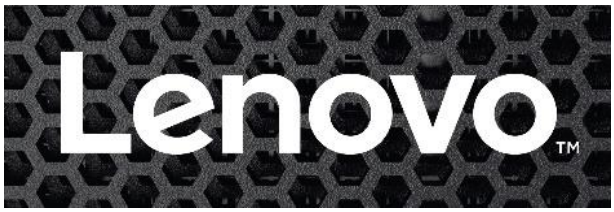

Lenovo ESXi Custom Image and VMware Update Manager (VUM) Guide

May 11th, 2018

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Table of Contents

Lenovo VMware Customized Image and VUM Reference Guide 4
ESXi Custom Image Download Links 5
Lenovo VMware Update Manager (VUM) Repository 6
System Support and VMware Lifecycle Policy 8
Best Practices and Solutions 9
Performance Enhancements 9
When is the Vendor CIM Provider Needed? 10
Identifying the CIM Providers 11
Installation of driver or provider 11
Creating a Full Image 25
Checking the Bootbank Size 25
Customized Image Content 26
Lenovo Custom Image or ESXi 6.5 U2 (ThinkSystem and System X) 26
Lenovo Custom Image for ESXi 6.5 U2 (ThinkServer) 27
Lenovo Custom Image for ESXi 6.7 (ThinkSystem and System X) 28
Lenovo Custom Image for ESXi 6.7 (ThinkServer) 29
Lenovo Custom Image for ESXi 6.5 U1 (ThinkSystem, System X and ThinkServer) 30
Lenovo Custom Image for ESXi 6.0 U3 (ThinkSystem, System X, and ThinkServer) 31
Lenovo Custom Image for ESXi 5.5 U3 (System X and ThinkServer) 32
Lenovo Custom Image for ESXi 6.5a (ThinkSystem) 33
Lenovo Custom Image for ESXi 6.5b (System X and ThinkServer) 34
Lenovo Custom Image for ESXi 6.5b (ThinkSystem) 35
Support 36
Fixes and Updates 36
Related Documentation 36

Lenovo VMware Customized Image and VUM Reference Guide

The Lenovo VMware ESXi custom image contains important deliverables from Lenovo:

1. It is tested across Lenovo's server and adapter portfolio with the same ServerProven® support guarantee as VMware's base release.
2. The image enables support of Lenovo's tools, including ToolCenter that give the customer the ability to flash server firmware such as: UEFI, XCC, and vendor firmware for supported IO adapters.
3. The image includes the latest drivers that align with VMware's release schedule. These updated drivers support Lenovo's portfolio.

This document provides additional information for VMware customized images available from Lenovo.

ESXi Custom Image Download Links

Custom Image Version	Targeted Systems	Download URL
Most Recent images		
ESXi 6.5 U2	ThinkSystem, System X	https://vmware.lenovo.com/content/custom_iso/6.5/6.5u2/SystemX ThinkSystem/
ESXi 6.5 U2	ThinkServer	https://vmware.lenovo.com/content/2018_05/Lenovo_Custom_ISO/6.5u2/ThinkServer/
ESXi 6.5 U2	ThinkServer-TS440-TS540	https://vmware.lenovo.com/content/2018_05/Lenovo_Custom_ISO/6.5u2/ThinkServer-TS440-TS540/
ESXi 6.7	ThinkSystem, System X	https://vmware.lenovo.com/content/custom_iso/6.7/6.7/SystemXThinkSystem/
ESXi 6.7	ThinkServer	https://vmware.lenovo.com/content/custom_iso/6.7/6.7/ThinkServer/
Older images		
ESXi 6.5 U1	ThinkSystem, System X and ThinkServer	https://vmware.lenovo.com/content/custom_iso/6.5/6.5u1/
ESXi 6.0 U3	ThinkSystem, System X and ThinkServer	https://vmware.lenovo.com/content/custom_iso/6.0/6.0u3/
ESXi 5.5 U3	System X	https://vmware.lenovo.com/content/custom_iso/5.5/5.5u3/
ESXi 6.5a	ThinkSystem	https://vmware.lenovo.com/content/custom_iso/6.5/6.5a/
ESXi 6.5b	ThinkSystem	https://vmware.lenovo.com/content/custom_iso/6.5/6.5b/thinksystem/
ESXi 6.5b	System X and ThinkServer	https://vmware.lenovo.com/content/custom_iso/6.5/6.5b/systemx/
ESXi 6.0u2	System X	https://vmware.lenovo.com/content/custom_iso/6.0/6.0u2/

Note: **A Minimum of 16 GB RAM is recommended to run the VMware ESXi Customized Image on Lenovo ThinkSystem.**

Lenovo VMware Update Manager (VUM) Repository

Lenovo VMware Update Manager (VUM) Repository is available at: https://vmware.lenovo.com/content

This is a one-stop repository that provides access to Lenovo developed bundles along with device drivers that are part of the Lenovo Customized VMware images. These bundles and associated vibs can be used with VMware applications and tools like VMware Update Manager (VUM), ESXCLI & PowerCLI.

To learn more about these tools, refer to the VMware documentation.

When configuring VMware Update Manager, choose the URL that is appropriate for your systems from the table below. In most cases, selecting the "Latest" location is sufficient and provides accumulative updates for all ESXi versions on all systems:

- https://vmware.lenovo.com/content/latest_index/ (for System x and ThinkSystem)
- https://vmware.lenovo.com/content/latest_thinkserver/ (for ThinkServer)

VUM Location	Targeted Systems	ESXi versions	URL for VMware Update Manager
Latest	ThinkSystem, System X	5.5, 6.0, 6.5, 6.7	https://vmware.lenovo.com/content/latest_index/
Latest	ThinkServer	6.5, 6.7	https://vmware.lenovo.com/content/latest_thinkserver/
2018_05	ThinkSystem, System X	6.5	https://vmware.lenovo.com/content/2018_05/esxi_650_custom_vibs/
2018_05	ThinkServer	6.5	https://vmware.lenovo.com/content/2018_05/esxi_650_thinkserver_vibs/
2018_04	ThinkSystem, System X	6.7	https://vmware.lenovo.com/content/2018_04/esxi_670_custom_vibs/
2018_04	ThinkServer	6.7	https://vmware.lenovo.com/content/2018_04/esxi_670_thinkserver_vibs/
2018_03	ThinkSystem, System X, ThinkServer	6.0, 6.5	https://vmware.lenovo.com/content/2018_03/
2018_01	ThinkSystem, System X, ThinkServer	6.0, 6.5	https://vmware.lenovo.com/content/2018_01/
2017_11	ThinkSystem, System X, ThinkServer	6.0, 6.5	https://vmware.lenovo.com/content/2017_11/
2017_08	ThinkSystem	6.5, 6.5	https://vmware.lenovo.com/content/2017_08/
2017_06	System X, ThinkServer	5.5, 6.0, 6.5, CIM Providers	https://vmware.lenovo.com/content/2017_06/

2017_02	System X, ThinkServer	5.5, 6.0, 6.5	https://vmware.lenovo.com/content/2017_02/
2016_07	System X, ThinkServer	6.0, CIM Providers	https://vmware.lenovo.com/content/2016_07/

System Support and VMware Lifecycle Policy

Resource / Document	Link
Lenovo VMware Support Resources page	https://vmware.lenovo.com
Firmware/Drivers for Lenovo ThinkSystem and System x	https://support.lenovo.com/us/en/solutions/ht506028
Firmware/Drivers for IBM System x	https://www-945.ibm.com/support/fixcentral/systemx/selectFixes?product=ibm%2Fsystemx%2F7875&fixids=IBM_System_x_Vmware_Code_Recipe&source=dbluesearch&function=fixId&parent=ibm/BladeCenterHS23
Firmware / Drivers for vSAN Ready Nodes and Build Your Own	https://datacentersupport.lenovo.com/us/en/solutions/ht505293
Lenovo Repository for VMware Update Manager (VUM)	https://vmware.lenovo.com/content/
Lenovo OS Interoperability Guide	https://lenovopress.com/osig
Lenovo Server Proven Compatibility	https://static.lenovo.com/us/en/serverproven/index.shtml
Lenovo vSAN Certified Devices	https://datacentersupport.lenovo.com/solutions/HT505293
VMware Lifecycle Product Matrix	https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/support/product-lifecycle-matrix.pdf

Best Practices and Solutions

1. Lenovo Custom images are not supported on IBM systems.
   - All Lenovo custom Images include Lenovo providers which only support Lenovo FW/UEFI on Lenovo systems. If installed on IBM hardware, the system could crash.

2. If during VMware ESXi installation you receive a "failuresbb" error, configure the UEFI the settings to move the MM Config Base Memory windows to 3G: System Settings → Devices and I/O ports → PCI 64-Bit Resource Allocation and Disabled System Settings → Devices and I/O ports → MM Config Base memory window : Change to 3G

   https://forums.lenovo.com/t5/tkb/articleprintpage/tkb-id/sx01_eg@tkb/article-id/9

3. VMware vSphere prior to ESXi 6.5 does not support 512e and 4K Native drives. ESXi 6.5 supports 512e, but not 4K. See http://kb.vmware.com/kb/2091600

4. For best practices for performance tuning of latency sensitive workloads in vSphere VMs, refer to:

   http://www.vmware.com/files/pdf/techpaper/VMW-Tuning-Latency-Sensitive-Workloads.pdf#sthash.zkmNuXPp.dpuf

Performance Enhancements

To allow for more space within the VMware bootbank in the Lenovo Customized image, the IHV CIM providers have been removed. You may choose to add the providers that are specific to your platform, or all of them if desired. If you plan to use NSX and or vSAN, please choose only the IHV CIM providers that are required for your system. The following are the providers that have been removed:

Note: You can determine which CIM providers you are using by the device driver that is loaded:

Device Driver in configuration	IHV CIM Provider needed
Elxnet Brcmfcoe Elxiscsi elx-esx-libelxima.so emulex-esx-elxnetcli ima-be2iscsi scsi-be2iscsi Lpfc	emulex-cim-provider

scsi-mpt3sas lsi-msgpt3 scsi-mpt2sas scsi-megaraid-sas lsi-mr3	lsiprovider
Mlnx	mlnxprovider
net-tg3	brcm
net-qlcnic net-qlge qlnativefc ima-qla4xxx scsi-qla4xxx	qlogic-cna-provider
misc-cnic-register net-bnx2 net-bnx2x qfle3	qlogic-nx2-provider

When is the Vendor CIM Provider Needed?

If you use Bootable Media Creator (BoMC) from Lenovo XClarity Essentials (OneCli), or Lenovo xClarity Administrator to perform firmware updates, then IHV CIM providers are not required.

If you use USXPi from the Lenovo ToolsCenter Suite, Lenovo XClarity Essentials (OneCli), or Lenovo xClarity Integrator for VMware vCenter:

- Users will have limited capabilities using Lenovo ASU, DSA for configuration, firmware updates, and inventory for I/O options with VMware ESXi with the image provided.
- The use of ToolsCenter Suite CLI for firmware update for I/O options thru VMware ESXi is not available.
- BOMC is an available option for firmware upgrades if the IHV CIM providers are not added back to the ESXi Custom Image.
- If the individual vendor CIM providers needed for your environment are added back to the ESXi image, the tools mentioned above will work with the specific vendor provider added.

Identifying the CIM Providers

To determine which CIM providers you will need for your system:

Find the Host Bus adapter information

Run this command to obtain the driver type that the Host Bus Adapter is currently using:

```
# esxcfg-scsidevs -a
```

You will see output similar to the following:

```
vmhba0 mptspi link-n/a pscsi.vmhba1 (0:16.0) LSI Logic / Symbios Logic LSI Logic
Parallel SCSI Controller.
```

This output is equal to the lsiprovider

Find the Network card information

Obtain a list of network interface cards and names.

Run this command to obtain the driver type that the Network card is currently using:

```
# esxcli network nic list
```

You will see output similar to:

```
Name PCI Driver Link Speed Duplex MAC Address

vmnic0 00:02:04.00 ixgbe Up 1000Mbps Full 01:23:45:67:89:AB vmnic1 00:02:05.00 igb
Up 1000Mbps Full 01:23:45:67:78:AC
```

This is an Intel device. There is no provider for these devices.

