



Lenovo XClarity Integrator for VMware vCenter Installation and User's Guide



Version 5.1.0

Note

Before using this information and the product it supports, read the information in Appendix C “Notices” on page 67.

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About this publication

This book provides instructions for installing and using Lenovo XClarity Integrator for VMware vCenter, Version 5.1.0.

These instructions include information about how to use the features to acquire system information, update firmware, monitor power usage, configure system settings, and create migration rules for the virtual machine in the VMware vCenter management environment.

Conventions and terminology

Paragraphs that start with a bold **Note**, **Important**, or **Attention** are notices with specific meanings that highlight key information.

Note: These notices provide important tips, guidance, or advice.

Important: These notices provide information or advice that might help you avoid inconvenient or difficult situations.

Attention: These notices indicate possible damage to programs, devices, or data. An attention notice appears before the instruction or situation in which damage can occur.

The following table describes some of the terms, acronyms, and abbreviations used in this document.

Table 1. Frequently used terms and acronyms

Term/Acronym	Definition
ASU	Lenovo Advanced Settings Utility
BMC	baseboard management controller
DSA	Lenovo Dynamic System Analysis
LXCA	Lenovo XClarity Administrator
LXCI	Lenovo XClarity Integrator
PFA	predictive failure alert
UXSP	UpdateXpress System Packs
UXSPi	UpdateXpress System Pack Installer

Web resources

The following websites provide resources for understanding, using, and troubleshooting System x, Flex System, BladeCenter servers, and systems-management tools.

Lenovo XClarity Integrator for VMware vCenter site

Locate the latest downloads for the Lenovo XClarity Integrator for VMware vCenter:

- [Lenovo XClarity Integrator for VMware website](#)

System Management with Lenovo XClarity Solutions

This website provides an overview of the Lenovo XClarity solutions that integrate System x and Flex System hardware to provide system management capability:

- System Management with Lenovo XClarity Solution website

Lenovo technical support portal

This website can assist you in locating support for hardware and software:

- Lenovo Support Portal website

ServerProven websites

The following websites provide an overview of hardware compatibility for BladeCenter, Flex System, System x, and xSeries® hardware:

- Lenovo ServerProven: Compatibility for BladeCenter products
- Lenovo ServerProven: Compatibility for Flex System Chassis
- Lenovo ServerProven: Compatibility for System x hardware, applications, and middleware

VMware website

This website can assist you in locating VMware products:

- VMware website

Chapter 1. Lenovo XClarity Integrator for VMware vCenter

Lenovo XClarity Integrator for VMware vCenter is an extension to VMware vCenter and provides system administrators with enhanced management capabilities for System x servers, BladeCenter servers and Flex System servers. Lenovo XClarity Integrator for VMware vCenter expands the management capabilities of VMware vCenter by integrating Lenovo hardware management functionality.

Lenovo XClarity Integrator for VMware vCenter provides the following features.

Dashboard

The Dashboard provides:

- Overview of a selected host and cluster status, including a system information summary and system health messages.
- Summary information, including overall resource usage, host health messages, and connection status.
- BMC information for each host and allows you to launch the BMC console directly.

Dynamic System Analysis

DSA collects and analyzes system information to help diagnose system problems.

Firmware Updates

The Firmware Updates function acquires and applies Lenovo UpdateXpress System Packs (UXSPs) and individual updates to an ESXi system. The Rolling System Update function provides nondisruptive system updates with zero downtime, automates the update process of the hosts in a cluster environment without any workload interruption, and supports updating multiple hosts concurrently to save time.

Power Metric

Power Metric monitors and provides a summary of power usage, thermal history, and fan speed, in addition to a trend chart for the managed host. The Power Metric function is either manually enabled or disabled on a host. You can also set the power capping for a power-capping capable host to limit the server power usage. The power throttling function allows you to receive an alert when the server power usage exceeds the set value.

Advanced Settings Utility

ASU manages the current system settings on the host, including BMC, uEFI, and boot order settings. To change unsupported settings in Lenovo XClarity Integrator for VMware vCenter, use the BMC and uEFI interfaces.

Predictive failure management

Predictive failure management monitors the server hardware status and receives predictive failure alerts. You can set a management policy for a server based on a predictive failure alert to either automatically evacuate virtual machines in response to predictive failure alerts to protect your workloads or notify you. Predictive failure management is manually enabled or disabled on a host.

Predictive Failure Analysis analyzes trends in corrected errors to predict future failures of hardware components and proactively enables mechanisms to avoid them.

Rolling System Update function

The Rolling System Update (RSU) function updates the firmware in a single batch while the system continues running without interruption to application services on a server host. The Rolling System Update (RSU) provides an approach of non-disruptive firmware updates. It fully manages firmware by orchestrating "rolling" updates leveraging dynamic virtual machine movement within a defined VMware

cluster, and completing the whole update process including host reboot automatically without any workload interruption.

Rolling System Reboot

Rolling System Reboot (RSR) provides a task manager that helps you manage rolling reboot tasks. A task contains all of the information and options for a rolling reboot.

Lenovo XClarity Administrator Integration

Lenovo XClarity Administrator Integration provides a convenient method of utilizing the features of Lenovo XClarity Administrator, such as Lenovo Infrastructure hierarchy view, the deployment configuration pattern, the graphic view of chassis map, the OS remote present, and the BMC remote console.

Chapter 2. Planning and installing Lenovo XClarity Integrator for VMware vCenter

Use this procedure to plan for and install Lenovo XClarity Integrator for VMware vCenter.

System requirements

This section describes system requirements for Lenovo XClarity Integrator for VMware vCenter.

Supported versions of VMware vCenter Server

The Lenovo XClarity Integrator for VMware vCenter plug-in is an extension to VMware vCenter Server.

The Lenovo XClarity Integrator for VMware vCenter plug-in supports the following versions of VMware vCenter Server:

- 6.5
- 6.0
- 5.5
- 5.1
- 5.0
- 4.1

Note: Only 5.1 and later versions of the VMware vCenter Server Appliance are supported.

Supported ESXi version

Lenovo XClarity Integrator for VMware vCenter supports the following Lenovo customized ESXi images:

- 6.5
- 6.0
- 5.5
- 5.1
- 5.0
- 4.1

You can download Lenovo customized ESXi images from the VMware product download website: <https://my.vmware.com/web/vmware/downloads>. Locate VMware vSphere and click the **Download Product** link. Then click the Custom ISOs tab to locate the Lenovo custom image for ESXi.

For generic VMware ESXi, you need to download and install Lenovo Content and IHV CIM provider offline bundle for Lenovo Custom Images VMware ESXi on Fix Central to enable all management functions. Without the offline bundles being installed, Lenovo XClarity Integrator for VMware vCenter provides limited management functionality. It is recommended that you update to the latest patch version on each managed ESXi host at your earliest convenience. You can find VMware vCenter ESXi with Lenovo Customization offline bundles and patches at Fix Central.

Supported hardware

This topic provides information about supported hardware for Lenovo XClarity Integrator for VMware vCenter.

The XClarity Integrator plug-in has no hardware limitations. However, the hardware that the plug-in manages is limited to the Lenovo and IBM hardware listed in the following tables.

Table 2. Supported Lenovo hardware

System	Server number
ThinkSystem servers	<ul style="list-style-type: none"> • SD530 (7X20, 7X21, 7X22) • SN550 (7X16) • SN850 (7X15) • SR530 (7X07, 7X08) • SR550 (7X03, 7X04) • SR630 (7X01, 7X02) • SR650 (7X05, 7X06) • SR850 (7X18, 7X19) • ST550 (7X09, 7X10)
ThinkServer servers Note: ThinkServer servers support only inventory, monitoring, and rolling reboot.	<ul style="list-style-type: none"> • RD350 • RD450 • RD550 • RD650 • RS160 • SD350 (5493) • TD350 • TS460
NeXtScale servers	<ul style="list-style-type: none"> • nx360 M5 (5465) • nx360 M5 DWC (5467, 5468, 5469)
System x servers	<ul style="list-style-type: none"> • x3250 M6 (3633) • x3500 M5 (5464) • x3550 M4 (7914) • x3550 M5 (5463) • x3630 M4 (7158) • x3650 M4 (7915) • x3650 M5 (5462, 8871) • x3750 M4 (8753) • x3850 X6 / x3950 X6 (6241)
Flex Compute Node	<ul style="list-style-type: none"> • Flex System x240 Compute Node (7162, 2588) • Flex System x240 M5 Compute Node (2591, 9532) • Flex System x280, x480, x880 X6 Compute Node (7196, 4258) • Flex System x440 Compute Node (7167, 2590)

Table 3. Supported IBM hardware

System	Server number
System x server	<ul style="list-style-type: none"> • dx360 M2 (7321, 7323) • dx360 M3 (6391) • dx360 M4 (7912, 7913, 7918, 7919) • nx360 M4 (5455) • Smart Analytics System (7949) • x3100 M4 (2582, 2586) • x3100 M5 (5457) • x3200 M2 (4367, 4368) • x3200 M3 (7327, 7328) • x3250 M2 (7657, 4190, 4191, 4194) • x3250 M3 (4251,4252,4261) • x3250 M4 (2583) * • x3250 M5 (5458) • x3300 M4 (7382) • x3400 M2 (7836, 7837) • x3400 M3 (7378, 7379) • x3500 M2 (7839) • x3500 M3 (7380) • x3500 M4 (7383) • x3530 M4 (7160) • x3550 M2 (7946, 4198) • x3550 M3 (7944, 4254) • x3550 M4 (7914) • x3620 M3 (7376) • x3630 M3 (7377) • x3630 M4 (7158, 7518, 7519) • x3650 M2 (7947, 4199) • x3650 M3 (7944, 7945, 4254, 4255, 5454) • x3650 M4 (7915) • x3650 M4 HD (5460) • x3650 M4 BD (5466) • x3750 M4 (8722, 8733) • x3755 M4 (7164) • x3690 X5 (7148, 7149, 7147, 7192) • x3850 X5/X3950 X5 (7145, 7146, 7143, 7191) • x3850 X6/x3950 X6 (3837, 3839)
Flex Compute Node	<ul style="list-style-type: none"> • Flex System x220 Compute Node (7906, 2585) • Flex System x222 Compute Node (7916) • Flex System x240 Compute Node (8956, 8737, 8738, 7863) • Flex System x280 X6 Compute Node / x480 X6 Compute Node / x880 Compute Node X6 (4259, 7903) • Flex System x440 Compute Node (7917)
Blade server	<ul style="list-style-type: none"> • HS22 (7870, 7809, 1911, 1936) • HS22V (7871, 1949) • HS23 (7875, 1882, 1929) • HS23E (8038, 8039) • HX5 (7872, 7873, 1909, 1910)

* Note the following:

- System x3250 M4 2583 supports only partial functions in the Dashboard and Lenovo Dynamic System Analysis. Update, power, and system configuration functions are not supported.
- The power and cooling function and the remote control function support only IMM2 systems.
- The predictive failure alert (PFA) function supports only systems that provide out-of-band BMC access.

- Lenovo customized ESXi 6.5 or later does not support IBM servers.

Hardware requirements

The following table lists minimum and recommended hardware requirements for Lenovo XClarity Integrator for VMware vCenter.

Table 4. Hardware requirements

Component	Minimum	Recommended
Memory	4 GB RAM	8 GB RAM
Disk space	64GB of free hard disk space	128 GB of free hard disk space
Processor	1 processor	2 processors

Note: The Lenovo XClarity Integrator for VMware vCenter virtual appliance is pre-configured with minimum hardware configuration by default.

Installing Lenovo XClarity Integrator for VMware vCenter

Lenovo XClarity Integrator for VMware vCenter can be installed in Windows-based and VMware ESXi-based environments.

Installing Lenovo XClarity Integrator for VMware vCenter in Windows-based environments

Lenovo XClarity Integrator for VMware vCenter must be installed on a standalone physical server that is set up exclusively for Lenovo XClarity Integrator for VMware vCenter, a virtual machine, or the same server as VMware vCenter Server. Note that for VMware vCenter virtual appliance, Lenovo XClarity Integrator for VMware vCenter must be installed outside of the vCenter server.

Before you begin

- If an instance of Lenovo XClarity Integrator for VMware vCenter is installed on the server, perform a fresh installation to ensure the successful deployment of the latest Lenovo XClarity Integrator for VMware vCenter (see “Upgrading Lenovo XClarity Integrator for VMware vCenter in Windows-based environments” on page 14).
- Administrator privileges are required to install Lenovo XClarity Integrator for VMware vCenter.
- Lenovo XClarity Integrator for VMware vCenter can be installed only on the following operating systems.
 - Microsoft Windows Server 2008 (x64)
 - Microsoft Windows Server 2008 R2 (x64)
 - Microsoft Windows Server 2012
 - Microsoft Windows Server 2012 R2
- Microsoft .NET Framework Version 2.0 or later is required. You can launch the Add Features wizard of the Windows Server Manager to install .NET.
- If you install Lenovo XClarity Integrator for VMware vCenter on a separate Windows operating system without VMware vCenter, Java 8 (64-bit) is required.
- The following ports must be available.

Port number	Protocol	Purpose
9500	HTTPS	Unified Service port This port can be changed when you install Lenovo XClarity Integrator for VMware vCenter.

9501	TCP	Database port This port can be changed when you install Lenovo XClarity Integrator for VMware vCenter.
5989	HTTPS	Lenovo XClarity Integrator for VMware vCenter communicates with the remote ESXi CIMOM and with BMC over this port.
5988	HTTPS	Lenovo XClarity Integrator for VMware vCenter communicates with the BMC over this port.
427	UDP	Lenovo XClarity Integrator for VMware vCenter communicates with the BMC over this port.
80	HTTP	Lenovo XClarity Integrator for VMware vCenter downloads firmware from the Lenovo website over this port.
443	HTTPS	Lenovo XClarity Integrator for VMware vCenter downloads firmware from the Lenovo website and communicates with Lenovo XClarity Administrator over this port.

Procedure

Complete these steps to install Lenovo XClarity Integrator for VMware vCenter on a Windows host.

- Step 1. Download and extract the Lenovo XClarity Integrator for VMware vCenter installation package files.
- Step 2. Double-click **lnvgy_sw_vmuim_x.x_windows_64.exe** to launch the installer. Where *x.x* represents the version of the Lenovo XClarity Integrator for VMware vCenter package you are installing.
- Step 3. Click **Next** on the startup page of the installer.
- Step 4. Read and agree to the Lenovo XClarity Integrator for VMware vCenter license.
- Step 5. Select the destination folder for installing Lenovo XClarity Integrator for VMware vCenter, then click **Next**.
- Step 6. Input your **user** and **company** information.
- Step 7. Click **Confirm** to install. The installation process begins.

During the installation process, Lenovo XClarity Integrator Unified Service is launched and installed. For more information, refer to the Lenovo XClarity Integrator Unified Service *User's Guide*.

After the installation is complete, the configuration starts.

- Step 8. Enter the VMware vCenter server information and connection information for the product.

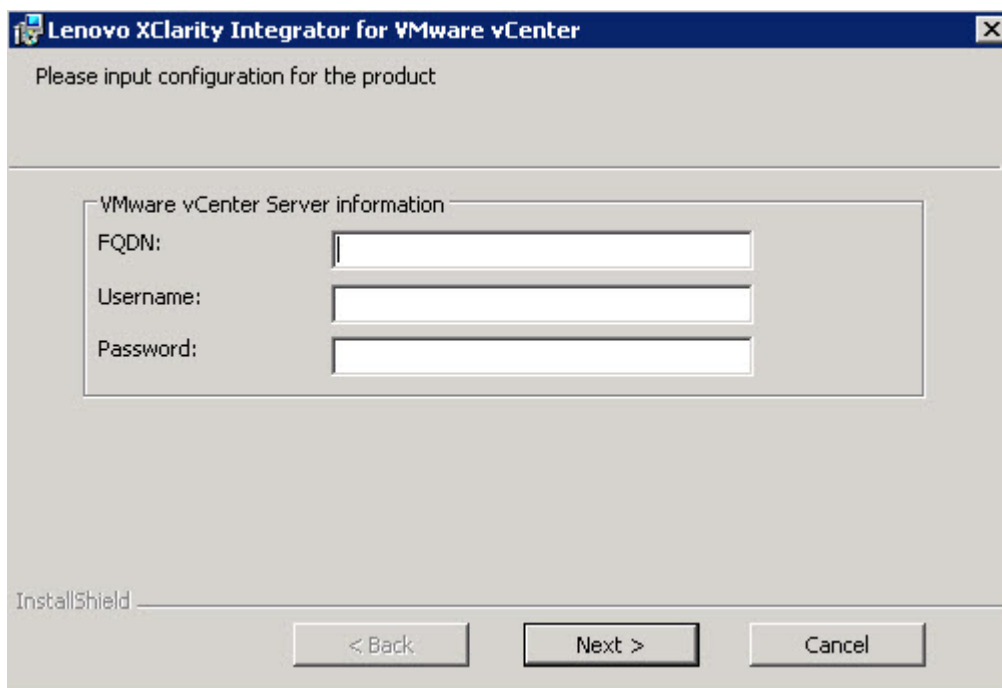


Figure 1. VMware vCenter server configuration

- In the **FQDN** field, enter the FQDN or IP address of the management network (used to connect to the VMware vCenter Server).
- In the **Username** and **Password** fields, provide a user name and password that has administrative credentials to manage the VMware vCenter Server.

