

# Lenovo Device Manager (LDM)

## User Guide



Name of Document	LDM User Guide
Version Number	V2.4
Release Date	1 November 2022
Modifications/Additions	<ol style="list-style-type: none"><li>1. Bulk Power Management for Intel vPro® devices</li><li>2. Remote Desktop Management for Intel vPro devices: Full Screen</li><li>3. Remote Desktop Management for Intel vPro devices: CTL-ALT-DEL</li><li>4. Support for AR/VR devices</li><li>5. Device Type categorization on Device Tray</li><li>6. Update files included in Windows device provisioning package</li></ol>

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# 1 OVERVIEW

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As the demand for more devices grows and the move to the cloud continues, Lenovo Device Manager provides a flexible, scalable endpoint and app management solution for any Lenovo Windows or Android device.

LDM features include:

- Robust device details and health status
- Simplified device & cloud-based application updating
- Integration with Intel vPro® EMA
- Quick deployment of software and add-on services
- Better end-user experience
- Safe, secure platform

The advertisement for Lenovo Device Manager (LDM) features a photograph of three women in professional attire (one in a white top, one in a black blazer, and one in a red dress) looking at a tablet device together. The background is a modern office hallway. The LDM logo is in the top left corner. The main headline reads "Zero-touch device management. Now that's smarter." Below the headline is a detailed description of LDM's purpose and benefits. A callout box highlights its features: robust device details, quick deployment, and a safe, secure platform. The Intel vPro® logo is in the bottom left, and the "Smarter technology for all" and "Lenovo" logos are in the bottom right.

Lenovo  
Device  
Manager

**Zero-touch device management.**  
**Now that's smarter.**

As the demand for more devices grows and the move to the cloud continues, Lenovo Device Manager (LDM) was developed to provide a flexible, scalable endpoint and app management solution for any Lenovo Windows or Android device. This cloud-based solution offers a streamlined experience for even the most complex environments, providing faster, less costly, and more flexible device management.

The LDM platform provides IT administrators the ability to easily manage all devices, ensuring the best end-user experience enhanced by Intel vPro® Essentials.

Robust device details and health status reporting

Quick deployment of software and add-on services

Easy to navigate dashboard to monitor all devices

Safe, secure platform for your fleet of devices

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Intel VPRO

Smarter technology for all

Lenovo

## 2 SETUP & CONFIGURATION

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### 2.1 Organization Setup

### 2.2 Manage Organization

### 2.3 User Preferences

### 2.4 User Management

### 2.5 User Groups

## 3 MANAGE DEVICES

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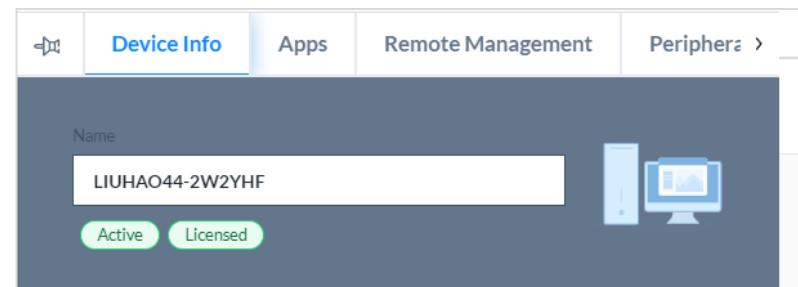
Devices represent the various device types that are in your organization and typically used by employees. A device type can fall under any of the following categories:

	Current Device Type Categories			
	PCs	SmartEdge	Tablet / Mobile	AR / VR
Examples	Any Lenovo notebook, desktop, workstation, etc	Any Lenovo edge appliance and servers	Any Lenovo tablets or mobile device	Any Lenovo AR or VR appliance

### 3.1 Add Devices

### 3.2 Manage Devices

### 3.3 View Device Information and Perform Basic Actions



- No adjust volume
- No airplane mode
- No ambient display
- No control apps
- No autofill
- No Bluetooth
- No Bluetooth sharing
- No config Bluetooth
- No config brightness
- No config cell broadcasts
- No config credentials
- No config date time
- No config locale
- No config location
- No config mobile networks
- No config private DNS
- No config screen timeout
- No config tethering
- No config VPN
- No config WiFi
- No content capture
- No content suggestions
- No create windows
- No cross-profile copy-paste
- No factory reset
- No fun
- No install apps
- No install unknown sources
- No install unknown sources globally
- No modify accounts
- No physical media
- No network reset
- No outgoing beam
- No outgoing calls
- No printing
- No remove user
- No safe boot
- No set user icon
- No set wallpaper
- No sharing into profile
- No share location
- No SMS
- No system error dialogs
- No unified password
- No uninstall apps
- No unmute microphone
- No file transfer through USB
- No user switch
- No apps verification

