



# Lenovo XClarity Administrator Product Guide

Lenovo XClarity™ Administrator is a centralized resource management solution that is aimed at reducing complexity, speeding response, and enhancing the availability of Lenovo® server systems and solutions. Lenovo XClarity Administrator provides agent-free hardware management for our servers, storage, network switches, hyperconverged and ThinkAgile solutions.

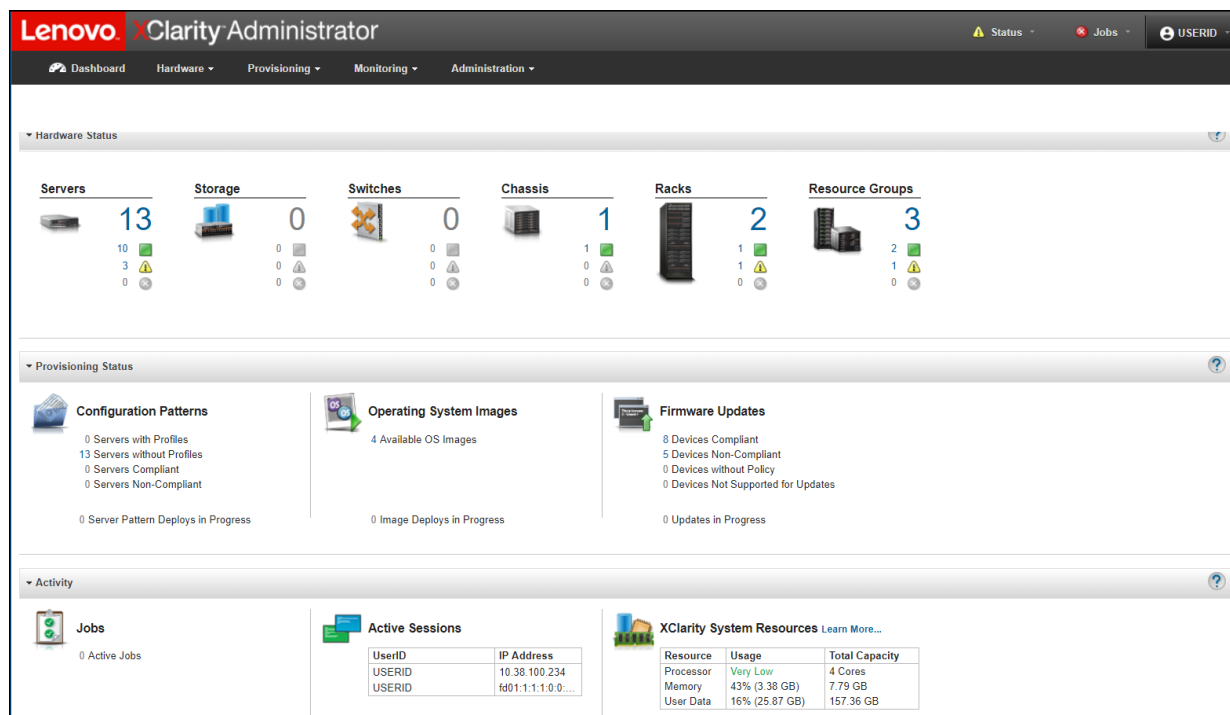


Figure 1. Lenovo XClarity Administrator dashboard

**Migrating from v1.x.x?** For information on migrating to XClarity Administrator v2.1.x from a previous release (1.x.x) please refer to the [Lenovo XClarity Administrator Quick Start Guide](#).

**Tip:** If running a version of XClarity v1.x.x you must update to v1.4.1 then you must migrate your system to v2.0.0 then upgrade to v2.1.0.

## Did you know?

Lenovo XClarity offers a mobile app for Android and iOS devices. The app enables you to securely monitor physical systems, get real-time status alerts and notifications, and take action on common system level tasks. The app can also connect directly via an enabled USB port to a ThinkSystem server and provide virtual LCD capability.

## Features

The XClarity Administrator dashboard is an HTML 5-based web interface that allows fast location of resources so tasks can be run quickly. Because Lenovo XClarity Administrator does not include any agent software that is installed on the managed endpoints, there are no CPU cycles spent on agent execution and no memory is used, which means that up to 1GB of RAM and 1 - 2% CPU usage is saved, compared to a typical managed system where an agent is required.

Lenovo XClarity Administrator delivers Lenovo resources faster. With a simplified administration dashboard, the following functions can be easily achieved:

- Discovery
- Inventory
- Monitoring
- Firmware compliance
- Firmware updates
- Windows device driver updates
- Configuration management and compliance
- Deployment of operating systems and hypervisors to bare metal servers

Fast time to value is realized through automatic discovery of existing or new Lenovo rack servers and Flex System infrastructure. Inventory of the discovered endpoints is gathered, so the managed hardware inventory and its status can be viewed-at-a-glance.

