



# LDI Quick Start Setup Guide



## Copyright/Disclaimer

Copyright © 2023, Lenovo. All rights reserved.

This document contains proprietary information of Lenovo that is protected by copyright and other intellectual property law which restricts its usage. The content in this document is subject to change without notice. If you find any issues in the documentation, please report to us in writing. Lenovo gives no representations or warranties of any kind regarding its content, including accuracy or completeness. Please do not reproduce or transmit any part of this document in any form or by any means, electronic or mechanical, for any purpose, without a written approval from Lenovo.

# Contents

<b>Contents.....</b>	<b>2</b>
<b>1 Onboard Your Fleet .....</b>	<b>3</b>
1.1 Onboard Your Fleet.....	3
1.1.1 Software Requirements.....	3
1.1.2 Download Provisioning Package.....	4
1.1.3 Install a Physical Device .....	4
1.1.4 Install Software Agent on Device .....	5
1.1.5 Track Device on LDI.....	7
1.1.6 Raise a Ticket .....	8
1.1.7 Onboard Fleet from Devices Page (Optional) .....	8
1.1.8 Proxy.....	9
1.1.9 Current Support Matrix.....	9
1.1.10 Limitations.....	9
1.1.11 Troubleshooting.....	10
1.1.11.1. Pre-install Validation.....	10
1.1.11.2. Troubleshooting Process .....	10
1.1.12 Uninstall UDC (Windows).....	11
1.1.13 Uninstall UDC with scripts.....	12
1.1.14 Onboard Your Fleet in a Proxy Environment.....	12

# 1 Onboard Your Fleet

## 1.1 Onboard Your Fleet

This chapter helps you smoothly onboard the fleet of devices in your organization to the LDI platform.



This can be installed by running the executable on individual devices or by using an endpoint management utility such as SCCM, Microsoft Intune, or Ivanti that have been tested and approved for LDI deployment. Other endpoint management utilities will likely work as well.

### 1.1.1 Software Requirements

Client software for this solution has a few requirements that the device must meet.

Category	Requirement
Manufacturer	Any device manufacturer is supported, though some features may only be available or verified on the Lenovo devices.
Operating System	Windows 10 version 1809 (October 2018 Update) or newer Windows 11 64-bit OS Special editions such as 10S or 10x are not currently supported
Hardware	<ul style="list-style-type: none"><li>Trusted Platform Module (TPM) 2.0 enabled</li><li>Processor supports x86 instruction set architecture</li></ul>
Environment	<ul style="list-style-type: none"><li>Access to the Internet - *.uds.lenovo.com on ports 443<ul style="list-style-type: none"><li>Port 8883 needed for devices with UDC agent older than 22.10.0.5</li></ul></li><li><b>Proxy is supported in some scenarios.</b> Devices may require additional configuration to support.</li></ul>

Category	Requirement
Proxy Support	<p>You must configure the proxy through WinINet (WinHTTP or a third-party application/browser extension).</p> <ul style="list-style-type: none"> <li>Proxy server can reach *.uds.Lenovo.com on ports 443 <ul style="list-style-type: none"> <li>Port 8883 needed for devices with UDC agent older than 22.10.0.5</li> </ul> </li> </ul> <p>DNS name resolution is available on each managed device. You cannot set an authentication on the proxy server.</p>

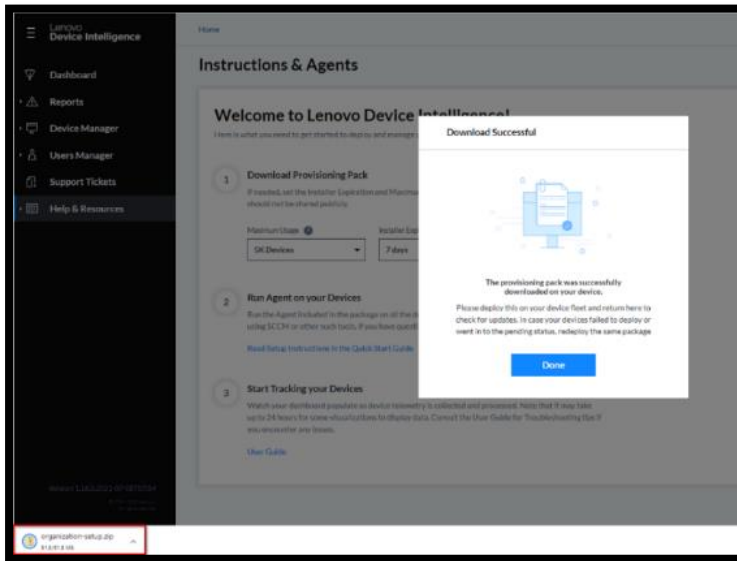
### 1.1.2 [Download Provisioning Package](#)

You can onboard fleet of devices to LDI platform through:

- Instructions and Agents (Preferred)
  - Devices page (optional)
- Click **Help & Resources** and then click **Instructions & Agents**. The **Instructions & Agents** page appears.
- Select **Windows (Physical)** to onboard a physical device. For further details, refer to [Install a Physical Device](#).

