:admin> roleconfig --change myzonesec -c pki -p N
switch:admin> roleconfig --change myzonesec -c security -p O
switch:admin> roleconfig --change myzonesec -c zoning -p OM
```

```
switch:admin> roleconfig --show myzonesec
Role Name      : myzonesec
Description    : Zone and Security Admin
```

RBAC Class	Permission
-----	-----
Security	O
Zoning	OM

Role permissions changed successfully.

To copy the role myzonesec:

```
switch:admin> roleconfig --copy superrole -r myzonesec
Role 'superrole' is copied successfully.
```

To delete a role:

```
switch:admin> roleconfig --delete -r myzonesec
You are going to delete a user defined role.
Are you sure? (yes, y , no, n) [no] y
Role 'myzonesec' is deleted successfully.
```

SEE ALSO [classConfig](#)

rootAccess

Configures root access through CLI.

Synopsis **rootaccess --set [none | consoleonly | all]**

rootaccess --show

rootaccess --help

Description Use this command to display and set root access settings.

Use the --set command to configure the root user to login to the switch through console or other interfaces such as SSH, Telnet or Web Tools, or to block root login from the interfaces. By default, access to the root account is allowed through console only. Root account must be enabled for the changes to take effect. If root account is disabled, root login through console or any interface fails with a warning message. By default, root account is disabled. You can enable or disable root account using the userConfig command. When access is changed, root is logged out.

Use the --show command to display the current root access settings.

Notes The execution of this command is not subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following optional operands:

--set

Modifies the root access settings. Valid options include the following:

none

Disables logging in to the switch as root through all interfaces.

consoleonly

Allows logging in to the switch as root through console only. This is the default setting.

all

Allows logging in to the switch as root through all interfaces.

--show

Displays the current root access settings.

--help

Displays the command usage.

Examples To set root access level to 'all':

```
switch:admin> rootaccess --set all
```

To display root access settings:

```
switch:admin> rootaccess --show  
RootAccess: all
```

SEE ALSO [userConfig](#)

routeHelp

Displays a list of FSPF-related commands.

Synopsis **routehelp**

Description Use this command to display a list of fabric-shortest-path-first (FSPF)-related commands.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display a list of routing-related commands:

```
switch:admin> routehelp

aptPolicy           Get and set Advanced Performance
                    Tuning policy
bcastShow           Print broadcast tree information
dlsReset            Turn off Dynamic Load Sharing
dlsSet              Turn on Dynamic Load Sharing
dlsShow             Print state of Dynamic Load Sharing
fspfShow            Print FSPF global information
interfaceShow       Print FSPF interface information
iodReset            Turn off In-Order Delivery
iodSet              Turn on In-Order Delivery
iodShow             Print state of In-Order Delivery
linkCost            Set or print the FSPF cost of a link
LSDBShow            Print Link State Database entry
nbrStateShow        Print neighbor's summary information
nbrStatsClear       Reset FSPF neighbor's counters
topologyShow        Print paths to domain(s)
uRouteShow          Print port's unicast routing info
```

SEE ALSO [bcastShow](#), [interfaceShow](#), [uRouteShow](#)

rtLogTrace

Manages real-time trace logging.

Synopsis **rtlogtrace --enable**

rtlogtrace --disable

rtlogtrace --show

rtlogtrace --help

Description Use this command to enable or disable real-time trace logging and to indicate whether the feature is enabled or disabled.

The RTLog facility captures the most recent hardware events and low-level software interrupts on Brocade DCX platforms in real time. When enabled, the RTLog traces are collected as part of the supportSave utility. The RTLog generates no console output. The RTLog is enabled by default and persistent across reboots. The rtLogTrace configuration is lost after a power cycle.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--enable

Enables the RTLog on the active Control Processor (CP). The RTLog becomes effective on the standby CP after a failover or a reboot of the active CP.

--disable

Disables the RTLog.

--show

Displays the current status of the RTLog as enabled or disabled.

--help

Displays the command usage.

Examples To enable the RTLog:

```
Switch:admin> rtlogtrace --enable
```

To disable the RTLog:

```
Switch:admin> rtlogtrace --disable
```

To display the RTLog status:

```
Switch:admin> rtlogtrace --show
```

SEE ALSO None

sddQuarantine

Clears or displays the quarantined ports.

Synopsis **sddquarantine --clear** *[[slot/]port | all]* **[-force]**

sddquarantine --show

sddquarantine --help

Description Use this command to clear or display ports that are quarantined by the MAPS action "SDDQ".

The slow drain device quarantine (SDDQ) feature is used to automatically detect the slow-drain devices and move the slow-drain flows to a low priority virtual channel (VC) from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. Due to this automatic isolation from the regular flows, the effects of the slow-drain flows on the fabric are reduced. Once the traffic flowing through an F_Port is isolated, the F_Port is marked as Slow Drain Quarantined. You can use the --clear option to clear the Slow Drain Quarantined state on the port.

If the quarantined ports go offline or disabled, the ports remain in Slow Drain Quarantined state. Once the ports come online, the flows destined to the port are quarantined.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--clear

Clears the specified port or all ports from the Slow Drain Quarantined state. This option is not allowed if the latency or frame loss condition persists on the ports. The -force option overrides the default behavior. Valid options include the following:

slot

For bladed systems only, specifies the slot number for which to set or display the cost, followed by a slash (/).

port

Specifies the port number for which to set or display the cost, relative to its slot for bladed systems. Use switchShow to list of valid ports.

all

Clears all the ports currently quarantined in the local switch.

-force

Clears the quarantined ports even when the latency or frame loss condition persists. This operand is optional.

--show

Displays all the local quarantined ports, ports on which VC translation is not enforced due to zoning count restriction, and the fabric-wide quarantined device information.

--help

Displays the command usage.

Examples To clear quarantined state for a port:

```
switch:admin> sddquarantine --clear 33
Initiated clearing port from quarantined state
```

To clear quarantined state for all ports:

```
switch:admin> sddquarantine --clear all
The clear action was not initiated for the following port(s). Try with individual
ports
3
Initiated quarantine action on other ports
```

To display the offline quarantined local ports and the online quarantined device information across the fabric:

```
switch:admin> sddquarantine --show
-----
Ports marked as Slow Drain Quarantined in the Local Switch: 2/1, 1/3
-----
Ports marked as Slow Drain Quarantined but not enforced: 1/3
-----

Online Quarantined Devices across the fabric
-----
Port Index | PID | PWWN
-----
17 | 051100 | 30:10:00:05:33:ac:c6:13
17 | 051101 | 30:10:01:05:33:ac:c6:13
-----
```

SEE ALSO [mapsConfig](#), [mapsRule](#), [switchShow](#)

secActiveSize

Displays the size of the active security database.

Synopsis **secactivesize**

Description Use this command to display the size of the active security database. The command also displays the maximum database size.

For switches running Fabric OS v6.2.0 and later, the maximum security database size is 1 megabyte per logical switch. With up to eight partitions, the total database size on a chassis can be up to 8 megabytes. On switches that are not Virtual Fabric-capable, the security database is limited to 1 megabyte. For switches running earlier versions of Fabric OS (up to v5.3.0), the maximum size is 256 Kilobytes.

Notes The effective security DB size is the lowest supported by the fabric. The presence of a Standby CP that runs an earlier version of the operating system will drop the effective security DB size on an Active CP that runs Fabric OS v6.2.0.

The Brocade 200E is unable to handle the maximum DB size supported in v6.2.0 and issues a compact flash warning when the active security database is close to the 1 MB limit.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the size of the active security database:

```
switch:admin> secactivesize
Size of security active data: 35 bytes \
(Max 1048576 bytes)
```

SEE ALSO [secDefineSize](#), [secGlobalShow](#)

secAuthSecret

Manages the DH-CHAP shared secret key information.

Synopsis **secauthsecret --show**

secauthsecret --set

secauthsecret --remove *value* | --all

Description Use this command to manage the DH-CHAP shared secret key database used for authentication. This command displays, sets, and removes shared secret key information from the database or deletes the entire database. If you are performing set or remove operations, when the command is completed new data is saved persistently. New data is effective with the next authentication request. The configuration applies to a switch instance only.

Port level authentication security must be enabled before encryption configuration can be enabled. Pre-shared secret keys should be configured on both ends of the ISL to perform authentication. For encrypted ports, an authentication key of 32 characters is recommended. Spaces are not allowed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--show

Lists the WWNs for which a shared secret is configured. In Access Gateway mode, since you cannot configure using domain ID or switchname, these fields will be displayed as -1 and Unknown respectively.

--set

Sets shared secrets. You can set shared secrets for F_Port, N_Port in Access Gateway mode and E, EX_Port and F_Port on Fabric OS. This command is interactive. In Access Gateway mode, you can specify only a WWN. In Fabric OS, you can specify a WWN or switchname or domain ID. Spaces are not allowed.

--remove [*wwn* | *domain* | *swname*]

Removes the specified WWN entry from the database. If a domain name is specified, it is converted to a WWN and then the entry is removed. If no option is specified, the command is interactive. In Access Gateway mode, you can specify only a WWN. In Fabric OS, you can specify a WWN or switchname or domain ID.

--remove --all

Deletes the entire secret key database.

Examples To list the shared secret WWN:

```
switch:admin> secauthsecret --show
```

WWN	DId	Name
10:00:00:60:69:80:5b:e8	1	switch

To list the shared secret WWN in Access Gateway mode:

```
switch:admin> secauthsecret --show
```

WWN	DId	Name
10:00:00:60:69:80:5b:e8	-1	Unknown

To set the shared secret:

```
switch:admin> secAuthSecret --set
```

This command sets up secret keys for the DH-CHAP authentication. The minimum length of a secret key is 8 characters and maximum 40 characters. Setting up secret keys does not initiate DH-CHAP authentication. If switch is configured to do DH-CHAP, it is performed whenever a port or a switch is enabled.

Warning: Please use a secure channel for setting secrets. Using an insecure channel is not safe and may compromise secrets.

Following inputs should be specified for each entry.

1. WWN for which secret is being set up.
2. Peer secret: The secret of the peer that authenticates to peer.
3. Local secret: The local secret that authenticates peer.

Press Enter to start setting up shared secrets >

Enter WWN, Domain, or switch name (Leave blank when done):

10:00:00:60:69:80:05:14

Enter peer secret:

Re-enter peer secret:

Enter local secret:

Re-enter local secret:

Enter WWN, Domain, or switch name (Leave blank when done):

Are you done? (yes, y, no, n): [no] **y**

Saving data to key store... Done.

To delete the entire secret key database:

```
switch:admin> secAuthSecret --remove --all
```

This command deletes database of DH-CHAP secret keys. If a fabric requires authentication, deleting this database may cause switch to segment from the fabric.

Do want to remove secret key database?

(yes, y, no, n): [no] **y**

Deleting secret key database... Done.

SEE ALSO None

secCertMgmt

Manages certificates on a switch.

Synopsis

seccertmgmt

seccertmgmt generate -csr [fcap | commoncert | https | radius | ldap | syslog | extn] [-type rsa | dsa | ecdsa] [-keysize value] [-hash type] [-years value] -keypair_tag keypair_name [-f]

seccertmgmt generate -cert [https | extn] [-type rsa | dsa | ecdsa] [-keysize value] [-hash type] [-years value] [-keypair_tag keypair_name] [-f]

seccertmgmt import -cert [fcap | commoncert | https | radius | ldap | syslog | extn | mgmtip] -keypair_tag keypair_name -protocol [scp | ftp] -ipaddr IP_address -remotedir remote_directory -certname certificate_name -cacert preimported_local_ca_cert -login login_name -password password [-f]

seccertmgmt import -ca [-client | -server] [fcap | commoncert | https | radius | ldap | syslog | extn] -keypair_tag keypair_name -protocol [scp | ftp] -ipaddr IP_address -remotedir remote_directory -certname certificate_name -cacert preimported_local_ca_cert -login login_name -password password [-f]

seccertmgmt export -cert [fcap | commoncert | https | radius | ldap | syslog | extn | mgmtip] -keypair_tag keypair_name -protocol [scp | ftp] -ipaddr ip_address -remotedir remote_directory -certname certificate_name -login login_name -password password

seccertmgmt export -ca [-client | -server] [fcap | commoncert | https | radius | ldap | syslog | extn] -keypair_tag keypair_name -protocol [scp | ftp] -ipaddr ip_address -remotedir remote_directory -certname certificate_name -login login_name -password password

seccertmgmt export -csr [fcap | commoncert | https | radius | ldap | syslog | extn] -keypair_tag keypair_name -protocol [scp | ftp] -ipaddr ip_address -remotedir remote_directory -certname certificate_name -login login_name -password password

seccertmgmt delete -cert [fcap | commoncert | https | radius | ldap | syslog | extn certificate_name | mgmtip certificate_name | all] [-f]

seccertmgmt delete -ca [-client | -server] [fcap | commoncert | https | radius | ldap | syslog | extn certificate_name | all] [-f]

seccertmgmt delete -csr [fcap | commoncert | https | radius | ldap | syslog | extn | all] [-f]

seccertmgmt delete -all [default | fcap | commoncert | https | radius | ldap | syslog | extn | mgmtip | all] [-f]

seccertmgmt show -cert [fcap | commoncert | https | radius | ldap | syslog | extn certificate_name | mgmtip certificate_name | all] -keypair_tag keypair_name -hexdump -all

```
seccertmgmt show -ca [-client | -server] [fcap | commoncert | https | radius |  
  ldap | syslog | extn certificate_name | all]  
  -keypair_tag keypair_name -hexdump -all
```

```
seccertmgmt show -csr [-client | -server] [fcap | commoncert | https | radius |  
  ldap | syslog | extn certificate_name  
  -keypair_tag keypair_name -hexdump -all
```

```
seccertmgmt --help
```

Description

Use this command to manage third-party certificates on a switch, including Public Key Infrastructure (PKI) based certificates, Lightweight Directory Access Protocol (LDAP) certificates, FCAP certificates, RADIUS certificates, syslog CA certificates, and extension platform certificates of IPsec tunnel. This command also imports or exports certificates from or to a remote host. This command supports IPV4 and IPV6 addresses.

Use this command to do the following:

- Generate a certificate or Certificate Signing Request (CSR).
- Import a certificate or CA certificate.
- Export a certificate, CA certificate, or CSR.
- Delete a certificate, CA certificate, or CSR.
- Display the contents of a certificate, CA certificate, or CSR.

This command takes an action and associated arguments. This command prompts interactively for input values of the associated arguments. The command runs noninteractively when the arguments associated with a given action are specified on the command line. When invoked without operands, this command displays the usage.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Before you import a certificate from Windows system, convert the certificate to a Unix file format with the dos2unix utility.

Operands

This command has the following operands:

generate

Generates a new certificate or CSR for the switch.

import

Imports a certificate or CSR. Use this command to import a certificate from the server or to download a certificate issued by a CA after sending the CSR to the CA.

export

Exports a certificate or CSR to a host. This command is typically used to submit a CSR to the Certification Authority (CA) that issues the certificate.

delete

Deletes the specified certificate, CSR, or FCAP keypair.

delete -all

Deletes all the certificates for the specified type.

show

Lists all existing PKI-based certificates on the switch.

-cert

Specifies a switch certificate.

-ca

Specifies a CA certificate.

-csr

Specifies a CSR file.

fcap | commoncert | https | radius | ldap | syslog | extn | mgmtip | https

Specifies the certificate type.

-type [rsa | dsa | ecdsa]

Specifies the key pair type. The ecdsa option is supported only with extn certificate type.

-keysize *value*

Specifies the size of the key. Valid values are 1024, 2048, 4096, 8192, or P384. The greater the value, the more secure is the connection; however, performance degrades with size.

-hash *type*

Specifies the hash type. Valid values are sha1, sha256, sha384, or sha512. The sha384 option is supported only with extn certificate type.

-years *value*

Specifies the number of years the certificate is valid for.

-keypair_tag *keypair_name*

Specifies the key pair name. This option is valid only with extn certificate type.

-protocol {scp | ftp}

Specifies the protocol as either FTP or SCP.

-ipaddr *ip_address*

Specifies the IP address of the remote host.

-remotedir *remote_directory*

Specifies the remote directory. Provide a fully qualified path name.

-certname *certificate_name*

Specifies the certificate name.

-cacert *preimported_local_ca_cert*

Specifies the preimported local CA certificate name. This option is valid only with extn certificate type.

-login *login_name*

Specifies the login name for the server.

-password *password*

Specifies the password for the user account. When using SCP, for security reasons, do not enter a password on the command line. Use the interactive version instead. Use CTRL-C to skip the password.

-client	Specifies a client CA certificate.
-server	Specifies a server CA certificate.
-hexdump	Displays raw hex data for all certificates.
-all	Specifies all certificates or CSRs.
-f	Executes without prompting for a confirmation.

Examples

To generate a certificate:

```
switch:admin> seccertmgmt generate -cert https -type rsa \
    -keysize 2048 -hash sha1 -years 5
Generating a new certificate will automatically do the following
1. Delete existing switch certificate(s).
2. Disable secure protocol HTTPS

Warning: Certificate generation is CPU intensive and can cause high CPU usage

Continue (yes, y, no, n): [no] y
Generating ... ..Generated self-signed https certificate successfully.
```

To generate a CSR:

```
switch:admin> seccertmgmt generate -csr fcap -type rsa \
    -keysize 2048 -hash sha1 -years 5
Generating a new CSR will automatically do the following:
1. Delete all existing CSRs.
2. Delete existing switch certificate.
3. Reset the certificate filename to none.

Warning: Key-pair generation is CPU intensive and can cause high CPU usage

Continue (yes, y, no, n): [no] y
Country Name (2 letter code, eg, US): US
State or Province Name (full name, eg, California): California
Locality Name (eg, city name): San Jose
Organization Name (eg, company name): Brocade
Organizational Unit Name (eg, department name): Fabric OS
Common Name (Fully qualified Domain Name, or IP address): server
Generating CSR, file name is: switch.0.csr
```

To import an HTTPS CA certificate from a remote host to the local switch:

```
switch:admin> seccertmgmt import -ca -server https -protocol scp -ipaddr
10.10.56.56 \
    -remotedir /home/localpath/CA -certname cacert.pem -login admin
Password: *****
Success: imported https certificate [cacert.pem].
Certificate file in configuration has been updated.
```

To import an HTTPS certificate from a remote host to the local switch:

```
switch:admin> seccertmgmt import -cert https -protocol scp
               -ipaddr 10.17.56.56 -remotedir /home/localpath/CERT -certname 92.pem -login
               admin
Password: *****
```

To export an HTTPS CA certificate from the switch to the remote host:

```
switch:admin> seccertmgmt export -ca -server https -protocol scp -ipaddr
10.10.56.56 \
               -remotedir /home/vishwa/CA -certname cacert.pem -login admin
Password: *****
Success: exported https certificate [cacert.pem].
```

To export an HTTPS certificate from the switch to the remote host:

```
switch:admin> seccertmgmt export -cert https -protocol scp -ipaddr 10.17.56.56 \
               -remotedir /home/admin/CERT -certname 92.pem -login admin
Password: *****
```

To delete an HTTPS CA certificate:

```
switch:admin> seccertmgmt delete -ca https
WARNING!!!

About to delete https: CA file(s)

Continue (yes, y, no, n): [no] y
Deleted HTTPS ca certificate
```

To display the contents of an HTTPS certificate:

```
switch:admin> seccertmgmt show -cert https
Displaying contents of servercert.pem
Issued To
countryName           = US
stateOrProvinceName   = California
localityName          = San Jose
organizationName       = Brocade
organizationalUnitName = Eng
commonName             = Brocade

Issued By
countryName           = US
stateOrProvinceName   = California
localityName          = San Jose
organizationName       = Brocade
organizationalUnitName = Eng
commonName             = Brocade

Period Of Validity
Begins On              Nov 16 07:43:43 2016 GMT
```

```
Expires On          Nov 15 07:43:43 2021 GMT

Fingerprints
  SHA1 Fingerprint
    6B:04:D5:CD:5C:7A:BF:9A:0B:19:3D:BA:A2:E1:E7:0C:B2:95:C7:EE
  SHA256 Fingerprint
    5B:91:A1:07:A5:A7:90:51:B3:E9:A4:30:26:52:67:A4:10:8B:DC:9A:59: \
    E8:96:A5:FB:B8:CD:86:D5:01:53:C1
```

To display the list of available certificates:

```
switch:admin> seccertmgmt show -all
ssh private key:
  Does not Exist

ssh public keys available for users:
  None
```

Certificate Files:

Protocol	Client CA	Server CA	SW	CSR	PVT Key	Passphrase
FCAP	Exist	NA	Exist	Exist	Exist	Exist
RADIUS	Exist	Exist	Exist	Exist	Exist	NA
LDAP	Exist	Exist	Empty	Empty	Empty	NA
SYSLOG	Empty	Exist	Empty	Exist	Exist	NA
HTTPS	NA	Exist	Exist	Exist	Exist	NA

SEE ALSO [secCertUtil](#)

secCertUtil

Manages certificates on a switch.

Synopsis

seccertutil

seccertutil genkey [-nowarn] [-keysize 1024 | 2048 | 4096 | 8192]

seccertutil delkey [-nowarn][**-all**]

seccertutil gencsr [-hash sha1 | sha256] [-country *country code*]
 [-state *state*] [-locality *locality*] [-org *organization*]
 [-orgunit *organization unit*] [-cn *common name*]

seccertutil delcsr [-nowarn]

seccertutil showcsr

seccertutil generate [-fcap] [-keysize 1024 | 2048]
 [-hash sha1 | sha256] [-nowarn]

seccertutil generate [-commoncert] [-keysize 1024 | 2048]
 [-hash sha1 | sha256] [-nowarn]

seccertutil generate -https [-keysize 1024 | 2048 | 4096 | 8192] [-type rsa | dsa]
 [-hash sha1 | sha256 | sha512] [-years *value*] [-nowarn]

seccertutil delete [-ldapcert *certificate name*] | **-syslogcacert** *certificate_name* |
-fcapcert | **-fcapswcert** | **-fcapall** |
-commoncertall | *certificate name*] [-nowarn]

seccertutil export [-ldapcert [-certname *certificate name*] |
-syslogcacert [-certname *certificate_name*] |
-fcapswcert | **-fcapswcsr** | **-fcapcert** |
-commonswcert | **-commonswcsr** | **-commoncacert**]
 [-protocol ftp | scp] [-ipaddr *IP address*]
 [-remotedir *remote directory*] [-login *login name*]
 [-password *password*]

seccertutil import [-ldapcert | **-syslogcacert** | **-fcapswcert** |
-fcapcert | **-config** *cacert* | **-config** *swcert* [-enable https]
-commonswcert | **-commoncacert**]
 [-protocol ftp | scp] [-ipaddr *IP address*]
 [-remotedir *remote directory*] [-certname *certificate name*]
 [-login *login name*] [-password *password*]

seccertutil show [-ldapcert] | [-syslogcacert *certificate name*] | [-fcapall] |
 [-fcapswcert] | [-commoncertall] | [*filename*]

Description Use this command to manage third-party certificates on a switch, including Public Key Infrastructure (PKI) based certificates, Lightweight Directory Access Protocol (LDAP) certificates, FCAP certificates, and syslog CA certificates. This command also imports or exports Certificate Signing Requests (CSRs) from or to a remote host. This command supports IPV4 and IPV6 addresses.

Use this command to do the following:

- Generate a public/private key pair.
- Delete a public/private key pair.
- Generate a CSR.
- Delete a CSR.
- List existing certificates on a switch.
- Display the contents of a certificate or CSR.
- Delete a specified certificate.
- Import or export a certificate.
- Configure a SSL certificate file name.
- Enable secure protocols.

This command takes an action and associated arguments. If only an action is specified, this command prompts interactively for input values of the associated arguments. The command runs noninteractively when the arguments associated with a given action are specified on the command line. When invoked without operands, this command displays the usage.

This command is also supported in Access Gateway mode, for FCAP authentication between AG and the switch.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Before you import a certificate from Windows system, convert the certificate to a Unix file format with the dos2unix utility.

Operands This command has the following operands:

genkey

Generates a public/private key pair. This is the first step in setting up a third-party certificate. The following operands are optional; when omitted, the command prompts interactively for input values to these operands.

-keysize 1024 | 2048 | 4096 | 8192

Specifies the size of the key. Valid values are 1024, 2048, 4096, or 8192 bits. The greater the value, the more secure is the connection; however, performance degrades with size. The keys are generated only after all existing CSRs and certificates have been deleted.

-nowarn

Specifies that no warning is given when overwriting or deleting data. If this operand is omitted, the command prompts for confirmation before existing CSRs and certificates are deleted.

delkey

Deletes all public/private key pairs with the exception of Encryption-related certificates and key pairs. This command prompts for confirmation unless **-nowarn** is specified.

-nowarn

Executes the delete operation without confirmation.

-all

Deletes all public/private key pairs including Encryption-related certificates and key pairs.

gencsr

Generates a new CSR for the switch. This is the second step in setting up a third-party certificate. The following operands are optional; if omitted, the command prompts for answers to a series of questions. If only one or a few operands are specified, the command prompts for input to the remaining questions. When all questions are answered, a CSR is generated and placed in a file named `ip_address.csr`, where `ip_address` is the IP address of the switch.

-hash sha1 | sha256

Sets the hash type. Valid values are "sha256" and "sha1".

-country *country code*

Specifies the country. Provide a two-letter country code, for example, US.

-state *state*

Specifies the state. Provide the full name, for example, California. If the state consists of multiple words, it must be enclosed in double quotes.

-locality *locality*

Specifies the city. Provide the full name, for example, "San Jose". If the locality consists of multiple words, it must be enclosed in double quotes.

-org *organization*

Specifies the organization. Provide the full name, for example, Brocade. If the organization consists of multiple words, it must be enclosed in double quotes.

-orgunit *organization unit*

Specifies the organizational unit, for example, your department name. If the organizational unit consists of multiple words, it must be enclosed in double quotes.

-cn *common name*

Specifies the common name. Provide a fully qualified Domain Name, or IP address.

showcsr

Displays the content of the CSR on the switch without page breaks. Use the pipe operator followed by the "more" option to display the content one page at a time.

delcsr [-nowarn]

Deletes the CSR. This command prompts for confirmation before deleting the CSR unless **-nowarn** is specified.

generate

Generates the certificate.

-fcap

Generates FCAP switch CSR, passphrase, and key.

-commoncert

Generates the CSR and key file with key size of 1024 or 2048 for the common certificate.

-keysize 1024 | 2048

Specifies the size of the key. Valid values are 1024 or 2048. bits. The greater the value, the more secure is the connection; however, performance degrades with size.

-hash sha1 | sha256

Specifies the hash type. Valid values are "sha256" or "sha1".

-nowarn

Generates the certificate without confirmation.

-https

Generates HTTPS certificate.

-keysize 1024 | 2048 | 4096 | 8192

Specifies the size of the key. Valid values are 1024, 2048, 4096, or 8192. bits. The greater the value, the more secure is the connection; however, performance degrades with size.

-type rsa | dsa

Specifies the key pair that the certificate is based on (RSA or DSA).

-hash sha1 | sha256 | sha512

Specifies the hash type. Valid values are "sha512", "sha256", or "sha1".

-years *value*

Specifies the number of years the certificate is valid for.

delete

Deletes the specified certificate. Specify one of the following operands:

-ldapcert

Deletes all LDAP CA certificates. You may specify a file name when deleting the LDAP CA certificates. The file name is optional. All LDAP certificates are concatenated in a single file. Use show -ldapcert to list that file name on the switch. You cannot delete an individual certificate.

-syslogcert *certificate_name*

Deletes the specified syslog CA certificate. You may specify -all to delete all the syslog CA certificates. The syslog certificates are stored in separate files. Use show -syslogcert to list the imported CA certificate names.

-fcapcert

Deletes the FCAP CA certificate.

-fcapswcert

Deletes the FCAP SW certificate.

-fcapall

Deletes all FCAP objects including the switch CSR, keys, pass phrase, Root CA certificate, and switch certificate.

-commoncertall

Deletes the CSR, key file with key size of 1024 or 2048, switch certificates for the common certificate.

certificate name

The name of the certificate to be deleted.

-nowarn

Deletes the specified file without confirmation. This operand is optional.

export

Exports a CSR to a host. This command is typically used to submit a CSR to the Certification Authority (CA) that issues the certificate. The following operands are optional; if omitted, the command prompts interactively for your input.

-ldapcacert -certname *certificate name*

Exports an LDAP CA certificate from the switch to a remote host. You must specify the name of the LDAP CA certificate to be exported. Use the show option for a list of existing certificates.

-syslogcacert [-certname *certificate_name*]

Exports a syslog CA certificate from the switch to a remote host. You must specify the name of the syslog CA certificate to be exported. Use the show -syslogcacert option for the list of existing certificates.

-fcapswcert

Exports the FCAP switch certificate from the switch to the remote host. The certificate is exported with the same filename it had when it was imported.

-fcapswcsr

Exports the FCAP switch CSR certificate from the switch to the remote host. The FCAP switch CSR is exported as switchIPfcapSw.csr.

-fcapcacert

Exports the FCAP CA certificate from the switch to the remote host. The FCAP CA certificate is exported as switchIPfcapRootCA.pem.

-commonswcert

Exports the switch certificate from the switch to the remote host. It is exported with the switch IP address as the file name.

-commonswcsr

Exports the switch CSR certificate from the switch to the remote host. The certificate name is in the format is ip_addresscommonSw.csr.

-commoncacert

Exports the CA certificate from the switch to the remote host. The certificate name is in the format is ip_addresscommonRootCA.pem.

-protocol ftp | scp

Specifies the protocol as either FTP or SCP.

-ipaddr *IP address*

Specifies the IP address of the remote host.

-remotedir *remote directory*

Specifies the remote directory. Provide a fully qualified path name.

-login *login name*

Specifies the login name for the server.

-password *password*

Specifies the password for the user account. When using SCP, for security reasons, do not enter a password on the command line. Use the interactive version instead. Use CTRL-C to skip the password.

import

Imports a certificate. Use this command to import a certificate from the server or to download a certificate issued by a CA after sending the CSR to the CA. If the certificate type is not mentioned, a generic certificate is imported. Specify one of the following certificates:

-ldapcacert

Imports an LDAP CA certificate.

-syslogcacert

Imports a syslog CA certificate.

-fcapswcert

Imports an FCAP switch certificate.

-fcapcacert

Imports an FCAP CA certificate.

-config cacert

Imports a CA certificate.

-config swcert [-nowarn]

Imports an SSL certificate. If -nowarn is specified, the SSL certificate import is blocked without warning if the certificate is invalid. If -nowarn is omitted, you are prompted for confirmation before importing an invalid switch certificate. However, you will be able to import the invalid certificate. The -nowarn option effectively prevents you from importing an invalid swcert certificate.

-enable https

Enables secure https. Optionally use this operand with -config swcert only.

The following operands are optional with import; if omitted, the command prompts interactively for your input.

-commonswcert

Imports the switch certificate. Optionally, you can enable HTTPS using the -enable https and -config swcert options.

-commoncacert

Imports the CA certificate.

-protocol ftp | scp

Specifies the protocol as either FTP or SCP.

-ipaddr *IP address*

Specifies the IP address of the remote host.

-remotedir *remote directory*

Specifies the remote directory. Provide a fully qualified path name.

-certname *certificate name*

Specifies the certificate name.

-login *login name*

Specifies the login name for the server.

-password *password*

Specifies the password for the user account. When using SCP, for security reasons, do not enter a password on the command line. Use the interactive version instead.

show

Lists all existing PKI-based certificates on the switch. The following operands are optional and exclusive.

-ldapcert

Displays the LDAP certificate file name.

-syslogcert [*certificate name*]

Displays the list of imported syslog CA certificates. You may specify a file name to display content of a particular CA certificate.

-fcapall

Indicates whether FCAP-related files exist or are empty.

-fcapswcert

Displays the contents of the FCAP SW certificate.

-commoncertall

Indicates whether CommonCert-related files exist or are empty.

filename

Displays the contents of the specified certificate.

Examples

To generate a public/private key pair in interactive mode:

```
switch:admin> seccertutil genkey
```

Generating a new key pair will automatically do the following:

1. Delete all existing CSRs.
2. Delete all existing certificates.
3. Reset the certificate filename to none.
4. Disable secure protocols.

Continue (yes, y, no, n): [no] **y**

Select key size [1024 or 2048]: **1024**

Generating new rsa public/private key pair

Done.

To generate a public/private key pair in noninteractive mode:

```
switch:admin> seccertutil genkey -nowarn -keysize 1024
```

Generating new rsa public/private key pair

Done.

To generate a CSR in interactive mode:

```
switch:admin> seccertutil gencsr
```

Input hash type (sha1 or sha256): **sha1**

Country Name (2 letter code, eg, US): **US**

State or Province Name (full name, \
eg, California): **California**

```

Locality Name (eg, city name):"San Jose"
Organization Name (eg, company name):Brocade
Organizational Unit Name (eg, department \
or section name): IT
Common Name (Fully qualified Domain Name, \
or IP address):192.168.38.206
generating CSR, file name is: 192.168.38.206.csr
Done

```

To generate a CSR in noninteractive mode:

```

switch:admin> seccertutil gencsr -country US \
-state California -locality "San Jose" \
-org Brocade -orgunit software -cn 192.168.38.206
Input hash type (sha1 or sha256): sha1
generating CSR, file name is: 192.168.38.206.csr
Done

```

To delete the CSR in interactive mode:

```

switch:admin> seccertutil delcsr
WARNING!!!

About to delete CSR: /etc/fabos/certs/sw0/10.20.5.82.csr
ARE YOU SURE (yes, y, no, n): [no] y

```

To delete a CSR in noninteractive mode:

```

switch:admin> seccertutil delcsr -nowarn

```

To import an LDAP certificate from a remote host to the local switch in interactive mode:

```

switch:admin> seccertutil import -ldapcacert
Select protocol [ftp or scp]: ftp
Enter IP address: 195.168.38.206
Enter remote directory: /users/home/remote_certs
Enter certificate name (must have ".cert", \
".cer" or ".pem" suffix): ldap.cer
Enter Login Name: mylogin
Enter Password: password
Success: imported certificate [ldap.cert].

```

To import an LDAP certificate from a remote host to the local switch in noninteractive mode:

```

switch:admin> seccertutil import -ldapcacert \
-protocol ftp -ipaddr 195.168.38.206 \
-remotedir /users/home/remote_certs -certname ldap.cer \
-login abcd -passwd passwd
Success: imported certificate [ldap.cert].

```

To import an FCAP switch certificate in interactive mode:

```
switch:admin> seccertutil import -fcapswcert
Select protocol [ftp or scp]: scp
Enter IP address: 10.32.2.25
Enter remote directory: /users/myname/OPENSSL
Enter certificate name (must have ".pem" suffix): 01.pem
Enter Login Name: myname
myname@10.32.2.25's password:
Success: imported certificate [01.pem].
```

To import an FCAP CA certificate in interactive mode:

```
switch:admin> seccertutil import -fcapcacert
Select protocol [ftp or scp]: scp
Enter IP address: 10.32.2.25
Enter remote directory: /users/myname/OPENSSL
Enter certificate name (must have ".pem" suffix): CACert.pem
Enter Login Name: myname
myname@10.32.2.25's password:
Success: imported certificate [CACert.pem].
```

To import a PKI-based certificate with configure and enable option in interactive mode:

```
switch:admin> seccertutil import -config swcert -enable https
Select protocol [ftp or scp]: ftp
Enter IP address: 192.168.38.206
Enter remote directory: /users/home/mycerts
Enter certificate name (must have ".crt" or ".cer" or
".pem" or "psk" suffix): filename.crt
Enter Login Name: username
Enter Password: password
Success: imported certificate [filename.crt].
Certificate file in configuration has been updated.
Secure http has been enabled.
```

To import a PKI-based certificate with configure and enable option in noninteractive mode:

```
switch:admin> seccertutil import -config swcert \
  -enable https -protocol ftp -ipaddr 195.168.38.206 \
  -remotedir /users/home/remote_certs -certname file.crt \
  -login abcd -password passwd
Success: imported certificate [file.crt].
Certificate file in configuration has been updated.
Secure http has been enabled.
```

To export the switch certificate from the switch to the remote host in interactive mode:

```
switch:admin> seccertutil import -commonswcert
Select protocol [ftp or scp]: scp
Enter IP address: 10.32.2.25
Enter remote directory: /users/myname/OPENSSL
Enter certificate name (must have ".pem" suffix): 01.pem
Enter Login Name: myname
myname@10.32.2.25's password:
Success: imported certificate [01.pem].
```


To export the switch certificate from the switch to the remote host in noninteractive mode:

```
switch:admin> seccertutil import -commonswcert \
    -ipaddr 10.32.2.25 -remotedir /users/myname/OPENSSL \
    certs -certname 01.pem -login myname -password passwd
Success: imported certificate [01.pem].
```

To export an LDAP CA certificate from the local switch to a remote host in interactive mode:

```
switch:admin> seccertutil export -ldapcacert
Select protocol [ftp or scp]: scp
Enter IP address: 192.168.38.206
Enter remote directory: /users/home/remote/mycerts
Enter Login Name: username
Enter LDAP certificate name (must have ".pem" \
    or ".crt" or ".cer" suffix): ldap.cer
Password: password
Success: exported LDAP certificate
```

To export an LDAP CA certificate from the local switch to a remote host in noninteractive mode:

```
switch:admin> seccertutil export -ldapcacert \
    -protocol ftp -ipaddr 192.168.38.206 \
    -remotedir /users/home/remote_certs \
    -login abcd -passwd passwd -certname ldap.cer
Success: exported LDAP certificate
```

To export an FCAP switch certificate in interactive mode:

```
switch:admin> seccertutil export -fcapswcert
Select protocol [ftp or scp]: scp
Enter IP address: 10.32.2.25
Enter remote directory: /users/myname/OPENSSL
Enter Login Name: myname
myname@10.32.2.25's password:
Success: exported FCAP switch certificate
```

To export an FCAP switch CSR in interactive mode:

```
switch:admin> seccertutil export -fcapswcsr
Select protocol [ftp or scp]: scp
Enter IP address: 10.32.2.25
Enter remote directory: /users/myname/OPENSSL
Enter Login Name: myname
myname@10.32.2.25's password:
Success: exported FCAP switch CSR
```

To delete an LDAP CA certificate in interactive mode:

```
switch:admin> seccertutil delete -ldapcacert filename.pem
WARNING!!!
About to delete certificate: filename.cer
ARE YOU SURE (yes, y, no, n): [no] y
Deleted LDAP certificate successfully
```

To delete an LDAP CA certificate in noninteractive mode:

```
switch:admin> seccertutil delete -ldapcacert filename.pem
Deleted LDAP certificate successfully
```

To delete all FCAP PKI objects:

```
switch:admin> seccertutil delete -fcapall
WARNING!!!
```

```
About to delete FCAP-Files:
ARE YOU SURE (yes, y, no, n): [no] y
```

To generate FCAP PKI objects:

```
switch:admin> seccertutil generate \
    -fcapall -keysize 1024
Generating a new key pair will automatically
do the following:
  1. Delete all existing CSRs.
  2. Delete existing switch certificate.
  3. Reset the certificate filename to none.

Continue (yes, y, no, n): [no] y
Installing Private Key and Csr...
Switch key pair and CSR generated...
```

To display the FCAP PKI objects:

```
switch:admin> seccertutil show -fcapall
List of fcap files:
Passphrase      : Exist
Private Key     : Exist
CSR             : Exist
Certificate     : Empty
Root Certificate: Exist
```

To display the LDAP certificate file name on a switch:

```
switch:admin> seccertutil show -ldapcacert
List of ldap ca certificate files:
Sample.cer
```

To display the content of the CSR one page at a time:

```
switch:admin> seccertutil showcsr | more
```

To display the contents of an FCAP SW certificate:

```
switch:admin> seccertutil show -fcapswcert
```

To display the contents of a PKI-based or LDAP CA certificate:

```
switch:admin> seccertutil show filename
```

SEE ALSO None

secCryptoCfg

Configures and displays cryptographic parameters and templates.

Synopsis

```
seccryptocfg --replace -type SSH | https [-cipher cipher_string |  
-kex value | -mac value] -force  
  
seccryptocfg --default -type https | SSH [-force]  
  
seccryptocfg --apply template_name  
  
seccryptocfg --import template_name [-server ip_address -name user  
-proto scp | sftp | ftp -file remote_file_name]  
  
seccryptocfg --export template_name [-server ip_address -name user  
-proto scp | sftp | ftp -file remote_file_name]  
  
seccryptocfg --listtemplates  
  
seccryptocfg --verify template_name  
  
seccryptocfg --delete template_name  
  
seccryptocfg --show [template_name]  
  
seccryptocfg --help
```

Description

Use this command to perform the following functions:

- Configure cryptographic parameters such as ciphers, key exchange (kex) algorithm, and message authentication code (MAC) algorithm for SSH or HTTPS.
- Reset the cryptographic parameters to default.
- Set the template configuration.
- Import a template file.
- Export a template file.
- Display the list of templates available.
- Verify the configuration against the template.
- Delete a template file.
- Display the configured cryptographic or template parameters.

When the cryptographic parameters are configured, this command restarts the SSH or HTTPS daemon for the changes to take effect. This command prompts for confirmation unless you use the `-force` option.

A maximum of eight templates including the default templates are supported. You cannot overwrite the default configurations but can upload the configurations, edit, and then download it with a different name. You can create a new template similar to default templates, download, and apply. For more information on the format and rule of the template, refer to Brocade Fabric OS Administrator's Guide.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--replace -type SSH | https

Configures the specified ciphers, key exchange, and MAC algorithms for SSH or HTTPS and restarts the SSH or HTTPS daemon.

-cipher *cipher_string*

Specifies the SSH or HTTPS cipher list. You can either specify one or more ciphers separated by a comma, for example, 3des-cbc,aes128-cbc,aes192-cbc. The following ciphers are configured by default. You can modify the cipher list using this operand.

For SSH:

- aes128-ctr
- aes192-ctr
- aes256-ctr
- aes128-cbc
- 3des-cbc
- aes192-cbc
- aes256-cbc

For HTTPS:

- ECDH
- DH
- HIGH
- MD5
- CAMELLIA
- SRP
- PSK
- AESGCM

-kex *value*

Specifies the SSH kex algorithms list. You can either specify one or more kex algorithms separated by a comma, for example,

ecdh-sha2-nistp256,diffie-hellman-group-exchange-sha256. The following kex algorithms are configured by default. You can modify the kex algorithms list using this operand.

- ecdh-sha2-nistp256
- ecdh-sha2-nistp384
- ecdh-sha2-nistp521
- diffie-hellman-group-exchange-sha256
- diffie-hellman-group-exchange-sha1
- diffie-hellman-group14-sha1
- diffie-hellman-group1-sha1

-mac *value*

Specifies the SSH MAC list. You can either specify one or more MAC algorithms separated by a comma, for example, hmac-md5,hmac-sha1. The following MAC algorithms are configured by default. You can modify the MAC algorithms list using this operand.

- hmac-md5
- hmac-sha1
- hmac-sha2-256
- hmac-sha2-512

--default -type SSH | https

Resets the cipher, kex, and MAC configurations to default.

-force

Executes without prompting for a confirmation.

--apply *template_name*

Sets a default or user-defined template file. The following default templates are supported:

- default_generic
- default_strong
- default_fips
- default_cc

--import

Imports a template file from a specified external host.

--export

Exports a template file to the specified external host.

template_name

Specifies the template name.

-server *ip_address*

Specifies the IP address of the remote host.

-name *user*

Specifies the user name for the host. Depending on your host configuration, this command may prompt for a password.

- proto scp | sftp | ftp**
Specifies the protocol as either SCP, SFTP, or FTP.
- file remote_file_name**
Specifies the remote directory. Provide a fully qualified path name.
- listemplates**
Displays the list of templates available.
- verify template_name**
Verifies the running configuration against a required configuration specified in the template file.
- delete template_name**
Deletes the specified template file.
- show [template_name]**
Displays the configured cipher, kex, and MAC algorithms. If the template name is specified, this command displays the configuration contents in the specified template file.
- help**
Displays the command usage.

Examples To configure ciphers, kex, and MAC for SSH and HTTPS:

```
switch:admin> seccryptocfg --replace -type SSH -cipher \
3des-cbc,aes128-cbc,aes192-cbc -kex diffie-hellman-group-exchange-sha1 \
-mac hmac-sha2-256
```

To configure ciphers for SSH:

```
switch:admin> seccryptocfg --replace -type SSH -cipher \
aes128-ctr,aes192-ctr
```

This command requires the daemon(s) SSH to be restarted.
Existing sessions will be terminated.
Please confirm and provide the preferred option
Press Yes(Y,y), No(N,n) [N]:y

To configure ciphers for HTTPS:

```
switch:admin> seccryptocfg --replace -type https -cipher \
'!ECDH:!DH:HIGH:-MD5:!CAMELLIA'
```

This command requires the daemon(s) HTTP to be restarted.
Existing sessions will be terminated.
Please confirm and provide the preferred option
Press Yes(Y,y), No(N,n) [N]:no

To configure ciphers for HTTPS using the -force option:

```
switch:admin> seccryptocfg --replace -type https -cipher \
'!ECDH:!DH:HIGH:-MD5:!CAMELLIA' -force
```

HTTP cipher list configured successfully.

To set the default CC configuration template:

```
switch:admin> seccryptocfg --apply default_cc
Validating....
Applying...