Step 9. Click **Next** to start the configuration.

Step 10. Click **Finish**.

Lenovo XClarity Integrator for VMware vCenter is successfully installed.

Notes:

1. For VMware vCenters in a Linked Mode group, you can only install Lenovo XClarity Integrator for VMware vCenter on one of the vCenters, and manage hosts in that vCenter only. If there are additional vCenters in the Linked Mode group, they are not supported.
2. When you launch the installation package, if an earlier version of Lenovo XClarity Integrator for VMware vCenter is detected, an upgrade dialog box is displayed. Click **Upgrade** to upgrade the product. The installer will remove the old version and install the new version. After the product has been successfully upgraded, it is recommended that you remove the directory with the prefix “com.ibm.ivp-” listed under C:\ProgramData\VMware\vCenterServer\cfg\vsphere-client\vc-packages\vsphere-client-serenity or /etc/vmware/vsphere-client/vc-packages/vsphere-client-serenity on the host where vSphere Web Client is installed, and restart the vSphere Web Client service to force plug-in redeployment.

Note: The directory name might vary depending on the vCenter version.

3. If you want to fully uninstall the product from the control panel, you must remove Lenovo XClarity Integrator for VMware vCenter first, then remove Lenovo XClarity Integrator Unified Service. If you choose to uninstall the product with the installer, both of items are automatically removed.

What to do next

Log in and configure Lenovo XClarity Integrator for VMware vCenter (see Configuring Lenovo XClarity Integrator).

Installing Lenovo XClarity Integrator for VMware vCenter in VMware ESXi-based environments

Use this information as a guide to installing the Lenovo XClarity Integrator for VMware vCenter virtual appliance in a VMware ESXi-based environment.

Before you begin

- If an instance of Lenovo XClarity Integrator for VMware vCenter is installed on the server, perform a fresh installation to ensure the successful deployment of the latest Lenovo XClarity Integrator for VMware vCenter (see “Upgrading Lenovo XClarity Integrator for VMware vCenter in VMware ESXi-based environments” on page 15).
- Ensure that the ESXi host has enough free disk space and memory for the Lenovo XClarity Integrator for VMware vCenter virtual appliance.
- Ensure that the network is set up to use DHCP or a static IP address.

Procedure

Complete these steps to install Lenovo XClarity Integrator for VMware vCenter virtual appliance on an ESXi host from the vSphere Web Client using the Deploy OVF Template function.

- Step 1. Log into the vSphere Web client.
- Step 2. Right click the target ESXi host and select **Deploy OVF Template....** The Deploy OVF Template wizard appears.
- Step 3. On **Select source** page, select the source location by either selecting the **URL** or the **Local file**. For local file, click **Browse** and provide the OVF location. Click **Next**.
- Step 4. On **Review details** page, verify the details and click **Next**.
- Step 5. On **Select name and folder** page, Specify the name and select the location where you want to save the OVA file, and click **Next**.
- Step 6. On **Select storage** page, select the virtual disk format and choose destination from the accessible datastore. Click **Next**.
- Step 7. On **Setup networks** page, Select the desired network for your virtual machine and click **Next**.
- Step 8. On **Ready to Complete** page, verify the details, and click **Finish**. Note: By default, the appliance use DHCP. If you want to configure a static IP address for the appliance, don't select the **Power on after deployment** check box.
- Step 9. If you are not using a DHCP server, follow steps below to configure static address for the appliance. Otherwise ignore following steps.

Note: Only the Eth0 network can be configured using this method. Creating a configuration file named eth1_config does not configure the Eth1 network. You can access Lenovo XClarity Integrator administrator page and configure eth1 later.

1. Create a file named eth0_config (with no file extension) on a Linux system that contains the static IP settings

Examples:

- Configure static IPv4 address

```
auto eth0
iface eth0 inet static
address 10.240.198.11
netmask 255.255.252.0
gateway 10.240.196.1
```

- Configure static IPv6 address


```
auto eth0
iface eth0 inet6 static
address 2072:97b:c2bb:830:20c:29ff:feb5:ae4c
netmask 64
gateway 2072:97b:c2bb:830::1
```

2. Create an ISO image that contains the eth0_config file.

To create an ISO image on Windows, use your favorite ISO software. On Linux, use the mkisofs command, for example:

```
mkisofs -J -o test1.iso ./eth0_config
```

where -J is for Joliet format, -o is the output file name, and ./eth0_config is the file to be included in the ISO image.

3. Upload the iso file to datastore of the ESXi host using the Datastore Browser.

4. Mount the .ISO image to the virtual machine as a CD/DVD drive.

- a. Right click Lenovo XClarity Integrator Virtual Machine, and click **Edit Settings**.
- b. Click **CD/DVD driver 1** dropdown list, and select “Datastore ISO file”
- c. Choose the .ISO image created, and select “Connect At Power On” checkbox
- d. Click **OK**

Note: You can unmount the drive and delete the ISO image after you log into the Lenovo XClarity Integrator administrator page and finish configuring the appropriate settings.

Step 10. Power on the virtual machine. When the virtual machine is started, URL for accessing Lenovo XClarity Integrator Administrator web page is displayed on the VM console

For example, the following diagram prompts you the URL from which to manage the appliance

```
-----
Lenovo XClarity Integrator - Version x.x.x build xxx
-----
```

```
Manage the appliance from: https://192.0.2.10/admin
```

```
eth0    Link encap:Ethernet  HWaddr 2001:db8:65:12:34:56
        inet addr: 192.0.2.10  Bcast 192.0.2.55  Mask 255.255.255.0
        inet6 addr: 2001:db8:ffff:ffff:ffff:ffff:ffff:ffff/64 Scope:Global
        inet6 addr: 2001:db8:56ff:fe80:bea3/64 Scope:Link
```

Step 11. Using a browser, go to the Lenovo XClarity Integrator Administrator web page. For example: <https://192.0.2.10/admin>

Step 12. The first time you access the Administrator web page, a wizard will show up to help you complete the configuration of the appliance.

1. Read and accept the license agreement, then click **Next**
2. On **Network Setting** page, refer the section “Configuring network access” in Chapter 6 on how to configure network settings as your need, then click **Next**
3. On **Account Configuration** page, set an administrator account which can be used to login the Administrator web page later, then click **Next**
4. On **Plug-in Registration** page, input the vCenter host address, vCenter administrator username and password, then click **Submit**

When the wizard is completed successfully, it will jump to Lenovo XClarity Integrator Administrator login page automatically

Note: After the wizard done, the next time you access Lenovo XClarity Integrator administrator web page, the login page will show up instead of the wizard page

Step 13. Restart the vSphere Web Client service.

What to do next

Log in and configure Lenovo XClarity Integrator for VMware vCenter (see Configuring Lenovo XClarity Integrator).

Configuring Lenovo XClarity Integrator

The topics in this section provide information about configuring the Lenovo XClarity Integrator on your server.

Configuring access control

Lenovo XClarity Integrator is fully accessible by the Administrator role automatically.

Lenovo XClarity Integrator is controlled by two privileges:

LenovoXClarityIntegrator.AccessLenovoESXiHost

This privilege allows access to all of the features listed under the Lenovo XClarity Integrator tabs, beneath the Manage tab for the DataCenter, Cluster, and Host items. These features include: monitoring, inventory, firmware updates, system configuration, and predictive failure management. This privilege allows you to use Lenovo XClarity Integrator Administration for registering, editing, and unregistering a Lenovo XClarity Administrator.

LenovoXClarityIntegrator.AccessLenovoInfrastructure

This privilege allows access to all of the features of the vCenter Lenovo Infrastructure, where you can view all of the infrastructures for the Lenovo XClarity Administrator domains.

The System Administrator should assign one or all privileges to a role as appropriate for working with Lenovo XClarity Integrator for VMware vCenter with vSphere Web Client.

Installing a customized, externally-signed server certificate

By default, Lenovo XClarity Integrator uses a Lenovo XClarity Integrator-generated certificate that is self-signed and issued by an internal certificate authority (CA).

Procedure

Complete these steps to use a certificate that was signed by a private or commercial certificate authority (CA).

- For Windows-based environments
 1. Copy the generated CA-signed certificate file in PEM format to the server on which Lenovo XClarity Integrator for VMware vCenter is installed.
 2. Rename the certificate file to `ca.pem` and replace `[Installation Path]\Lenovo XClarity Integrator for VMware vCenter\Light TPD\cert\ca.pem`.
 3. Restart Lenovo XClarity Integrator services.
- For VMware ESXi-based environments, see “Working with security certificates” on page 58.

Importing the Lenovo XClarity Integrator certificate in your web browser

If the certificate Lenovo XClarity Integrator uses has not been signed by a trusted third party, the next time that you connect to Lenovo XClarity Administrator, your browser displays a security message and dialog

prompting you to accept the new certificate into the browser. To avoid the security messages, you can import a downloaded server certificate into your web browser's list of trusted certificates.

Procedure

- For Internet Explorer:
 1. Select an ESXi host, navigate to the **Manager → Lenovo XClarity Integrator** tab, and click the **Help** tab.
 2. Click the **Download Certification** link to download the certificate.
 3. Double-click the ca.cer file.
 4. In the **General** tab, and click **Install Certificate**.
 5. Click **Next**.
 6. From the Certificate Store page, select **Place all certificates in the following store**, and click **Browse**.
 7. Select **Trusted Root Certificate Authorities**, and click **OK**.
 8. Click **Finish**.
- For Firefox:
 1. In an open browser, click **Firefox → Options → Advanced → Certificates → View Certificates → Servers → Add Exception**.
 2. In the **Location** field, enter the fully-qualified domain name or the IP address of the host on which you installed Lenovo XClarity Integrator.
 3. Click **Get Certificate**.
 4. Click **Confirm Security Exception**, and then refresh your browser.

Configuring Lenovo XClarity Administrator

Lenovo XClarity Integrator provides an integrated method for managing your servers with Lenovo XClarity Administrator using vSphere Web Client. Use the register function to integrate Lenovo XClarity Administrator with vSphere Web Client. Once registered, you can manage servers in vSphere Web Client using the Lenovo XClarity Administrator features.

Before you begin

Before you can work with Lenovo XClarity Administrator, ensure the following:

- Lenovo XClarity Administrator is working in your environment.
- The user-authentication method in Lenovo XClarity Administrator *is not* configured as **Allow logons from LDAP users**.
- The specified Lenovo XClarity Administrator user account has supervisor privilege.
- You have *LenovoXClarityIntegrator.AccessLenovoESXiHost* privileges.

Procedure

- Step 1. From the vSphere Web Client Home page, click **Lenovo XClarity Integrator Administration**. The Lenovo XClarity Integrator Administration page is displayed.

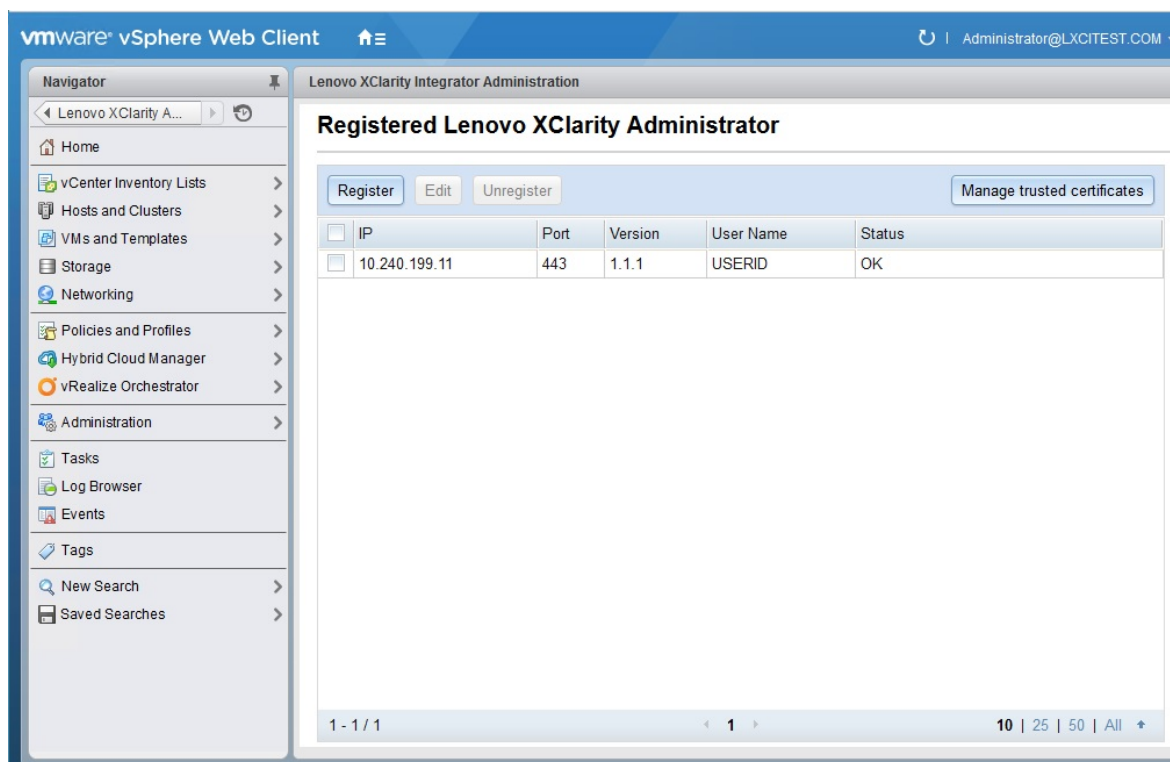


Figure 2. Lenovo XClarity Integrator Administration window

- Step 2. Click **Register**, and enter the information that is required by the Lenovo XClarity Integrator Administration function.
- Step 3. Click **OK**.
- Step 4. If the View Certificate page is displayed, click **Trust this certificate** to confirm that Lenovo XClarity Administrator is trusted.

A new user will be created in Lenovo XClarity Administrator and used for communication between this application and the Lenovo XClarity Administrator.

After registration is complete, Lenovo XClarity Administrator is displayed on the LXCA Management page.

Notes:

- If Lenovo XClarity Administrator runs in only an IPv6 environment, manually download the server certificate for the Lenovo XClarity Administrator instance, and import it in to Lenovo XClarity Integrator by clicking **Manage trusted certificates → Add**; otherwise, Lenovo XClarity Administrator cannot be registered.
- If you registered a Lenovo XClarity Administrator instance using an earlier version of Lenovo XClarity Integrator (v4.1.0 or earlier), manually download the server certificate for the Lenovo XClarity Administrator instance, and import it in to Lenovo XClarity Integrator by clicking **Manage trusted certificates → Add**. If the server certificate is not added to Lenovo XClarity Integrator, Lenovo XClarity Integrator cannot connect to Lenovo XClarity Administrator. You can also choose to un-register and then re-register the Lenovo XClarity Administrator to view and accept the server certificate instead.

What to do next

After completing the registration, you can perform these actions:

- Unregister Lenovo XClarity Administrator by clicking **Unregister**.
- Manage trusted certificates by clicking **Manage trusted certificates**.

Downloading the Lenovo XClarity Administrator server certificate

You can download a copy of the current Lenovo XClarity Administrator server certificate, in PEM format, to your local system.

Procedure

Complete the following steps to download the server certificate.

- Step 1. Log in to Lenovo XClarity Administrator.
- Step 2. From the Lenovo XClarity Administrator menu bar, click **Administration → Security** to display the Security page.
- Step 3. Click **Server Certificate** under the Certificate Management section. The Server Certificate page is displayed.
- Step 4. Click the **Download Certificate** tab.
- Step 5. Click **Download Certificate**. The Server Certificate dialog is displayed.
- Step 6. Click **Save to pem** to save the server certificate as a PEM file on your local system.

Note: DER format is not supported.

Managing trusted certificates

Lenovo XClarity Integrator provides an integrated method for managing the trusted Lenovo XClarity Administrator certificates.

Procedure

From the Lenovo XClarity Integrator Administration page, click **Manage trusted certificates** to display the **Trusted Certificates** page. From this page you can perform the following actions:

- Manually add a trusted Lenovo XClarity Administrator certificate by clicking **Add**.
- Viewed detail information for of a trusted certificate by clicking **View**.
- Delete a trusted certificate by clicking **Delete**.
- Update the trusted certificates list by clicking **Refresh**.
- Return to the Lenovo XClarity Integrator Administration page. by clicking **LXCA Registration**.

Updating Lenovo XClarity Integrator for VMware vCenter

You can update Lenovo XClarity Integrator for VMware vCenter when it is already installed in Windows-based or VMware ESXi-based environments.

Upgrading Lenovo XClarity Integrator for VMware vCenter in Windows-based environments

This section describes how to upgrade Lenovo XClarity Integrator when it is already installed.

Before you begin

Ensure that you are logged out of vSphere Web Client.