### 1.1.3 [Install a Physical Device](#)

- Follow the instructions in [Download Provisioning Package](#).
- Click **Confirm**.
- In the **Maximum Usage** drop-down list, select the number of devices on which you can download the provisioning package.
- In the **Installer Expiration** drop-down list, select the days for which the provisioning pack installation is valid.
- Click **Download Pack**. The pack is downloaded on the device, which access the portal.



The package, organization-setup.zip which has the following components:

- **install-ldi.bat** - A script that has series of commands for installation for LDI software.
- 1. A Windows-based troubleshooting file package, **LenovoDeviceIntelligence-0.0.75.0.diagcab**. To know more about how to install, run, and create the LenovoDeviceIntelligence.diagcab file, refer to [Troubleshooting](#).
- 2. README.txt file
- 3. **udc\_setup.exe** - UDC setup, UDC Service information, and task control settings

This PC > Downloads > organization-setup.zip

Name	Type	Compressed size	Password ...	Size	Ratio	Date modified
install-ldi.bat	Windows Batch File	1 KB	No	1 KB	27%	11/8/2021 9:09 AM
LenovoDeviceIntelligence-0.0.75.0...	Troubleshooting Pack Ca...	91 KB	No	95 KB	5%	11/8/2021 9:09 AM
README.txt	Text Document	1 KB	No	2 KB	50%	11/8/2021 9:09 AM
udc_setup.exe	Application	10,991 KB	No	11,103 KB	2%	11/8/2021 9:09 AM

#### 1.1.4 Install Software Agent on Device

**Note:** The setup is unique for the organization and must not be shared.

Execute the following steps on every device in the fleet.

1. Copy the following files to an empty folder in the device, e.g., C:\temp\LDItemp
  - udc\_setup.exe
  - README.txt
  - install-ldi.bat
2. Execute the batch file as an Administrator.
  - Open the command prompt as an Administrator
  - Execute `cd C:\temp\LDItemp`

- .\install-ldi.bat
3. Confirm whether device onboarding was successful or not by checking for an error in the registry.

UDC records the error in the Windows Registry at  
HKLM\SOFTWARE\LENOVO\UDC\CriticalTranscript when onboarding fails.

If there is an error during installation, check the following error code table to identify the error and rectify it by following the remedial tips:

UDC Significant Event Codes	Error Name	Remedial Tip
None	Ok	
1016:12007	PortalUnreachable	Ensure you have a proper network connectivity and check the connection to the UDS portal.
1001:80	CertificateMismatch	Portal certificate is not valid. Check for https proxy (like Fiddler) that overrides server certificate. Otherwise, contact Lenovo, because server certificate could have been changed.
1001:85	TokenExpired	LDI portal token has expired, or the device registration limit set for this token is over. Request for a new provisioning package with a new token.
1001:86	TokenNotValidated	UDS does not accept provided token. Create another provision package or contact the administrator.
1016	RegisteredToAutomaticOrg	The device was registered to an automatic organization. Restart UDCSERVICE and log in again. If it fails, contact the administrator.
	DeviceAlreadyRegistered	This device was already registered in the portal. No other action may be needed, but we recommend you follow the uninstallation steps including deletion from the portal before attempting to reinstall and register the device to the portal. Refer to <a href="#">Uninstall UDC</a> .
1016	UnableToRetrieveClaimCode	The script /UDC was unable to retrieve the activation code required for registration of the device in the