Template configurations applied successfully
```

To import a template file:

```
switch:admin> seccryptocfg --import cc_import -server 10.70.12.10 \
    -name brocade -proto scp -file /users/home40/brocade/default_cc
brocade@10.70.12.10's password:

Import successful
```

To export a template file:

```
switch:admin> seccryptocfg --export default_cc -server 10.70.12.10 \
    -name brocade -proto scp -file /users/home40/brocade
brocade@10.70.12.10's password:

Export successful
```

To display the list of templates available:

```
switch:admin> seccryptocfg --lstemplates

List of templates:
default_generic
default_fips
cc_import
default_strong
default_cc
```

To verify a template file:

```
switch:admin> seccryptocfg --verify default_strong
Validating ....
Verifying ....
Failed for ....
    SSH:Kex,Mac,Enc

Failed: System configuration is not compliant with input template
switch:admin> seccryptocfg --verify default_cc
Validating ....
Verifying ....
Passed: System configuration is compliant with the input template
```

To delete a template file:

```
switch:admin> seccryptocfg --delete cc_import
```

To display the configured ciphers, kex, and MAC algorithms:

```
switch:admin> seccryptocfg --show
HTTPS Cipher List      : !ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM
SSH Cipher List        : aes128-ctr,aes192-ctr,aes256-ctr,aes128-cbc, \
                        3des-cbc,aes192-cbc,aes256-cbc
SSH Kex Algorithms List : ecdh-sha2-nistp256,ecdh-sha2-nistp384, \
                        ecdh-sha2-nistp521, \
                        diffie-hellman-group-exchange-sha256, \
                        diffie-hellman-group-exchange-sha1, \
                        diffie-hellman-group14-sha1, \
                        diffie-hellman-group1-sha1
SSH MACs List          : hmac-md5,hmac-sha1,hmac-sha2-256,hmac-sha2-512
```

To display configuration contents in a specific template file:

```
switch:admin> seccryptocfg --show default_cc
[Ver] 0.1
[SSH]
Enc:aes128-cbc,aes256-cbc
Kex:diffie-hellman-group14-sha1,ecdh-sha2-nistp256,ecdh-sha2-nistp384,\
    ecdh-sha2-nistp521
Mac:hmac-sha1,hmac-sha2-256,hmac-sha2-512
[AAA]
RAD_Ciphers:!ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM:!SSLv3
LDAP_Ciphers:!ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM:!SSLv3
[HTTPS]
Ciphers:!ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM:!3DES:!DES
```

SEE ALSO None

secDefineSize

Displays the size of the defined security database.

Synopsis **secdefinesize**

Description Use this command to display the size of the defined security database. The command also displays the maximum database size.

For switches running Fabric OS v6.2.0 and later, the maximum security database size is 1 Megabyte per logical switch. With up to eight partitions, the total database size on a chassis can be up to 8 Megabytes. On switches that are not Virtual Fabric-capable, the security database is limited to 1 Megabyte. For switches running earlier versions of Fabric OS (up to v5.3.0), the maximum size is 256 Kilobytes.

The effective security DB size is the lowest supported by the fabric. The presence of a Standby CP that runs an earlier version of the operating system drops the effective security DB size on an Active CP that runs Fabric OS v6.2.0 or later.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the size of the defined security database

```
switch:admin> secdefinesize
Size of security defined data: 35 bytes \
(Max 1048576 bytes)
```

SEE ALSO [secActiveSize](#), [secGlobalShow](#)

secGlobalShow

Displays the current internal security state information.

Synopsis **secglobalshow**

Description Use this command to display security server-specific information as a snapshot of its current state. The output may include information about the following:

- General security parameters
- The latest zone transaction
- The current status of the RCS transaction
- The state of the Domain
- wwnDL state

This command is intended primarily for debugging purposes by technical support staff. The information displayed may not be supported between releases and is subject to change without notice.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To view the current security state:

```
switch:admin> secglobalshow

----General Security Information----
flag 1, saveflag 0
transId 0
Queue Size 0
final Rca 0
reliablemsg 0
reliablePhase 0
Primary pub key: Empty
Primary Version 0
Primary WWN 10:00:00:05:1e:01:23:e0 (local switch)
Stamp 0
----The latest zone transaction--
last retVal from zone: not used
last zone size when calling zone: not used
----The latest RCS STATUS----
RCS was enabled
sec_aca: free
RCS latest Phase: Completion
RCS Message ==> RCS transaction completes.
----DataBase STATUS----
Retry Role 0
Retry Query 0
Security Active DataSize 35 bytes

-----Domain State-----
```

secGlobalShow

```
Active Sum 215b
Security Defined DataSize 35 bytes
Define Sum 215b
Zone Size (include enabled configuration) 312 bytes
Zone sum e04b215b
sec_db: free
primaryDLPhase 0
----wnnDL State-----
pid      tid      key      sec      usec

----- LOG CACHE -----
14:08:50 813905136 secipadm_ipchange receives notification
14:08:50 850588912 secProcessIPChange starts processing
14:08:50 850588912 secProcessIPChange acks completion
(Output truncated)
```

SEE ALSO [secActiveSize](#), [secDefineSize](#)

secHelp

Displays information about security commands.

Synopsis **sechelp**

Description Use this command to display a list of security commands with a brief description of the commands.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display a list of security commands:

```
switch:admin> sechelp
fipscfg          Configure FIPS mode operation
secactivesize    Displays size of the active (security)
                  database
secauthcertificate Configure FCAP switch certificate properties
secauthsecret    Creates/Manages DHCHAP secret key details
seccertutil      Creates/Manages/Displays third party PKI
                  certificates
secdefinesize    Displays size of the defined (security)
                  database
secglobalshow    Displays current internal security state
                  information
secpolicyabort   Aborts changes to defined policy
secpolicyactivate Activates all policy sets
secpolicyadd     Adds members to an existing policy
secpolicycreate  Creates a new policy
secpolicydelete  Deletes an existing policy
secpolicydump    Displays all members of existing policies
secpolicyfcsmove Moves a member in the FCS policy
secpolicyremove  Removes members from an existing policy
secpolicysave   Saves defined policy set and sends to all
                  switches
secpolicyshow    Shows members of one or more policies
secstatsreset    Resets security statistics
secstatsshow     Displays security statistics
sshutil         Configure SSH authentication options
```

SEE ALSO None

secPolicyAbort

Aborts all unsaved changes to the defined database.

Synopsis **secpolicyabort**

Description Use this command to abort all changes to the defined security database that have not been saved to flash memory and to abort changes to policy creation and modification operations from all the switches if a fabric-wide consistency policy is not set for the particular policy.

Notes When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

Only the user who made the changes to the defined database may use this command to abort them.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To abort all changes that have not been saved to nonvolatile memory:

```
primaryfcs:admin> secpolicyabort
Unsaved data has been aborted.
primaryfcs:admin> secpolicyabort
No new data to abort.
```

SEE ALSO [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyDelete](#), [secPolicyDump](#), [secPolicyRemove](#), [secPolicySave](#), [secStatsShow](#)

secPolicyActivate

Saves and activates the Defined Security Policy Set.

Synopsis **secpolicyactivate**

Description Use this command to activate the current defined security policy to all switches in the fabric. This activates the policy set on the local switch or all switches in the fabric depending on the fabric-wide consistency policy.

If there are changes to the SCC, DCC, or FCS policies in the current CLI or API transaction that have not been saved to the Defined Security Policy Set, then this command saves the changes to the Defined Security Policy Set first, and then activates it. If there are no changes, but the Defined Security Policy Set differs from the Active Security Policy Set, then the Defined Security Policy Set is activated. If there are no changes and the Defined Security Policy Set is the same as the Active Security Policy Set, then nothing is done.

After activation the defined policy set becomes the Active Policy Set.

Use secPolicyShow to display the members of an existing policy in the Active or Defined Security Policy Sets.

Notes The behavior of this command is the same for tolerant and strict fabric-wide consistency.

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

Any modifications to the SCC, DCC, and FCC DB are saved and activated. When secPolicyActivate is issued after the secPolicySave command, it might fail.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To activate the defined security policy set on all switches in the fabric:

```
switch:admin> secpolicyactivate
About to overwrite the current Active data.
ARE YOU SURE (yes, y, no, n): [no] y
secpolicyactivate command was completed successfully.
```

SEE ALSO [fddCfg](#), [secPolicyAdd](#), [secPolicyDelete](#), [secPolicyDump](#), [secPolicyShow](#)

secPolicyAdd

Adds members to an existing security policy.

Synopsis **secpolicyadd** "*name*", "*member*[:*member*...]" [-**legacy**]

Description Use this command to add one or more members to an existing access policy.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method; all access is granted. After a policy has been created and a member has been added to the policy, that policy becomes closed to all access except from included members. If all members are then deleted from the policy, all access is denied for that management method (the DCC_POLICY is an exception).

Attempting to add a member to a policy that already is a member causes this command to fail.

In a Virtual Fabric Environment, when you create a DCC lockdown policy on a logical switch, the DCC policy is created for each port in the chassis, even though the ports are not currently present in the local logical switch. This is done to provision the DCC policy for the ports that may be moved later. If a policy seems stale at any point, use secPolicyDelete to remove all stale DCC policies.

Fabric-wide consistency policies can be configured on per logical switch basis, which applies the FCS policy to the corresponding fabric connecting to the logical switch. Automatic policy distribution for DCC, SCC and FCS remains unchanged in Fabric OS v6.2.0 and can be configured on a per logical switch basis.

On switches running Fabric OS v7.1.0 or later, all DCC and SCC security policy members are sorted based on their world wide names (WWNs) in order to avoid a segmentation of ports. This is not the case for switches running earlier firmware versions; on these switches, security member lists are unsorted. When a switch with an unsorted security policy member list tries to join a switch that runs Fabric OS v7.1.0 or later and is configured with an ordered security policy list, port segmentation occurs because of mismatching security policy lists. To prevent this from happening, use the -legacy option to add security policy members in a manner that matches the order of security policy members in Fabric OS v7.0.0 and earlier.

Notes When an FCS policy is enabled, this command can be issued only from the Primary FCS switch. The secpolicyadd command can be issued on all switches for SCC and DCC policies as long as fabric-wide consistency policy is not set for the particular policy.

Do not add the WWNs of front or translate (xlate) domains to the FCS policy if the edge fabric is connected to an FC Router.

Backup FCS switches typically cannot modify the policy. However, if the Primary FCS switch in the policy list is not reachable, then a backup FCS switch is allowed to modify the policy. If all the reachable backup FCS switches are running pre-v5.3.0 versions of Fabric OS, a non-FCS v5.3.0 switch is allowed to modify the policy so that a new switch can be added to the policy.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"name"

Specify the name of an existing policy to which you want to add members. Valid values for this operand include the following:

- DCC_POLICY_nnn
- FCS_POLICY
- SCC_POLICY

The specified policy name must be capitalized.

The DCC_POLICY_nnn name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but they are case-sensitive.

"member"

Specify a list of one or more member switches to be included in the security policy. The list must be enclosed in quotation marks; members must be separated by semicolons. Depending on the policy type, members are specified as follows.

FCS_POLICY or SCC_POLICY Members

This policy type requires member IDs to be specified as WWN strings, Domains, or switch names. If Domain IDs or switch names are used, the switches associated must be present in the fabric or the command fails.

DCC_POLICY Members

The DCC_POLICY_nnn is a list of device port names associated with a specific switch and port index combination. An empty DCC_POLICY does not stop access to the switch. The device port name is specified by its port WWN string. The switch and port index combination must be in the switch portformat, where switch can be specified as a WWN, a domain, or a switch name, and port is specified by port numbers separated by commas and enclosed in either brackets or parentheses; for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)

Selects ports 1 through 6.

(*)

Selects all ports on the switch.

[3, 9]

Selects ports 3 and 9 and all devices attached to those ports.

[1-3, 5]

Selects ports 1 through 3 and 5 and all devices attached to those ports.

[*]

Selects all ports on the switch and devices currently attached to those ports.

-legacy

Adds a security policy with the desired order.

Examples To add a member to the SCC_POLICY using the device WWN:

```
primaryfcs:admin> secpolicyadd "SCC_POLICY", \
"12:24:45:10:0a:67:00:40"
Member(s) have been added to SCC_POLICY.
```

To add two devices to attach to domain 3, ports 1 and 3, in an existing empty DCC policy; the port WWN of the first device is 11:22:33:44:55:66:77:aa and port WWN of the second device is 11:22:33:44:55:66:77:bb:

```
primaryfcs:admin> secpolicyadd "DCC_POLICY_abc", \
"11:22:33:44:55:66:77:aa;11:22:33:44:55:66:77:bb;3(1,3)"
Member(s) have been added to DCC_POLICY_abc.
```

To add a security policy:

```
switch:admin> secpolicyadd SCC_POLICY,\
"10:00:00:05:1e:a3:01:d9" -legacy
switch:admin> secpolicyshow
```

ACTIVE POLICY SET		
DEFINED POLICY SET		
SCC_POLICY		
WWN	DIID	swName

10:00:00:05:1e:a1:ef:b9	2	sw0
10:00:00:05:1e:a3:00:59	5	sw0
10:00:00:05:1e:a2:f9:09	3	sw0
10:00:00:05:1e:a3:01:d9	3	sw0

SEE ALSO [fddCfg](#), [secPolicyActivate](#), [secPolicyDelete](#), [secPolicyDump](#)

secPolicyCreate

Creates a new security policy.

Synopsis **secpolicycreate** "*name*" [, "*member[;member...]*"] [-**legacy**]

Description Use this command to create a new policy and to edit Switch Connection Control (SCC), Device Connection Control (DCC), and Fabric Configuration Server (FCS) policies on the local switch. All policies can be created only once, except for the DCC_POLICY_nnn. Each DCC_POLICY_nnn must have a unique name. This command can be issued on all switches in the current fabric for SCC and DCC policies if they are not intended to be fabric-wide.

Adding members while creating a policy is optional. You can add members to a policy later, using the secPolicyAdd command.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method, which is all access is granted. After a policy is created and a member is added to the policy, that policy is closed to all access except to included members. If all members are then deleted from the policy, all access is denied for that management access method.

All newly created policies are saved on the local switch only, unless the switch has a fabric-wide consistency policy for that policy.

In a Virtual Fabric environment, when you create a DCC lockdown policy on a logical switch, the DCC policy is created for each port in the chassis, even though the ports are not currently present in the local logical switch. This is done to provision the DCC policy for the ports that may be moved later. If a policy seems stale at any point, use the secPolicyDelete command to remove all stale DCC policies.

Fabric wide consistency policies can be configured on a logical switch basis, which applies the FCS policy to the corresponding fabric connecting to the logical switch. Automatic policy distribution behavior for DCC, SCC and FCS remains unchanged in Fabric OS v6.2.0 or later and can be configured on a logical switch basis.

On switches running Fabric OS v7.1.0 or later, all DCC and SCC security policy members are sorted based on their world wide names (WWNs) in order to avoid a segmentation of ports. This is not the case for switches running earlier firmware versions; on these switches, security member lists are unsorted. When a switch with an unsorted security policy member list tries to join a switch that runs Fabric OS v7.1.0 or later and is configured with an ordered security policy list, port segmentation occurs because of mismatching security policy lists. To prevent this from happening, use the -legacy option to create security policy members in a manner that matches the order of security policy members in Fabric OS v7.0.0 and earlier.

Notes When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"name"

Specify the name of the policy you want to create. Valid values for this operand include the following:

- DCC_POLICY_nnn
- SCC_POLICY
- FCS_POLICY

The specified policy name must be capitalized.

The DCC_POLICY_nnn name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names. Valid values for DCC_POLICY_nnn are user-defined alphanumeric or underscore characters. The maximum length is 30 characters, including the prefix DCC_POLICY_.

secpolicycreate DCC_POLICY "" may be used to indicate DCC lockdown. This command creates a unique policy for each port in the fabric locking it down to the device connected or creating an empty policy to disallow any device to be connected to it. This can be done only when there are no other DCC policies defined on the switch. The switch must be in an enabled state for DCC lockdown to succeed. On a disabled switch, executing secpolicycreate DCC_POLICY "" will not create any DCC policies.

"member"

Specify one or more members to be included in the security policy. The member list must be enclosed in double quotation marks and members separated by semicolons. The member list must be separated from the name field by a comma and a space. Depending on the policy type, members are specified as follows:

DCC_POLICY Members

The DCC_Policy_nnn is a list of devices associated with a specific switch and port index combination. An empty DCC_POLICY does not stop access to the switch. The device is specified by its port WWN. The switch and port combination must be in the switchportformat.

switch can be specified using a WWN, domain, or switch name.

port can be specified by port numbers separated by commas and enclosed in either brackets or parentheses: for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)

Selects ports 1 through 6.

(*)

Selects all ports on the switch.

[3, 9]

Selects ports 3 and 9 and all devices attached to those ports.

[1-3, 5]

Selects ports 1 through 3 and 5 and all devices attached to those ports.

[*]

Selects all ports on the switch and devices currently attached to those ports.

SCC_POLICY and FCC_POLICY Members

This policy type requires member IDs to be specified as WWN strings, domains, or switch names. If domain or switch names are used, the switches associated must be present in the fabric or the command fails.

To add all switches in the current fabric as members of the policy, enter an asterisk enclosed in quotation marks (*) as the member value. This feature cannot be used by the other security commands.

-legacy

Creates a security policy with desired order.

Examples

To create an FCS policy (While creating the FCS policy, the local switch WWN is automatically included in the list. Switches included in the FCS list are FCS switches and the remaining switches in the fabric are non-FCS switches. Out of the FCS list, the switch that is in the first position becomes the Primary FCS switch and the remaining switches become backup FCS switches. If the first switch in the FCS list is not reachable, the next switch becomes the Primary):

```
primaryfcs:admin> secpolicycreate "FCS_POLICY", "3; 4"
FCS_POLICY has been created.
```

To create a device policy to allow two devices to attach to domain 3 ports 1 and 3 (the WWN of first device is 11:22:33:44:55:66:77:aa and the WWN of second device is 11:22:33:44:55:66:77:bb):

```
primaryfcs:admin> secpolicycreate "DCC_POLICY_aB_7", \
    "11:22:33:44:55:66:77:aa;11:22:33:44:55:66:77:bb;3[1,3]"
DCC_POLICY_abc has been created.
```

To create a SCC policy in a fabric with three switches:

1. Check if a policy exists.

```
switch:admin> secpolicyshow
```

ACTIVE POLICY SET	
<hr/>	
DEFINED POLICY SET	

2. Identify switches in the fabric.

```
switch:admin> fabricshow
Switch ID      Worldwide Name      Enet IP Addr FC IP Addr Name
-----
2:fffc02 10:00:00:05:1e:39:5f:67 10.32.69.53 10.20.30.53 "sw1"
                                fec0:60:69bc:60:260:69ff:fe80:d4a
4:fffc04 10:00:00:05:1e:04:ef:0e 10.32.69.49 10.20.30.49 'sw2"
                                fec0:60:69bc:54:205:1eff:fe04:ef0e
200: fffc08 10:00:00:05:1e:35:cd:ef 10.32.69.117 10.20.30.117 \
                                "nSW4100_98"
```

3. Create a SCC policy that includes switches with domain IDs 2 and 4.

```
switch:admin> secpolicycreate "SCC_POLICY","2;4"
SCC_POLICY has been created.
```

4. Activate the policy.

```
switch:admin> secpolicyactivate
About to overwrite the current Active Policy Set.
ARE YOU SURE (yes, y, no, n): [no] y
secpolicyactivate command was completed successfully.
```

To create an SCC policy that includes all switches in the fabric:

```
switch:admin> secpolicycreate "SCC_POLICY",*
SCC_POLICY has been created.
```

To create a security policy:

```
switch:admin> secpolicycreate SCC_POLICY,\
"10:00:00:05:1e:a1:ef:b9; 10:00:00:05:1e:a3:00:59; \
10:00:00:05:1e:a2:f9:09" -legacy
SCC_POLICY created as user specified.
switch:admin> secpolicyshow
```

ACTIVE POLICY SET	
<hr/>	
DEFINED POLICY SET	
SCC_POLICY	
WWN	DId swName
<hr/>	
10:00:00:05:1e:a1:ef:b9	2 sw0
10:00:00:05:1e:a3:00:59	5 sw0
10:00:00:05:1e:a2:f9:09	3 sw0

SEE ALSO [fddCfg](#), [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyDelete](#), [secPolicyDump](#)

secPolicyDelete

Deletes an existing security policy.

Synopsis **secpolicydelete** *name*

Description Use this command to delete an existing security policy from the defined security database. Run secPolicyActivate to delete the policies from the active security policy list. Deleting a security policy does not cause any traffic disruption.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method; all access is granted. After a policy has been created and a member has been added to the policy, that policy becomes closed to all access except from included members. If the policy is deleted all access is granted.

Notes When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operand is required:

"name"

Specify the name of a security policy to delete. The policy name must be capitalized. Quotation marks are optional. Once a security policy is deleted, fabric-wide switch access through that method is unrestricted. Valid security policy names include the following:

DCC_POLICY_nnn

Deletes the specified Device Connection Control (DCC) policy. The DCC_POLICY_nnn name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized.

ALL_DCC_POLICY

Deletes all DCC policies from the defined policy list.

ALL_STALE_DCC_POLICY

Deletes all stale DCC policies from the defined policy list. DCC policies become stale when the ports are removed from a logical switch.

SCC_POLICY

Deletes the Switch Connection Control policy from the defined policy list.

FCS_POLICY

Deletes the Fabric Configuration Server policy from the defined policy list.

Examples To delete an existing security policy:

```
switch:admin> secpolicydelete "DCC_POLICY_ab1"
About to delete policy DCC_POLICY_ab1.
Are you sure (yes, y, no, n):[no] y
DCC_POLICY has been deleted.
```

secPolicyDelete

To delete all existing DCC policies in the fabric:

```
primaryfcs:admin> secpolicydelete ALL_DCC_POLICY  
About to clear all the DCC policies  
ARE YOU SURE (yes, y, no, n): [no] y
```

To delete all stale DCC policies in the fabric:

```
primaryfcs:admin> secpolicydelete ALL_STALE_DCC_POLICY  
About to clear all STALE DCC policies  
ARE YOU SURE (yes, y, no, n): [no] y
```

SEE ALSO [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyCreate](#), [secPolicyDump](#), [secPolicyShow](#)

secPolicyDump

Displays the members of one or all existing security policies.

Synopsis `secpolicydump ["listtype"][, "name"]`

Description Use this command to display, without page breaks, the members of an existing policy in the active and defined (saved) databases. When issued without operands, this command displays the members of all security policies.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command can be issued from all FCS switches in the fabric.

Operands This command has the following optional operands:

"listtype"

Specifies the database to display, enclosed in double quotation marks. The name for an active database is "Active"; the name for a saved, defined database is "Defined". If listtype is not specified, all databases are displayed.

"name"

Specifies the security policy for which to display the members. Valid values for this operand include the following:

- DCC_POLICY_nnn
- FCS_POLICY
- SCC_POLICY

The specified policy name must be capitalized and enclosed in double quotation marks.

The DCC_POLICY_nnn name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalize. If name is not specified, all existing policies are displayed.

Examples To display all security policy information from all databases without page breaks:

```
switch:admin> secpolicydump
ACTIVE POLICY SET
FCS_POLICY
Pos Primary WWN                               DId swName
-----
1   Yes    10:00:00:60:69:30:15:5c 1 primaryfcs
2   No     10:00:00:60:69:30:1e:62 4 switch
-----
DEFINED POLICY SET
FCS_POLICY
Pos Primary WWN                               DId swName
-----
1   Yes    10:00:00:60:69:30:15:5c 1 primaryfcs
2   No     10:00:00:60:69:30:1e:62 4 switch
-----
```


To display all security policies in the active database:

```
switch:admin> secpolicydump "active"
```

```

ACTIVE POLICY SET
FCS_POLICY
Pos    Primary  WWN                               DId swName
-----
  1    Yes     10:00:00:05:1e:39:5f:67  3 NeptuneSec
  2    No      10:00:00:05:1e:90:09:4a   - Unknown

SCC_POLICY
WWN                               DId swName
-----
10:00:00:05:1e:39:5f:67    3 NeptuneSec
10:00:00:05:1e:90:09:4a   - Unknown

DCC_POLICY_h1
Type    WWN                               DId swName
-----
Switch  10:00:00:05:1e:39:5f:67    3 NeptuneSec.
=Index=> 34.
Device  21:00:00:e0:8b:13:5e:8d
Device  21:00:00:e0:8b:13:5e:8e

```

To display all security policies in the defined database:

```
switch:admin> secpolicydump "Defined"
```

```

DEFINED POLICY SET
FCS_POLICY
Pos    Primary  WWN                               DId swName
-----
  1    Yes     10:00:00:05:1e:39:5f:67  3 NeptuneSec
  2    No      10:00:00:05:1e:90:09:4a   - Unknown

SCC_POLICY
WWN                               DId swName
-----
10:00:00:05:1e:39:5f:67    3 NeptuneSec
10:00:00:05:1e:90:09:4a   - Unknown

DCC_POLICY_h1
Type    WWN                               DId swName
-----
Switch  10:00:00:05:1e:39:5f:67    3 NeptuneSec.
=Index=> 34.
Device  21:00:00:e0:8b:13:5e:8d
Device  21:00:00:e0:8b:13:5e:8e

```

To display the FCS policies in the defined database:

```
switch:admin> secpolicydump "Defined","FCS_POLICY"
```

DEFINED POLICY SET				
FCS_POLICY				
Pos	Primary	WWN	DId	swName
1	Yes	10:00:00:05:1e:39:5f:67	3	NeptuneSec
2	No	10:00:00:05:1e:90:09:4a	-	Unknown

To display the SCC policies in the defined database:

```
switch:admin> secpolicydump "Defined","SCC_POLICY"
```

DEFINED POLICY SET			
SCC_POLICY			
WWN	DId	swName	
10:00:00:05:1e:39:5f:67	3	NeptuneSec	
10:00:00:05:1e:90:09:4a	-	Unknown	

To display the SCC policies in the active database:

```
switch:admin> secpolicydump "Active","SCC_POLICY"
```

ACTIVE POLICY SET			
SCC_POLICY			
WWN	DId	swName	
10:00:00:05:1e:39:5f:67	3	NeptuneSec	
10:00:00:05:1e:90:09:4a	-	Unknown	

SEE ALSO [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyCreate](#), [secPolicyDelete](#), [secPolicyShow](#)

secPolicyFCSMove

Moves a member in the FCS policy.

Synopsis

Description Use this command to move an FCS member from one position to another position in the FCS list. Only one FCS can be moved at a time. The first FCS switch in the list that is also present in the fabric is the Primary FCS.

Notes If a backup FCS is moved to the first position, it becomes the primary FCS after activation.

An FCS policy must be enabled to execute this command, and the command must be issued from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

from

Specify the position of the FCS switch you want to move.

to

Specify the position to which you want to move the FCS switch.

Examples To move the backup FCS switch from position 2 to position 3 in the FCS list (interactively):

```
switch:admin> secpolicyfcsmove
```

Pos	Primary	WWN	DId	swName.
1	Yes	10:00:00:60:69:10:02:18	1	switch5.
2	No	10:00:00:60:69:00:00:5a	2	switch60.
3	No	10:00:00:60:69:00:00:13	3	switch73.

```
Please enter position you'd like to move \
from : (1..3) [1] 2
```

```
Please enter position you'd like to move \
to : (1..3) [1] 3
```

DEFINED POLICY SET

FCS_POLICY				
Pos	Primary	WWN	Did	swName
1	Yes	10:00:00:60:69:10:02:18	1	switch5.
2	No	10:00:00:60:69:00:00:13	3	switch73.
3	No	10:00:00:60:69:00:00:5a	2	switch60.

To move Backup FCS switch from position 3 to position 1 in the FCS list(non-interactively):

```
switch:admin> secpolicyshow
```

```

      ACTIVE POLICY SET
1  Yes      10:00:00:05:1e:39:5f:67    2 switch1
2  No       10:00:00:05:1e:04:ef:0e    4 switch2
3  No       10:00:00:05:1e:35:cd:ef   200 switch3

```

```
switch:admin> secpolicyfcsmove 3,1
```

```

      DEFINED POLICY SET
FCS_POLICY
Pos   Primary WWN                                DId swName
-----
1   No      10:00:00:05:1e:35:cd:ef   200 switch3
2   Yes     10:00:00:05:1e:39:5f:67    2 switch1
3   No      10:00:00:05:1e:04:ef:0e    4 switch2

```

```
switch:admin> secpolicyactivate
```

About to overwrite the current Active Policy Set.

ARE YOU SURE (yes, y, no, n): [no] y

secpolicyactivate command was completed successfully.

```
switch:admin> secpolicyshow
```

```

      ACTIVE POLICY SET
FCS_POLICY
Pos   Primary WWN                                DId swName
-----
1   Yes     10:00:00:05:1e:35:cd:ef   200 switch3
2   No      10:00:00:05:1e:39:5f:67    2 switch1
3   No      10:00:00:05:1e:04:ef:0e    4 switch2

```

SEE ALSO [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyCreate](#), [secPolicyDelete](#), [secPolicyDump](#), [secPolicyShow](#)

secPolicyRemove

Removes members from an existing security policy.

Synopsis `secpolicyremove "name" , "member[;member...]"`

Description Use this command to remove one or more members from an existing security policy. It is not possible to remove all members from the FCS_POLICY; the local switch WWN cannot be deleted from the FCS policy. In the case of SCC policy, if it is empty after removing all members, all access to the switch itself would be disallowed.

Beginning Fabric OS v7.3, this command will not remove the local WWN from SCC policy list in HIF and non-HIF mode. The command also prompts for confirmation before removing any member if HIF is enabled.

Notes If an FCS policy is enabled, this command must be issued from the primary FCS switch.

After removing members from an existing security policy, execute the secPolicyActivate command to activate the current defined policy.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

"name"

Specify the name of an existing policy you want to remove members from. This operand is required. Valid values for this operand include the following:

- DCC_POLICY_nnn
- FCS_POLICY
- SCC_POLICY

The specified policy name must be capitalized.

The DCC_POLICY policy name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but are case-sensitive.

"member"

Specify a member or list of members to delete from the policy. The list must be enclosed in quotation marks; members must be separated by semicolons. This operand is required.

Depending on the policy type, members can be specified using IP address, WWN, domain, or switch name.

WWN Member Policy Types

The following policy types require members be specified by WWN address:

- FCS_POLICY
- SCC_POLICY

These policy types require member IDs be specified as WWN strings, domains, or switch names. If domain or switch names are used, the switches associated must be present in the fabric or the command fails.

DCC_POLICY Members

The DCC_Policy_nnn is a list of devices associated with a specific switch and port combination. The device is specified with a WWN string. The switch and port combination must be specified in the switch portformat where switch can be specified by switch WWN, domain, or switch name. The port parameter can be specified by port number separated by commas, and enclosed in either brackets or parentheses: for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)	Selects ports 1 through 6.
(*)	Selects all ports on the switch.
[3, 9]	Selects ports 3 and 9 and all devices attached to those ports.
[1-3, 5]	Selects ports 1 through 3 and 5 and all devices attached to those ports.
[*]	Selects all ports on the switch and devices currently attached to those ports.

Examples

To remove a member that has a WWN of 12:24:45:10:0a:67:00:40 from SCC policy:

```
switch:admin> secpolicyremove "SCC_POLICY", \  
"12:24:45:10:0a:67:00:40"  
Member(s) have been removed from SCC_POLICY.
```

To remove a member with SCC policy and HIF enabled:

```
switch:admin> secpolicyremove "SCC_POLICY" "10:00:00:27:f8:d0:b3:8f"  
HIF mode is enabled. About to remove SCC_POLICY member(s).  
ARE YOU SURE (yes, y, no, n): [no] y
```

SEE ALSO

[secPolicyAbort](#), [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyCreate](#), [secPolicyDelete](#), [secPolicyDump](#), [secPolicySave](#), [secStatsShow](#)

secPolicySave

Saves a defined security policy to persistent memory.

Synopsis **secpolicysave**

Description Use this command to save a defined security policy to persistent memory. SecPolicySave saves the modified SCC, DCC, and FCS policies to the Defined Security Policy Set on the local switch.

Notes This command is always a local switch operation. A fabric-wide consistency configuration does not affect the behavior of this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To save a defined policy set to persistent memory:

```
switch:admin> secpolicysave  
secpolicysave command was completed successfully.
```

SEE ALSO [fddCfg](#), [secPolicyAbort](#), [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyCreate](#), [secPolicyDelete](#), [secPolicyDump](#), [secPolicyRemove](#), [secStatsShow](#)

secPolicyShow

Displays an existing security policy including the FCS policy.

Synopsis **secpolicyshow** [*"policy_set"* [, *name*]]

Description Use this command to display the members of an existing policy in the Active or Defined security policy set. The command can be issued from all FCS switches.

This command displays the policy database one page at a time. Use the secPolicyDump command to display the policy database without page breaks.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

"policy_type"

Specify which policy to display, in quotation marks. Valid values are "Active", "Defined", or an asterisk (*) for both Active and Defined. This operand is optional. If not specified, all databases are displayed.

"name"

Specify the name of the security policy you want to view, in quotation marks. The specified policy name must be capitalized. This operand is optional. Valid values for this operand include the following:

- DCC_POLICY_nnn
- FCS_POLICY
- SCC_POLICY

The DCC_POLICY_nnn name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but they are case-sensitive.

Examples To display all security policies from active databases:

```
switch:admin> secpolicyshow "active"
```

ACTIVE POLICY SE				
FCS_POLICY				
Pos	Primary	WWN	DId	swName
1	Yes	10:00:00:60:69:30:15:5c	1	primaryfcs
2	No	10:00:00:60:69:30:1e:62	4	switch

To display all security policies from defined databases:

```
switch:admin> secpolicyshow "defined"
```

DEFINED POLICY				
FCS_POLICY				
Pos	Primary	WWN	Did	swName
1	Yes	10:00:00:60:69:30:15:5c	1	primaryfcs
2	No	10:00:00:60:69:30:1e:62	4	switch

SEE ALSO [fddCfg](#), [secPolicyActivate](#), [secPolicyAdd](#), [secPolicyCreate](#), [secPolicyDelete](#), [secPolicyDump](#)

secStatsReset

Resets one or all security statistics to 0.

Synopsis **secstatsreset** [*name*][, "*domain*[:*domain*"]]

Description Use this command to reset one or all security statistics to 0. This command can be issued on any switch to reset the security statistics on the local switch or chassis. If an FCS policy is enabled and secStatsReset is issued on the primary FCS switch, this command can reset security statistics for any or all switches in the fabric.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands When invoked without operands, this command displays the security statistics on the local switch or chassis. The following operands are optional:

name

Specify the name of a security statistic you would like to reset. The specified policy name must be capitalized. If executed on the primary FCS, specify an asterisk (*) to reset all security policies. Valid values for this operand include the following:

- TELNET_POLICY
- HTTP_POLICY
- SCC_POLICY
- DCC_POLICY
- LOGIN
- INVALID_CERT
- AUTH FAIL
- TS_OUT_SYNC
- NO_FCS
- INCOMP_DB
- ILLEGAL_CMD

To access DCC policies, enter DCC_POLICY. Violations are not tracked for individual DCC policies. The statistics for all DCC_POLICY violations are grouped together.

domain(s)

Specify a list of domain IDs on which to reset the security statistics. Specify an asterisk (*) to represent all switches in the fabric or specify a list of domains, separated by semicolons and enclosed in quotation marks. This option can only be executed when an FCS policy is enabled and when the command is issued from the primary FCS switch. When domain is specified, the name operand is required.

Examples To reset all statistics on the local switch:

```
switch:admin> secstatsreset
About to reset all security counters.
ARE YOU SURE (yes, y, no, n):[no] y
Security statistics reset to zero.
```

secStatsReset

To reset DCC_POLICY statistics on domains 1 and 69:

```
primaryfcs:admin> secstatsreset DCC_POLICY, "1;69"  
Reset DCC_POLICY statistic.
```

SEE ALSO [secStatsShow](#)

secStatsShow

Displays one or all security statistics.

Synopsis **secstatsshow** [*name*["*domain*[:*domain*"]]]

Description Use this command to display one or all security statistics. This command can be issued on any switch to display local security statistics. If an FCS policy is enabled and secStatsShow is issued on the primary FCS switch, this command can retrieve and display the security statistics for any or all switches in the fabric.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands When invoked without operands, this command displays the security statistics on the local switch or chassis. The following operands are optional:

name

Specify the name of the security statistic you want to view. The specified policy name must be capitalized. If executed on the primary FCS, specify an asterisk (*) to represent all security policies in the fabric. Valid values for this operand include the following:

- TELNET_POLICY
- HTTP_POLICY
- SCC_POLICY
- DCC_POLICY
- LOGIN
- AUTH FAIL
- TS_OUT_SYNC
- NO_FCS
- INCOMP_DB
- ILLEGAL_CMD

To access DCC policies, enter DCC_POLICY. Violations are not tracked for individual DCC policies. The statistics for all DCC_POLICY violations are grouped together.

The INVALID_CERT policy name is not supported.

domain

Specify one or more domains for which to display the security statistics. Specify an asterisk (*) in quotation marks to represent all switches in the fabric or specify a list of domains separated by semicolons. This option can only be executed when an FCS policy is enabled and the command is issued from the primary FCS switch. When domain is specified, the name operand is required.

Examples To display the LOGIN policy statistics for the local domain.

```
switch:admin> secstatsshow LOGIN

Fabric Statistics:

Domain 1:
Name          Value
=====
LOGIN          2
```

To display statistic information for TELNET_POLICY for all switches in the fabric from the primary FCS switch.

```
primaryfsc:admin> secstatsshow TELNET_POLICY,""

Fabric Statistics:

Domain 1:
Name          Value
=====
TELNET_POLICY    0

Domain 69:
Name          Value
=====
TELNET_POLICY    0

Domain 70:
Name          Value
=====
TELNET_POLICY    0
```

SEE ALSO [secStatsReset](#)

sensorShow

Displays sensor readings.

Synopsis **sensorshow**

Description Use this command to display the current temperature, fan, and power supply status and readings from sensors located on the switch. The actual location of the sensors varies, depending on the switch type.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To view all sensor values:

```
switch:admin> sensorshow
sensor  1: (Temperature) is Ok, value is 39 C
sensor  2: (Temperature) is Absent
sensor  3: (Temperature) is Absent
sensor  4: (Temperature) is Absent
sensor  5: (Temperature) is Ok, value is 26 C
sensor  6: (Temperature) is Ok, value is 27 C
sensor  7: (Fan          ) is Ok, speed is 2537 RPM
sensor  8: (Fan          ) is Ok, speed is 2537 RPM
sensor  9: (Fan          ) is Ok, speed is 2556 RPM
sensor 10: (Power Supply ) is Ok
sensor 11: (Power Supply ) is Absent
sensor 12: (Power Supply ) is Ok
sensor 13: (Power Supply ) is Absent
```

SEE ALSO [fanShow](#), [tempShow](#)

serDesTuneMode

Configures and displays SerDes tuning values.

Synopsis

serdestunemode --set

serdestunemode --reset

serdestunemode --show

serdestunemode --autoenable

serdestunemode --autodisable

serdestunemode --autoreset

serdestunemode --autoshow

serdestunemode --help

Description

Use this command to configure and display SerDes tuning values on the Brocade FC8-16 blade and to control tuning optimization of backend links for all Brocade FC8-xx blades.

When used with the --set, --reset and --show options, this command enables or disables the SerDes tuning mode for the Brocade FC8-16 port blade and to display the configuration.

Enabling SerDes tuning mode for the Brocade FC8-16 port blade is indicated under the following conditions:

- You have a Brocade FC8-16 blade installed in slot 2 or in slot 7 (or in both slots) in a DCX-4S chassis with a CR4S-8 core blade.
- You notice increasing numbers of CRC errors on ports 1/11, 2/0, 2/1, 2/3, 2/4, 2/5, 2/8, 2/10, 6/58 and 7/1.

Enabling SerDes tuning mode change the SerDes values on the above-mentioned ports in slots 1, 2 and 7 along with their peer ports, provided the port blades are FC8-16s and the peer is a CR4S-8 core blade. SerDes tuning mode changes take effect immediately and are saved persistently.

When used with the --autoenable, --autodisable, --autoreset and --autoshow options, this command configures SerDes tuning optimization for backend SerDes errors. SerDes tuning optimization is indicated when you receive RASLog errors of type C2-5825 indicating a CRC error with a good EOF. Brocade highly recommends that you contact your service provider if you encounter such errors. If the error appears to be an isolated incident, you may enable auto SerDes tuning for a short period of time (24-48 hours) to see if this resolves the problem. Then disable the function to reduce the risk of resetting register values unnecessarily if single occurrence errors are encountered. If the errors persist contact your service provider.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--set	Enables SerDes tuning mode and sets new SerDes values on FC8-16 blades in slots 1, 2 and 7 and on peer ports in the CR4S-8 core blade.
--reset	Disables SerDes tuning mode and resets SerDes values to default on FC8-16 blades in slots 1, 2 and 7 and on peer ports in the CR4S-8 core blade.
--show	Indicates whether the SerDes tuning mode is enabled or disabled.
--autoenable	Enables SerDes tuning optimization on all backend ports.
--autodisable	Disables further tuning optimization but retains all current tuning values identified by the algorithm.
--autoreset	Disables further tuning optimization and resets all tuning values back to their default values. If SerDes tune mode or was set, the configuration is restored.
--autoshow	Displays whether SerDes tuning optimization is enabled or disabled.
--help	Displays the command usage.

Examples To enable SerDes tuning mode on a DCX-4S chassis with two FC8-16 blades and to display the configuration:

```
switch:admin> serdestunemode --set
serdestunemode is turned on
New serdes values set on slot = 1
New serdes values set on slot = 2
New serdes values set on slot = 7

switch:admin> serdestunemode --show
serdestunemode is enabled
```

To disable SerDes tuning mode and reset the SerDes values to defaults and to display the configuration:

```
switch:admin> serdestunemode --reset
serdestunemode is turned off
New serdes values reset on slot = 1
New serdes values reset on slot = 2
New serdes values reset on slot = 7

switch:admin> serdestunemode --show
serdestunemode is disabled
```


To enable SerDes tuning optimization on all backend ports and to display the configuration:

```
switch:admin> serdestunemode --autoenable  
Autotunemode is turned on  
  
switch:admin> serdestunemode --show  
Autotunemode is turned on
```

To disable SerDes tuning optimization on all backend ports and retain all current tuning values:

```
switch:admin> serdestunemode --autodisable  
Autotunemode is turned off  
  
switch:admin> serdestunemode --show  
Autotunemode is turned off
```

To disable SerDes tuning optimization on all backend ports and reset all tuning values to their default values:

```
switch:admin> serdestunemode --autoreset  
AutoTune Resetting Default Tuning On Next Poll  
  
switch:admin> serdestunemode --show  
Autotunemode is in reset state
```

SEE ALSO None

setContext

Sets the logical switch context to a specified FID.

Synopsis **setcontext** [*FID* | *switchname*]

Description Use this command to set the logical switch context to a specified fabric ID (FID) or unique switch name. The FID uniquely defines a partition as a logical switch. Use `lscfg --show` to display currently configured partitions and their FIDs.

A logical switch context defines the boundaries within which a user can execute commands in a Virtual Fabric-aware environment. In a Virtual Fabric-aware environment, all commands are context-specific. When a user executes a switch-wide command, the command applies to the current logical switch context.

On legacy platforms, or if a logical switch context is not set explicitly, switch commands apply to the default logical switch context (FID 128). When the context is changed, switch-wide commands apply to the new logical switch context.

You must have chassis permissions to access all logical switches in the chassis and to use the `setContext` command to change the current context to any partition configured on the chassis. A user without chassis permissions can change contexts only within the list of FIDs specified in the user's access permissions. Refer to `userConfig` for more information.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If a logical switch FID is deleted, users logged in to that switch are logged out.

Operands This command has the following operand:

<i>FID</i>	Specifies the fabric ID of the logical switch instance for which the context is set.
<i>switchname</i>	Specifies the name of the logical switch for which the context is set.

Examples To change the logical switch context to FID 20:

```
switch:admin> setcontext 20
```

To change the logical switch context to switch_20:

```
switch:admin> setcontext switch_20
```

SEE ALSO [lsCfg](#), [userConfig](#)

setDbg

Sets the debug level of the specified module.

Synopsis **setdbg** [*module_name*][*level*]

Description Use this command to set the debug level of a specified module. Debug levels filter the display of debug messages to the serial console. By default, no debug messages are displayed.

High debug level values can generate a large volume of messages, degrading the system response time.

The set of supported modules and their current debug levels are displayed by the command `dbgShow`.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

module_name

Specify the name of the module for which you want to set the debug levels. Module names are case-sensitive. If this operand is omitted an error message is displayed.

level

Specify the debug level for the specified module (0 to 9). A zero (0) value (default) specifies that no messages are to display. Higher values cause more messages from that module to display. If this operand is omitted an error message is displayed.

Examples To set the debug level for a module named NS to value 3:

```
switch:admin> setdbg NS 3
switch:admin> dbgshow NS
Module NS,          debug level = 3, verbose level = 0
```

SEE ALSO [dbgShow](#)

setVerbose

Specifies module verbose level.

Synopsis **setverbose** [*module_name*][*level*]

Description Use this command to set the verbose level of the specified module. These levels filter the display of the debug message to the serial console. By default, no debug messages are displayed.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

module_name Specify the name of the module for which the verbose level is to be set; module names are case-sensitive.

level Specify the verbose level (0 to 9).

Examples To set the verbose level of a module named NS to value 3:

```
switch:admin> setverbose NS 3
switch:admin> dbgshow NS
Module NS, debug level = 0, verbose level = 3
```

SEE ALSO [dbgShow](#), [setDbg](#)

sfpShow

Displays Small Form-factor Pluggable (SFP) transceiver information.

Synopsis

sfpshow

sfpshow [*slot*]/*port* **-link** [**-force**]

sfpshow [*slot*]**geport** [**-f**]

sfpshow -pid *pid*

sfpshow -all

sfpshow -health

sfpshow --help

Description

Use this command to display information about Serial Identification SFPs, also known as module definition "4" SFPs. These SFPs provide extended information that describes the SFP capabilities, interfaces, manufacturer, and other information.

Use this command without operands to display a summary of all SFPs in the switch. For each port, the summary displays the SFP type and, for serial ID SFP, the vendor name and SFP, serial number, and speed capability (in Gbps). Refer to switchShow for an explanation of the two-letter codes.

Use this command with a port number to display detailed information about the serial ID SFP in the specified port. In this mode, this command displays values described in the "Gigabit Interface Converter" spec by Sun Microsystems, et al. The detailed view also displays the total number of Monitoring and Alerting Policy Suite (MAPS) state transitions for each SFP and a time stamp of the last polling time. The power-on time is displayed for 16 Gbps/32 Gbps SFPs and QSFPs only.

Use the **-all** operand to display detailed information for all available SFPs. On switches running Fabric OS v7.0.0 or later, this view includes the power on time for the switch in years and hours.

For "smart" SFPs including mini-SFPs, this command displays additional fields, including module temperature, voltage, received optical power, transmitted optical power (long wave only), laser diode drive current, optional status/control register, alarm and warning flags, as well as high and low thresholds programmed on the SFPs.

A "Can not read Serial Data!" message indicates that an SFP ID could not be detected on that location (it could be a fixed port type, or an unsupported SFP type, or an interchassis link without a cable).

Notes

The identifier field has the value 3 for SFPs and mSFPs. mSFPs are supported only on FC8-64 blades and can be identified with OUI 00:05:33.

The sfpShow command does not reflect changes in the sfpShow output if any SFPs are replaced or removed while a port or a switch is disabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The identifier field has the following values to indicate the various transceiver types:

- 1 for GBIC
- 2 for On-board
- 3 for SFP
- 6 for XFP
- 12 for QSFP
- 13 for QSFP+
- 17 for QSFP28

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to display, followed by a slash (/)

port

Specifies the number of the port for which to display the SFP information, relative to its slot for bladed systems. Use switchShow for a list of valid ports. This operand is optional; if omitted, this command displays a summary of all SFPs on the switch.

-link [-force]

Displays the diagnostic information from cached data for a local switch port and the peer port. The -force option displays the real-time diagnostic information from the registers for a port.

-f

Refreshes the SFP information. This option is valid only when sfpShow is issued for a specific port.

-pid *pid*

Specifies the diagnostics information of a remote switch port along with its peer port.

-all

Displays detailed data for all available SFPs on the switch. This operand is not compatible with slot/port operands.

-health

Displays SFP health status information from MAPS for 10 Gbps, 16 Gbps, 32 Gbps SFPs and for 16 Gbps QSFPs (Quad SFPs). When any of the diagnostic SFP parameters such as current, voltage, receiver power, transmit power, and temperature crosses user-configured low and high thresholds, the SFP health state changes. Possible health states include the following:

Green

SFP operates within MAPS thresholds.

Yellow

At least one SFP parameter monitored by MAPS has crossed a low or high threshold.

No License

The switch does not have a Fabric Vision license.

Unknown

This state displays for 8 Gbps, 4 Gbps and 2 Gbps SPF types not supported by this feature.

Paused

Health monitoring is not enabled on the switch.

--help

Displays the command usage.

Examples

To display SFP information including SFP health parameters on a Brocade DCX 8510-8:

```
switch:admin> sfpshow -health
Slot 1/Port 0: id
Slot 1/Port 1: id
Slot 1/Port 2: id
Slot 1/Port 3: id
Slot 1/Port 4: id
Slot 1/Port 5: id
Slot 1/Port 6: id
Slot 1/Port 7: id
Slot 1/Port 8: id
Slot 1/Port 9: id
Slot 1/Port 10: id
Slot 1/Port 11: id
Slot 1/Port 12: id
Slot 1/Port 13: id
Slot 1/Port 14: id
Slot 1/Port 15: id
Slot 2/Port 0: id
Slot 2/Port 1: id
Slot 2/Port 2: id
Slot 2/Port 3: id
Slot 2/Port 4: id
Slot 2/Port 5: id
Slot 2/Port 6: id
Slot 2/Port 7: id
Slot 2/Port 8: id
Slot 2/Port 9: id
Slot 2/Port 10: id
Slot 2/Port 11: id
Slot 2/Port 12: id
Slot 2/Port 13: id
Slot 2/Port 14: id
Slot 2/Port 15: id
Slot 3/Port 0: id (sw) Vendor: BROCADE \
    Serial No: HAA110491000HJ2 Speed: 4,8,16_Gbps Health: Green
Slot 3/Port 1: id (sw) Vendor: BROCADE \
    Serial No: HAA110491000HN2 Speed: 4,8,16_Gbps Health: Green
Slot 3/Port 2: id (sw) Vendor: BROCADE \
    Serial No: HAA110491000HZ2 Speed: 4,8,16_Gbps Health: Green
Slot 3/Port 3: id (sw) Vendor: BROCADE \
    Serial No: HAA110491000HS2 Speed: 4,8,16_Gbps Health: Green
Slot 3/Port 4: id (sw) Vendor: BROCADE \
    Serial No: HAA110491000HM2 Speed: 4,8,16_Gbps Health: Green
Slot 3/Port 5: id (sw) Vendor: BROCADE \
    Serial No: HAA110491000HY2 Speed: 4,8,16_Gbps Health: Green
Slot 3/Port 6: id (sw) Vendor: BROCADE \
    Serial No: HAA110491000J62 Speed: 4,8,16_Gbps Health: Green
Output truncated
```

To display detailed information about a single 16G QSFP:

```
switch:user> sfpshow 3/44
QSFP No: 11 Channel No:0
Identifier:      13    QSFP+
Connector:      12    MPO Parallel Optic
Transceiver:    0000000000000000 16_Gbps  sw Short_dist
Encoding:       5      64B66B
Baud Rate:      140    (units 100 megabaud)
Length 9u:      0      (units km)
Length 50u (OM4): 100  (units m)
Length 62.5u:   0      (units m)
Vendor Name:    BROCADE
Vendor OUI:     00:05:1e
Vendor PN:      57-1000294-01
Vendor Rev:     A
Wavelength:     850    (units nm)
Options:        00000fde
Max Case Temp:  70     (C)
Device Tech:    0x00
Serial No:      HUA1140700000A1
Date Code:      140215
DD Type:        0x8
Enh Options:    0x0
Status/Ctrl:    0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature:    32     Centigrade
Current:        7.502  mAmps
Voltage:        3272.6 mVolts
RX Power:       -1.8   dBm (659.9uW)
State transitions: 1
Last poll time: 02-16-2016 PST Tue 22:18:49
```

To display SFP information when a new SFP is inserted in a disabled port:

```
switch:user> sfpshow 0
Identifier: 3      SFP
Connector: 7      LC
Transceiver: 540c404000000000 2,4,8_Gbps M5,M6 sw Short_dist
Encoding: 1      8B10B
Baud Rate: 85     (units 100 megabaud)
Length 9u: 0      (units km)
Length 9u: 0      (units 100 meters)
Length 50u: 5     (units 10 meters)
Length 62.5u: 2   (units 10 meters)
Length Cu: 0      (units 1 meter)
Vendor Name: BROCADE
Vendor OUI: 00:05:1e
Vendor PN: 57-1000012-01
Vendor Rev: A
Wavelength: 850   (units nm)
Options: 003a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max: 0
BR Min: 0
Serial No: UAF109280000J24
Date Code: 090711
DD Type: 0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
```



```

Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature:    Not Available
Current       :    Not Available
Voltage       :    Not Available
RX Power      :    Not Available
TX Power      :    Not Available
Last poll time:    Polling has not started

```

To display detailed information about all SFPs:

```

switch:user> sfpshow -all
(output truncated)
=====
Slot 8/Port 50:
=====

=====
Slot 8/Port 51:
=====

=====
Slot 8/Port 52:
=====
QSFP No: 13 Channel No:0
Identifier: 13 QSFP+
Connector: 12 MPO Parallel Optic
Transceiver: 0000000000000000 16_Gbps id
Encoding: 5 64B66B
Baud Rate: 140 (units 100 megabaud)
Length 9u: 0 (units km)
Length 50u: 25 (units 2 meters)
Length 62.5u:0 (units 1 meter)
Length Cu: 0 (units 1 meter)
Vendor Name: BROCADE
Vendor OUI: 00:05:1e
Vendor PN: 57-0000090-01
Vendor Rev: A
Wavelength: 850 (units nm)
Options: 00000fde
Max Case Temp: 70 (C)
Device Tech: 0x00
Serial No: HTA110491002833
Date Code: 101207
DD Type: 0x8
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 38 Centigrade
Current: 6.394 mAmps
Voltage: 3266.0 mVolts
RX Power: -0.1 dBm (977.0uW)

State transitions: 1
Last poll time: 02-03-2012 UTC Fri 07:36:05
(output truncatad)

```

To display mini-SFPs on a DCX-4S with a FC8-64 blade:

```
switch:user> setcontext 52
switch:user> sfpshow

Slot 8/Port 60: id (sw) Vendor: BROCADE \
Serial No: UYA109291003972 Speed: 2,4,8_Gbps

Slot 8/Port 61: id (sw) Vendor: BROCADE \
Serial No: UYA109301011012 Speed: 2,4,8_Gbps

Slot 8/Port 62: id (sw) Vendor: BROCADE \
Serial No: UYA109291004082 Speed: 2,4,8_Gbps
```

To display mini-SFP details on a DCX with an FC8-64 blade:

```
switch:user> sfpshow 12/8
Identifier: 3 SFP
Connector: 7 LC
Transceiver: 540c402000000000 2,4,8_Gbps \
M5,M6 sw Inter_dist
Encoding: 1 8B10B
Baud Rate: 85 (units 100 megabaud)
Length 9u: 0 (units km)
Length 9u: 0 (units 100 meters)
Length 50u: 5 (units 10 meters)
Length 62.5u:3 (units 10 meters)
Length Cu: 0 (units 1 meter)
Vendor Name: BROCADE
Vendor OUI: 00:05:21
Vendor PN: 57-1000046-01
Vendor Rev: A
Wavelength: 850 (units nm)
Options: 001a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max: 0
BR Min: 0
Serial No: UYA109301009212
Date Code: 090723
DD Type: 0x68
Enh Options: 0xf0
Status/Ctrl: 0x80
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature:30 Centigrade
Current: 5.648 mAmps
Voltage: 3300.0 mVolts
RX Power:-2.5 dBm (565.9 uW)
TX Power:-2.6 dBm (551.6 uW)

State transitions: 1
Last poll time: 02-03-2012 UTC Fri 07:36:05
```

To display detailed information for GbE port 0 on a Brocade 7800 extension switch:

```
switch:admin> sfpshow ge0
Identifier: 3      SFP
Connector: 0
Transceiver: 0000000008000000 id
Encoding: 1      8B10B
Baud Rate: 13    (units 100 megabaud)
Length 9u: 0     (units km)
Length 9u: 0     (units 100 meters)
Length 50u: 0    (units 10 meters)
Length 62.5u: 0  (units 10 meters)
Length Cu: 100   (units 1 meter)
Vendor Name: BROCADE
Vendor OUI: 00:05:1e
Vendor PN: 57-1000042-01
Vendor Rev: A
Wavelength: 0    (units nm)
Options: 0010 Tx_Disable
BR Max: 0
BR Min: 0
Serial No: CZA109302000053
Date Code: 090504
DD Type: 0x0
Enh Options: 0x0
```

To display detailed information about a QSFP:

```
switch:admin> sfpshow 8/0
QSFP No: 0 Channel No:0
Identifier: 13    QSFP+
Connector: 12    MPO Parallel Optic
Transceiver: 0000000000000004 10_Gbps id
Encoding: 5      64B66B
Baud Rate: 103   (units 100 megabaud)
Length 9u: 0     (units km)
Length 50u (OM3): 100 (units m)
Length 62.5u: 0  (units m)
Vendor Name: BROCADE
Vendor OUI: 00:17:6a
Vendor PN: 57-1000042-01
Vendor Rev: 01
Wavelength: 850  (units nm)
Options: 00000fde
Max Case Temp: 70 C)
Device Tech: 0x00
Serial No: XXXXXX16
Date Code: 100722
DD Type: 0x8
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 36   Centigrade
Current: 6.132    mAmps
Voltage: 3285.8   mVolts
RX Power: -0.3    dBm (926.2uW)

State transitions: 1
Last poll time: 05-29-2013 UTC Wed 11:11:47
```

To display information about a QSFP on a Brocade G620 switch:

```
switch:admin> sfpshow 60
QSFP No: 1 Channel No:0
Identifier: 17 QSFP28
Connector: 12 MPO Parallel Optic
Transceiver: 0802404000000080 32_Gbps OM3 sw Short_dist
Encoding: 5 64B66B
Baud Rate: 255 (units 100 megabaud)
Length 9u: 0 (units km)
Length 50u (OM4): 100 (units m)
Length 62.5u:0 (units m)
Vendor Name: BROCADE
Vendor OUI: 00:05:1e
Vendor PN: 57-1000331-01
Vendor Rev: A
Wavelength: 850 (units nm)
Options: 0007ffde Loss_of_Sig, Loss_of_Sig_Inverted
Max Case Temp: 0 (C)
Device Tech: 0x00
Serial No: ZTA11517000001F
Date Code: 150528
DD Type: 0xc
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 50 Centigrade
Current: 7.494 mAmps
Voltage: 3315.4 mVolts
RX Power: -inf dBm (0.0 uW)
TX Power: -25.2 dBm (3.0 uW)

State transitions: 1
Last poll time: 11-05-2015 UTC Thu 04:36:18
```

To display the cached data for a port:

```
switch:admin> sfpshow 0 -link
Identifier: 3 SFP
Connector: 7 LC
Transceiver: 7004404000000000 4,8,16_Gbps M5 sw Short_dist
Encoding: 6 64B66B
Baud Rate: 140 (units 100 megabaud)
Length 9u: 0 (units km)
Length 9u: 0 (units 100 meters)
Length 50u (OM2): 3 (units 10 meters)
Length 50u (OM3): 10 (units 10 meters)
Length 62.5u:0 (units 10 meters)
Length Cu: 0 (units 1 meter)
Vendor Name: BROCADE
Vendor OUI: 00:05:1e
Vendor PN: 57-0000088-01
Vendor Rev: A
Wavelength: 850 (units nm)
Options: 003a Loss_of_Sig, Tx_Fault, Tx_Disable
BR Max: 0
BR Min: 0
Serial No: HAF3150800003M8
Date Code: 150215
```

```

DD Type:      0x68
Enh Options:  0xfa
Status/Ctrl:  0xb0
Pwr On Time:  1.04 years (9118 hours)
E-Wrap Control: 0
O-Wrap Control: 0
Alarm flags[0,1] = 0x5, 0x0
Warn Flags[0,1] = 0x5, 0x0
Temperature:  43      Centigrade
Current:      8.094   mAmps
Voltage:      3346.9  mVolts
RX Power:     -3.7    dBm (429.5uW)
TX Power:     -2.5    dBm (563.3 uW)

State transitions: 1
Port Speed Capabilities  4Gbps 8Gbps 16Gbps 32Gbps

PEER Port Gbic Info

Vendor Name: BROCADE
Serial num:  HAA1130710CLVZ2
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   130215
      Laser Type:      Short Wave Laser
      SFP Type:        Optical Port Type
      Connector Type:  SFP+
Following SFP Parameters are Valid
      Temperature: 56      Centigrade [Range -128 - +128 C]
      Current:      6.070  mAmps      [Range 0 - 131 mAmps]
      Voltage:      3288.0  mVolts    [Range 0 - 3600 mVolts]
      Rx Power:     518.2   uW        [Range 0 - 6550 uW]
      Tx Power:     436.3   uW        [Range 0 - 6550 uW]
Signal Loss (Upstream) : -13.5  dBm (45.1 uW)
Signal Loss (Downstream): -21.7  dBm (6.8 uW)
Port Speed Capabilities  2Gbps 4Gbps 8Gbps 16Gbps
Last poll time: 10-05-2016 UTC Wed 09:20:14

```

To display the information of a remote switch port:

```

switch:admin> sfpshow -pid 0x060000
SWITCH PORT SFP

Vendor Name: BROCADE
Serial num:  HAF3150800003M8
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   150215
      Laser Type:      Short Wave Laser
      SFP Type:        Optical Port Type
      Connector Type:  SFP+
Following SFP Parameters are Valid
      Temperature: 43      Centigrade [Range -128 - +128 C]
      Current:      8.094  mAmps      [Range 0 - 131 mAmps]
      Voltage:      3346.9  mVolts    [Range 0 - 3600 mVolts]
      Rx Power:     429.5   uW        [Range 0 - 6550 uW]
      Tx Power:     563.3   uW        [Range 0 - 6550 uW]
Port Speed Capabilities  4Gbps 8Gbps 16Gbps 32Gbps

```

PEER PORT SFP

```

Vendor Name: BROCADE
Serial num:  HAA1130710CLVZ2
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   130215
      Laser Type:      Short Wave Laser
      SFP Type:        Optical Port Type
      Connector Type:   SFP+
Following SFP Parameters are Valid
      Temperature: 56      Centigrade [Range -128 - +128 C]
      Current:      6.100  mAmps      [Range 0 - 131 mAmps]
      Voltage:      3288.0 mVolts     [Range 0 - 3600 mVolts]
      Rx Power:     520.2   uW         [Range 0 - 6550 uW]
      Tx Power:     435.3   uW         [Range 0 - 6550 uW]
Signal Loss (Upstream) : -13.7  dBm (43.1  uW)
Signal Loss (Downstream): -22.4  dBm (5.8   uW)
Port Speed Capabilities 2Gbps 4Gbps 8Gbps 16Gbps

```

SEE ALSO [switchShow](#)

shellFlowControlDisable

Disables XON/XOFF flow control on the console serial port.

Synopsis **shellflowcontroldisable**

Description Use this command to disable XON/XOFF flow control on the console serial port. Flow control is disabled by default.

Because this command changes the flow control on the console serial port, it must be executed from a session that is logged in from the console serial port. This command cannot run from a Telnet session.

This setting is saved in the configuration database; therefore, it is persistent across reboots and power cycles.

Notes On dual-CP systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable flow control:

```
switch:admin> shellflowcontroldisable
Disabling flowcontrol
flow control is now disabled
```

SEE ALSO [shellFlowControlEnable](#)

shellFlowControlEnable

Enables XON/XOFF flow control on the console serial port.

Synopsis **shellflowcontrolenable**

Description Use this command to enable XON/XOFF flow control to the shell task. Flow control is disabled by default.

Because this command changes the flow control on the console serial port, it must be executed from a session that is logged in from the console serial port. This command cannot run from a Telnet session.

This setting is saved in the configuration database; therefore, it is persistent across reboots and power cycles.

Notes On dual-CP systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

If flow control is enabled and if the console output is suspended for an extended period of time, the switch might reboot. It is recommended to disable the flow control, using shellFlowControlDisable.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable flow control:

```
switch:admin> shellflowcontrolenable
Enabling flowcontrol
flow control is now enabled
```

SEE ALSO [shellFlowControlDisable](#)

slotCfgPersistence

Sets or removes the persistent disable flag on a slot, and displays all the persistently disabled slots in the chassis.

Synopsis

slotcfgpersistence

slotcfgpersistence --poweroff *slot*

slotcfgpersistence --poweron *slot*

portcfgpersistence --help

Description

Use this command to set or remove the persistent disable flag on a slot. Execute this command without operands to display all persistently disabled slots on the chassis.

When the persistent disable flag is set on a slot, the blade present in the slot is powered off. The blade is powered on after removing persistent disable flag on the slot.

Persistently disabled slots remain disabled across power cycles, switch reboots, and switch enables. The slotShow command reports the persistently disabled slots with a string "Persistent".

On power up, insert blade, reboot, and HA failover, the blade will be powered off if the persistent slot power off is set on the slot. The slotCfgPersistence settings remain unaffected and will be applied after reboot.

Notes

After configDownload, the system must be rebooted for slotCfgPersistence settings to take effect.

You can use the slotPowerOn command to temporarily power on a blade that is persistently disabled. After the system is powered up or rebooted, the blade will be powered off.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

Specifies the slot number of the blade.

--poweroff

Sets the persistent disable flag on the specified slot.

--poweron

Removes the persistent disable flag on the specified slot.

--help

Displays command usage.

Examples

To set the persistent disable flag on a slot:

```
switch:admin> slotcfgpersistence --poweroff 8
```

To display the persistent disabled slots on a chassis:

```
switch:admin> slotcfgpersistence
slot 8 is Persistent disable
```

To remove the persistent disable flag on a slot:

```
switch:admin> slotcfgpersistence --poweron 8
```

SEE ALSO [slotPowerOff](#), [slotPowerOn](#), [slotShow](#)

slotPowerOff

Removes power from a slot.

Synopsis **slotpoweroff slot [-force]**

slotpoweroff --help

Description Use this command to turn off the power to a blade unit. The slot must have a valid blade unit present and the blade unit must be of a type that can be powered off.

This command is supported on 8 Gbps-capable, 16 Gbps-capable, and 32 Gbps-capable core blades also. There is no frame loss when there are no ICLs connected.

This command, when executed on a core blade, displays a warning message and prompts for confirmation as powering off the last core blade will disable the chassis.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

slot [-force]

Specify the slot number of the blade to be powered down. This operand is required.

On core blades, the command prompts for confirmation unless you use the -force option.

--help

Displays command usage.

Examples To power off blade unit 3:

```
switch:admin> slotpoweroff 3
Slot 3 is being powered off
```

SEE ALSO [powerOffListSet](#), [powerOffListShow](#), [slotPowerOn](#), [slotShow](#)

slotPowerOn

Restores power to a slot.

Synopsis **slotpoweron** *slot*

slotpoweron --help

Description Use this command to turn on the power to a blade unit. The slot must have a valid blade unit present and the blade unit must be currently powered off. The slotShow command reports such slots as being in the state of INSERTED, NOT POWERED ON.

This command is supported on 8 Gbps-capable, 16 Gbps-capable, and 32 Gbps-capable core blades also. There is no frame loss when there are no ICLs connected.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

slot Specify the slot number of the blade to be powered on. This operand is required.

--help Displays command usage.

Examples To power on blade unit 3:

```
switch:admin> slotpoweron 3
Powering on slot 3.
```

SEE ALSO [slotPowerOff](#), [slotShow](#)

slotShow

Displays the status of all slots in the system.

Synopsis slotshow [-m] [-p]

Description Use this command to display the current status of each slot in the system. Depending on the option used, the command retrieves information on blade type, blade ID, status, Brocade model name, and power usage for each slot in the switch or chassis.

This command does not display the model names for unsupported blades. If a blade is not supported, only the Blade ID is displayed, and the Status field registers as FAULTY(9). Use the list below to identify the model name associated with an unsupported blade.

When no operand is specified, slotShow displays the blade type, blade ID, and status for each slot. In this view, the fields and their possible values are as follows:

Slot	Displays the physical slot number.
Blade Type	Displays the blade type as one of the following:
SW BLADE	The blade is a switch.
CP BLADE	The blade is a control processor.
CORE BLADE	The blade is a core switch blade.
AP BLADE	The blade is an application processor.
UNKNOWN	The blade not present or its type is not recognized.
ID	Displays the blade type ID as one of the following:
50	CP8 control processor blade
51	FC8-48 switch blade
52	Core8 core blade
55	FC8-32 switch blade
75	FX8-24 application processor blade

96	FC16-48 switch blade
97	FC16-32 switch blade
98	CR16-8 core blade
99	CR16-4 core blade
153	FC16-64 switch blade
175	CPX6 control processor blade
176	CR32-4 core blade
177	CR32-8 core blade
178	FC32-48 switch blade
186	SX6 application processor blade

Status

Displays the status of the blade as one of the following:

VACANT

The slot is empty.

INSERTED, NOT POWERED ON

The blade is present in the slot but is turned off.

POWERING UP

The blade is present and powering on.

LOADING

The blade is present, powered on, and loading the initial configuration.

DIAG RUNNING POST1

The blade is present, powered on, and running the POST (power-on self-test).

DIAG RUNNING POST2

The blade is present, powered on, and running the reboot power on self tests.

INITIALIZING

The blade is present, powered on, and initializing hardware components.

ENABLED

The blade is on and fully enabled.

DISABLED

The blade is powered on but disabled.

FAULTY

The blade is faulty because an error was detected. A fault code of 53 may also indicate the possibility of a rolling reboot detection (RRD) on the specified blade. In the case of an RRD, investigate and correct the cause, then reboot the control processor (CP) to recover the blade.

UNKNOWN

The blade is inserted but its state cannot be determined.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

In a X6-4 chassis, slot 1 and 2 (Blade ID 175) are occupied by control processor blades and slot 5 and 6 (Blade ID 176) are occupied by core blades. In a X6-8 chassis, slot 1 and 2 (Blade ID 175) are occupied by the control processor blades and slot 7 and 8 (Blade ID 177) are occupied by core blades..

Operands This command supports the following operands:

-p

In addition to the basic slot status view, displays the following information about power consumption:

- Total direct current (DC) power consumption for the chassis and individual values for each blade (in Watts). Usage for other components such the WWN card or fans is included in the calculation but not listed per component. Note that the data displayed in the "DC Power Consumption" column and in the summary field "Total DC Power consumption" indicate the maximum allowed power consumption, not a real-time value. Real-time power consumption data is displayed for 16G platforms only with the chassisShow command.
- Total alternating current (AC) power consumption in Watts. This value indicates the maximum allowed AC power consumption; it is not a real-time value.
- AC efficiency, as a percentage of total and BTU.
- Power efficiency in Watts/port and Watts/Gb.

-m

In addition to the basic slot status view, displays the Brocade model name for each blade.

Examples To display the status of all slots on a Brocade X6-8:

```
switch:user> slotshow

Slot  Blade Type  ID    Status
-----
  1     CP BLADE    175    ENABLED
  2     CP BLADE    175    ENABLED
  3     AP BLADE    186    ENABLED
  4     AP BLADE    186    ENABLED
  5     SW BLADE    178    ENABLED
  6     SW BLADE    178    ENABLED
  7     CORE BLADE  177    ENABLED
  8     CORE BLADE  177    ENABLED
  9     AP BLADE    186    ENABLED
 10     SW BLADE    178    ENABLED
 11     SW BLADE    178    ENABLED
 12     AP BLADE    186    ENABLED
```

To display the Brocade model name for each blade on a Brocade X6-8:

```
switch:user> slotshow -m
```

Slot	Blade	Type	ID	Status
1	CP BLADE	175	CPX6	ENABLED
2	CP BLADE	175	CPX6	ENABLED
3	AP BLADE	186	SX6	ENABLED
4	AP BLADE	186	SX6	ENABLED
5	SW BLADE	178	FC32-48	ENABLED
6	SW BLADE	178	FC32-48	ENABLED
7	CORE BLADE	177	CR32-8	ENABLED
8	CORE BLADE	177	CR32-8	ENABLED
9	AP BLADE	186	SX6	ENABLED
10	SW BLADE	178	FC32-48	ENABLED
11	SW BLADE	178	FC32-48	ENABLED
12	AP BLADE	186	SX6	ENABLED

To display power consumption information on a Brocade X6-8:

```
switch:user> slotshow -p
```

Slot	Blade	Type	ID	DC Power Consumption	Status
1	CP BLADE	175		55	ENABLED
2	CP BLADE	175		55	ENABLED
3	UNKNOWN			-	VACANT
4	AP BLADE	186		425	INSERTED, NOT POWERED ON
5	UNKNOWN			-	VACANT
6	SW BLADE	178		260	ENABLED
7	CORE BLADE	177		450	ENABLED
8	CORE BLADE	177		450	ENABLED
9	UNKNOWN			-	VACANT
10	UNKNOWN			-	VACANT
11	SW BLADE	178		260	INSERTED, NOT POWERED ON
12	UNKNOWN			-	VACANT

```
Total DC Power Consumption:
2184 watts
```

```
Total AC Power Consumption:
2426 watts AC @ 90% efficiency (8280 BTU)
```

```
Power Efficiency:
3.73 watts per port, 0.58 watts per Gb
```

INSERTED, NOT POWERED ON blades are not included in Total Power Consumption.

To display the Brocade model name for each blade on a Brocade X6-4:

```
switch:user> slotshow -m
```

Slot	Blade	Type	ID	Model Name	Status
1	CP BLADE	175	CPX6		ENABLED
2	CP BLADE	175	CPX6		ENABLED
3	SW BLADE	178	FC32-48		ENABLED
4	SW BLADE	178	FC32-48		ENABLED

slotShow

5	CORE BLADE	176	CR32-4	ENABLED
6	CORE BLADE	176	CR32-4	ENABLED
7	SW BLADE	178	FC32-48	ENABLED
8	AP BLADE	186	SX6	ENABLED

To display power consumption information on a Brocade X6-4:

```
switch:user> slotshow -p
Slot   Blade Type      ID   DC Power      Status
      Consumption
-----
  1     CP BLADE    175      55     ENABLED
  2     UNKNOWN
  3     UNKNOWN
  4     UNKNOWN
  5     CORE BLADE  176     250     ENABLED
  6     UNKNOWN
  7     SW BLADE    178     260     ENABLED
  8     SW BLADE    178     260     ENABLED
Total DC Power Consumption:
1435 watts
Total AC Power Consumption:
1594 watts AC @ 90% efficiency (5440 BTU)
Power Efficiency:
4.15 watts per port, 0.26 watts per Gb
```

SEE ALSO [bladeDisable](#), [bladeEnable](#), [chassisShow](#), [slotPowerOff](#), [slotPowerOn](#)

slotStatsClear

Clears hardware statistics for all the ports or the ports in specified slot or chip.

Synopsis **slotstatsclear [-s slot1[-slot2]]**

slotstatsclear [-c chip1[-chip2]]

slotstatsclear -h

Description Use this command to clear all the port hardware statistics such as ALPA-based CRC monitor, End-to-End monitor, and Filter-based performance monitor statistics for one or more ports in the switch. Execute this command without operands to clear all the port hardware statistics in the switch.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-s slot1[-slot2]

Clears all ports on a slot or on a range of slots. Specify a range (1-3), or a list of slots separated by a comma (1,5,7), or a combination of both (1-3,5,7-9).

-c chip1[-chip2]

Clears all ports on a chip or on a range of chips. Specify a range (1-3), or a list of chips separated by a comma (1,5,7), or a combination of both (1-3,5,7-9). On chassis-based systems, this operand must be specified along with -s operand.

-h

Displays the command usage.

Examples To clear hardware statistics for all the slots:

```
switch:admin> slotstatsclear
```

To clear hardware statistics for specific slot:

```
switch:admin> slotstatsclear -s 3
```

To clear hardware statistics for slot range:

```
switch:admin> slotstatsclear -s 3-4
```

To clear hardware statistics for specific chip:

```
switch:admin> slotstatsclear -c 1
```

To clear hardware statistics for chip range:

```
switch:admin> slotstatsclear -c 1-2
```

SEE ALSO [portStatsClear](#)

snmpConfig

Manages the SNMP agent configuration.

Synopsis

```
snmpconfig --set snmpv1 [-index index] [-community community_name]
    [-host [ipv4 | ipv6 | dns]] [-port udp_port]
    [-severity severity_level]

snmpconfig --set snmpv1 [-index index] [-default]

snmpconfig --set snmpv3 [-index index] [-default]

snmpconfig --set snmpv3 [-enable | -disable [informs | passwd_encryption]]

snmpconfig --set snmpv3 [-index index] [-user user_name]
    [-host [ipv4 | ipv6 | dns]] [-port udp_port]
    [-severity severity_level] [-auth_proto auth_protocol]
    [-auth_passwd auth_password] [-priv_proto priv_protocol]
    [-priv_passwd priv_password] [-engine_id engine_id]
    [-notify_type trap | informs]

snmpconfig --set mibcapability [-mib_name mib_name [-bitmask bit_mask]]

snmpconfig --set accesscontrol [-index index] [-host ip_address]
    [-access [ro | rw]]

snmpconfig --set systemgroup [-sysdescr sysdescr] [-syslocation syslocation]
    [-syscontact syscontact] [-authtrapienabled [ON | OFF]]

snmpconfig --set seclevel [-snmpget security_level] [-snmpset security_level]

snmpconfig --set auditinterval [-interval minute]

snmpconfig --enable | --disable mibcapability
    -mib_name mib_name [-trap_name trap_name]

snmpconfig --enable | --disable snmpv1

snmpconfig --show [snmpv1 | snmpv3 | accesscontrol | mibcapability |
    systemgroup | seclevel | auditinterval]

snmpconfig --default [snmpv1 | snmpv3 | accesscontrol | mibcapability |
    systemgroup | seclevel | auditinterval]

snmpconfig --help
```

Description

Use this command to manage the configuration of the SNMP agent in the switch. The configuration includes SNMPv1 and SNMPv3 configuration, access control list (ACL), MIB capability, system group, and security level settings. The command supports set, reset to default, and display operations. This command supports enabling or disabling a single MIB or all MIBs, configuring a single trap only, and managing traps in excess of 32.

The SNMP Agent configuration interface allows both interactive and command line options (non-interactive) for all parameters.

The SNMPv3 configuration supports sending inform requests as an alternative to trap requests. Traps are unreliable because the receiver does not send any acknowledgment when it receives a trap. The sender cannot determine if the trap was received. However, an SNMP manager that receives an inform request acknowledges the message with an SNMP response protocol data unit (PDU). If the manager does not receive an inform request, it does not send a response. If the sender never receives a response, the inform request can be sent again. For this reason, informs are more likely to reach their intended destination.

All values successfully changed by this command take effect immediately and are persistent across power cycles and reboots.

SNMPv1 Configuration Parameters

The agent supports six communities and their associated trap recipients and trap recipient severity levels. The first three communities are for read-write (rw) access and the last three are for read-only (ro) access. The default value for the trap recipient of each community is 0.0.0.0. The length of the community string should be in the range of 2 to 16 characters. The default values for the community strings include the following:

- Community 1: Secret Code
- Community 2: OrigEquipMfr
- Community 3: private
- Community 4: public
- Community 5: common
- Community 6: FibreChannel

For an SNMP management station to receive a trap generated by the agent, the administrator must configure a trap recipient to correspond to the IP address of the management station. In addition, the trap recipient must be able to pass the access control list (ACL) check as described in the Access Control category.

SNMPv3 Configuration Parameters

Two user roles, `snmpadmin` and `snmpuser` are supported. The `snmpadmin` role provides read-write access and the `snmpuser` role provides read-only access. Entries are added to the USM table corresponding to each role. A total of three entries for `snmpadmin` and `snmpuser` respectively are supported. Separate default passwords are provided for creation of `authKey` and `privKey` for each entry. The default set of passwords is published and the algorithm (MD5/SHA) is used to create the set of authentication keys. You can change these passwords using this option. You can select the authentication protocol MD5/SHA or no authentication for each entry.

When new passwords are entered for any user entry, a new `authKey` and `privKey` are generated. The new passwords must be updated on the client (e.g., MIB browser) as well. `AuthKey` and `privKey` can also be updated with the delta key mechanism provided by the SNMPv3 protocol.

The system prompts for password confirmation if a protocol other than NoAuth/NoPriv is selected. Protocol passwords must be between 1 and 32 characters.

In order for an SNMP management station to receive SNMPv3 traps generated by the agent, the administrator must configure a trap recipient value to correspond to the IP address of the management station. In addition, the trap recipient must pass the ACL check as described in the Access Control section. The trap recipient must be associated with one of the six users of SNMPv3 and trap severity level. The factory default value for the SNMPv3 trap recipient of each user is 0.0.0.0.

Access Control Configuration Parameters

The ACL check is as follows: there are six ACLs to restrict SNMP get, set, and trap operations to hosts under an host-subnet-area. The host-subnet-area is defined by comparing nonzero IP octets. For example, an ACL of 192.168.64.0 enables access by any hosts that start with the specified octets. The connecting host is enabled to set each host-subnet-area to be read-write or read-only. The closest match out of six entries is given access. The ACL check is turned off when all six entries contain 0.0.0.0. The default values of all six entries are 0.0.0.0. For IPv6 subnets, the format is specified by an IPv6 address followed by the number of fixed bits in the address.

MIB Capability Configuration Parameters

The mibCapability option turns certain MIBs and associated SNMP traps on or off. If a specific MIB is disabled, the corresponding traps also are disabled. If any trap group is disabled, the corresponding individual traps are also disabled.

SNMP Traps are identified by their bit mask and can be read directly from the switch configuration. The MIB and trap status (enabled or disabled) status is recorded in a 64-bit counter. The last bit (bit 0) is reserved for the MIB and the remaining bits are reserved for the traps of that MIB. The trap's position is allocated based on the last ID of the trap OID. For example, the last ID of the swEventTrap is 5 so its position will be 5th from the right. The following is a listing of valid SNMP traps and their bit masks:

MIB	Trap Name and position	Bit mask	Default
FE-MIB		0x1	Enabled
SW-MIB		0x1	Enabled
	swFCPortScn (3)	0x8	Enabled
	swEventTrap (4)	0x10	Enabled
	swIPv6ChangeTrap (7)	0x80	Enabled
	swPmgrEventTrap (8)	0x100	Enabled
	swFabricReconfigTrap (10)	0x200	Disabled
	swFabricSegmentTrap (9)	0x400	Disabled
	swExtTrap (11)	0x800	Disabled
	swStateChange (12)		Disabled
	swMovePort (13)		Disabled
	swBrdcGenericTrap (15)		Disabled
	swDeviceStatusTrap (16)		Disabled
	swZoneConfigChangeTrap (17)		Disabled
FA-MIB		0x1	Enabled
	connUnitStatusChange(1)	0x2	Enabled
	connUnitEventTrap (4)	0x10	Enabled
	connUnitPortStatusChange (6)	0x40	Enabled
FICON-MIB		0x1	Enabled
	linkRNIDDeviceRegistration (1)	0x2	Enabled
	linkRNIDDevicedeRegistration(2)	0x4	Enabled
	linkLIRRListenerAdded (3)	0x8	Enabled
	linkLIRRListenerRemoved (4)	0x10	Enabled
	linkRLIRFailureIncident (5)	0x20	Enabled
HA-MIB		0x1	Enabled
	fruStatusChanged (1)	0x2	Enabled
	cpStatusChanged (2)	0x4	Enabled
	fruHistoryTrap (3)	0x8	Enabled
FCIP-MIB		0x1	Enabled
IF-MIB		0x1	Enabled

linkUpTrap (3)	0x8	Enabled
linkdownTrap (4)	0x10	Enabled
<hr/>		
MAPS-MIB	0x1	Enabled
mapsTrapAM (1)	0x2	Enabled
mapsQuietTimeExpirationTrap (2)	0x4	Enabled
<hr/>		
T11-FC-ZONE-SERVER-MIB	0x1	Disabled
t11ZsRequestRejectNotify (1)	0x2	Disabled
t11ZsMergeFailureNotify (2)	0x4	Disabled
t11ZsMergeSuccessNotify (3)	0x8	Disabled
t11ZsDefZoneChangeNotify (4)	0x10	Disabled
t11ZsActivateNotify (5)	0x20	Disabled

Note: The Zone Mib parameters are for restricted usage only.

Use the --show mibcapability option to display the traps configurable under each MIB.

Notes The execution of this command is subject to Virtual Fabric restriction that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Informs are not supported for IPv6 addresses.

Operands This command has the following operands:

--help

Displays the command usage.

--enable

Enables the SNMP agent configuration for the specified category. This operand is valid only with mibcapability and snmpv1. When used with the snmpv1 operand, this command restores access to SNMPv1/v2c.

--disable

Disables the SNMP agent configuration for the specified category. This operand is valid only with mibcapability and snmpv1. When used with the snmpv1 operand, this command blocks access to SNMPv1/v2c. All requests for v1/v2c version will be dropped by the switch, and SNMPv1 traps will be blocked from being sent, even if trap destinations are present.

--show

Displays the SNMP agent configuration data of the specified category. When used with the snmpv1 operand, this command displays whether access to SNMPv1/v2c is enabled or disabled.

--set

Sets the SNMP agent configuration data of the specified category.

snmpv1

Selects SNMPv1-related configuration parameters. These parameters include the community string, trap recipient IP address, and trap severity level associated with each trap recipient IP address. When "0" is configured as a trap port, traps can be received at the default port 162.

snmpv3

Selects SNMPv3-related configuration parameters. These parameters include the user name, authentication protocol and password, the privacy protocol and password, the SNMPv3 trap recipient's IP address, its associated user index, and trap severity level. When "0" is configured as a trap port, traps can be received at the default port 162.

-index *index*

Specifies the index for which the user details are configured. Valid values are from 1 through 6.

-community *community_name*

Specifies the community string. If special characters are used in the community_name, the community_name must be enclosed in single quotes. The default values for the community strings include the following:

- Community 1: Secret Code
- Community 2: OrigEquipMfr
- Community 3: private
- Community 4: public
- Community 5: common
- Community 6: FibreChannel

-host [*ipv4* | *ipv6* | *dns*]

Specifies the IP address of the host. IPv4, IPv6, and DNS hosts are supported.

-port *udp_port*

Specifies the UDP port where SNMP traps will be received. Valid port IDs range from 0 through 65535. The default port is 162. This command prompts for confirmation only when you specify the port number within the range of 0 through 49151.

-severity *severity_level*

Specifies the trap recipient severity level. When an event occurs and its severity level is at or below the set value, the Event Trap traps (swEventTrap and connUnitEventTrap), are sent to configured trap recipients. By default, this value is set at 0, implying that no Event Trap is sent. Possible values are:

- 0: None
- 1: Critical
- 2: Error
- 3: Warning
- 4: Informational
- 5: Debug

--default

Sets the SNMP agent configuration data for a specified item to the default values. Generally, these default values may be available in the configuration database. The command sets to factory defaults if the SNMP agent configuration parameters are not available in the configuration database. This operand is valid with snmpv1, snmpv3, accesscontrol, mibcapability, systemgroup, seclevel, and auditinterval.

-enable | -disable [informs]

Enables or disables informs. If informs are enabled, all trap destinations receive inform requests. If informs are disabled, all trap destinations receive trap requests. When informs are enabled, the engine ID must be set to correspond to the management engine IP address. Informs are by default disabled. IPv6 Informs are currently not supported.

-enable | -disable [passwd_encryption]

Enables or disables password encryption. If password encryption is enabled, both authentication and privacy passwords are encrypted. If the password encryption is disabled, the authentication and privacy passwords are reset to default. Password encryption is disabled by default.

When password encryption is enabled, the configuration key attribute values for the SNMPv3 users must not be modified in the uploaded configuration file. If the configuration file is modified and downloaded to the switch, the configDownload may fail for the filter SNMP. Even if the SNMP configurations are downloaded successfully, the calculated digest value may be incorrect and the SNMPv3 query as well as the trap may fail for that user.

-user *user_name*

Specifies the name of the user that connects to the agent. The user name must be between 2 and 32 characters long. The default user names are defined with the noAuth and noPriv protocol. The factory default SNMPv3 user names include the following:

- User 1: snmpadmin1
- User 2: snmpadmin2
- User 3: snmpadmin3
- User 4: snmpuser1
- User 5: snmpuser2
- User 6: snmpuser3

-auth_proto *auth_protocol*

Specifies the authentication protocol as MD5, SHA, or no authentication for each entry. If FIPS mode is enabled, MD5 protocol configuration is not supported for the snmpv3 users. The following combinations of protocols are supported:

- NoAuth/NoPriv
- Auth/NoPriv
- Auth/Priv

-auth_passwd *auth_password*

Specifies the authentication password that enables the agent to receive packets from the host. Passwords are plain text and must be added each time for each configuration replay. The password must be between 1 and 32 characters long. In FIPS mode, the password must be between 8 and 32 characters long.

-priv_proto *priv_protocol*

Specifies privacy authentication level setting. The valid values are DES and AES128.

-priv_passwd *priv_password*

Specifies the privacy password that enables the host to encrypt the contents of the message that it sends to the agent. Passwords are plain text and must be added each time for each configuration replay. The password must be between 1 and 32 characters long. In FIPS mode, the password must be between 8 and 32 characters long. The privacy password alone cannot be configured. You configure the privacy password with the authentication password.

-engine_id *engine_id*

Configures a user-defined engine ID for the SNMP agent.

-notify_type trap | informs

Specifies the type of notification traps that are sent for the host. Traps and informs are supported. The default notify type is traps.

--set mibcapability

Configures MIBs.

-mib_name *mib_name*

Specifies the name of the MIB to be configured. This operand is required if you want to configure MIB traps noninteractively. Valid MIB names include the following.

- FE-MIB
- SW-MIB
- FA-MIB
- FICON-MIB
- HA-MIB
- FCIP-MIB
- ISCSI-MIB
- IF-MIB
- MAPS-MIB
- T11-FC-ZONE-SERVER-MIB

-bitmask *bit_mask*

Specifies the bit mask for the MIB. Refer to the table above for valid values.

-trap_name *trap_name*

Specifies the name of the trap to be enabled or disabled. This operand is optional. Use `snmpconfig --show mibcapability` for a listing of valid traps.

accessControl

Selects access-control-related parameters. These parameters include the access host subnet area and access permission (read-write).

-host *ip_address*

Specifies the host IP address with or without a subnet mask.

-access [ro | rw]

Specifies the read-write (rw) or read-only (ro) access to the host.

systemGroup

Selects configuration parameters related to the system group.

-sysdescr *sysdescr*

Specifies the system description. The default value is "Fibre Channel Switch".

-syslocation *syslocation*

Specifies the location of the system (switch). The default value is "End User Premise". The string must be at least 4 characters in length; the maximum length is 255 characters. If special characters are used in the syslocation, the syslocation must be enclosed in single quotes.

-syscontact *syscontact*

Specifies the contact information for this system (switch). The default value is "Field Support". Refer to the definition of sysDescr, sysLocation and sysContact in the system group of MIB-II. The string must be at least 4 characters in length; the maximum length is 255 characters. If special characters are used in the syscontact, the syscontact must be enclosed in single quotes.

-authtrapenabled [ON | OFF]

Enables or disables the authentication traps. When enabled, the authentication trap (authenticationFailure) is transmitted to a configured trap recipient in the event that the agent receives a protocol message that is not properly authenticated. In the context of SNMPv1 and SNMPv2c, this means that a request contains a community string that is not known to the agent. The default value for this parameter is OFF (disabled).

secLevel

Sets the SNMP security level.

-snmpget *security_level*

Specifies security level for all SNMP GET requests.

-snmpset *security_level*

Specifies security level for SNMP SET requests only. Values include the following:

- **0** - No security.
- **1** - Authentication only.
- **2** - Authentication and Privacy.
- **3** - OFF

auditinterval

Sets the SNMP audit interval.

-interval *minute*

Specifies the the SNMP audit interval in minutes. Valid value range is from 1 through 1440. Default value is 60.

Examples

To display the SNMPv1 configuration :

```
switch:admin> snmpconfig --show snmpv1
SNMPv1 community and trap recipient configuration:
Community 1: Secret C0de (rw)
  Trap recipient: 10.32.147.113
  Trap recipient Severity Level: 0
Community 2: OrigEquipMfr (rw)
  Trap recipient: 1080::8:800:200C:1234
  Trap recipient Severity Level: 0
Community 3: private (rw)
  No trap recipient configured yet
Community 4: public (ro)
```

```

    No trap recipient configured yet
Community 5: common (ro)
    No trap recipient configured yet
Community 6: FibreChannel (ro)
    No trap recipient configured yet

```

To set the SNMPv1 configuration of a switch noninteractively:

```

switch:admin> snmpconfig --set snmpv1 -index 2 -community community2 \
               -port 4000 -severity 3
Committing configuration.....done

```

To set the SNMPv3 configuration of a switch noninteractively:

```

switch:admin> snmpconfig --set snmpv3 -index 2 -user user1 \
               -host 1.3.4.5 -port 178 -severity 5 -auth_proto 2 \
               -auth_passwd "password1" -priv_proto 3 -priv_passwd "password2" \
               -engine_id "80:00:08:08:08:98:AB:5C:01" -notify_type informs \
Committing configuration.....done

```

To set the severity level for switch events and MAPS alerts interactively:

```

switch:admin> snmpconfig --set mibcapability
[...]
SW-TRAP (yes, y, no, n): [yes]
swFCPortScn (yes, y, no, n): [yes]
swEventTrap (yes, y, no, n): [yes]

    DesiredSeverity: (0..4) [0] 4
swIPv6ChangeTrap (yes, y, no, n): [yes]
    DesiredSeverity: (0..4) [0] 4
swPmgrEventTrap (yes, y, no, n): [yes]
[...]

```

To enable the mapsTrapAM noninteractively:

```

switch:admin> snmpconfig --enable mibcapability \
               -mib_name SW-MIB -trap_name mapsTrapAM
Operation succeeded

```

To enable the swEventTrap of the SW-MIB category only (this operation disables all other SNMP traps in this MIB category):

```

switch:admin> snmpconfig --set mibcapability \
               -mib_name SW-MIB -bitmask 0x10
Operation succeeded

switch:admin> snmpconfig --show mibcapability
[...]
SW-TRAP: NO
    swFCPortScn: YES
    swEventTrap: YES
        DesiredSeverity:4
    swIPv6ChangeTrap: YES
        DesiredSeverity:None
    swPmgrEventTrap: YES
    swFabricReconfigTrap: YES
    swFabricSegmentTrap: YES
    swExtTrap: NO

```

```

swStateChangeTrap: NO
swPortMoveTrap: NO
swBrcdGenericTrap: YES
swDeviceStatusTrap: YES
swZoneConfigChangeTrap: NO
[...]
```

To enable the SW-MIB MIB only without changing the current trap configuration:

```

switch:admin> snmpconfig --enable mibcapability \
               -mib_name SW-MIB
Operation succeeded

switch:admin> snmpconfig --show mibcapability
[...]
SW-TRAP: YES
    swFCPortScn: YES
    swEventTrap: YES
        DesiredSeverity:4
    swIPv6ChangeTrap: YES
        DesiredSeverity:4
    swPmgrEventTrap: YES
    swFabricReconfigTrap: YES
    swFabricSegmentTrap: YES
    swExttTrap: NO
    swStateChangeTrap: NO
    swPortMoveTrap: NO
    swBrcdGenericTrap: YES
    swDeviceStatusTrap: YES
    swZoneConfigChangeTrap: NO
[...]
```

To re-enable all traps under the SW-MIB category:

```

switch:admin> snmpconfig --set mibcapability \
               -mib_name SW-MIB -bitmask 0xFFFF
Operation succeeded

switch:admin> snmpconfig --show mibcapability
[...]
SW-TRAP: YES
    swFault: YES
    swSensorScn: YES
    swFCPortScn: YES
    swEventTrap: YES
        DesiredSeverity:None
    swIPv6ChangeTrap: YES
    swPmgrEventTrap: YES
    swFabricReconfigTrap: Yes
    swFabricSegmentTrap: Yes
    swExttTrap: Yes
    swStateChangeTrap: NO
    swPortMoveTrap: NO
    swBrcdGenericTrap: NO
[...]
```

To display the configuration for all MIBs and associated traps:

```
switch:admin> snmpconfig --show mibcapability
FE-MIB: YES
SW-MIB: YES
FA-MIB: YES
FICON-MIB: YES
HA-MIB: YES
FCIP-MIB: YES
IF-MIB: YES
BROCADE-MAPS-MIB: YES
T11-FC-ZONE-SERVER-MIB: NO
SW-TRAP: YES
    swFCPortScn: YES
    swEventTrap: YES
        DesiredSeverity:None
    swIPv6ChangeTrap: YES
    swPmgrEventTrap: YES
    swFabricReconfigTrap: YES
    swFabricSegmentTrap: YES
    swExtTrap: NO
    swStateChangeTrap: NO
    swPortMoveTrap: NO
    swBrcdGenericTrap: YES
    swDeviceStatusTrap: YES
    swZoneConfigChangeTrap: NO
FA-TRAP: YES
    connUnitStatusChange: YES
    connUnitEventTrap: YES
    connUnitPortStatusChange: YES
FICON-TRAP: YES
    linkRNIDDeviceRegistration: YES
    linkRNIDDeviceDeRegistration: YES
    linkLIRRListenerAdded: YES
    linkLIRRListenerRemoved: YES
    linkRLIRFailureIncident: YES
HA-TRAP: YES
    fruStatusChanged: YES
    cpStatusChanged: YES
    fruHistoryTrap: YES
IF-TRAP: YES
    linkDown: YES
    linkUp: YES
MAPS-TRAP: YES
    mapsTrapAM: YES
    mapsQuietTimeExpirationTrap: YES
T11-FC-ZONE-SERVER-TRAP: NO
    t11ZsRequestRejectNotify: NO
    t11ZsMergeFailureNotify: NO
    t11ZsMergeSuccessNotify: NO
    t11ZsDefZoneChangeNotify: NO
    t11ZsActivateNotify: NO
```

Note: The Zone Mib parameters are for restricted usage only.

To set the access control configuration noninteractively:

```
switch:admin> snmpconfig --set accesscontrol -index 1 -host 2.3.4.5 -access ro
Committing configuration...done.
```

To display the access control configuration:

```
switch:admin> snmpconfig --show accesscontrol
SNMP access list configuration:
Entry 0: Access host subnet area 2.3.4.5 (ro)
Entry 1: No access host configured yet
Entry 2: No access host configured yet
Entry 3: No access host configured yet
Entry 4: No access host configured yet
Entry 5: No access host configured yet
```

To configure system group parameters and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set systemgroup -syscontact "Field Support" \
    -authTrapEnabled false -sysdescr "Fibre Channel Switch" \
    -syslocation "End User Premise"

switch:admin> snmpconfig --show systemgroup
sysDescr = Fibre Channel Switch
sysLocation = End User Premise
sysContact = Field Support
authTraps = 0 (OFF)
```

To set the SNMP security level and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set seclevel -snmpset 0
SET seclevel cannot be less than GET. Changing SET seclevel to be \
    same as GET. Do you want to continue? (yes, y, no, n): [no] y

switch:admin> snmpconfig --show seclevel
GET security level = 1, SET level = 1
SNMP GET Security Level: Authentication only
SNMP SET Security Level: Authentication only
```

To set the audit interval and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set auditinterval -interval 90
Committing configuration.....done.

switch:admin> snmpconfig --show auditinterval
SNMP Audit Interval (in min): 90
```

To display the SNMPv3 configuration with informs disabled interactively:

```
switch:admin> snmpconfig --show snmpv3

SNMP Informs = 0 (OFF)

SNMPV3 user password encrypted = 0 (OFF)

SNMPv3 USM configuration:
User 1 (rw): snmpadmin1
    Auth Protocol: noAuth
    Priv Protocol: noPriv
User 2 (rw): snmpadmin2
    Auth Protocol: noAuth
    Priv Protocol: noPriv
User 3 (rw): snmpadmin3
    Auth Protocol: noAuth
```

```

        Priv Protocol: noPriv
User 4 (ro): snmpuser1
        Auth Protocol: noAuth
        Priv Protocol: noPriv
User 5 (ro): snmpuser2
        Auth Protocol: noAuth
        Priv Protocol: noPriv
User 6 (ro): admin
        Auth Protocol: noAuth
        Priv Protocol: noPriv

SNMPv3 Trap/Informs configuration:
Trap Entry 1:      1.2.3.4
        Trap Port: 162
        Trap User: snmpadmin1
        Trap recipient Severity level: 4
        Notify Type: TRAP(1)
Trap Entry 2:      No trap recipient configured yet
        Notify Type: TRAP(1)
Trap Entry 3:      No trap recipient configured yet
        Notify Type: TRAP(1)
Trap Entry 4:      No trap recipient configured yet
        Notify Type: TRAP(1)
Trap Entry 5:      No trap recipient configured yet
        Notify Type: TRAP(1)
Trap Entry 6:      5.6.7.8
        Trap Port: 162
        Trap User: admin
        Trap recipient Severity level: 4
        Notify Type: TRAP(1)

```

To enable inform requests to be sent instead of trap requests interactively:

```

switch:admin> snmpconfig --set snmpv3

SNMP Informs Enabled (true, t, false, f): [true]

SNMPV3 Password Encryption Enabled (true, t, false, f): [false]

User (rw): [snmpadmin1]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]: (2..2) [2]
Engine ID: [01:02:03:04:05:06:07:08:09]
User (rw): [snmpadmin2]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]: (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (rw): [snmpadmin3]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]: (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (ro): [snmpuser1]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]: (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (ro): [snmpuser2]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]: (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (ro): [snmpuser3]

```

```

Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]: (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00]

SNMPv3 trap/inform recipient configuration:
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1] 2
Inform Recipient's IP address : [0.0.0.0] 10.70.12.115
UserIndex: (1..6) [1]
Inform recipient Severity level : (0..5) [0] 5
Inform recipient Port : (0..65535) [162]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1] 2
Inform Recipient's IP address : [0.0.0.0] 1.2.3.4
UserIndex: (1..6) [2]
Informs recipient Severity level : (0..5) [0] 2
Informs recipient Port : (0..65535) [162]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1]
Trap Recipient's IP address : [0.0.0.0]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1]
Trap Recipient's IP address : [0.0.0.0]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1] 1
Trap Recipient's IP address : [0.0.0.0] 10.70.4.106
UserIndex: (1..6) [5]
Trap recipient Severity level : (0..5) [0] 2
Trap recipient Port : (0..65535) [162]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1]
Trap Recipient's IP address : [0.0.0.0]
Committing configuration.....done.