A centralized view of events and alerts that are generated from managed endpoints is available. When an issue is detected by a managed endpoint, an event is passed to Lenovo XClarity Administrator. Alerts and events are visible via the XClarity Administrator Dashboard, the Status bar, and the Alerts and Events detail for the specific system.

Supported endpoints include:

- ThinkSystem servers and compute nodes
- Flex System Compute Nodes
- System x Servers
- ThinkServer Servers
- ThinkAgile solutions
- Hyperconverged solutions
- NeXtScale servers
- RackSwitch switches
- ThinkSystem storage
- Lenovo storage

## Firmware management

Firmware management is simplified by assigning Firmware-compliance policies to supported managed endpoints to ensure that firmware on those endpoints remains compliant. You can also create and edit firmware-compliance policies when validated firmware levels do not match the suggested predefined policies. Additionally you can also apply and activate firmware that is later than the currently installed firmware on a single managed endpoint or group of endpoints without using compliance policies.

## Windows Device Driver updates

Starting with v2.1.0, XClarity Administrator utilizes Windows UpdateXpress System Packs (UXSPs) to enable the update of the OS device drivers on deployed Windows operating systems. Windows UXSPs contain Windows device drivers for supported Windows versions and for Lenovo servers that supports Windows. You can download or import Windows UXSPs in the repository. UXSPs must be available in the repository before you can update Windows device drivers on managed servers.

## Configuration management and compliance

Configuration management uses pattern-based configurations to quickly provision and re-provision a single server or multiple servers and compute nodes, all with a single set of configuration settings. Settings to configure include local storage, I/O adapters, boot order, and other baseboard management controller and UEFI settings on managed servers. Server patterns also integrate support for virtualizing I/O addresses, so you can virtualize server fabric connections or repurpose servers without disruption to the fabric.

Additionally if the settings on a server change, you can determine the compliance status of each server from within the Configuration Patterns Server Profiles page.

Configuration support for CNOS-based RackSwitch networking switches has been added starting with XClarity Administrator 2.4. It provides template creation, editing and deployment for global settings, port channel, spine-leaf, VLAG and VLAN.

## OS Provisioning

OS Provisioning enables bare metal deployment. VMware ESXi, Windows Server, SUSE Linux Enterprise Server (SLES) and Red Hat Linux images can be imported and held in a repository for images. A maximum of 10 Images can be stored within the repository and it is possible to deploy operating-system images to up to 28 bare-metal servers concurrently.

## Security

Lenovo XClarity Administrator includes several features that can help you secure your environment. These include:

- When you manage Lenovo chassis and servers in XClarity Administrator, you can configure XClarity Administrator to change the firewall rules for the devices so that incoming requests are accepted only from XClarity Administrator. This is referred to as encapsulation.
- If you must be compliant with NIST SP 800-131A or FIPS 140-2, XClarity Administrator can help you meet that compliance. XClarity Administrator supports self-signed SSL certificates (issued by an internal certificate authority) or external SSL certificates (private or commercial CA).
- When changing cryptographic settings within XClarity Administrator you can choose to apply the settings to the management server only, to the managed devices only, or both.
- XClarity Administrator includes an audit log that provides a historical record of user actions, such as logging on, creating users, or changing user passwords.

## Integration

XClarity Administrator can be integrated into external, higher level management, automation, and orchestration platforms through open REST application programming interfaces (APIs). This means Lenovo XClarity can easily integrate with your existing management infrastructure.

## Lenovo XClarity Integrators

Lenovo XClarity integrates with leading management applications in the areas of infrastructure management, orchestration and automation, and IT service management.

Available integrators include the following:

- Lenovo XClarity Integrator for VMware vCenter (free download, support requires XClarity Pro license)  
<https://datacentersupport.lenovo.com/documents/LNVO-VMWARE>
- Lenovo XClarity Integrator for VMware vRealize Orchestrator (free download, support requires XClarity Pro license)