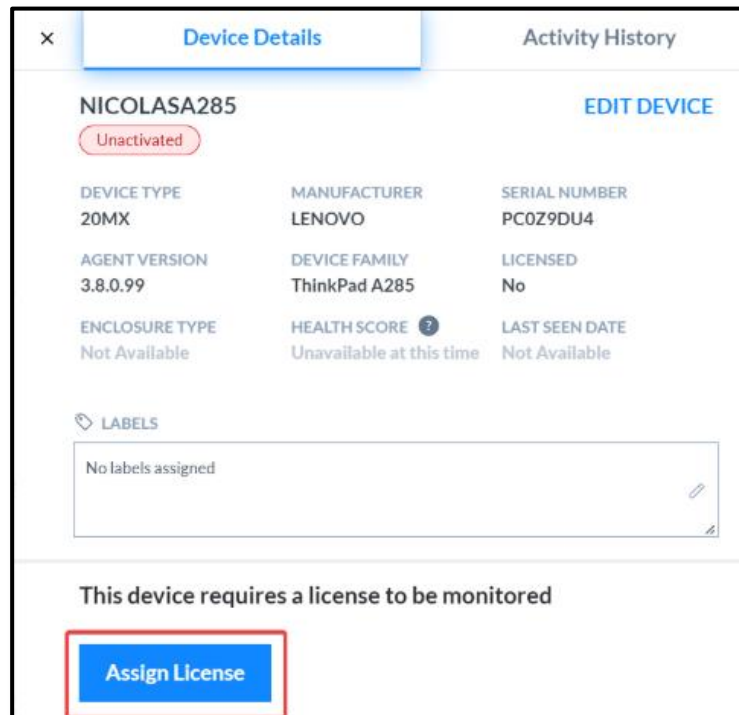
		<p>portal. Restart UDService and try again. If it fails, contact the administrator.</p> <p>To restart the UDC Service, follow these options:  Press Windows + R → Enter services.msc → Select UDC Client Service → Restart</p> <p>Restart the device and log in to the LDI portal again.</p>
1011	RegistrationTo Organization Failed	<p>device_path in the C:\ProgramData\Lenovo\Udc\Shared\ConfigPolicy.json.signed is empty or this file is missing. Check for the UDC Error and UDC log files.</p> <p><b>Note:</b> Check for the log files in C:\ProgramData\Lenovo\Udc\Log</p> <p>ConfigAgent log file informs you if the config policy has been updated from UDS</p> <p>DeployAgent log file informs you if the package has been installed successfully.</p> <p>Navigate to C:\ProgramData\Lenovo\Udc\Download to see the Provisioning Package ID.</p>

#### 1.1.5 Track Device on LDI

1. Check the **Devices** page to track whether the device has been onboarded to the LDI or not.
2. Check the device status. If the status is:
  - **Pending** - The device could not be onboarded because of an error. Check for the type of error code in the registry and follow the remedy tip provided for it in the error code table. This also includes devices that don't have an assigned license.
  - **Active** – Device has successfully onboarded and is currently online.
  - **Offline** - Device has successfully onboarded and is currently offline.

**Note:** To get a license, follow these steps:

1. Select **Device Manager** → **Devices**.
2. Search for the device with 'Unassigned License'.

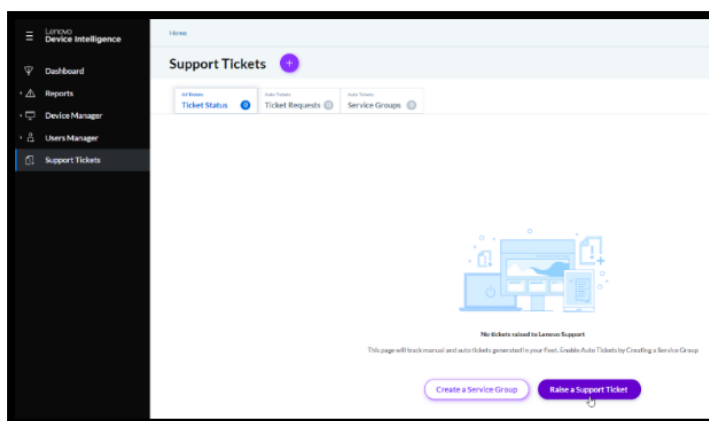


### 3. Click **Assign License**.

**Offline** - Devices that do not send data to the system for 1 hour. These devices are moved from Active Status to Offline Status. If the device does not have a license, it becomes Unactivated with status Pending.