**Note:** In LDM, hovering over tool tip next to each Restriction provides its definition

The following options are available for a user on the device tray – **Apps** tab:

- **Deployments** sub-tab:
  - View LDM-managed applications (software, firmware, driver) on device
  - Deploy application updates to the device
  - Uninstall applications from the device
  - View deployment status

The screenshot shows the 'Apps' tab selected in the top navigation bar. Below it, the 'DEPLOYMENTS' sub-tab is also selected. The main area displays a table of deployed applications with columns for Name, Version, Size, and Status. A search bar and a 'Only show errors' toggle are at the top of the table area. At the bottom, there are navigation links for page 1 of 31 entries.

NAME	VERSION	SIZE	STATUS
10Msize	1.0	10.00 MB	<input type="button" value=""/>
AppPerfo...	1	2.77 MB	<input type="button" value=""/>
AppPerfo...	1.0	2.77 MB	<input type="button" value=""/>
AppPerfo...	1.0	2.77 MB	<input type="button" value=""/>
AppPerfo...	1.0	2.77 MB	<input type="button" value=""/>
AppPerfo...	1.0	2.77 MB	<input type="button" value=""/>
AppPerfo...	1.0	2.77 MB	<input type="button" value=""/>
ChromeS...	542	1.35 MB	<input type="button" value=""/>
CloudMu...	2.1	150.81 MB	<input type="button" value=""/>
EmaAgent	1	3.16 MB	<input type="button" value=""/>
Failed1	1.0	22.93 MB	<input type="button" value=""/>
Failed1	1.0	22.93 MB	<input type="button" value=""/>
Failed1	1.0	22.93 MB	<input type="button" value=""/>
Gmail	46.49	106.57 MB	<input type="button" value=""/>

1 - 25 of 31 entries | « | ← | 1 | 2 | → | »

Cancel

- ***App Restrictions*** sub-tab:

**Note:** This feature is currently only available for Android devices (tablets) and **MUST BE ENABLED** in Org Settings (see Section 2.2.2 for more information)

- Displays list of standard pre-loaded Android apps
- Allows end user app experience to be controlled remotely

1. Find the App to be managed
2. Under “Action”, click the drop down to select from the following Actions:
  - **Show** (default) – allows app to be visible and usable on the device
  - **Hide** – app will be hidden on the device and unusable
  - **Disable** – app will be seen, but will be disabled and unusable

The screenshot shows a software interface for managing app restrictions. At the top, there are tabs: 'Settings' (with a gear icon), 'Apps' (which is selected and highlighted in blue), 'Peripherals and IoT', and 'Alerts History'. Below these are two sub-tabs: 'DEPLOYMENTS' and 'APPS RESTRICTIONS' (which is also highlighted in blue). A section titled 'PRELOADED APPS' contains the following table:

NAME	ACTION
Amazon Prime	Show ▾
Camera	Hide ▾
Gmail	Show ▾
Google Camera Go	Disable ▾
Google Chrome Browser	Show ▾
Google Docs	Show ▾
Google Drive	Show ▾
Google Duo	Show ▾
Google Home	Show ▾
Google Maps	Show ▾
Google One	Show ▾

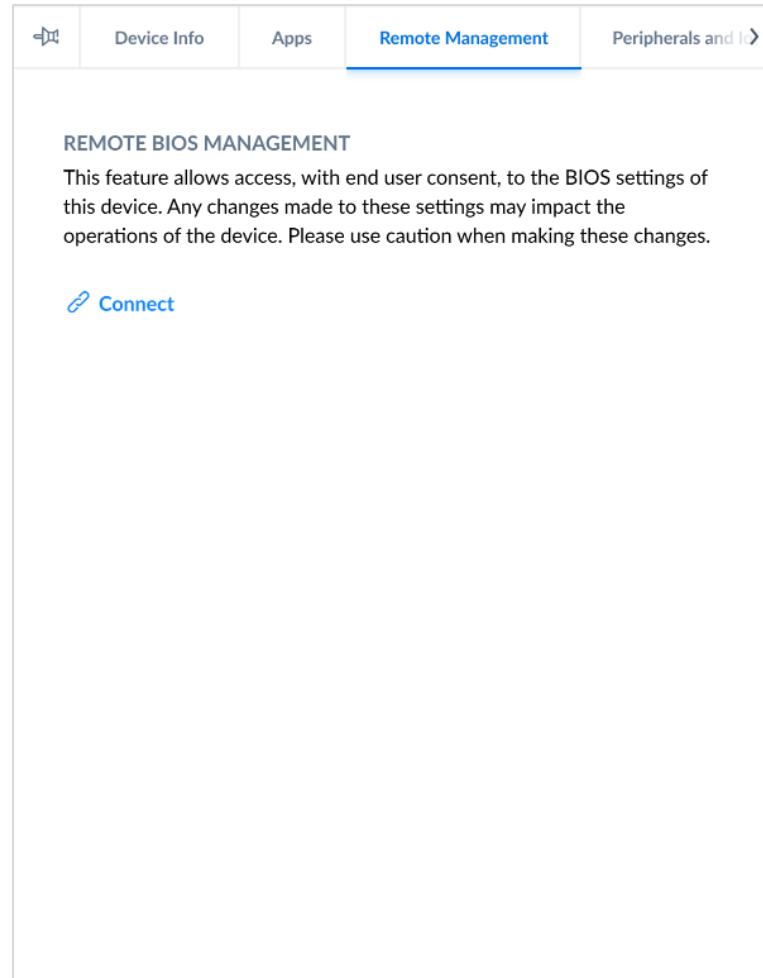
At the bottom of the interface are two buttons: 'Cancel' and 'Save'.