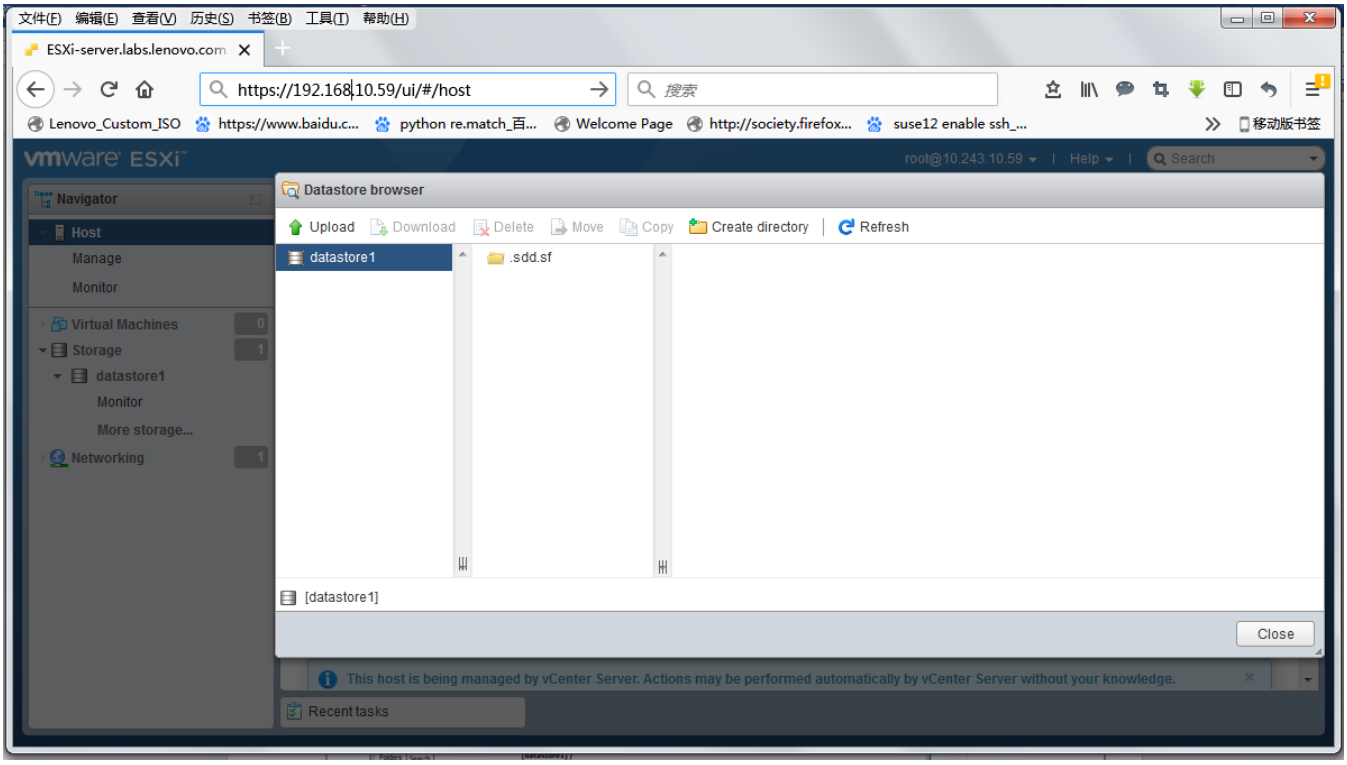
Installation of driver or provider

To install Lenovo driver or provider, use one of these methods:

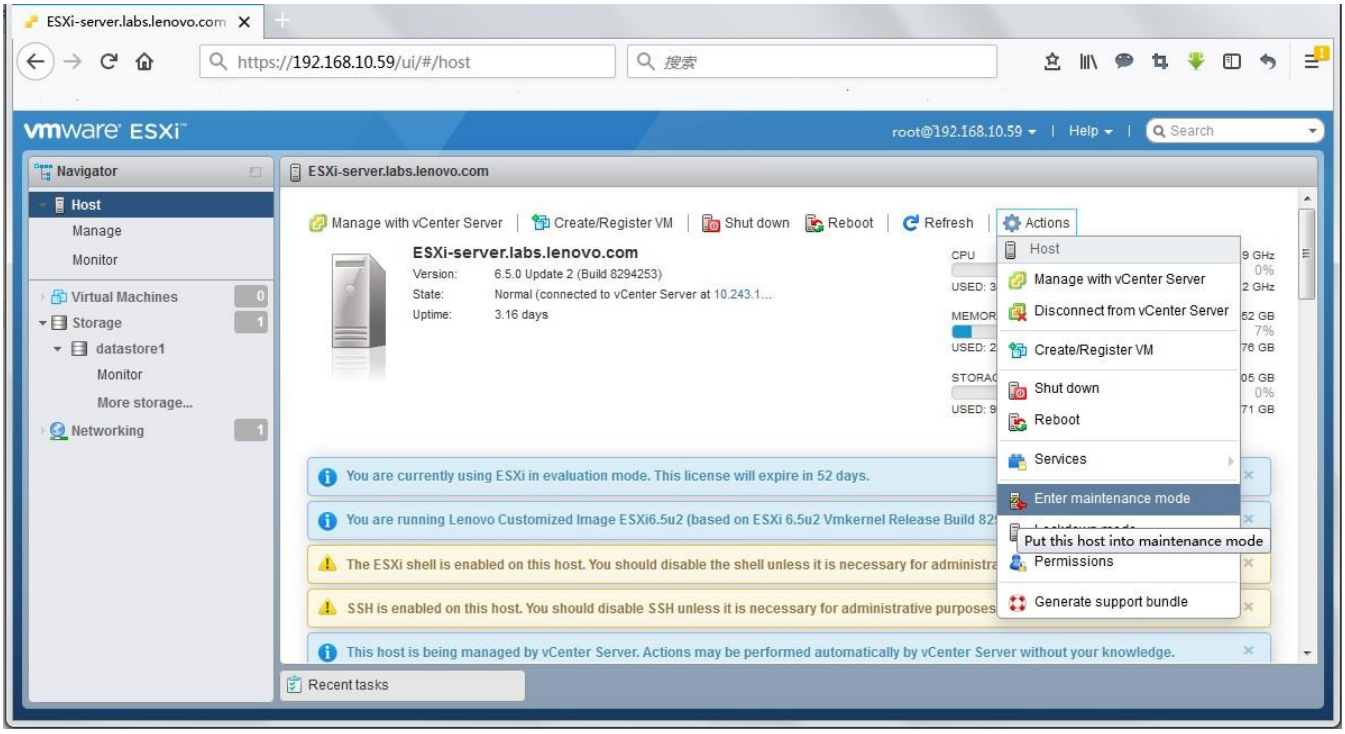
a. Install Lenovo driver or provider bundle using esxcli
b. Install Lenovo driver or provider using Update Manager:

To install using esxcli:

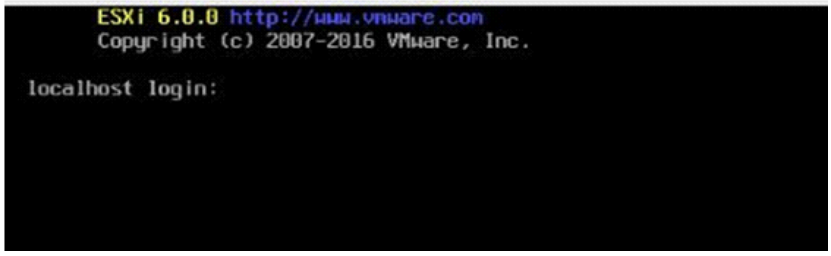
1. Identify required provider and driver
2. Download Lenovo bundle or *.vib file(s) from Lenovo VUM Repository
3. Login to the ESXi host from web browser with administrator privileges, such as root.
4. Right click target datastore and choose “Browse” to open the Datastore Browser, upload the Lenovo bundle zip or file.vib file(s) to a datastore in the ESXi host.



5. Enter the host into maintenance mode



6. Login as root at the ESXi console by using SSH.



7. Run the following command to install the drivers using the offline bundle: esxcli software vib install –v d

```
/path/Lenovo_bundle_name.zip*.vib
```

Note: This command requires an absolute path. For example:

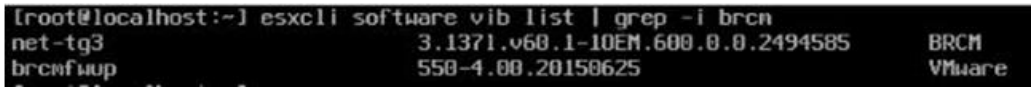
```
esxcli software vib install –v /vmfs/volumes/datastore_name/
Lenovo_bundle_name.zip*.vib
```

Note: If this command fails, unzip the file and try running the same command. If hostd does not respond, try using localcli instead of esxcli. For example:

```
localcli software vib install –v /vmfs/volumes/datastore_name/
Lenovo_bundle_name.zip*.vib
```

8. Restart the ESXi host.
9. To confirm that the VIB is installed successfully, run this command: esxcli

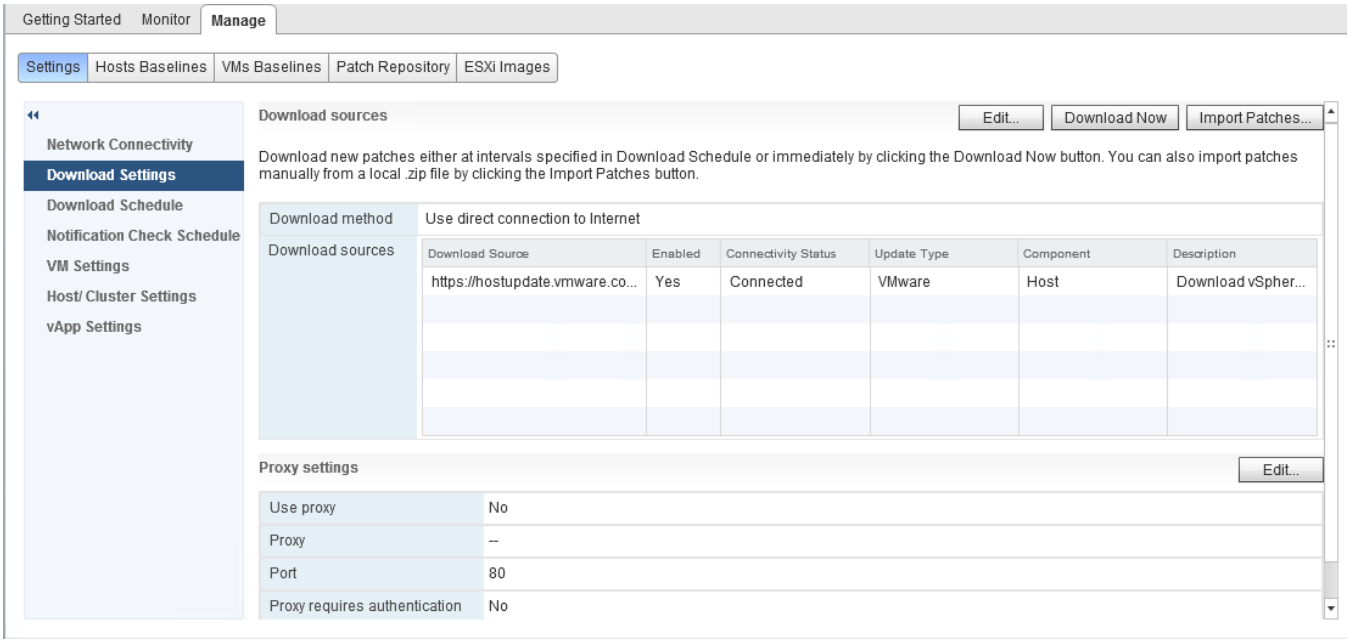
```
software vib list | grep -i vib_name
```



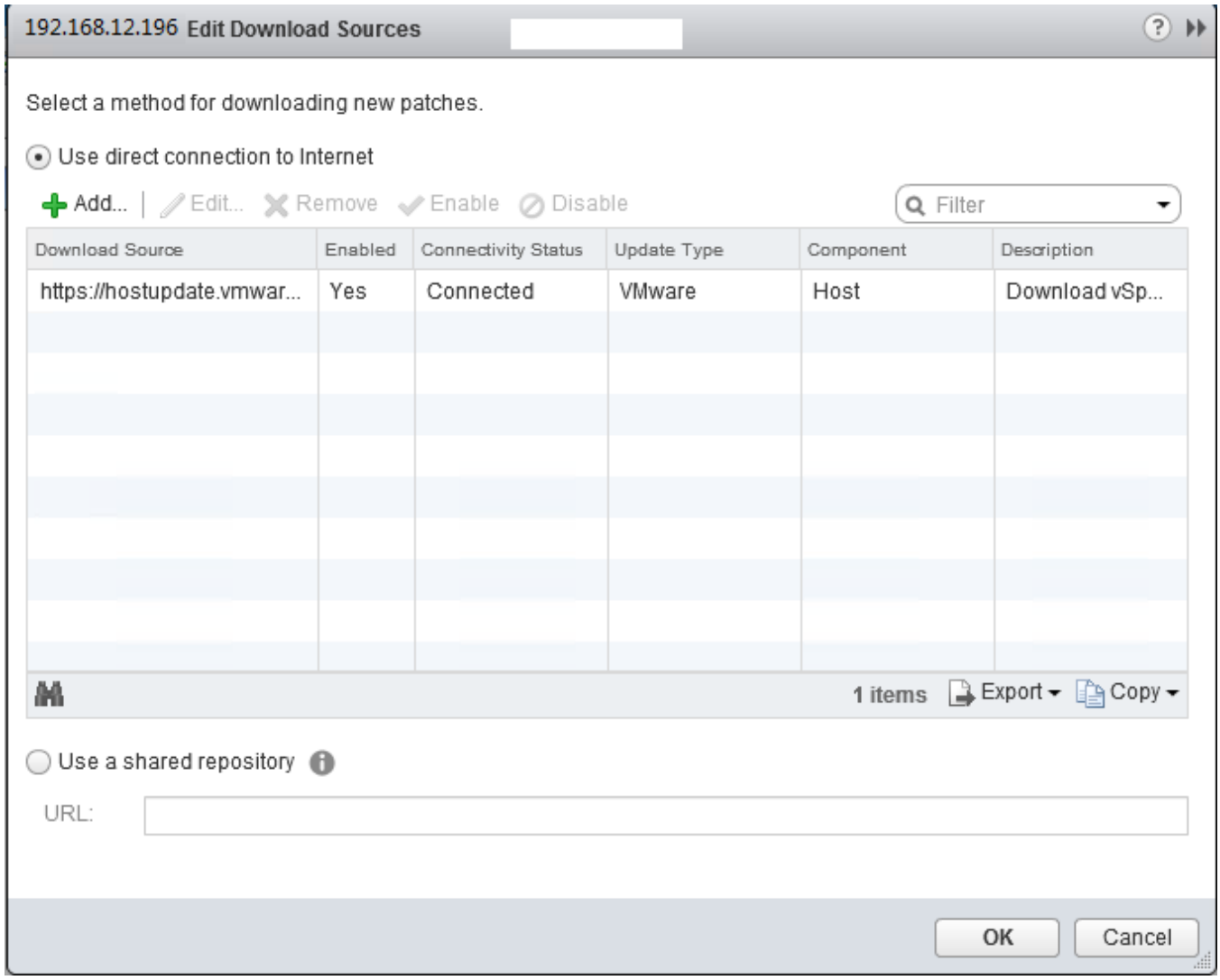
10. Exit maintenance mode.