Procedure

- Step 1. Uninstall the current version of Lenovo XClarity Integrator for VMware vCenter.
 - a. From the Windows Control Panel, click **Uninstall or modify programs**.
 - b. Select Lenovo XClarity Integrator for VMware vCenter, and click **Uninstall**.
 - c. Select Lenovo XClarity Integrator Unified Service, and click **Uninstall**.

Note: All history data and configuration is kept unchanged.

- Step 2. Download and extract the Lenovo XClarity Integrator for VMware vCenter installation package files from the Lenovo XClarity Integrator for VMware website.

- Step 3. Double-click `lnvgy_sw_vmuiim_x.x_windows_64.exe` to launch the installer, where `x.x` represents the new version of the Lenovo XClarity Integrator for VMware vCenter package you are installing. For installation instructions, see Chapter 2 “Planning and installing Lenovo XClarity Integrator for VMware vCenter” on page 3.

Note: The difference with a fresh install is that you are required to input the original database password instead of setting a new password.

- Step 4. Stop the vSphere Web Client service.

- Step 5. Remove the `com.lenovo.lxci-*.*` directory from the vSphere Web Client server.

- For Windows, the path is
`C:\ProgramData\VMware\VMware vCenter Server\cfg\vsphere-client\vc-packages\vsphere-client-serenity\`
- For Linux, the path is
`/etc/vmware/vsphere-client/vc-packages/vsphere-client-serenity/`

Note: The path might vary depending on your version of vCenter.

- Step 6. Start the vSphere Web Client service.

Upgrading Lenovo XClarity Integrator for VMware vCenter in VMware ESXi-based environments

This section describes how to update Lenovo XClarity Integrator virtual appliance when it is already installed in an ESXi-based environment.

Before you begin

To perform update, first you need to get the update package. Typically, the update package contains four files:

- **.chg file.** Change history file
- **.tgz file.** Update payload
- **.txt file.** Readme file of the specific update package
- **.xml file.** Metadata about the update

Procedure

- Step 1. From the Lenovo XClarity Integrator web interface, click **Version and upgrade** in the left panel of the page.
- Step 2. Click **Import**. The Import dialog is displayed.
- Step 3. Click **Browse**, and select the files that you want to import. Ensure that you select all four files (`.txt`, `.chg`, `.xml` and `.tgz`), and then click **Open**. The selected files are listed in the Import dialog.
- Step 4. Click **Import** to import the selected files.

Notes:

- The import process might take several minutes or hours depending on the size of the update package and underlying network. Ensure that the network is connected and wait until the progress bar finishes and the dialog closes.
- If an Invalid session error is displayed, the session expired. Log out of the Lenovo XClarity Integrator web interface, log in again, and then try the import operation again. Consider placing the update package in a faster network.

Step 5. After the update package is imported, choose the update package in the table and click **Perform Update**. A prompt dialog is displayed. Read the information carefully

Notes:

- Lenovo XClarity Integrator might be restarted to complete the update process. If it is restarted, this configuration connection and all other active jobs are stopped.
- You can monitor the update progress from the virtual appliance's console in vSphere client or vCenter web client.

Step 6. When the appliance's console is opened, click **OK** and the update request will be sent to the server. The update progress message is shown on the console. If you see update finished and there are no errors on console, the update is successful..

```
-----
Manage the appliance from: https://10.240.197.36/admin

eth0    Link encap:Ethernet  HWaddr 00:0c:29:4a:d4:5e
        inet addr:10.240.197.36  Bcast:10.240.199.25  Mask:255.255.255.0
        inet6 addr: 2002:96b:c2bb:830:20c:29ff:fe34:d34e/64  Scope:Global
        inet6 addr: fe80:20c:39ff:fe3a:d9/64  Scope:Link

lxc login: starting to extract update package
extract update package finished
=====Fri Feb 10 17:32:33 CST 2017=====
start to update...
Preparing... #####
uus      warning: /etc/lighttpd.conf saved as /etc/lighttpd.conf.rpmsave
#####
Stopping usserverd
Starting usserverd
Database record of identificationCode:lnvgy_sw_lxc_i_upatch1.0.0_anyos_noarch
changed to applied successfully
update finished...
```

Step 7. Log in to the Lenovo XClarity Integrator web interface again.

Uninstalling Lenovo XClarity Integrator for VMware vCenter

This section describes how to uninstall Lenovo XClarity Integrator for VMware vCenter.

Procedure

Complete these steps to uninstall Lenovo XClarity Integrator for VMware vCenter.

- For Windows-based environments
 1. From the Windows Control Panel, click **Uninstall or modify programs**.
 2. Select Lenovo XClarity Integrator for VMware vCenter, and click **.Uninstall**.
 3. Select Lenovo XClarity Integrator Unified Service, and click **.Uninstall**.

Note: All history data and configuration is kept unchanged.

4. Stop the vSphere Web Client service.

5. Remove the `com.ibm.ivp-*.*` and `com.lenovo.lxci-*.*` directories from the `C:\ProgramData\VMware\VCenterServer\cfg\vsphere-client\vc-packages\vsphere-client-serenity\` path on the vSphere Web Client server.
 6. Start the vSphere Web Client service.
- For VMware ESXi-based environments.
 1. Log in to the Lenovo XClarity Integrator administrator web page
 2. Create a backup of the appliance, for more information, see [Backing up data](#).
 3. Deregister the plug-in from the vCenter, for more information, see [Configuring vCenter connections](#).
 4. Power off the appliance from the vSphere Web Client and delete it from the inventory.
 5. Stop the vSphere Web Client service.
 6. Remove the `com.ibm.ivp-*.*` and `com.lenovo.lxci-*.*` directories from the `/etc/vmware/vsphere-client/vc-packages/vsphere-client-serenity/` path on the vSphere Web Client server.

Note: The path might vary depending on your version of vCenter.
 7. Start the vSphere Web Client service.

Chapter 3. Managing clusters

The topics in this section describe how to use Lenovo XClarity Integrator for managing clusters.

Procedure

Complete these steps to view the Lenovo XClarity Integrator cluster management functions.

For vCenter 6.0 and earlier

1. Select a cluster from the inventory tree.
2. Click the **Manage** tab.
3. Click the **Lenovo XClarity Integrator** tab.

For vCenter 6.5 and later

1. Select a cluster from the inventory tree.
2. Click the **Configure** tab.
3. In the cluster navigation tree, expand **More** , and then click the **Lenovo XClarity Integrator** tab.

The following cluster management functions are available:

- Cluster Overview
- BMC Discovery
- Rolling System Update
- Rolling Reboot
- Predictive Failure

Working with the Cluster Overview function

The Cluster Overview function collects and analyzes cluster inventory information and health status to assist with the operation and management of hosts and clusters.

The Cluster Health section provides a snapshot view of the following aspects of a system:

- The total number of hosts, which includes:
 - IBM hosts
 - Lenovo hosts
 - Other hosts
- The overall health status of a host and any current alerts.
- A summary of usage information indicating the space used for the cluster disk, memory, and CPU.

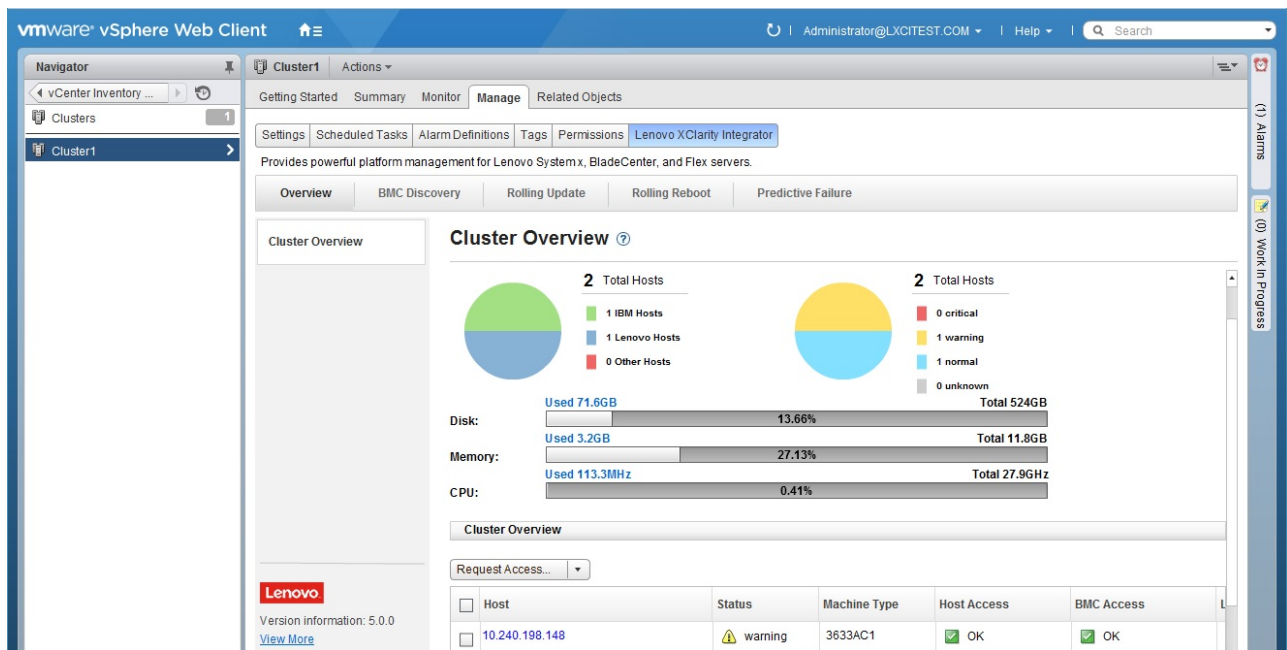


Figure 3. Cluster Overview

The Cluster Overview section provides the following host information:

- Host IP address
- Status
- Machine Type
- Host Access
- BMC Access

The **Request Access** list has the following options:

- Request host access
- Request BMC access

Requesting host access

This topic explains how to request host access.

Before you begin

Add hosts to a cluster in vSphere Web Client.

Procedure

Complete the following steps from the Cluster Overview page:

- Step 1. Click **Lenovo XClarity Integrator** → **Overview**.
- Step 2. In the Cluster Overview section, select the hosts for which you want to request host access.
- Step 3. From the **Request Access** list, select **Request Host Access**.
- Step 4. In the Request Host Access dialog box, enter the following information for the host(s) you selected, then click **OK**.
 - User Name
 - Password

If any of the hosts selected have the same account information, they are also enabled.

Requesting BMC access

This topic explains how to request BMC access from the Cluster Overview page.

Before you begin

To request BMC access, the selected hosts must have been previously discovered using the BMC Discovery page. For more information, see “Working with the BMC Discovery function” on page 21.

Procedure

Complete the following steps from the Cluster Overview page:

- Step 1. Click **Lenovo XClarity Integrator → Overview**.
- Step 2. In the Cluster Overview section, select the hosts for which you want to request BMC access.
- Step 3. From the **Request Access** list, select **Request BMC Access**. In the Request BMC Access dialog box, enter the following information for the BMCs you selected, then click **OK**.
 - User Name
 - Password

Working with the BMC Discovery function

The BMC Discovery function provides out-of-band (OOB) management for your servers using IMM2 or BMC on vSphere Web Client. This functionality can assist you with managing your host and lower the risk cluster hardware problems by monitoring hardware events using BMC or setting predictive failure policies. The BMC Discovery function discovers the BMCs for your host in the cluster.

Note: ThinkServer server are not supported.

Procedure

Complete the following steps from the BMC Discovery page:

- Step 1. Click **Lenovo XClarity Integrator → BMC Discovery**.
- Step 2. From the **select a discovery option** dual-list, select a discovery option.
- Step 3. Enter a range of IP addresses or a single IP address.
- Step 4. Click **Add** to add the discovery items to the Discovery Item dual-list. If there are any discovery items added, that you do not want to discover, you can select **Delete** to remove them from the Discovery Item list.
- Step 5. After adding all of the discovery items, click **Discover Now** to start the discovery process.

Note: You cannot stop the discovery operation after it has started.

When the discovery operation has finished, the discovered BMCs are listed in the Discovered BMC table.

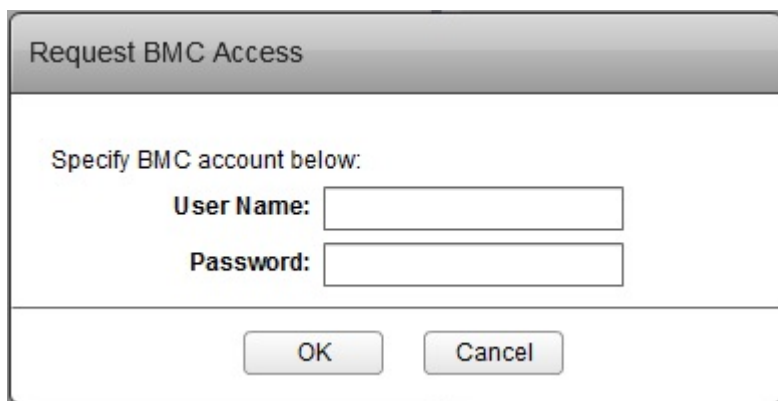
Requesting BMC access using the BMC Discovery function

This topic explains how to request BMC access from the BMC Discovery page.

Procedure

Complete the following steps from the **Lenovo XClarity Integrator → BMC Discovery** page:

- Step 1. From the Discovery BMC table, select one or multiple BMC IP addresses that will use the same credentials for BMC access.



The image shows a dialog box titled "Request BMC Access". Inside the dialog, there is a label "Specify BMC account below:" followed by two input fields: "User Name:" and "Password:". At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

Figure 4. Requesting BMC access on the BMC Discovery page

- Step 2. In the Request BMC Access dialog box, enter the BMC credentials and then click **OK**. If the user name and password are valid, the BMC Access displays a status of OK.

If any BMC fail the authentication process, the following warning message is displayed: One or more BMCs fail the authentication with the given user name and password; close this window to see the result.

Working with the Rolling System Update function

Rolling System Update (RSU) provides a nondisruptive approach to firmware updates. RSU fully manages firmware by orchestrating "rolling" updates, leveraging dynamic virtual machine movement within a defined VMware cluster, completing the whole update process, including ESXi host reboot automatically, without any interruption to application services running on the host.

Before you begin

Notes:

- ThinkServer servers are not supported.
- Firmware downloads for IBM servers are not supported.
- Ensure that VMware vCenter DRS is enabled and running in fully automated mode.

Configuring the Rolling System Update preferences

The Preferences page allows you to configure the update repository for rolling updates.

Specify the update repository location

You can configure the update repository where the Rolling System Update function checks for firmware updates when you create a task of type **Update without Policy**.

Procedure

- Step 1. Click **Lenovo XClarity Integrator → Rolling System Update**.
- Step 2. Click the **Preferences** link on the Rolling System Update page.
- Step 3. On the Preferences page, specify the firmware repository location.

By default, Lenovo XClarity Integrator uses the local directory `<install_dir>\Lenovo\Lenovo XClarity Integrator for VMware vCenter\webroot\bin\data\repository` as the firmware repository.

If you are using a firmware repository on the network, enter the network address of the repository using the format `\\<IP_address>\<repository_path>`, and enter the credential if authentication required.

Notes:

- For legacy IBM servers, you can only use a Linux repository.
- For repository setup on a host using IPv6 addresses, you must specify the network address using the fully qualified domain name (FQDN).

If you have downloaded the update packages manually, you can copy the packages to the repository that is specified above. If the update packages are not available, you can choose to download the update packages from the Lenovo website automatically by performing the following steps:

1. Select **Download updates from Lenovo website**.
2. Configure your Internet settings.
3. Choose the frequency for downloading update packages automatically, and then save the changes. If you want to download update packages immediately, click **Check Now**.

Step 4. Click **Save** to save the settings.

If the settings save successfully, nothing happens.

Note: Click the **Check Now** link to check for the latest firmware from the Lenovo website.

Step 5. Click the **Go Back** link to return to the Rolling System Update Task Manager page.

Creating a Rolling System Update task

You can create an update task and schedule a firmware update at a planned time.

About this task

You can update host firmware with or without a policy.

- **Update with a policy**

You can create firmware-compliance policies and then apply the policies to the managed devices to ensure that firmware on those devices remains compliant. The following prerequisites are necessary.

- Servers running ESXi must be added to and managed by Lenovo XClarity Administrator.
- Firmware-compliance policies must be created in Lenovo XClarity Administrator.
- Firmware are downloaded in Lenovo XClarity Administrator
- Lenovo XClarity Administrator must be registered in Lenovo XClarity Integrator.

Note: If you registered Lenovo XClarity Administrator in Lenovo XClarity Integrator, and later added a new ESXi server to the Lenovo XClarity Administrator, when you create the update task, you might not be able to see the host. If it happens, wait and retry 1 hour later.

- **Update without a policy**

If Lenovo XClarity Administrator is not available in your environment, you must select individual firmware updates or UXSP for each server. The following prerequisites are necessary:

- The server must have been up and running for a minimum of 20 minutes before creating a Rolling System Update without a policy task.
- The server must be running Lenovo customized ESXi image, version 5.0 and later (see Supported ESXi version).