```

To block access to SNMPv1/2c

```

switch:admin> snmpconfig --disable snmpv1
switch:admin> snmpconfig --show
SNMPv1 community and trap recipient configuration:
  Community 1: ram (rw)
    Trap recipient: 172.26.4.84
    Trap port: 162
    Trap recipient Severity level: 5
  Community 2: OrigEquipMfr (rw)
    No trap recipient configured yet
  Community 3: private (rw)
    No trap recipient configured yet
  Community 4: public (ro)
    No trap recipient configured yet
SNMPv1:Disabled

```

References Refer to the following publications for further information on SNMP:

- SW_v5_x.mib, "Switch Management Information & Switch Enterprise Specific Trap"
- RFC1157, "A Simple Network Management Protocol (SNMPv1)"
- RFC1213, "Management information Base for Network Management of TCP/IP-based internets: MIB-II"
- RFC2574, "User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)"

SEE ALSO None

snmpStatistics

Changes or displays the SNMP throttling attributes.

Synopsis

```
snmpstatistics --set module -maxPT max_pt
               -avgPT avg_pt -mul MUL

snmpstatistics --enable module

snmpstatistics --disable module

snmpstatistics --clear module

snmpstatistics --show

snmpstatistics --help
```

Description Use this command to change or display the SNMP throttling parameters.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

<i>module</i>	Specifies a module such as SNMP.
--set	Configures the SNMP throttling parameters for the specified module.
-maxPT max_pt	Specifies the maximum processing time in milliseconds.
-avgPT avg_pt	Specifies the average processing time in milliseconds.
-mul MUL	Specifies the base interval. The default value is 1 second.
--enable	Enables SNMP throttling.
--disable	Disables SNMP throttling.
--clear	Clears SNMP throttling configuration parameters and statistics.
--show	Displays the SNMP throttling configuration parameters and statistics.
--help	Displays the command usage.

Examples To set the throttling configuration parameters:

```
switch:admin> snmpStatistics --set SNMP -maxPT 250 -avgPT 10 -mul 5
```

To enable SNMP throttling:

```
switch:admin> snmpstatistics --enable snmp
```

To disable SNMP throttling:

```
switch:admin> snmpstatistics --disable snmp
```

To clear SNMP throttling parameters and statistics:

```
switch:admin> snmpstatistics --clear snmp
```

To display SNMP throttling parameters and statistics:

```
switch:admin> snmpstatistics --show
snmpInPkts = 510
snmpOutPkts = 510
snmpInBadVersions = 0
snmpInBadCommunityNames = 0
snmpInBadCommunityUses = 0
snmpInASNParseErrs = 0
snmpInTooBig = 0
snmpInNoSuchNames = 0
snmpInBadValues = 0
snmpInReadOnly = 0
snmpInGenErrs = 0
snmpInTotalReqVars = 0
snmpInTotalSetVars = 0
snmpInGetRequests = 0
snmpInGetNexts = 0
snmpInSetRequests = 0
snmpInGetResponses = 0
snmpInTraps = 0
snmpOutTooBig = 0
snmpOutNoSuchNames = 0
snmpOutBadValues = 0
snmpOutGenErrs = 0
snmpOutGetRequests = 0
snmpOutGetNexts = 0
snmpOutSetRequests = 0
snmpOutGetResponses = 510
snmpOutTraps = 0
snmpEnableAuthenTraps = 2
snmpSilentDrops = 0
snmpProxyDrops = 0
snmpInformsCreate = 0
snmpInformsAck = 0
snmpInformsSent = 0
snmpInformsErrorResponse = 0
snmpInformsFailed = 0
snmpInformRetries = 0
```

Throttling config:

```
Flag          : Off
MOD ID        : 0
```

snmpStatistics

```
Avg PT           : 10 milli second
Max PT           : 250 milli second
MUL              : 5
```

Throttling Statistics:

```
last PT          : 0 milli second
Act Avg PT       : 0 nano second
No Of Throttle   : 0
No Of PKT Throttle : 0
No Of samples    : 0
```

Debug Stats:

```
Start Time       : 0 second: 0 nano second
End Time         : 0 second: 0 nano second
Remaining PT     : 0 m
```

SEE ALSO [snmpConfig](#), [snmpTraps](#)

snmpTraps

Sends or displays SNMP traps.

Synopsis **snmptraps --send** [-trap_name *trap_name*]
 [-ip_address *ip_address*]

snmptraps --show [*port*]

snmptraps --block -port [*slot*]*port*

snmptraps --unblock -port [*slot*]*port* | **ALL**

snmptraps --help

Description Use this command to manage specific Simple Network Management Protocol (SNMP) traps.

Use the --send option to send a specific SNMP trap to a recipient indicated by its IP address. Or use the --send option without operands to send all supported traps to all configured SNMP trap recipients. When the command is issued to send all traps, the message returned indicates only the total number of traps sent and not the individual trap names.

In Fabric OS v7.0.0 and later you can block or unblock certain port traps on specified ports. This feature provides control over a subset of port traps including the following: SwFCPortScn, ConnUnitPortStatusChange, and SwFabricSegmentTrap.

Use the --show option with the port operand to display the status of blocked ports. When used without operands, the --show option displays all Management Information Base (MIB) objects and associated traps that are supported in Fabric OS.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--send

Sends one or all SNMP traps to all configured recipients or to a specified recipient. The following operands are optional:

-trap_name *trap_name*

Specifies the trap by name. Use snmptraps --show for a listing of valid traps.

-ip_address *ip_address*

Specifies the recipient by its IP address in IPv4 or IPv6 format. IPv6 addresses require Fabric OS v6.4.0 or later.

--block [*slot*]*port*

Blocks the following port traps on the specified port: SwFCPortScn, ConnUnitPortStatusChange, and SwFabricSegmentTrap.

--unblock [*slot*]*port* | **ALL**

Removes the trap blocking from the specified port or from all ports.

--show [port]

Displays all configured SNMP traps and MIBs. When used with the optional port argument, this command displays the ports that are blocked from receiving certain software traps.

--help

Displays the command usage.

Examples

To send all traps to the configured recipients:

```
switch:admin> snmpTraps --send
Number of traps sent : 27
```

To send a FRU history trap to recipient 172.16.0.12

```
switch:admin> snmptraps --send -trap_name \
    fru-history-trap -ip_address 172.16.0.12.
Number of traps sent : 1
```

To display the traps and MIBs supported in Fabric OS:

```
switch:admin> snmpTraps --show
```

#	Mib Name	Supported Traps
001	SW-MIB	sw-fc-port-scn sw-ip-v6-change-trap sw-pmgr-event-trap sw-event-trap sw-fabric-reconfig-trap sw-fabric-segment-trap sw-state-change-trap sw-zone-config-change-trap sw-port-move-trap sw-brcd-generic-trap sw-device-status-trap
002	FICON-MIB	link-rnid-device-registration link-rnid-device-deregistration link-lirr-listener-added link-lirr-listener-removed link-rlir-failure-incident
003	FA-MIB	conn-unit-status-change conn-unit-port-status-change conn-unit-event-trap
004	MIB-2	cold-restart-trap warm-restart-trap
005	IF-MIB	if-link-up-trap if-link-down-trap
006	RFC1157	snmp-authetication-trap
007	HA-MIB	fru-status-change-trap fru-history-trap cp-status-change-trap
008	MAPS-MIB	maps-trap maps-quiet-time-trap
009	T11-FC-ZONE-SERVER-MIB	t11ZsRequestRejectNotify t11ZsMergeSuccessNotify t11ZsMergeFailureNotify t11ZsDefZoneChangeNotify t11ZsActivateNotify

Note: The Zone Mib parameters are for restricted usage only.

To block a single port from receiving traps:

```
switch:admin> snmpTraps --block 17
```

To unblock a previously blocked port:

```
switch:admin> snmpTraps --unblock 17
```

To display the blocked port status:

```
switch:admin> snmpTraps --show port
Port      0      1      2      3      4      5      6      7      8      9
-----
Blocked   |      |      |      |      |      |      |      |      |
Port     10     11     12     13     14     15     16     17     18     19
-----
Blocked   |      |      |      |      |      |      | Y   | Y   |
Port     20     21     22     23     24     25     26     27     28     29
-----
Blocked   |      |      |      |      |      |      |      |      |
Port     30     31     32     33     34     35     36     37     38     39
-----
Blocked   |      |      |      |      |      |      |      |      |
```

SEE ALSO [snmpConfig](#)

spinFab

Runs functional test of interswitch link (ISL) cabling and trunk group operation.

Synopsis

spinfab
 [-nmegs *count*]
 [-framesize *bytes*]
 [-ports *itemlist*]
 [-setfail *mode*]
 [-fports *flag*]
 [-nframes *number*]
 [-pattern *number/name*]
 [-timeout *length*]

Description

Use this command to verify the intended functional operation of interswitch links (ISLs) at the maximum speed by setting up the routing hardware so that test frames received by each E_Port are retransmitted on the same E_Port. Several frames are subsequently sent to the neighbor port attached to each active E_Port specified. Because the default action for such frames is to route them back to the sender, which never occurs during normal traffic, the frames circulate until the test terminates.

The frames are continuously transmitted and received in all ports in parallel. For SFP ports, the port LEDs flicker green rapidly while the test is running. The ICL or QSFP port LEDs glow steady green and blinking is not supported.

M->N/M->M loopback ports are tested as well, using the same algorithm, if loopback cables or loopback plugs are present in the switch.

While the frames are circulating, the RX frame count and port CRC and encoder error statistics are monitored. If a port stops or a low-level error occurs, the test generates an error message. Every one million frames, the circulating frames are captured to verify that they are still circulating and in the appropriate order. In this manner, the test can verify the entire path to the remote switch as well as the proper in-order delivery operation of any trunk groups present.

In case of trunk master ports, all the slave ports are also monitored for low-level errors.

The switch remains in normal operation while this test is running. However, some performance degradation may occur due to the ISLs being saturated with test frames. For this reason, use caution when running this test on live fabrics. Consider testing only one trunk group or ISL at a time, and do not run the tests for extended periods of time.

Combine this test with portLoopBackTest for ISL link failure isolation. If spinFab fails, replace the cable with a loopback plug and run portLoopBackTest to verify the local switch and media. If these pass, the fault lies in the cable, the remote switch, or media.

The frame size depends on the amount of buffer credit available on the port. There are eight possible frames that can be sent. Especially with trunking groups, all eight possible frames are used unless there is extensive traffic running on the link. The payload sizes of those eight frames are 1024, 12, 8, 1024, 512, 1024, 12, and 1024.

Notes The following port types support the spinFab diagnostics.

- Loopback ports
- AE_Ports
- E_Ports
- Interchassis link (ICL) E_Ports
- ICLs configured as D_Ports
- D_Ports
- F_Ports connected to Brocade-branded HBA
- Trunk master ports
- Trunk slave ports
- Ports in logical switches
- Ports in Base Switches
- Loopback ports in D_Port mode between two logical switches on the same switch
- Ports on non-VF connected to VF-configured switch
- Long distance ports
- D_Ports connected to AG switch in D_Port mode
- ICL D_Ports connected to AG switch in D_Port mode
- Loopback ports in D_Port mode connected to AG switch

The following ports do not support the spinFab test:

- F_Ports connected to non-Brocade-branded HBA
- F_Port connections to N_Port on AG switch
- F_Port on VF-enabled switch
- Ports on AG switch connected to HBA
- AE_Ports
- AF_Ports
- EX_Ports
- E_Ports connected to EX_Ports
- Core blade connected to port blade

When trunk groups are present, the entire trunk group must be included in the range of ports to test or false failure notifications may occur. If multiple ISL links are present between two switches that support trunking, then it is likely that trunk groups are present and all ports between the two switches should be tested at the same time.

You cannot interrupt the test by pressing the return key (<cr>).

This command supports a maximum of 16 paths to a single remote domain.

When new logical switches are created, appropriate switch domain must be set to avoid domain ID overlap when running spinfab. With insistent DID turned off to overcome this issue, DID negotiation depends on when the switch is powered on. A reboot of the switches with links already established re-configures the domain if the domain ID is already in use by another switch in the fabric, to avoid convergence.

Spinfab tests skips F_Ports if Virtual Fabric is enabled on any platform.

Spinfab is not supported on F_Port that is configured as a D_Port. Please use the portDPortTest command for the link validation on F_Ports configured as D_Ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-nmegs *count*

Specifies the number of frames to send in millions. The test progresses until the specified number of frames has been transmitted on each port. The default value is 10 million frames. This command only approximately counts the frames and the actual number of frames sent will be slightly larger, particularly at link speeds of 4 Gbps or higher.

-framesize *bytes*

For internal use only. Not supported.

-ports *itemlist*

Specifies a list of user ports to test. By default, all of the ISL ports in the current switch are tested. Refer to itemList for further details.

-setfail *mode*

Instructs spinFab how to mark failed ports. Valid values include the following:

0

Does not mark failing ports as FAILED (default). This option minimizes the impact on live fabrics.

1

Marks the failing ports as FAILED. In test or qualification environments without live traffic, this may be useful with large values of -nmegs count. This mode is disabled by default.

-fports *flag*

Instructs spinFab to include or exclude F_Ports in the testing. This feature is disabled by default. If enabled, spinFab tests the F_Ports connected to Brocade-branded HBAs along with other valid ports (E-ports & Loopback ports). The HBA must be running firmware v2.1.1 or higher. Valid flag values include the following:

0

Does not include F_Ports in the port list for testing (default).

1

Includes F_Ports in the port list for testing.

-nframes *number*

Determines how many frames will be sent by spinfab on the link to spin. Default is 2. The maximum number is 5. If you want to configure more than 5 use -nframes 0.

-pattern *number/name*

Forces spinfab to use a particular data pattern for the frames it spins between ports. The pattern can be a user defined pattern or is selected from a set of twenty five predefined pattern types. Use the `datatype` command to view the predefined patterns supported with spinfab. For each pattern, the `datatype` command displays the name, the pattern type number, and an example. Specify the pattern by its name after the `-pattern` option. If pattern is not specified, it defaults to `jCRPAT` (type=17). To use a user defined pattern, follow the `-pattern` option with a 32 bit hexadecimal number.

-timeout *length*

Defines a time limit (in seconds) for the running of spinfab. Spinfab will keep track of how long the test has run and stop testing once the timeout limit has been reached. The overall accuracy will be in the tens of seconds.

Diagnostics

When it detects failures, the test may report one or more of the following error messages. If errors persist, contact Technical Support.

```
DATA
ERR_STAT
ERR_STATS
ERR_STATS_2LONG
ERR_STATS_BADEOF
ERR_STATS_BADOS
ERR_STATS_C3DISC
ERR_STATS_CRC
ERR_STATS_ENCIN
ERR_STATS_ENCOUT
ERR_STATS_TRUNC
ERR_STAT_2LONG
ERR_STAT_BADEOF
ERR_STAT_BADOS
ERR_STAT_C3DISC
ERR_STAT_CRC
ERR_STAT_ENCIN
ERR_STAT_ENCOUT
ERR_STAT_TRUNC
FINISH_MSG_ERR
INIT
MBUF_STATE_ERR
NO_SEGMENT
PORT_ABSENT
PORT_DIED
PORT_ENABLE
PORT_M2M
PORT_STOPPED
PORT_WRONG
RXQ_RAM_PERR
STATS
STATS_C3FRX
STATS_FRX
STATS_FTX
TIMEOUT
XMIT
```

Examples To test cascading ISLs:

```
switch:admin> spinfab -ports 1/0 - 1/2
spinfab running...
spinfab: Completed 11 megs, status:  passed.
      port 0 test status: 0x00000000 -- passed.
      port 1 test status: 0x00000000 -- passed.
      port 2 test status: 0x00000000 -- passed.
Test Complete: "spinfab" Pass 10 of 10
Duration 0 hr, 0 min & 41 sec (0:0:41:877).
passed.
```

SEE ALSO [itemList](#), [portLoopbackTest](#), [portPerfShow](#)

sshUtil

Manages public key authentication.

Synopsis

sshutil allowuser *user name*

sshutil showuser

sshutil importpubkey

sshutil showpubkeys

sshutil delpubkeys

sshutil genkey [-rsa | -dsa | -ecdsa]

sshutil exportpubkey

sshutil delprivkey

sshutil delknownhost [-all]

sshutil genhostkey [-rsa | -dsa | -ecdsa]

sshutil showhostkey

sshutil delhostkey [-rsa | -dsa | -ecdsa]

sshutil rekeyinterval *value*

sshutil showrekey

sshutil help

Description Use this command to enable and manage SSH public key authentication on a switch. SSH public key authentication provides a mechanism for authenticating an authorized user without a password. SSH public key authentication is more secure than password authentication and can be used to securely access services that require automatic login.

SSH public key authentication works as follows: An authorized user generates a pair of encryption keys (public and private) on a local machine (a switch or a server). Messages encrypted with the private key can only be decrypted by the public key, and vice versa. The private key remains on the local machine; the public key is exported to a remote host. The remote host responds to login requests by sending a brief message encrypted with the public key. The private key on the local host decrypts the message, and the login succeeds.

Use the sshUtil command to do the following:

- Configure a user to manage keys on a switch.
- Generate a private/public key pair on the local switch.
- Import a public key for a specified user from a remote host to the local switch.
- Export the public key from the local switch to a remote host.
- Delete the public keys associated with a specified user or all users on the local switch.
- Delete the private key on the local switch.
- Delete the known host name or IP address from the file .ssh/known_hosts.
- Generate, display, and delete the SSH host keys.
- Configure and display SSH rekey interval.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Outgoing public key authentication from the switch to a remote host is restricted to Fabric OS Commands which use secure copy (SCP), such as configDownload or configUpload.

This command supports generation of a public/private key pair on the switch to enable outgoing connections between a switch and a remote host. To set up incoming connections, you must first generate the public/private key pair on a remote host and then import the public key to the switch. Use the SSH utility ssh-keygen -t dsa to generate the keys on the remote host. Refer to your UNIX system documentation for details on this command.

Operands This command supports the following operands:

allowuser *user name*

Configures the specified user to perform key management operations such as to generate a key pair, export the public key, and delete the private key. The default admin is, by default, a configured user. Only one user can be configured at any given time.

The following operand is required:

user name

Specifies login name for the configured user. The user must be in the switch user database and must have admin privileges on the switch.

showuser

Displays the currently configured user. This operation can only be performed by the default admin.

importpubkey

Imports a public key from a remote host to the local switch. The protocol used is SCP. This operation supports authentication for incoming connections. For this operation to succeed, a public/private key pair must be generated on the remote host prior to the import by issuing `ssh-genkey -t dsa` (a UNIX command). The command prompts for a user name for whom the public key is imported. Once the public key is imported successfully, the user for whom the key was imported can perform public key authentication with the switch from the remote host, on which the private key resides.

importpubkey prompts for the following input parameters:

Username

Enter the user name for whom the key is imported.

IP Address

Enter the IP address for the remote host. IPv4 and IPv6 addresses are supported.

remote directory

Enter the path where the public key is stored on the remote host. The default directory where SSH stores public keys is `~username/.ssh`.

public key name

Enter the name of the file in which the public key is stored on the remote host. This is a user-generated file name that must have a `.pub` extension.

login name

Enter the user login name for the remote host.

password

Enter the password for the remote user.

showpubkeys

Displays all imported public keys associated with the specified user. Public keys generated on the switch are not shown. This command interactively prompts for a username.

username

Enter the username for whom you want to display the public keys.

delpubkey

Deletes all imported public keys associated with a specified user on the switch or with all users. This command prompts for the user name associated with the public keys. Enter "all" to delete the public keys of all users. Deletion of a configured user's public keys effectively blocks incoming connections from this user that rely on public key authentication with the switch.

genkey [-rsa | -dsa | -ecdsa]

Generates a private or public key pair for the selected type on the local switch. This option can be performed only by a configured user. This option enables authentication for outgoing connections from the switch to a remote host. You must export the public key to a remote host to complete the setup. For incoming connections, the private or public key must first be generated on the remote host by issuing `ssh-genkey -t dsa` (a UNIX command), and then importing the public key from the remote host to the switch using the `sshutil import` command.

genkey prompts for user input on the following parameters:

passphrase

Accepts a string of arbitrary length. This operand is optional, but creating a pass phrase is strongly recommended. A strong pass phrase is 10–30 characters long, fairly complex and difficult to guess, and contains a mix of upper and lowercase letters, numbers, and nonalphanumeric characters. There is no way to recover a lost pass phrase. If the pass phrase is lost, a new key must be generated and copied to the corresponding public key to other machines.

exportpubkey

Exports the public key from the switch to a specified remote host to support outgoing connections from the switch to a remote host. This option can only be performed by a configured user. The successfully exported public key must be appended to the `authorized_keys` file on the remote host. Use the `cat ~/.ssh/outgoing.pub >> ~/.ssh/authorized_keys` command to append the file.

exportpubkey prompts for IP Address, remote directory, login name and password. Refer to importpubkey for a description of these parameters.

delprivkey

Deletes the private key for outgoing connection from the switch. This option can only be performed by a configured user. Deletion of a configured user's private keys effectively blocks outgoing connections initiated by this user that rely on public key authentication with a remote host.

delknownhost [-all]

Deletes the known host name or IP address from the file `.ssh/known_hosts`. This option can only be performed by the authorized user. On deletion of a known host name or IP address from the `.ssh/known_hosts` file, the next SSH connection prompts the user to accept a new public key.

-all

Deletes all the known host names or IP addresses from the file.

genhostkey [-rsa | -dsa | -ecdsa]

Generates a host key and installs it on the switch.

showhostkey

Displays the host keys installed on the switch.

delhostkey [-rsa | -dsa | -ecdsa]

Deletes the host keys installed on the switch.

rekeyinterval *value*

Configures time duration in seconds for regenerating the session keys. The rekey process is initiated after every configured seconds. Valid values are 0, or from 900 through 3600. If you set the rekey interval to 0, rekey process is not initiate for the session.

showrekey

Displays the configured rekey interval in seconds.

help

Displays the command usage.

Examples To configure a user for public key authentication:

```
switch:admin> sshutil allowuser username
Allowed user has been successfully changed to username.
```

To display the configured user:

```
switch:admin> sshutil showuser
username
```

To set up SSH public key authentication on a switch for incoming connections:

1. Generate a private/public key pair on a remote host (accept default directory and file name):

```
username@remotehost> ssh-keygen -t dsa
Generating public/private dsa key pair.
Enter file in which to save the key \
(/users/home/username/.ssh/id_dsa):
Enter passphrase (empty for no passphrase):passphrase
Enter same passphrase again: passphrase
Your identification has been saved in \
/users/home/username/.ssh/id_dsa.
Your public key has been saved in \
/users/home/username/.ssh/id_dsa.pub.
The key fingerprint is:
3 0:9f:ae:b6:7f:7e:55:e4:b2:7a:51:f0:95:44:5c:d1
```

2. Import the public key from the remote host to the local switch:

```
switch:username> sshutil importpubkey
Enter user name for whom key is imported: username
Enter IP address:Remote host IP Address
Enter remote directory: ~username/.ssh
Enter public key name(must have .pub suffix):id_dsa.pub
Enter login name:username
Password:*****
public key is imported successfully.
```

3. Connect to switch using remote ssh client with the -i private_key option:

```
username@remotehost> ssh username@IP Address-i id_dsaIP Address-i id_dsaIP
Address-i id_dsa
```

To display the imported public keys on a switch:

```
switch:username> sshutil showpubkeys
Enter user name whose ssh public key is to be displayed: username
user's public keys
ssh-dss AAAAB3NzaC1kc3MAAACBANXuRsJoIA0PFJtGuZVLfqvfSr\
DYPPlWuFouOmTcmuNvpTnd+yoZ
u3C/lAu930HLTmhfxeke/NWRIdj2MJS8yTf30a0u4bf9MSNB8Pt453P/+ \
7VHHxNBYsh+Z++DvlhfcTeb
0s53bdf7jyYSUdjlk+w//sNTaz0DCs0+rimo4l2NAAAFQDCuHKRctSH \
D8PRYu5EelyWCQKT/wAAAIAo
AMvrlooq0JVXmXfd0VKcC7AImzFYgRa/FOxZBe4JDkCAXztFk5wnAFy \
UbyTWEoC955mkYGqZRydMrSNM
9wLCAf2DTxXxuHFujA1REL5NGdZqRw02Sk5HLkYQQYm1w9r9vfK \
QnFH3wYsnHV2sq7+tyRlXfwE416ee
```



```
chdwWVpmjgAAAIEAqxcaE1vY4o/cBq1Py62lPaZTcfOHS3jjdKgSO \
BKPCCVeNyx4gxnmqvihtyroeway
dBDK4CFgyhut16a/QmdFjn6iyiNR2SGV7X9xqkjPN8H4EhIPXGxoD \
VofY1Vdt3V3KUxVeEI+vTBI2KJd
PmmLfyeKZqCH0lwBx+HuuZP2BnU= username@host
```

To delete all imported public keys for a single user:

```
switch:username> sshutil delpubkeys
Enter user name for whom ssh public key is to be deleted \
or all for all users:username
WARNING: It deletes all the ssh public keys for user. \
Do you want to proceed(Yes or No, default is No)?yes
ssh public keys associated to username are deleted.
```

To set up SSH public key authentication on a switch for outgoing connections:

1. Generate a private/public key pair on the local switch:

```
switch:username> sshutil genkey -rsa
Enter passphrase (empty for no passphrase):passphrase
Enter same passphrase again: passphrase
Key pair generated successfully.
```

2. Export the public key to a remote host:

```
switch:username> sshutil exportpubkey
Enter IP address: remote host IP Address
Enter remote directory: ~username/.ssh
Enter login name:username
Password:*****
public key out_going.pub is exported successfully.
```

3. Append the public key to the authorized_keys file on the remote host:

```
username@remotehost> cat ~/.ssh/outgoing.pub >> \
~/.ssh/authorized_keys
```

To delete the private key on a switch:

```
switch:username> sshutil delprivkey
private key is deleted successfully.
```

To delete a known host or IP address from the file .ssh/known_hosts:

```
switch:username> sshutil delknownhost
IP Address/Hostname to be deleted:172.26.26.104
```

To delete all the known hosts or IP addresses from the file .ssh/known_hosts:

```
switch:username> sshutil delknownhost -all
This Command will delete all the known host keys.
Please Confirm with Yes(Y,y), No(N,n) [N]: Y

All known hosts are successfully deleted.
```

To configure the rekey interval to 900 seconds:

```
switch:username> sshutil rekeyinterval 900
```

To display the configured rekey interval:

```
switch:username> sshutil showrekey  
configured rekey duration 900 seconds.
```

SEE ALSO None

statsClear

Clears port and diagnostic statistics.

Synopsis

```
statsclear
  [--slot slot]
  [-uports itemlist]
  [-bports itemlist]
  [-use_bports value]
```

Description

Use this command to clear the port and diagnostics statistics for the specified list of blade or user ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following are optional:

--slot *slot*

Specifies the slot on which to operate. If this option is not specified, the default slot is assumed. The default slot is 0 and designed to operate on fixed-port-count products, if -use_bports sets with nonzero value.

-uports *itemlist*

Specifies the list of user ports for which statistics are to be cleared.

-bports *itemlist*

Specifies the list of blade ports for which statistics are to be cleared.

-use_bports *value*

Specify a nonzero value to clear the diagnostics statistics for the blade ports specified in -bports clears. A value of zero (0) clears the user ports specified in -uports. The default value is 0.

Examples

To clear port and diagnostic statistics:

```
switch:admin> statsclear -bports 1/10-1/62 -use_bports 1
```

SEE ALSO

[itemList](#)

stopPortTest

Terminates the running portTest.

Synopsis **stopporttest** [-ports *itemlist*]

Description Use this command to terminate the portTest command. Refer to the portTest help page for more information.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

-ports *itemlist* Terminates the test on the specified ports; this operand is optional; if omitted, the test is terminated on all ports. Refer to the itemList help page for more information.

Examples To stop the portTest command:

```
switch:admin> stopporttest
```

SEE ALSO [portLoopbackTest](#), [portTest](#), [portTestShow](#), [spinFab](#)

supportFfdc

Modifies or displays the first-fault data capture (FFDC) daemon.

Synopsis **supportffdc [--disable | --enable | --show]**

Description Use this command to disable or enable the FFDC events, or to display the current configuration. If disabled, the daemon does not capture any data even when a message with FFDC attributes is logged. FFDC is enabled by default. When executed without operands, the command prints the usage.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--disable	Disables the FFDC.
--enable	Enables the FFDC.
--show	Displays the FFDC configuration parameters.

Examples To display the FFDC configuration:

```
switch:admin> supportffdc --show  
First Failure Data Capture (FFDC) is disabled.
```

To enable the FFDC events:

```
switch:admin> supportffdc --enable  
First Failure Data Capture (FFDC) is enabled.
```

SEE ALSO None

supportFtp

Sets, clears, or displays support FTP parameters and enables or disables auto file transfer.

Synopsis

supportftp [-S]

supportftp -s [-h *host*][-u *username*][-p *password*]
[-d *remotedirectory*] [-l *protocol*]

supportftp -t *hours*

supportftp -R

supportftp -e

supportftp -d

Description

Use this command to set, clear, or display supportFtp parameters. The parameters set by this command are used by the supportSave and traceDump commands.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-S

Displays the current supportFtp parameters.

-s

Sets the supportFtp parameters. The following operands are optional. If the -s option is specified without further operands, the command interactively prompts for these parameters.

-h *host*

Specifies the host. Provide an IP address or a server name. IPv4 and IPv6 addresses are supported. To specify the host by name, a DNS entry must exist for the server.

-u *username*

Specifies the user name. The user name must be less than 48 characters long.

-p *password*

Specifies the account password. The password must be less than 48 characters long. When using the reserved user names such as anonymous or FTP, a password is not required.

-d *remotedirectory*

Specifies the remote directory where the trace dump files are stored. The directory name must be less than 48 characters long. Specifying the root directory as the remote directory (/) is not allowed.

-l *protocol*

Specifies the transfer protocol. Valid values are file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP).

-t hours

Specifies the time interval, in units of hours, at which the server connectivity is checked. The fractional value for time interval is converted to the nearest lower integer value, for example, a value of 6.5 hours is truncated to 6 hours.

-R

Clears all supportFtp parameters.

-e

Enables auto file transfer. Trace dump files are automatically transferred to a designated FTP server. The server parameters must be set before you can enable auto file transfer.

-d

Disables auto file transfer.

Examples

To set the FTP parameters:

```
switch:admin> supportftp -s -h 1080::8:800:200C:417A \
-u admin -p password -d support -l sftp
supportftp: ftp parameters changed.
```

To display the FTP parameters:

```
switch:admin> supportftp
Host IP Addr: 1080::8:800:200C:417A
User name: admin
Remote Dir: support
Auto Upload protocol: sftp
Auto-FTP: Off
```

To set FTP parameters interactively:

```
switch:admin> supportftp -s
Host IP Addr[1080::8:800:200C:417A]:192.168.67.126
User Name[admin]: admin
Password[*****]:password
Remote Dir[support]:
Auto upload protocol[ftp]:scp
Auto file transfer parameters changed
```

To set the time interval at which the FTP server connectivity is checked:

```
switch:admin> supportftp -t 24
supportftp: ftp check period changed.
```

To enable auto file transfer:

```
switch:admin> supportftp -e
support auto file transfer enabled.
```

To disable auto file transfer:

```
switch:admin> supportftp -d
support auto file transfer disabled.
```

SEE ALSO [supportSave](#), [supportShow](#), [traceDump](#)

supportInfoClear

Clears all the default port statistic counters and portlogs in a chassis or switch.

Synopsis **supportinfoclear --clear [-RASlog] [-force]**

supportinfoclear --help

Description Use this command to clear all the default port statistic counters, and portlogs in a chassis or switch. Use the -RASlog option to clear error logs along with statistics and portlogs on the active CP. On the standby CP, the -RASlog option clears only the error logs.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--clear	Clears port statistic counters and portlogs in a chassis or switch. The command prompts for a confirmation.
-RASlog	Clears error logs along with port statistic counters and portlogs in a chassis or switch. The command prompts for a confirmation.
-force	Executes without prompting for a confirmation.
--help	Displays command usage.

Examples To clear port statistic counters and portlogs:

```
switch:admin> supportinfoclear --clear
Execution of the command will clear the default collection of counters and port logs
in the chassis.
Would you like to continue [y/n]? : y
```

To clear port statistic counters and portlogs along with error logs:

```
switch:admin> supportinfoclear --clear -RASlog
Execution of the command will clear the error logs along with default collection of
counters and port logs in the chassis.
Would you like to continue [y/n]? : y
```

SEE ALSO [errClear](#), [portLogClear](#), [portStatsClear](#), [statsClear](#)

supportSave

Saves RASLOG, TRACE, supportShow, core file, FFDC data, and other support information

Synopsis

supportsave

```
supportsave [-n] [-c] [-k] [-a]
               [-u user_name -p password -h host_ip
               -d remote_dir -l protocol]
```

```
supportsave [-R]
```

```
supportsave [-U -d remote_dir]
```

```
supportsave [-t timeout_multiplier]
```

Description

Use this command to collect RASLOG, TRACE, supportShow, core file, FFDC data and other support information to a remote FTP location. On platforms that support USB, the information can also be stored on an attached USB device. On a dual-CP system, information is saved for the local and the remote CP. SupportShow information is available on Active and Standby CPs. To reduce the chance of missing the correct trace dump, supportSave retrieves old (the dump created prior to the current one) and new (the dump triggered by the command) trace dumps.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data are removed after the command has finished.

If there are blade processor (BP) blades installed on the switch, a support file (a.tar.gz file) is generated from each slot.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto file transfer and event notification to syslog will not work in the case where the Fabric OS version is downgraded. You must reconfigure auto file transfer and syslog with IPv4 IP addresses.

In a Virtual Fabric environment, supportSave saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If you use anonymous FTP to run supportSave on a chassis with multiple AP blades, configure the FTP Windows server to allow unlimited anonymous users.

Operands

When invoked without operands, this command goes into interactive mode. The following operands are optional:

-n

Does not prompt for confirmation. This operand is optional; if omitted, you are prompted for confirmation.

- c**
- Uses the FTP, SCP, or SFTP parameters saved by the supportFtp command. This operand is optional; if omitted, specify the FTP, SCP, or SFTP parameters through command line options or interactively. To display the current supportFTP parameters, run supportFtp (on a dual-CP system, run supportFtp on the active CP).
- The -c option is mutually exclusive with -u, -p, -h, and -d.
- k**
- Used to transfer the core and FFDC files. This operand can be specified with the -c and -n operands.
- a**
- Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.
- u *user_name***
- Specifies the user name for the FTP, SCP, or SFTP server. This operand is optional; if omitted, anonymous FTP is used.
- p *password***
- Specifies the password for the FTP, SCP, or SFTP server. This operand is optional with FTP; if omitted, anonymous FTP is used.
- h *host_ip***
- Specifies the IPv4 or IPv6 address for the remote server.
- d *remote_dir***
- Specifies the remote directory to which the file is to be transferred. By default, the remote directory is created in the /supportdirectory of the USB device.
- R**
- Removes all core files on the CP and BP. This option cannot be used with any other options.
- l *protocol***
- Specifies the transfer protocol. Valid values are file transfer protocol (FTP), secure copy (SCP), or secure FTP (SFTP).
- If you plan to use SCP to transfer files, it is important to test the supportSave command prior to its use with various SCP-mode services. Because the supportSave command makes several access requests to copy files, it is important that the SCP-mode service be configured so that passwords are not required for each attempted transfer by the supportSave command. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the supportSave command.
- When using secure copy (SCP), supportSave may create a directory specified by the -d option if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.
- U**
- Saves support data to an attached USB device. When using this option, a target directory must be specified with the -d option.

-t timeout_multiplier

Extends predefined SupportSave timeout values by the value of the timeout multiplier. Use this option to repeat the supportSave operation when supportSave completion indicates that one or more modules timed out during the process. For example, -t 2 doubles the timeout values for each of the SupportSave modules. Valid multiplier values are 2 to 5. The default is 1.

Examples

To save RASLOG, TRACE, supportShow, and other support information to an FTP server in interactive mode:

```
switch:admin> supportsave
This command collects RASLOG, TRACE, supportShow, \
  core file, FFDC data
and then transfer them to a FTP/SCP/SFTP server \
  or a USB device.
This operation can take several minutes.
NOTE: supportSave will transfer existing trace dump \
  file first, then
  automatically generate and transfer latest one. \
  There will be two trace dump
  files transferred after this command.
OK to proceed? (yes, y, no, n): [no] y

Host IP or Host Name: 192.168.126.115
User Name: admin
Password:*****
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP) [1]: 4
Remote Directory: /temp/support

Do you want to continue with CRA (Y/N) [N]: Y

Saving support information for chassis:HL51,module:RAS...
Saving support information for chassis:HL51,module:TRACE_OLD...
Saving support information for chassis:HL51,module:TRACE_NEW...
Saving support information for chassis:HL51,module:FABRIC...
Saving support information for chassis:HL51,module:CORE_FFDC...
Saving support information for chassis:HL51,module:DIAG...
Saving support information for chassis:HL51,module:RTE...
Saving support information for chassis:HL51,module:ISCSID_DBG...
Saving support information for chassis:HL51,module:AGDUMP...
Saving support information for chassis:HL51,module:SSHOW_PLOG...
Saving support information for chassis:HL51,module:SSHOW_OS...
Saving support information for chassis:HL51,module:SSHOW_EX...
Saving support information for chassis:HL51,module:SSHOW_FABRIC...
(output truncated)
```

To collect support information on a switch and save it to an attached USB device (timeout values are doubled):

```
switch:admin> supportsave -U -d mysupportsave -t 2
Saving support information for switch:ras072, module:RAS...
.....

Saving support information for switch:ras072, module:FTR_START...
Saving support information for switch:ras072, module:SSHOW_SYS...
.....

Saving support information for switch:ras072, module:SSHOW_ISWITCH...

Saving support information for switch:ras072, module:FABRIC...
```

```

.....

Saving support information for switch:ras072, module:DIAG...
.....

Saving support information for switch:ras072, module:RTE...
Saving support information for switch:ras072, module:IF_TREE...
Saving support information for switch:ras072, module:ISCSID_DBG...
Saving support information for switch:ras072, module:AGDUMP...
Saving support information for switch:ras072, module:AGWWNS...
Saving support information for switch:ras072, module:AGWWN_CFG...
Saving support information for switch:ras072, module:VPWWN_CFG...
.....
(output truncated)

```

To run supportSave without confirmation on a chassis with AP blades included using supportFTP parameters (only Active CP output is shown):

```

switch:admin> supportsave -n -c
Saving support information for chassis:ras2,module:RAS...
Saving support information for chassis:ras2,module:TRACE_OLD...
Saving support information for chassis:ras2,module:TRACE_NEW...
Saving support information for chassis:ras2,module:FABRIC...
Saving support information for chassis:ras2,module:CORE_FFDC...
Saving support information for chassis:ras2,slot:4...
slot 4 support file transfer done.
Saving support information for chassis:ras2,slot:12...
slot 12 support file transfer done.
Saving support information for chassis:ras2,module:DIAG...
Saving support information for chassis:ras2,module:RTE...
Saving support information for chassis:ras2,module:ISCSID_DBG...
Saving support information for chassis:ras2,module:AGDUMP...
Saving support information for chassis:ras2,module:SSHOW_PLOG...
(output truncated)

```

SEE ALSO [supportShow](#), [supportFtp](#)

supportShow

Displays switch information for debugging purposes.

Synopsis **supportshow**

supportshow slot[/port1-port2] [lines]

Description Use this command to display support information from groups of preselected Fabric OS and Linux commands and other support and debugging information. You can specify a port or a range of ports for which to display this information. These commands are organized by groups, but note that the order of the groups listed below is not the same as executed by the command.

The FCIP commands are supported only on the Brocade 7800 switch and the Brocade FX8-24 blade. On unsupported platforms, the command displays a "not applicable to this platform" message next to the FCIP command group.

SupportShow executes commands in the following command groups. Use supportShowCfgenable or supportShowCfgDisable to modify the settings for each group.

os	OS group commands, enabled by default.
exception	Exception group commands, enabled by default.
port	Port group commands, enabled by default.
fabric	Fabric group commands, enabled by default.
services	Service group commands, enabled by default.
security	Security group commands, enabled by default.
network	Network group commands, enabled by default.
portlog	Portlog group commands, enabled by default.
system	System group commands, enabled by default.
extend	Extend group commands, disabled by default.
filter	Filter group commands, disabled by default.
ficon	FICON group commands, disabled by default.

iswitch	FC Router group commands, disabled by default.
asic_db	ASIC DB group commands, disabled by default.
fcip	FCIP group commands, disabled by default.
ag	Access Gateway group commands, disabled by default.
dce_hsl	DCE group commands, enabled by default.
crypto	Encryption group commands, disabled by default.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This is a diagnostic command and should only be run for diagnostic support.

Output generated by this command may vary by switch configuration and platform. Output may change without notice.

Operands This command has the following operands:

<i>slot</i>	On bladed systems only, specifies a slot number.
<i>port1-port2</i>	Specifies a port or a range of ports for which to display supportShow information. This operand is optional; if omitted, the command displays information for all ports. The following values are supported: <ul style="list-style-type: none"> • A single port in port1-port1 format, for example, "5/8-8". • A port range where the beginning and end port are separated by a dash, for example, "5/8-13".
<i>lines</i>	Specifies the number of lines for the portLogDump output. This parameter is valid only with the slot/port parameters.