To install the Lenovo provider or driver using Update Manager:

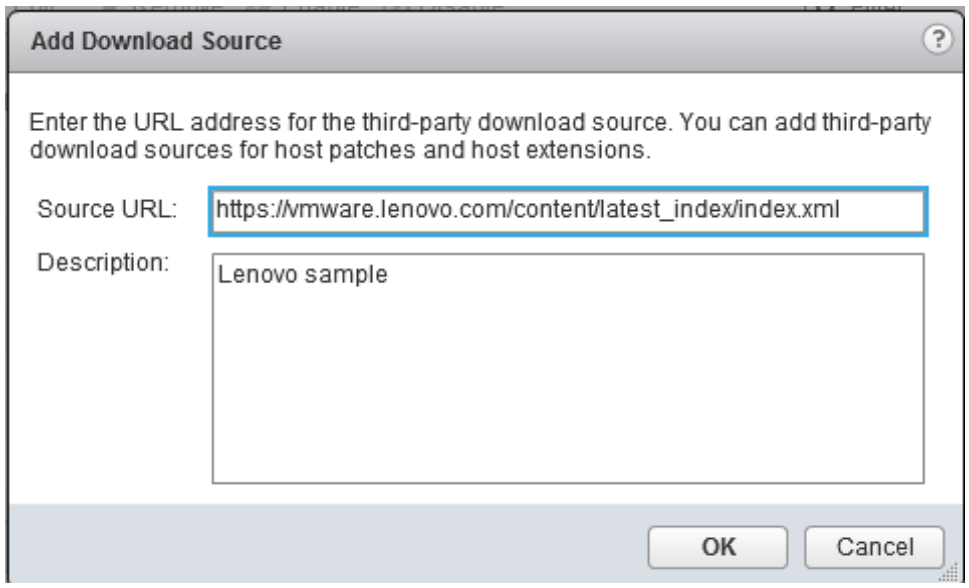
1. Login vCenter Server from web browser. .
2. Open Update Manager from “Home” -> “Operations and Plicies" -> “Update Manager”
3. Got to “Manage”-> “Settings” -> “download setting” , click “Edit” for “Download resources”



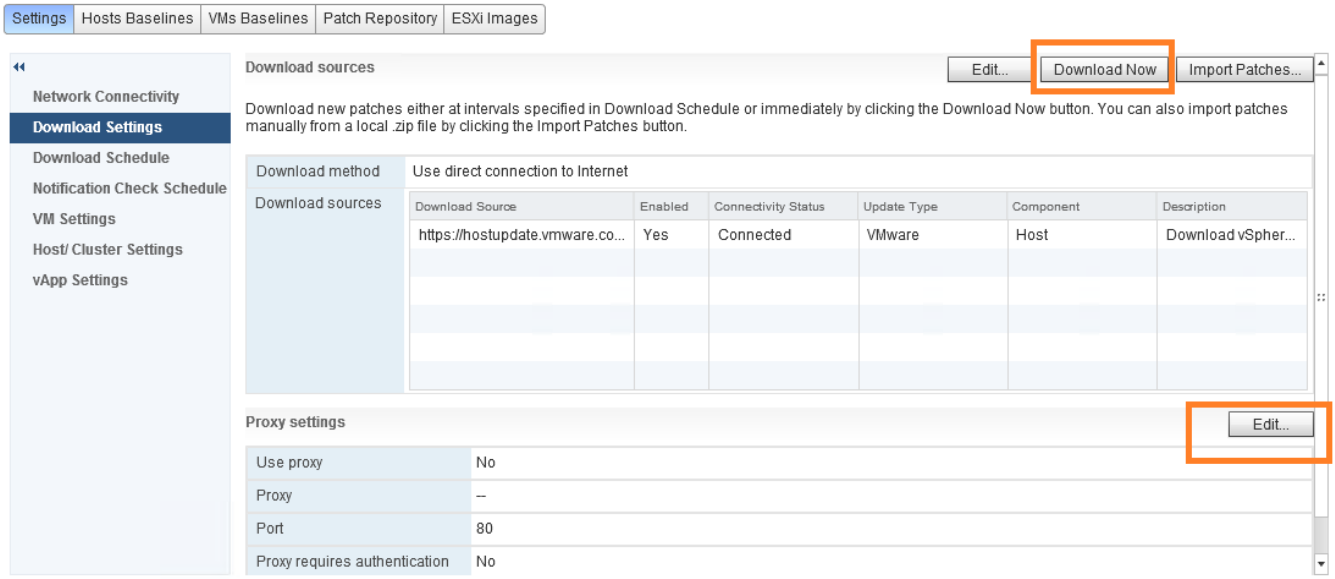
4. Click “add” button to add Lenovo resource link, for detail of the link, please refer to “Lenovo VMware Update Manager (VUM) Repository”



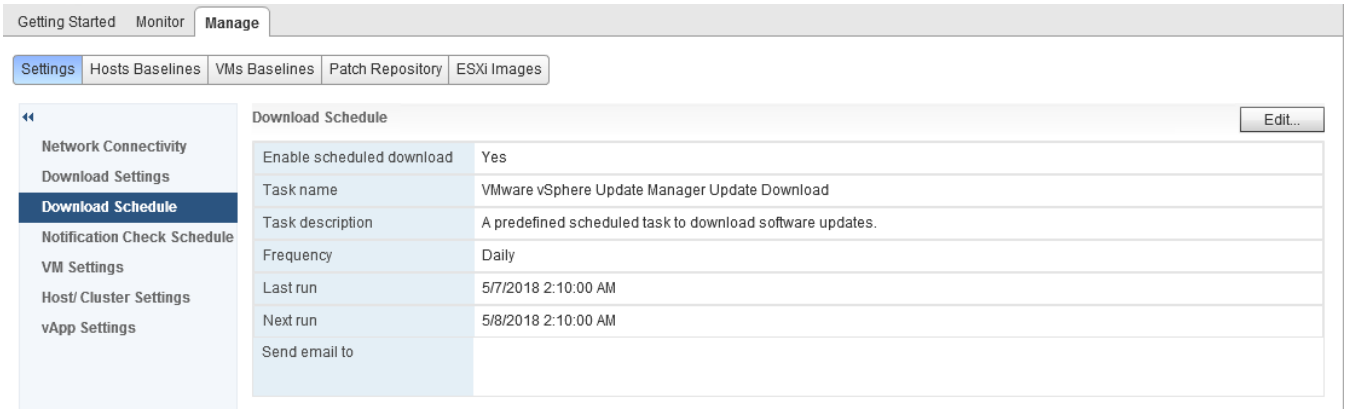
5. Input the resource information, then click “OK” button



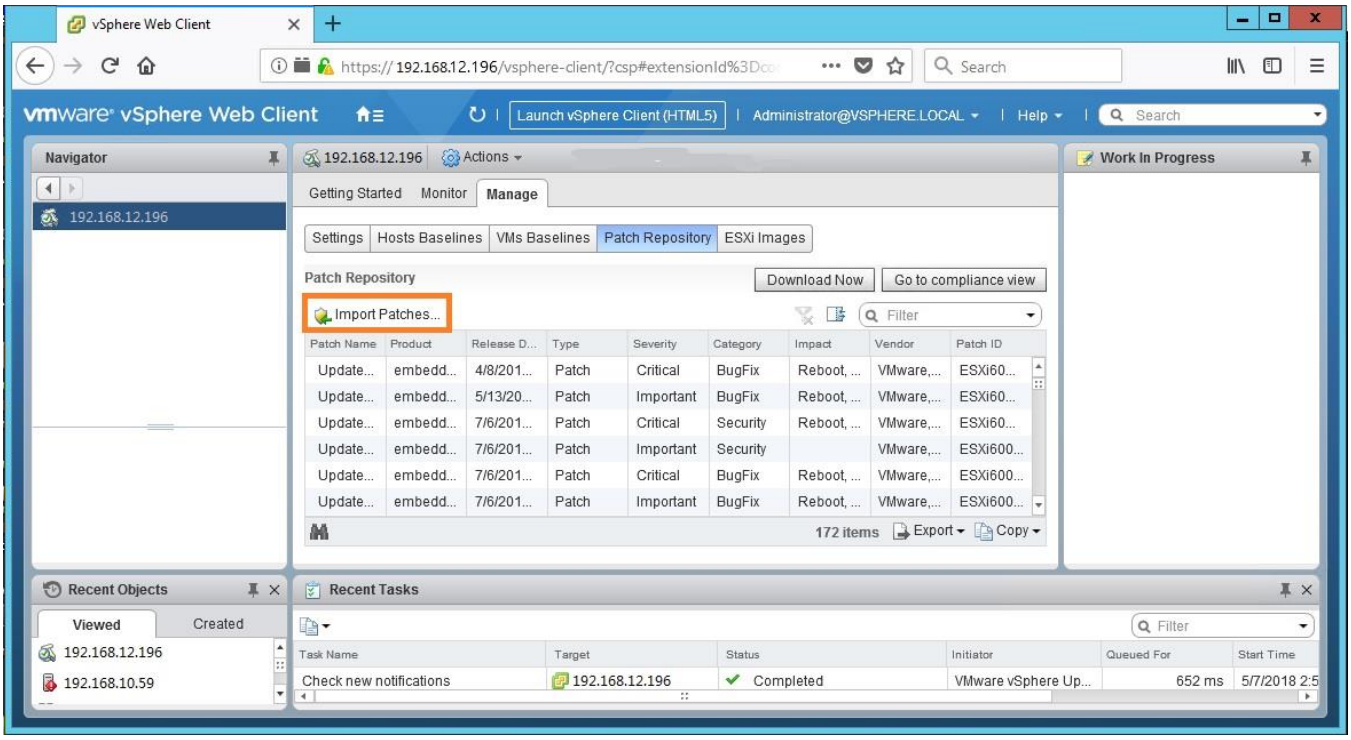
6. Click “Download Now” to download VMware patch or bundle from the “Download resource”, configure proxy if required.



7. Configure download schedule if needed.

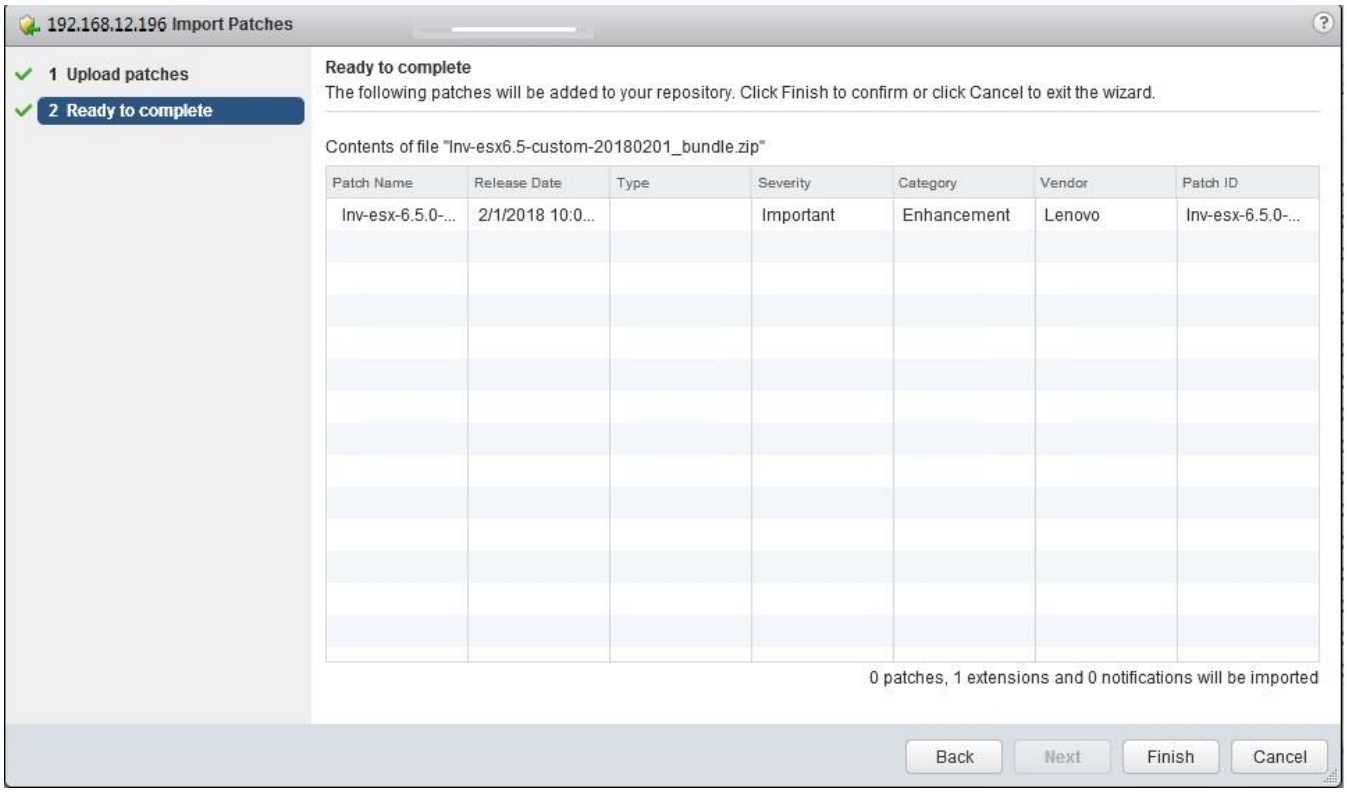


8. You can also import patch manually, go to “Manage”-> “Patch Repository”, Click the Import Patches link at the top left of the screen.