#### 1.1.6 Raise a Ticket

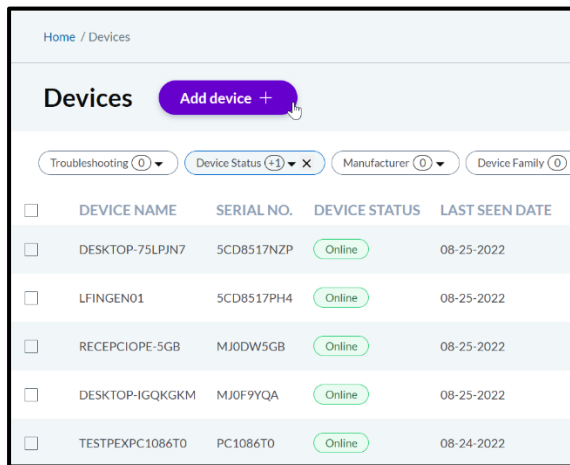
Raise a ticket if the error persists even after following the remedial tip from the error code table.



#### 1.1.7 Onboard Fleet from Devices Page (Optional)

You can also onboard the fleet of devices in your organization to LDI platform from the **Devices** page.





In the **Devices** page, click **Add device +**. The **Instructions & Agents** window appears. For more details, refer to [Download Provisioning Package](#).

#### 1.1.8 Proxy

UDC uses a security feature called certificate pinning. UDC does not support the scenario where a proxy service in your environment performs TLS inspection (decrypting and re-encrypting traffic using an alternate certificate). You must completely exclude the traffic for \*.uds.Lenovo.com from the proxy or disable TLS inspection permanently for that endpoint. Please refer to your proxy service documentation for how to achieve this.

#### 1.1.9 Current Support Matrix

- Leverages OS level proxy configuration
- Usage: Configure proxy information in OS using pac file or manual proxy setup

#### 1.1.10 Limitations

Scenario	Configure UDC to use proxy	For UDC to work and If TLS inspection is enabled
Reaching to internet requires proxy	Use the OS level configuration * Pac file as well as manual proxy setup	In proxy server, whitelist *.uds.lenovo.com: 443 (include port 8883 if UDC agent older than 22.10.0.5)
Internet is reachable but proxy is also required to be setup	Use the OS level configuration * Pac file as well as manual proxy setup	Whitelist *.uds.lenovo.com at device level OR Whitelist *.uds.lenovo.com at proxy server

**Note:** The UDC agent installation is not supported on virtual machines, hence Type 1 hypervisors and type 2 hypervisors are not supported.

### 1.1.11 Troubleshooting

When you are unable to register your device in the LDI tool, you can run a tool that executes some routine checks, collect logs, and other device information that can be used to analyse the problem offline. Use the `LenovoDeviceIntelligence.diagcab` file for troubleshooting, which you get with the Provisioning Package.

#### 1.1.11.1. Pre-install Validation

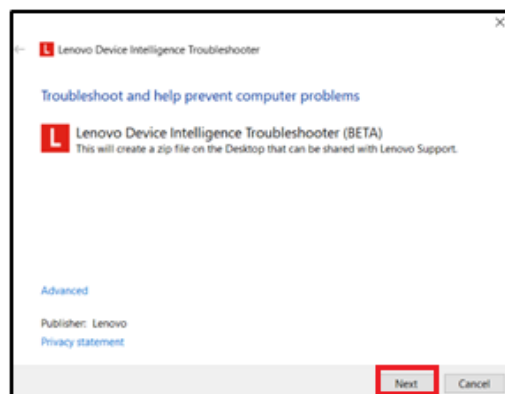
Note the following information for the API accessibility in different settings:

API	Test-NetConnection-Port 443
Reachability	api.naea1.uds.lenovo.com
	Test-NetConnection-Port 443
	api.euwe1.uds.lenovo.com

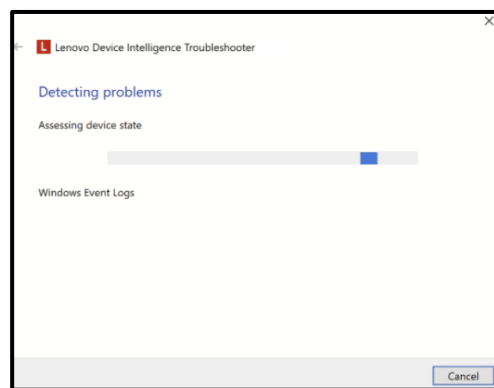
#### 1.1.11.2. Troubleshooting Process

Follow these steps to troubleshoot:

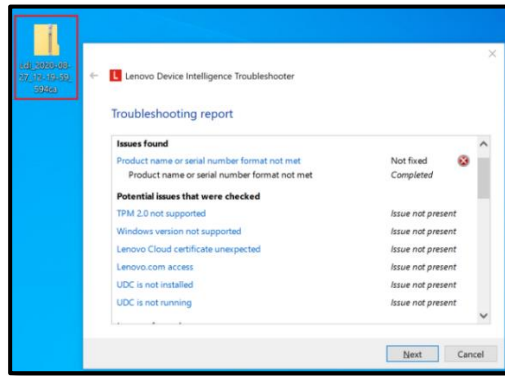
1. Double-click the `LenovoDeviceIntelligence.diagcab` file. The following window appears.