The following options are available for a user on the device tray –  
**Remote Management** tab:

**Note:** This feature is currently only available for Windows devices (with Intel vPro agent installed)

- Remote BIOS Management: Allows IT Admins to access the device's BIOS settings
- Requires Intel vPro agent installed on the device

*For more information on Remote BIOS Management, see Intel vPro Support, section 3.4*



A screenshot of a software interface showing the 'Remote Management' tab selected in a top navigation bar. The bar also includes tabs for 'Device Info', 'Apps', and 'Peripherals and I/O'. Below the tabs, the 'REMOTE BIOS MANAGEMENT' section is displayed, containing a brief description and a blue 'Connect' button.

REMOTE BIOS MANAGEMENT

This feature allows access, with end user consent, to the BIOS settings of this device. Any changes made to these settings may impact the operations of the device. Please use caution when making these changes.

[Connect](#)

The following options are available for a user on the device tray –

**Peripherals and IoT tab:**

- View any USB or HDMI connected peripheral connected to the device
- See port type in use

The screenshot shows the 'Peripherals and IoT' tab selected in a device tray interface. The tab bar includes icons for Device Info, Apps, Peripherals and IoT (which is highlighted in blue), and Alerts History. Below the tab bar, the word 'PERIPHERALS' is centered. There are four items listed in a grid:

Icon	Name	Type	Status
USB Mouse icon	Lenovo Optical Mouse - USB Mouse	USB Port	Connected
USB Printer icon	HP CZ993A - USB Printer	USB Port	Connected
USB Hub icon	Unknown Device	USB Port	Connected
HDMI Monitor icon	Lenovo HDMI Monitor	HDMI Port	Connected

The following options are available for a user on the device tray – ***Alert History*** tab:

- View any “Low Battery” alert
- View any “Storage” alert
- View any “OTA Deployment” alert
- Delete device

*NOTE: Alert status is reflective over a rolling seven-day period.*

The screenshot shows a user interface for managing device alerts. At the top, there is a navigation bar with tabs: Device Info, Apps, **Alerts History** (which is highlighted in blue), and Activity History. Below the navigation bar, the main content area is titled "REPORTED ISSUES ON THIS DEVICE (In the last 7 days)". This section contains two expandable sections: "Battery" and "Storage". The "Battery" section shows one alert, indicated by the number "1 total" and a lightning bolt icon. The "Storage" section also shows one alert, indicated by the number "1 total" and a storage icon. At the bottom of the interface are two buttons: "Delete" (highlighted with a red border) and "Cancel".

The following options are available on the device tray - **Activity History** tab:

- View the device Activity History
- Export device Activity History to CSV file
- Delete device

The screenshot shows a user interface for managing device activity. At the top, there is a navigation bar with five tabs: Device Info, Apps, Alerts History, and Activity History. The Activity History tab is currently selected, indicated by a blue border around its text. Below the navigation bar, the title "ACTIVITY HISTORY" is centered. To the left of the main content area, there is a "Export" button with a CSV icon. The main content area is divided into two sections: "DATE AND TIME" on the left and "ACTIVITY / USER" on the right. A table lists four activity entries, each with a timestamp, an event description, and a user or device name. At the bottom of the table, there are two buttons: "Delete" on the left and "Cancel" on the right.