- Host access must be granted (see Working with the Cluster Overview function).
- Update repository must be configured, and firmware must be downloaded (see Configuring the Rolling System Update preferences).

Notes:

- Update without a policy task does not support firmware updates for option cards. Instead, create an update with a policy task to update option card firmware.
- The Lenovo XClarity Integrator virtual appliance does not support firmware updates for IBM servers that are running in an IPv6 environment.

Procedure

Complete the following steps to create a Rolling System Update task.

Step 1. On Task Manager page, click **Create** to launch the create task wizard.

Step 2. Specify a task name, select the task type (**Update with Policy** or **Update without Policy**), and click **Next**.

Note: Ensure that all prerequisites are met for each task type.

Step 3. Select firmware updates, and click **Next**

If **Update with Policy** is selected, select an available firmware policy from the **Policy** drop-down list for each host. You can view firmware-version defined in the policy and customize firmware selection.

If **Update without Policy** is selected, select the specific firmware for each host that you want to update.

Step 4. Select one or more of the following update options, and click **Next**.

- **Update Parallelization.** Specifies how many hosts to update concurrently.
- **Perform VM Evacuation.** Specifies whether to migrate virtual machines before updating the host.
- **Schedule.** Schedules the task to run at a planned time.

Step 5. View task summary, and click **Save**.

Managing Rolling System Update tasks

You can use the Rolling System Update function to manage rolling update tasks.

About this task

The Rolling System Update function provides a task manager for managing rolling-update tasks. A task contains all of the information and options for a rolling update.

You can perform the following tasks using the task manager:

- Create a Rolling System Update task. Each cluster can have only one active task when the task type is **Update Only**, **Update and Reboot**, or **Reboot Only**.
- Edit a Rolling System Update task that has not started.
- Copy a Rolling System Update task that has completed.
- Remove a Rolling System Update task from task list.
- Cancel a Rolling System Update task that is running.
- View Rolling System Update tasks status.

Procedure

Step 1. Click **Lenovo XClarity Integrator → Rolling System Update**.

Step 2. From the navigation pane, click **Task Manager**. The Task Manager page is displayed.

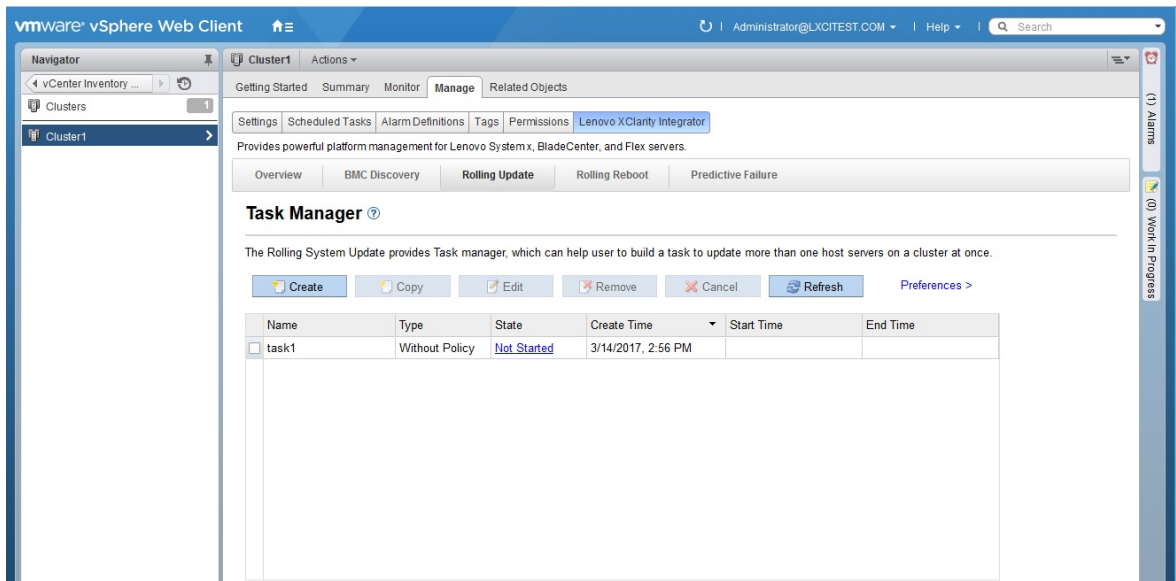


Figure 5. Task Manager page

Step 3. Perform one of the following steps:

- Create a task
- Copy a task
- Edit a task
- Remove a task
- Cancel a task
- Refresh the task list from the page

If you click **Create** or **Edit**, you can use the Create/Edit Task wizard to create or edit a task.

Table 5. Rolling System Update task status

Target	Status	Description
Rolling Update Task	Not Started	The task has not started.
	Running	The task is running.
	Canceled	The task is canceled.
	Failed	Downloading firmware package failed.
	Finished	The task has completed.
Host	Not Started	The update for the host has not started.
	Migrating	The host is entering maintenance mode.
	Maintenance	The host is in maintenance mode.
	Updating	The firmware of the host is updating.
	Reboot	The host is rebooting after updating completes.
	Exit Maintenance	The host is exiting maintenance mode.
	Success	The firmware update succeeded.
	Failed	The causes of host failure: <ul style="list-style-type: none"> • Cannot get the update package. • Cannot enter maintenance mode. • Cannot update the firmware. • Cannot reboot the host. • Cannot exit maintenance mode.
Firmware	Not Started	The firmware update has not started.
	Running	The firmware update is running.
	Success	The firmware update succeeded.
	Failed	The firmware update failed.

Working with the Rolling System Reboot function

The Rolling System Reboot (RSR) function reboots a server while a system continues running without interrupting any running application services by dynamic VM migration.

Before you begin

The following prerequisites are necessary for using the Rolling System Reboot function:

VMware vCenter Enterprise or Enterprise Plus Edition with DRS:
Is enabled and running in fully automated mode.

Host access has been granted:

For more information, see the “Working with the Cluster Overview function” on page 19.

Managing Rolling System Reboot tasks

The Rolling System Reboot (RSR) Task Manager can assist you with creating and managing rolling reboot tasks. An RSR task contains all of the information and options required for a rolling reboot.

Procedure

- Step 1. Click **Lenovo XClarity Integrator → Rolling System Reboot**.
- Step 2. In the navigation pane, click **Task Manager**. The Task Manager page is displayed.

The Task Manager table provides the following detailed information about RSR tasks:

- Task Name
- Status
- Progress
- Start Time
- End Time
- Task Type

- Step 3. Use the Task Manager to perform the following task functions.

Table 6. Rolling System Reboot task functions

Task function	Description
Create	Creates a new RSR task.
Create Like	Creates a new RSR task from an existing RSR task.
Edit	Allows you to edit an RSR task that has not been started.
Delete	Removes an RSR task from the task list.
Cancel	Stops a running RSR task.
Rerun	Allows you to rerun a failed RSR task.

Creating an RSR task

Use the **Create** option to create a new Rolling System Reboot (RSR) task. Each cluster can have only one active RSR task if the task type is *Update Only*, *Update and Reboot*, or *Reboot Only*.

Procedure

Complete the following steps from the **Lenovo XClarity Integrator → Rolling System Reboot → Task Manager** page.

- Step 1. Click **Create** to open the Rolling System Reboot wizard. The **Create** button is enabled only if a task has a status of Finished, Canceled, or Failed in the task list. The Name and Type page is displayed.
- Step 2. Enter a name for the task you are creating in the **Task Name** field and select the hosts you want to reboot.
- Step 3. Click **Next**. The reboot options and schedules screen is displayed.

Reboot Parallelization

The default is 1.

Specifies the number of hosts that can be rebooted concurrently.

Rebooting multiple hosts concurrently requires more system resources.

You should carefully set the value according to the current available system resources; such as CPU and memory on the vCenter Server.

Schedule

Specifies a time to initiate the task.

- Step 4. Click **Next**. The Summary page is displayed.
- Step 5. Click **Finish** to save the task. RSR initiates the task according to the schedule.

Editing a not-started RSR task

Use the **Edit** Rolling System Reboot (RSR) option to make changes to a task that has not started and has a task type of *Reboot Only*. Only editing a not-started task is supported.

Procedure

Complete the following steps from the **Lenovo XClarity Integrator → Rolling System Reboot → Task Manager** page.

- Step 1. Select a not-started RSR task in the list and click **Edit**. The Rolling System Reboot wizard opens. The machine type and hosts are listed.
- Step 2. Edit the task and then click **Finish** to save changes.

Deleting an RSR task

Use the **Delete** option to remove a Rolling System Reboot (RSR) task from the task list if it is not currently running. All RSR tasks that are not currently running can be deleted.

Procedure

Complete the following steps from the **Lenovo XClarity Integrator → Rolling System Reboot → Task Manager** page.

- Step 1. Select one or more RSR tasks, that are not currently running, from the list.
- Step 2. Click **Delete**. The selected tasks are removed from the task list.

Canceling a running RSR task

Use the **Cancel** option to cancel a Rolling System Reboot (RSR) task while it is running. When a task is canceled, the task status changes to *Canceling*.

Procedure

Complete the following steps from the **Lenovo XClarity Integrator → Rolling System Reboot → Task Manager** page.

- Step 1. Select a running RSR task from the list.
- Step 2. Click **Cancel**. RSR completes updating the host that has started and only cancels the others. This task may take several minutes to complete.

Rerunning a failed RSR task

Use the **Rerun** option to restart a Rolling System Reboot (RSR) task that has failed or if it has been canceled. The **Rerun** button is only available in these two situations.

Procedure

From the **Lenovo XClarity Integrator → Rolling System Reboot → Task Manager** page, click **Rerun** in the status column. RSR restarts this task and shows its current status.

Cloning a completed RSR task

Use the **Create Like...** option to clone a new Rolling System Reboot task using a task that has a status of finished, failed, or canceled.

Procedure

Complete the following steps from the **Lenovo XClarity Integrator → Rolling System Reboot → Task Manager** page.

- Step 1. Select a finished, failed or canceled RSR task from the list.
- Step 2. Click **Create Like...** to open the Rolling System Reboot wizard.

Step 3. Edit the original selection and click **Finish** to save the new task.

Viewing the RSR task report

The Rolling System Reboot Report view provides detailed task status information.

Procedure

From the **Lenovo XClarity Integrator → Rolling System Reboot → Task Manager** page., click a status link in the **Status** column to open the Rolling System Reboot Report view. The table below lists the status for tasks and hosts. For detailed information about the Rolling System Reboot tasks, refer to “Working with the Rolling System Reboot function” on page 26.

Table 7. Rolling System Reboot task status

Target	Status	Description
Rolling Reboot Task	Not Started	The task has not started.
	Running	The task is running.
	Canceled	The task is canceled.
	Failed	Causes of task failure: <ul style="list-style-type: none"> • Downloading firmware package failed. • Rebooting ESXi host failed. • VM migration failed. • Firmware update failed
	Finished	The task has completed.
Host	Not Started	The update for the host has not started.
	Migrating	The host is entering maintenance mode.
	Maintenance	The host is in maintenance mode.
	Reboot	The host is rebooting after updating completes.
	Exit Maintenance	The host is exiting maintenance mode.
	Success	The firmware update succeeded.
	Failed	The causes of host failure: <ul style="list-style-type: none"> • Cannot enter maintenance mode. • Cannot reboot the host. • Cannot exit maintenance mode.

Working with Predictive Failure Management

The topics in this section describe how to use Predictive Failure Management on vSphere Web Client to protect your running workload. Use the Policy and Rules page to set management policies for a server based on a hardware predictive failure alert. Based on a defined policy, Lenovo XClarity Integrator for VMware vCenter evacuates VM from a server to other hosts in the cluster in response to predictive failure alerts that have occurred. Use the Predictive Failures page to view predictive failure alerts from the server and the triggered policy history.

Before you begin

Note: ThinkServer servers are not supported.

Before using Predictive Failure Management, verify the following prerequisites are met:

- Discover the BMCs and request access to the BMCs before setting the predictive failure management policy.
- Proper configuration of the network management policy on the VMware vCenter Server server is required to enable TCP on the https port that you selected when installing Lenovo XClarity Integrator. The default port is 9500. Lenovo XClarity Integrator for VMware vCenter listens on this port for incoming indications.
- A host must be put in a properly configured cluster. A host with vMotion enabled must be available within this cluster. Lenovo XClarity Integrator for VMware vCenter evacuates VM to other hosts in the cluster, and then puts the host in maintenance mode.

Setting a new policy

A policy defines the hardware event categories you want to monitor and the corresponding action if an event occurs. You can set an RAS policy for each of the supported servers in a cluster.

Procedure

Complete the following steps from the **Lenovo XClarity Integrator** → **Predictive Failure** → **Policy and rules** page.

Step 1. Click **Set policy**. The Set Policy dialog box is displayed.

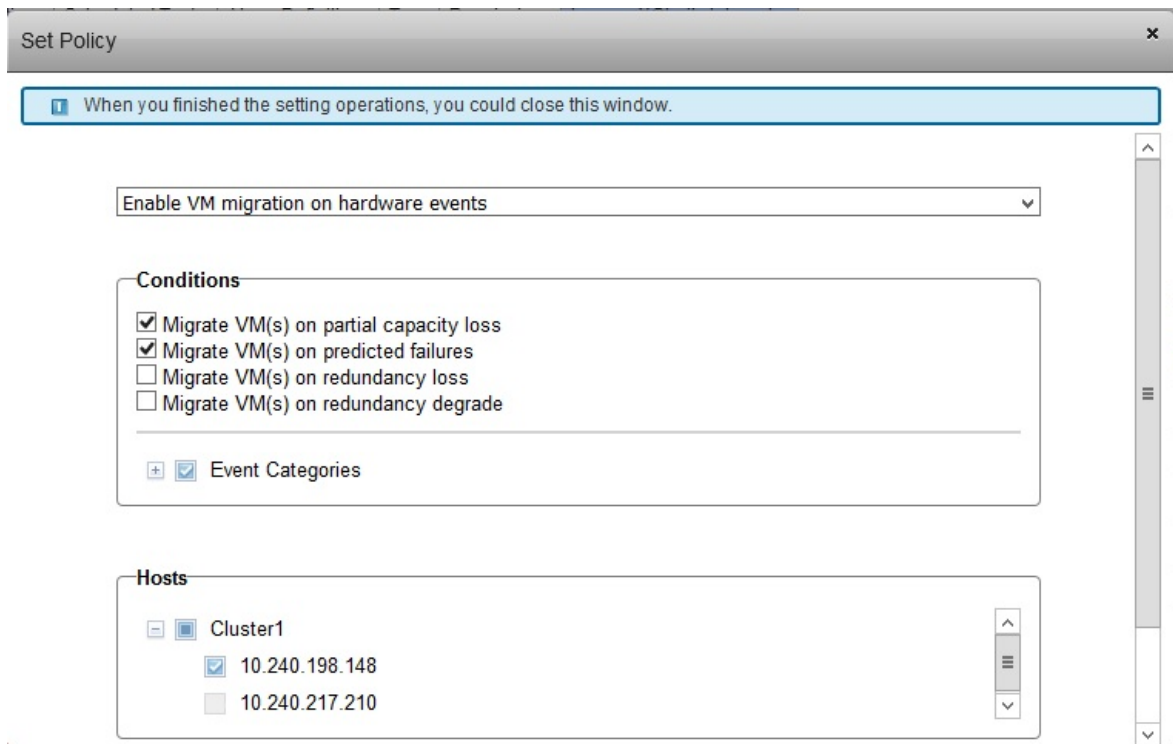


Figure 6. Set Policy

Note: The Conditions and Event Categories might be different for each server, depending on the server's firmware version.

- Step 2. To create a new policy, select **Enable VM migration on hardware events** from the list.
- Step 3. Select your preferred Conditions and Hosts and click **OK**.
- Step 4. To disable a policy, select **Disable VM migration on hardware events** from the list.
- Step 5. Select the hosts, and click **OK**.
- Step 6. Close the Set Policy dialog by clicking the close button at the top right.

The Conditions will show as one or more of the following:

- Migrate VM(s) on partial capacity loss
- Migrate VM(s) on predicted failures
- Migrate VM(s) on redundancy loss
- Migrate VM(s) on redundancy degrade.

You can select one or more of the supported condition actions.

Event categories

This topic describes predictive failure alert event categories as shown on the Set Policy page.

The following table contains the predictive failure alert event categories used on the Set Policy page.

Table 8. Predictive Failure Alert Event categories

PFA Event	Description
Processor subsystem	Processor subsystem includes the CPU, its internal circuits like cache, the bus controller, and external interface.
Memory subsystem	Memory subsystem includes the memory controller, memory buffer, memory bus interface, memory card, and DIMM.
I/O subsystem	I/O subsystem includes: I/O Hub, I/O bridge, I/O bus, I/O processor, I/O adapters for various I/O protocols, such as PCI and InfiniBand.
Power	Power includes the power supply and power control hardware.
Cooling	All thermal-related events.
Fans	Includes the fan and blower.
Storage	Includes the storage enclosure, storage controller, raid controller, and media (disk, flash).
Platform firmware	Platform firmware includes BMC and uEFI.
Software	Operating system software and application software.
External environment	All events of an external-related environment including: AC power source, room ambient temperature, and user error.