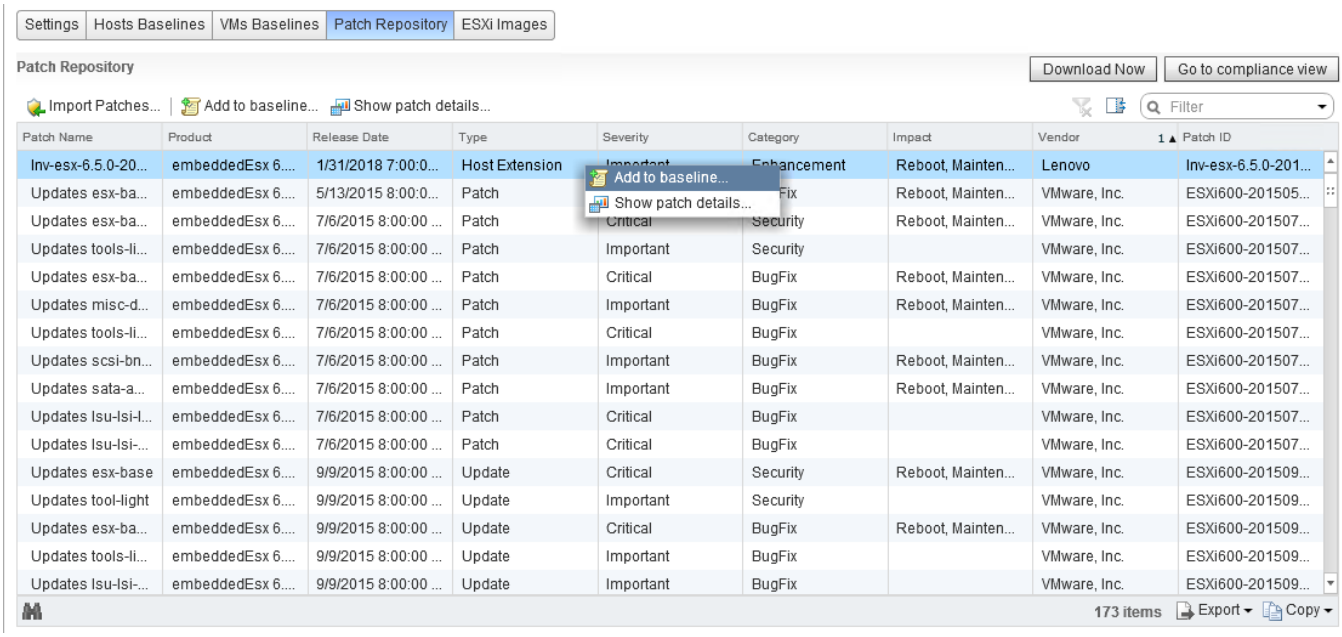
9. Select the required zip, then click Next

10. Click Finish. The Lenovo bundle added to the patch repository.

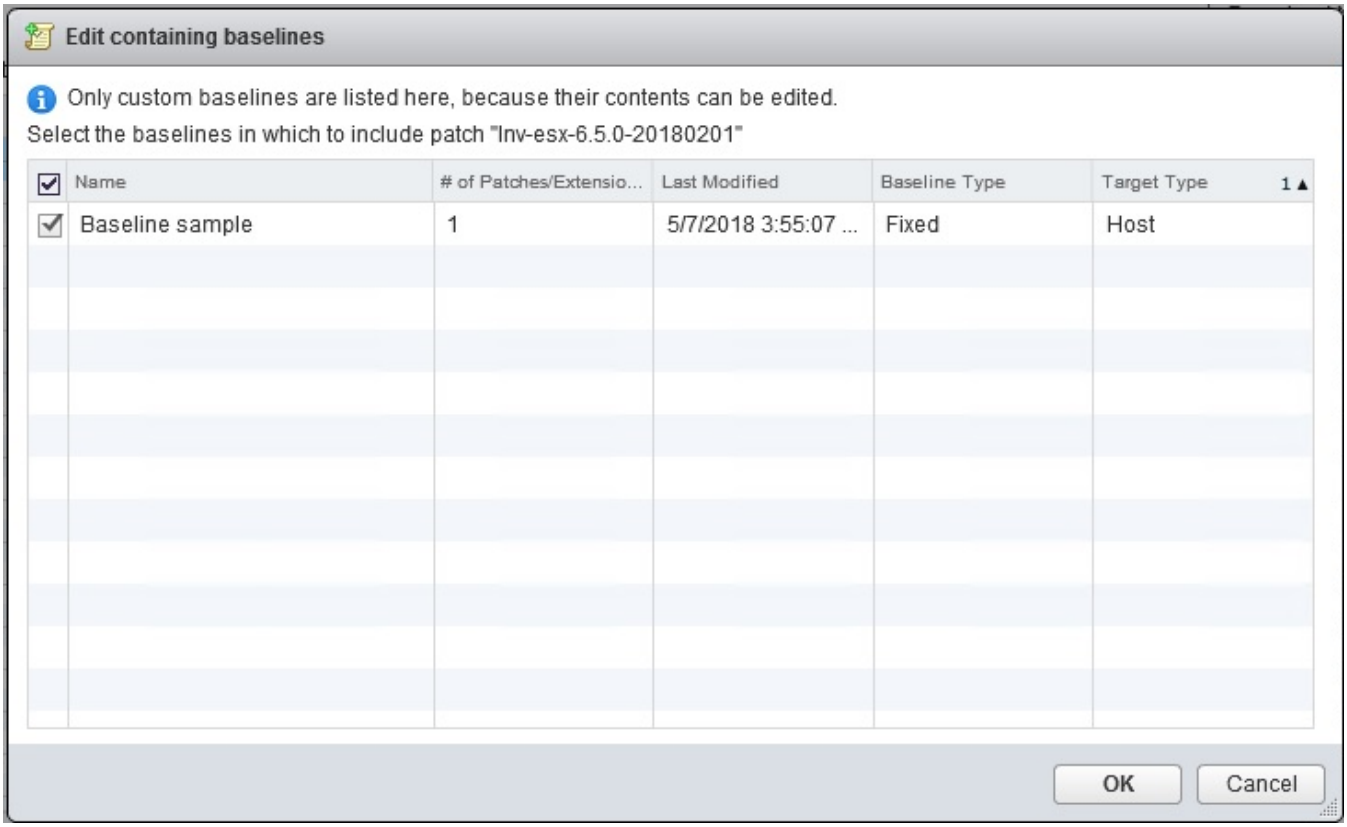


11. Repeat the previous 3 steps if more than one bundle is needed.

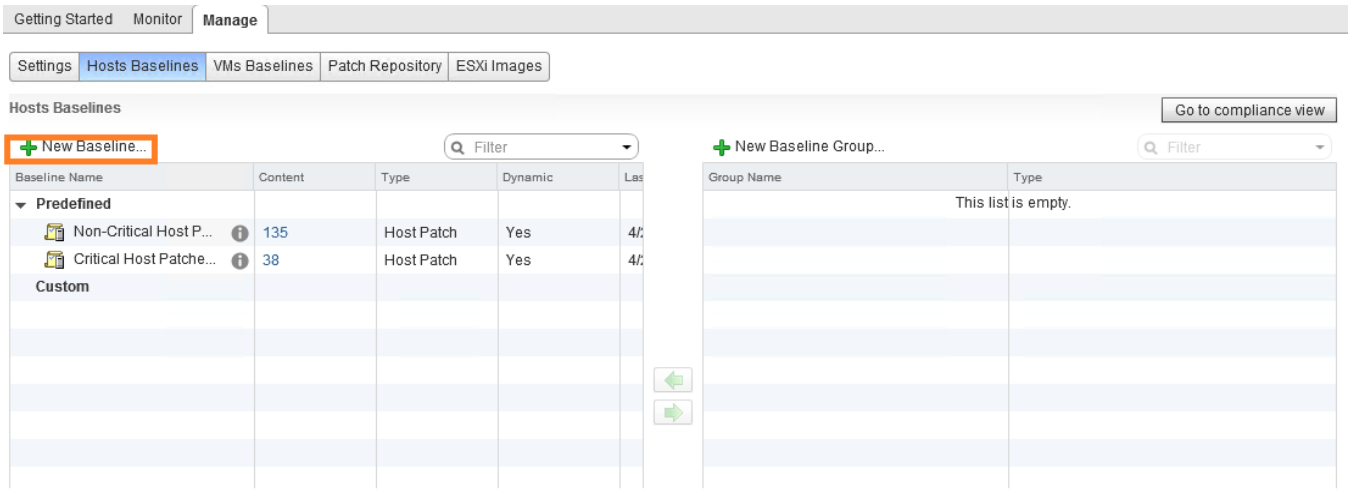
12. If you have already created the baseline, (baseline with component value “Host Extension” is required, check the value by select the Patch Repository tab). Choose required bundles and right click then click “Add to Baselines”