DATE AND TIME	ACTIVITY / USER
09-24-2021 09:19 AM	device record updated system events
09-24-2021 09:19 AM	public key added Fake Device 2
09-24-2021 09:15 AM	device added Fake Device 2
09-24-2021 09:08 AM	device record created lcp_admin_user

**Delete**      **Cancel**



### 3.4 Intel vPro® Support

### 3.5 Deleting or Removing a Device

### 3.6 Grouping Devices

## 4 LICENSING

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Lenovo Device Manager operates on a device-based SaaS model. Licenses can be purchased through standard Lenovo channels and applied to UDS / LDM. Within the LDM portal, administrators may view the licenses purchased for the organization and easily assign the licenses to devices. Devices can be claimed and provisioned but can only be fully managed through LDM once a license has been applied.

### 4.1 Managing Licenses

### 4.2 Managing License Purchases

## 5 APPS

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### 5.1 App Management

### 5.2 Adding an Application

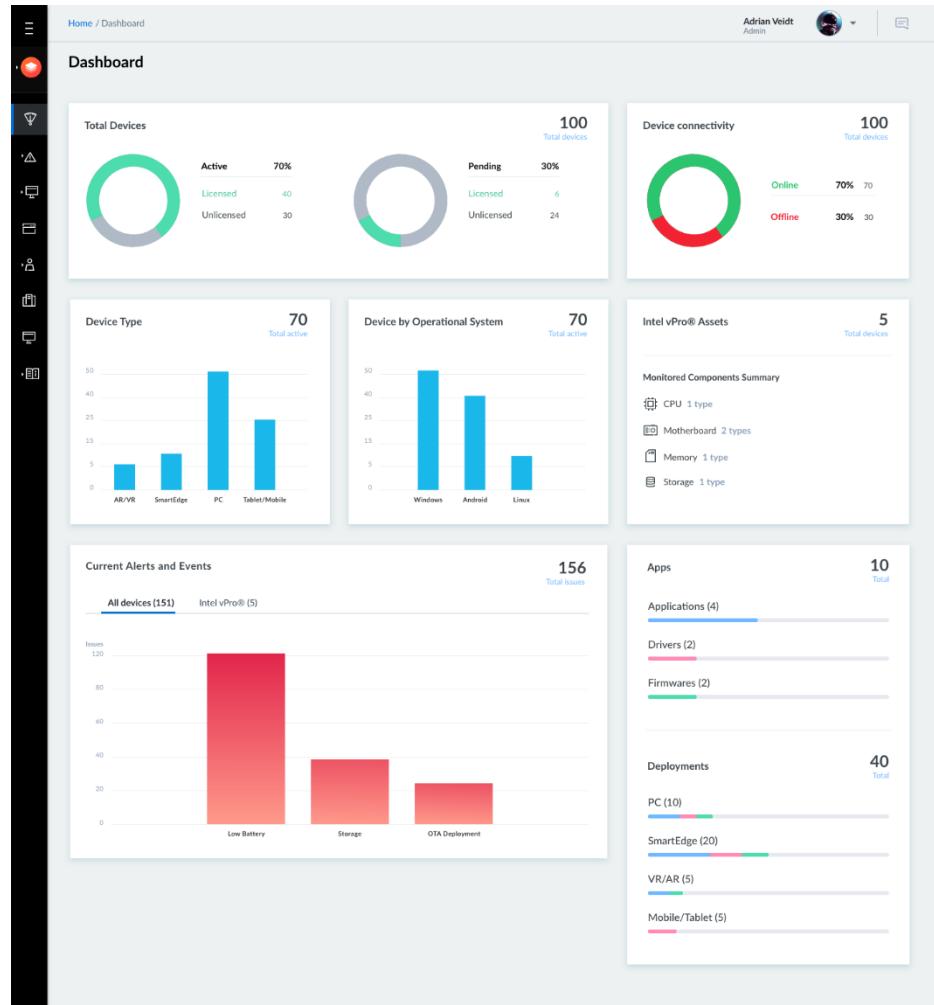
### 5.3 Deploying an Application

### 5.4 Removing an Application

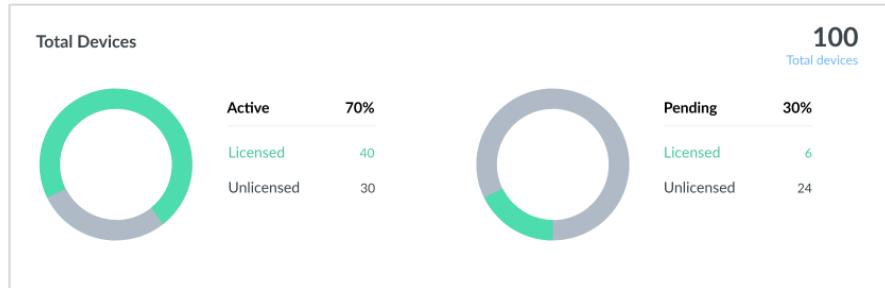
## 6 LENOVO DEVICE MANAGER DASHBOARD

The Dashboard is the home page for Lenovo Device Manager and offers an at-a-glance overview of the devices in your organization. The Dashboard consists of several widgets, where each widget represents different device management categories.