Condition Action: The Virtual Machine Migration action evacuates all of the VM from the server and puts the server in maintenance mode.

Viewing predictive failure alert events and the Action History table

Lenovo XClarity Integrator for VMware vCenter with vSphere Client monitors predictive failure alerts (PFAs) from an BMC. All predictive failure events are listed in the Event Log table. When the conditions of a rule are met, the defined action of the rule is launched on the managed endpoint. All of the triggered rules and action results are listed in the Action History table.

Procedure

From the Predictive Failure page, click **Lenovo XClarity Integrator → Predictive Failure**.

Predictive Failures ?

View Predictive Failure event log and action history.

Event Log

Host	Message ID	Severity	Time Stamp	Description
10.240.197.135	PLAT0038	Warning	10:37:26 03/04/2015	processor 1 is operati
10.240.197.135	PLAT0039	Warning	10:37:37 03/04/2015	The Processor proces
10.240.197.135	PLAT0188	Warning	06:05:25 03/20/2015	The System IBM Flex S
10.240.197.135	PLAT0188	Warning	06:32:46 03/20/2015	The System IBM Flex S
10.240.197.135	PLAT0038	Warning	02:44:24 03/27/2015	processor 1 is operati
10.240.197.135	PLAT0039	Warning	02:44:44 03/27/2015	The Processor proces

Action History

Host	Message ID	Status	Start Time	End Time
10.240.197.135	PLAT0188	Success Detail...	17:01:28 03/20/2015	17:02:01 03/20/2015
10.240.197.135	PLAT0188	Success Detail...	17:30:00 03/20/2015	17:30:36 03/20/2015

Figure 7. Viewing Predictive Failures

Managing hardware events

Hardware events and alarms are integrated into vCenter. Lenovo XClarity Integrator for VMware vCenter loads events from out-of-band (OOB) BMC nodes into the vCenter server, allowing administrators to view and manage them from vSphere Web Client. This provides administrators with a single, heterogeneous view of all host system events within the managed environment.

Procedure

Complete the following prerequisite steps to assist you with managing hardware events.

- Step 1. On the Cluster overview page, find the BMCs and request BMC access to ensure that the vCenter server has an out-of-band (OOB) network connection with the BMC managed ESXi servers.
- Step 2. Enable TCP on the https port that you selected for Lenovo XClarity Integrator for VMware vCenter. The default is 9500 when you install Lenovo XClarity Integrator for VMware. Lenovo XClarity Integrator for VMware vCenter listens on this port for incoming indications.

What to do next

Select the **Events** tab in vSphere Web Client to view Lenovo hardware events.

Alarms

When a Lenovo event is delivered to VMware vCenter Server, the overall host status changes based on the corresponding event severity. An alarm is triggered when the changes to the host status meet the criteria assigned by the administrator.

When an alarm occurs, an icon is displayed to the right of the vSphere Web Client window along the toolbar above the vSphere Web Client tabs or on the host icon in the inventory tree.

To view a list of all alarms contained in the **Alarms** tab, click the alarms icon.

Chapter 4. Managing servers

Lenovo XClarity Integrator provides platform management for System x, BladeCenter, and Flex servers. The topics in this section describe how to use Lenovo XClarity Integrator for managing servers.

Verify that these prerequisites have been completed:

- The VMware vCenter Server server has an out-of-band (OOB) network connection with the BMC of the managed ESXi servers.
- You can locate the BMC and have requested access for the BMCs on the Cluster Overview page.
- ThinkServer servers must be managed by Lenovo XClarity Administrator, and Lenovo XClarity Administrator must be registered with Lenovo XClarity Integrator (see “Configuring Lenovo XClarity Administrator” on page 12).

Procedure

Complete these steps to view the Lenovo XClarity Integrator server management functions.

For vCenter 6.0 and earlier

1. Select a host from the inventory tree.
2. Click the **Manage** tab.
3. Click the **Lenovo XClarity Integrator** tab.

For vCenter 6.5 and later

1. Select a host from the inventory tree.
2. Click the **Configure** tab.
3. In the cluster navigation tree, expand **More** , and then click the **Lenovo XClarity Integrator** tab.

The following management functions are available to use for a single Lenovo server:

- System
- Alerts and Events
- Firmware Updates
- Power and Cooling
- Configuration

System function

The System function collects and analyzes system inventory information and health status to aid in diagnosing system problems.

Information about the following aspects of a system are collected:

- Basic system information
- System event logs
- Hardware inventory
- Vital product data and firmware information

System provides an organized view that you can use to perform the following functions:

- View the system information
- Launch system diagnostic collection
- View the categorized system inventory results

Chassis Map function

If a server is also managed by Lenovo XClarity Administrator, and you have already registered Lenovo XClarity Administrator to this vCenter, you can use the Chassis Map function.

For information about using the Chassis Map function, refer to the “Working with the Chassis Map function” on page 48 in “Working with the Lenovo Infrastructure view” on page 47.

System Overview

The System Overview page provides a snapshot view of the current system. You can view basic system information such as the machine type, operating system, version, BMC firmware version, and uEFI firmware version. You can also view the System Hardware Event Summary and System Inventory Collection History.

The screenshot shows the 'System Overview' page in the Lenovo XClarity Integrator. The interface includes a top navigation bar with 'Manage' selected, and a sub-navigation bar with 'Lenovo XClarity Integrator' highlighted. The main content area is divided into a left sidebar with navigation options like 'System Overview', 'Map View', and 'Installed Applications', and a main panel titled 'System Overview'. The main panel contains a 'System Information' section with a table of details: Serial Number (KVX0072), Operating System (VMware ESXi, 5.1.0 build-1483097), IMM Firmware (9.0(TCO051E-9.00)), Total CPU (1 * 10 Cores, 2.25 Ghz), and uEFI Firmware (1.0(TCE103DUS-1.00)). Below this is a 'System Status' section showing a total of 500 events, with a breakdown: 14 Critical (red), 27 Warning (yellow), and 459 Information (blue). A 'Collect' button is located at the bottom of the page, with the text 'Click Collect to generate the categorized diagnostic data.' and 'Get the latest system diagnostic data.'

Figure 8. System Overview page

Launching the System Diagnostic Collection function

This topic describes how to launch the System Diagnostic Collection function to get an up-to-date and detailed system analysis.

Procedure

Step 1. Click **Collect** located in the bottom section of the System Overview page. This collect operation can take up to five minutes to complete.

Important: During the collection process, the Installed Applications page, Network Settings page, Hardware Inventory page, and Firmware/VPD page are blocked. To avoid possibly disrupting the process, do not navigate to any other host.

When the collection process finishes, the last collection time is displayed on the System Overview page. The hyperlink **Download log** is displayed after the collection time.

Step 2. Click **Download log** to download the latest system diagnostic data. The latest system diagnostic data can be viewed from each of the categorized pages. See “Viewing the categorized analysis results for vSphere Web Client” on page 37.

Viewing the categorized analysis results for vSphere Web Client

After you launch a full system diagnostic collection, you can view the latest categorized analysis results.

The categorized analysis results are contained in tables located on the pages listed below. On the System Overview page, select a page to view the results:

- Installed Applications
- Network Settings
- Hardware Inventory
- Firmware/VPD

Working with Alerts and Events

The Alerts and Events function collects system health information and displays hardware events and Power Throttling alerts.

The screenshot shows the vSphere Web Client interface for a host at IP 10.240.197.202. The 'Alerts and Events' tab is selected, showing a summary of 14 Critical, 27 Warning, and 459 Information alerts. A table of alerts is displayed below, with columns for Message ID, Severity, Time Stamp, and Description. The table contains six rows of information messages.

Message ID	Severity	Time Stamp	Description
IMM0022	Information	2001-05-13 16:56:24	ENET[CIM:ep1] DHCP-HSTN=IMM2-ffffffff, DN=, IP@=10.240.197.32, SN=255.255.252.0, GW@=10.240.196.1, DNS1@=10.240.196.10 .
IMM0022	Information	2001-05-13 17:06:32	ENET[CIM:ep1] DHCP-HSTN=IMM2-ffffffff, DN=, IP@=10.240.197.32, SN=255.255.252.0, GW@=10.240.196.1, DNS1@=10.240.196.10 .
IMM0022	Information	2001-05-13 17:16:40	ENET[CIM:ep1] DHCP-HSTN=IMM2-ffffffff, DN=, IP@=10.240.197.32, SN=255.255.252.0, GW@=10.240.196.1, DNS1@=10.240.196.10 .
IMM0022	Information	2001-05-13 17:26:37	ENET[CIM:ep1] DHCP-HSTN=IMM2-ffffffff, DN=, IP@=10.240.197.32, SN=255.255.252.0, GW@=10.240.196.1, DNS1@=10.240.196.10 .
IMM0022	Information	2001-05-13 17:36:47	ENET[CIM:ep1] DHCP-HSTN=IMM2-ffffffff, DN=, IP@=10.240.197.32, SN=255.255.252.0, GW@=10.240.196.1, DNS1@=10.240.196.10 .
IMM0022	Information	2001-05-13 17:46:51	ENET[CIM:ep1] DHCP-HSTN=IMM2-ffffffff, DN=, IP@=10.240.197.32, SN=255.255.252.0, GW@=10.240.196.1, DNS1@=10.240.196.10 .

Figure 9. Viewing Alerts and Events

The System Health table contains alerts and events that can be sorted by clicking the table columns. The table can also be filtered by choosing a severity level from the **Filter by** menu. To collect the latest alerts and events from the host, click **Refresh**.

Working with Firmware Updates

You can use the Firmware Updates function to obtain and deploy UpdateXpress System Pack (UXSP) or individual firmware updates to the current ESXi server that you are operating against.

Updating a single ESXi server is the same with Rolling System Update except that only the current ESXi is shown and can be selected when creating an update task. For more information about configuring update preferences and managing update tasks, see “Working with the Rolling System Update function” on page 22.

Working with Power and Cooling

The topics in this section describe Power Metric options that provide you with the ability to manage power usage with the Power Capping and Power Throttling features.

Note: Only rack servers are supported for this function.

Power Metric page

The Power Metric page has options for viewing the power usage history, thermal history, and fan summary. If a host is being monitored, the current power usage, thermal history, fan history, and the time of the monitor reading is displayed. This information is automatically refreshed every five minutes. This information is helpful for determining whether to reassign the workload.

After enabling power metric, you can set the value for each power metric function.

Attribute	Value	Actions
Host Monitoring	Enabled	
Poll Time	2014-09-25 01:56:33	
Power Input	154 watts	
Thermal Input	26 °C	
Fan Input		
Power Capping	Enabled	<input type="button" value="Disable"/>
	440 watts Edit	
Power Throttling	Enabled	<input type="button" value="Disable"/>
Warning Throttling	480 watts Edit	
Critical Throttling	516 watts Edit	

Figure 10. Power Metric page

Set Power Capping on vSphere Web Client

You can use the Power Capping feature to allocate less power and cooling to a system if the firmware supports Power Capping and it is enabled. This feature can help lower datacenter infrastructure costs and potentially allow more servers to be put into an existing infrastructure. By setting a Power Capping value, you can ensure that system power consumption stays at or below the value defined by the setting. The Power Capping value is the value you set for a rack or Blade server that will be capped by the firmware. The Power Capping value is persistent across power cycles for both rack and blade servers.

If the server supports Power Capping, XClarity Integrator retrieves the minimum and maximum Power Capping values from the server and displays it as a range. In the following figure, 437 is the minimum value, and 516 is the maximum value.

The screenshot shows the vSphere Web Client interface with the 'Power and Cooling' tab selected. The 'General' section is active, displaying power metrics. The 'Power Capping' section is enabled, and the value is set to 440 watts. The range is (437 - 516). The 'Power Throttling' section is also enabled, with warning and critical throttling values set to 480 watts and 516 watts, respectively.

Attribute	Value	Actions
Host Monitoring	Enabled	
Poll Time	2014-09-25 01:56:33	
Power Input	154 watts	
Thermal Input	26 °C	
Fan Input		
Power Capping	Enabled	Disable
	440 (437 - 516) Save Cancel	
Power Throttling	Enabled	Disable
Warning Throttling	480 watts Edit	
Critical Throttling	516 watts Edit	

Figure 11. Setting Power Capping on vSphere Web Client

Set Power Throttling on vSphere Web Client

You can use the Power Throttling feature on vSphere Web Client to receive alerts when power consumption exceeds a set value. You can set two different Power Throttling values, one for a warning and one for a critical alert. When the power consumption exceeds a defined Power Throttling value, LXCI receives a throttling event, which is then displayed in the Power Throttling Indications table.

Click **Enable** to enable the Power Throttling feature before setting a value for Watts.

The screenshot shows the vSphere Web Client interface with the 'Power and Cooling' tab selected. The 'General' section is active, displaying power metrics. The 'Power Throttling' section is enabled, and the warning and critical throttling values are set to 480 watts and 516 watts, respectively. The 'Power Capping' section is also enabled, and the value is set to 440 watts. The range is (437 - 516).

Attribute	Value	Actions
Host Monitoring	Enabled	
Poll Time	2014-09-25 01:56:33	
Power Input	154 watts	
Thermal Input	26 °C	
Fan Input		
Power Capping	Enabled	Disable
	440 watts Edit	
Power Throttling	Enabled	Disable
Warning Throttling	480 (437 - 516) Save Cancel	
Critical Throttling	516 (437 - 516) Save Cancel	

Figure 12. Setting Power Throttling on vSphere Web Client

Viewing the Power Usage History, Thermal Usage History, and Fan Usage History for vSphere Web Client

You can customize the duration and interval for the Power Usage History, Thermal History, and Fan History charts. These charts are displayed in the right pane.

Procedure

Step 1. Click the **Power and Cooling** tab. For each of the history charts, you can:

- Use the mouse wheel to zoom in and out of the charts, and use the drag and drop feature to move charts.
- Click **Set Duration** to change the collection of history data to a different time interval.

Step 2. Select one of the following options from the left pane.

General

On this page, you can set the value of each power metric attribute after enabling power monitoring on a host.

Power History

The Power Usage History chart provides power consumption readings for a 24-hour period.

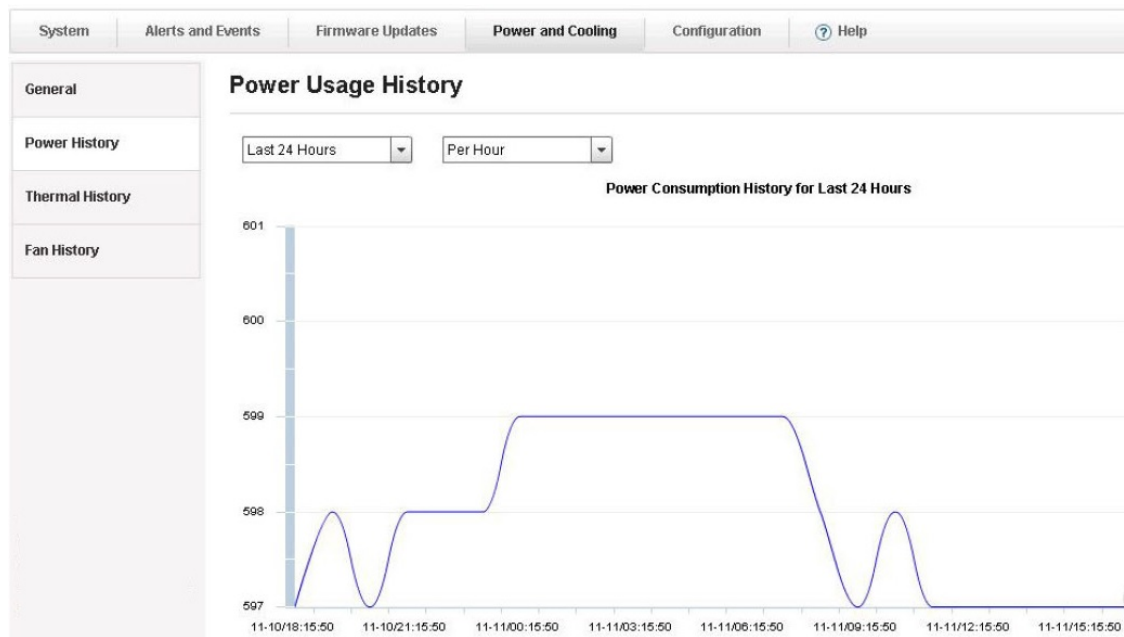


Figure 13. Power Usage History for vSphere Web Client

Thermal History

The Thermal Usage History chart provides temperature readings for a 24-hour period.