<https://datacentersupport.lenovo.com/documents/LNVO-VMRO>

- Lenovo XClarity Integrator for VMware vRealize Log Insight (free download, support requires XClarity Pro license)  
<https://marketplace.vmware.com/vsx/solutions/xclarity-integrator-for-vrealize-log-insight>
- Lenovo XClarity Integrator for Microsoft System Center (free download, support requires XClarity Pro license)  
<https://datacentersupport.lenovo.com/documents/LNVO-MANAGE>
- Lenovo XClarity Integrator for Microsoft Windows Admin Center  
<https://support.lenovo.com/us/en/solutions/HT507549>
- Lenovo XClarity Administrator App for SPLUNK (as-is solution)  
<https://splunkbase.splunk.com/app/3105/>
- Lenovo XClarity and Moogsoft AIOps Integration (as-is solution)  
<https://docs.moogsoft.com/en/xclarity-lam.html>
- Lenovo XClarity Administrator Ruby toolkit  
The Ruby toolkit provides a Ruby-based library of commands and APIs to automate resource management from an OpenStack environment, such as Ansible, Chef or Puppet:  
<https://github.com/lenovo/Ansible.lenovo-lxca>  
<https://github.com/lenovo/chef.lenovo-lxca>  
<https://github.com/lenovo/puppet.lenovo-lxca>
- Lenovo XClarity and PagerDuty Integration (as-is solution)  
Note: XClarity Administrator integrates with PagerDuty without additional software.
- Lenovo XClarity Integrator for ServiceNow (free download)  
<https://datacentersupport.lenovo.com/us/en/solutions/ht506884>
- Lenovo ThinkAgile XClarity Integrator for Red Hat CloudForms (no download required)  
The Lenovo Physical Infrastructure Provider provides IT administrators the ability to integrate the management features of Lenovo XClarity Administrator with the hybrid-cloud management capabilities of Red Hat CloudForms.  
[https://access.redhat.com/documentation/en-us/red\\_hat\\_cloudforms/4.7/html/configuring\\_the\\_lenovo\\_physical\\_infrastructure\\_provider\\_for\\_red\\_hat\\_cloudforms/overview](https://access.redhat.com/documentation/en-us/red_hat_cloudforms/4.7/html/configuring_the_lenovo_physical_infrastructure_provider_for_red_hat_cloudforms/overview)
- Lenovo XClarity Integrator for Microsoft Azure Log Analytics (free download)  
<https://support.lenovo.com/us/en/solutions/ht506712>
- Lenovo XClarity Integrator for Nagios (free download, requires Lenovo XClarity Administrator installed)  
Lenovo XClarity Integrator for Nagios retrieves alerts from XClarity Administrator, and makes them available to Nagios.  
<https://support.lenovo.com/us/en/solutions/ht507298>
- Lenovo XClarity Essentials Plug-in for Nagios (free download)  
Lenovo XClarity Essentials Plug-in for Nagios is a stand-alone plugin for Nagios that retrieves health status from individual Lenovo ThinkSystem servers.  
<https://support.lenovo.com/us/en/solutions/ht507403>

Ordering information for those integrators requiring a license is described in the [Download and ordering information](#) section.

Support for Lenovo XClarity Integrators for VMware vCenter & vRealize and Microsoft System Center is included in Lenovo XClarity Pro offering which is described in the next section. For details on Support click on Scope of Support tab at <https://support.lenovo.com/gb/en/solutions/lnvo-xclarit>

## Lenovo XClarity Pro

Lenovo XClarity Pro provides the following entitlement:

- Lenovo XClarity Administrator Configuration Pattern feature entitlement
- Lenovo XClarity Administrator OS deployment feature entitlement
- Lenovo XClarity Administrator Service & Support
- Lenovo XClarity Integrator for Microsoft System Center Support
- Lenovo XClarity Integrator for VMware vCenter Support
- Lenovo XClarity Integrator for VMware vRealize

Lenovo XClarity Administrator is available for download from the following URL:

<https://www3.lenovo.com/us/en/data-center/software/systems-management/xclarity/>

This download provides Lenovo XClarity Administrator base functionality plus a 90-day trial evaluation Licenses for XClarity Administrator features Configuration Patterns and Operating System Deployment.

**Note:** Service and Support for XClarity Administrator and XClarity Integrators is only available with an XClarity Pro purchase.

The following table compares XClarity and XClarity Pro.

Table 1. Comparing Lenovo XClarity Administrator and Lenovo XClarity Pro

Feature	Lenovo XClarity Administrator	Lenovo XClarity Pro
<b>Licensing and Support</b>		
License	Free	Licensed
Service and Support	No	Yes
<b>Key Features</b>		
REST APIs and XClarity Integrators	Yes	Yes
Auto-discovery and asset management	Yes	Yes
Real-time monitoring, fault handling, alert notification, and call home	Yes	Yes
Firmware update management	Yes	Yes
Configuration patterns	No	Yes
Operating system and hypervisor installation	No	Yes

## Lenovo XClarity mobile app

The Lenovo XClarity mobile app provides management functions on Android and iOS devices:

- View the status summary of all hardware.
- Monitor the detailed status of each device.
- Monitor the inventory of each device.
- Monitor audit events, hardware and management events, alerts, and jobs.
- Perform power actions on a device.
- Take action on common system level tasks to minimize the risk of disruptions and downtime
- Forward emails to share inventory, alert and event information.
- On ThinkSystem servers: Perform initial configuration of servers, retrieve diagnostic information (virtual LCD) and perform actions, Initiate Lenovo XClarity Administrator management from a mobile device.

Support requirements are as follows:

- Supports Android 5 to 8, and iOS 10 and 11.
- Requires Lenovo XClarity Administrator v1.2.1 or later.

Note:

- iOS 8 is supported only for Lenovo XClarity Mobile v1.3.0 and earlier.
- iOS 9 is supported only for Lenovo XClarity Mobile v1.3.1 and earlier.

The following figure shows the Inventory screen of the mobile app.