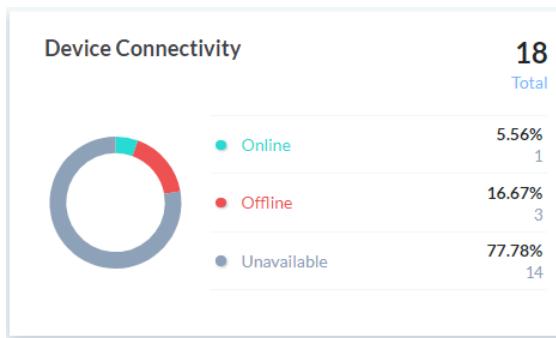
Clicking on metrics displayed on a chart will typically navigate the user to the corresponding detail pages throughout the portal. This data is updated throughout the day.



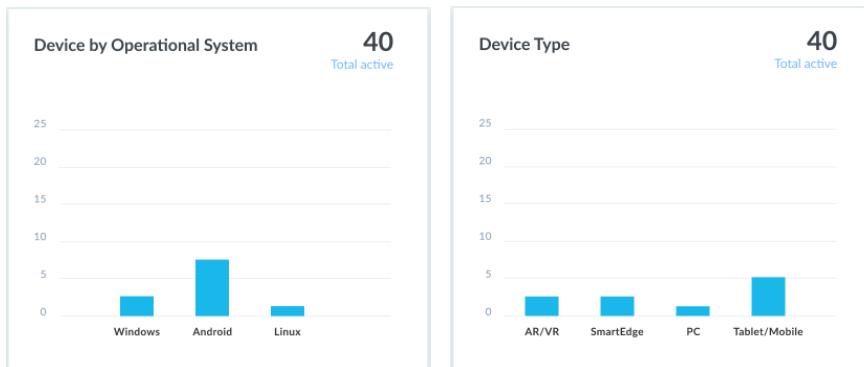
## Dashboard Widgets



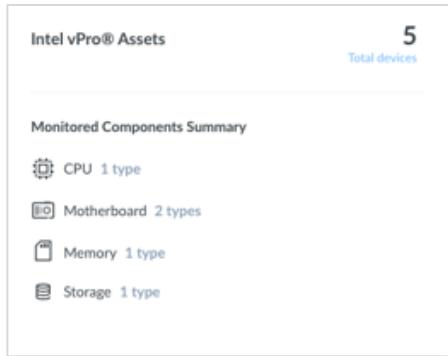
The total devices claimed on Lenovo Client Remote Management, highlighting licensing status. Clicking on Active or Pending charts will automatically take you to the Device list, filtered by the status selected.



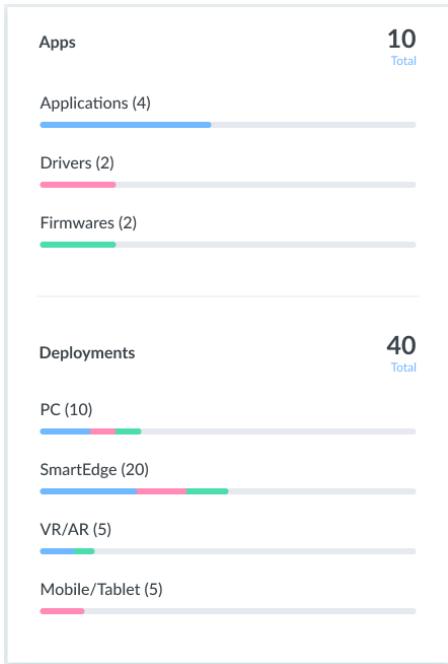
Current connectivity status, highlighting devices that are currently online or offline. Unavailable devices have not yet been fully claimed on LDM.