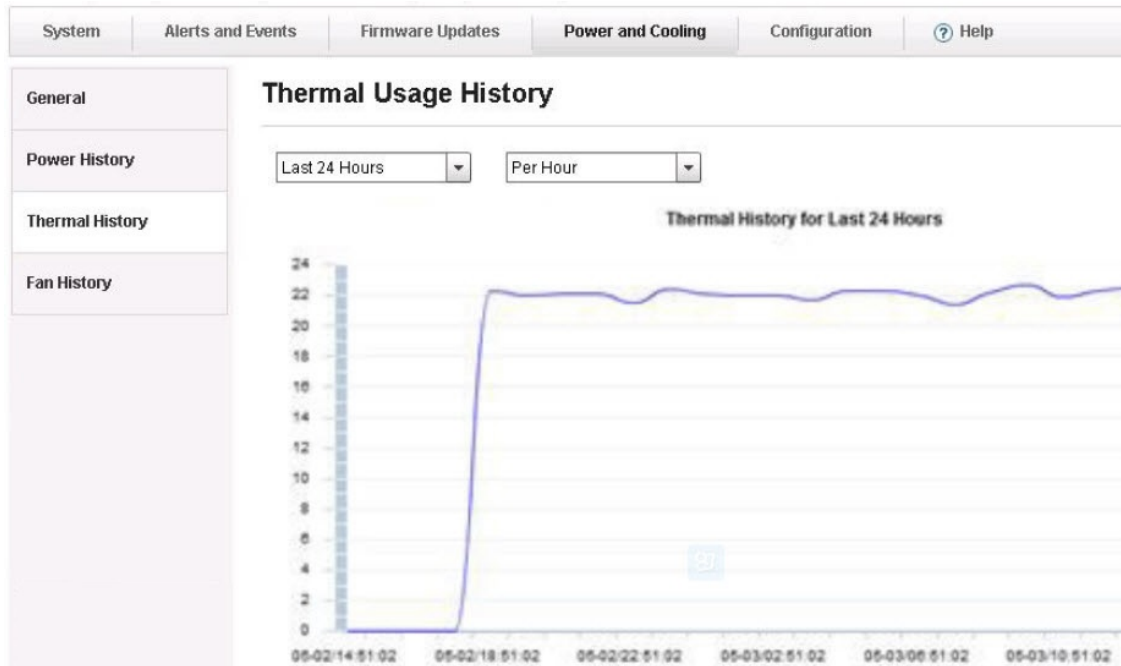


Figure 14. Thermal Usage History for vSphere Web Client

Fan History

The Fan Usage History chart provides fan usage readings for a 24-hour period.

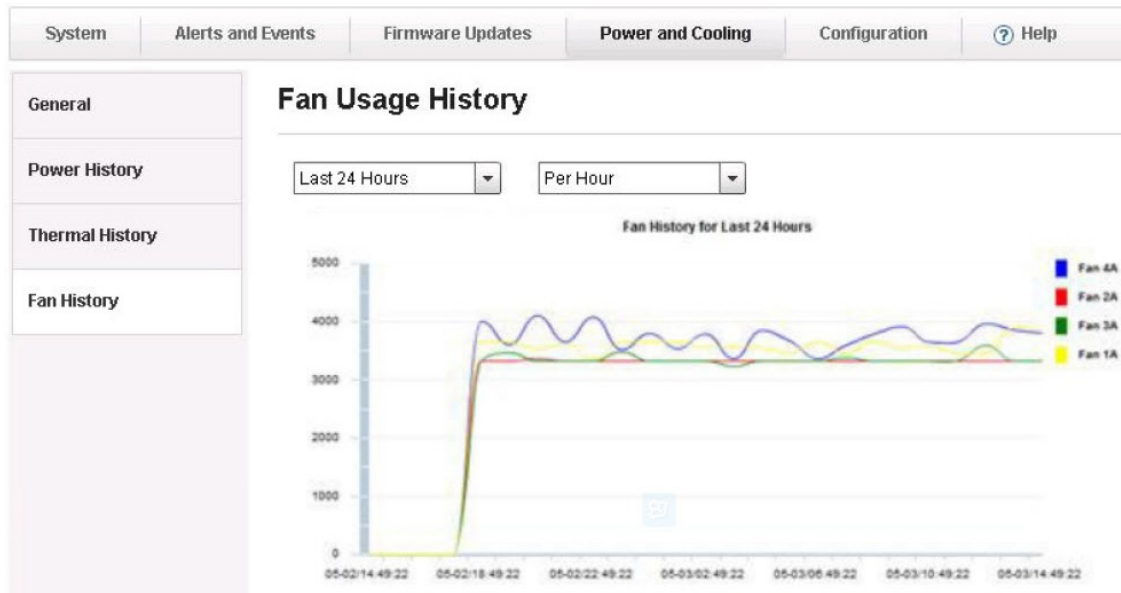


Figure 15. Fan Usage History for vSphere Web Client

Working with configuration

The Configuration page manages the system settings for a host. If the server is managed by Lenovo XClarity Administrator, and Lenovo XClarity Administrator is registered to this Lenovo XClarity Integrator, you can only deploy a configuration pattern to the host; otherwise you can only configure individual settings for BMC, uEFI, and boot order for the host.

Deploying a configuration pattern on a server

After you have registered the Lenovo XClarity Administrator in Lenovo XClarity Integrator, you can deploy or deactivate a configuration pattern on each supported server that is managed by a Lenovo XClarity Administrator. A server pattern represents a pre-OS server configuration, including local storage configuration, I/O adapter configuration, boot settings, and other BMC and uEFI firmware settings. A server pattern is used as an overall pattern to quickly configure multiple servers simultaneously.

About this task

If Lenovo XClarity Administrator does not have any predefined patterns, you can create server patterns by clicking the link to open Lenovo XClarity Administrator. This task is performed on the Configuration Pattern page.

Procedure

Step 1. Click **Lenovo XClarity Integrator** → **Configuration** → **Configuration Pattern**. The Configuration Pattern page is displayed.

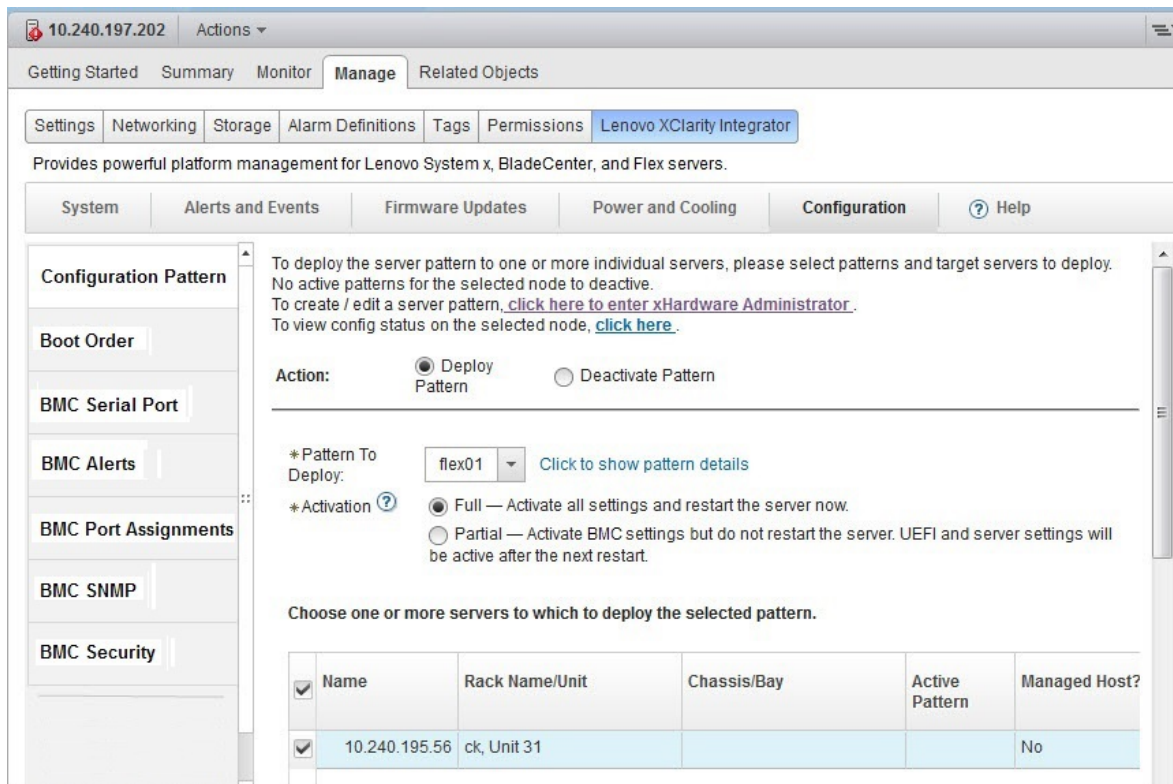


Figure 16. Deploy Pattern

- Step 2. Select one of the following actions:
- **Deploy pattern.** Deploys the selected pattern to your servers.
 - **Deactivate pattern.** Deactivates the pattern from your servers.
- Step 3. Select a predefined pattern and apply it to your server.

Viewing advanced system settings

You can view the advanced system settings of your Lenovo System x, BladeCenter, or Flex server using the following procedure. Some configuration settings, such as uEFI settings, are only supported on a certain

machine type or firmware version. If a host does not support a setting, it is disabled to indicate that it is not supported.

About this task

The following steps illustrate how to view two different advanced system settings: BMC Port Assignments and Boot Order.

Configuration settings are listed in the left pane. A date stamp with the last update date and time is displayed to the right of **Refresh** button. Click **Refresh** to get the latest setting values.

Procedure

- Click **BMC Port Assignments** to view the current BMC port assignments.

The screenshot shows a management console interface for IP address 10.240.196.173. The 'Manage' tab is active, and the 'Lenovo XClarity Integrator' settings are selected. The left sidebar shows a tree view with 'BMC Port Assignments' selected. The main content area displays the 'IMM Port Assignments' configuration page. A message at the top states: 'Please save the changes when you finish the setting to make them effective.' Below this are 'Save' and 'Refresh' buttons, and a 'Last update date: 15:31:14 2015-04-10'. A table lists the port assignments for various protocols:

Director over Http	5988
Director over Https	5989
Http	80
Https	443
SSH	22
Telnet	23

Figure 17. Viewing BMC Port Assignments

- Click **Boot Order** to view the current Boot Order, Wake-on-LAN boot order, or uEFI ROM order.

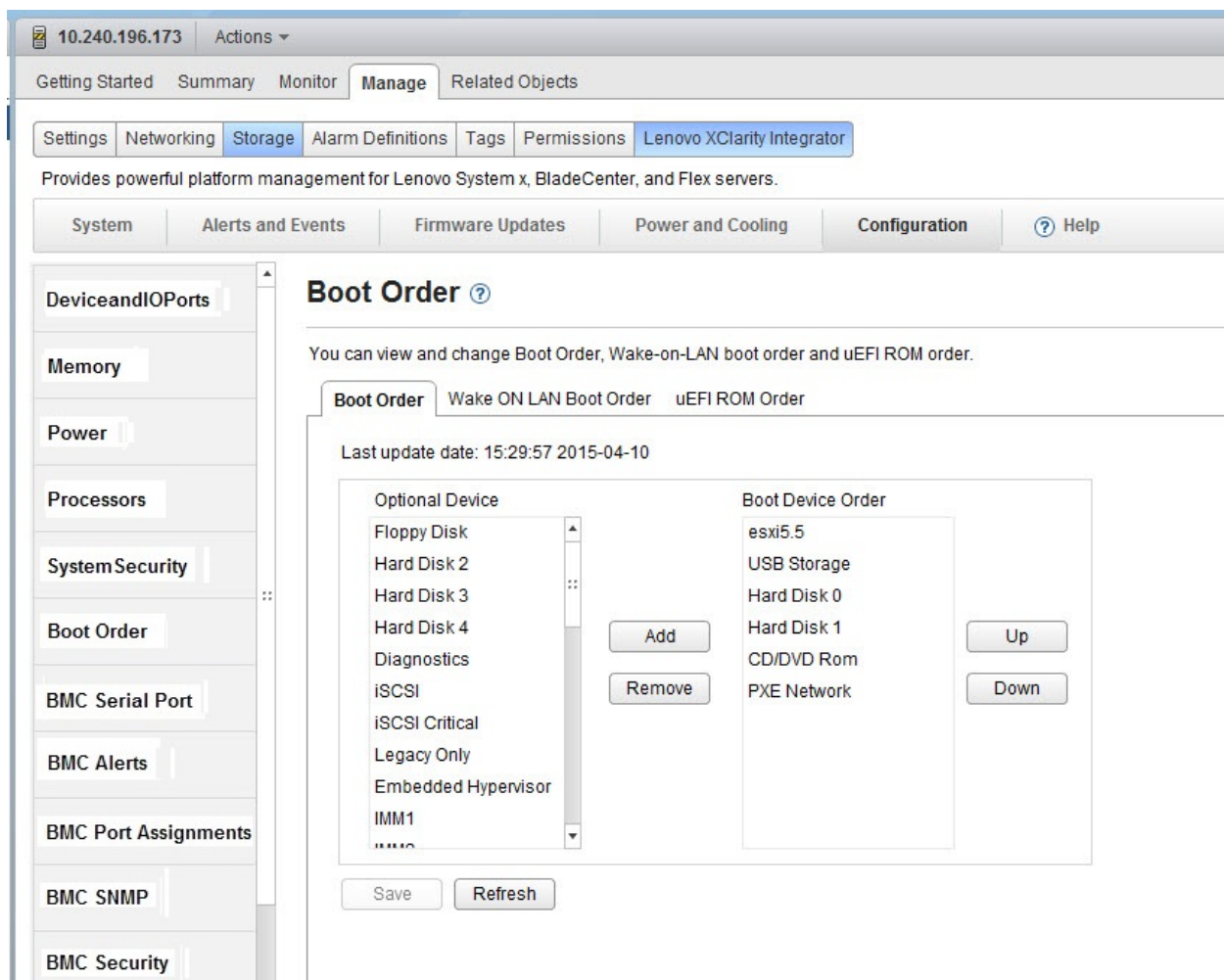


Figure 18. Viewing Boot Order

Changing advanced system settings

This topic describes how to change advanced system settings on the host.

About this task

The following procedure provides an example of changing the BMC Alerts settings.

Procedure

Step 1. Click **BMC Alerts** in the left pane to view the Alerts section of BMC settings.

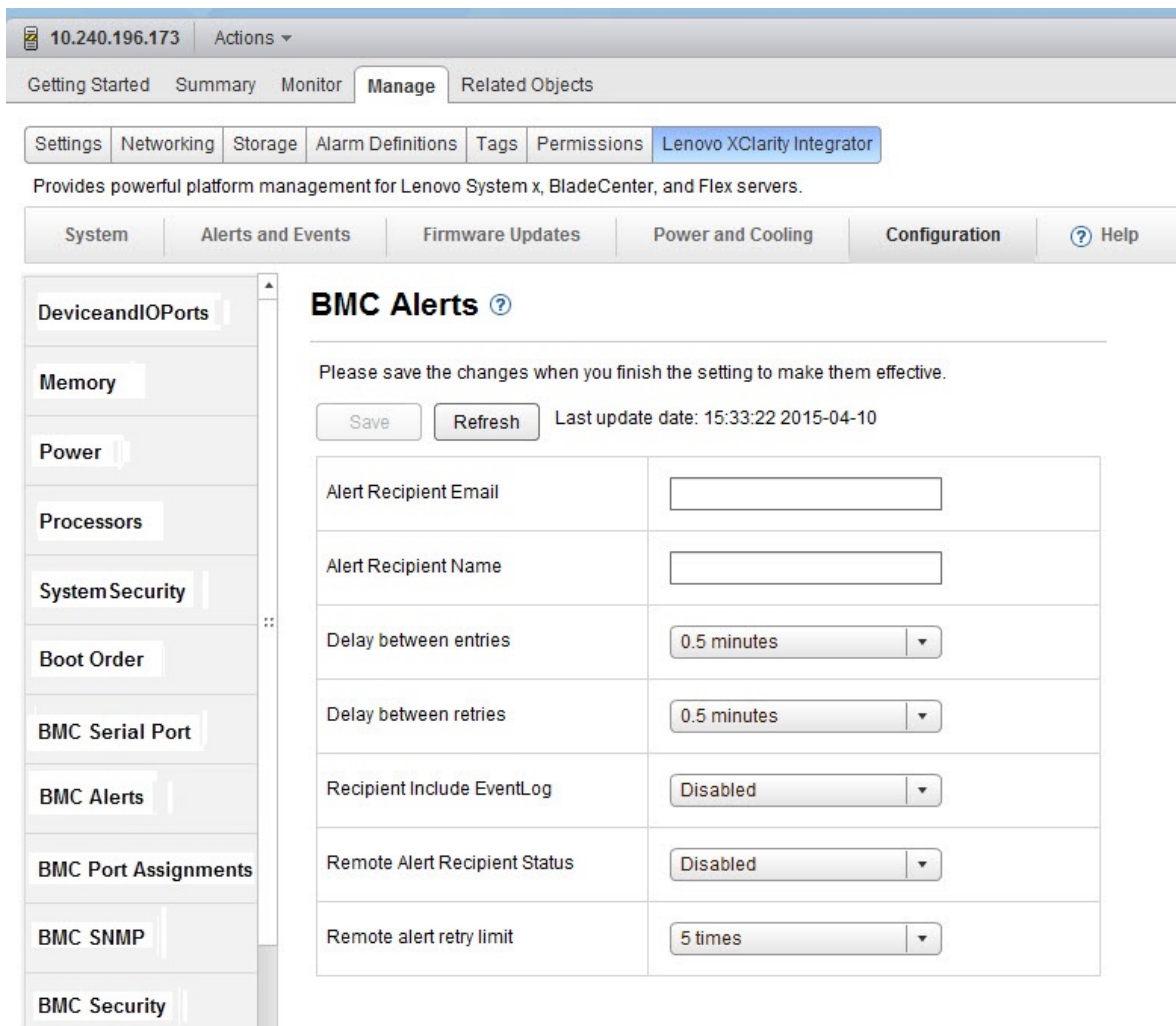


Figure 19. Viewing BMC Alerts

Step 2. Enter the new value, and click **Save**. The change is executed on the endpoint.