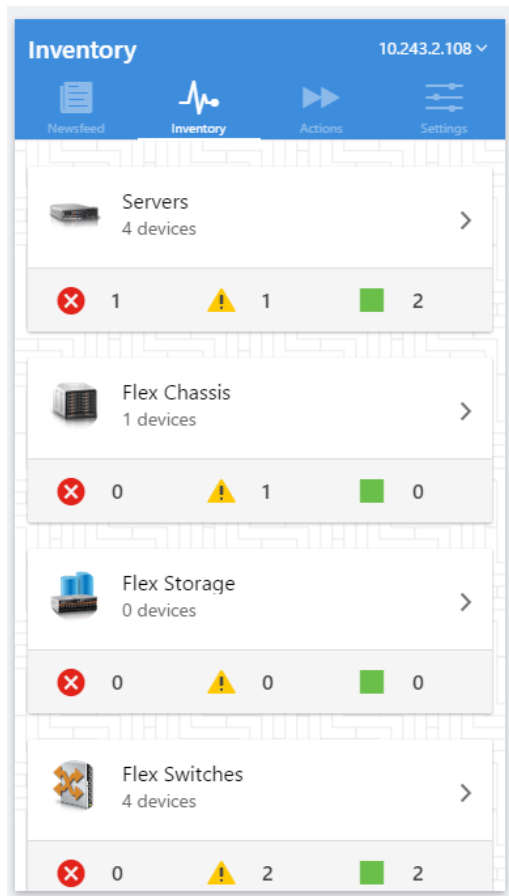


Figure 2. Lenovo XClarity mobile app

The mobile app is available for download from these app stores:

- [Google Play](#)
- [Apple iTunes](#)

## Management tasks

By using Lenovo XClarity, users can perform the following tasks that are described in this section.

### User Management

Lenovo XClarity Administrator provides a centralized authentication server to create and manage all user accounts and to manage and authenticate user credentials. The authentication server is created automatically when the management server first starts. The User accounts, which are used to log on and manage the Lenovo XClarity Administrator, are also used for all chassis and servers that are managed by the Lenovo XClarity Administrator. When you create a user account, you control the level of access, such as whether the account has read/write authority or read-only authority, by using role groups.

When devices are initially managed by Lenovo XClarity Administrator, a predefined set of role groups have permission to access the devices by default. This predefined set is empty by default until it is configured. You can change the role groups that can access specific managed devices. When permission is given to certain role groups, only users that are members of those role groups can see and act on those specific devices.

By default, devices are managed using XClarity Administrator managed authentication to log in to the devices. When managing rack servers and Lenovo chassis, you can choose to use managed authentication or local authentication to log in to the devices.

The following figure shows the Lenovo XClarity Administration interface for Security that comprises User Management, roles, and other security settings.