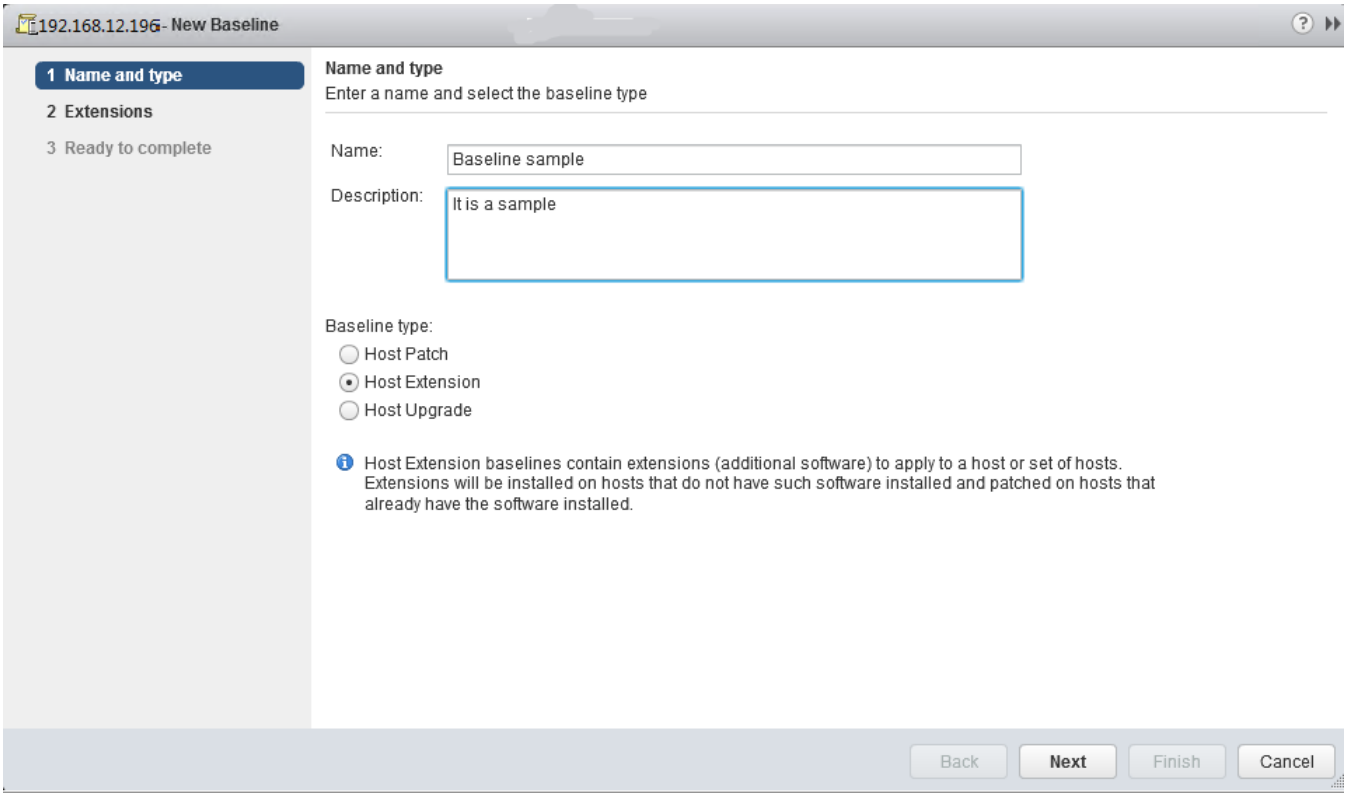
13. Choose the baseline, click OK



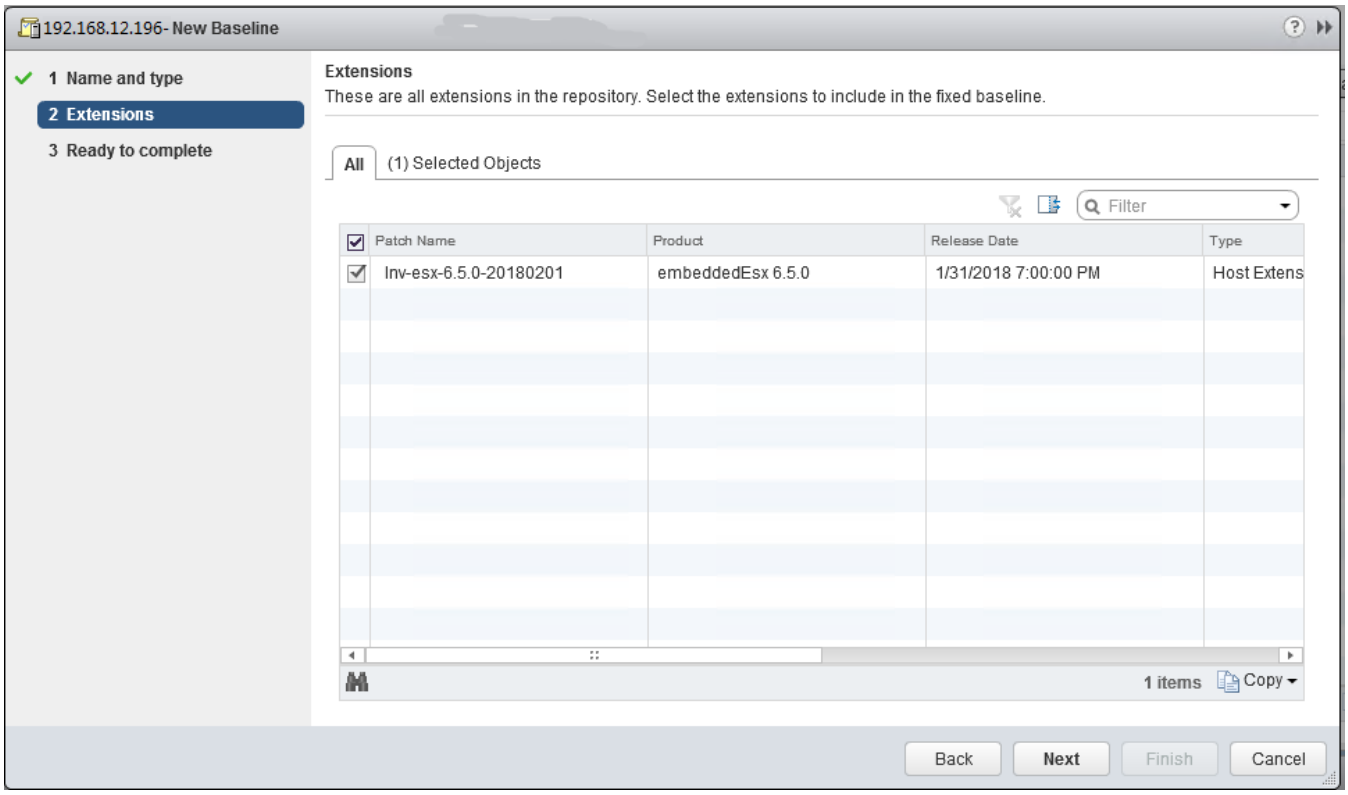
14. If baseline isn't available, select "Host Baselines" tab, click "New Baseline" button upper Baselines



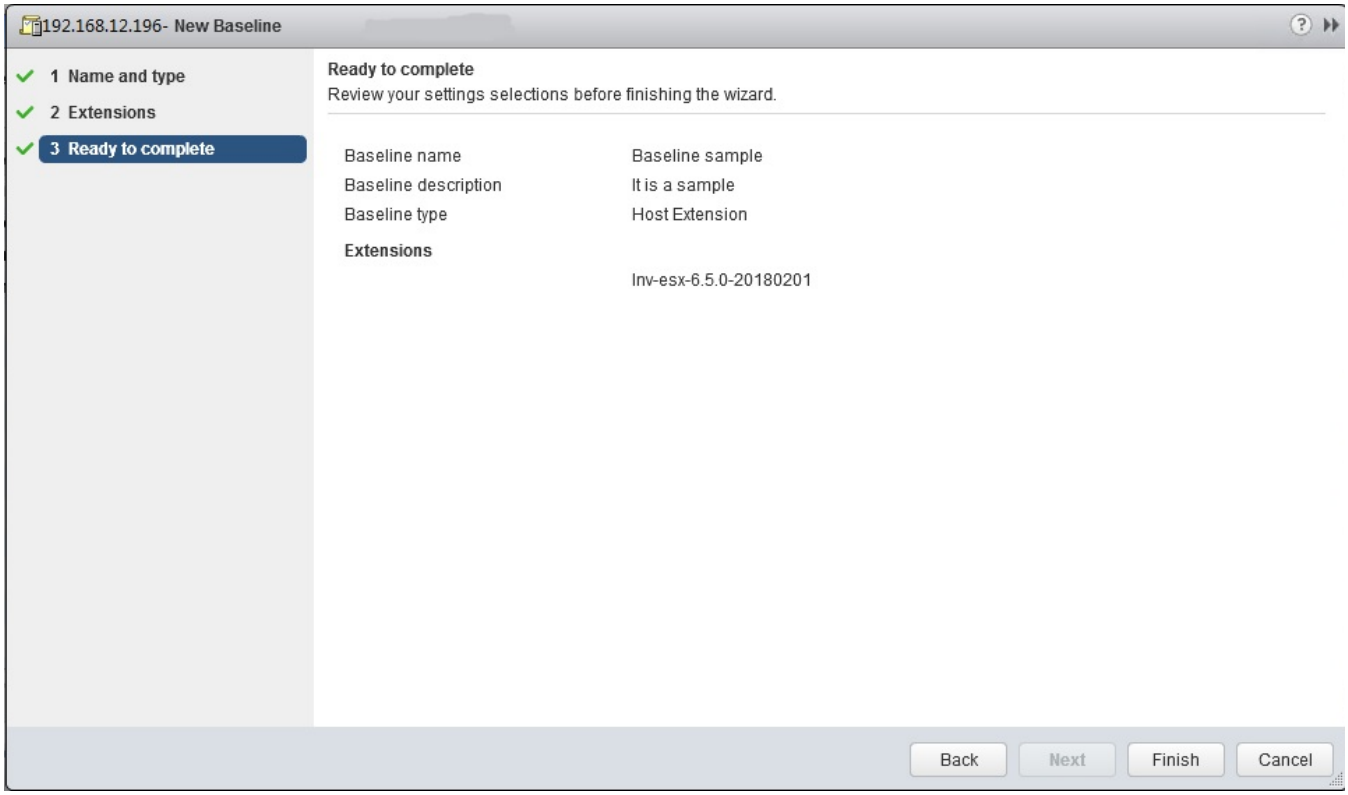
15. Create a Host Extension baseline, click Next.