Examples To display debugging information for a single port on a Brocade 5300:

```
switch:admin> supportshow 43
VF
=====
Date:
Sun Dec  6 05:10:13 PST 2009

Time Zone:
America/Los_Angeles

Version:
Kernel:      2.6.14.2
```

supportShow

```
Fabric OS: v6.4.0_main_bld09
Made on:   Tue Dec 1 20:04:36 2009
Flash:     Wed Dec 2 11:54:49 2009
BootProm:  1.0.15
```

```
supportshow groups enabled:
os          enabled
exception   enabled
port        enabled
fabric      enabled
services    enabled
security    enabled
network     enabled
portlog     enabled
system      enabled
extend      disabled
filter      disabled
ficon       disabled
iswitch     enabled
asic_db     enabled
fcip        disabled (not applicable to this platform)
ag          enabled
dce_hsl     enabled
```

```
**** Begin start_port_log_cmd group ****
Sun Dec  6 05:10:14 PST 2009
portlogdump:
CURRENT CONTEXT -- 0 , 128
portlogdump      :
time             task      event  port cmd  args
-----
Sat Dec 5 23:54:37 2009
23:54:37.560 FCPH      read    56 16 02fffc23,00fffc19, \
bb000000,00000000,04 3401bb
23:54:37.560 FCPH      seq     56 10 20290000,043401bb, \
00000722,0000001c,00 000000
23:54:37.560 msd0      ctin    56 fa 0001f007,00000000
23:54:37.561 msd0      ctout   56 fa 00018001,0009f300
(output truncated)
```

SEE ALSO [supportFtp](#), [supportSave](#), [supportShowCfgDisable](#), [supportShowCfgEnable](#), [supportShowCfgShow](#), [traceDump](#)

supportShowCfgDisable

Disables a group of commands under the supportShow command.

Synopsis **supportshowcfgdisable** os | exception | port | fabric
 | services | security | network | portlog | system | extend
 | filter | ficon | iswitch | asic_db | ag
 | dce_hsl | crypto | fcip

Description Use this command to disable a group of commands under the supportShow command. Use the supportShowCfgEnable command to enable groups of commands.

The FCIP commands are supported only on the Brocade FX8-24 platform and cannot be configured to collect data on unsupported platforms.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

- os** Disables the OS group commands.
- exception** Disables the exception group commands.
- port** Disables the port group commands.
- fabric** Disables the fabric group commands.
- services** Disables the service group commands.
- security** Disables the security group commands.
- network** Disables the network group commands.
- portlog** Disables the portlog group commands.
- system** Disables the system group commands.
- extend** Disables the extend group commands.
- filter** Disables the filter group commands.
- ficon** Disables the FICON group commands.

supportShowCfgDisable

iswitch	Disables the FC Router group commands.
asic_db	Disables the ASIC DB group commands.
ag	Disables the Access Gateway group commands.
dce_hsl	Disables the DCE group commands.
crypto	Disables the encryption group commands
fcip	Disables the FCIP group commands. Supported only on the Brocade FX8-24.

Examples To disable the OS group of commands under the supportShow command:

```
switch:admin> supportshowcfgdisable os  
Config update Succeeded
```

SEE ALSO [supportShow](#), [supportShowCfgEnable](#), [supportShowCfgShow](#)

supportShowCfgEnable

Enables a group of commands to be displayed under the supportShow command.

Synopsis **supportshowcfgenable** os | exception | port | fabric
 | services | security | network | portlog | system
 | extend | filter | ficon | iswitch | asic_db
 | ag | dce_hsl | crypto | fcip

Description Use this command to enable a group of commands to be displayed under the supportShow command. Use the supportShowCfgDisable command to disable groups of commands.

The FCIP commands are supported only on the Brocade FX8-24 platform and cannot be configured to collect data on unsupported platforms.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

os	Enables the OS group commands.
exception	Enables the exception group commands.
port	Enables the port group commands.
fabric	Enables the fabric group commands.
services	Enables the service group commands.
security	Enables the security group commands.
network	Enables the network group commands.
portlog	Enables the portlog group commands.
system	Enables the system group commands.
extend	Enables the extend group commands.
filter	Enables the filter group commands.
ficon	Enables the FICON group commands.

supportShowCfgEnable

iswitch	Enables the FC Router group commands.
asic_db	Enables the ASIC DB group commands.
ag	Enables the Access Gateway group commands.
dce_hsl	Disables the DCE group commands
crypto	Enables the encryption group commands.
fcip	Enables the FCIP group commands. Supported only on the Brocade FX8-24 platform.

Examples To enable a group of commands under the supportShow command:

```
switch:admin> supportshowcfgenable os  
Config update Succeeded
```

SEE ALSO [supportShow](#), [supportShowCfgDisable](#), [supportShowCfgShow](#)

supportShowCfgShow

Displays the groups of commands enabled for display by the supportShow command.

Synopsis **supportshowcfgshow**

Description Use this command to display the groups of commands enabled for display by the supportShow command. Use the supportShowCfgEnable and the supportShowCfgDisable commands to modify which groups are displayed.

The FCIP commands are supported only on the Brocade FX8-24 platform and cannot be configured to collect or display data on unsupported platforms.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display command groups configured for data collection on the Brocade 6510:

```
switch:admin> supportshowcfgshow
os             enabled
exception      enabled
port           enabled
fabric         enabled
services       enabled
security       enabled
network        enabled
portlog        enabled
system         enabled
extend         disabled
filter         disabled
ficon          disabled
iswitch        disabled
asic_db        enabled
fcip           disabled (not applicable to this platform)
ag             disabled
```

To display command groups configured for data collection on the Brocade 7800

```
switch:admin> supportshowcfgshow
os             enabled
exception      enabled
port           enabled
fabric         enabled
services       enabled
security       enabled
network        enabled
portlog        enabled
system         enabled
extend         disabled
filter         disabled
ficon          disabled
```

supportShowCfgShow

iswitch	enabled
asic_db	enabled
fcip	enabled
ag	enabled
dce_hsl	enabled

SEE ALSO [supportShow](#), [supportShowCfgDisable](#), [supportShowCfgEnable](#)

switchBeacon

Sets switch beaconing mode on or off.

Synopsis **switchbeacon** [*mode*]

Description Use this command to enable or disable switch beaconing mode. Switch beaconing can be used to locate a failing unit.

When beaconing mode is turned on, the port LEDs flash amber, left to right and right to left, from port 0 to the highest port number and back to port 0. The beaconing mode continues until you turn it off.

The beaconing LED pattern continues until you turn it off. Beaconing mode takes over the port LEDs. Other commands are still executable and functional. The normal flashing LED pattern (associated with an active, faulty or disabled port for example) is suppressed and only the beaconing pattern is shown. However, if diagnostic frame-based tests (such as portLoopbackTest) are executed, two patterns are interleaved. The diagnostic test flickers the LEDs green and the beaconing mode runs the LEDs amber at the same time.

The switchBeacon command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The portBeacon command enables or disables beaconing on a specified port.
- The switchBeacon command enables or disables beaconing on all ports in the current logical switch.
- The chassisBeacon command enables or disables beaconing on all ports in the chassis.
- The portPeerBeacon command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. For example, if you enabled beaconing on the logical switch (1) and you want to enable beaconing on the entire chassis, you must first disable switch beaconing with the switchBeacon command before you can use the chassisBeacon command to enable beaconing on the entire chassis. Likewise, existing portBeacon settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

To determine beaconing status, use the switchBeacon or chassisBeacon command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the portBeacon --showcommand to display beaconing for a specific port. The switchShow command displays the status of the switchBeacon command only.

Notes The switchBeacon command is not supported on the Brocade FCOE10-24 blade.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

mode

Specify 1 to enable beaconing mode or 0 to disable beaconing mode. This operand is optional. If no operand is specified, the current value is displayed.

switchBeacon

Examples To turn beaconing mode on and to verify the configuration:

```
switch:admin> switchbeacon 1  
switch:admin> switchbeacon  
value = 1
```

To turn beaconing mode off to verify the configuration::

```
switch:admin> switchbeacon 0  
switch:admin> switchbeacon  
value = 0
```

SEE ALSO [chassisBeacon](#), [portBeacon](#), [portPeerBeacon](#), [switchShow](#)

switchCfgPersistentDisable

Disables a switch persistently.

Synopsis **switchcfgpersistentdisable**

switchcfgpersistentdisable --setdisablestate

switchcfgpersistentdisable --disable

switchcfgpersistentdisable --help

Description Use this command to persistently disable the switch immediately or after reboot. All Fibre Channel ports are taken offline. If the switch was part of a fabric, the remaining switches reconfigure. The switch remains disabled even after a reboot.

As each port is disabled, the front panel LEDs change to a slow-flashing amber.

You can temporarily enable a persistently disabled switch with the switchEnable command. A temporarily enabled switch remains disabled after a reboot.

Notes Performance Monitoring cannot be added to any port on a persistently disabled switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--setdisablestate Sets the switch in disable state. The switch is disabled persistently after the next reboot.

--disable Disables the switch persistently.

--help Displays command usage.

Examples To disable a switch persistently:

```
switch:admin> switchcfgpersistentdisable
Switch's persistent state set to 'disabled'
```

To set the state of a switch to disable so that the switch is disabled during next reboot:

```
switch:admin> switchcfgpersistentdisable -setdisablestate
Switch's persistent state set to 'disabled'
Switch persistent disable set
```

SEE ALSO [switchDisable](#), [switchEnable](#), [switchCfgPersistentEnable](#), [switchShow](#)

switchCfgPersistentEnable

Enables a switch persistently.

Synopsis **switchcfgpersistentenable**

Description Use this command to persistently enable a persistently disabled switch. All Fibre Channel ports that passed the power-on self-test (POST) are enabled and come online if connected to a device, or remain offline if disconnected. The switch may need to be enabled if it was previously disabled to make configuration changes or to run diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. If this switch remains the principal switch, it assigns itself a domain ID. If another switch assumes the principal role, then this switch becomes a subordinate switch, and accepts a domain ID from the principal. Refer to the FC-SW specification for a complete description of this process.

As each port is enabled, the front panel LEDs change from slow-flashing amber to green for online ports, or to nonflashing amber for ports that do not initialize. Disconnected ports remain unlit.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To persistently enable a previously persistently disabled switch:

```
switch:admin> switchcfgpersistentenable  
Switch's persistent state set to 'enabled'
```

SEE ALSO [switchDisable](#), [switchEnable](#), [switchCfgPersistentDisable](#), [switchShow](#)

switchCfgSpeed

Configures the speed for all ports on a switch.

Synopsis **switchcfgspeed** *speed*

Description Use this command to configure the port speed on a switch. This command sets the speed for all user ports. If any port on the switch is not capable of the specified speed setting, an error message is displayed for that port. The configuration is saved in nonvolatile memory and persists across switch reboots or power cycles.

On 16 Gbps-capable and 32 Gbps-capable platforms, the switchCfgSpeed command checks if the requested speed is allowed, based on the combination configured for the octet that contains the first eight physical ports of the switch or blade. If the requested speed is not supported by the current octet speed combination, this command logs a RASlog message and moves on to the next port. Use the portCfgOctetSpeedCombo command to set the suggested combination before re-executing the switchCfgSpeed command.

Use the portShow command to display actual port speed settings. Use the portCfgShow command to display user-configured speed settings.

Notes This configuration cannot be set on VE_Ports or VEX_Ports.

Speed configuration is not applicable to FCoE ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

speed

Specifies the speed for all ports on a switch. This operand is required. Valid values are as follows:

0	Autosensing mode. The port automatically configures for the highest speed.
1	The port is set at a fixed speed of 1 Gbps (not supported on 10G and 16G platforms).
2	The port is set at a fixed speed of 2 Gbps.
4	The port is set at a fixed speed of 4 Gbps.
8	The port is set at a fixed speed of 8 Gbps.
16	The port is set at a fixed speed of 16 Gbps (not supported on 8G platforms).
32	The port is set at a fixed speed of 32 Gbps (not supported on 8G platforms).

switchCfgSpeed

Examples To set the autosensing mode for all ports on a switch:

```
switch:admin> switchcfgspeed 0  
Committing configuration...done.
```

SEE ALSO [portCfgOctetSpeedCombo](#), [portCfgSpeed](#), [portShow](#)

switchCfgTrunk

Enables or disables trunking on all the ports of a switch.

Synopsis **switchcfgtrunk mode**

Description Use this command to enable or disable trunking on all the ports of a switch. Use portCfgTrunkPort to enable or disable trunking on a single port.

When the command is executed to update the trunking configuration, the ports to which the configuration applies are disabled and subsequently re-enabled with the new trunking configuration. Traffic through these ports may be temporarily disrupted. The command issues a message that lists the VE/VEX_Ports to which the configuration does not apply.

Although trunking configuration changes are applied at the switch level, they are tracked as a per-port attribute and no switch-wide attribute is maintained to keep track of these changes. Whenever a new port comes online as part of the switch, you must reapply the trunking configuration. For example, If you remove a blade from a chassis while trunking is enabled for the ports on the blade, and you disable trunking on the switch after you removed the blade, the blade ports will come online with trunking enabled after you reinsert the blade. To avoid potentially disruptive behavior, reapply the trunking configuration.

Trunking on Inter-Chassis Link (ICL) ports is always enabled and cannot be turned off by this command.

Disabling trunking fails if a Trunk Area (TA) is enabled on the port.

Notes Enabling trunking requires an ISL Trunking license. You may disable trunking without a license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operand is required:

mode

Specify 1 to enable trunking on all ports. Specify 0 to disable trunking on all ports.

Examples To enable trunking on all ports of a switch:

```
switch:admin> switchcfgtrunk 1
Configuration applied to all ports except the following \
VE/VEX_Ports (ports 176 - 191).
```

To disable trunking on all ports of a switch:

```
switch:admin> switchcfgtrunk 0
Committing configuration...done.
```

SEE ALSO [portCfgShow](#), [portCfgTrunkPort](#), [portShow](#), [switchShow](#)

switchDisable

Disables all user ports on a switch.

Synopsis **switchdisable**

Description Use this command to disable all user ports on a switch. All Fibre Channel ports are taken offline. If the switch was part of a fabric, the remaining switches reconfigure. As each port is disabled, the front panel LED changes to a slow-flashing amber.

The switch must be disabled before making configuration changes or before running offline diagnostic tests. Commands that require the switch to be disabled generate an error message if invoked while the switch is enabled. It is not necessary to disable the switch before rebooting or powering off.

When this command is executed on a logical switch, only the ports allocated to the logical are disabled. To disable the entire chassis, use the chassisDisable command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To disable the switch:

```
switch:admin> switchdisable
```

SEE ALSO [bladeEnable](#), [bladeDisable](#), [chassisEnable](#), [chassisDisable](#), [switchCfgPersistentDisable](#), [switchCfgPersistentEnable](#), [switchEnable](#), [switchShow](#)

switchEnable

Enables all user ports on a switch.

Synopsis **switchenable**

Description Use this command to enable all user ports on a switch. All Fibre Channel ports that passed the power-on self test (POST) are enabled. They can come online if connected to a device, or remain offline if disconnected. Use switchEnable to re-enable the switch after making configuration changes or running offline diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. If the switch remains the principal switch, it assigns itself a domain ID. If another switch assumes the principal role, then the re-enabled switch becomes a subordinate switch and accepts a domain ID from the principal.

As each port is enabled, the front panel LED changes to green for online ports, or to amber for uninitialized ports. Disconnected ports remain unlit.

When this command is executed on a logical switch, only the ports allocated to the logical switch are enabled. To enable the entire chassis, use the chassisEnable command.

Notes This command also enables the ports of a disabled blade on the switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To enable a switch:

```
switch:admin> switchenable
```

SEE ALSO [bladeEnable](#), [bladeDisable](#), [chassisDisable](#), [chassisEnable](#), [switchCfgPersistentDisable](#), [switchCfgPersistentEnable](#), [switchDisable](#), [switchShow](#)

switchName

Displays or sets the switch name.

Synopsis **switchname** [*name*]

Description Use this command to display or set the switch name. Once you set the switchname, you must re-login for the change to be in effect. All switches have a symbolic name that is primarily used for switch management. This name is shown in the Fabric OS CLI prompt, under each switch icon in Web Tools, in all the switch event RASLog messages, and in the output of various Fabric OS Commands, such as fabricShow.

Enter this command without an operand to display the current switch name. Use this command with the name operand to assign a new switch name. The switch name must be unique in the fabric.

Changing the switch name causes a domain address format registered state change notification (RSCN) to be issued. Refer to the FC-FLA specification for a description of RSCNs).

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

name

Specifies the name for the switch. A switch name can be up to 30 characters in length. It can begin with either a letter or number and can consist of letters, numbers, hyphens, periods, and underscore characters. Spaces are not allowed. A switch name that begins with a numeric character must at least have either an alphabetic (A-Z, a-z) character or an underscore or a dash or a period. A switch name with only numeric character is not valid. For example, the switch name 12345678 is invalid. The case used in the name is recorded and will be displayed, but does not make the name unique. The switch name must be unique in the fabric.

When FICON Management Server (FMS) mode is enabled, the switch name can include up to 24 characters only.

Examples To change the switch name to a name starting with a character (note the change in the prompt text):

```
switch:admin> switchname Lab1_demo_1298765_AY4TYI60
Lab1_demo_1298765_AY4TYI60:admin>
```

To change the switch name to a name starting with a character and containing dashes (-):

```
switch:admin> switchname Lab1-demo-1298765-AY4TYI60
Lab1-demo-1298765-AY4TYI60:admin>
```

To change the switch name to a name starting with a numeric:

```
switch:admin> switchname 174-switch
174.switch:admin> switchname
174.switch
```

To change the switch name to a name with a period:

```
switch:admin> switchname switch.73  
switch.73:admin> switchname  
switch.73  
switch.73:admin>
```

SEE ALSO [chassisShow](#), [switchShow](#)

switchShow

Displays switch and port status.

Synopsis **switchshow**

switchshow [-slot *slot*] [-portname | -qsfp]

switchshow [-portcount]

Description Use this command to display switch, blade, and port status information. Output may vary depending on the switch model.

When used without operands, switchShow displays the following information:

switchName	Switch name.
switchType	Switch model and revision numbers.
switchState	Switch state: Online, Offline, Testing, or Faulty. When you issue the switchcfgPersistentDisable command followed by the switchEnable command, the switch state changes to, "Online (Temporary)". The switch remains in this state until you issue the switchcfgPersistentEnable command.
switchMode	Switch operation mode: Access Gateway (if AG is enabled).
switchRole	Switch role: Principal, Subordinate, or Disabled.
switchDomain	Switch domain ID: 1 to 239.
switchId	Switch embedded port D_ID.
switchWwn	Switch world wide name (WWN).
switchBeacon	Switch beaconing state: On or Off.
zoning	The name of the active zone is displayed in parentheses. Active only when Access Gateway mode is disabled.
FC Router	FC Router state: On or Off.
FC Router BB Fabric ID	The backbone fabric ID for FC routing.

Fabric Name	The name assigned to the fabric. The fabric name is set with the fabricName command.
HIF Mode	Indicates HIF mode of the switch. Values are ON or OFF. The HIF mode can be set using the configure command.
Allow XISL Use	Allows the switch to use interswitch links (XILS) in the base fabric to carry traffic to this logical switch. Values are ON or OFF.
LS Attributes	On a switch in Virtual Fabric mode, this field displays logical switch attributes, including the fabric ID associated with the logical switch, the switch role (default switch, base switch, or FICON mode logical switch), and the fabric Address Mode (0, 2 or 3). If Virtual Fabrics are disabled, only the Address Mode is displayed. The fabric Address Mode value is set by the configure command (Enable a 256 Area Limit).
The switch summary is followed by one-line description for non-EX_Ports and one or two lines for EX_Ports:	
Index	Port index is a number between 0 and the maximum number of supported ports on the platform. The port index identifies the port number relative to the switch.
Slot	Slot number; 1-12.
Port	Port number; 0-15, 0-31, or 0-63.
PortWWN	Port world wide name (WWN).
Address	The 24-bit Address Identifier.
Media	Media types include the following:
--	No module present. Applicable to all port types.
cu	Displays when the copper (default) GbE port ge0 or ge1 is active (refer to portCfgGeMediaType for more information). If the optical GbE port is active and an SFP is installed (copper or optical), "id" is displayed. If nothing is installed on the optical port, the Media field shows "--". The "cu" field also displays for interchassis links (ICLs).
id	Serial ID. Indicates that an SFP is installed. Use sfpShow to get more information about the SFP, including the serial number.

Speed

The speed of the port. Valid port speeds include the following:

1G	1 Gbps fixed transfer speed (not supported on 16 Gbps-capable ports)
N1	1 Gbps negotiated transfer speed (not supported on 16 Gbps-capable ports)
2G	2 Gbps fixed transfer speed (only supported with use of 8 Gbps SFPs)
N2	2 Gbps negotiated transfer speed (only supported with use of 8 Gbps SFPs)
4G	4 Gbps fixed transfer speed
N4	4 Gbps negotiated transfer speed
8G	8 Gbps fixed transfer speed
N8	8 Gbps negotiated transfer speed
10G	10 Gbps fixed transfer speed
N10	10 Gbps negotiated transfer speed
16G	16 Gbps fixed transfer speed
N16	16 Gbps negotiated transfer speed
32G	32 Gbps fixed transfer speed
N32	32 Gbps negotiated transfer speed
AN	Autonegotiating
UN	Unknown

State

Port state information. Valid states include the following:

No_Card	No interface card present.
No_Module	No module (GBIC or other) present.

Mod_Val	Module validation in process.
Mod_Inv	Module speed mismatch or incompatible SFP.
No_Light	The module is not receiving light. This state is not applicable to 16 Gbps-capable interchassis link (ICL) ports.
No_SigDet	No signal is detected on the port. For 16 Gbps-capable interchassis link (ICL) ports, this state replaces the No_Light indicator. It indicates that a quad small form-factor pluggable (QSFP) has been installed but is not connected with a cable.
No_Sync	The module is receiving light but is out of sync.
In_Sync	The module is receiving light and in sync.
Laser_Flt	The module is signaling a laser fault.
Port_Flt	The port is marked faulty.
Lock_Ref	The port is locking to the reference signal.
Testing	The port is running diagnostics.
Offline	A port connection is not established (for virtual ports only).
Online	The port is up and running.
Transient	The port is disabled and re-enabled by MAPS to recover from the bottleneck condition caused by the target device.
Proto	Protocol support by GbE port. Valid protocols include the following:
ISCSI	The port supports ISCSI (deprecated).
FCIP	The port supports FCIP.
FCoE	The port supports Fibre Channel over Ethernet.
LAN	The port supports LAN.

comment

Optionally displays one of the following:

Copper or Optical

Displays which GbE port is currently active: Copper indicates that the RJ45 GbE port is currently active. Only copper connections are accepted (default). Optical indicates that the currently active GbE port accepts both copper and optical connections (SFPs). This parameter is set by the portCfgGeMediaType command, and applies only to the geO and geI ports on the Brocade 7800.

Disabled

The port is disabled. Port disable reasons may be stated in parenthesis:

Disabled (FMS Mode)

The port is disabled and in Ficon Server Management mode.

Disabled (No area available for PID assignment)

The port is disabled because a PID could not be assigned for the stated reason.

Disabled (persistent) *disable reason*

This port has been disabled with the portCfgPersistentDisable command.

Disabled (Persistently disabled port) *disable reason*

This port has been disabled for unspecified reasons.

Disabled (Fabric Vision License required)

This D_Port has been disabled because the Fabric Vision license is not installed on the switch.

Disabled (Insistent Domain ID)

This port has been disabled because the switch did not get the requested domain ID.

Disabled (EX_Port IR POD License Limit Exceeded)

The EX_Port has been disabled because the Integrated Routing license limit for the number of EX_Ports allowed in a switch has exceeded.

Disabled (License not Installed for Integrated Routing)

The EX_port has been disabled because License for Integrated Routing not installed in the switch.

Disabled (Incompatible AMP Version)

This port has been disabled because of Analytics Monitoring Platform (AMP) version conflict.

Disabled (Port not bounded to Address in FICON Switch)

This port has been disabled because it is not bound to an area after migrating into a FICON switch. Use the portaddress --bind command to bind the port.

Disabled (Decommissioned)

The E_Port has been disabled by decommissioning operation.

Bypassed

The port is bypassed (loop only).

Loopback

The port is in loopback mode.

D_Port	Diagnostic port; D_Port feature can be configured on both E_Port and F_Port. D_Port on E_Port displays the world wide node name (WWNN) of the remote switch and D_Port on F_Port displays the world wide port name (WWPN) of remote port.
E_Port	Fabric port; displays the world wide name (WWN) and name of the attached switch. If the port is configured as an EX_Port, the WWN of the attached switch is the same as the router.
F_Port	Point-to-point port; displays the WWN of the attached N_Port. If that specific F_Port receives 1 FDISK frame, switchShow displays the total number of NPIV Public ports as 1, for example: F_Port 1 NPort + 1 NPIV devices. If the base device logs out with NPIV devices logged in, the command displays the number of NPIV devices, for example, F_Port 1 NPort + 2 NPIV.
G_Port	Point-to-point port, but not yet E_Port or F_Port.
L_Port	Loop port; displays the number of NL_Ports.
EX_Port	Router port; displays the WWN of the attached edge switch.
VF_Port	FCoE Virtual F_Port. For these ports, the number of NPIV or external device logins is displayed ("n VN-Port(s)"), instead of the WWN of the internal port.
VF_Port Disabled	FCoE Virtual F_Port is disabled.
D_Port Dynamic	The port is in Dynamic D_Port mode. Use the configure command to set the Dynamic D_Port mode.
D_Port On-demand	The port is in On-demand D_Port mode. Use the configure command to set the On-demand D_Port mode.
D_Port protocol violation	The port is stuck in G_Port state. The Static D_Port configuration is removed but the remote port is still in Static D-Port mode, which results in the switch port stuck in G_Port mode.
D_Port F_Port WWN Dynamic	The port is connected to a device port in the D_Port mode.
SIM Port	The port is a simulated (SIM) port.
Mirror Port	The port is a mirror port.
(Trunk master)	The port is the master port in a group of trunking ports.

(Trunk port, master is port #x)

The port is configured as a trunking port; the master port is port #x.

(upstream)

The E_Port is an upstream path toward the principal switch of the fabric.

(downstream)

The E_Port is a downstream path away from the principal switch of the fabric.

FICON Persistent DID

This port has been disabled, because the switch could not obtain its configuration domain ID during the fabric reconfiguration when fmsmode was enabled. See the ficonCupSet help page for more information.

Fabric ID conflict

Two different fabrics have been assigned the same fabric ID. Applicable only to EX_Ports and Logical Fabric environments.

Fabric ID oversubscribed

One fabric has been assigned two different fabric IDs (EX_Ports only).

AoQ

Application-oriented QoS; indicates that an F_Port or N_Port has negotiated a link that is capable of quality of service (QoS). Both sides of the link have QoS capability and agreed on the protocol. The link could be between an HBA and an Access Gateway, between an Access Gateway and an edge switch, or between an HBA and an edge switch.

LB mode

If the Access Gateway cannot negotiate QoS capabilities with the edge switch, an HBA connected to the Access Gateway will not be able to negotiate a QoS link with the Access Gateway.

(logical)

Indicates a logical port. The switchShow output shows all logical ports currently present in the logical switch. The command displays -1 for the slot for logical ports and the user port number for slot port. The logical port numbers are not persistent and may change when the logical interswitch links (LISLs) are deleted and recreated. A logical port is shown to be in one of the following states: E_Port (if the port is online), offline, or disabled. When the port is disabled, a reason is provided.

segmented

Indicates a segmented or disabled port along with one of the following segmentation reasons:

(Encrypt incompatible)

Port segmentation or port disable due to mismatched configurations.

(Compress incompatible)

Port segmentation or port disable due to mismatched configurations.

(Encrypt limitation)

Port segmentation or port disable due to reaching encryption limitations.

(Compress limitation)

Port segmentation or port disable due to reaching compression limitations.

(Authentication failure)

Port segmentation or port disable due to authentication failure.

(Defzone conflict)

Port segmentation due to defzone states.

(Type mismatch)

D_Port configuration mismatch between local and remote switch.

(D-port mode mismatch, Not D-port)

The local port is configured as D_Port and remote port is not a D_Port. This segmentation reason is displayed for the local port.

(D-port mode mismatch, Static D-port)

The local port is configured as D_Port and remote port is not a D_Port. This segmentation reason is displayed for the remote port.

(ESC mismatch, AMP Version Conflict)

Port segmentation due to Analytics Monitoring Platform (AMP) version mismatch.

(Incompatible AMP Version)

Port segmentation due to incompatible Analytics Monitoring Platform (AMP) version.

When used with the -slot option, the command displays the following blade-specific information:

slot

Slot number.

Blade Type

Type of blade, for example, Core blade or AP blade. Refer to the slotShow command for a listing of supported blade types.

ID

A numeric blade ID that specifies the blade type. Refer to the slotShow command for a listing of supported blade IDs.

Status

Enabled or disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

On the Brocade FCoE10-24 blade, the Proto column identifies the FCoE ports of the switch. For all FCoE ports, the speed is 10 Gbps. The default configuration of an FCoE port is an F_Port configuration. After a successful reboot switchShow displays all FCoE ports as online. For each FCoE port, the FCoE controller WWN is shown. FCoE ports are not configurable with the Fabric OS port commands. Use the FCoE commands instead.

If a port is configured as a long distance port, the long distance level is displayed in the format of Lx, where x represents the long distance level number. See portCfgLongDistance for the level description.

When a port is configured as an N_Port and is online, switchShow displays its type as an N_Port. Also, switchShow displays the WWN of the border switch attached to this N_Port as a 24-bit Port Identifier assigned to this port by the enterprise fabric.

In an AD context, if one of the L_Ports or NPIV Ports is a part of the current AD, the complete device information attached to the port is displayed.

Operands This command has the following operands:

-slot *slot*

Displays blade information. You can specify this operand with -portname or -qsfp.

-portname

Displays the name for each port on the switch. The port name is set by the portName command.

-qsfp

Displays the output of the switchShow command with a QSFP column added. If a QSFP is installed on the port, the QSFP number is displayed for the port. This number corresponds to the physical QSFP number that can be found on the front of each Core Blade. A double dash (--) indicates that QSFP is not supported on that blade.

-portcount

Displays the number of ports on the switch. This operand is exclusive.

Examples To display the port count:

```
switch:admin> switchshow -portcount
FC ports = 198, GE ports = 12
```

To display a QoS-capable Core Access Gateway with online AoQ F_Ports and N_Ports:

```
switch:admin> switchshow
switchName:      Spirit_125
switchType:      66.1
switchState:     Online
switchMode:      Access Gateway Mode
switchWwn:       10:00:00:05:1e:85:95:d0
switchBeacon:    OFF
FC Router:       OFF
FC Router BB Fabric ID: 1
```

Area	Port	Media	Speed	State	Proto
0	0	--	N8	No_Module	FC
1	1	--	N8	No_Module	FC
2	2	--	N8	No_Module	FC
3	3	--	N8	No_Module	FC
4	4	--	N8	No_Module	FC
5	5	--	N8	No_Module	FC
6	6	--	N8	No_Module	FC
7	7	--	N8	No_Module	FC
8	8	--	N8	No_Module	FC
9	9	id	N8	Online	FC F-Port \
				10:00:00:05:1e:53:2c:54	0x690105 (AoQ)
10	10	id	N8	Online	FC F-Port \
				10:00:00:05:1e:56:5f:a9	0x690107 (AoQ)
11	11	id	N4	Online	FC F-Port \
				10:00:00:05:1e:56:5f:a8	0x690106 (AoQ)
12	12	--	N8	No_Module	FC
13	13	--	N8	No_Module	FC
14	14	--	N8	No_Module	FC
15	15	--	N8	No_Module	FC
16	16	id	N8	No_Light	FC
17	17	id	N8	Online	FC F-Port \

```

1 N Port + 3 NPIV public (AoQ)
18 18 -- N8 No_Module FC
19 19 -- N8 No_Module FC
20 20 -- N8 No_Module FC
21 21 -- N8 No_Module FC
22 22 -- N8 No_Module FC
23 23 -- N8 No_Module FC
24 24 -- N8 No_Module FC
25 25 -- N8 No_Module FC
26 26 -- N8 No_Module FC
27 27 -- N8 No_Module FC
28 28 -- N8 No_Module FC
29 29 -- N8 No_Module FC
30 30 -- N8 No_Module FC
31 31 -- N8 No_Module FC
32 32 id N8 Online FC N-Port \
    10:00:00:05:1e:43:e8:02 0x690100 (Trunk master) (AoQ)
33 33 -- N8 No_Module FC
34 34 id N8 Online FC N-Port \
    10:00:00:05:1e:43:e8:02 0x690100 (Trunk port, \
    master is Port 32 )(AoQ)
35 35 -- N8 No_Module FC
36 36 -- N8 No_Module FC
37 37 -- N8 No_Module FC
38 38 -- N8 No_Module FC
39 39 -- N8 No_Module FC

```

To display switch information on a Virtual Fabrics-enabled switch with an assigned fabric name:

```

switch:admin> switchshow
switchName:      brocade218
switchType:      62.1
switchState:     Online
switchMode:      Native
switchRole:      Principal
switchDomain:    1
switchId:        fffc01
switchWwn:       10:00:00:60:69:80:04:92
zoning:          ON (testcfg1)
switchBeacon:    OFF
FC Router:       OFF
Fabric Name:     Fabric_A12
HIF Mode:ON
Allow XISL use:  ON
LS Attributes:   [FID: 10, Base Switch: No,\
                  Default Switch: No, Address Mode 0]

Index Slot Port Address Media Speed State      Proto
=====
377  12  41  32f180  --   N8   No_Module
378  12  42  32f280  --   N8   No_Module
379  12  43  32f380  --   N8   No_Module
380  12  44  32f480  --   N8   No_Module
381  12  45  32f580  --   N8   No_Module
382  12  46  32f680  --   N8   No_Module
383  12  47  32f780  --   N8   No_Module
769  -1 769   --    --   -- Online E-Port \

```

```

10:00:00:05:1e:40:f0:79 "Switch 1" (logical)
770  -1  770    --    --    --  Offline (logical)
785  -1  785    --    --    --  Offline \
      Disabled (logical, reason why port was disabled)
(output truncated)

```

To display switch configuration information on the Brocade FCoE10-24:

```

switch:admin> switchshow -slot 8
switchName:      switch
switchType:      77.3
switchState:     Online
switchMode:      Native
switchRole:      Subordinate
switchDomain:    2
switchId:        fffc02
switchWwn:       10:00:00:05:1e:75:af:00
zoning:          ON (longevity_cfg)
switchBeacon:    OFF
FC Router:       OFF
Fabric Name:     fl_2010_11_16_21_29_26__
Allow XISL Use:  OFF
LS Attributes:   [FID: 128, Base Switch: \
                  No, Default Switch: Yes, Address Mode 0]

```

Slot	Blade Type	ID	Model Name	Status
8	AP BLADE	74	FCOE10-24	ENABLED

Index	Slot	Port	Address	Media	Speed	State	Proto
192	8	0	02c000	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
193	8	1	02c100	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
194	8	2	02c200	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
195	8	3	02c300	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
196	8	4	02c400	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
197	8	5	02c500	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
198	8	6	02c600	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
199	8	7	02c700	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
200	8	8	02c800	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
201	8	9	02c900	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
202	8	10	02ca00	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
203	8	11	02cb00	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
204	8	12	02cc00	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
205	8	13	02cd00	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
206	8	14	02ce00	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
207	8	15	02cf00	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
208	8	16	02d000	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
209	8	17	02d100	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
210	8	18	02d200	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
211	8	19	02d300	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
212	8	20	02d400	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
213	8	21	02d500	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
214	8	22	02d600	--	10G	Online	FCoE VF-Port 0 VN-Port(s)
215	8	23	02d700	--	10G	Online	FCoE VF-Port 0 VN-Port(s)

To display blade information and port names:

```
switch:admin> switchshow -slot 5 -portname
```

FC Router: OFF
 Allow XISL Use: OFF
 LS Attributes:[FID: 128, Base Switch: No, Default Switch:\
 Yes, Address Mode 0]

Slot	Blade Type	ID	Status
5	COREBLADE	52	ENABLED

Index	Slot	Port	PortWWN	Name
384	5	0	20:04:00:05:33:0e:df:00	MyName_portname0
385	5	1	20:04:00:05:33:0e:df:01	-----
386	5	2	20:04:00:05:33:0e:df:02	-----

To display QSFP information on a Brocade DCX 8510-4:

- Ports 3/60-63 indicate no QSFP is present.
- Slot 5 and 8 have QSFPs installed and the number is the group ID.
- Port 5/6 is an example of non-contiguous ports crossing QSFP group boundaries.

```
switch:admin> switchshow -qsfp
```

switchType: 120.1
 switchState: Online
 switchMode: Native
 switchRole: Subordinate
 switchDomain: 60
 switchId: fffc3c
 switchWwn: 10:00:00:05:1e:40:68:78
 zoning: ON (WB_DEFAULT_CFG_LSAN)
 switchBeacon: OFF
 FC Router: OFF
 Allow XISL Use: OFF
 LS Attributes: [FID: 128, Base Switch: No,
 Default Switch: Yes, Address Mode 0]

Index	Slot	Port	QSFP	Address	Media	Speed	State	Proto
812	3	60	--	3c2cc0	--	N8	No_Module	FC
813	3	61	--	3c2dc0	--	N8	No_Module	FC
814	3	62	--	3c2ec0	--	N8	No_Module	FC
815	3	63	--	3c2fc0	--	N8	No_Module	FC
384	5	0	15	-----	id	16G	No_SigDet	FC
385	5	1	15	-----	id	16G	No_SigDet	FC
386	5	2	7	-----	id	16G	No_SigDet	FC
387	5	3	7	-----	id	16G	No_SigDet	FC
388	5	4	7	-----	id	16G	No_SigDet	FC
389	5	5	7	-----	id	16G	No_SigDet	FC
390	5	6	15	-----	id	16G	No_SigDet	FC
391	5	7	15	-----	id	16G	No_SigDet	FC
392	5	8	14	-----	--	16G	No_Module	FC
393	5	9	14	-----	--	16G	No_Module	FC
394	5	10	6	-----	--	16G	No_Module	FC
395	5	11	6	-----	--	16G	No_Module	FC

```

396      5      12      6      -----      --      16G      No_Module      FC
397      5      13      6      -----      --      16G      No_Module      FC
398      5      14      14     -----      --      16G      No_Module      FC
399      5      15      14     -----      --      16G      No_Module      FC
400      5      16      13     -----      --      16G      No_Module      FC
401      5      17      13     -----      --      16G      No_Module      FC
402      5      18      5      -----      --      16G      No_Module      FC
403      5      19      5      -----      --      16G      No_Module      FC
404      5      20      5      -----      --      16G      No_Module      FC
405      5      21      5      -----      --      16G      No_Module      FC
406      5      22      13     -----      --      16G      No_Module      FC
407      5      23      13     -----      --      16G      No_Module      FC
408      5      24      12     -----      id      16G      No_SigDet      FC
409      5      25      12     -----      id      16G      No_SigDet      FC
410      5      26      4      -----      id      16G      Online         FC      \
      E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
411      5      27      4      -----      id      16G      Online         FC      \
      E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
412      5      28      4      -----      id      16G      Online         FC      \
      E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
413      5      29      4      -----      id      16G      Online         FC      \
      E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
414      5      30      12     -----      id      16G      No_SigDet      FC
415      5      31      12     -----      id      16G      No_SigDet      FC
1152     5      32      11     -----      --      16G      No_Module      FC
1153     5      33      11     -----      --      16G      No_Module      FC
1154     5      34      3      -----      --      16G      No_Module      FC
1155     5      35      3      -----      --      16G      No_Module      FC
1156     5      36      3      -----      --      16G      No_Module      FC
1157     5      37      3      -----      --      16G      No_Module      FC
1158     5      38      11     -----      --      16G      No_Module      FC
1159     5      39      11     -----      --      16G      No_Module      FC
1160     5      40      10     -----      --      16G      No_Module      FC
1161     5      41      10     -----      --      16G      No_Module      FC
1162     5      42      2      -----      --      16G      No_Module      FC
1163     5      43      2      -----      --      16G      No_Module      FC
1164     5      44      2      -----      --      16G      No_Module      FC
1165     5      45      2      -----      --      16G      No_Module      FC
1166     5      46      10     -----      --      16G      No_Module      FC
1167     5      47      10     -----      --      16G      No_Module      FC
1168     5      48      9      -----      --      16G      No_Module      FC
1169     5      49      9      -----      --      16G      No_Module      FC
1170     5      50      1      -----      --      16G      No_Module      FC
1171     5      51      1      -----      --      16G      No_Module      FC
1172     5      52      1      -----      --      16G      No_Module      FC
1173     5      53      1      -----      --      16G      No_Module      FC
1174     5      54      9      -----      --      16G      No_Module      FC
1175     5      55      9      -----      --      16G      No_Module      FC
1177     5      57      8      -----      id      16G      No_SigDet      FC
1178     5      58      0      -----      --      16G      No_Module      FC
1179     5      59      0      -----      --      16G      No_Module      FC
1180     5      60      0      -----      --      16G      No_Module      FC
1181     5      61      0      -----      --      16G      No_Module      FC
1182     5      62      8      -----      id      16G      No_SigDet      FC
1183     5      63      8      -----      id      16G      No_SigDet      FC
416      8      0      15     -----      id      16G      No_SigDet      FC
417      8      1      15     -----      id      16G      No_SigDet      FC
418      8      2      7      -----      id      16G      No_SigDet      FC
419      8      3      7      -----      id      16G      No_SigDet      FC
420      8      4      7      -----      id      16G      No_SigDet      FC

```

```

421      8      5      7      -----      id      16G      No_SigDet      FC
422      8      6     15      -----      id      16G      No_SigDet      FC
423      8      7     15      -----      id      16G      No_SigDet      FC
424      8      8     14      -----      --      16G      No_Module      FC
425      8      9     14      -----      --      16G      No_Module      FC
426      8     10      6      -----      --      16G      No_Module      FC
427      8     11      6      -----      --      16G      No_Module      FC
428      8     12      6      -----      --      16G      No_Module      FC
429      8     13      6      -----      --      16G      No_Module      FC
430      8     14     14      -----      --      16G      No_Module      FC
431      8     15     14      -----      --      16G      No_Module      FC
432      8     16     13      -----      --      16G      No_Module      FC
433      8     17     13      -----      --      16G      No_Module      FC
434      8     18      5      -----      --      16G      No_Module      FC
435      8     19      5      -----      --      16G      No_Module      FC
436      8     20      5      -----      --      16G      No_Module      FC
437      8     21      5      -----      --      16G      No_Module      FC
438      8     22     13      -----      --      16G      No_Module      FC
439      8     23     13      -----      --      16G      No_Module      FC
440      8     24     12      -----      id      16G      No_SigDet      FC
441      8     25     12      -----      id      16G      No_SigDet      FC
442      8     26      4      -----      id      16G      Online        FC      \
      E-Port 10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
443      8     27      4      -----      id      16G      Online        FC      \
      E-Port 10:00:00:05:1e:39:f0:ca "ras040" (upstream)(Trunk master)
444      8     28      4      -----      id      16G      Online        FC      \
      E-Port 10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
445      8     29      4      -----      id      16G      Online        FC      \
      E-Port 10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
446      8     30     12      -----      id      16G      No_SigDet      FC
447      8     31     12      -----      id      16G      No_SigDet      FC
1184     8     32     11      -----      --      16G      No_Module      FC
1185     8     33     11      -----      --      16G      No_Module      FC
1186     8     34      3      -----      --      16G      No_Module      FC
1187     8     35      3      -----      --      16G      No_Module      FC
1188     8     36      3      -----      --      16G      No_Module      FC
1189     8     37      3      -----      --      16G      No_Module      FC
1190     8     38     11      -----      --      16G      No_Module      FC
1191     8     39     11      -----      --      16G      No_Module      FC
1192     8     40     10      -----      id      16G      No_SigDet      FC
1193     8     41     10      -----      id      16G      No_SigDet      FC
1194     8     42      2      -----      --      16G      No_Module      FC
1195     8     43      2      -----      --      16G      No_Module      FC
1196     8     44      2      -----      --      16G      No_Module      FC
1197     8     45      2      -----      --      16G      No_Module      FC
1198     8     46     10      -----      id      16G      No_SigDet      FC
1199     8     47     10      -----      id      16G      No_SigDet      FC
1200     8     48      9      -----      --      16G      No_Module      FC
1201     8     49      9      -----      --      16G      No_Module      FC
1202     8     50      1      -----      --      16G      No_Module      FC
1203     8     51      1      -----      --      16G      No_Module      FC
1204     8     52      1      -----      --      16G      No_Module      FC
1205     8     53      1      -----      --      16G      No_Module      FC
1206     8     54      9      -----      --      16G      No_Module      FC
1207     8     55      9      -----      --      16G      No_Module      FC
1208     8     56      8      -----      id      16G      No_SigDet      FC
1209     8     57      8      -----      id      16G      No_SigDet      FC
1210     8     58      0      -----      --      16G      No_Module      FC

```

```

1211      8    59    0    -----    --    16G    No_Module    FC
1212      8    60    0    -----    --    16G    No_Module    FC
1213      8    61    0    -----    --    16G    No_Module    FC
1214      8    62    8    -----    id    16G    No_SigDet    FC
1215      8    63    8    -----    id    16G    No_SigDet    FC

```

To display media type information (relevant output excerpts only):

- The following example shows switchshow output for the ge0 and ge1 ports on a Brocade 7800. The ge0 port is a copper port (default). The ge1 has an SFP installed (copper or optical):

```

[... ]
ge0  cu    1G    No_Sync    FCIP    Copper
ge1  id    1G    No_Light    FCIP
ge2  --    1G    No_Module    FCIP
ge3  --    1G    No_Module    FCIP
ge4  id    1G    Online      FCIP
ge5  --    1G    No_Module    FCIP
[... ]

```

- This example shows switchshow output for a Brocade 5100. Port 31 has an SFP installed. Nothing is installed on Port 32.

```

[... ]
31  31    421f00    id    N4    In_Sync    FC    Disabled
32  32    422000    --    N8    No_Module    FC    Disabled
[... ]

```

- The sfpShow output for the same switch displays the serial number for the SFP.

```

[... ]
Port 31: id (sw) Vendor: BROCADE Serial No: UAF1081800000MK
        Speed: 200,400,800_MB/s
Port 32: --
[... ]

```

To display output when an authentication fails for a reason and the port gets disabled:

```

[... ]
15  15    id    N2    No_Light                Disabled (Authentication Required)
[... ]

```

To display the neighbor switch WWN for the segmented ISLs during ELP and post ELP:

```

switch:admin>    switchshow
switchName:      swd77
switchType:      71.2
switchState:     Online
switchMode:      Native
switchRole:      Principal
switchDomain:    1
switchId:        fffc01
switchWwn:       10:00:00:05:1e:a2:ec:9c
zoning:          OFF
switchBeacon:    OFF

Index Port Address Media Speed State      Proto
=====
    0   0   010000    id     N8    No_Light    FC    Disabled (Persistent)
    1   1   010100    id     N8    No_Light    FC    Disabled (Persistent)
    2   2   010200    id     N4    No_Light    FC

```

```

3   3   010300   id      N4   No_Light   FC
4   4   010400   id      N8   No_Light   FC   Disabled (Persistent)
5   5   010500   id      N8   No_Light   FC   Disabled (Persistent)
6   6   010600   id      N8   No_Light   FC   Disabled (Persistent)
7   7   010700   id      N8   No_Light   FC   Disabled (Persistent)
8   8   010800   --      N8   No_Module  FC   Disabled (Persistent)
9   9   010900   id      N4   Online    FC   E-Port \
      10:00:00:05:1e:a3:00:59 segmented, (RA TOV incompat)
10  10  010a00   id      N8   No_Light   FC   Disabled (Persistent)

```

To display the output when any of the ICL links get disabled with no Enterprise ICL (EICL) license installed:

- If no EICL license is installed and the number of ICL-connected chassis in the fabric is more than 4, the port disable reason code displayed is, "No EICL License".
- If EICL license is installed and the number of ICL-connected chassis in the fabric exceeds 10, the port disable reason code displayed is, "EICL License Limited".

```
switch:admin> switchshow
```

```

switchName:      DCX_150
switchType:      120.3
switchState:     Online
switchMode:      Native
switchRole:      Principal
switchDomain:     6
switchId:        fffc06
switchWwn:       10:00:00:05:1e:93:ff:00
zoning:          OFF
switchBeacon:    OFF
FC Router:       OFF
Fabric Name:     fabric
Allow XISL Use:  OFF
LS Attributes:   [FID: 128, Base Switch: No, Default Switch: Yes, Address Mode 0]

```

```

Index Slot Port Address Media  Speed  State      Proto
=====
   0    1    0   050000   --     N8   No_Module  FC
   1    1    1   050100   --     N8   No_Module  FC
   2    1    2   050200   --     N8   No_Module  FC
   ....
  398    5   14   -----   cu     8G   No_Sync    FC
  399    5   15   -----   cu     8G   No_Sync    FC
  400    5   16   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
  401    5   17   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
  402    5   18   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
  403    5   19   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
  404    5   20   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
  405    5   21   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
  406    5   22   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
  407    5   23   -----   cu     8G   In_Sync    FC   Disabled (No EICL License)
   ....
  416    8    0   -----   cu     8G   In_Sync    FC   E-Port  10:00:00:05:1e:4a:cb:00
"sw0" (upstream) \

```



```

(Trunk master)
417   8   1   -----   cu   8G   In_Sync   FC   E-Port   (Trunk port, master is
Slot 8 Port 0 )
418   8   2   -----   cu   8G   In_Sync   FC   E-Port   (Trunk port, master is
Slot 8 Port 0 )
419   8   3   -----   cu   8G   In_Sync   FC   E-Port   (Trunk port, master is
Slot 8 Port 0 )
420   8   4   -----   cu   8G   In_Sync   FC   E-Port   (Trunk port, master is
Slot 8 Port 0 )

```

To display the port status information on 16 Gbps-capable Inter-Chassis Links (ICLs):

```

switch:admin> switchshow
switchName:      ICL_DCX
switchType:      120.3
switchState:     Online
switchMode:      Native
switchRole:      Principal
switchDomain:     1
switchId:        fffc01
switchWwn:       10:00:00:05:1e:48:f8:02
zoning:          ON (bb_zone)
switchBeacon:    OFF
FC Router:       ON
Fabric Name:     BBTI
LS Attributes:   [FID: 10, Base Switch: Yes,
Default Switch: No, Address Mode 0]

```

Index	Slot	Port	Address	Media	Speed	State	Proto
396	5	12	018040	id	16G	Online	FC EX-Port \
			10:00:00:05:33:b3:39:00			"Pluto2" (fabric id = 11)	(Trunk master)
397	5	13	018080	id	16G	Online	FC EX-Port \
			10:00:00:05:33:b3:39:00			"Pluto2" (fabric id = 11)	(Trunk master)
398	5	14	0180c0	id	16G	Online	FC EX-Port \
			10:00:00:05:33:b3:39:00			"Pluto2" (fabric id = 11)	(Trunk master)
399	5	15	018100	id	16G	Online	FC EX-Port \
			10:00:00:05:33:b3:39:00			"Pluto2" (fabric id = 11)	(Trunk master)
412	5	28	-----	id	16G	Online	FC E-Port \
			10:00:00:05:1e:75:4c:00			"FCR-DCX128" (upstream)	(Trunk master)
413	5	29	-----	id	16G	Online	FC E-Port \
			10:00:00:05:1e:75:4c:00			"FCR-DCX128" (Trunk master)	
414	5	30	-----	id	16G	Online	FC E-Port \
			10:00:00:05:1e:75:4c:00			"FCR-DCX128" (Trunk master)	
415	5	31	-----	id	16G	Online	FC E-Port \
			10:00:00:05:1e:75:4c:00			"FCR-DCX128" (Trunk master)	

To display the output when the location ID is configured:

```

switch:admin> switchshow
switchName:      switch
switchType:      66.1
switchState:     Online
switchMode:      Native
switchRole:      Subordinate
switchDomain:     106
switchId:        fffc6a
switchWwn:       10:00:00:05:1e:57:df:49
zoning:          ON (cfg_qos)

```

```
switchBeacon:  OFF
FC Router:     ON
FC Router BB Fabric ID: 128
Address Mode:  0
Fabric Name:   base
Location ID:   1
```

```
Index Port Address Media Speed State      Proto
=====
```

SEE ALSO [fabricName](#), [portCfgLongDistance](#), [switchDisable](#), [switchEnable](#), [switchName](#)

switchUptime

Displays the amount of time the switch has been operating.