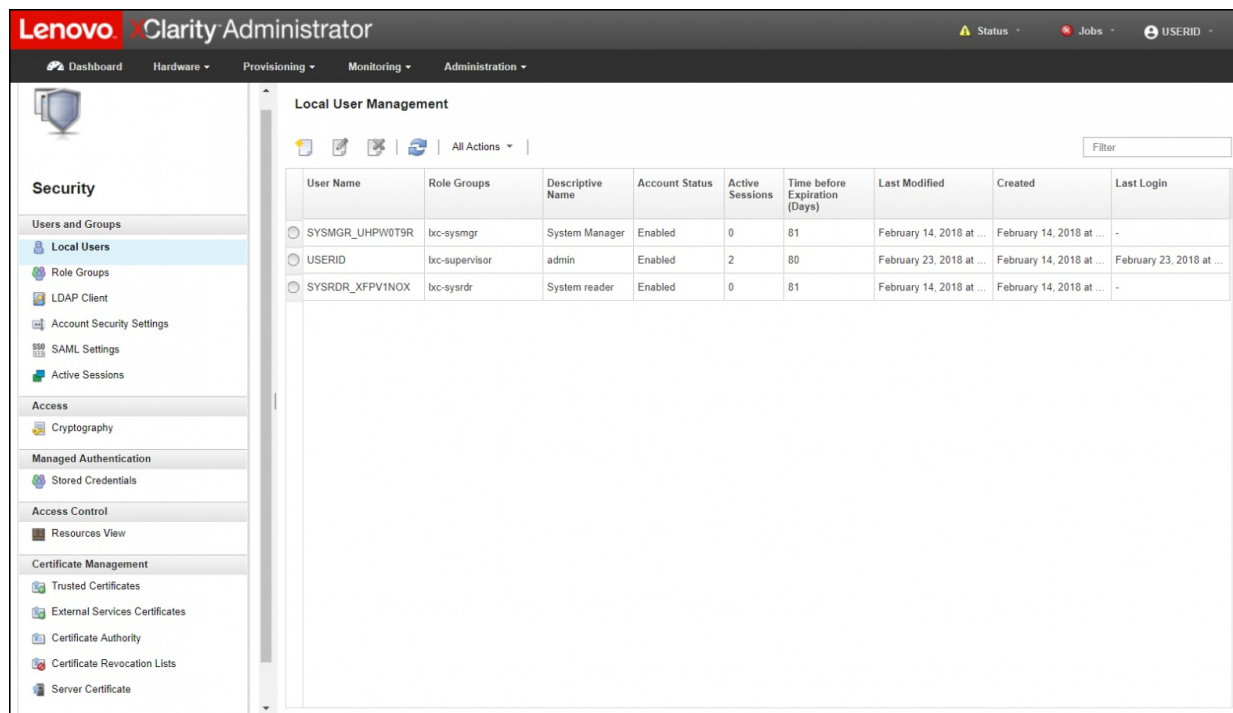


Figure 3. User management interface

## Hardware monitoring

Lenovo XClarity Administrator provides a centralized view of events and alerts that are generated from managed endpoints, such as chassis, servers, and Flex System switches. When an issue is detected by the Chassis Management Module (CMM) or device that is installed in the chassis, an event is passed to the Lenovo XClarity Administrator. That event is displayed in the alerts list that is available within the user interface. A status bar also is available that provides overall status information on the main XClarity Administrator interface. An example list of alerts is shown in the following figure.

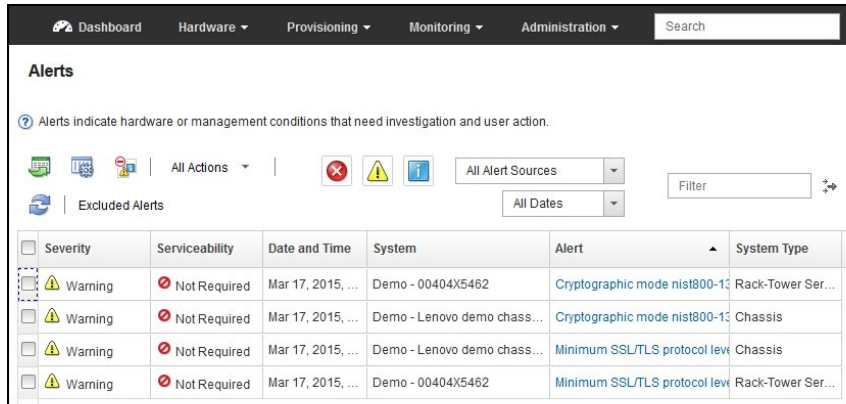


Figure 4. Alerts and actions

## Hardware management

There are various management tasks for each supported endpoint, including viewing status and properties, configuring system information and network settings, starting the CMM/IMM web interface, and remote control for the System x or Flex system node. The interface with a single System x Server selected and the power actions is shown in the following figure.

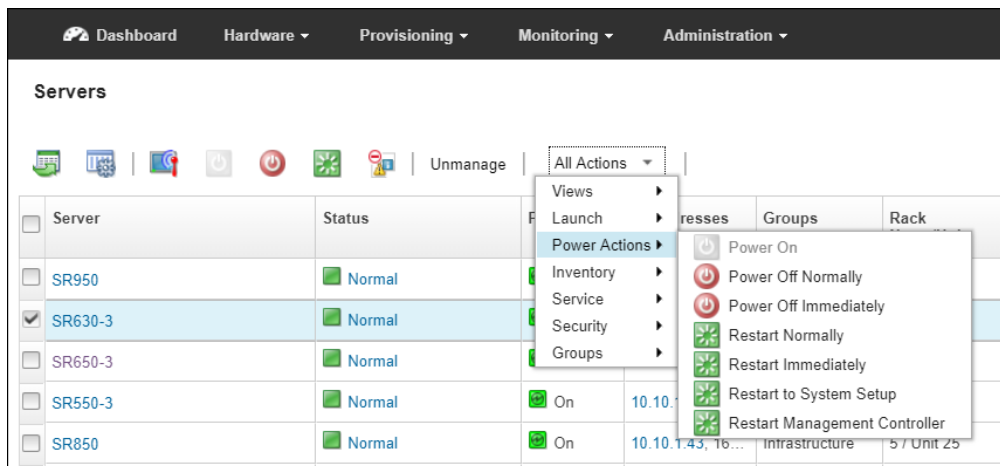


Figure 5. Hardware Management



## Configuration management

Configuration patterns provide a way to ensure that you have consistent configurations applied to managed servers. Server patterns are used to provision or pre-provision a managed server by configuring local storage, I/O adapters, boot setting, firmware, ports, IMM, and UEFI settings. Server patterns also integrate support for virtualizing I/O addresses so you can virtualize Flex System fabric connections or re-purpose servers without disruption to the fabric.

You can also determine whether the settings on a server are in compliance with the server profile. The settings on a server can become out of compliance with its server profile if settings are changed without using Configuration Patterns or if an issue occurred during deployment, such a firmware issue or an invalid setting.