16. Select the required patch to the new baseline. Click Next

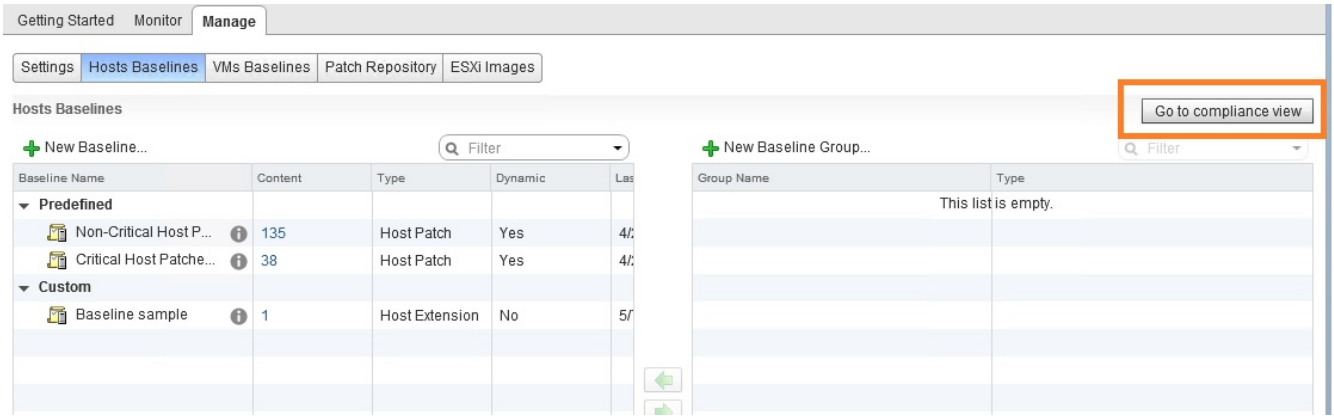


17. Review the baseline, click Finish

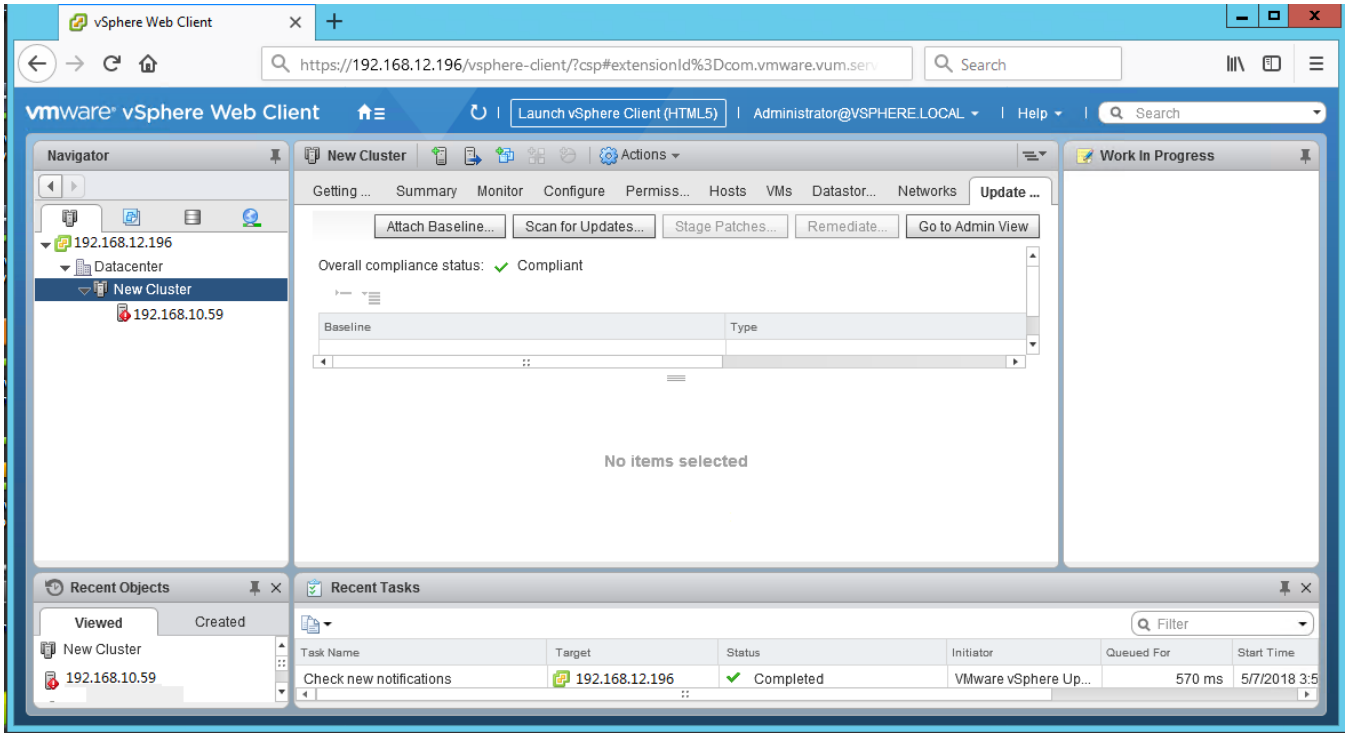


18. We can begin to remediate the ESXi host after baseline is created. Click “Go to compliance view” button

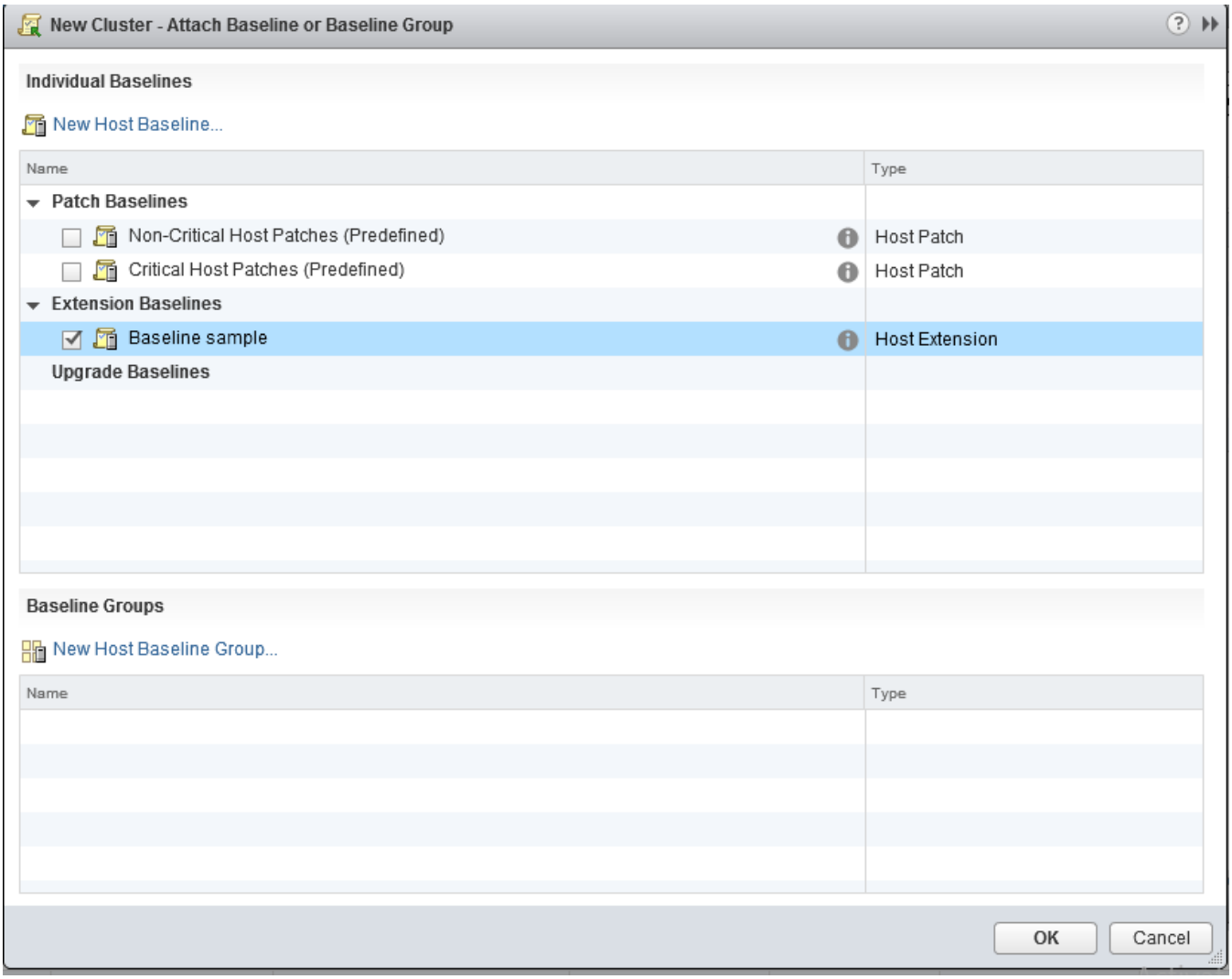
to compliance view



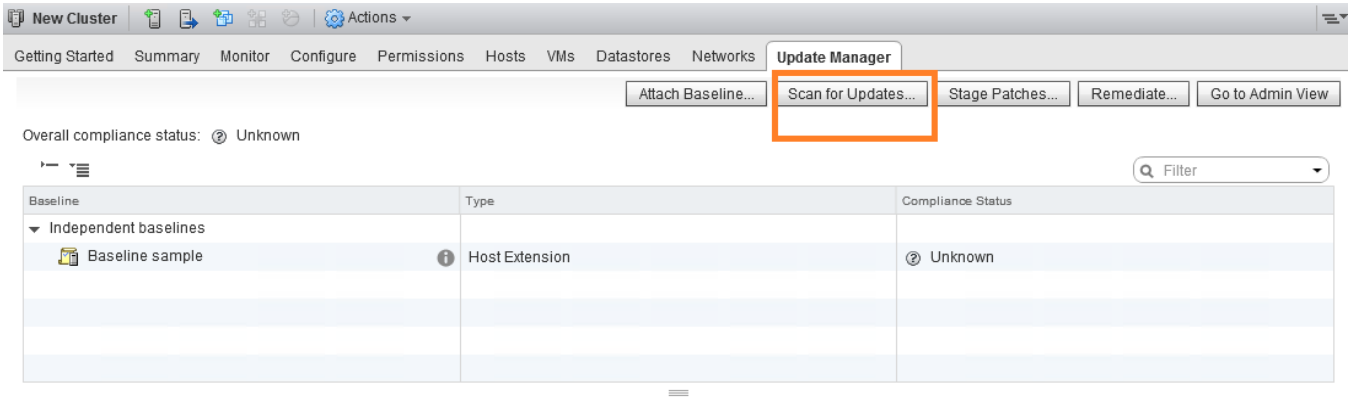
19. Choose Datacenter, Cluster or Host in the left tree based on the apply scope



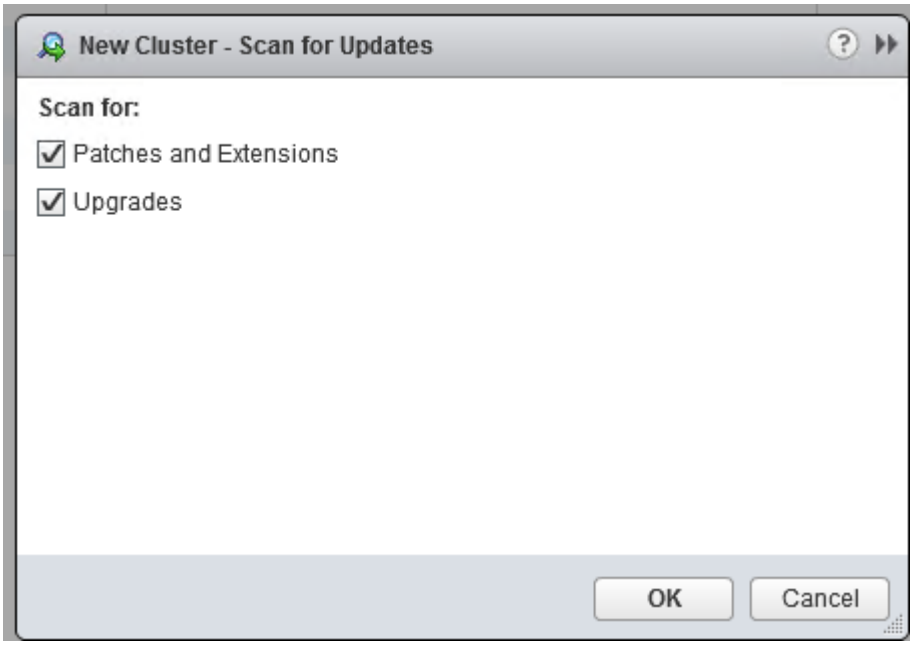
20. Click “Attach Baseline" to choose the Baselines or groups. Select the baselines or groups, click “OK”


New Cluster - Attach Baseline or Baseline Group
Individual Baselines
New Host Baseline...
Name
Type
Patch Baselines
Non-Critical Host Patches (Predefined)
Host Patch
Critical Host Patches (Predefined)
Host Patch
Extension Baselines
Baseline sample
Host Extension
Upgrade Baselines
Baseline Groups
New Host Baseline Group...
Name
Type
OK
Cancel

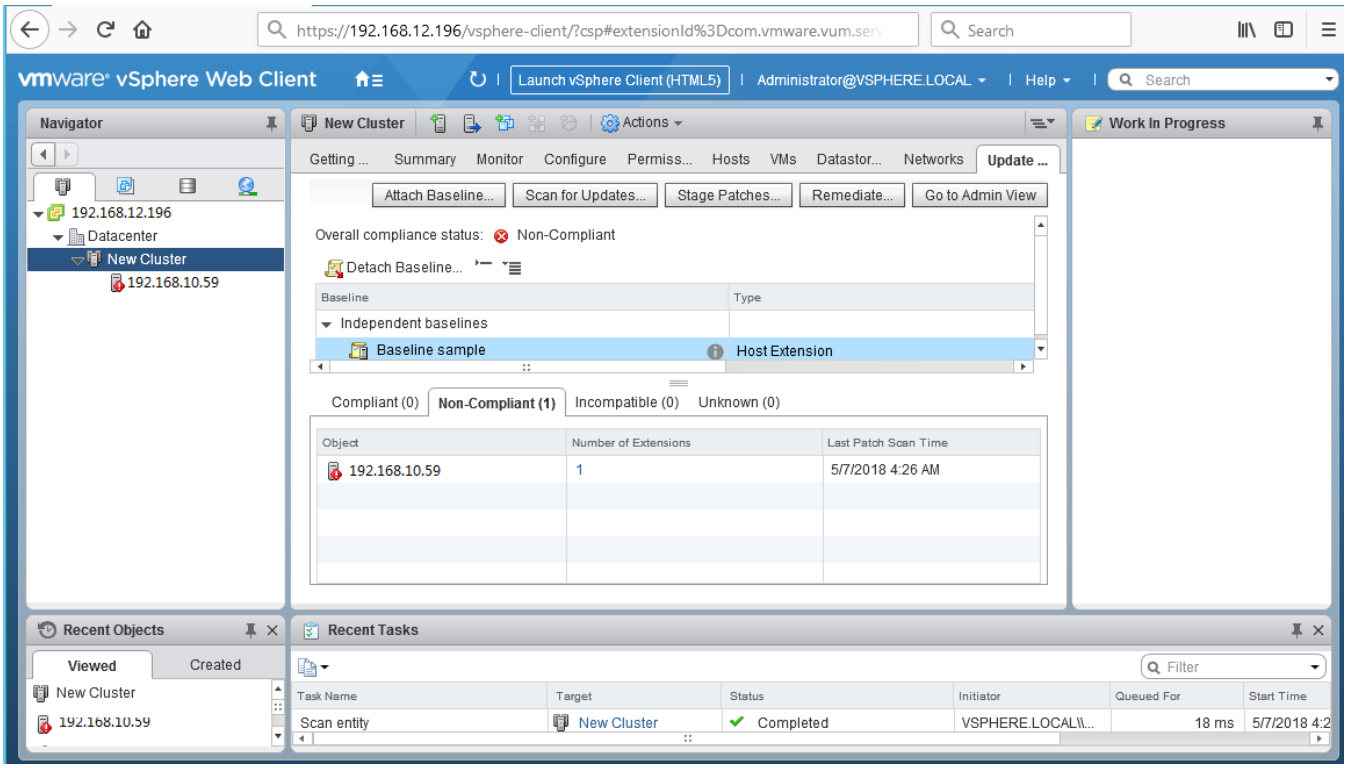
21. Click “Scan for updates”



22. Confirm Scan by clicking the OK button.



23. The scan result will show hosts compliance result with the baselines.



You can stage the host or remediate it immediately.

(Staging allows you to download patches and extensions from the Update Manager server to the ESXi hosts without applying the patches and extensions immediately.)

For more information, see the Installing and Administering VMware vSphere Update Manager Guide. Note: The Update Manager automatically restarts the ESXi host after the remediation is complete.

In order to make sure that all VMware functions work properly check the bootbank size. The recommendation is that this remain under 80% and optimal performance would be 75%. If you find that you are reaching 80% or above remove drivers that are not needed in your configuration.

Creating a Full Image

Visit the following url for instructions on how to build a full iso.

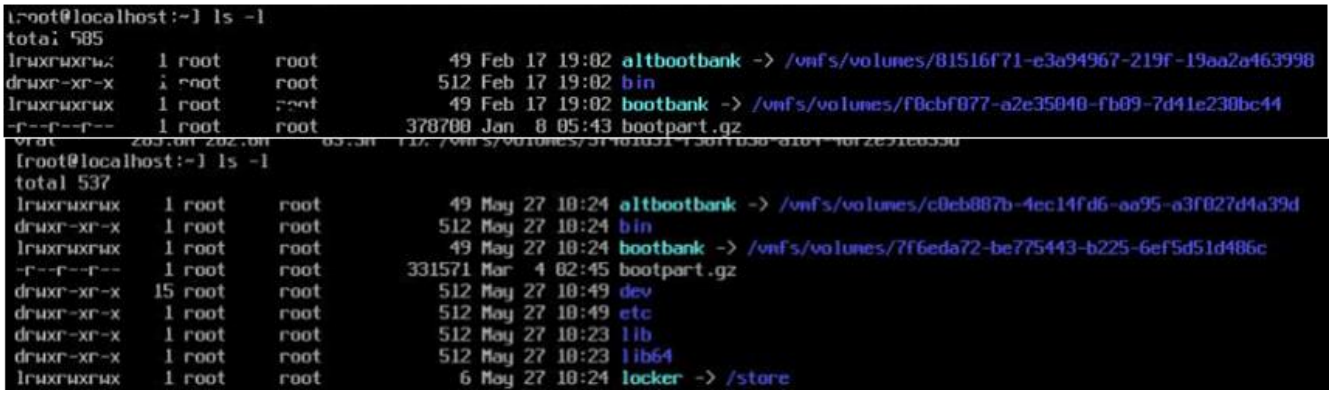
https://download.lenovo.com/ibmdl/pub/pc/pccbbs/thinkservers/make_the_customized_esxi_iso_final. pdf

Checking the Bootbank Size

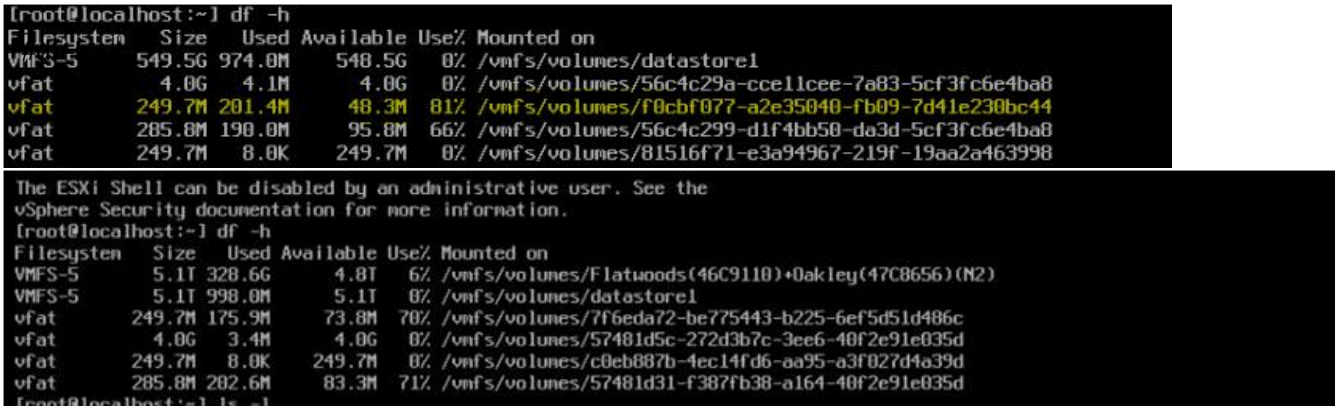
1. Log in as root at the ESXi console by using SSH.
2. Run following command to identify bootbank partitation:

```
#ls -l
```

You will see output similar to:



3. Run the following command to show the size of each partition:



4. Then you can find out the size of usage of bootbank partition

Customized Image Content

All Lenovo customized images adhere to VMware specifications. All drivers that Lenovo adds are part of the IOVP program – http://www.vmware.com/partners/tap-access/vmware-ready/platform-compute.html .