Synopsis **switchuptime**

Description Use this command to display the current time and the amount of time that the switch has been operational.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To view the uptime for the switch:

```
switch:user> switchuptime  
9:50pm    up for 20 mins
```

SEE ALSO None

switchViolation

Dumps the DCC violations for a switch.

Synopsis **switchViolation --dump -dcc**

Description Use this command to display all Device Connection Control (DCC) violations that have occurred on a switch. Internally the command searches "errdumpall" for the DCC violations. For each DCC violation, the command displays the device WWN and the port where the violation occurred.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command can be executed on both active and standby CPs. This command does not support High Availability (HA).

Operands This command has the following operands. If executed without operands, the command prints the usage.

--dump Displays specified policy violation.

-dcc Specifies the violation type as DCC.

Examples To display DCC violations for a switch:

```
switch:admin> switchviolation --dump -dcc
Device WWN                               Port
-----
22:00:00:04:cf:75:59:87                   10
```

SEE ALSO None

syslogAdmin

Configures a syslog server host.

Synopsis **syslogadmin --set -ip** *ip_address* | *hostname* [-secure [-port *port_num*]]

syslogadmin --set -facility *level*

syslogadmin --remove -ip *ip_address* | *hostname*

syslogadmin --show -ip | **-facility**

syslogadmin --help

Description Use this command to configure a switch to forward all error log entries to a remote syslog server, to set the syslog facility to a specified log file, to remove a syslog server, and to display the list of configured syslog servers. Brocade switches use the syslog daemon, a process available on most UNIX systems that reads and forwards system messages to the appropriate log files or users, depending on the system configuration. Up to six servers are supported.

By default, the switch uses UDP protocol to send the error log messages to the syslog server. The default UDP port is 514. Use the -secure option to configure the switch to send the error log messages securely using the Transport Layer Security (TLS) protocol. TLS is an encryption protocol over the TCP/IP network protocol and it can be used only with the TCP-based destinations (tcp() and tcp6()). The default TLS port is 6514. While enabling secure syslog mode, you must specify a port that is configured to receive the log messages from the switch.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--set -ip *ip_address* | *hostname*

Configures a syslog server with the specified IP address or hostname. IPv4 and IPv6 addresses are supported. Only one syslog server can be specified at any given time. To configure more than one server, the command must be executed for each server.

-secure [-port *port_num*]

Enables secure syslog mode to send the error log messages securely using the TLS protocol to the syslog server. The secure syslog mode is disabled by default. The -port operand is optional. If secure mode is enabled and port number is not specified, the default TLS port number (6514) is set.

--set -facility *level*

Sets the syslog facility. Valid levels are 0 through 7. The default is 7.

0

LOG_LOCAL0

1

LOG_LOCAL1

2	LOG_LOCAL2
3	LOG_LOCAL3
4	LOG_LOCAL4
5	LOG_LOCAL5
6	LOG_LOCAL6
7	LOG_LOCAL7 (default)

- remove -ip *ip_address* | *hostname***
Removes the specified syslog server. IPv4 and IPv6 addresses are supported.
- show**
Displays the list of configured syslog servers and the facility level.
- ip**
Displays all syslog server IP addresses and hostnames.
- facility**
Display the configured syslog facility.
- help**
Displays the command usage.

Examples

To configure an IPv4 secure syslog server to which error log messages are sent:

```
switch:admin> syslogadmin --set -ip 172.26.26.173 -secure -port 2000
```

To configure an IPv6 non-secure syslog server:

```
switch:admin> syslogadmin --set -ip fec0:60:69bc:92:218:8bff:fe40:15c4
```

To configure a syslog server using a hostname:

```
switch:admin> syslogadmin --set -ip win2k8-58-113
```

To set the syslog facility to LOG_LOCAL2:

```
switch:admin> syslogadmin --set -facility 2
switch:admin> syslogadmin --show -facility
Syslog facility: LOG_LOCAL2
```

To display all syslog IP addresses configured on a switch:

```
switch:admin> syslogadmin --show -ip
syslog.1    172.26.26.173
syslog.2    fec0:60:69bc:92:218:8bff:fe40:15c4
syslog.3    win2k8-58-113
```

syslogAdmin

To remove the IP address fec0:60:69bc:92:218:8bff:fe40:15c4 from the list of servers to which error log messages are sent:

```
switch:admin> syslogadmin --remove -ip fec0:60:69bc:92:218:8bff:fe40:15c4
```

SEE ALSO

None

sysShutDown

Provides a graceful shutdown to protect the switch file systems.

Synopsis **sysshutdown**

Description On standalone platforms, use this command to shut down the switch operating system.

On enterprise-class platforms, when sysShutDown is called on the active control processor (CP), the command shuts down the active CP, standby CP, and any AP blades.

Some platforms will only shut down the operating systems; others will shut down the operating system as well as shut off the power, that is, the LEDs will turn black.

After executing this command, manually power off the system. To reboot the system, manually turn the power switch on.

Notes This command is not supported on the standby CP.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To perform a system shutdown on a standalone platform:

```
switch:admin> sysshutdown
This command will shutdown the operating systems on your
switch. You are required to power-cycle the switch in
order to restore operation.
Are you sure you want to shutdown the switch [y/n]? y
Broadcast message from root (ttyS0) Mon Sep 12 17: \
52:12 2005...

The system is going down for system halt NOW !!
INIT: Switching to runlevel:
INIT: Sending processes the TERM signal
ess095:root> Unmounting all filesystems.
The system is halted
flushing ide devices: hda
Power down.
```

To perform a system shutdown on a Brocade DCX-4S:

```
switch:admin> sysshutdown
This command will shutdown the operating systems on your
switch. You are required to power-cycle the switch in
order to restore operation.
Are you sure you want to shutdown the switch [y/n]?y
HA is disabled
Shutting down blade in slot:1, IP addr:127.1.14.2
Shutting down blade in slot:8, IP addr:127.1.14.9
```


sysShutDown

```
Shutting down OCP at:0.0.0.0
```

```
Broadcast message from root (pts/0) Wed Nov  5 19:03:06 2008...
```

```
The system is going down for system halt NOW !!
```

To attempt a system shutdown from the standby CP (not supported):

```
switch:admin> sysshutdown
```

```
Shut down the whole system is not support from the standby CP
```

```
For shut down the whole system
```

```
please run the sysshutdown from the active CP
```

SEE ALSO [haDisable](#)

tcpTimeStamp

Enables or disables the TCP Timestamping in the TCP frame.

Synopsis **tcptimestamp**

tcptimestamp --enable

tcptimestamp --disable

tcptimestamp --help

Description Use this command to enable or disable TCP Timestamping in the TCP frame. By default, Timestamping in TCP frame is enabled.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--enable

Enables the TimeStamping in TCP frame.

--disable

Disables the TimeStamping in TCP frame.

--help

Displays the command usage.

Examples To disable the timestamping in TCP frame:

```
switch:user> tcptimestamp --disable
```

To enable the timestamping in TCP frame:

```
switch:user> tcptimestamp --enable
```

SEE ALSO None

tempShow

Displays temperature readings.

Synopsis tempshow [-details]

Description Use this command to display the current temperature readings of all temperature sensors in a switch. For each sensor, this command displays the sensor ID (an index number), the slot number (if applicable), the sensor index (when issued with the -detail option), the sensor state (OK or absent), and the temperature. The temperature readings are given in both Centigrade and Fahrenheit.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Refer to the hardware reference manual for your switch to determine the normal temperature range.

Operands This command has the following operand:

-details Displays an additional column for the sensor index. Sensor index indicates the position of the sensor in the system.

Examples To display temperature and status sensors:

```
switch:user> tempshow
```

Sensor ID	Slot	State	Centigrade	Fahrenheit
1	1	Ok	38	100
2	1	Ok	28	82
3	1	Ok	40	104
4	1	Ok	31	87
5	1	Ok	43	109
6	2	Ok	39	102
7	2	Ok	28	82
8	2	Ok	40	104
9	2	Ok	30	86
10	2	Ok	43	109

To display temperature and status sensors with the sensor index:

```
switch:user> tempshow -details
```

Sensor ID	Slot	Sensor Index	State	Centigrade	Fahrenheit
1	1	0	Ok	35	95
2	1	1	Ok	34	93
3	1	2	Ok	43	109
4	1	3	Ok	34	93
5	1	4	Ok	41	105

6	| 2	| 0	| Absent	| 0	| 0	|
7	| 4	| 0	| Ok	| 33	| 91	|
8	| 4	| 1	| Ok	| 42	| 107	|
9	| 4	| 2	| Ok	| 42	| 107	|
10	| 4	| 3	| Ok	| 44	| 111	|

SEE ALSO [fanShow](#), [psShow](#), [sensorShow](#), [slotShow](#)

timeOut

Sets or displays the idle timeout value for a login session.

Synopsis **timeout** [*timeval*]

Description Use this command without an operand to display the current timeout value (in minutes) after which idle logins are automatically terminated.

Use this command with the *timeval* operand to set the login timeout value to the specified interval. A value of 0 disables timeout of login sessions.

The new timeout value takes effect with the next logins.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

timeval

Specify the number of minutes for the Telnet timeout value. Valid values are 1 to 99,999, or 0 to disable login timeouts. This operand is optional; if omitted, the command displays the current timeout value.

Examples To set the idle timeout to 10 minutes:

```
switch:admin> timeout 10
                IDLE Timeout Changed to 10 minutes
The modified IDLE Timeout will be in effect after NEXT login
```

SEE ALSO None

topologyShow

Displays the unicast fabric topology.

Synopsis **topologyshow -index** [*domain*]
topologyshow -nopage [*domain*]
topologyshow --help

Description Use this command to display the fabric topology as it appears to the local switch. The display varies depending on the hardware configuration. The following rules apply:

- On all switches, the command displays the number of domains in the fabric and the local Domain IDs. If translate domains are configured, existing translate domains and associated ports are displayed.
- On an edge fabric, the command displays the following additional details for all domains in the fabric (including local translate domains):
 - All possible paths from the local switch to each of the remote domains.
 - For each path, the cost, the associated output port on the local switch, the path cost, and the number of hops from the local switch to the destination switch.
 - A summary of all ports that are routed through that path.
- On a backbone fabric, the command displays details for remote domains only. Details for local translate domains are not displayed.
- If there are two switches in the Backbone and the edge fabric is directly connected to both of those switches, topologyshow does not display the description of the translate domain associated with that edge fabric. In this case the translate domain is considered local to both of the switches in the backbone.
- If there is only one switch in the backbone, no domain details are displayed (all domains are local).

Depending on the fabric, the display may contains the following fields:

Local Domain ID	The domain number of local switch.
Local Translate Domain x owned by port	The port number associated with the local translate domain x.
Domain	The domain number of destination switch.
Metric	The cost of reaching destination domain.
Name	The name of the destination switch.
Path Count	The number of currently active paths to the destination domain. The maximum number of paths supported is 16. If there are more than 16 paths, the path count displays as 16 of number of paths available, for example, "16 of 20".
Hops	The maximum number of hops to reach destination domain.

Out Port

The port to which incoming frames are forwarded to reach the destination domain.

In Ports

The input ports that use the corresponding out port to reach the destination domain. This is the same information provided by portRouteShow and uRouteShow but in a different format.

Total Bandwidth

The maximum bandwidth of the out port. A bandwidth that is less than 0.512 Gbps is adjusted to the nearest power of 2 value. A bandwidth in the range of 0.512 Gbps (included) to 1 Gbps (not included) is adjusted to the 0.512 Gbps value. No adjustment takes place if the bandwidth is greater or equal to 1 Gbps.

Bandwidth Demand

The maximum bandwidth demand by the in ports.

Flags

Always D, indicating a dynamic path. A dynamic path is discovered automatically by the FSPF path selection protocol.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

domain

Specify the destination domain for which to display the topology information.

index

Display port index numbers instead of slot or port numbers in the output.

nopage

Disables the paging format to display the output.

Examples

To display the topology on a single switch: domain is local, details are not displayed.

```
switch:user> topologyshow
```

```
1 domains in the fabric; Local Domain ID: 97
```

When executed from an edge fabric, topologyshow displays details for all domains, including local domains and local translate domains:

```
switch:user> topologyshow
```

```
6 domains in the fabric; Local Domain ID: 7
```

```
Domain:          1
Metric:          10500
Name:            fcr_xd_1_1
Path Count:      1

Hops:            2
Out Port:        11
In Ports:        0 1 2 3 4 5 6 7 8 9 15
```

```

        Total Bandwidth:      8.000 Gbps
        Bandwidth Demand:    1275 %
        Flags:                D

Domain:      2
Metric:      1000
Name:        fcr_fd_2
Path Count:  1

        Hops:                2
        Out Port:            15
        In Ports:            0 1 2 3 4 5 6 7 8 9 11
        Total Bandwidth:      2.000 Gbps
        Bandwidth Demand:    4000 %
        Flags:                D

Domain:      3
Metric:      10500
Name:        fcr_xd_3_5
Path Count:  1

        Hops:                2
        Out Port:            11
        In Ports:            0 1 2 3 4 5 6 7 8 9 15
        Total Bandwidth:      8.000 Gbps
        Bandwidth Demand:    1275 %
        Flags:                D

Domain:      111
Metric:      500
Name:        peng3900101
Path Count:  1

        Hops:                1
        Out Port:            15
        In Ports:            0 1 2 3 4 5 6 7 8 9 11
        Total Bandwidth:      2.000 Gbps
        Bandwidth Demand:    4000 %
        Flags:                D
(output truncate)

```

The command is executed from the backbone in a fabric with five switches. The fabric has five domains, but details are only shown for the three remote domains, not for the two local translate domains.

```
switch:user> topologyshow
```

```

5 domains in the fabric; Local Domain ID: 2
Local Translate Domain 4 owned by port: 24
Local Translate Domain 5 owned by port: 23 33

```

```

Domain:      1
Metric:      500
Name:        pengsaturn104
Path Count:  1

        Hops:                1
        Out Port:            0
        In Ports:            23 24 33 38 39
        Total Bandwidth:      8.000 Gbps
        Bandwidth Demand:    350 %

```


topologyShow

```
Flags: D
Domain: 3
Metric: 10500
Name: fcr_xd_3_6
Path Count: 1

Hops: 2
Out Port: 0
In Ports: 23 24 33 38 39
Total Bandwidth: 8.000 Gbps
Bandwidth Demand: 350 %
Flags: D
```

To display the topology with index numbers:

```
switch:user> topologyshow -index
1 domain(s) in the fabric; Local Domain ID: 188

Domain: 178
Metric: 500
Name: dcx_178
Path Count: 1

Hops: 1
Out Port (index): 112
In Ports (index): 246 247
Total Bandwidth: 24.000 Gbps
Bandwidth Demand: 133 %
Flags: D
```

SEE ALSO [portRouteShow](#), [uRouteShow](#)

traceDump

Initiates, or removes a trace dump or displays the trace dump status.

Synopsis **tracedump [-S]**

tracedump -n [-s *s/of*]

tracedump -r [-s *s/of*] | -R

tracedump -c

Description Use this command to initiate a background trace dump, to remove the content of a trace dump, or to display the dump status on the switch.

When executed without operands, this command defaults to traceDump -S.

Execution of traceDump -n generates a local trace dump locally. Use supportSave to transfer the local trace dump to a remote host. When supportSave is used, the default remote file name format for the trace dump file is as follows:

chassisname-S#xxs-YYYYMMDDHHMMSS.type_[NEW | OLD].dmp.gz

When the traceDump -n -s command is used with an AP blade, the trace dump is generated with the following file name format:

chassisname-S#xxs-YYYYMMDDHHMMSS_dump.tar.gz

S#

Indicates the slot number (0 on standalone platforms)

xxs

Indicates the processor. Values are cp0, cp1, bp0, bp1, dp0, or dp1.

YYYYMMDDHHMMSS

Indicates the trace dump time stamp (year-month-day-hour-minute-second).

type

Indicates the tracedump type. Valid types include TRACE, BTRACE, DTRACE, CTRACE, and Reboot.

NEW | OLD

Indicates a new or an old trace dump file.

dmp.gz

The compressed trace dump archive file extension.

For example, the filename for a new BFOS tracedump received from slot 10 on chassisABC would be chassisABC-S10bp-201103031111.BTRACE_NEW.dmp.gz.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following mutually exclusive operands:

- S** Displays the trace dump status. This operand is optional. If omitted, the same status information is displayed.
- n** Initiates a background trace dump.
- r** Clears the status of a particular trace dump on a specified slot.
- R** Clears the status of a particular trace dump on all slots.
- c** Clears all trace dump buffers. This operation resets the trace buffer contents.
- s slot** Specifies the slot number from which a trace dump is generated. If a slot is not supplied, the trace dump is generated from the local slot. This operand is optional.

Examples To initiate a background trace dump from slot 5:

```
switch:admin> tracedump -n -s 5
```

To display the trace dump status on the Brocade 8510-8 switch:

```
switch:admin> tracedump -S
Dump status for switch:
Slot 6: Thu Mar 17 04:43:44 2016
Slot 7: Thu Mar 17 04:44:57 2016
Slot 11: Thu Mar 17 04:45:07 2016
```

To display the trace dump status on a Gen6 switch:

```
switch:admin> tracedump -S
Dump status for switch:

slot: 1
Type          Timestamp
-----
Reboot        2016/03/16 10:50
FFDC(EM-1100) 2016/03/17 02:13
Panicdump     2016/03/17 02:24
CLI           2016/03/17 02:47

slot: 2
Type          Timestamp
-----
Reboot        2016/03/16 10:50
Reboot        2016/03/17 02:24
Reboot        2016/03/17 02:47
```

To clear the status of a trace dump:

```
switch:admin> tracedump -R  
trace dump removed
```

To clear the content of the trace dump buffer:

```
switch:admin> tracedump -c  
Cleared Trace Buffer contents
```

SEE ALSO [supportFtp](#), [supportSave](#), [supportShow](#)

trunkDebug

Debugs a trunk link failure.

Synopsis `trunkdebug port1 port2`

Description Use this command to debug a trunk link failure. This command reports one of the following messages, based on the trunking properties of the two specified ports:

- Switch does not support trunking
- Trunking license required
- port port_id is not E_Port
- port port_id trunking disabled
- port port_id speed is not 2G, 4G or 8G
- port port_id and port port_id are not in same port group
- port port_id and port port_id connect to different switches
- port port_id and port port_id connect to the switch WWN
- port port_id is not a trunking port due to: E_Port being disabled, or trunking might be disabled at remote port
- port port_id and port port_id cannot trunk, please check link length to make sure difference is less than 400 m

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

port1

Specify the port index number of port 1. Use the switchShow command to view the index numbers for a port. This operand is required.

port2

Specify the port index number of port 2. Use the switchShow command to view the index numbers for a port. This operand is required.

Examples To debug a trunk connection:

```
switch:admin> trunkdebug 43 44
Switch does not support trunking
```

```
switch:admin> trunkdebug 62 63
port 62 and 63 are trunked together
```

SEE ALSO [portCfgTrunkPort](#), [switchCfgTrunk](#), [trunkShow](#)

trunkShow

Displays trunking information.

Synopsis `trunkshow [-perf] [-swname]`

Description Use this command to display trunking information of both E_Ports and EX_Ports. The command displays the following fields:

Trunking Group Number

Displays each trunking group on a switch. All ports that are part of this trunking group are displayed.

Port to port connections

Displays the port-to-port trunking connections.

WWN

Displays the world wide name of the connected port.

Domain

Displays the domain IDs of the switches directly connected to the physical ports. In case of an FC Router backbone fabric interlinking several edge fabrics, the domain ID displayed for an E_Port trunk refers to a domain of a switch within the backbone fabric, whereas the domain ID displayed for an EX_Port trunk refers to the domain ID of a switch in the edge fabric. Because they are independent fabrics, it is possible that both the backbone and the edge fabric may have the same domain ID assigned to switches. If this is the case, run switchShow to obtain information on the port types of the local switch and the WWNs of the remote switches. Refer to the Example section for an illustration.

deskew

The difference between the time it takes for traffic to travel over each ISL compared to the time it takes through the shortest ISL in the group plus the minimum deskew value. The value is expressed in nanoseconds divided by 10. The firmware automatically sets the minimum deskew value for the shortest ISL, which is 15.

Master

Displays whether this trunking port connection is the master port connection for the trunking group.

When used with the -perf option, the command output displays the following additional information:

bandwidth

The bandwidth (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Values are displayed as either bits per second (Bps), kilobits per second (Kbps), megabits per second (Mbps), or gigabits per second (Gbps), rounded down to the next integer.

throughput

Displays the throughput (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Results are displayed for the previous second. Values are displayed as either bits per second (Bps), kilobits per second (Kbps), megabits per second (Mbps), or gigabits per second (Gbps), rounded down to the next integer.

%

Displays the percentage of link utilization (Rx, Tx, and the combined total for Tx+Rx) . Even when the link utilization is 100% , the throughput value will be lesser than the bandwidth value, due to the 8b/10b encoding and the control words transmitted. For example, the throughput for an 8Gbps link at 100% utilization would be approximately 6.8Gbps.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-perf

Displays the total bandwidth, throughput, and percentage of link utilization information for the trunk group (Rx, Tx, and combined total for Tx+Rx). This operand is optional.

-swname

Displays the neighbor switch name. This operand is optional.

Examples

To display trunking information for a switch:

```
switch:admin> trunkshow
1: 43->  0 10:00:00:05:1e:53:e3:8a  92 deskew 15 MASTER

2: 58-> 66 10:00:00:05:1e:4f:eb:00  65 deskew 16 MASTER
61-> 69 10:00:00:05:1e:4f:eb:00  65 deskew 16
57-> 65 10:00:00:05:1e:4f:eb:00  65 deskew 16
60-> 68 10:00:00:05:1e:4f:eb:00  65 deskew 15
56-> 64 10:00:00:05:1e:4f:eb:00  65 deskew 16
63-> 71 10:00:00:05:1e:4f:eb:00  65 deskew 16
62-> 70 10:00:00:05:1e:4f:eb:00  65 deskew 16

3: 59-> 67 10:00:00:05:1e:4f:eb:00  65 deskew 15 MASTER
```

To display trunking information for a switch that is part of an FC Router backbone fabric interlinking several edge fabrics (see the EX_Port with WWN "10:00:00:05:1e:35:b3:03" and the E_Port with WWN "10:00:00:05:1e:37:12:13" in the output below):

```
switch:admin> trunkshow
4: 49->  0 10:00:00:05:1e:35:b3:03   4 deskew 16 MASTER
54->  2 10:00:00:05:1e:35:b3:03   4 deskew 16
53->  5 10:00:00:05:1e:35:b3:03   4 deskew 16
50->  6 10:00:00:05:1e:35:b3:03   4 deskew 15
51->  4 10:00:00:05:1e:35:b3:03   4 deskew 16
52->  7 10:00:00:05:1e:35:b3:03   4 deskew 67
55->  3 10:00:00:05:1e:35:b3:03   4 deskew 16
48->  1 10:00:00:05:1e:35:b3:03   4 deskew 15

5: 71-> 22 10:00:00:05:1e:37:12:13   4 deskew 17 MASTER
67-> 17 10:00:00:05:1e:37:12:13   4 deskew 16
70-> 20 10:00:00:05:1e:37:12:13   4 deskew 16
69-> 21 10:00:00:05:1e:37:12:13   4 deskew 16
66-> 18 10:00:00:05:1e:37:12:13   4 deskew 17
68-> 23 10:00:00:05:1e:37:12:13   4 deskew 17
64-> 16 10:00:00:05:1e:37:12:13   4 deskew 15
65-> 19 10:00:00:05:1e:37:12:13   4 deskew 16
```

```

switch:admin> switchshow
48 4 0 013000 id N4 Online EX-Port \
  (Trunk port, master is Slot 4 Port 1 )
49 4 1 013100 id N4 Online EX-Port \
  10:00:00:05:1e:35:b3:03 "SW4100_33" (fabric id = 100 )\
  (Trunk master) E-Port \
  50:00:51:e3:70:bb:af:c1 "fcr_xd_9_100"
50 4 2 013200 id N4 Online EX-Port \
  (Trunk port, master is Slot 4 Port 1 )
51 4 3 013300 id N4 Online EX-Port \
  (Trunk port, master is Slot 4 Port 1 )
52 4 4 013400 id N4 Online EX-Port \
  (Trunk port, master is Slot 4 Port 1 )
53 4 5 013500 id N4 Online EX-Port \
  (Trunk port, master is Slot 4 Port 1 )
54 4 6 013600 id N4 Online EX-Port \
  (Trunk port, master is Slot 4 Port 1 )
55 4 7 013700 id N4 Online EX-Port \
  (Trunk port, master is Slot 4 Port 1 )
64 7 0 014000 id N4 Online E-Port \
  (Trunk port, master is Slot 7 Port 7 )
65 7 1 014100 id N4 Online E-Port \
  (Trunk port, master is Slot 7 Port 7 )
66 7 2 014200 id N4 Online E-Port \
  (Trunk port, master is Slot 7 Port 7 )
67 7 3 014300 id N4 Online E-Port \
  (Trunk port, master is Slot 7 Port 7 )
68 7 4 014400 id N4 Online E-Port \
  (Trunk port, master is Slot 7 Port 7 )
69 7 5 014500 id N4 Online E-Port \
  (Trunk port, master is Slot 7 Port 7 )
70 7 6 014600 id N4 Online E-Port \
  (Trunk port, master is Slot 7 Port 7 )
71 7 7 014700 id N4 Online E-Port \
  10:00:00:05:1e:37:12:13 "SW4900_43" (downstream)(Trunk master)

```

To display trunking information along with bandwidth throughput information:

```

switch:admin> trunkshow -perf
1: 43-> 0 10:00:00:05:1e:53:e3:8a 92 skew 15 MASTER
Tx: Bandwidth 4.00Gbps, Throughput 288.00bps (0.00%)
Rx: Bandwidth 4.00Gbps, Throughput 320.00bps (0.00%)
Tx+Rx: Bandwidth 8.00Gbps, Throughput 608.00bps (0.00%)

2: 58-> 66 10:00:00:05:1e:4f:eb:00 65 skew 16 MASTER
61-> 69 10:00:00:05:1e:4f:eb:00 65 skew 16
57-> 65 10:00:00:05:1e:4f:eb:00 65 skew 16
60-> 68 10:00:00:05:1e:4f:eb:00 65 skew 15
56-> 64 10:00:00:05:1e:4f:eb:00 65 skew 16
63-> 71 10:00:00:05:1e:4f:eb:00 65 skew 16
62-> 70 10:00:00:05:1e:4f:eb:00 65 skew 16
Tx: Bandwidth 28.00Gbps, Throughput 320.00bps (0.00%)
Rx: Bandwidth 28.00Gbps, Throughput 1.73Kbps (0.00%)
Tx+Rx: Bandwidth 56.00Gbps, Throughput 2.05Kbps (0.00%)

3: 59-> 67 10:00:00:05:1e:4f:eb:00 65 skew 15 MASTER
Tx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)
Rx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)
Tx+Rx: Bandwidth 16.00Gbps, Throughput 0.00bps (0.00%)

```


To display trunking information along with switch name:

```
switch:admin> trunkshow -swname
1:  0-> 10 10:00:00:05:1e:a1:99:09  88 SW_88 deskew 15 MASTER

2:  2-> 11 10:00:00:05:1e:a1:eb:39  75 switchname01234567890123456789 deskew 15
    MASTER
```

To display trunking information, with switch name and bandwidth throughput information:

```
switch:admin> trunkshow -pref -swname
1:  0-> 10 10:00:00:05:1e:a1:99:09  88 SW_88 deskew 15 MASTER
    Tx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Rx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Tx+Rx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)

2:  2-> 11 10:00:00:05:1e:a1:eb:39  75 switchname01234567890123456789 deskew 15
    MASTER
    Tx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Rx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Tx+Rx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)
```

SEE ALSO [portCfgTrunkPort](#), [switchCfgTrunk](#)

tsClockServer

Displays or sets the Network Time Protocol (NTP) Server addresses.

Synopsis **tsclockserver** [*ipaddr* [: *ipaddr* ...]]

Description Use this command to synchronize the local time of the Principal or Primary FCS switch to one or more external NTP servers.

This command accepts a list of NTP server addresses. The NTP server addresses can be passed in either IPV4 or IPV6 address format or as a DNS server name. When multiple NTP server addresses are specified, tsClockServer sets the first reachable address for the active NTP server. The remaining addresses are stored as backup servers, which can take over if the active NTP server fails.

The time server daemon synchronizes fabric time by sending updates of the Principal or Primary FCS local switch time periodically to every switch in the fabric. The time server daemon runs on all switches in the fabric, but only the Principal switch (when an FCS policy is not enabled) or the Primary FCS switch (when an FCS policy is enabled) connect to the NTP server (if specified) and broadcasts time service updates.

All switches in the fabric maintain the current clock server IP address in nonvolatile memory. By default, this value is LOCL., that is, the local clock of the Principal or the Primary FCS switch is the default clock server. Changes to the clock server IP addresses on the Principal or Primary FCS switch are propagated to all switches in the fabric.

Use this command without parameters to display the active NTP server and the configured NTP server list. Specify the *ipaddr* operands to set the clock server IP addresses and enable fabric-wide clock synchronization with the specified clock server. A value of LOCL may be specified as operand to set the clock server back to default.

Each *ipaddr* specified should be the IP address of an NTP server and should be accessible from the switch. The NTP server must support a full NTP client. When a clock server IP address other than LOCL is specified but is not used by the fabric, a warning is displayed and logged. When a clock server IP address other than LOCL is specified, the date command is restricted to display only. Refer to the date command help for details.

Notes When an FCS policy is enabled, this command can be run on all switches to view the clock server value. However, you can only modify the clock server value from the Primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

ipaddr

Specify the IP address of the NTP server or LOCL to use the local clock of the Principal or Primary FCS switch as the clock server. If more than one IP address is specified, separate the IP addresses by semicolons and enclose the list in double quotation marks. This operand is optional; if omitted, the current NTP server configuration is displayed. The default NTP server is LOCL.

Examples To display the default clock server:

```
switch:admin> tsclockserver
LOCL
```

To set the NTP server to a specified IP address:

```
switch:admin> tsclockserver 123.123.123.123  
Updating Clock Server configuration...done.
```

```
switch:admin> tsclockserver  
123.123.123.123
```

To configure multiple NTP servers:

```
switch:admin> tsclockserver "12.134.125.24; 12.234.87.01"  
Updating Clock Server configuration...done.
```

SEE ALSO [date](#)

tsTimeZone

Displays or sets the system time zone.

Synopsis

tsTimeZone --interactive

tsTimeZone *timezonename*

tsTimeZone --old *hourOffset[,minuteOffset]*

Description

Use this command to display or set the system time zone.

All switches maintain the current time zone setup in nonvolatile memory. Changing the time zone on a switch updates the local time zone setup and is reflected in local time calculations.

All switches are by default in the 0,0 time zone:, which is, GMT. If all switches in a fabric are located in the same time zone, you may leave the default time zone setup.

Time zone is used in computing local time for error reporting and logging. An incorrect time zone setup does not affect the switch operation in any way.

System services started during the switch boot reflect a time zone change only at the next reboot.

The time zone can be specified in the following two ways, by name or in an hours and minutes offset format:

- The offset format is specified with the --old option, followed by an hour offset value and optionally a minute offset value.
- The time zone name format uses the timezone database, which automatically adjusts for Daylight Saving Time.

By default, the switch is in offset mode (--old), with zero offsets, that is, time is displayed in GMT. Use tsTimeZone timezonename to change the offset format to the timezone name format.

When executed without parameters, this command displays the current time zone configuration in the format in which it was set.

- Negative hour offset values mean that the local time is behind GMT; for example, -8,0 is GMT-08:00.
- Positive hour offset values mean the that local time is ahead of GMT; for example, 3,0 is GMT+03:00.

When Virtual Fabrics are enabled, the hardware clock is updated by the default switch in the chassis, and the time zone set on any logical switch applies to all logical switches on the chassis. The tsTimeZone command requires chassis permissions.

Because there is only one clock on the chassis, for the time server to function correctly, ensure that all logical switches in the fabric have the same NTP Clock Server configured. This includes any Pre-v6.2.0 switches in the fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The option 11 (none) in interactive command mode to specify the time zone using the POSIX TZ format is not supported.

Operands This command has the following operands:

--old

Specifies the time zone in the offset format.

hourOffset

Specifies the number of hours relative to GMT. This operand must be specified as an integer. Valid values are -12 to 12. This operand is required with the --old option.

minuteOffset

Specifies the number of minutes relative to hour offset. This operand must be specified as an integer and is valid only with the --old option. Valid values are -30, 0, or 30. This operand is optional; if not specified, the value defaults to 0.

timezonename

Specifies the name of a time zone from the time zone database. Use `tstimezone --interactive` for a listing of valid time zone name.

--interactive

Interactively sets the timezone in name format.

Examples To display the current time zone setup and then change it to GMT-3:30:

```
switch:admin> tstimezone
Time Zone Hour Offset: 0
Time Zone Minute Offset: 0

switch:admin> tstimezone -3, -30
Updating Time Zone configuration...done.
System Time Zone change will take effect at next reboot.

switch:admin> tstimezone
Time Zone Hour Offset: -3
Time Zone Minute Offset: -30
```

To set the current timezone to the zone to Pacific Time using the interactive command mode:

```
switch:admin> tsTimeZone --interactive
Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.
1) Africa
2) Americas
3) Antarctica
4) Arctic Ocean
5) Asia
6) Atlantic Ocean
7) Australia
8) Europe
9) Indian Ocean
10) Pacific Ocean
11) none - I want to specify the time zone using the POSIX TZ format.
Enter number or control-D to quit ?2
Please select a country.
1) Anguilla
2) Antigua & Barbuda
3) Argentina
4) Aruba
5) Bahamas
28) Haiti
29) Honduras
30) Jamaica
31) Martinique
32) Mexico
```

- | | |
|----------------------------------|-----------------------------|
| 6) Barbados | 33) Montserrat |
| 7) Belize | 34) Nicaragua |
| 8) Bolivia | 35) Panama |
| 9) Bonaire Sint Eustatius & Saba | 36) Paraguay |
| 10) Brazil | 37) Peru |
| 11) Canada | 38) Puerto Rico |
| 12) Cayman Islands | 39) Sint Maarten |
| 13) Chile | 40) St Barthelemy |
| 14) Colombia | 41) St Kitts & Nevis |
| 15) Costa Rica | 42) St Lucia |
| 16) Cuba | 43) St Martin (French part) |
| 17) Curacao | 44) St Pierre & Miquelon |
| 18) Dominica | 45) St Vincent |
| 19) Dominican Republic | 46) Suriname |
| 20) Ecuador | 47) Trinidad & Tobago |
| 21) El Salvador | 48) Turks & Caicos Is |
| 22) French Guiana | 49) United States |
| 23) Greenland | 50) Uruguay |
| 24) Grenada | 51) Venezuela |
| 25) Guadeloupe | 52) Virgin Islands (UK) |
| 26) Guatemala | 53) Virgin Islands (US) |
| 27) Guyana | |

Enter number or control-D to quit ?49

Please select one of the following time zone regions.

- 1) Eastern Time
- 2) Eastern Time - Michigan - most locations
- 3) Eastern Time - Kentucky - Louisville area
- 4) Eastern Time - Kentucky - Wayne County
- 5) Eastern Time - Indiana - most locations
- 6) Eastern Time - Indiana - Daviess, Dubois, \
 Knox & Martin Counties
- 7) Eastern Time - Indiana - Pulaski County
- 8) Eastern Time - Indiana - Crawford County
- 9) Eastern Time - Indiana - Pike County
- 10) Eastern Time - Indiana - Switzerland County
- 11) Central Time
- 12) Central Time - Indiana - Perry County
- 13) Central Time - Indiana - Starke County
- 14) Central Time - Michigan - Dickinson, Gogebic, \
 Iron & Menominee Counties
- 15) Central Time - North Dakota - Oliver County
- 16) Central Time - North Dakota - Morton County \
 (except Mandan area)
- 17) Central Time - North Dakota - Mercer County
- 18) Mountain Time
- 19) Mountain Time - south Idaho & east Oregon
- 20) Mountain Time - Navajo
- 21) Mountain Standard Time - Arizona
- 22) Pacific Time
- 23) Alaska Time
- 24) Alaska Time - Alaska panhandle
- 25) Alaska Time - southeast Alaska panhandle
- 26) Alaska Time - Alaska panhandle neck
- 27) Alaska Time - west Alaska
- 28) Aleutian Islands
- 29) Metlakatla Time - Annette Island
- 30) Hawaii

Enter number or control-D to quit ?18

The following information has been given:

```
United States
Mountain Time
Therefore TZ='America/Denver' will be used.
Local time is now:      Tue Nov  6 02:43:16 MST 2012.
Universal Time is now:  Tue Nov  6 09:43:16 UTC 2012.
Is the above information OK?
1) Yes
2) No
Enter number or control-D to quit ?1
System Time Zone change will take effect at next reboot
```

To revert back to the offset format and verify the configuration:

```
switch admin> tstimezone --old 2

switch admin> tstimezone
Time Zone Hour Offset: 2
Time Zone Minute Offset: 0
```

SEE ALSO [date](#)

turboRamTest

Performs a turbo SRAM test of ASIC chips.

Synopsis **turboramtest**
 [--slot slot]
 [-passcnt count]

Description Use this command to verify the chip SRAM located in the ASIC using the turbo-RAM BIST circuitry. The BIST controller is able to perform the SRAM write and read operation at a much faster rate than the PCI operation.

Notes Do not abort this test prematurely, using CTRL-C or q to quit. Doing so may cause the test to report unexpected errors. Errors may vary depending on the hardware platform.

You cannot interrupt the test by pressing the return key (<cr>).

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This diagnostic cannot be run on an operational switch. You must disable the switch using the chassisDisable command before you can run this test. After the test completes, re-enable the switch using the chassisEnable command.

Operands This command has the following optional operands:

--slot slot Specifies the slot number on which the diagnostic operates. All eligible blade ports in the specified slot are tested. This operand is optional. The default value is 0 and operates on fixed port count products.

-passcnt count Specifies the number of times to perform this test. This operand is optional. The default value is 1.

Examples To run the SRAM test with two passes:

```
switch:admin> turboramtest -passcnt 2
Platform bladeType 154

Running turboramtest .....

WARNING:
This test should NOT be aborted in the middle. If aborted, current
blade or fixed configuration switch may become unusable.
```


turboRamTest

Reset the blade or the switch to recover.

```
Running Condor3 turboramtest on slot 0 Condor 0
Condor3 turboramtest on slot 0 condor 0 PASSED
```

PASSED.

SEE ALSO [bladeDisable](#), [bladeEnable](#), [chassisDisable](#), [chassisEnable](#)

upTime

Displays length of time the system has been operational.

Synopsis **uptime**

Description This command displays the current time, how long the system has been running, how many users are currently logged on, and the system load averages for the past 1, 5, and 15 minutes.

If the uptime is less than 60 seconds, the time is displayed in seconds. For times greater than or equal to 60 seconds, the time is displayed in minutes. The output format adjusts accordingly.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display the length of time the system has been operational:

```
switch:admin> uptime  
12:03am up 4:56, 3 users, load average: 1.17, 1.08, 1.08
```

SEE ALSO [date](#), [fastBoot](#), [reboot](#)

uRouteShow

Displays unicast routing information.

Synopsis `urouteshow [slot!][port] [domain]`

Description Use this command to display the unicast routing information for a port, as it is known by the FSPF path selection and routing task. The routing information describes how a frame that is received from a port on the local switch is to be routed to reach a destination switch.

The following information displays:

Local Domain ID

Domain number of local switch.

In Port

Port from which a frame is received. Except for the cases in which you perform a port swap or enable extended-edge PID (PID Format 2) on a switch, the value is equal to the port index field displayed by the switchShow command. Refer to Fabric OS Administrator's Guide for more information regarding the extended edge PID format.

Domain

Destination domain of incoming frame.

Out Port

Port to which the incoming frame is to be forwarded. Except for the cases in which you perform a port swap or enable extended edge PID (PID Format 2) on a switch, the value is equal to the port index field displayed by the switchShow command. For port swap operations, the value is equal to the switch port field displayed by the portSwapShow command. Refer to Fabric OS Administrator's Guide for more information regarding the extended-edge PID format.

Metric

Cost of reaching the destination domain.

Hops

Maximum number of hops required to reach the destination domain. If the number of hops are different for some multiple equal cost paths (to reach the same domain), then it displays the maximum number.

Flags

Indicates route type as either dynamic (D) or static (S). A dynamic route is discovered automatically by the FSPF path selection protocol.

Next (Dom, Port)

Domain and port number of the next hop. These are the domain number and the port number of the switch to which Out Port is connected.

The information provided by this command should match what is provided by portRouteShow and topologyShow.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

slot

For bladed systems only, specify the slot number of the input port whose routes are displayed, followed by a slash (/).

port

Specify the number of the input port whose routes are to be displayed, relative to its slot for bladed systems. Use switchShow to display a list of valid ports. This operand is optional; if omitted, the command displays routing information for all input ports in the switch.

domain

Specify a remote domain in the fabric for which routing information is to be displayed. This operand is optional; if omitted, the routing information for all domains in the fabric is displayed.

Examples To display the routing information of all the active ports:

```
switch:admin> urouteshow
Local Domain ID: 3
In Port Domain Out Port Metric Hops Flags Next (Dom, Port)
-----
    0         1      11      1000    1    D              1,0

Type <CR> to continue, Q<CR> to stop:
   11         2        0      1500    2    D              4,0

Type <CR> to continue, Q<CR> to stop:
    4         0        0       500    1    D              4,0
   16         1       27      1000    1    D              1,1

Type <CR> to continue, Q<CR> to stop:
   27         2       16      1500    2    D              4,16
```

To display the routing information of port 11 to domain 4 only:

```
switch:admin> urouteshow 1/11, 4

Local Domain ID: 3

In Port Domain Out Port Metric Hops Flags Next (Dom, Port)
-----
   11         4       16       500    1    D              4,16
```

SEE ALSO [portRouteShow](#), [topologyShow](#)

usbStorage

Manages data files on an attached USB storage device.

Synopsis

usbstorage [-e | --enable]

usbstorage [-d | --disable]

usbstorage [-l | --list]

usbstorage [-r | --remove *area target*]

usbstorage [-h | --help]

Description

Use this command to control a USB device attached to the Active CP. When the USB device is enabled, other applications, such as supportSave, firmwareDownload, or configDownload/cfgUpload can conveniently store and retrieve data from the attached storage device. Refer to the help pages for these commands for specific information on how the USB device is accessed by each application.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is available only on the Active CP.

On the Brocade 7840, the USB may continue blinking even after the USB device is disabled.

Operands

This command has the following operands:

-e | --enable

Enables the USB device. The USB device must be enabled before the list and remove functions are available.

-d | --disable

Disables an enabled USB device. This command prevents access to the device until it is enabled again.