- If the change is successfully executed, the following symbol is displayed.



Figure 20. Setting change success symbol

- If the change is not successfully executed, the following symbol is displayed.



Figure 21. Setting change not success symbol

To view detailed information about why the setting change failed, place the cursor over the symbol.

Example

The following list provides an example for some of the different types of settings and how to change these settings. The manner in which each setting is changed varies.

text string

Before you enter any information, a prompt showing the requirements is displayed. If the information you entered does not match the requirements, place the cursor over the text string to view the description.

selection type

Select a value from the list.

boot order

The left column displays the current boot order, and the right column displays the optional device. To change the order, you can move a boot order option up or down and between the two columns, by clicking the corresponding button.

Chapter 5. Managing Lenovo infrastructure

Lenovo XClarity Administrator can assist you in managing your Lenovo infrastructure. The topics in this section describe how to use Lenovo XClarity Administrator to manage Lenovo infrastructure.

Refer to “Configuring Lenovo XClarity Administrator” on page 12 for information about the how to complete the Lenovo XClarity Administrator prerequisites and registration.

Working with the Lenovo Infrastructure view

The Lenovo Infrastructure view shows the managed Lenovo XClarity Administrator domains, chassis, rack, and node in vSphere Web Client. This function allows you to use the features of Lenovo XClarity Administrator, such configuration pattern deployment and chassis map.

Before you begin

Before you can work with Lenovo XClarity Administrator, ensure the following:

1. Lenovo XClarity Administrator is registered in vSphere Web Client. For more information, see Chapter 5 “Managing Lenovo infrastructure” on page 47.
2. You have *LenovoXClarityIntegrator.AccessLenovoInfrastructure* privileges.

About this task

This procedure describes how to view and manage an Lenovo XClarity Administrator domain using the Lenovo Infrastructure view.

Procedure

Step 1. Click **Home** → **Center** → **Lenovo Infrastructure**. The managed Lenovo XClarity Administrator list is displayed.

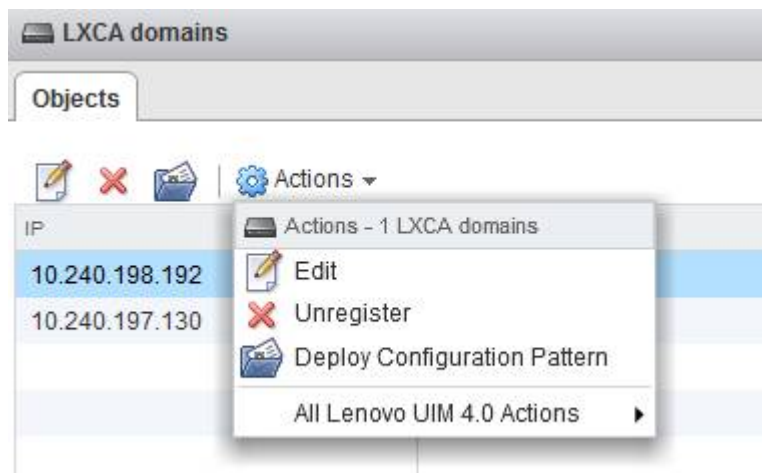


Figure 22. Lenovo XClarity Administrator domains Actions list

Step 2. Select one of the following options:

- **Edit.** Allows you to edit your Lenovo XClarity Administrator registered information.
- **Unregister.** Allows you to unregister your Lenovo XClarity Administrator.

- **Deploy Configuration Pattern.** Allows you to deploy a pattern for all the nodes managed by this Lenovo XClarity Administrator.

Step 3. Select a domain managed by Lenovo XClarity Administrator. The managed Chassis and Racks table is displayed, where you can run the Deploy Configuration Pattern action to deploy a pattern for all the nodes managed by this Chassis.

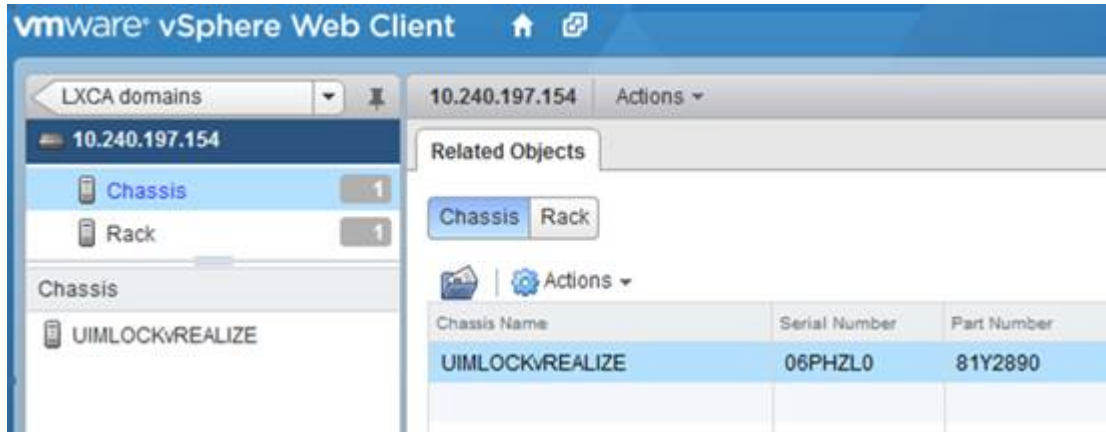


Figure 23. Managed Chassis and Racks table

Step 4. Click either **Chassis** or **Rack** to view details for a chassis or a rack in the Lenovo XClarity Administrator domain.

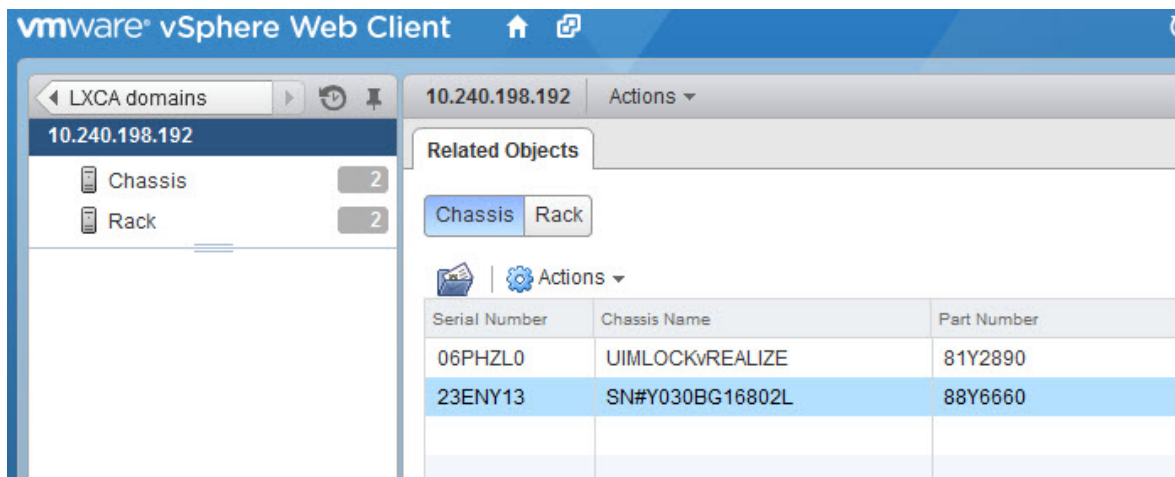


Figure 24. Chassis view

- Step 5. After selecting a Chassis or Rack view, you can:
- Select **Deploy Configuration Pattern** to deploy a pattern for all the servers managed by this chassis or rack.
 - Click the **Monitor** tab to view the Chassis Map.
 - Click the **Related Objects** tab to view the nodes list managed by this chassis or rack.

Working with the Chassis Map function

The Chassis Map provides a graphical view of a chassis. From this interface, you can also display the component status in a tabular list.


About this task

This task is performed on the Chassis page.

Note: Ensure that you are using Lenovo XClarity Administrator v1.2.0 or later; otherwise, the status in the Chassis Map that is displayed in Lenovo XClarity Integrator might be a different than the Chassis Map that is displayed in Lenovo XClarity Administrator.

Procedure

Step 1. In the **Chassis** column, click the link for a chassis. The Chassis view page for that chassis is displayed.



The screenshot displays the Chassis view in the Lenovo XClarity Administrator. The interface is split into two main sections. On the left, a graphical view shows a server chassis with components like compute nodes, fans, and power supplies. A specific component is highlighted with a blue border. On the right, a summary table provides details about the selected component. Below the graphical view, there is an 'All Actions' dropdown menu.

Summary	
Name:	10.240.197.151
Status:	Offline
Chassis/Bay:	UIMLOCKvREALIZE / 6
Host names (IMM):	IMM2-40f2e990dcd1
Architecture:	x86_64
Type-Model:	9532-AC1
System FRU:	
System Board UUID:	DUMMY-73CBE41AFA1D4FEF-010103060000

Figure 25. Chassis view

The graphical view shows components in the front of the chassis, such as compute nodes and components in the rear of the chassis such as fans, power supplies, and Flex switches.

Step 2. Click **Table view** to display the component status in a tabular list.

You can choose among several overlays to help you quickly determine the status for all of the components in the chassis.

Table 9. Hardware map overlays






Overlay	Icon	Description
Hardware status		<p>Use this overlay to display the status for each of the components. You can choose one or more of the following status criteria:</p> <p>Critical Components have one or more critical alerts. Immediate user action is required.</p> <p>Warning Components have one or more warning alerts. User investigation is needed to determine the cause of the warnings, but there is no immediate risk of an outage.</p> <p>Synchronizing Lenovo XClarity Administrator is waiting for the components to provide an updated status.</p> <p>Offline Components are not online.</p> <p>Unknown Lenovo XClarity Administrator is not able to retrieve the status from one or more of the components in a chassis. User investigation might be needed.</p> <p>Normal Components are operating normally. Hover over a specific component to view information about the current status.</p>
Highlight front panel LEDs		<p>Use this overlay to view the LEDs that are available for each of the components. You can choose one or more of the following LEDs to view:</p> <p>Power LED Displays the current power LED for each component.</p> <p>Event Log LED Displays the event log LED, which is lit when there are events specific to a component in the Lenovo XClarity Administrator event log.</p> <p>Location LED Displays the location LED, which can be turned on from the CMM to help you identify where a component is physically located.</p> <p>Fault LED Displays the status of the Fault LED for each component.</p> <p>Other LED Displays all of the other LEDs that are available for each component.</p> <p>Only Active LEDs Displays only the LEDs that are currently lit.</p> <p>Hover over a specific component to view more information about all of the LEDs for a component. For detailed information about each of the LEDs that can be displayed for a component, refer to the product documentation that is available for that component.</p>

Table 9. Hardware map overlays (continued)

Overlay	Icon	Description
Component names and properties		Use this overlay to display the name for each component in the chassis. When you hover over a component, additional properties about that component, such as the IP address and UUID, are displayed.
Compliance		Use this overlay to determine whether the firmware that is currently installed on a component complies with the compliance policy that has been defined for that component.
Configuration patterns		Use this overlay to determine which server patterns are assigned to each compute node.

Viewing the details of a managed chassis

You can view detailed information about a managed chassis.

About this task

To view the information about a managed chassis, complete these steps.

Procedure

- Step 1. Open Lenovo XClarity Administrator.
- Step 2. Select the **Open Lenovo XClarity Administrator for Details** link.

Launching an Integrated Management Module Interface

This topic explains how to launch management web console for a selected chassis or server on the Chassis Map.

About this task

This task is performed on the Chassis Map page.

Procedure

- Step 1. Click **vCenter → Lenovo Infrastructure → LXCA Domains**.
- Step 2. In the Lenovo XClarity Administrator domains section, select the Lenovo XClarity Administrator IP node and double click the chassis node in the right pane.
- Step 3. On the Chassis Map page, select a chassis or host and click **All Actions**.
- Step 4. Click **Launch Management Module Interface**. The web console is launched within Explorer.

Launching Remote Control

You can launch the Remote Control of a selected server on the Chassis Map.

About this task

This task is performed on the Chassis Map page.

Procedure

- Step 1. Click **vCenter** → **Lenovo Infrastructure** → **LXCA Domains**.
- Step 2. In the Lenovo XClarity Integrator for VMware vCenter domains section, select the Lenovo XClarity Integrator for VMware vCenter IP node and double click the chassis node in the right pane.
- Step 3. Select a chassis or a host on the Chassis Map page, and click **All Actions**.
- Step 4. Click **Launch Remote Control**. The remote console opens.

Working with configuration patterns

You can easily deploy or deactivate a server pattern to one or more individual servers or groups of servers using the Lenovo XClarity Administrator **Deploy Configuration Pattern** option from either the domains list view or Chassis list view. For example, you can deploy a server pattern to a chassis and have all of the servers in that chassis configured the same.

About this task

This task is performed from the LXCA domains page.

Procedure

- Step 1. Click **vCenter** → **Lenovo Infrastructure** → **LXCA Domains**. The LXCA domains page is displayed.
- Step 2. Select a Lenovo XClarity Administrator domain or Chassis, then click **Action** → **Deploy Configuration Pattern**. The Lenovo LXCA Configuration Pattern dialog box is displayed.

Lenovo LXCA Configuration Pattern

Please choose **Deploy Pattern** to deploy the server pattern to one or more individual servers, or **Deactivate Pattern** to deactivate a active pattern.
To create / edit a server pattern, [click here to enter LXCA](#).
To view config status on the selected node, [click here](#).

Action: Deploy Pattern Deactivate Pattern

*Pattern To Deploy: flex01 [Click to show pattern details](#)

*Activation [?](#) Full — Activate all settings and restart the server now.
 Partial — Activate BMC settings but do not restart the server. UEFI and server settings will be active after the next restart.

Choose one or more server to deploy the selected pattern.

Show Empty Bays Show vSphere Managed Hosts

By Deploy Status: All Systems

<input type="checkbox"/>	Name	Rack Name/Unit	Chassis/Bay	Active Pattern	Managed Host?	Deploy Readiness
<input type="checkbox"/>	10.240.195.56	ck, Unit 31			No	⚠ Not Supported

Deploy

Figure 26. Lenovo XClarity Administrator Configuration Pattern dialog box

- Step 3. Select one of the following actions:
 - **Deploy pattern**. Deploys the selected pattern to your servers.
 - **Deactivate pattern**. Deactivates the pattern from your servers.
- Step 4. Select a pattern from the **Pattern to Deploy** list.
- Step 5. Select one or more servers and click **Deploy**. The deployment progress is displayed.

Chapter 6. Administering Lenovo XClarity Integrator

This section provides information about using the Lenovo XClarity Integrator for VMware vCenter administrator webpage to collect service data, register the plug-in, and backup and restore appliance configurations.

Configuring network access

In this setting page, you can configure host name, domain name, DNS, and IP settings for Eth0 and Eth1 interfaces.

Before you begin

When a Lenovo XClarity Integrator is initially deployed, the Eth0 interface is enabled for connecting both the VMware vCenter and baseboard management controller (BMC) network. You can optionally enable the Eth1 interface for the BMC network connection. After the Eth1 interface is enabled, Eth0 interface is no longer available for BMC connections.

Unless you have strong reason, you should not change network settings after they are set in the wizard. If you must change the network settings, perform the following steps to reconfigure the virtual appliance.

Attention: If you change the settings incorrectly, you might lose connection to the virtual appliance.

1. Regenerate the server certificate (see “ ” on page 58).
2. Unregister vCenter and re-register again (see “Configuring vCenter connections” on page 55).
3. Clean up Lenovo XClarity Integrator on the vCenter server (see “Uninstalling Lenovo XClarity Integrator for VMware vCenter” on page 16).
4. Discover all BMCs again in vCenter (see “Working with the BMC Discovery function” on page 21) in the following cases:
 - Eth0 is changed and Eth1 is disabled.
 - Eth1 is changed.

Configuring the hostname, domain name, and DNS

You can configure the hostname, domain name, and DNS from the Network Settings page.

Before you begin

Procedure

Complete the following steps from the Network Settings page under the **Host Name, Domain Name and DNS for virtual appliance** section.

- Step 1. Change the hostname in the **Host Name** field.
- Step 2. Change the domain name in the **Domain Name** field.