Lenovo Custom Image or ESXi 6.5 U2 (ThinkSystem and System X)

Release Date 05/03/2018

https://vmware.lenovo.com/content/custom_iso/6.5/6.5u2/SystemXThinkSystem/

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	7.703.51.00-1OEM.650.0.0.4598673
Avago	lsi-msgpt35	05.00.00.00-1OEM.650.0.0.4598673
Avago	lsi-msgpt3	16.00.00.00-1OEM.650.0.0.4598673
Broadcom	Bnxtnet	20.6.302.0-1OEM.650.0.0.4598673
Broadcom	ntg3	4.1.2.0-1vmw.650.0.0.4598673
Emulex CAN	Brcmfcoe	11.4.1216.0-1OEM.650.0.0.4598673
Emulex CAN	Elxiscsi	11.4.1210.0-1OEM.650.0.0.4598673
Emulex CAN	Elxnet	11.4.1205.0-1OEM.650.0.0.4598673
Emulex CNA	elx-esx-libelxima.so	11.4.1210.0-03
Emulex FC	Lpfc	11.4.142.11-1OEM.650.0.0.4598673
Qlogic	qlnativefc	2.1.57.0-1OEM.600.0.0.2768847
Intel	Iavmd	1.3.0.1004-1OEM.650.0.0.4598673
Intel	i40en	1.5.6-1OEM.650.0.0.4598673
Intel	Igbn	1.4.1-1OEM.600.0.0.2768847
Intel	ixgben	1.6.5-1OEM.600.0.0.2768847
NX2	misc-cnic-register	1.713.30.v60.1-1OEM.600.0.0.2494585
NX2	net-bnx2	2.2.6b.v60.2-1OEM.600.0.0.2494585
NX2	net-bnx2x	2.713.30.v60.8-1OEM.600.0.0.2494585
NX2	net-cnic	2.713.30.v60.6-1OEM.600.0.0.2494585
NX2	scsi-bnx2fc	1.713.30.v60.6-1OEM.600.0.0.2494585
Nx2	scsi-bnx2i	2.713.30.v60.5-1OEM.600.0.0.2494585
Mellanox	nmlx5-core	4.16.12.12-1OEM.650.0.0.4598673
Mellanox	nmlx5-rdma	4.16.12.12-1OEM.650.0.0.4598673
Mellanox	nmlx4-rdma	3.16.11.6-1OEM.650.0.0.4598673
Mellanox	nmlx4-en	3.16.11.6-1OEM.650.0.0.4598673
Mellanox	nmlx4-core	3.16.11.6-1OEM.650.0.0.4598673
Lenovo	Concretejob	600-4ACE26PUS
Lenovo	Filetrans	600-4ACE26SUS
Lenovo	Fwupdate	600-4ACE26PUS
Lenovo	Immpassthru	600-4ACE26UUS
Lenovo	Lnvcustomization	6.52-10.1
Lenovo	Pciinfo	550-ESXI17ACN
Lenovo	Fupb	6.0-17A02A

Lenovo Custom Image for ESXi 6.5 U2 (ThinkServer)
Release Date 05/03/2018

Profile Name(TS440,TS540) : Lenovo_ESXi6.5u2-8294253_thinkserver_20180424
https://vmware.lenovo.com/content/2018_05/Lenovo_Custom_ISO/6.5u2/ThinkServer-TS440-TS540/

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	7.703.51.00-1OEM.650.0.0.4598673
Adaptec_Inc	scsi-aacraid	6.0.6.2.1.52011-1OEM.600.0.0.2494585
Lenovo	Lnvcustomization	6.52-21.1

Profile Name(Other ThinkServers) :
https://vmware.lenovo.com/content/2018_05/Lenovo_Custom_ISO/6.5u2/ThinkServer/

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	7.703.51.00-1OEM.650.0.0.4598673
Avago	lsi-msgpt3	16.00.00.00-1OEM.650.0.0.4598673
Emulex CAN	Brcmfcoe	11.4.1121.0-1OEM.650.0.0.4598673
Emulex CAN	Elxiscsi	11.4.1184.0-1OEM.650.0.0.4598673
Emulex CAN	Elxnet	11.4.1179.0-1OEM.650.0.0.4598673
Emulex CNA	elx-esx-libelxima.so	11.4.1184.0-03
Emulex FC	Lpfc	11.4.142.11-1OEM.650.0.0.4598673
Qlogic	qlnativefc	2.1.57.0-1OEM.600.0.0.2768847
Intel	i40en	1.5.6-1OEM.650.0.0.4598673
Intel	Igbn	1.4.1-1OEM.600.0.0.2768847
Intel	ixgben	1.6.5-1OEM.600.0.0.2768847
Mellanox	nmlx5-core	4.16.12.12-1OEM.650.0.0.4598673
Mellanox	nmlx5-rdma	4.16.12.12-1OEM.650.0.0.4598673
Mellanox	nmlx4-rdma	3.16.11.6-1OEM.650.0.0.4598673
Mellanox	nmlx4-en	3.16.11.6-1OEM.650.0.0.4598673
Mellanox	nmlx4-core	3.16.11.6-1OEM.650.0.0.4598673
PMC	**scsi-aacraid**	6.0.6.2.1.52011-1OEM.600.0.0.2494585
Lenovo	Lnvcustomization	6.52-20.1

Lenovo Custom Image for ESXi 6.7 (ThinkSystem and System X)

Release Date 04/17/2018

https://vmware.lenovo.com/content/custom_iso/6.7/6.7/SystemXThinkSystem/

VENDOR	PROVIDER/DRIVER	VERSION
Broadcom	Bnxtnet	20.6.302.0-1OEM.650.0.0.4598673
NX1	ntg3	4.1.2.0-1vmw.650.0.0.4598673
Emulex CAN	Brcmfcoe	11.4.1216.0-1OEM.650.0.0.4598673
Emulex CAN	Elxiscsi	11.4.1210.0-1OEM.650.0.0.4598673
Emulex CAN	Elxnet	11.4.1205.0-1OEM.650.0.0.4598673
Emulex CNA	elx-esx-libelxima.so	11.4.1210.0-03
Emulex FC	Lpfc	11.4.142.11-1OEM.650.0.0.4598673
Intel	i40en	1.5.6-1OEM.650.0.0.4598673
Intel	Igbn	1.4.1-1OEM.600.0.0.2768847
Intel	ixgben	1.6.5-1OEM.600.0.0.2768847
NX2	misc-cnic-register	1.713.30.v60.1-1OEM.600.0.0.2494585
NX2	net-bnx2	2.2.6b.v60.2-1OEM.600.0.0.2494585
NX2	net-bnx2x	2.713.30.v60.8-1OEM.600.0.0.2494585
NX2	net-cnic	2.713.30.v60.6-1OEM.600.0.0.2494585
NX2	scsi-bnx2fc	1.713.30.v60.6-1OEM.600.0.0.2494585
Nx2	scsi-bnx2i	2.713.30.v60.5-1OEM.600.0.0.2494585
Mellanox	nmlx5-core	4.16.12.12-1OEM.650.0.0.4598673
Mellanox	nmlx5-rdma	4.16.12.12-1OEM.650.0.0.4598673
Mellanox	nmlx4-rdma	3.16.11.6-1OEM.650.0.0.4598673
Mellanox	nmlx4-en	3.16.11.6-1OEM.650.0.0.4598673
Mellanox	nmlx4-core	3.16.11.6-1OEM.650.0.0.4598673
Lenovo	Immpassthru	670-4ACE27CUS
Lenovo	Ipptool	670-4ACE27CUS
Lenovo	Lnvcustomization	6.70-10.1
Lenovo	Pciinfo	550-ESXI17ACN

Lenovo Custom Image for ESXi 6.7 (ThinkServer)

Release Date 04/17/2018

https://vmware.lenovo.com/content/custom_iso/6.7/6.7/ThinkServer/

VENDOR	PROVIDER/DRIVER	VERSION
Lenovo	Invcustomization	6.70-20.1
Emulex CAN	Brcmfcoe	11.4.1216.0-1OEM.650.0.0.4598673
Emulex CAN	Elxiscsi	11.4.1210.0-1OEM.650.0.0.4598673
Emulex CAN	Elxnet	11.4.1205.0-1OEM.650.0.0.4598673
Emulex CNA	elx-esx-libelxima.so	11.4.1210.0-03
Emulex FC	Lpfc	11.4.142.11-1OEM.650.0.0.4598673
Intel	i40en	1.5.6-1OEM.650.0.0.4598673
Intel	Igbn	1.4.1-1OEM.600.0.0.2768847
Intel	ixgben	1.6.5-1OEM.600.0.0.2768847

Lenovo Custom Image for ESXi 6.5 U1 (ThinkSystem, System X and ThinkServer)

Release Date 03/16/2018

https://vmware.lenovo.com/content/custom_iso/6.5/6.5u1/

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	7.703.51.00-1OEM.650.0.0.4598673
Avago	lsi-msgpt35	05.00.00.00-1OEM.650.0.0.4598673
Avago	lsi-msgpt3	16.00.00.00-1OEM.650.0.0.4598673
Broadcom	Bnxtnet	20.6.302.0-1OEM.650.0.0.4598673
Broadcom	ntg3	4.1.2.0-1vmw.650.0.0.4598673
Emulex CAN	Brcmfcoe	11.4.1216.0-1OEM.650.0.0.4598673
Emulex CAN	Elxiscsi	11.4.1210.0-1OEM.650.0.0.4598673
Emulex CAN	Elxnet	11.4.1205.0-1OEM.650.0.0.4598673
Emulex CNA	elx-esx-libelxima.so	11.4.1210.0-03
Emulex FC	Lpfc	11.4.142.11-1OEM.650.0.0.4598673
Qlogic	qlnativefc	2.1.57.0-1OEM.600.0.0.2768847
Intel	Iavmd	1.3.0.1004-1OEM.650.0.0.4598673
Intel	i40en	1.5.6-1OEM.650.0.0.4598673
Intel	Igbn	1.4.1-1OEM.600.0.0.2768847
Intel	ixgben	1.6.5-1OEM.600.0.0.2768847
NX2	misc-cnic-register	1.713.30.v60.1-1OEM.600.0.0.2494585
NX2	net-bnx2	2.2.6b.v60.2-1OEM.600.0.0.2494585
NX2	net-bnx2x	2.713.30.v60.8-1OEM.600.0.0.2494585
NX2	net-cnic	2.713.30.v60.6-1OEM.600.0.0.2494585
NX2	scsi-bnx2fc	1.713.30.v60.6-1OEM.600.0.0.2494585
Nx2	scsi-bnx2i	2.713.30.v60.5-1OEM.600.0.0.2494585
Mellanox	nmlx5-core	4.16.8.8-1OEM.650.0.0.4598673
Mellanox	nmlx4-rdma	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-en	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-core	3.15.5.5-1OEM.600.0.0.2768847
PMC	scsi-aacraid	6.0.6.2.1.52011-1OEM.600.0.0.2494585
Lenovo	Concretejob	600-4ACE26PUS
Lenovo	Filetrans	600-4ACE26SUS
Lenovo	Fwupdate	600-4ACE26PUS
Lenovo	Immpassthru	600-4ACE26UUS
Lenovo	Lnvcustomization	6.5-15
Lenovo	Pciinfo	550-ESXI13FCN
Lenovo	Fupb	6.0-17A02A

Lenovo Custom Image for ESXi 6.0 U3 (ThinkSystem, System X, and ThinkServer)