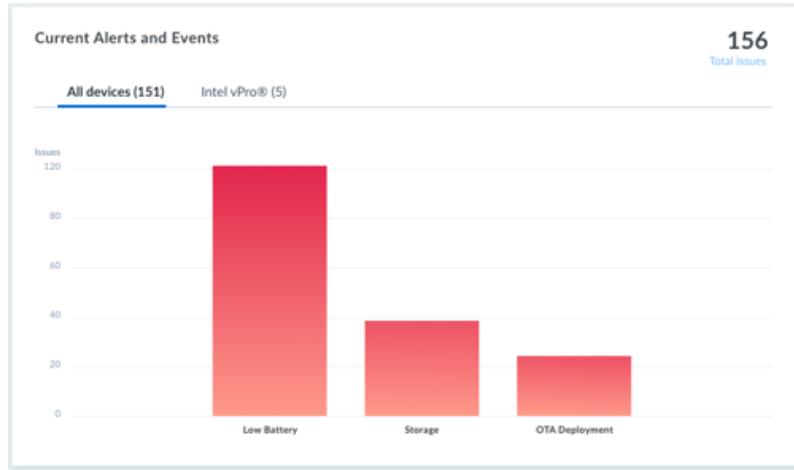
Breakdown of devices by "Device Type" and "Operating System" allows you to track the number of each being managed through LDM.



Summarizes the Intel vPro® device assets, including all monitored hardware components.



Provides an overview of the different app types being managed through LDM as well as how those apps are being deployed.



Provides information on any alerts detected over the last 7 days as of the last data update. Clicking on a category will navigate you to the issue report for that respective category, listing impacted devices. Clicking on the Intel vPro® tab will show asset change alerts. See the “Reports” section for more details on each.

## 7 REPORTS

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### 7.1 Low Battery Report

### 7.2 Low Storage Report

### 7.3 OTA Deployment Report

### 7.4 Decommissioned Devices Report

### 7.5 Intel vPro® Asset Changes

## 8 TROUBLESHOOTING - FAQ

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**Question:** I am unable to login to the portal; my username or password is incorrect.

**Answer:** Your login credentials must match the login setup in [Lenovo ID/Lenovo Passport](#). If you are still having problems logging in, reset the Lenovo ID password and try again.

**Question:** During device claiming (provisioning), I am asked to run a ‘PowerShell’ script. However, I am getting a “UnauthorizedAccess” message. What should I do?

**Answer:** To execute the PowerShell script file, please run the following command to enable the PowerShell script to run without issues:  
Set-ExecutionPolicy Unrestricted

**Question:** My LDM portal is not updating with device information, or my device is showing “Offline”. What should I do?

**Answer:** This typically happens when the Universal Device Client (UDC) has stopped running on the device. To fix:

1. On CMD prompt, run ‘services.msc’ command
2. When Services application opens, you will see a list of services. Search for ‘Universal Device Client’.
3. Check the status column. If status does not show “Running” it needs to be restarted.

4. Highlight the Universal Device Client and right click and select 'Restart' to start the service. This is an automatic service so it will start updating the LDM portal soon after.

**Question:** I see "Information not currently available. Device network still pending" message on my Device Tray. What should I do?

**Answer:** Contact your Org Admin to assign a License to this device. A license may need to be purchased if none are currently available for the organization.

**Question:** I installed the Intel vPro® agent on a device and I want to uninstall it. How can I do this?

**Answer:** Remote uninstallation of the Intel vPro® agent is not currently supported. This feature will be added in the next release. For now, removing the agent will require manual interaction with the device.

**Question:** When claiming a device and "Downloading Provisioning Pack", I receive the message: "An error occurred. Please try again". What do I do?

**Answer:** Please wait 10 minutes and try again. If the problem persists, contact Lenovo to investigate further.

**Question:** I cannot see "Settings Restrictions" and/or "App Restrictions" on my Android Device Tray. What should I do?

**Answer:** There are two possibilities for this issue. Please check:

1. Contact your Org Admin to ensure the Android Settings/Application Management has been enabled under Organization Settings. The default setting is enabled, but if it was disabled, this feature will not appear.
2. Device may not have been claimed as 'Device Owner'. Reclaim the device as Device Owner to resolve.

If the feature has been enabled in Org Settings AND the device was claimed as Device Owner, please wait 10 minutes and try again, giving LDM time to recognize the device under Device Owner status. If the problem persists, contact Lenovo to investigate further.

## 9 REFERENCE DOCUMENTS

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Terms & Conditions: Available on LDM portal “Preferences”

[Lenovo Privacy Policy](#)

[Lenovo Software as a Service Cloud Agreement](#)

## 10 LDM QUICK START GUIDE

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### Overview

The purpose of this guide is to help you smoothly onboard one or more devices in your organization to the Lenovo Device Manager platform.



**Note for New User:** To set up a new LDM account, it is mandatory to have a Lenovo ID and get an email invitation registered with Lenovo. Once admin account is set up, the administrator can invite other users within the organization to create accounts based on the roles and permissions granted to them.