-r | --remove *area target*

Removes a target in a specified application storage area. Valid areas are: firmware, support, config, or firmwarekey. A specified area must be followed by a target. Any existing file in a given application directory can be specified as a target. This command removes all data associated with the specified target.

-l | --list

Lists the content of the USB device up to two levels down from the root directory.

-h | --help

Displays the command usage.

Examples

To enable an attached USB device:

```
switch:admin> usbstorage -e
USB storage enabled
```

To list the contents of the attached USB device:

```
switch:admin> usbstorage -l

firmwarekey\          0B      2010 Aug 15 15:13
support\              106MB   2010 Aug 24 05:36
    support1034\      105MB   2010 Aug 23 06:11
config\               0B      2010 Aug 15 15:13
firmware\             380MB   2010 Aug 15 15:13
    FW_v6.4.0\        380MB   2010 Aug 15 15:13
    Available space on usbstorage 74%
```

To remove a firmware target from the firmware application area:

```
switch:admin> usbstorage -r firmware FW_v6.0.0
```

To disable an attached USB device:

```
switch:admin> usbstorage -d
USB storage disable
```

SEE ALSO [supportSave](#), [firmwareDownload](#), [configUpload](#), [configDownload](#)

userConfig

Manages user accounts.

Synopsis

userconfig

userconfig --show [*username* | **-a** | **-r rolename**]

userconfig --showlf **-l** *LF_ID* | **-c**

userconfig --add *username* **-r** *role* **-l** *LF_ID_list* [**-h** *LF_ID*
[**-c** *chassis_role*] [**-d** *description*] [**-p** *password*]
[**-at** | **-access-time** *start_time*-*end_time*] [**-x**]

userconfig --change *username* [**-r** *role*] [**-h** *LF_ID*]
[**-l** *LF_ID_list*] [**-c** *chassis_role*] [**-d** *description*] [**-x**]
[**-e** *yes* | *no*] [**-u**]

userconfig --addlf *username* [**-h** *LF_ID*]
[**-r** *role* **-l** *LF_ID_list*] [**-c** *chassis_role*]

userconfig --deletelf *username* [**-h** *LF_ID*][**-l** *LF_ID_list*] [**-c**]

userconfig --delete *username*

userconfig --help

Description

Use this command to manage user accounts on a switch. In a Virtual Fabric-enabled environment, you can configure the account's username, its role, and the logical fabrics that the account may access. An account can have different roles for different Logical Fabrics. An account can access multiple Logical Fabrics, but only one Logical Fabric at a time.

When executed without operands, this command displays the usage. The logical fabric command options are displayed only if Logical Fabrics are enabled on the switch.

You can execute the userConfig command on any switch. When the command completes, account information is saved persistently. On platforms supporting multiple switch domains, account information is saved only to the switch domain, in which the command was executed.

Use the distribute command to distribute the account database manually to other switches in the fabric. Target switches must be configured to accept the database. Accounts that are not consistent with the distributed database are overwritten. Account recovery from backup or access to backup data is not supported..

This command supports all user-defined roles in addition to the default roles provided with Fabric OS. To display the user-defined roles with their associated access permissions, use the roleConfig --show -all command. To display all roles, including the default roles, use the roleConfig --show -all -default command.

In a Logical Fabric environment, you can additionally define access to chassis-level commands. An account can have one role in the Logical Fabric, and another role regarding chassis commands.

An asterisk (*) next to the account name in the userConfig --show and userConfig -a output indicates that the password for that user account is still at the default value.

Notes The userConfig command operates on the switch-local user database only, regardless of whether the switch is configured to use RADIUS or LDAP authentication.

The account database supports a maximum of 256 customer created accounts.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--show

Displays user account information. Only accounts with access permissions compatible with the SecurityAdmin and Admin roles can show information about accounts other than the current login account. The following operands are optional:

username

Specifies the account login name. When no operand is specified, the command displays the current account information.

-a

Displays information about all accounts.

-r rolename

Displays information about all accounts with the specified role.

--showlf

Displays Logical Fabric permissions in an Logical Fabrics-enabled environment. Only users with access permissions compatible with the SecurityAdmin or Admin role may execute this command. An operand is required with this command. The following operands are mutually exclusive:

-l LF_ID_list

For each Logical Fabric in the LF_ID_list, this option displays a list of users that include that Logical Fabric in their Logical Fabrics permissions. Specify a range (1-5), or a list of Logical Fabric IDs separated by a comma (1,2,3), or a combination of both (1-5,7). Only users with access permissions compatible with the SecurityAdmin or Admin role may execute this command.

-c

Displays a list of users who have permission to execute chassis commands.

--add | --change

Creates a new user account or modifies an existing user account. The following restrictions apply when you create or modify a user account:

- You cannot change the role, the Logical Fabric permissions, the home Logical Fabric of any default account.
- You cannot change the role, the Logical Fabric permissions, or the description of accounts at the same or a higher authorization level.
- You cannot change the role, the Logical Fabric permissions, or the home Logical Fabric of your own account.
- No account can disable itself.
- Logical Fabric permissions must be a subset of the respective Logical Fabric permissions of the account that creates or modifies a user account.
- In an Logical Fabric-enabled environment, you can change the role associated with existing Logical Fabrics but you cannot add new Logical Fabrics or delete any existing Logical Fabrics.
- You cannot use change if the default FID was modified after user creation. --addlf must be used to add newly created Logical Fabrics to user.
- The account name cannot be the same an existing user account, a default role, a user-defined role, or a system role. System roles are used by internal switch processes and include the following: bin, daemon, sys, adm, tty, disk, lp, mem, kmem, wheel, mail, news, uucp, man, dip, ftp, nobody, users, floppy, console, utmp, and slocate. If the specified username already exists, this command fails with an appropriate message. Choose a different username and reissue the command.

The following operands are supported with the --add and --change option

username

Specifies the login name of the account to be created or modified. Enter a valid login name to modify an existing account. For new accounts, the name must be unique and must begin with an alphabetic character. User names are case-sensitive and can contain up to 32 alphanumeric characters, including periods (.) and underscore (_) characters. For backward compatibility with releases prior to Fabric OS v7.3.0, the username with 40 characters is supported through configDownload and password distribution from switches.

-r role

In an Logical Fabric-enabled environment, this operand specifies the account's role for all Logical Fabrics provided with the Logical Fabric list. When you create a user account in an Logical Fabric-enabled environment, you can specify only one role for the user. This role is associated with each of the Logical Fabric IDs in the specified LF_ID_list. Once the account is created, you can use the --addlf option to create another list of Logical Fabric IDs with its own set of associated roles.

You can assign any role to the account, user-defined or default. Use the roleconfig --show command for a listing of valid roles. This operand is required with the --add option; it is optional with the --change option.

-h LF_ID

Specifies the home Logical Fabric depending on the environment. This operand is optional. If no Logical Fabric is specified with the --add option, the system assigns the lowest numbered Logical Fabric the user is authorized to access.

-l *LF_ID_list*

Specifies the Virtual Fabrics the user is authorized to access. The Logical Fabrics in *LF_ID_list* and the existing Logical Fabric permissions for username must be a subset of the Logical Fabric permissions of the account that executes this command. This operand is required with the `--add` option. It is optional with the `--change` option.

-c *chassis_role*

Specifies the account's access permissions at the chassis level. The chassis role allows the user to execute chassis-related commands in an Logical Fabric-enabled environment. To assign the chassis role to an account, the executing account must have chassis-level permissions. Valid chassis roles include the default roles and any of the user-defined roles. Use the `roleconfig --show` command for a listing of valid roles.

-d *description*

Provides a description for the new account. This operand is optional. The maximum length is 32 printable ASCII characters. Some characters that are interpreted by the shell (" , ! etc.) require a preceding escape character (\). To include spaces, place the description in double quotation marks. Colons are not permitted.

-at | -access-time *start_time-end_time*

Specifies the time range the users can access the switch through Telnet, SSH, console or Web. Outside the configured time, access will be denied and the existing sessions for the user will be terminated on the configured *end_time*. The *start_time* and *end_time* must be specified in the hh:mm 24-hour clock format. The firmwaredownload will continue even when the user gets logged out upon expiry of time limit.

If *end_time* is less than the *start_time*, then it is considered as next day end time. For example, the command `-access-time 23:20-07:20` represents time interval in between two days.

-x

Optionally specifies an expired password that must be changed the first time the user logs into a new or modified account. This command also prompts for the existing password.

The following optional operand is available only with the `--add` option:

-p *password*

Specifies a password for the account. This operand is optional; if omitted, the command prompts for an initial password for the account. The password must satisfy all currently enforced password rules. By default the password is created with the configured expiration period.

The following optional operands are available only with the `--change` option:

-eyes | no

Enables or disables an account. Specify "yes" to enable or "no" to disable an account. Once an account is disabled, the CLI sessions associated with the account are terminated.

-u

Unlocks the specified user account. User accounts can get locked after several attempts to log in with an invalid password. Refer to the `passwdCfg` help page for more information.

--addlf | --deletelf

Adds Logical Fabric or chassis permissions to a user account or deletes Logical Fabric or chassis permission from a user account. The following operands are supported:

username

Specifies the account login name.

-h *LF_ID*

Specifies the account's home Logical Fabric. This operand is optional.

- If a home Logical Fabric is specified with the --addlf option, the home Logical Fabric must be one of the Logical Fabrics in LF_ID_list. If a home Logical Fabric is not specified and the account did not previously have a home Logical Fabric, the home Logical Fabric is set to the lowest numbered Logical Fabric in the user's Logical Fabric permissions.
- If a home Logical Fabric is specified with the --deletelf option, the home Logical Fabric must be one of the Logical Fabrics in the Logical Fabric permissions remaining after the Logical Fabrics specified in LF_ID_list have been removed. If a home Logical Fabric is not specified, the current home Logical Fabric remains unchanged, if it is still in the user's Logical Fabric permissions. If a home Logical Fabric is not specified and the current home Logical Fabric is deleted, the new home Logical Fabric is set to the lowest numbered Logical Fabric in the user's Logical Fabric permissions.

The account's existing Logical Fabric permission and the LF_ID_list must be a subset of the Logical Fabric permissions of the account executing this command.

-l *LF_ID_list*

Specifies the logical fabric IDs to be added or deleted. Specify a range (1-5) or a list of Logical Fabric IDs separated by comma (1,2,3), or a combination of both (1-5,7).

-r *role*

Specifies the role associated with the Logical Fabric ID list given in this command. This operand is required when you specify an LF_ID_list operand.

-c [*chassis_role*]

Specifies the account's access permissions regarding chassis-level commands. To remove an account's chassis permissions, specify -c only. To add chassis permissions, specify a chassis role with the --c option.

--delete *username*

Deletes the specified account from the switch. This command prompts for confirmation. Once an account is deleted, the CLI sessions associated with the account are terminated.

The following restrictions apply when you delete an account:

- You cannot delete a default account.
- You cannot delete your own account.

LF_ID list and associated Logical Fabric permissions for username must be a subset of the Logical Fabric permissions of the account that executes the userConfig --delete command.

--help

Displays the command usage. In a Logical Fabric-enabled environment, options specific to Logical Fabrics are displayed.

Examples

To create a new account named "test" with admin role and admin chassis permissions in the Logical Fabric member list 1-10:

```
switch:admin> userconfig --add test -l 1-10 \
-r admin -c admin
Setting initial password for test
Enter new password:
Re-type new password:
Account test has been successfully added.
```

To display current account information:

```
switch:admin> userconfig --show test
Account name: test
Role: admin
Description:
Enabled: Yes
Password Last Change Date: Sat Jun 14 2008
Password Expiration Date: Not Applicable
Locked: No
RoleLFMaps: admin: 1-10 chassis
Chassis Role: admin
Home Context: 1
```

To grant user access permissions to the test account for the Virtual Fabrics 11-15:

```
switch:admin> userconfig --addlf test -r user -l 11-15
New LFs/Chassis role for account test has been \
successfully added.
```

To change the test account's access permissions for the Logical Fabrics 5 and 6 to ZoneAdmin and the chassis permission to user:

```
switch:admin> userconfig --change test -r zoneadmin \
-l 1-5 -c user -h 4
Broadcast message from root (ttyS0) Sat Jun 14 01:05:28 2008...
Security Policy, Password or Account Attribute Change: \
test will be logged out
```

To display the test account information:

```
switch:admin> userconfig --show test
Account name: test
Role: zoneadmin
Description:
Enabled: Yes
Password Last Change Date: Sat Jun 14 2008
Password Expiration Date: Not Applicable
Locked: No
RoleLFMaps: zoneadmin: 1-5 admin: 6-10 user: 11-15 chassis
Chassis Role: user
Home Context: 4
```

To remove chassis permissions from the test account for the Logical Fabrics 1-3.

```
switch:admin> userconfig --deletelf test -l 1-3 -c
Broadcast message from root (ttyS0) Sat \
Jun 14 01:10:02 2008...

Security Policy, Password or Account Attribute Change: \
test will be logged out
LFs/chassis role for account test has been successfully\
deleted.
```

To display information for all accounts with admin privileges:

```
switch:admin> userconfig --show -r admin

Account name: admin
Description: Administrator
Enabled: Yes
Password Last Change Date: Unknown
Password Expiration Date: Not Applicable
Locked: No
Home LF Role: admin
Role-LF List: admin: 1-128
Chassis Role: admin
Home LF: 128

Account name: test1s1
Description:
Enabled: Yes
Password Last Change Date: Sun Oct 5 2025
Password Expiration Date: Not Applicable
Locked: No
Home LF Role: admin
Role-LF List: admin: 1
No chassis permission
Home LF: 1
```

SEE ALSO [roleConfig](#)

version

Displays firmware version information.

Synopsis **version**

Description Use this command to display firmware version information and build dates.

The command output includes the following:

Kernel

The version of switch kernel operating system.

Fabric OS

The version of switch Fabric OS.

Made on

The build date of firmware running in switch.

Flash

The build date of firmware stored in flash prompts.

BootProm

The version of the firmware stored in the boot PROM

Usually the Made on and Flash dates are the same, because the switch starts running flash firmware at power-on. However, in the time period between firmwareDownload and the next reboot, the dates can differ.

Operands None

Examples To display the firmware version information in a switch:

```
switch:admin> version
Kernel:      2.6.14.2
Fabric OS:   v7.2.0
Made on:     Wed Apr 24 19:52:07 2013
Flash:       Fri Apr 26 06:58:33 2013
BootProm:    1.0.15
```

SEE ALSO [firmwareDownload](#), [reboot](#)

wwn

Displays the world wide name (WWN) and factory serial number of the switch or chassis.

Synopsis **wwn [-sn]**

Description Use this command to display the WWN associated with a switch or chassis and to display the factory serial number. The WWN is a 64-bit number that has eight colon-separated fields each consisting of one or two hexadecimal digits between 0 and ff. The WWN is a factory-set parameter that cannot be changed by the end user. The WWN is used as the license ID in many cases, but the only official string to be used for requesting licenses is the licenseidshow output. Alternately, use switchShow to display the WWN.

In addition to the WWN, all switches have a unique 24-bit Fibre Channel address that is used for communicating with the switch. Use fabricShow to display the FC address in addition to the WWN.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

-sn On enterprise-class platforms, this operand displays the chassis factory serial number following the WWN. On standalone platforms, it displays the factory serial number. This operand is optional; if omitted, this command displays only the WWN for the switch or chassis.

Examples To display the WWN on a Brocade DCX-4S:

```
switch:admin> wwn
10:00:00:05:1e:7a:7a:00
```

To display the WWN and chassis factory serial number:

```
switch:admin> wwn -sn

WWN: 10:00:00:05:1e:7a:7a:00
SN:  ANP0645D05B

switch:admin> chassisshow | grep ANP0645D05B
Chassis Factory Serial Num: ANP0645D05B
switch:admin>
```

To display the license ID:

```
switch:admin> licenseidshow
10:00:00:05:1e:7a:7a:00
```

To display the WWN and the Fibre Channel address:

```
switch:admin> fabricshow
Switch ID      Worldwide Name      Enet IP Addr FC IP Addr Name
-----
1:fffc01 10:00:00:05:1e:7a:7a:00 10.32.39.25 0.0.0.0 "sw03"
2:fffc02 10:00:00:05:1e:b3:00:9e 10.32.39.34 0.0.0.0 "ras39"
3:fffc03 10:00:00:05:1e:93:c4:00 10.32.39.20 0.0.0.0 "sw5"
4:fffc04 10:00:00:05:1e:55:5c:69 10.32.39.59 0.0.0.0 >"sp39"
```

To display the WWN on a Brocade 5100:

```
switch:admin> wwn
10:00:00:05:1e:7a:7a:00
```

To display the WWN and factory serial number:

```
switch:admin> wwn -sn

WWN: 10:00:00:05:1e:82:3c:2a
SN:  ALM0602E003

switch:admin> chassisshow | grep ALM0602E003
Factory Serial Num:      ALM0602E003
```

SEE ALSO [chassisShow](#), [fabricShow](#), [licenseIdShow](#), [switchShow](#)

wwnAddress

Binds an FC Port ID to a device WWN.

Synopsis **wwnaddress --bind [WWN] [PID]**

wwnaddress --unbind [WWN]

wwnaddress --show

wwnaddress --findPID [WWN]

wwnaddress --help

Description Use this command to manage address assignments for a given device world wide name. The allocation of a PID to a specified device WWN supports the persistence of the PID based on the WWN of the device to which the PID is bound. If the PID is not bound to a device WWN, the device can get the same or a different PID irrespective of which port it logs in to a given switch partition.

This command fails under any of the following conditions:

- The PID is currently bound to another port through port address binding. Use portaddress --unbind to free up the PID.
- The WWN is already bound with a different PID, or the PID is bound to another WWN. Use wwnaddress --unbind to remove the PID-WWN binding.
- There is no space left in the WWN-PID table for an additional entry. Use wwnaddress --unbind to free up space in the table.

The command provides a --show option that displays the currently bound address for all WWNs. Alternately, you can use the --findPID option to display the PID currently bound to a specified WWN.

Notes Dynamic Area Mode and WWN-Based persistent PID must be enabled on the switch before you can assign an address with this command. Refer to configure for more information.

This command is supported only on the Brocade DCX and on the DCX-4S.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operands:

--bind

Assigns the lower two bytes of the Fibre Channel address to the specified WWN. This operand is not supported on the Brocade Analytics Monitoring Platform.

WWN

Specifies the WWN for the device to which the PID should be assigned.

PID

Specifies the PID (the lower 16 bits of the address excluding the domain part) in hexadecimal format to be bound to the device WWN. Note that only the upper 10 bits of the PID can be used for a unique route. Therefore, not all addresses in the 16-bit range are available.

--unbind

Removes the WWN-PID binding corresponding to the specified device WWN. This operand is not supported on the Brocade Analytics Monitoring Platform.

WWN

Specifies the WWN for the device from which to remove the PID binding.

--show

Displays all WWN-PID entries currently present in the partition.

--findPID

Displays the PID currently bound to the specified device WWN. This operand is not supported on the Brocade Analytics Monitoring Platform.

WWN

Specifies the device WWN.

--help

Displays the command usage.

Examples

To bind a 16-bit address to a device WWN:

```
switch:admin> wwnaddress --bind \  
10:00:00:06:2b:0f:76:5f 0x9000
```

To unbind a given address from a WWN:

```
switch:admin> wwnaddress --unbind \  
10:00:00:06:2b:0f:76:5f
```

To display all WWN address bindings on the current partition:

```
switch:admin> wwnaddress --show  
#    WWN                      Area  Age  Flag  
=====
```

1)	10:00:00:06:2b:0f:71:0c	0x405	53	0x12
2)	10:00:00:05:1e:5e:2c:11	0x9900	101	0x21
3)	10:00:00:06:2b:0f:71:0d	0x503	37	0x12
4)	10:00:00:06:2b:0f:71:0e	0x304	43	0x12
5)	10:00:00:06:2b:0f:71:0f	0x303	38	0x12
6)	10:00:00:06:2b:0f:70:14	0x401	29	0x12
7)	10:00:00:06:2b:0f:70:15	0x505	46	0x12
8)	10:00:00:06:2b:0f:70:16	0x402	33	0x12
9)	10:00:00:06:2b:0f:70:17	0x406	47	0x12
10)	10:00:00:06:2b:0f:72:20	0x403	30	0x12
11)	10:00:00:06:2b:0f:72:21	0x501	36	0x12
12)	10:00:00:06:2b:0f:72:23	0x502	34	0x12
13)	10:00:00:06:2b:0f:6e:30	0x301	35	0x12
14)	10:00:00:06:2b:0f:6e:31	0x102	42	0x12
15)	10:00:00:06:2b:0f:6e:32	0x302	39	0x12
16)	10:00:00:06:2b:0f:6e:33	0x504	45	0x12

wwnAddress

```
17) 10:00:00:06:2b:0f:76:5e 0x404 101 0x12
18) 10:00:00:06:2b:0f:76:5f 0x101 41 0x12
19) 20:20:00:05:1e:0b:61:cc 0x400 28 0x22
20) 20:21:00:05:1e:0b:61:cc 0x500 31 0x22
21) 20:22:00:05:1e:0b:61:cc 0x300 32 0x22
22) 20:23:00:05:1e:0b:61:cc 0x100 40 0x22
23) 10:00:00:06:2b:0f:6d:ee 0x305 50 0x12
24) 10:00:00:06:2b:0f:6d:ef 0x103 49 0x12
```

To display the WWW address binding for device 20:22:00:05:1e:0b:61:cc:

```
switch:admin> wwnaddress --findPid 20:22:00:05:1e:0b:61:cc
WWN                               PID
=====
20:22:00:05:1e:0b:61:cc 0x300
```

SEE ALSO [portAddress](#)

wwnRecover

Utility to recover mismatch of data in WWN card. Errors may be due to corruption, defect, or other causes.

Synopsis **wwnrecover**

Description Use this command to recover one or both WWN cards from errors detected by the audit routine. The audit routine is triggered upon first boot up of the system, periodically every 24 hours thereafter, and upon detection of insertion of either of the WWN card. The audit routine performs consistency checks on each of the following sections of data maintained in the WWN cards for use by the corresponding system component:

- License ID data sections within the same WWN card
- IP address data sections across the two WWN cards
- DCE data sections across the two WWN cards
- License ID data sections across the two WWN cards
- Chassis configuration data sections across the two WWN cards
- Chassis serial and part number sections across the two WWN cards

Error resulting from a mismatch in data may be encountered on one or more sections. The recovery mechanism may vary depending on the nature of the error encountered and is also based on the data section. The **wwnrecover** operation presents a summary of all the errors detected and prompts you through the recovery process interactively for all data sections. For each data section, you will be prompted with an option to recover WWN1 card data from WWN2 card data or vice-versa or to exit without recovering the corresponding data section. For example, if WWN2 is replaced by a minimally programmed factory replacement card, WWN recovery recommends to recover most of the data sections on WWN2 from WWN1. However, in a rare case where a bit corruption occurs in one data section on one card and another bit corruption in a different data section on the other card, the recovery for each of the affected data sections will be different. WWN recovery is not possible if the license ID differs on both WWN cards.

In the event of any of the following issues with WWN card operations, the system logs the corresponding RASlog message:

- Mismatch between the two WWN cards detected by the audit routine (EM-1220 message).
- Insertion of either of the two WWN cards detected by the system (EM-1221 message).
- Access failure by the audit routine during read/write to either of the WWN cards (EM-1222 message).

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To perform WWN recovery (the following example shows that no WWN errors were detected):

```
switch:admin> wwnrecover
No WWN Error is detected. Exiting.
```

To perform WWN recovery (the following example shows the WWN errors and the recovery process):

```
switch:admin> wwnrecover
WWN Discrepancies (Error:64) detected.

Please attempt recovery of these errors (where possible)
by navigating to the required recovery selection
from the following WWN Recovery Options Menu.

Please note that in the event of a mismatch in the LicenseIds,
between WWN1 and WWN2 cards, wwn recovery may not be possible.
In this case a factory programmed card with a matching LicenseId
must be used, as a replacement card, to complete the wwn recovery.

WWN 1 and WWN 2 Non-Critical Seeprom data is mismatched.

      WWN Non-Critical Seeprom Problem Details

WWN Seeprom Chassis Serial Number Mismatch.
WWN 1 Serial Number: BADSerial
WWN 2 Serial Number: GOODSerial

      WWN Recovery Options

0. Exit

3. Recover WWN 2 from WWN 1

4. Recover WWN 1 from WWN 2

Enter Selection > 4
You have opted to recover WWN1 from WWN 2.
Are you sure? Please Confirm: (yes, y, no, n): [no] y
Recovering Serial Number...
Serial Number Recovery completed.

WWN Seeprom Chassis Part Number Mismatch.
WWN 1 part Number: GoodPARTNO
WWN 2 Part Number: BadPARTNo

      WWN Recovery Options

0. Exit

3. Recover WWN 2 from WWN 1

4. Recover WWN 1 from WWN 2

Enter Selection > 3
You have opted to recover WWN2 from WWN1.
Are you sure? Please Confirm: (yes, y, no, n): [no] y
Recovering Part Number...
Part Number Recovery completed.
```

SEE ALSO [licenseldShow](#), [wwn](#)

zone

Performs specific zone operations, manages Traffic Isolation (TI) Zones, and Frame Redirect (RD) Zones.

Synopsis

zone --help

zone --copy *source_zone_object*
[*dest_zone_object*][-f]

zone --expunge "*zone_object*"

zone --validate [[-f]] [-m *mode*] ["*zone_object*"]]]
[[-i] [*pattern*]]

zone --create -t *objecttype* [-o *optlist*] *name* -p *portlist*

zone --add [-o *optlist*] *name* -p *portlist*

zone --remove *name* -p *portlist*

zone --delete *name*

zone --activate *name*

zone --deactivate *name*

zone --show [-ic] [*name*][-ascending]

zone --showTlerrors

zone --rdcreate [*host_wwn*] [*target_wwn*]
[*vi_wwn*] [*vt_wwn*] [*policy*] [FCR | noFCR]

zone --rddelete *name*

zone --showTltrunkerrors

Description

The zone command supports three types of operations: specific zone operations, management of Traffic Isolation Zones, and management of Frame Redirect (RD) Zones.

1. Manage Zoning Operations

Use the --copy, --expunge, and --validate options to perform specific zoning operations. These commands follow a batched-transaction model.

2. Manage Traffic Isolation (TI) Zones

Use the --create, --add, --remove, --delete, --activate, --deactivate, and --show options to manage Traffic Isolation Zones.

TI zones control the flow of interswitch traffic by provisioning certain E_Ports to carry only traffic flowing from a specific set of source ports. The provision (a.k.a TI Zone) is part of the defined zone configuration and does not appear in the effective zone configuration. A Maximum of 255 TI Zones can be created in one fabric.

TI zones over FCR provide the ability to lock down a request and corresponding response to the same VE_Port tunnel for a given pair of devices in two separate fabrics. TI over FCR has two working parts:

- TI within edge fabric routes traffic between a real device and a Proxy device to a specified EX_Port.
- TI within backbone fabric locks down the route within the backbone fabric based on EX_Ports and devices involved.

Use the `--showTlerrors` option to generate a report of potential routing problems in the local Domain. If the command detects errors, it outputs the ID of the current domain, and for each record, it displays the following information:

Error Type

Error or Warning.

Affected Remote Domain

Domain where the traffic drop is likely to be happening.

Affected Local Port

Device port shared by the TI zones.

Affected TI Zones

Lists the names of the TI zones implicated in the problem.

Affected Remote Ports

Remote ports that are affected by the problem in the TI Zones.

Using TI zones in logical fabrics has several restrictions. TI zones created in logical fabrics cannot include logical interswitch links (LISLs); only physical port numbers can be included. TI zones cannot use the failover disabled option in Logical fabrics that have LISLs, and TI zones cannot use the failover disabled option in Base Fabrics. For more information, refer to the Fabric OS Administrator's Guide.

3. Manage Frame Redirect (RD) Zones

Use the `--rdcreate` and `--rddelete` options to manage Frame Redirect Zones. RD zones allow frames to be redirected to devices that can perform additional processing on these frames (for example, encryption). The feature uses a combination of RD zones and Name Server changes to map real device world wide names (WWNs) to virtual port IDs (PIDs.) This allows redirecting a flow between a host and target to a device that can perform its functionality without reconfiguring the host and target.

The RD Zone is part of the defined zone configuration and does not appear in the effective zone configuration. Use `cfgSave` to save the RD zone changes to the defined configuration. Use `cfgShow` to display the RD zones.

When you create the first RD zone, two additional zone objects are created automatically: A base zone "red_____base" and a zone configuration "r_e_d_i_r_c__fg". These additional zone objects are required by the implementation. These zone objects must remain on the switch as long as other redirect zones are defined. Do not remove these objects, unless redirection is no longer required and no other redirect zones exist.

Use zone `--rddelete` to remove the base RD zone, "red_____base", if it is the last remaining RD zone in the RD zone configuration, "r_e_d_i_r_c__fg." When the base zone is removed, the RD zone configuration is removed as well.

Notes Device ports are allowed to be part of several TI zones to support enhanced TI zone deployment in FICON environments.

You cannot swap E_Ports that are configured as part of a TI zone. The TI zone information is lost when you use portSwap to swap the E_Ports. To work around this issue, reconfigure your TI zones rather than swapping the E_Ports.

The current zone commands, zoneCreate, aliCreate, cfgCreate, etc., cannot be used to manage special zones, such as TI zones or RD zones.

Peer Zones are not allowed to be edited using this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command takes as an operand an action and its associated arguments. When executed without operands, the command displays the usage.

--help

Displays the command usage.

1. Commands for performing specific zone operations

--copy

Copies a specified zone object or all zone objects. The current transaction buffer is used for this operation. The following operands are optional:

source_zone_object

Specifies the zone object. The zone object can be a zone configuration, a zone alias, or several zones. If a source zone object is not specified, all zone configurations are copied over.

dest_zone_object

Identifies the destination zone object. If dest_zone_object is not specified, source_zone_object is copied over with the same name. If the destination zone object is not already present, one is created (with type as source_zone_object).

-f

Overwrites existing zone object without confirmation.

--expunge

Removes all references to the specified zone object and then deletes the zone object. The command displays the list of zone objects to be deleted and prompts for confirmation before deleting the zone objects. The removal of zone object references can trigger the removal of zones not specified in the command. For example, removing the last zone member from a zone deletes the zone, and may trigger a recursive deletion of other zones. The following operand is required:

"zone_object"

Specifies a zone object. A zone object can be a zone member, zone alias, or a zone. The zone object must be enclosed in double quotation marks.

--validate

Lists all zone members that are not part of the current zone enforcement table.

If a zone member is specified by Domain and Port (D,P) in the Admin Domain membership list, all zone elements specified with WWNs associated with that D,P are considered for zone enforcement. If a device WWN is specified in the Admin Domain member list, the corresponding D,P (the device the specified WWN is associated with) is not considered for zone enforcement.

The following operands are optional:

-f

Specifies that zone members that are not enforceable should be expunged in the transaction buffer. This pruning operation affects both the transaction buffer and the defined buffer. You cannot specify a mode or a zone object together with the -f option.

mode

Specifies the zone database location. This operand is optional. If no mode option is specified, the validated output of all the three buffers is displayed. Supported mode flag values include the following:

0

Uses the zone database from the current transaction buffer.

1

Uses the zone database stored in persistent storage.

2

Uses the currently enforced zone database.

"zone_object"

Specifies a zone object. A zone object can be a zone member, a zone alias, or a zone.

-i

Lists all zone members for a given pattern without case distinction.

pattern

A POSIX-style regular expression used to match zone members. This operand is optional. Patterns can contain:

- A question mark (?) to match any single character.
- An asterisk (*) to match any string of characters.
- A range of characters to match any character within the range: for example, [0-9] or [a-f].

2. Creating and managing TI Zones

Use these commands to create and manage TI Zones.

--create

Creates a TI Zone with specified options and port list.

--add

Adds port list members and the failover option to existing TI zones.

--remove

Removes port list members from existing zones. Removal of the last member from an active TI zone generates a warning. If the last member of a TI zone is removed, the TI zone name is removed from the defined TI zone list.

The following operands are supported:

-t *objecttype*

Specifies the zone object type. This operand is supported only with the --create option. To create a TI zone, the value is ti.

-o *optlist*

Specifies list of options to control activation, deactivation, and failover mode. If this option is not specified the zone is created, by default, with failover enabled, and the zone will be activated. This operand is supported only with the --create and --add options.

Valid values for optlist include the following:

a

Activates the specified zone.

d

Deactivates the specified zone.

n

Disables failover mode. In non-failover mode, when the last interswitch link (ISL) of a TI Zone goes offline and there is an alternative ISL, the alternative ISL is not used and the switch generates a state change notification (SCN) or a registered state change notification (RSCN) to indicate that no ISL is available. When the ISL of the TI Zone comes online again, the route is set up again and the switch generates another SCN or RSCN. TI zones with no-failover option are not supported in logical fabrics. TI zones defined in the Base Fabric for logical fabric traffic need to allow failover.

f

Enables failover mode. In failover mode, when the last ISL of a TI Zone goes offline and there is an alternative ISL, the alternative ISL is used and the switch does not generate any SCN or RSCN messages. If the ISL of that TI Zone comes online again, traffic is rerouted immediately to the original ISL.

name

Specifies the name of the zone to be created, added or deleted

-p *portlist*

Specifies the lists of ports to be included, added or removed from a TI zone. The syntax for portlist is "D,I" (Domain, Index). The port list must be enclosed in double quotation marks. List members must be separated by semicolons, followed by a space. When you create TI zones over FCR, for a TI within an Edge fabric use "-1" in "I" (of "D,I") in to denote Front and Translate phantom in the E_Port list. When creating a TI zone within the Backbone fabric specify "Port WWN" in portlist to indicate devices talking across fabrics.

--activate *name*

Activates the specified TI zones. If more than one zone is specified, the list of zone names must be enclosed in double quotation marks; zone names must be separated by semicolons.

--deactivate *name*

Deactivates the specified TI zones. If more than one zone is specified, the list of zone names must be enclosed in double quotation marks; zone names must be separated by semicolons.

--delete <i>name</i>	Deletes TI zones from the defined TI zone lists. This command prompts for confirmation.
--show [<i>name</i>]	Displays zone name, port lists, failover option, configured status and, the active status for the specified zones. The configured status reflects the latest change that may or may not have been activated. The active status reflects the state that is activated by <code>cfgEnable</code> . Without any specified name, this command displays all TI zones in the defined configuration. The following operands are optional:
-ic	Displays all TI zone configurations for a given zone name without case distinction.
-ascending	Displays the TI zone members in ascending order.
--showTlerrors	Analyzes real and potential routing problems with the activated TI zoning set and prints a report. This command must be executed in the local domain and analyzes only that domain.
--showTltrunkerrors	Displays details of the trunk members present in the TI zone and those not present in the TI zone.
3. Creating and managing RD Zones	
--rdcreate	Creates a RD Zone for the specified members. The following operands are required:
<i>host_wwn</i>	Specifies the port world wide name of the host.
<i>target_wwn</i>	Specifies the port world wide name of the target.
<i>vi_wwn</i>	Specifies the port world wide name of the virtual initiator (VI).
<i>vt_wwn</i>	Specifies the port world wide name of the virtual target (VT).
<i>policy</i> restartable | nonrestartable	Specifies the policy as either restartable or nonrestartable. A restartable policy causes traffic flow to revert to the physical host and target configuration in the event the virtual device should fail. When the policy is specified as nonrestricted and one of the virtual devices goes offline, the physical devices are considered offline and no traffic is allowed between the original host and target.
FCR | noFCR	Indicates whether or not this RD zone should function across a Fibre Channel router (FCR). Specify FCR to support FCR. Specify noFCR if you do not wish to support FCR.
--rddelete <i>name</i>	Deletes the RD Zone specified by name. RD Zones are unique in that the zone name is not user-defined. It is derived based on members and the specified configuration. Use <code>cdcfgShow</code> to display currently implemented RD zone by name.

Examples 1. Specific zone operation commands

The following example shows a scenario of an invalid configuration. If you attempt to create a zone z10 with an alias a10, then create a zone with name a10, z10 expects a10 to be an alias and results in an invalid configuration.

To validate all zones in the currently enforced zone database:

```
switch:admin> zonecreate z10,a10

switch:admin> zonecreate a10, 1,2

switch:admin> zone --validate
Defined configuration:
zone: a10 1,2*
zone: z10 a10~

Effective configuration:
No Effective configuration: (No Access)
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

The reason for not being in the current enforcement table could be The device is not online.

To delete all references associated with zone member 100,5:

```
switch:admin> zone --expunge"100,5"
You are about to expunge one configuration
or member. This action could result in removing
many zoning configurations recursively.
[Removing the last member of a configuration
removes the configuration.]
Do you want to expunge the member?
(yes, y, no, n): [no] yes
```

To validate all zones in the zone database in the current transaction buffer:

```
switch:admin> zone --validate -m 0
Defined configuration:
cfg:  t_r_a_f_f_i_c_i_s_o_c_fg
      bluezone; greenzone
cfg:  ticonfig
      regzone
zone:  bluezone
      1,1*; 1,2*
zone:  greenzone 1,1*; 20:01:00:05:1e:01:23:e0*
zone:  regzone 1,4*; 1,5*
zone:  t_r_a_f_f_i_c_i_s_o_prop_zn
      1,3*; 2,3*
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

To validate all zones in the zone database in the persistent storage (defined configuration):

```
switch:admin> zone --validate -m 1
Defined configuration:
cfg:  t_r_a_f_f_i_c_i_s_o_c_fg
      bluezone; greenzone
cfg:  ticonfig
      regzone
zone:  bluezone
      1,1*; 1,2*
zone:  greenzone 1,1*; 20:01:00:05:1e:01:23:e0*
zone:  regzone 1,4*; 1,5*
zone:  t_r_a_f_f_i_c_i_s_o_prop_zn
      1,3*; 2,3*
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

To validate all zones in the zone database in the effective configuration:

```
switch:admin> zone --validate -m 2
Effective configuration:
cfg:  ticonfig
zone:  regzone 1,4*
      1,5*
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

To prune all the zone members that are not enforceable:

```
switch:admin> zone --validate -f
You are about to prune the zone configurations,
based on zone --validate output.
Do you want to prune the zone
configurations (yes, y, no, n): [no] y
```

To validate the zone members beginning with "gre", regardless of the case:

```
switch:admin> zone --validate -i gre*
Defined configuration:
zone:  GREEN  44,4; 21:00:00:20:37:0c:71:02; 8,9
zone:  green  2,2*; 2,3*; 21:00:00:20:37:0c:76:8c*

Effective configuration:
zone:  green  2,2*
      2,3*
      21:00:00:20:37:0c:76:8c*
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

2. Traffic isolation zone commands

To create an activated traffic isolation zone with failover enabled (default).

```
switch:admin> zone --create -t ti purplezone \
-p "1,1; 2,4; 1,8; 2,6"
```

To create a deactivated traffic isolation zone with failover disabled:

```
switch:admin> zone --create -t ti -o dn purplezone \
-p "1,1; 2,4; 1,8; 2,6"
```

To add an E_Port and N_Port member as a portlist to an existing TI zone:

```
switch:admin> zone --add purplezone \
-p "3,4; 3,6"
```

To add the option to disable failover for a TI zone:

```
switch:admin> zone --add -o n purplezone
```

To add the option to enable failover for a TI zone:

```
switch:admin> zone --add -o f greenzone" -p "3,4"
```

To remove portlist members from an existing TI zone.

```
switch:admin> zone --remove bluezone -p "3,4; 3,6"
```

To activate the TI zone "bluezone":

```
switch:admin> zone --activate bluezone
```

To deactivate the TI zone "purplezone":

```
switch:admin> zone --deactivate purplezone
```

To delete the TI zone "bluezone":

```
switch:admin> zone --delete bluezone
```

To display all TI zones in the defined configuration:

```
switch:admin> zone --show
Defined TI zone configuration:

TI Zone Name:    ti_blue
Port List:  4,55; 10:00:00:00:00:01:00:01; \
            10:00:00:00:00:01:00:04; 3,9

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated

TI Zone Name:    ti_red
Port List:  4,4; 5,5; 3,3

Configured Status: Activated / Failover-Enabled
Enabled Status: Activated / Failover-Enabled
```

To display all TI zones in the defined configuration in ascending order:

```
switch:admin> zone --show -ascending

Defined TI zone configuration:

TI Zone Name:   ti_blue
Port List:      10:00:00:00:00:01:00:01; \
                10:00:00:00:00:01:00:04; 3,9; 4,55

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated

TI Zone Name:   ti_red
Port List:      3,3; 4,4; 5,5

Configured Status: Activated / Failover-Enabled
Enabled Status: Activated / Failover-Enabled
```

To display a specified zone in the defined configuration:

```
switch:admin> zone --show ti_red

Defined TI zone configuration:

TI Zone Name:   ti_red
Port List:      4,4; 5,5; 3,3

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated
```

To display members for the zone "ti_red" in ascending order:

```
switch:admin> zone --show ti_red -ascending

Defined TI zone configuration:

TI Zone Name:   ti_red
Port List:      3,3; 4,4; 5,5

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated
```

To display members for the zone "TI_zone", regardless of the case:

```
switch:admin> zone --show -ic TI_zone*

Defined TI zone configuration:

TI Zone Name:   TI_zone
Port List:      7,8

Configured Status: Activated / Failover-Enabled
Enabled Status: Deactivated

TI Zone Name:   ti_zone
Port List:      3,3

Configured Status: Activated / Failover-Enabled
Enabled Status: Deactivated
```

To create an FCR TI zone within an Edge fabric where a host should talk to target1 and target4 through port number 2 on an Edge fabric switch with a domain ID of 3. (in the example, "3,1" is the host, and the remaining members are E_Ports):

```
switch:admin> zone --create -t ti fcr_edge_ti_zone \
-p "3,1; 3,2; 4,-1; 5, -1"
```

To create an FCR TI zone within a Backbone where a host, target1, and target4 communicate over VE_Ports consisting of FCR1 port number 4 and FCR2 port number 7:

```
switch:admin> zone --create -t ti fcr_ti_zone \
-p "1,1; 2,1; host_PWWN; target1_PWWN; \
target4_PWWN; 1,4; 2,7"
```

To troubleshoot TI zone problems:

```
switch:admin> zone --showTIerrors
My Domain: 1

Error type:          ERROR
Affected Remote Domain: 2
Affected Local Port: 3
Affected TI Zones:   ti1, ti2
Affected Remote Ports: 6, 7, 8, 9
```

To display details of the trunk members present in the TI zone and those not present in the TI zone:

```
switch:admin> zone --showTitrunkerrors
TI Zone Name: brackets

E-Port Trunks
Trunk members in TI zone: 16 18
Trunk members not in TI zone: 17

F-Port Trunks
Trunk members in TI zone: 4 5
Trunk members not in TI zone: 6

TI Zone Name: loop

E-Port Trunks
Trunk members in TI zone: 0
Trunk members not in TI zone: 1

TI Zone Name: operand

E-Port Trunks
Trunk members in TI zone: 8
Trunk members not in TI zone: 9 10

E-Port Trunks
Trunk members in TI zone: 16
Trunk members not in TI zone: 17 18
```


3. Frame redirect zone commands

To create an RD Zone, given a host (10:10:10:10:10:10:10:10), target (20:20:20:20:20:20:20:20), VI (30:30:30:30:30:30:30:30), and VT (40:40:40:40:40:40:40:40):

```
switch:admin> zone --rdcreate \
    10:10:10:10:10:10:10:10 20:20:20:20:20:20:20:20 \
    30:30:30:30:30:30:30:30 40:40:40:40:40:40:40:40 \
    restartable noFCR
```

This command creates the following zone objects:

- RD zone "red_0917_10_10_10_10_10_10_10_10_10_10_20_20_20_20_20_20_20_20", with a restricted policy and no FCR support.
- The base zone object, "red_____base".
- The RD zone configuration, "r_e_d_i_r_c__fg".

To display the newly created zone objects:

```
switch:admin> cfgshow
Defined configuration:
cfg:    myHTcfg myHostTarget
cfg:    r_e_d_i_r_c__fg
        red_____base;
red_0917_00_3f_3f_3f_23_24_25_26_3f_3f_3f_30_32_00_00_00
zone:    myHostTarget
        00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00
zone:red_0917_00_3f_3f_3f_23_24_25_26_3f_3f_3f_30_32_00_00_00
        00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00;
        3f:3f:3f:30:30:00:00:00; 3f:3f:3f:30:31:00:00:00
zone:    red_____base
        00:00:00:00:00:00:00:01; 00:00:00:00:00:00:00:02;
        00:00:00:00:00:00:00:03; 00:00:00:00:00:00:00:04

Effective configuration:
cfg:    myHTcfg
zone:    myHostTarget
        00:3f:3f:3f:23:24:25:26
        3f:3f:3f:30:32:00:00:00
```

To delete an RD Zone named "red_0917_10_10_10_10_10_10_10_10_10_10_20_20_20_20_20_20_20_20":

```
switch:admin> zone --rddelete \
    red_0917_10_10_10_10_10_10_10_10_10_10_20_20_20_20_20_20_20
```

SEE ALSO [ad, zoneHelp](#)

zoneAdd

Adds a member to the zone or Peer Zone.

Synopsis **zoneadd** "zoneName", "member[;member...]"

zoneadd --peerzone "zoneName" **-principal** "principal[;principal...]"
-members "member[;member...]"

Description Use this command to add one or more members to an existing zone or Peer Zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command. For the change to become effective, enable the configuration with the `cfgEnable` command.

Target Driven Peer Zones are not allowed to be edited using this command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operands are required:

- "zoneName"** Specify the name of an existing zone. Double quotation marks are optional.
- "member"** Specify a member or list of members to be added. The list must be enclosed in double quotation marks. Members must be separated by semicolons. Members can be specified in one or more of the following ways:
- A switch domain and port index number pair; for example, "2, 20". Use `switchShow` for a listing of valid port index numbers.
 - Node or port WWN.
 - Zone alias name.
 - Zone alias pattern. Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.
- peerzone "zoneName"** Specifies the Peer Zone name to which one or more principal or members should be added.
- principal "principal"** Specify a principal or list of principal members to be added. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

-members "member"

Specify a member or list of members to be added to the Peer Zone. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

Examples

To add aliases for three disk arrays to "Blue_zone":

```
switch:admin> zoneadd "Blue_Zone", "array3; array4; array5"
```

To add aliases for all the arrays that matches a pattern:

```
switch:admin> zoneadd matt, "ze*;bond*; j*"
switch:admin> cfgshow
Defined configuration:
zone: matt 30:06:00:07:1e:a2:10:20; 3,2; zeus; \
      bond; jake; jeff; jones
zone: sloth bawn; bolt; bond; brain; brit; bru; \
      10:00:00:00:01:1e:20:20
alias:      bawn 3,5; 4,8
alias:      bolt 10:00:00:02:1f:02:00:01
alias:      bond 10:00:05:1e:a9:20:00:01; 3,5
alias:      brain 11,4; 22,1; 33,6
alias:      brit 12,1
alias:      bru 5,3; 12,4
alias:      geek 2,7; 4,11; 20:10:00:05:1e:a9:20:87
alias:      jake 4,7; 8,9; 14,11
alias:      jeff 30:00:00:05:1e:a1:cd:02; \
      40:00:00:05:1e:a1:cd:04
alias:      jones 7,3; 4,5
alias:      zeus 4,7; 6,8; 9,2
```

Effective configuration:

No Effective configuration: (No Access)

To add a member to a Peer Zone:

```
switch:admin> zoneadd --peerzone peerzone_wnn_mbrs \
      -members "10:00:05:1e:a9:20:00:02"
```

SEE ALSO [zoneCreate](#), [zoneDelete](#), [zoneRemove](#), [zoneShow](#)

zoneCreate

Creates a zone or a Peer Zone.

Synopsis **zonecreate** "zonename", "member[;member...]"

zonecreate --peerzone "zonename" **-principal** "principal[;principal...]"

[-members "member[;member...]"

Description Use this command to create a new zone or a Peer Zone, or to create a "broadcast" zone.

A broadcast zone is a special zone that specifies the nodes that can receive broadcast traffic. This zone must be named "broadcast". Only one "broadcast" zone can exist within a fabric. This type of zone is enforced by the hardware; the switch controls the data transfer to a port.

This command changes the defined configuration. For the change to be preserved across switch reboots, save it to nonvolatile memory with the `cfgSave` command. For the change to become effective, enable the zone configuration with the `cfgEnable` command.

Target Driven Peer Zones are not allowed to be created using this command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operands are required:

"zonename"

Specify a unique name for the zone to be created. Double quotation marks are optional. A zone name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar (\$), or caret (^) characters. Names are case-sensitive. For example, "Zone_1" and "zone_1" indicate different zones. Zone names are limited to 64 characters. Spaces are ignored.

"member"

Specify a member or a list of members to be included in the zone. The list must be enclosed in double quotation marks. Members must be separated by semicolons. The list must have at least one member; empty lists are not allowed.

A member can be specified in one or more of the following ways:

- Domain and port index pair: Specify a port by domain and port index, for example, "2, 20" specifies port index 20 on switch domain 2. When a zone member is specified by port index, all devices connected to that port are in the zone. If this port is an arbitrated loop, then all devices on the loop are in the zone. Use switchShow for a list of valid port index numbers.
- World wide name: Specify a world wide name as eight hex numbers separated by colons, for example "10:00:00:60:69:00:00:8a". Zoning compares the WWN with the node and port names presented by a device in a login frame (FLOGI or PLOGI). When a zone member is specified by node name, then all ports on that device are in the zone. When a zone member is specified by port name, then only that single device port is in the zone.
- Zone alias name: Specify a zone alias name using the same format as a zone name. Refer to aliCreate command help for zone alias naming requirements.
- Zone alias pattern: Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.

--peerzone "zoneName"

Creates a new Peer Zone.

-principal "principal"

Specify a principal or list of principal members to be included in the Peer Zone. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

-members "member"

Specify a member or list of members to be included in the Peer Zone. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone. This operand is optional.

When creating a zone, you can combine different ways of specifying zone members. For example, a zone defined with the following members: "2,12; 2,14; 10:00:00:60:69:00:00:8a" contains all devices connected to switch 2, ports 12 and 14, and to the device with the world wide name "10:00:00:60:69:00:00:8a" (either node name or port name), at the port in the fabric to which it is connected.

Examples

To create three zones using a combination of port numbers and zone aliases:

```
switch:admin> zonecreate "Purple_zone", "1,0"

switch:admin> zonecreate "Blue_zone", "1,1; array1; 1,2; array2"

switch:admin> zonecreate "Green_zone", "1,0; 1,2; array2"
```

To create zone with the specified zone alias and to include the members that matches a pattern:

```
switch:admin> zonecreate sloth, "b*; 10:00:00:00:01:1e:20:20"
switch:admin> cfgshow
Defined configuration:
zone: matt 30:06:00:07:1e:a2:10:20; 3,2
zone: sloth bawn; bolt; bond; brain; brit; \
      bru; 10:00:00:00:01:1e:20:20
alias: bawn 3,5; 4,8
```

```

alias:      bolt    10:00:00:02:1f:02:00:01
alias:      bond    10:00:05:1e:a9:20:00:01; 3,5
alias:      brain   11,4; 22,1; 33,6
alias:      brit    12,1
alias:      bru     5,3; 12,4
alias:      geek    2,7; 4,11; 20:10:00:05:1e:a9:20:87
alias:      jake    4,7; 8,9; 14,11
alias:      jeff    30:00:00:05:1e:a1:cd:02; \
                  40:00:00:05:1e:a1:cd:04
alias:      jones   7,3; 4,5
alias:      zeus    4,7; 6,8; 9,2

```

To create Peer Zones:

```

switch:admin> zonecreate --peerzone peerzone_wnn_mbrs \
                    -principal "10:00:00:00:01:1e:20:20" -members
                    "10:00:00:02:1f:02:00:01;10:00:05:1e:a9:20:00:01"

switch:admin> zonecreate --peerzone peerzone_di_mbrs -principal "10,1" -members
                    "20,1;20,2"

```

SEE ALSO [zoneAdd](#), [zoneDelete](#), [zoneRemove](#), [zoneShow](#)

zoneDelete

Deletes a zone or Peer Zone.

Synopsis **zonedele**te "zonename"

Description Use this command to delete a zone or Peer Zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory using the `cfgSave` command. For the change to become effective, enable the configuration with the `cfgEnable` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operand is required:

"zonename"

Specify the name of the zone to be deleted. Quotation marks are optional.

Examples To delete the zone "Blue_zone":

```
switch:admin> zonedele
```

te "Blue_zone"

To delete the Peer Zone "peerzone_di_mbrs":

```
switch:admin> zonedele
```

te "peerzone_di_mbrs"

SEE ALSO [zoneAdd](#), [zoneCreate](#), [zoneRemove](#), [zoneShow](#)

zoneHelp

Displays a description of zoning commands.

Synopsis **zonehelp**

Description Use this command to display short descriptions of zoning commands.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands None

Examples To display zone command help information:

```
switch:admin> zonehelp
aliadd          Add a member to a zone alias
alcreate        Create a zone alias
aldelete        Delete a zone alias
alremove        Remove a member from a zone alias
alishow         Print zone alias information
bootluncfg      Configure boot LUN for an HBA
cfgactvshow     Display Effective zone configuration \
information
cfgadd          Add a member to a configuration
cfgclear        Clear all zone configurations
cfgcreate       Create a zone configuration
cfgdelete       Delete a zone configuration
cfgdisable      Disable a zone configuration
cfgenable       Enable a zone configuration
cfgremove       Remove a member from a configuration
cfgsave         Save zone configurations in flash
cfgshow         Print zone configuration information
cfgsize         Print size details of zone database
cfgtransabort   Abort zone configuration transaction
cfgtransshow    Print zone configurations in transaction buffer
defzone         Activates or deactivates a default zone
configuration.
msfr            Create a MSFR Zone (internal use only)
nszonemember    Display the information of all the online devices
which are zoned with the given device.
openfr          Create a MSFR Zone (internal use only)
zone            Copies/Removes/Validates zone objects
zoneadd         Add a member to a zone
zonecreate      Create a zone
zoneddelete     Delete a zone
zonehelp        Print zoning help info
zoneobjectcopy  Copies a zone object
zoneobjectexpunge Expunges a zone object
zoneobjectrename Rename a zoning Object
zoneremove      Remove a member from a zone
zoneshow        Print zone information
```

SEE ALSO None

zoneObjectCopy

Copies a zone object.

Synopsis **zoneObjectCopy** *"objectName"*, *"newName"*

Description Use this command to make a copy of an existing zone object and give it a new name. The resulting object is of the same type as the original object. You can use this command for all zone object types, including cfg, zone, and alias.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command. For the change to become effective, enable the configuration with the `cfgEnable` command.

This command is not applicable for special zones, such as TI zones or RD zones.

Notes When FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operands are required:

"objectName"

The name of the object that you want to copy. Quotation marks are optional.

"newName"

The name of the object that you want created. Quotation marks are optional.

A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar (\$), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Blank spaces are ignored.

Refer to the `zoneCreate` command for more information on name and member specifications

Examples To create a configuration containing three zones:

```
switch:admin> cfgshow ""
      cfg:   USA_cfg   Red_zone; White_zone; Blue_zone

switch:admin> zoneobjectcopy "USA_cfg", "UK_cfg"

switch:admin> cfgshow ""
      cfg:   UK_cfg    Red_zone; White_zone; Blue_zone
      cfg:   USA_cfg   Red_zone; White_zone; Blue_zone
```

SEE ALSO [cfgAdd](#), [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#), [zoneObjectRename](#)

zoneObjectExpunge

Expunges a zone object.

Synopsis **zoneObjectExpunge** "*objectName*"

Description Use this command to expunge a zone object. In addition to deleting the object, this command also removes the object from the member lists of all other objects. After successful execution of this command, the specified object no longer exists in the database. You can use this command for all zone object types, including cfg, zone, and alias.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command. For the change to become effective, enable the configuration with the `cfgEnable` command.

Notes When FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands This command has the following operand:

"*objectName*"

The name of the object that you want to expunge. Quotation marks are optional. This operand is required.

Examples To create a configuration containing three zones:

```
switch:admin> cfgshow
Defined configuration:
  cfg:   USA_cfg Red_zone; White_zone; Blue_zone
  zone:  Blue_zone
        1,1; array1; 1,2; array2
  zone:  Red_zone
        1,0; loop1
  zone:  White_zone
        1,3; 1,4
  alias: array1  21:00:00:20:37:0c:76:8c; \
        21:00:00:20:37:0c:71:02
  alias: array2  21:00:00:20:37:0c:76:22; \
        21:00:00:20:37:0c:76:28
  alias: loop1   21:00:00:20:37:0c:76:85; \
        21:00:00:20:37:0c:71:df
```

```
switch:admin> zoneobjectexpunge "White_zone"
```

```
switch:admin> cfgshow
Defined configuration:
  cfg:   USA_cfg   Red_zone; Blue_zone
  zone:  Blue_zone
        1,1; array1; 1,2; array2
  zone:  Red_zone
        1,0; loop1
```

zoneObjectExpunge

```
alias: array1 21:00:00:20:37:0c:76:8c; \  
21:00:00:20:37:0c:71:02  
alias: array2 21:00:00:20:37:0c:76:22; \  
21:00:00:20:37:0c:76:28  
alias: loop1 21:00:00:20:37:0c:76:85; \  
21:00:00:20:37:0c:71:df
```

SEE ALSO [cfgAdd](#), [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#), [zoneObjectCopy](#), [zoneObjectRename](#)

zoneObjectRename

Renames a zone object.

Synopsis **zoneObjectRename** *"objectName"*, *"newName"*

Description Use this command to rename a zone object. You can use this command for all zone object types, including cfg, zone, and alias.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command. For the change to become effective, enable the configuration must be enabled with the `cfgEnable` command.

This command is not applicable for special zones, such as TI zones or RD zones.

Notes When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands The following operands are required:

"objectName"

The name of the object you want to rename.

"newName"

The new name of the object.

A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar (\$), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Quotation marks are optional. Spaces are ignored.

Refer to the `zoneCreate` command for more information on name and member specifications.

Examples To create a configuration containing three zones:

```
switch:admin> cfgshow ""
      cfg:   USA_cfg   Red_zone; White_zone; Blue_zone

switch:admin> zoneobjectrename "USA_cfg", "UK_cfg"

switch:admin> cfgshow ""
      cfg:   UK_cfg    Red_zone; White_zone; Blue_zone
```

SEE ALSO [cfgAdd](#), [cfgClear](#), [cfgDelete](#), [cfgDisable](#), [cfgEnable](#), [cfgRemove](#), [cfgSave](#), [cfgShow](#), [zoneObjectCopy](#)

zoneObjectReplace

Replaces zone members.

Synopsis **zoneobjectreplace** *oldmember newmember*

zoneobjectreplace --help

Description Use this command to replace the existing member of a zone or a Peer Zone with a new member. This command can be used to replace members of an alias, but an alias itself cannot be replaced. This command is not applicable for Traffic Isolation (TI) Zones, and Frame Redirect (RD) Zones.

The property member of a Peer Zone cannot be replaced using this command.

Target Driven Peer Zones are not allowed to be edited using this command.

For the change to become effective, enable the configuration with the `cfgEnable` command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operands are required:

oldmember

Specifies the the zone member that has to be replaced. You can specify WWN or Domain,Index (D,I).

newmember

Specifies the new zone member with which to replace the old zone member. You can specify WWN or D.I.

--help

Displays the command usage.

Examples To replace zone member:

```
switch:admin> zoneobjectreplace \
    "20:00:00:05:1e:a1:af:b2" "10:00:00:05:1e:a1:10:c1"
switch:admin> cfgshow
Defined configuration:
cfg:   cfg      lsan_m
cfg:   cfg1     zone2; zone3
zone:  lsan_m   20:15:00:05:1e:a2:f9:b1; 20:13:00:05:1e:a2:f9:b1
zone:  zone1    2,3; 20:00:00:05:1e:a1:af:b1; zali_1
zone:  zone2    5,7; 2,9
zone:  zone3    10:00:00:05:1e:a1:10:c1; 20:10:00:05:1e:a9:20:12
```

```
alias: zali_1 10:00:00:05:1e:a1:ef:b9; 2,3; 1,11
```

Effective configuration:

```
cfg:    cfg
```

```
zone:   lsan_m      20:15:00:05:1e:a2:f9:b1 20:13:00:05:1e:a2:f9:b1
```

SEE ALSO [zoneAdd](#), [zoneCreate](#), [zoneDelete](#), [zoneRemove](#), [zoneShow](#)

zoneRemove

Removes a member and principal (Peer Zone) from a zone.

Synopsis **zoneremove** "zonename", "member[;member...]"

zoneremove --peerzone "zonename" **-principal** "principal[;principal...]"
-members "member[;member...]"

Description Use this command to remove one or more members from an existing zone, and to remove one or more members or principal members from a Peer Zone.

If all members are removed, the zone is deleted.

If all members (principal and non-principal members) are removed, the Peer Zone is deleted. If all non-principal members are removed but there is still a principal member, the Peer Zone will still exist.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the `cfgSave` command. For the change to become effective, enable the configuration with the `cfgEnable` command.

Target Driven Peer Zones are not allowed to be edited using this command.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands The following operands are required:

"zonename"

Specify the name of the zone from which to remove a member or principal (Peer Zone only). Double quotation marks are optional.

"member"

Specify a member or a list of members to be removed from the specified zone. The list must be enclosed in double quotation marks. Members must be separated by semicolons. A member can be one or more of the following:

- A switch domain and port index pair: for example, "2.20". Use `switchShow` for a list of valid port index numbers.
- A world wide name
- A zone alias name
- Zone alias pattern. Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.

--peerzone "zonename"

Specifies the Peer Zone name from which one or more principal or members are to be removed.

-principal "principal"

Specify a principal or list of principal members to be removed from a Peer Zone. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

-members "member"

Specify a member or list of members to be removed from a Peer Zone. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

Examples

To remove "array2" from "Blue_zone":

```
switch:admin> zoneremove "Blue_zone", "array2"
```

To remove all the members and aliases matching a pattern:

```
switch:admin> zoneremove matt,"30:06:00:07:1e:a2:10:20; ja*; 3,2"
switch:admin> cfgshow
Defined configuration:
zone: matt    zeus; bond; jeff; jones
zone: sloth   bawn; bolt; bond; brain; brit; \
              bru; 10:00:00:00:01:1e:20:20
alias:        bawn    3,5; 4,8
alias:        bolt    10:00:00:02:1f:02:00:01
alias:        bond    10:00:05:1e:a9:20:00:01; 3,5
alias:        brain   11,4; 22,1; 33,6
alias:        brit    12,1
alias:        bru     5,3; 12,4
alias:        geek    2,7; 4,11; 20:10:00:05:1e:a9:20:87
alias:        jake    4,7; 8,9; 14,11
alias:        jeff    30:00:00:05:1e:a1:cd:02; \
                    40:00:00:05:1e:a1:cd:04
alias:        jones   7,3; 4,5
alias:        zeus    4,7; 6,8; 9,2
```

```
Effective configuration:
No Effective configuration: (No Access)
```

To remove a member from a Peer Zone:

```
switch:admin> zoneremove --peerzone peerzone_wnn_mbrs \
                  -members "10:00:05:1e:a9:20:00:02"
```

SEE ALSO [zoneAdd](#), [zoneCreate](#), [zoneDelete](#), [zoneShow](#)

zoneShow

Displays zone information.

Synopsis

```

zonestow [--sort] [pattern][, mode]
zonestow [--ic] [pattern][, mode]
zonestow [--alias] [-ic] [pattern]
zonestow [--transdiffs]
zonestow [--transdiffsonly]
zonestow [--validate [pattern] [,mode]]
zonestow [--peerzone [all | user | target]]
zonestow --help
  
```

Description Use this command to display zone configuration information. This command includes sorting and search options to customize the output. If a pattern is specified, the command displays only matching match zone configuration names in the defined configuration. When used without operands, the command displays all zone configuration information for the Defined and the Effective configuration.

Use the --transdiffs and --transdiffsonly options to view changes in the current transaction.

The command output displays the changes in the current transaction by the following notations:

- An asterisk(*) before any tag indicates a change in that zone, zone configuration, alias or any other entity in the zone configuration.
- A plus(+) before any entity indicates that it is a newly added entity.
- A minus(-) before any entity indicates that it is a deleted entity.

Refer to cfgShow for a description of this display.

Notes The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When FCS policy is enabled, this command can be issued on any FCS switch in the fabric.

Operands This command has the following operands:

--sort

Displays D,I zone members, WWNs, and zone alias in ascending order. For Peer Zones, the principal and peer members are sorted separately.

--ic

Displays all zone configuration names for a given pattern without case distinction.

pattern

A POSIX-style regular expression used to match zone configuration names. This operand is optional. Patterns can contain:

- A question mark (?) to match any single character.
- An asterisk (*) to match any string of characters.
- A range of characters to match any character within the range: for example, [0-9] or [a-f].

mode

Specify 0 to display the contents of the transaction buffer (the contents of the current transaction), or specify 1 to display the contents of the nonvolatile memory. The default value is 0. This operand is optional.

--alias

Displays all the zones containing the given alias pattern. The pattern operand is mandatory. The pattern can contain:

- A question mark (?) to match any single character.
- An asterisk (*) to match any string of characters.
- A range of characters to match any character within the range: for example, [0-9] or [a-f].

--transdiffs

Displays the changes in the current transaction.

--transdiffonly

Displays only the changes in the current transaction.

--validate

Displays the validated output for the specified zone configuration or for all the zone configurations in the zone database.

zone_name

Specify the exact zone name or a portion of the zone name followed by an asterisk (*) at the end to match any string of characters.

mode

Specifies the zone database location. This operand is optional. If no mode option is specified, the validated output of all the three buffers is displayed. Supported mode flag values include the following:

0 | trans

Uses the zone database from the current transaction buffer.

1 | def

Uses the zone database stored in persistent storage.

2 | eff

Uses the currently enforced zone database.

--peerzone

Displays the Peer Zone configuration information (Peer Zone name, Peer Zone type, property member, principal members, and peer members) for the Defined and the Effective configuration. The following operands are valid:

all

Displays configuration information for all Peer Zones.

user

Displays configuration information for the user created Peer Zones.

target

Displays configuration information for the target created Peer Zones.

--help

Displays the command usage.

Examples

To display all zones:

```
switch:admin> zoneshow
Defined configuration:
    cfg:  cfg1  red
    zone:  blue  44,5; 10:00:00:00:00:01:00:00; 3,4
    zone:  red   3,4; 1,2; 4,5; 2,3

Effective configuration:
    cfg:  cfg1
    zone:  red   3,4
                    1,2
                    4,5
                    2,3
```

To sort the zones in ascending order:

```
switch:admin> zoneShow --sort
Defined configuration:
    cfg:  cfg1  red
    zone:  blue  10:00:00:00:00:01:00:00; 3,4; 44,5
    zone:  red   1,2; 2,3; 3,4; 4,5

Effective configuration:
    cfg:  cfg1
    zone:  red   1,2
                    2,3
                    3,4
                    4,5
```

To display the red zone only using pattern search:

```
switch:admin> zoneshow red
zone:  red   3,4; 1,2; 4,5; 2,3
```

To combine a pattern search with the sorting option:

```
switch:admin> zoneshow --sort red
zone:  red   1,2; 2,3; 3,4; 4,5
```

To display the filtered content of the transaction buffer:

```
switch:admin> zoneshow red, 1
zone:  red   3,4; 1,2; 4,5; 2,3
```

To display the filtered and sorted content of the transaction buffer:

```
switch:admin> zoneshow --sort red, 1
zone:  red   1,2; 2,3; 3,4; 4,5
```

To display all green zones using pattern search, regardless of the case:

```
switch:admin> zonestow --ic GREEN*
zone:  GREEN    44,4; 21:00:00:20:37:0c:71:02; 8,9
zone:  green     2,2; 2,3; 21:00:00:20:37:0c:76:8c
```

To display the zone members of alias "ali10":

```
switch:admin> zonestow --alias ali10
zone:  zone20 ali10
```

To display the zone members of aliases beginning with "ali1":

```
switch:admin> zonestow --alias ali1*
zone:  zone1  1,2; ali12; 3,3; 30:04:00:05:1e:0b:55:0f; 30:05:00:05:1e:0b:55:0f
zone:  zone   15 9,8; 2,5; 3,3; ali13
zone:  zone   17 ali1
zone:  zone   20 ali10
```

To display the changes in the current transaction:

```
switch:admin> zonestow --transdiffs
Defined configuration:
cfg:    fabric_cfg
       green_zone
zone:   blue_zone
       21:00:00:20:37:0c:76:8c
*zone: green_zone
       21:00:00:20:37:0c:76:01; -1,4
*zone: red_zone
       3,3; 3,4; +5,5; +5,6

Effective configuration:
cfg:    fabric_cfg
zone:   green_zone
       21:00:00:20:37:0c:76:01
       1,4
```

To display only the changes in the current transaction:

```
switch:admin> zonestow --transdiffsonly
*zone: green_zone
       21:00:00:20:37:0c:76:01; -1,4
*zone: red_zone
       3,3; 3,4; +5,5; +5,6
```

To display validated output of all zones in the zone database:

```
switch:admin> zonestow --validate
Defined configuration:
cfg:  cfg1    zone1; zone10; zone2
zone: zone1   20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6
zone: zone10  20:1e:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
zone: zone2   20:03:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*

Effective configuration:
cfg:  cfg1
zone: zone1   20:1c:00:05:1e:57:b1:c6*
```

```

20:1d:00:05:1e:57:b1:c6
zone: zone10 20:1e:00:05:1e:57:b1:c6
20:1f:00:05:1e:57:b1:c6*
zone: zone2 20:03:00:05:1e:57:b1:c6
20:1f:00:05:1e:57:b1:c6*
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone

```

To display validated output for a zone:

```

switch:admin> zoneshow --validate zone1
Defined configuration:
zone: zone1 20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6

Effective configuration:
zone: zone1 20:1c:00:05:1e:57:b1:c6*
20:1d:00:05:1e:57:b1:c6
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone

```

To display validated output for zone members beginning with "zone":

```

switch:admin> zoneshow --validate zone*
Defined configuration:
zone: zone1 20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6
zone: zone10 20:1e:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
zone: zone2 20:03:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
zone: zone200 20:1d:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*

Effective configuration:
zone: zone1 20:1c:00:05:1e:57:b1:c6*
20:1d:00:05:1e:57:b1:c6
zone: zone10 20:1e:00:05:1e:57:b1:c6
20:1f:00:05:1e:57:b1:c6*
zone: zone2 20:03:00:05:1e:57:b1:c6
20:1f:00:05:1e:57:b1:c6*
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone

```

To display validated output for a zone in the current transaction buffer:

```

switch:admin> zoneshow --validate zone200 0
Defined configuration:
zone: zone200 20:1d:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
-----
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone

```

To display the complete Peer Zoning configuration:

```
switch:admin> zoneshow --peerzone all
Defined configuration:
zone: peerzone_di_mbrs
  Property Member: 00:02:00:00:00:02:00:01
  Created by: User
  Principal Member(s):
    10,1
  Peer Member(s):
    20,1; 20,2
zone: peerzone_wwn_mbrs
  Property Member: 00:02:00:00:00:03:00:01
  Created by: User
  Principal Member(s):
    10:00:00:00:01:1e:20:20
  Peer Member(s):
    10:00:00:02:1f:02:00:01; \
    10:00:05:1e:a9:20:00:01
Effective configuration:
zone: peerzone_wwn_mbrs
  Property Member: 00:02:00:00:00:03:00:01
  Created by: User
  Principal Member(s):
    10:00:00:00:01:1e:20:20
  Peer Member(s):
    10:00:00:02:1f:02:00:01
    10:00:05:1e:a9:20:00:01
1 Peer Zones in Eff Cfg
```

SEE ALSO None

Primary FCS Commands

Primary FCS commands

Table 1 summarizes the commands that are available only on the primary Fabric Configuration Server (FCS) when FCS policy is enabled.

TABLE 1 Primary FCS commands

Command	Description
aliAdd	Must be run from the primary FCS switch.
aliCreate	Must be run from the primary FCS switch.
aliDelete	Must be run from the primary FCS switch.
aliRemove	Must be run from the primary FCS switch.
aliShow	Can be run on all FCS switches.
cfgAdd	Must be run from the primary FCS switch.
cfgClear	Must be run from the primary FCS switch.
cfgCreate	Must be run from the primary FCS switch.
cfgDelete	Must be run from the primary FCS switch.
cfgDisable	Must be run from the primary FCS switch.
cfgEnable	Must be run from the primary FCS switch.
cfgRemove	Must be run from the primary FCS switch.
cfgSave	Must be run from the primary FCS switch.
cfgShow	Can be run on all FCS switches.
cfgTransAbort	Must be run from the primary FCS switch.
cfgTransShow	Must be run from the primary FCS switch.
date	This command can be run on all switches to view the current date. You can only modify the date from the primary FCS switch.
defZone	defzone --show can be run on all switches. All other options must be run from the primary FCS switch.
msPIClearDB	Must be run from the primary FCS switch.
msPIMgmtActivate	Must be run from the primary FCS switch.
msPIMgmtDeactivate	Must be run from the primary FCS switch.
msTdDisable	msTdDisable "ALL" must be run from the primary FCS switch.
msTdEnable	msTdEnable "ALL" must be run from the primary FCS switch.
secPolicyAbort	Must be run from the primary FCS switch.
secPolicyActivate	Must be run from the primary FCS switch.
secPolicyAdd	Must be run from the primary FCS switch.
secPolicyCreate	Must be run from the primary FCS switch.
secPolicyDelete	Must be run from the primary FCS switch.
secPolicyDump	Can be run on all FCS switches.

TABLE 1 Primary FCS commands (Continued)

Command	Description
secPolicyFCSMove	Must be run from the primary FCS switch.
secPolicyRemove	Must be run from the primary FCS switch.
secPolicySave	Must be run from the primary FCS switch.
secPolicyShow	Can be run on all FCS switches.
snmpConfig	Can be run on all FCS switches.
tsClockServer	Can be run on all switches to view the NTP server's IP address. You can only modify the NTP server's IP address on the primary FCS switch.
zoneAdd	Must be run from the primary FCS switch.
zoneCreate	Must be run from the primary FCS switch.
zoneDelete	Must be run from the primary FCS switch.
zoneObjectCopy	Must be run from the primary FCS switch.
zoneObjectExpung	Must be run from the primary FCS switch.
zoneObjectRename	Must be run from the primary FCS switch.
zoneRemove	Must be run from the primary FCS switch.

Command Availability

- [Command validation checks](#) 1233
- [Command Virtual Fabrics and Remote Domain execution restrictions](#) 1234

Command validation checks

Before a command is executed, it is validated against the following checks.

1. Active or Standby availability: On enterprise-class platforms systems, checks that the command is available on the Control Processor (CP).
2. Role-Based Access Control (RBAC) availability: Checks that the invoking user's role is permitted to invoke the command. If the command modifies system state, the user's role must have modify permission for the command. If the command only displays system state, the user's role must have observe permission for the command. Some commands both observe and modify system state and thus require observe-modify permission. The following RBAC permissions are supported:
 - O = Observe
 - OM = Observe-modify,
 - N = None or not available
3. Virtual Fabric availability: If Virtual Fabrics are enabled, commands are checked for context and switch type as follows:
 - Virtual Fabric context (VF) = Command applies to the current logical switch only, or to a specified logical switch.
Virtual Fabric commands are further constrained by one of the following switch types:
 - All Switches (All) = Command can be run in any switch context.
 - Base Switch (BS) = Command can be run only on the base switch.
 - Default Switch (DS) = Command can be run only on the default switch.
 - N/A = Switch type is not applicable to the command.
 - Chassis context (CH) = Command applies to the chassis on which it is executed.
 - Switch and Chassis context (VF/CH) = Command applies to the switch and the chassis.
 - Disallowed = Command cannot be executed when Virtual Fabrics are enabled.
4. Command-specific: Checks whether the command is supported on the platform for which it is targeted.
5. Remote Domain Execution: Commands can be executed from a specified remote domain or logical switch context. In most cases, the Show commands and the commands with show options are supported.

NOTE

To determine RBAC permissions for a specified command and associated major options, use the **classConfig --showcli** command. Refer to ["Using Fabric OS Commands"](#) for more information.

Command Virtual Fabrics and Remote Domain execution restrictions

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands.

Command name	Context	Switch type	Remote Domain Execution
aaaConfig	CH	N/A	Disallowed
ad	VF	N/A	Disallowed
ag	VF	All	Disallowed
agAutoMapBalance	VF	All	Disallowed
agShow	VF	All	Disallowed
aliAdd	VF	All	Disallowed
aliCreate	VF	All	Disallowed
aliDelete	VF	All	Disallowed
aliRemove	VF	All	Disallowed
aliShow	VF	All	Disallowed
appLoginHistory	VF	All	Disallowed
appServer	VF	All	Disallowed
aptPolicy	VF	All	Disallowed
auditCfg	CH	N/A	Disallowed
auditDump	CH	N/A	Disallowed
authUtil	VF	All	Disallowed
bannerSet	VF	N/A	Disallowed
bannerShow	VF	N/A	Disallowed
bcastShow	VF	All	Allowed
bladeCfgGemode	CH	N/A	Allowed
bladeDisable	CH	N/A	Disallowed
bladeEnable	CH	N/A	Disallowed
bladeSwap	VF	All	Disallowed
bladeVerShow	CH	N/A	Disallowed
bootLunCfg	VF	All	Disallowed
bufOpMode	CH	N/A	Allowed
cfgActvShow	VF	All	Disallowed
cfgAdd	VF	All	Disallowed
cfgClear	VF	All	Disallowed
cfgCreate	VF	All	Disallowed
cfgDelete	VF	All	Disallowed
cfgDisable	VF	All	Disallowed
cfgEnable	VF	All	Disallowed
cfgRemove	VF	All	Disallowed
cfgSave	VF	All	Disallowed
cfgShow	VF	All	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
cfgSize	VF	All	Disallowed
cfgTransAbort	VF	All	Disallowed
cfgTransShow	VF	All	Disallowed
chassisBeacon	CH	N/A	Disallowed
chassisCfgPerrThreshold	CH	N/A	Allowed
chassisDisable	CH	N/A	Disallowed
chassisDistribute	CH	N/A	Disallowed
chassisEnable	CH	N/A	Disallowed
chassisName	CH	N/A	Disallowed
chassisShow	CH	N/A	Allowed
classConfig	CH	N/A	Disallowed
cliHistory	CH/ VF	All	Disallowed
configDefault	VF/CH	N/A	Disallowed
configDownload	VF/CH	N/A	Disallowed
configList	CH	N/A	Disallowed
configRemove	VF	N/A	Disallowed
configShow	VF/CH	N/A	Disallowed
configUpload	VF/CH	N/A	Disallowed
	VF	All	Disallowed
Chassis	CH	N/A	Disallowed
creditRecovMode	CH	N/A	Allowed
dataTypeShow	CH	N/A	Disallowed
date	CH	N/A	Disallowed
dbgShow	CH	N/A	Disallowed
defZone	VF	All	Disallowed
diagClearError	CH	N/A	Disallowed
diagDisablePost	CH	N/A	Disallowed
diagEnablePost	CH	N/A	Disallowed
diagHelp	Disallowed	N/A	Disallowed
diagPost	CH	N/A	Disallowed
diagRetry	CH	N/A	Disallowed
diagShow	VF	All	Disallowed
distribute	VF	All	Disallowed
dlsReset	VF	All	Disallowed
dlsSet	VF	All	Disallowed
dlsShow	VF	All	Allowed
dnsConfig	CH	N/A	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
enclosureShow	CH	N/A	Disallowed
errClear	CH	N/A	Disallowed
errDelimiterSet	CH	N/A	Disallowed
errDump	VF/CH	N/A	Disallowed
errFilterSet	CH	N/A	Disallowed
errModuleShow	VF	N/A	Disallowed
errShow	VF/CH	N/A	Disallowed
ethIf	CH	N/A	Allowed
exit	CH	N/A	Disallowed
extnCfg	VF/CH	All	Disallowed
fabRetryShow	VF	All	Allowed
fabRetryStats	VF	All	Allowed
fabricLog	VF	All	Disallowed
fabricName	VF	All	Allowed
fabricPrincipal	VF	All	Allowed
fabricShow	VF	All	Allowed
fabStatsShow	VF	All	Allowed
fanDisable	CH	N/A	Disallowed
fanEnable	CH	N/A	Disallowed
fanShow	CH	N/A	Allowed
faPwwn	VF	All	Allowed
fastBoot	CH	N/A	Disallowed
fcipHelp	Disallowed	N/A	Disallowed
fcipLedTest	CH	N/A	Disallowed
fcipPathTest	CH	N/A	Disallowed
fcPing	VF	All	Disallowed
fcplLogClear	VF	All	Disallowed
fcplLogDisable	VF	All	Disallowed
fcplLogEnable	VF	All	Disallowed
fcplLogShow	VF	All	Disallowed
fcplProbeShow	VF	All	Allowed
fcplRIsProbe	VF	All	Allowed
fcplRIsShow	VF	All	Allowed
fcrBcastConfig	VF	BS	Allowed
fcrConfigure	VF	All	Disallowed
fcrEdgeShow	VF	BS	Allowed
fcrFabricShow	VF	BS	Allowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
fcrIclPathBWMonitor	VF	All	Disallowed
fcrLsan	VF	BS	Allowed
fcrLsanCount	VF	BS	Allowed
fcrLsanMatrix	VF	BS	Allowed
fcrPhydevShow	VF	BS	Allowed
fcrProxyConfig	VF	BS	Disallowed
fcrProxyDevShow	VF	BS	Allowed
fcrResourceShow	VF	BS	Allowed
fcrRouterPortCost	VF	BS	Allowed
fcrRouteShow	VF	BS	Allowed
fcrXlateConfig	VF	BS	Allowed
fddCfg	VF	All	Disallowed
fdmiCacheShow	VF	All	Allowed
fdmiShow	VF	All	Allowed
femDump	CH	N/A	Allowed
ficonCfg	VF	All	Disallowed
ficonClear	VF	All	Disallowed
ficonCupSet	VF	All	Disallowed
ficonCupShow	VF	All	Allowed
ficonHelp	Disallowed	N/A	Disallowed
ficonShow	VF	All	Allowed
fipsCfg	CH	NA/ALL	Disallowed
firmwareActivate	CH	N/A	Disallowed
firmwareCheck	CH	N/A	Disallowed
firmwareCleanInstall	CH	N/A	Disallowed
firmwareCommit	CH	N/A	Disallowed
firmwareDownload	CH	N/A	Disallowed
firmwareDownloadStatus	CH	N/A	Allowed
firmwareKeyShow	CH	N/A	Allowed
firmwareRestore	CH	N/A	Disallowed
firmwareShow	VF	N/A	Allowed
firmwareSync	CH	N/A	Disallowed
flow	VF	All	Allowed
fosConfig	CH	N/A	Disallowed
fosExec	VF	All	Disallowed
frameLog	VF	All	Allowed
fspfShow	VF	All	Allowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
gePortErrShow	VF	All	Allowed
gePortPerfShow	VF	All	Disallowed
h	Disallowed	N/A	Disallowed
haDisable	CH	N/A	Disallowed
haDump	CH	N/A	Allowed
haEnable	CH	N/A	Disallowed
haFailover	CH	N/A	Disallowed
haReboot	CH	N/A	Disallowed
haRedundancy	CH	N/A	Allowed
haShow	CH	N/A	Allowed
haShutdown	CH	N/A	Disallowed
haSyncStart	CH	N/A	Disallowed
haSyncStop	CH	N/A	Disallowed
help	Disallowed	N/A	Disallowed
historyLastShow	CH	N/A	Allowed
historyMode	CH	N/A	Disallowed
historyShow	CH	N/A	Allowed
i	CH	N/A	Disallowed
iflShow	VF	All	Allowed
interfaceShow	VF	All	Allowed
iodReset	VF	All	Disallowed
iodSet	VF	All	Allowed
iodShow	VF	All	Allowed
ipAddrSet	CH	N/A	Disallowed
ipAddrShow	VF, CH/ CH	N/A	Allowed
ipFilter	CH	N/A	Disallowed
ipSecConfig	CH	N/A	Disallowed
islShow	VF	All	Allowed
itemList	VF	All	Disallowed
killTelnet	CH	N/A	Disallowed
ldapCfg	CH	N/A	Disallowed
lfCfg	CH	N/A	Allowed
licenseAdd	CH	N/A	Disallowed
licenseIdShow	CH	N/A	Disallowed
licensePort	CH	N/A	Allowed
licenseRemove	CH	N/A	Disallowed
licenseShow	CH	N/A	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
licenseSlotCfg	CH	N/A	Disallowed
linkCost	VF	All	Disallowed
logicalGroup	VF	All	Allowed
login	Disallowed	N/A	Disallowed
logOut	Disallowed	N/A	Disallowed
lsanZoneShow	VF	BS	Disallowed
lsCfg	CH	N/A	Allowed
lsDbShow	VF	All	Allowed
mapsConfig	VF	All	Allowed
mapsDb	VF	All	Allowed
mapshelp	VF	All	Disallowed
mapsPolicy	VF	All	Allowed
mapsRule	VF	All	Disallowed
mapsSam	VF	All	Allowed
memShow	CH	N/A	Disallowed
motd	CH	N/A	Disallowed
msCapabilityShow	VF	All	Disallowed
msConfigure	VF	All	Disallowed
msPlatShow	VF	All	Disallowed
msPlatShowDBCB	VF	All	Disallowed
msPIClearDB	VF	All	Disallowed
msPIMgmtActivate	VF	All	Disallowed
msPIMgmtDeactivate	VF	All	Disallowed
msTdDisable	VF	All	Disallowed
msTdEnable	VF	All	Disallowed
msTdReadConfig	VF	All	Disallowed
myId	VF	N/A	Disallowed
nbrShow	VF	All	Allowed
nbrStateShow	VF	All	Allowed
nbrStatsClear	VF	All	Disallowed
nodeFind	VF	All	Disallowed
nsAliasShow	VF	All	Disallowed
nsAllShow	VF	All	Disallowed
nsCamShow	VF	All	Disallowed
nsDevLog	VF	All	Disallowed
nsShow	VF	All	Disallowed
nsZoneMember	VF	All	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
nsZoneShow	VF	All	Disallowed
passwd	VF/CH	N/A	Disallowed
passwdCfg	CH	N/A	Disallowed
pathBwConfig	VF	All	Disallowed
pathInfo	VF	All	Disallowed
pdShow	CH	N/A	Disallowed
portAddress	VF	All	Allowed
portAlpaShow	VF	All	Allowed
portBeacon	VF	All	Disallowed
portBufferCalc	VF	All	Disallowed
portBufferShow	VF	All	Allowed
portCamShow	VF	All	Allowed
portCfg	VF	All	Disallowed
portCfgAlpa	VF	All	Disallowed
portCfgAutoDisable	VF	All	Allowed
portCfgCompress	VF	All	Allowed
portCfgCreditRecovery	VF	All	Allowed
portCfgDefault	VF	All	Disallowed
portCfgDPort	VF	All	Disallowed
portCfgEncrypt	VF	All	Disallowed
portCfgEport	VF	All	Disallowed
portCfgEportCredits	VF	All	Allowed
portCfgEXPort	VF	All	Disallowed
portCfgFaultDelay	VF	All	Disallowed
portCfgFec	VF	All	Allowed
portCfgfFillword	VF	All	Disallowed
portCfgFlogiLogout	VF	All	Disallowed
portCfgFportBuffers	VF	All	Disallowed
portCfgGE	VF	All	Allowed
portCfgGeMediaType	VF	All	Disallowed
portCfgGport	VF	All	Disallowed
portCfgISLMode	VF	All	Disallowed
portCfgLongDistance	VF	All	Disallowed
portCfgLossTov	VF	All	Disallowed
portCfgLport	VF	All	Disallowed
portCfgNonDfe	VF	All	Allowed
portCfgNPiVPort	VF	All	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
portCfgNPort	VF	All	Disallowed
portCfgOctetSpeedCombo	CH	N/A	Disallowed
portCfgPersistence	VF	All	Disallowed
portCfgPersistentDisable	VF	All	Disallowed
portCfgPersistentEnable	VF	All	Disallowed
portCfgQos	VF	All	Disallowed
portCfgShow	VF	All	Allowed
portCfgSpeed	VF	All	Disallowed
portCfgTdz	VF	All	Disallowed
portCfgTrunkPort	VF	All	Disallowed
portCfgVEXPort	VF	All	Disallowed
portChannelShow	VF	All	Disallowed
portCmd	VF	All	Disallowed
portDebug	CH	N/A	Disallowed
portDecom	VF	All	Disallowed
portDisable	VF	All	Disallowed
portDPortTest	VF	All	Allowed
portEnable	VF	All	Disallowed
portEncCompShow	VF	All	Allowed
portErrShow	VF	All	Allowed
portFlagsShow	VF	All	Allowed
portLedTest	CH	N/A	Disallowed
portLogClear	VF	All	Disallowed
portLogConfigShow	VF	All	Disallowed
portLogDisable	VF	All	Disallowed
portLogDump	VF	All	Disallowed
portLogDumpPort	VF	All	Disallowed
portLogEnable	VF	All	Disallowed
portLogEventShow	VF	All	Disallowed
portLoginShow	VF	All	Disallowed
portLogPdisc	VF	All	Disallowed
portLogReset	VF	All	Disallowed
portLogResize	VF	All	Disallowed
portLogShow	VF	All	Disallowed
portLogShowPort	VF	All	Disallowed
portLogTypeDisable	VF	All	Disallowed
portLogTypeEnable	VF	All	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
portLoopbackTest	CH	N/A	Disallowed
portName	VF	All	Disallowed
portPerfShow	VF	All	Disallowed
portPeerBeacon	VF	All	Allowed
portRouteShow	VF	All	Allowed
portShow	VF	All	Disallowed
portStats64Show	VF	All	Allowed
portStatsClear	VF	All	Disallowed
portStatsShow	VF	All	Allowed
portSwap	VF	All	Disallowed
portSwapDisable	VF	All	Disallowed
portSwapEnable	VF	All	Disallowed
portSwapShow	VF	All	Allowed
portTest	VF	All	Disallowed
portTestShow	VF	All	Disallowed
portTrunkArea	VF	All	Allowed
portZoneShow	VF	All	Disallowed
powerOffListSet	CH	N/A	Disallowed
powerOffListShow	CH	N/A	Allowed
psShow	CH	N/A	Allowed
rasAdmin	CH	N/A	Disallowed
rasMan	Disallowed	N/A	Disallowed
reBoot	CH	N/A	Disallowed
relayConfig	CH	N/A	Allowed
roleConfig	CH	N/A	Disallowed
routeHelp	Disallowed	N/A	Disallowed
rtLogTrace	CH	N/A	Disallowed
sddQuarantine	VF	All	Disallowed
secActiveSize	VF	All	Disallowed
secAuthSecret	VF	All	Disallowed
secCertMgmt	CH	N/A	Disallowed
secCertUtil	CH	N/A	Disallowed
secCryptoCfg	CH	N/A	Disallowed
secDefineSize	VF	All	Disallowed
secGlobalShow	VF	All	Disallowed
secHelp	Disallowed	N/A	Disallowed
secPolicyAbort	VF	All	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
secPolicyActivate	VF	All	Disallowed
secPolicyAdd	VF	All	Disallowed
secPolicyCreate	VF	All	Disallowed
secPolicyDelete	VF	All	Disallowed
secPolicyDump	VF	All	Disallowed
secPolicyFCSMove	VF	All	Disallowed
secPolicyRemove	VF	All	Disallowed
secPolicySave	VF	All	Disallowed
secPolicyShow	VF	All	Disallowed
secStatsReset	VF	All	Disallowed
secStatsShow	VF	All	Disallowed
sensorShow	CH	N/A	Allowed
serDesTuneMode	CH	N/A	Allowed
setContext	VF	All	Disallowed
setDbg	CH	N/A	Disallowed
setVerbose	CH	N/A	Disallowed
sfpShow	VF	All	Disallowed
shellFlowControlDisable	CH	N/A	Disallowed
shellFlowControlEnable	CH	N/A	Disallowed
slotCfgPersistence	CH	All	Disallowed
slotPowerOff	CH	N/A	Disallowed
slotPowerOn	CH	N/A	Disallowed
slotShow	VF, CH	N/A	Allowed
slotStatsClear	VF	All	Disallowed
snmpConfig	CH	N/A	Disallowed
snmpStatistics	CH	N/A	Disallowed
snmpTraps	CH	N/A	Disallowed
spinFab	VF	All	Disallowed
sshUtil	CH	N/A	Disallowed
statsClear	VF	All	Disallowed
stopPortTest	VF	DS	Disallowed
supportFfdc	CH	N/A	Disallowed
supportFtp	CH	N/A	Disallowed
supportInfoClear	CH	N/A	Allowed
supportSave	CH	N/A	Allowed
supportShow	VF	All	Disallowed
supportShowCfgDisable	CH	N/A	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
supportShowCfgEnable	CH	N/A	Disallowed
supportShowCfgShow	CH	N/A	Disallowed
switchBeacon	VF	All	Disallowed
switchCfgPersistentDisable	VF	All	Disallowed
switchCfgPersistentEnable	VF	All	Disallowed
switchCfgSpeed	VF	All	Disallowed
switchCfgTrunk	VF	All	Disallowed
switchDisable	VF	All	Disallowed
switchEnable	VF	All	Disallowed
switchName	VF	All	Disallowed
switchShow	VF	All	Allowed
switchUptime	CH	N/A	Allowed
switchViolation	VF	All	Disallowed
syslogAdmin	VF/CH	N/A	Disallowed
sysShutdown	CH	N/A	Disallowed
tcpTimeStamp	CH	N/A	Disallowed
tempShow	CH	N/A	Allowed
timeOut	CH	N/A	Disallowed
topologyShow	VF	All	Allowed
traceDump	CH	N/A	Disallowed
trunkDebug	VF	All	Allowed
trunkShow	VF	All	Allowed
tsClockServer	CH	N/A	Disallowed
tsTimeZone	CH	N/A	Disallowed
turboRamTest	CH	N/A	Disallowed
upTime	CH	N/A	Disallowed
uRouteShow	VF	All	Allowed
usbStorage	CH	N/A	Disallowed
userConfig	CH/VF	All/NA	Disallowed
version	VF	N/A	Allowed
wwn	VF, CH/ VF	All	Disallowed
wwnAddress	VF	All	Disallowed
wwnRecover	VF, CH/ VF	All	Disallowed
zone	VF	All	Disallowed
zoneAdd	VF	All	Disallowed
zoneCreate	VF	All	Disallowed
zoneDelete	VF	All	Disallowed

TABLE 1 Virtual Fabric and Remote Domain execution restrictions for Fabric OS commands. (Continued)

Command name	Context	Switch type	Remote Domain Execution
zoneHelp	Disallowed	N/A	Disallowed
zoneObjectCopy	VF	All	Disallowed
zoneObjectExpunge	VF	All	Disallowed
zoneObjectRename	VF	All	Disallowed
zoneObjectReplace	VF	All	Disallowed
zoneRemove	VF	All	Disallowed
zoneShow	VF	All	Disallowed