Release Date 03/16/2018

https://vmware.lenovo.com/content/custom_iso/6.0/6.0u3/

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	7.703.51.00-1OEM.600.0.0.2768847
Avago	lsi-msgpt35	05.00.00.00-1OEM.600.0.0.2768847
Avago	lsi-msgpt3	16.00.00.00-1OEM.600.0.0.2768847
Broadcom	bnxtnet	20.6.302.0-1OEM.600.0.0.2768847
Broadcom	net-tg3	3.137l.v60.1-1OEM.600.0.0.2494585
Emulex CAN	brcmfcoe	11.4.1216.0-1OEM.600.0.0.2768847
Emulex CAN	elxnet	11.4.1205.0-1OEM.600.0.0.2768847
Emulex CNA	scsi-be2iscsi	11.4.1210.0-1OEM.600.0.0.2494585
Emulex CAN	ima-be2iscsi	11.4.1210.0-1OEM.600.0.0.2494585
Emulex FC	Lpfc	11.4.142.11-1OEM.600.0.0.2768847
Qlogic	qlnativefc	2.1.57.0-1OEM.600.0.0.2768847
Intel	i40en	1.5.6-1OEM.600.0.0.2768847
Intel	Igbn	1.4.1-1OEM.600.0.0.2768847
Intel	Ixgben	1.6.5-1OEM.600.0.0.2768847
PMC	scsi-aacraid	6.0.6.2.1.52011-1OEM.600.0.0.2494585
NX2	misc-cnic-register	1.713.30.v60.1-1OEM.600.0.0.2494585
NX2	net-bnx2	2.2.6b.v60.2-1OEM.600.0.0.2494585
NX2	net-bnx2x	2.713.30.v60.8-1OEM.600.0.0.2494585
NX2	net-cnic	2.713.30.v60.6-1OEM.600.0.0.2494585
NX2	scsi-bnx2fc	1.713.30.v60.6-1OEM.600.0.0.2494585
Nx2	scsi-bnx2i	2.713.30.v60.5-1OEM.600.0.0.2494585
Mellanox	nmlx5-core	4.15.8.8-1OEM.600.0.0.2768847
Mellanox	nmlx4-rdma	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-en	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-core	3.15.5.5-1OEM.600.0.0.2768847
Lenovo	Concretejob	600-4ACE26PUS
Lenovo	Filetrans	600-4ACE26SUS
Lenovo	Fwupdate	600-4ACE26PUS
Lenovo	Immpassthru	600-4ACE26UUS
Lenovo	Lnvcustomization	6.0-35
Lenovo	Pciinfo	550-ESXI13FCN
Lenovo	Fupb	6.0-17A02A

Lenovo Custom Image for ESXi 5.5 U3 (System X and ThinkServer)

Release Date 03/16/2018

https://vmware.lenovo.com/content/custom_iso/5.5/5.5u3/

VENDOR	PROVIDER/DRIVER	VERSION
Broadcom	net-tg3	3.137h.v55.1-1OEM.550.0.0.1331820
Qlogic(NX2)	qlgcsups-provider	1.0.03-1045108
Qlogic(NX2)	misc-cnic-register	1.712.30.v55.1-1OEM.550.0.0.1331820
Qlogic(NX2)	net-bnx2	2.2.5h.v55.1-1OEM.550.0.0.1331820
Qlogic(NX2)	net-bnx2x	2.712.30.v55.2-1OEM.550.0.0.1331820
Qlogic(NX2)	net-cnic	2.712.30.v55.2-1OEM.550.0.0.1331820
Qlogic(NX2)	scsi-bnx2fc	1.712.30.v55.2-1OEM.550.0.0.1331820
Qlogic(NX2)	scsi-bnx2i	2.712.30.v55.1-1OEM.550.0.0.1331820
Qlogic(Brocade)	scsi-bfa	3.2.5.0-1OEM.550.0.0.1331820
Qlogic(Brocade)	net-bna	3.2.5.0-1OEM.550.0.0.1331820
Intel	net-igb	5.2.10-1OEM.550.0.0.1331820
Intel	net-i40e	1.2.48-1OEM.550.0.0.1331820
Emulex	ima-be2iscsi	10.6.150.3-1OEM.550.0.0.1331820
Emulex	Elxnet	10.6.163.0-1OEM.550.0.0.1331820
Emulex	scsi-be2iscsi	10.6.150.3-1OEM.550.0.0.1331820
Emulex	Lpfc	10.6.126.0-1OEM.550.0.0.1331820
LSI(Avago)	scsi-mpt3sas	08.00.01.00.1vmw-1OEM.550.0.0.1331820
LSI(Avago)	scsi-mpt2sas	20.00.00.00.1vmw-1OEM.550.0.0.1331820
LSI(Avago)	scsi-megaraid-sas	6.612.07.00-1OEM.550.0.0.1331820
LSI(Avago)	lsi-mr3	6.912.12.00-1OEM.550.0.0.1391871
QLogic(CNA)	net-qlcnic	5.5.190-1OEM.550.0.0.1331820
QLogic(CNA)	net-qlge	3.0.0.59-1OEM.550.0.0.1331820
QLogic(CNA)	Qlnativefc	1.1.43.1-1OEM.550.0.0.1331820
QLogic(CNA)	ima-qla4xxx	500.2.01.31-1vmw.0.3.100400
QLogic(CNA)	scsi-qla4xxx	644.55.36.0-1OEM.550.0.0.1331820
Lenovo	Ilfu	550-1.01.20141015
VMware(Lenovo)	Brcmfwup	550-4.00.20150625
Lenovo	Concretejob	550-3ACE25HUS
Lenovo	Filetrans	550-3ACE25HUS
Lenovo	Fwupdate	550-3ACE25HUS
Lenovo	Immpassthru	550-3ACE25HUS
Lenovo	Hwckvm	550-ESXI08ACN
Lenovo	Pciinfo	550-ESXI09ACN
Lenovo	Soibms	550-ESXI08ACN
Lenovo	Lnvcustomization	5.5-3e
Lenovo	Fupb	5.5-15D02A

Lenovo Custom Image for ESXi 6.5a (ThinkSystem)

Release Date 02/28/17

https://vmware.lenovo.com/content/custom_iso/6.5/6.5a/

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	6.912.12.00-1OEM.650.0.0.4240417
Avago	lsi-msgpt3	14.00.03.00-1OEM.650.0.0.4598673
Emulex CAN	Brcmfcoe	11.2.1153.13-1OEM.650.0.0.4240417
Emulex CAN	Elxiscsi	11.2.1152.0-1OEM.650.0.0.4240417
Emulex CAN	Elxnet	11.2.1149.0-1OEM.650.0.0.4240417
Emulex CNA	elx-esx-libelxima.so	11.2.1152.0-03
Emulex CNA	emulex-esx-elxnetcli	11.2.1149.0-01
Emulex FC	Lpfc	11.2.156.20-1OEM.650.0.0.4240417
Intel	net-i40e	1.4.28-1OEM.550.0.0.1331820
Intel	net-igb	5.3.2-1OEM.550.0.0.1331820
Intel	net-ixgbe	4.4.1-1OEM.550.0.0.1331820
QLogic	Qlnativefc	2.1.50.0-1OEM.600.0.0.2768847
NX2(Qlogic)	qfle3	1.0.28.0-1OEM.650.0.0.4240417
Lenovo(NX1 facade)	Brcmfwup	550-4.00.20150625
Lenovo(LSI facade)	Ilfu	6.0-2.03.20160225
Lenovo	Lnvcustomization	6.5-00
Lenovo	pciinfo	550-ESXI12ACN
Lenovo	soibms	550-ESXI08ACN
Lenovo	hwckvm	550-ESXI08ACN
Lenovo	Fupb	6.0-15D02A

Lenovo Custom Image for ESXi 6.5b (System X and ThinkServer)

Release Date 05/24/17

https://vmware.lenovo.com/content/custom_iso/6.5/6.5b/systemx/

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	6.912.12.00-1OEM.600.0.0.2768847
Avago	lsi-msgpt3	14.00.03.00-1OEM.650.0.0.4598673
Emulex CAN	Brcmfcoe	11.2.1153.13-1OEM.650.0.0.4240417
Emulex CAN	Elxiscsi	11.2.1152.0-1OEM.650.0.0.4240417
Emulex CAN	Elxnet	11.2.1149.0-1OEM.650.0.0.4240417
Emulex CNA	elx-esx-libelxima.so	11.2.1152.0-03
Emulex CNA	emulex-esx-elxnetcli	11.2.1149.0-01
Emulex FC	Lpfc	11.2.156.20-1OEM.650.0.0.4240417
Intel	net-i40e	1.4.28-1OEM.550.0.0.1331820
Intel	net-igb	5.3.2-1OEM.550.0.0.1331820
Intel	net-ixgbe	4.4.1-1OEM.550.0.0.1331820
Mellanox	nmlx5-core	4.16.8.8-1OEM.650.0.0.4598673
Mellanox	nmlx4-rdma	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-en	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-core	3.15.5.5-1OEM.600.0.0.2768847
QLogic	Qlnativefc	2.1.50.0-1OEM.600.0.0.2768847
NX2(Qlogic)	qfle3	1.0.28.0-1OEM.650.0.0.4240417
Lenovo(NX1 facade)	Brcmfwup	550-4.00.20150625
Lenovo(LSI facade)	Ilfu	6.0-2.03.20160225
Lenovo	Concretejob	600-4ACE26PUS
Lenovo	Filetrans	600-4ACE26PUS
Lenovo	Fwupdate	600-4ACE26PUS
Lenovo	Immpassthru	600-4ACE26PUS
Lenovo	Lnvcustomization	6.5-01
Lenovo	Pciinfo	550-ESXI12ACN
Lenovo	soibms	550-ESXI08ACN
Lenovo	hwckvm	550-ESXI08ACN
Lenovo	Fupb	6.0-17A02A

Lenovo Custom Image for ESXi 6.5b (ThinkSystem)

Release Date 08/08/2017

https://vmware.lenovo.com/content/custom_iso/6.5/6.5b/thinksystem/

A minimum of 16 GB RAM is recommended to run Customized Image on ThinkSystem.

VENDOR	PROVIDER/DRIVER	VERSION
Avago	lsi-mr3	7.700.24.00-1OEM.650.0.0.4598673
Avago	lsi-msgpt35	01.00.04.00-1OEM.650.0.0.4598673
NX1	Bnxtnet	20.6.101.0-1OEM.650.0.0.4598673
Emulex CAN	Brcmfcoe	11.2.1153.13-1OEM.650.0.0.4240417
Emulex CAN	Elxiscsi	11.2.1152.0-1OEM.650.0.0.4240417
Emulex CAN	Elxnet	11.2.1149.0-1OEM.650.0.0.4240417
Emulex CNA	elx-esx-libelxima.so	11.2.1152.0-03
Emulex CNA	emulex-esx-elxnetcli	11.2.1149.0-01
Emulex FC	Lpfc	11.2.156.20-1OEM.650.0.0.4240417
Qlogic	qlnativefc	2.1.50.0-1OEM.600.0.0.2768847
Intel	net-i40e	2.0.6-1OEM.600.0.0.2494585
Intel	net-igb	5.3.3-1OEM.600.0.0.2494585
Intel	net-ixgbe	4.5.1-1OEM.600.0.0.2494585
NX2	qfle3	1.0.28.0-1OEM.650.0.0.4240417
Mellanox	nmlx5-core	4.16.8.8-1OEM.650.0.0.4598673
Mellanox	nmlx4-rdma	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-en	3.15.5.5-1OEM.600.0.0.2768847
Mellanox	nmlx4-core	3.15.5.5-1OEM.600.0.0.2768847
Lenovo(NX1 facade)	Brcmfwup	550-4.00.20150625
Lenovo(LSI facade)	Ilfu	6.0-2.03.20160225
Lenovo	Concretejob	600-4ACE26PUS
Lenovo	Filetrans	600-4ACE26PUS
Lenovo	Fwupdate	600-4ACE26QUS
Lenovo	Immpassthru	600-4ACE26PUS
Lenovo	Lnvcustomization	6.5-02
Lenovo	Pciinfo	550-ESXI13FCN
Lenovo	soibms	550-ESXI08ACN
Lenovo	hwckvm	550-ESXI08ACN
Lenovo	Fupb	6.0-17A02A

Support

For general resources and support information, visit http://vmware.lenovo.com

If you have a VMware support contract, contact VMware Global Support Services:
http://www.vmware.com/support

If you have VMware support contract with Lenovo, contact customer support at:
https://datacentersupport.lenovo.com/us/en/products/solutions-and-software/operating-systems/vmware/contactus

If you have VMware support contract with IBM Global Services, contact:
http://www.ibm.com/contact/us/en/

All new images and patch updates will be created using the Lenovo brand. Updating from an IBM branded customized OEM image to a Lenovo branded customized OEM image is not supported. The Lenovo customized image is not supported on IBM systems.

Fixes and Updates

Customized Image Patch – Check for the latest update. Patches are system agnostic. You can download the patch from under any system within https://vmware.lenovo.com/content/

Related Documentation

Refer to the following documents for platform specific installation instructions:

Lenovo Tools Center Suite is a collection of server management tools that utilize a command line interface program to manage firmware, hardware, and operating systems for CMM, IMM, and Flex- IOM based systems using the applications listed in the table below. ToolsCenter Suite CLI is comprised of individual ToolsCenter application modules that are easily updated. The first release of Lenovo ToolsCenter Suite CLI replaces the Advanced Settings Utility and Online Dynamic System Analysis tools and includes the ToolsCenter Suite CLI Portable Edition. https://support.lenovo.com/us/en/documents/lnvo-tcli

Lenovo XClarity Integrator for VMware vCenter provides IT administrators with the ability to integrate the management features of Lenovo XClarityAdministrator and the System x, Flex System and BladeCenter systems with VMware vCenter. Lenovo expands the virtualization management capabilities of VMware vCenter with Lenovo System x hardware management functionality, providing affordable foundational, basic management of physical and virtual environments to reduce the time and effort required for routine system administration. It provides the discovery, configuration, monitoring, event management, and power monitoring needed to reduce cost and complexity through server consolidation and simplified management.

Lenovo XClarity™ is a new centralized resource management solution that enables administrators to deploy infrastructure faster and with less effort. The solution seamlessly integrates into Lenovo physical systems and provides automated discovery, monitoring, policy-based firmware management, pattern-based configuration management, and installation of operating systems and hypervisors to multiple systems.
https://support.lenovo.com/us/en/documents/LNVO-XCLARIT#tabs1-item1