## Operating system deployment

Lenovo XClarity Administrator can be used to manage the OS images repository and deploy operating system images to managed servers. To deploy an operating system image from Lenovo XClarity, at least one of the network interfaces (Eth0 or Eth1) must have IP network connectivity to the server network interface that is used to access the host operating system. It also must be configured with an IPv4 address. Additionally the Feature on Demand (FoD) key for remote presence is required on ThinkSystem, ThinkAgile Solutions, NeXtScale, and System x servers if not included as standard.

## Firmware updates

Within Lenovo XClarity, you can manage the firmware updates repository and apply and activate firmware updates for all managed endpoints. Compliance policies can be started to flag managed endpoints that do not comply with the defined firmware rules. Refreshing the repository and downloading updates requires an Internet connection. If Lenovo XClarity has no Internet connection, you can manually import updates to the repository. The firmware apply and activate interface is shown in the following figure.

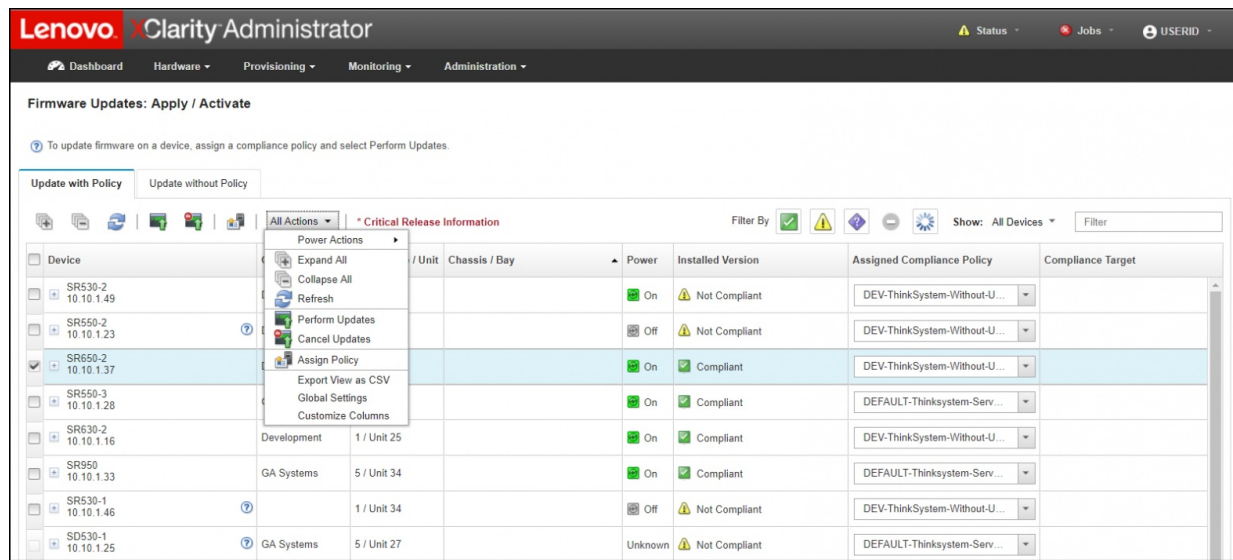


Figure 6. Firmware updates

## Task automation using scripts

Lenovo XClarity Administrator can run the provided cmdlets in a Microsoft PowerShell session to automate certain management functions. The cmdlets use Lenovo XClarity REST APIs and can automate the following functions:

- Logging in to Lenovo XClarity Administrator

- Managing user accounts
- Managing a chassis
- Deploying an operating system image to one or more compute nodes or rack servers
- Configuring compute nodes and rack servers through the use of configuration patterns

XClarity Administrator offers a PyLXCA toolkit which provides a Python-based library of commands and APIs to automate provisioning and resource management from an OpenStack environment, such as Ansible or Puppet.

The PyLXCA toolkit provides an interface to Lenovo XClarity Administrator REST APIs to automate functions such as:

- Logging in to Lenovo XClarity Administrator
- Managing and unmanaging chassis, servers, storage systems, and top-of-rack switches (endpoints)
- Viewing inventory data for endpoints and components
- Deploying an operating-system image to one or more servers
- Configuring servers through the use of Configuration Patterns
- Applying firmware updates to endpoints

Additionally, Lenovo now provides the Lenovo XClarity Ruby toolkit which is supported to automate resource management from an OpenStack environment, such as Ansible, Chef, or Puppet. The Ruby toolkit provides an interface to Lenovo XClarity Administrator REST APIs to automate functions (see Lenovo XClarity Administrator Ruby toolkit).

## Download and ordering information

Lenovo XClarity Administrator is available to download from Lenovo at the following link:

<https://www.lenovo.com/us/en/data-center/software/systems-management/XClarity-Administrator/p/WMD00000366>

The free download includes a 90-day evaluation license for Configuration Patterns and Operating System Deployment to allow you to evaluate these licensed components.