You can onboard one or more devices to LDM platform through the LDM → Device Management / Devices page. This process may vary based on the device type and operating system as described below. This guide will provide quick instructions for each category type.

Current Device Type Categories				
	PCs	SmartEdge	Tablet / Mobile	AR / VR
<b>Examples</b>	Any Lenovo notebook, desktop, workstation, etc	Any Lenovo edge appliance and servers	Any Lenovo tablets or mobile device	Any Lenovo AR or VR appliance
<b>Current Install Options</b>	 • Automatically with Provisioning Package download	 • Automatically with Provisioning Package download	 • Automatically with QR code scan	Currently Unavailable in LDM 2.1 <i>Will return in LDM 2.2</i>

The UDC software agent bundle includes:

- setup.cmd
- udc.exe
- udc-provision.json
- Readme file

## 10.1 Add Windows Devices

## 10.2 Add Android Devices

## 10.3 Installing the Intel vPro® Agent

## 10.4 Requirements

## 10.5 Troubleshooting

# 11 APP PACKAGE – EXAMPLE POWERSHELL SCRIPT

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Custom package creation allows you to package and deploy applications and policies to your devices using the specifications outlined in [Section 5.2.2](#) of this User Guide. For reference, use the following PowerShell script as an example:

```
Param(
    [string]$command="install"
)
$pathToSelf = Split-Path -Parent -Path $PSCmdletPath
```

```

$pathToLogFile = "($env:TEMP)\Lenovo.AppPerformance.Package-$(Get-Date -Format 'yyyy-MM-dd_HH-mm-ss').txt"
$taskName = "Lenovo App Performance Task"
$taskFolder = "Lenovo"
$pathToService = "($env:ProgramData)\Lenovo\Ldi\Performance"
$pathToServiceParent = Split-Path -Parent $pathToService
$pathToRegistry = "HKLM:\Software\Lenovo\Ldi"
$relativePathToLog = "Lenovo\Ldi"

function Write-Log
{
    Param(
        [string]$logString,
        [switch]$isError
    )

    $log = (Get-Date -Format s).ToString() + ":" + $logString
    Add-Content $pathToLogFile -value $log

    if($isError.isPresent) {
        Write-Error $log
    }else{
        Write-Host $log
    }
}

function Assert-Elevation()
{
    $isAdminOrSystem = ([Security.Principal.WindowsPrincipal]` 
        [Security.Principal.WindowsIdentity]::GetCurrent() ` 
        ).IsInRole([Security.Principal.WindowsBuiltInRole]::Administrator)

    if(-not ($isAdminOrSystem))
    {
        Write-Log "Error: This script requires elevation" -isError
        exit 1
    }
}

```

```

function Set-FolderSecurity {
    Param(
        [Parameter(Mandatory = $true)]
        [string]$path
    )
    $fullControlEnum = [System.Security.AccessControl.FileSystemRights]::FullControl
    $readExecuteEnum = [System.Security.AccessControl.FileSystemRights]::ReadAndExecute
    $allowEnum = [System.Security.AccessControl.AccessControlType]::Allow
    $inheritanceFlag = [System.Security.AccessControl.InheritanceFlags]::ObjectInherit -bor
[System.Security.AccessControl.InheritanceFlags]::ContainerInherit
    $propagationFlag = [System.Security.AccessControl.PropagationFlags]::None

    if (-not (Test-Path $path -PathType Container)) {
        New-Item -Path $path -ItemType Directory
    }

    $acl = Get-Acl -Path $path

    # takeown
    $adminGroup = New-Object System.Security.Principal.NTAccount("Builtin", "Administrators")
    $acl.SetOwner($adminGroup)

    # disable inheritance from parent folder
    $isProtected = $true
    $preserveInheritance = $false
    $acl.SetAccessRuleProtection($isProtected, $preserveInheritance)

    # set permission for different user and group
    $adminAccessRule = New-Object -TypeName System.Security.AccessControl.FileSystemAccessRule -ArgumentList "BUILTIN\Administrators",
$fullControlEnum, $inheritanceFlag, $propagationFlag, $allowEnum
    $systemAccessRule = New-Object -TypeName System.Security.AccessControl.FileSystemAccessRule -ArgumentList "NT AUTHORITY\SYSTEM",
$fullControlEnum, $inheritanceFlag, $propagationFlag, $allowEnum
    $userAccessRule = New-Object -TypeName System.Security.AccessControl.FileSystemAccessRule -ArgumentList "BUILTIN\Users",
$readExecuteEnum, $inheritanceFlag, $propagationFlag, $allowEnum

    $acl.AddAccessRule($adminAccessRule)
    $acl.AddAccessRule($systemAccessRule)
}