2. Click **Next** to complete the installation.



4. After successful installation, the **Troubleshooting report** window appears.



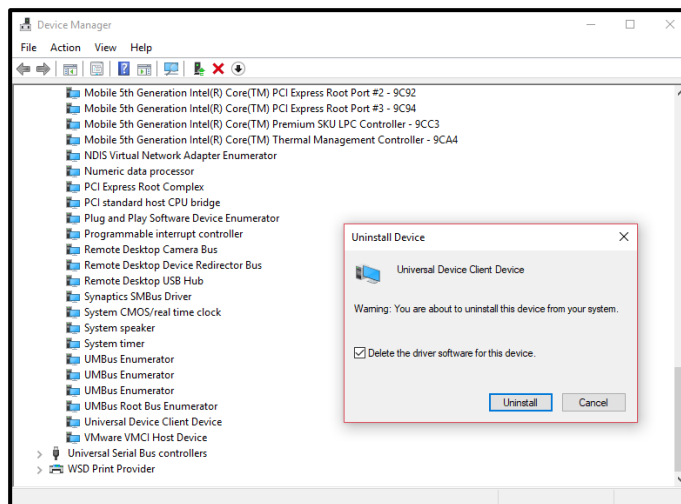
**Note:** By default, the output is a zip file, and it also displays the location where the file is saved.

### 1.1.12 Uninstall UDC (Windows)

**Note:** We recommend you use the Device Manager option to uninstall Universal Device Client (UDC) that ensures removal of UDC from both Windows and Driver Store.

1. In the device, open the **Device Manager** page.
2. Select **System devices** and right-click **Universal Device Client Device**.
3. Select **Uninstall**.

**Note:** Select the **Delete the driver software for this device** check box.



4. Verify that there is no Universal Device Client Service in Device Manager or running service.
5. Restart the device.
6. In the LDI portal, select **Device Manager** → **Devices**, search for that device and click **Delete**.

### 1.1.13 Uninstall UDC with scripts

#### Automated uninstall using Powershell

```
# This will uninstall UDC device, service, driver, & data
# Ensure running with elevated privileges
$udcInstall = Get-Item (Join-Path ([System.Environment]::SystemDirectory) "drivers\Lenovo\udc\InfBackup\UDCInfInstaller.exe")
if($null -eq $udcInstall) { throw "Unable to locate UDC install files" }
Push-Location $udcInstall.Directory.FullName
& $udcInstall.Fullname -uninstall
Pop-Location
```

#### Automated uninstall using Cmd

```
:: This will uninstall UDC device, service, driver, & data
:: Ensure running with elevated privileges
PUSHD %windir%\System32\drivers\Lenovo\udc\Data\InfBackup\
.\UDCInfInstaller.exe -uninstall
POPD
```

### 1.1.14 Onboard Your Fleet in a Proxy Environment

You can onboard your device using proxy setups.

Manual Proxy Setup section:

1. In the **Address** field, enter \*.uds.lenovo.com
2. In the **Port** field, enter **443**.

**Edit proxy server**

Use a proxy server

☒ On

Proxy IP address: proxy.company.com:8888      Port: 8888

Use the proxy server except for addresses that start with the following entries.  
Use semicolons (;) to separate entries.

\*uds.lenovo.com:443;  
\*lakesidesoftware.com:443

☐ Don't use the proxy server for local (intranet) addresses

Save      Cancel

UDC and LDI support the following proxy configurations:

- You must configure proxy through WinINET (vs WinHTTP or a 3rd party application / browser extension)

- Proxy server can reach \*.[uds.lenovo.com:443](https://uds.lenovo.com:443) (include port 8883 if UDC agent older than 22.10.0.5)
- Proxy server does DNS resolving for client
- Proxy server does NOT support authentication.

**Note:** UDC can register and sync telemetry on proxy environment by auto-detect the browser proxy settings (except if a user/password is required for such proxy access, which it is not supported).

UDC always imports whatever is configured in the browser settings (WinINET) automatically, though manual setting is done for WinHTTP.