Lenovo XClarity Integrators for Microsoft System Center (MSSC) are also available to download for free from the following link (XClarity Pro License required for technical support):

<https://datacentersupport.lenovo.com/documents/Invo-manage>

Lenovo XClarity integrator for VMware vCenter is also available to download for free from the following link (XClarity Pro License required for technical support):

<https://datacentersupport.lenovo.com/documents/Invo-vmware>

**Note:** The free downloads do not include any entitlement for technical support.

To gain entitlement for technical support, purchase a license for Lenovo XClarity Pro to add entitlement to use these features and gain technical support:

- Lenovo XClarity Administrator Configuration Patterns
- Lenovo XClarity Administrator Operating System (OS) Deployment
- Technical support for Lenovo XClarity Administrator
- Technical support for Lenovo XClarity Integrators for MSSC
- Technical support for Lenovo XClarity Integrators for VMware vCenter
- Technical support for Lenovo XClarity Integrators for VMware vRealize

Lenovo XClarity Pro editions are available with a 1-year, 3-year, or 5-year software subscription and support. Lenovo XClarity Pro is available on a per-managed-server basis or per-managed-chassis basis. The per chassis licenses offer a more cost effective way of purchasing licenses for the Flex System environment.

When you purchase XClarity Pro, the order is fulfilled via electronic software delivery (ESD) using the Lenovo Key Management System (LKMS). The order is placed onto LKMS using an email address for the end user who has ordered the code. This email address is where the Activation Code is sent in PDF format (the email will come from lkmsdev@lenovo.com). The recipient email address is the login to the LKMS system for administration and to manage the LKMS inventory.

The Activation code is redeemed via LKMS and the information about the *end customer* should be entered during the redemption process. The customer information is then used to send the electronic proof of entitlement (will come from sw\_override@lenovo.com) and a welcome letter along with an explanation of how to obtain the code from the ESD portal (will come from lenovo.esd@flexnetoperations.com). The ESD portal is also known as Flexnet or Lenovo Download and License Center:

<https://lenovo.esd.flexnetoperations.com/control/Invo/login>

The part numbers for geographical regions are listed in the following tables.

Lenovo XClarity Pro includes Lenovo XClarity Integrator for Microsoft System Center and Lenovo XClarity Integrator for VMware vCenter.

### Lenovo XClarity Pro - Per Endpoint

Table 2. Lenovo XClarity Pro part numbers: Per managed endpoint

Description	Part number
United States, Asia Pacific, Canada and Japan	
Lenovo XClarity Pro, per Managed Endpoint w/1 Yr SW S&S	00MT201
Lenovo XClarity Pro, per Managed Endpoint w/3 Yr SW S&S	00MT202
Lenovo XClarity Pro, per Managed Endpoint w/5 Yr SW S&S	00MT203
Europe Middle East, Africa & Latin America	
Lenovo XClarity Pro, per Managed Endpoint w/1 Yr SW S&S	00MT207
Lenovo XClarity Pro, per Managed Endpoint w/3 Yr SW S&S	00MT208
Lenovo XClarity Pro, per Managed Endpoint w/5 Yr SW S&S	00MT209

### Lenovo XClarity Pro - Flex System chassis

Table 3. Lenovo XClarity Pro part numbers: Per managed chassis

Description	Part number
United States, Asia Pacific, Canada and Japan	
Lenovo XClarity Pro, per Managed Chassis w/1 Yr SW S&S	00MT198
Lenovo XClarity Pro, per Managed Chassis w/3 Yr SW S&S	00MT199
Lenovo XClarity Pro, per Managed Chassis w/5 Yr SW S&S	00MT200
Europe Middle East, Africa & Latin America	
Lenovo XClarity Pro, per Managed Chassis w/1 Yr SW S&S	00MT204
Lenovo XClarity Pro, per Managed Chassis w/3 Yr SW S&S	00MT205
Lenovo XClarity Pro, per Managed Chassis w/5 Yr SW S&S	00MT206

## Supported Host Systems

The Lenovo XClarity management appliance runs in a virtual machine on the host system. The following Hypervisors are supported for installing Lenovo XClarity:

- Nutanix Acropolis Hypervisor (AHV)
- Microsoft Windows Server 2019 with Hyper-V installed
- Microsoft Windows Server 2016 with Hyper-V installed
- Microsoft Windows Server 2012 R2 with Hyper-V installed
- Microsoft Windows Server 2012 with Hyper-V installed
- Red Hat Enterprise Linux 7.x with Kernel-based Virtual Machine (KVM) v1.2.17 installed
- VMware ESXi 6.7 base and U1
- VMware ESXi 6.5 U1 and U2
- VMware ESXi 6.0 U1, U2 and U3
- VMware ESXi 5.5 U1 and U2
- VMware ESXi 5.1 U1, U2, and U3

For VMware, the virtual machine is available as an OVF template. For Hyper-V and Nutanix AHV, the virtual machine is a virtual-disk image (VHD). For KVM, the virtual machine is available as qcow2 format.