```

```

$acl.AddAccessRule($userAccessRule)

Set-Acl -Path $path -AclObject $acl

# Grant permission to avoid no enough permission when uninstall
$acl.SetAccessRuleProtection($false, $true)
Get-ChildItem $path -Recurse -Force | ForEach-Object { Set-Acl -Path $_.FullName -AclObject $acl }
}

function Install()
{
    Uninstall
    Copy-Service
    Add-ScheduledTask
}

function Copy-Service()
{
    Set-FolderSecurity $pathToServiceParent
    Copy-Item $pathToSelf\bin\ai\$pathToService -Force -Recurse
    if(-not (Test-Path $pathToService -PathType Container))
    {
        Write-Log "Error: Can not copy service to $pathToService" -isError
        exit 1
    }
}

function Add-ScheduledTask()
{
    $triggerTime = "12:00"
    $taskCommand = Join-Path $pathToService 'Lenovo.AppPerformance.exe'
    $taskParameter = ''
    $settings = New-ScheduledTaskSettingsSet -DontStopIfGoingOnBatteries
    $principal = New-ScheduledTaskPrincipal -GroupId "BUILTIN\Users"

    $action = New-ScheduledTaskAction -Execute $taskCommand -Argument $taskParameter -WorkingDirectory $pathToService
    $triggers = @(
        ${&{

```

```

$dailyTrigger = $(New-ScheduledTaskTrigger -Daily -At $triggerTime)
$dailyTrigger.StartBoundary = [DateTime]::Parse($dailyTrigger.StartBoundary).ToLocalTime().ToString("s")
$dailyTrigger
}),
$(&{
    $logonTrigger = $(New-ScheduledTaskTrigger -AtLogon)
    $logonTrigger.delay = 'PT15M'
    $logonTrigger
})
)

if(-not (Test-path $taskCommand)) {
    Write-Log "Error: Can not find necessary task target $taskCommand" -isError
    exit 1
}

Remove-ScheduledTask
Register-ScheduledTask -TaskName $taskName -TaskPath $taskFolder -Action $action -Trigger $triggers -Settings $settings -Principal $principal

if (-not $($Get-ScheduledTask -TaskName $taskName -ErrorAction SilentlyContinue).TaskName -eq $taskName) {
    Write-Log "Error: Can not create scheduled task." -isError
    exit 1
}
}

function Uninstall()
{
    Remove-ScheduledTask
    Remove-RegistryKey
    Remove-LogFile

    Set-FolderSecurity $pathToServiceParent
    if (Test-Path $pathToService)
    {
        Remove-Item $pathToService -Recurse -Force
    }
    if (-not (Test-Path (Join-Path $pathToServiceParent "*")))
    {

```

```

        Remove-Item $pathToServiceParent -Recurse -Force
    }
}

function Remove-ScheduledTask()
{
    if ($(Get-ScheduledTask -TaskName $taskName -ErrorAction SilentlyContinue).TaskName -eq $taskName) {
        Unregister-ScheduledTask -TaskName $taskName -Confirm:$False
    }
}

function Remove-RegistryKey()
{
    if (Test-Path $pathToRegistry)
    {
        Remove-Item $pathToRegistry -Recurse -Force
    }
}

function Get-AppDataFolderForAllUsers()
{
    $folderName = "Local Appdata"

    $userProfileList = Get-ItemProperty "Registry::HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\ProfileList\*" -Name
    "ProfileImagePath" `

    | Where-Object PsChildName -Match "^S-1-5-21.*" `

    | Select-Object PSChildName, ProfileImagePath

    return $userProfileList | ForEach-Object {
        $userShellFoldersKey = "Registry::HKEY_USERS\" + $_.PSChildName + "\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\User Shell
        Folders";
        if (Test-Path $userShellFoldersKey) {
            $unexpandedFolderPath = (Get-Item $userShellFoldersKey).GetValue($folderName, `
                [System.String]::Empty, `
                [Microsoft.Win32.RegistryValueOptions]::DoNotExpandEnvironmentNames)
            return $unexpandedFolderPath -replace "%USERPROFILE%", $_.ProfileImagePath
        }
    }
}

```

```
}

function Remove-LogFile()
{
    Get-AppDataFolderForAllUsers | ForEach-Object {
        $UserLogFolder = Join-Path $_ $relativePathToLog
        if (Test-Path $UserLogFolder) {
            Remove-Item $UserLogFolder -Recurse -Force
        }
    }
}

if($command -eq "install")
{
    Assert-Elevation
    Install
}

if($command -eq "uninstall")
{
    Assert-Elevation
    Uninstall
}
```