The host system that is running the Lenovo XClarity virtual machine has the following minimum requirements:

- Two virtual microprocessors
- 8 GB of memory
- A minimum of 192 GB of storage for use by Lenovo XClarity virtual appliance
- Display with a minimum resolution of 1024 pixels in width (XGA)

For more information about minimum hardware recommendations based on the number of managed devices in your environment, see the Lenovo XClarity Administrator Performance white paper:

[https://download.lenovo.com/servers\\_pdf/Lenovo\\_XClarity\\_Performance\\_V2.1.0.pdf](https://download.lenovo.com/servers_pdf/Lenovo_XClarity_Performance_V2.1.0.pdf)

## Supported Managed Endpoints

XClarity Administrator supports the following endpoints:

- ThinkSystem servers and compute nodes
- Flex System Compute Nodes
- System x Servers
- ThinkServer Servers
- Converged HX Servers
- NeXtScale servers
- RackSwitch switches
- ThinkSystem storage
- Lenovo storage

For details about support, including any limitations, see the following support pages:

- [Flex System and ThinkSystem devices in a Flex System chassis](#)
- [ThinkSystem, Converged HX, NeXtScale, and System x servers](#)
- [ThinkServer servers](#)
- [RackSwitch switches](#)
- [Lenovo Storage, ThinkSystem Storage, and Nimble storage devices](#)

## Related links

For more information, see the following resources:

- Lenovo XClarity website:  
<https://www.lenovo.com/us/en/data-center/software/systems-management/c/systems-management>
- Free XClarity Administrator download (includes 90-day trial license for Configuration Patterns and OS Deployment)  
<https://www.lenovo.com/us/en/data-center/software/systems-management/XClarity-Administrator/p/WMD00000366>
- Lenovo XClarity demonstration videos:  
<https://lenovopress.com/lp0037-lenovo-xclarity-demonstrations>
- Lenovo XClarity Online Product Information Center (InfoCenter):  
[http://flexsystem.lenovofiles.com/help/topic/com.lenovo.lxca.doc/aug\\_product\\_page.html](http://flexsystem.lenovofiles.com/help/topic/com.lenovo.lxca.doc/aug_product_page.html)
- Lenovo XClarity product publications:  
[http://flexsystem.lenovofiles.com/help/topic/com.lenovo.lxca.doc/printable\\_doc.html](http://flexsystem.lenovofiles.com/help/topic/com.lenovo.lxca.doc/printable_doc.html)
  - Lenovo XClarity Administrator Planning and Installation Guide
  - Lenovo XClarity Administrator User's Guide
  - Lenovo XClarity Administrator PowerShell User's Reference
  - Lenovo XClarity Administrator Problem Determination Guide
  - Lenovo XClarity Administrator REST API Guide
  - Lenovo XClarity Administrator Performance white paper
- Lenovo XClarity discussion forum  
[https://forums.lenovo.com/t5/Lenovo-XClarity/bd-p/xc01\\_eg](https://forums.lenovo.com/t5/Lenovo-XClarity/bd-p/xc01_eg)
- Lenovo XClarity Administrator performance, tips and techniques  
[https://download.lenovo.com/servers\\_pdf/lenovo\\_xclarity\\_performance\\_v1.3.0.pdf](https://download.lenovo.com/servers_pdf/lenovo_xclarity_performance_v1.3.0.pdf)
- Lenovo XClarity support page  
<https://datacentersupport.lenovo.com/documents/LNVO-XCLARIT>
- Lenovo XClarity Administrator updates page  
<https://datacentersupport.lenovo.com/documents/LNVO-LXCAUPD>
- Lenovo Key Management System  
<https://fod.lenovo.com/lkms>
- Lenovo Key Management System user guide, *Using Lenovo Features on Demand*  
<https://lenovopress.com/redp4895>
- Lenovo ESD Download and License Center  
<https://lenovo.esd.flexnetoperations.com/control/Invo/login>
- Lenovo Software Warranty Lookup  
<https://datacentersupport.lenovo.com/systemxwarrantylookup>
- [Lenovo XClarity Controller Online Documentation](#)
- [Integrated Management Module 2 Online Documentation](#)  
[http://systemx.lenovofiles.com/help/topic/com.lenovo.sysx.imm2.doc/product\\_page.html](http://systemx.lenovofiles.com/help/topic/com.lenovo.sysx.imm2.doc/product_page.html)
- [Chassis Management Module 2 Online Documentation](#)  
[http://flexsystem.lenovofiles.com/help/topic/com.lenovo.acc.cmm.doc/cmm\\_product\\_page.html](http://flexsystem.lenovofiles.com/help/topic/com.lenovo.acc.cmm.doc/cmm_product_page.html)
- [Chassis Management Module 1 Online Documentation](#)  
[http://flexsystem.lenovofiles.com/help/topic/com.ibm.acc.cmm.doc/cmm\\_product\\_page.html](http://flexsystem.lenovofiles.com/help/topic/com.ibm.acc.cmm.doc/cmm_product_page.html)

## Related product families

Product families related to this document are the following:

- [Lenovo XClarity](#)

## Notices

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