Note: The domain name is optional. If you configure both the hostname and domain name, a fully qualified domain name (FQDN) is defined. In this case, this FQDN is used for vCenter registration and server-certificate generation. Ensure that the DNS is correctly set in vCenter.

- Step 3. Change the DNS in the **DNS** field.

Note: If you use the hostname to connect vCenter and vCenter managed ESXi hosts, you must configure a DNS for Lenovo XClarity Integrator so Lenovo XClarity Integrator can access vCenter and ESXi hosts through the hostname.

Step 4. Click **Save**.

Configuring Eth0 IP settings

You can change the Eth0 IP address and gateway settings from the Network Settings page.

About this task

When you change IP settings for the Eth0 interface, connection to Lenovo XClarity Integrator web interface is lost. Check the VM console for the new Eth0 IP address, and reopen Lenovo XClarity Integrator web interface to continue the setup.

Procedure

Complete the following steps from the Network Settings page.

Step 1. Specify the IPv4 address, IPv6 address or both for the Eth0 interface.

For IPv4, you can choose to use a statically assigned IP address, obtain an IP address from a DHCP server, or disable IPv4.

For IPv6, you can assign an IPv6 address to the interface using one of the following assignment methods:

- Use a statically assigned IP address
- Use a stateful address configuration (DHCPv6)
- Use a stateless address auto configuration

Step 2. Specify the default gateway.

Notes:

- Because Eth1 is intentionally used for connecting to the baseboard management controller (BMC) network, which is normally within the Eth1 subnet, you are allowed to configure the default gateway for only Eth0.
- If you specify a default gateway, it must be a valid IP address and must use the same network mask (the same subnet) as the IP address for Eth0.
- If Eth0 uses DHCP to obtain an IP address, the default gateway must also use DHCP and you cannot manually change this.

Step 3. Click **Save**.

Configuring Eth1 IP settings

You can enable the Eth1 interface for the baseboard management controller (BMC) network and change the Eth1 IP address and gateway settings from the Network Settings page.

About this task

By default, both Eth0 and Eth1 are connected to the same VM network with label “VM Network”. You can configure Eth1 to connect to a different network by completing the following steps:

1. Edit Lenovo XClarity Integrator VM settings
2. Select **Network adapter 2**, and choose the VM network to which you want Eth1 to connect.
3. Save the settings.

Procedure

Complete the following steps from the Network Settings page.

Step 1. Select the **Eth1** checkbox to enable Eth1. The IP setting fields are displayed.

Step 2. Specify the IPv4 address, IPv6 address or both for the Eth1 interface.

Note: The IP addresses that are assigned to the Eth1 interface must be in a different subnet from the IP addresses that are assigned to the Eth0 interface. If you choose to use DHCP to assign IP addresses for both interfaces (Eth0 and Eth1), the DHCP server must not assign the same subnet for the IP addresses of the two interfaces.

For IPv4, you can choose to use a statically assigned IP address, obtain an IP address from a DHCP server, or disable IPv4

For IPv6, you can assign an IPv6 address to the interface using one of the following assignment methods:

- Use a statically assigned IP address
- Use a stateful address configuration (DHCPv6)
- Use a stateless address auto configuration

Step 3. Click **Save**.

Setting the date and time

You can change the date and time from the Date and Time page.

Procedure

Perform the following steps from the Date and Time page.

Step 1. Specify your region and time zone.

Step 2. Specify the date and time. You can set the date or time manually or let Lenovo XClarity Integrator synchronize with an NTP server.

Step 3. Click **Save**.

Configuring vCenter connections

You can register or unregister Lenovo XClarity Integrator from the vCenter server.

When a Lenovo XClarity Integrator is initially deployed, Lenovo XClarity Integrator is registered to a vCenter server. You can check the vCenter server host address and user name on this page.

Registering Lenovo XClarity Integrator to vCenter server

You can register Lenovo XClarity Integrator to a vCenter server.

Before you begin

Lenovo XClarity Integrator can be registered to only one vCenter server. To register Lenovo XClarity Integrator to another vCenter server, you must first unregister it from the current vCenter server (see Unregistering Lenovo XClarity Integrator from vCenter server).

Procedure

Complete the following steps to register Lenovo XClarity Integrator.

Step 1. Click **Register** A dialog is displayed prompting for more information.

Step 2. Specify the fully-qualified domain name (FQDN) or IP address of the vCenter server.

Important: If you specify the FQDN, ensure that the DNS is configured on the Network Settings page.

- Step 3. Specify user name and password that has administrative credentials to manage the vCenter server.
- Step 4. Click **OK**.

Note: The registration process might take several minutes to complete. If successful, the vCenter information is displayed.

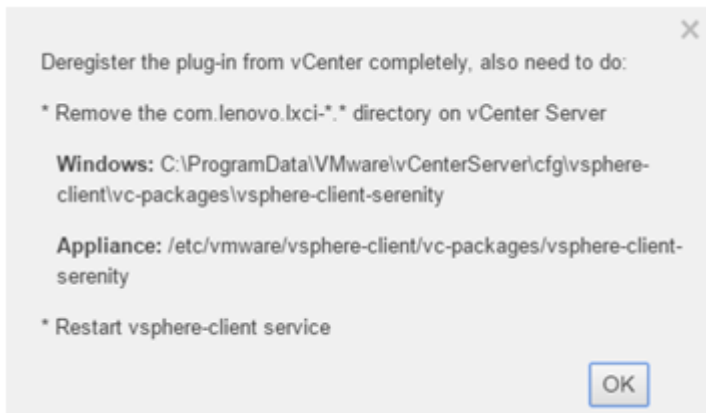
Unregistering Lenovo XClarity Integrator from vCenter server

You can unregister Lenovo XClarity Integrator from vCenter server.

Procedure

- Step 1. Select a vCenter server, and then click **Deregister**. A confirmation dialog is displayed.
- Step 2. Click **OK** to confirm that you want to unregister Lenovo XClarity Integrator.
- Step 3. Click **OK** again to complete the unregistration process.

If successful, a dialog similar to the following figure is displayed.



- Step 4. On the vCenter server, remove the `com.lenovo.lxci-*. *` directory.
- Step 5. Restart the “vsphere-client” service.

Backing up, restoring, and migrating data

You can back up, restore and migrate data for Lenovo XClarity Integrator for VMware vCenter.

Backing up data

You can back up data for a Lenovo XClarity Integrator virtual appliance.

Procedure

- Step 1. From the Lenovo XClarity Integrator menu, click **Backup and Restore**.
- Step 2. Click the **Backup** tab, and then click the **Backup** button. A dialog is displayed asking for a password for protecting the backup file.
- Step 3. Specify a password in the **Password** and **Confirm Password** fields. The password must be at least nine ASCII characters.
- Step 4. Click **OK** to start the backup process.

Step 5. When the backup completes, a download link **Click Here to Download** is displayed next to the **Backup** button. Click the link to download the backup file.

Note: Ensure that you record the password and store the back-up file in a safe location. When restoring data using the back-up file, you will be asked to specify the password.

Restoring data

You can restore previously backed up data to the same virtual appliance or migrate the data to a newly deployed virtual appliance.

Before you begin

To migrated to a newly deployed virtual appliance:

- Ensure that you are logged out of vSphere Web Client.
- If you are migrating backup data to a newly deployed virtual appliance, ensure the following conditions are met.
 - You must first uninstall the old Lenovo XClarity Integrator virtual appliance (see “Uninstalling Lenovo XClarity Integrator for VMware vCenter” on page 16).
 - You must use the exact same network settings as old Lenovo XClarity Integrator virtual appliance in the newly deployed appliance.
 - You must register the same vCenter as old Lenovo XClarity Integrator virtual appliance to the newly deployed appliance.

Procedure

Step 1. From the Lenovo XClarity Integrator menu, click **Backup and Restore**.

Step 2. Click the **Restore/Migrate** tab.

Step 3. Click the **Browse** button to select the data file to be restored.

Step 4. Click the **Restore** button. A dialog is displayed asking for the password for the data file.

Step 5. Click **OK**. The appliance starts to restore/migrate the data file.

The virtual appliance restarts after the restoration process completes. You are redirect to login page after 10 seconds.

Note: Because the Lenovo XClarity Administrator certificates are not migrated, you must re-register the Lenovo XClarity Administrator instances if you want to re-use them.

Migrating data from a Windows-based Lenovo XClarity Integrator

You can migrate data from a Window-based Lenovo XClarity Integrator to a Lenovo XClarity Integrator virtual appliance

Before you begin

The data being migrated must be backed up from a Windows-based Lenovo XClarity Integrator, not Lenovo XClarity Integrator virtual appliance.

The data being migrated does not include user information and passwords. You must update password for Lenovo XClarity Integrator, BMCs, and host passwords manually after migration.

Procedure

Step 1. Uninstall the old Windows-based Lenovo XClarity Integrator, not Lenovo XClarity Integrator (see “Uninstalling Lenovo XClarity Integrator for VMware vCenter” on page 16).

Step 2. Export data from Windows-based Lenovo XClarity Integrator using the following PostgreSQL command:

```
pg_dump -p 9501 -U postgres uim_service > [target_data_file]
```

For example:

```
pg_dump -p 9501 -U postgres uim_service > d:\db_backup.sql
```

Step 3. Deploy a Lenovo XClarity Integrator virtual appliance

Note: You must register the same vCenter as the Windows-based Lenovo XClarity Integrator to the newly deployed virtual appliance.

Step 4. Import the data file into the newly deployed virtual appliance.

- a. From the Lenovo XClarity Integrator menu, click **Backup and Restore**.
- b. Click the **Migrate Data from Windows** tab.
- c. Click the **Browse** button to select the data file to be migrated.
- d. Click **Migrate** button. The data file is uploaded to the virtual appliance and migration begins

The virtual appliance will restart after the migration process completes. You are redirected to login page after 10 seconds

Working with security certificates

Lenovo XClarity Integrator and the supporting software (Lenovo XClarity Administrator and VMware vCenter) use SSL certificates to establish secure connections between each other. By default, Lenovo XClarity Integrator uses Lenovo XClarity Integrator-generated certificates that are self-signed and issued by an internal certificate authority (CA).

Generating a customized externally-signed server certificate

When you install a customized server certificate in Lenovo XClarity Integrator, you must provide the certificate bundle that contains the entire CA signing chain.

About this task

If the new server certificate is not signed by a trusted international third party (such as VeriSign), the next time you connect to Lenovo XClarity Integrator, your browser displays a security message prompting you to accept the new certificate as an exception into the browser. To avoid the security messages, you can import the CA signing chain of the server certificate into your web browser's list of trusted certificates.

For more information about importing certificates, see Importing the Lenovo XClarity Integrator certificate in your web browser.

Procedure

Complete the following steps to generate a customized server certificate.

Step 1. Generate a certificate signing request (CSR) for Lenovo XClarity Integrator.

- a. Click **Server Certificate** to display the Server Certificate page
- b. Click the **Generate Certificate Signing Request (CSR)** tab.
- c. Fill in the fields in the Generate Certificate Signing Request (CSR) page:
 - Country
 - State or Province

- City or Locality
- Organization
- Organization Unit (optional)
- Common Name

Attention: Select a common name that matches the IP address or host name of Lenovo XClarity Integrator virtual appliance. Failure to select the correct value might result in connections that are not trusted. You can allow Lenovo XClarity Integrator to generate the common name automatically by specifying “Generated by LXCI.”

d. Click **Generate CSR File** to download the generated file.

Step 2. Submit all CSRs to your trusted CA for signing. The trusted CA returns a certificate bundle for each CSR. The certificate bundle contains the signed certificate and the complete certificate authority (CA) chain of trust.

Step 3. Upload the externally-signed server certificate to Lenovo XClarity Integrator.

Note: The certificate being uploaded must have been created from the Certificate Signing Request that was most recently created using the **Generate CSR File** button. The uploaded file must contain the complete certificate chain, including the root certificate and any intermediate certificates. The order of certificates in the file must be server certificate, intermediate certificates, and then root certificate.

1. From the Lenovo XClarity Integrator menu, click **Security Settings**.
2. Click **Server Certificate** on the setting page.
3. Click the **Upload Certificate** tab.
4. Click **Upload Certificate** to upload the certificate file (.der, .pem or .cer).

After uploading the server certificate, Lenovo XClarity Integrator is restarted and your browser connection to the Lenovo XClarity Integrator web interface is terminated. You need to log in to the Lenovo XClarity Integrator web interface again to continue your work.

Note: Update VMware vCenter registration after the new server certificate is uploaded.

Restoring the Lenovo XClarity Integrator-generated server certificate

You can generate a new server certificate to reinstate a Lenovo XClarity Integrator-generated certificate if Lenovo XClarity Integrator currently uses a customized server certificate. The customized server certificate is then replaced and the new self-signed server certificate is used on the Lenovo XClarity Integrator.

Procedure

Complete the following steps to restore self-signed server certificate on Lenovo XClarity Integrator.

Step 1. Generate a new CA root certificate.

Generating a new CA root certificate replaces all server certificates that were previously generated by Lenovo XClarity Integrator.

1. Click **Certificate Authority** on the setting page.
2. Click **Regenerate Certificate Authority Root Certificate**.

Step 2. Download the CA root certificate.

1. Click **Certificate Authority** on the setting page.
2. Click **Download Certificate Authority Root Certificate** to download the root certificate.
3. Import the certificate into web browser. For more information about importing certificates, see [Importing the Lenovo XClarity Integrator certificate in your web browser](#).

Step 3. Regenerate a new server certificate.

Complete these steps to generate a new server certificate and sign the certificate with the currently generated CA root certificate:

1. Click **Server Certificate** on the setting page.
2. Click the **Regenerate Server Certificate** tab.
3. Fill in the fields in the Regenerate Server Certificate page:
 - Country
 - State or Province
 - City or Locality
 - Organization
 - Organization Unit
 - Common Name

Attention: Select a common name that matches the IP address or hostname of the Lenovo XClarity Integrator virtual appliance. Failure to select the correct value might result in connections that are not trusted. You can allow Lenovo XClarity Integrator to generate the common name automatically by specifying “Generated by LXCI.”

4. Click **Regenerate Certificate**

When the new server certificate is regenerated, Lenovo XClarity Integrator is restarted and your browser connection to the Lenovo XClarity Integrator web interface is terminated. You need to log in to the Lenovo XClarity Integrator web interface again to continue your work.

Note: Update VMWare vCenter registration after the server certificate is regenerated.

Collecting service data

You can collect Lenovo XClarity Integrator logs and send to Lenovo for support.

Procedure

- Step 1. If required, click **Change level** to change log level to Debug. Ensure that you restore the log level to Information after problem resolved
- Step 2. Click **Collect Log**. The **Download Log** link is displayed.
- Step 3. Click the **Download Log** link to download the log.

Appendix A. Troubleshooting

Use this section to troubleshoot and resolve problems with Lenovo XClarity Integrator for VMware vCenter.

Help information

When you click on a question mark icon, an Online help page is displayed for that item.

The first time you access online help, you are asked to trust the certification of the site. Click **Yes** to trust the certification.

“-2:null” error message displays when accessing Lenovo XClarity Integrator for the first time

The first time that you access Lenovo XClarity Integrator, the -2:null error message might be displayed.

Procedure

Collect the vSphere Web Client log to determine the root cause.

- For vCenter server appliance, the log path is `/storage/log/vmware/vsphere-client/logs/lxci_plugin.log`.
- For vCenter server on Windows, the log path is `C:\ProgramData\Lenovo\LXCI\lxci_plugin.log`.

Finding the vCenter plug-in version

This procedure describes how to find the vCenter plug-in version.

Procedure

- Step 1. In the vCenter interface, click **Plug-in → Manage Plug-in**.
- Step 2. Locate **Lenovo XClarity Integrator for VMware vCenter**. The version column displays the version of the installed plug-in.

Installed version field shows Undetected in firmware updates

The **Installed version** field in the Firmware Update Recommendation table indicates **Undetected**.

About this task

If the **Installed version** field displays **Undetected**, try restarting the BMC and the ESXi host.

BMC Discovery failure

If the BMC Discovery list does not display correctly, the BMC discovery process has failed.

About this task

If the discovery list fails to display after clicking **Discovery**, complete these steps.

Procedure

- Step 1. Verify that the network connection between vCenter and the host is working.

Step 2. Try the discovery process again by clicking **Discovery**.

Cannot display a chassis map or a configuration pattern page because of a certificate issue

This topic will help you fix certification errors when launching a chassis map or a configuration pattern page.

About this task

If the page is blocked by the browser with a certificate is not trusted message, complete the steps for your browser.

Procedure

- For Internet Explorer:
 1. Navigate to the **Lenovo XClarity Integrator** tab located below the **Host Manage** tab, and click the **Help** tab.
 2. Click the **Download Certification** link to download the certificate.
 3. Double-click the ca.cer file in **General** tab and click **Install Certificate**.
 4. Click **Next**.
 5. From the **Certificate Store** page, select **Place all certificates in the following store**, and click **Browse**.
 6. Select **Trusted Root Certificate Authorities**, and click **OK**.
 7. Click **Finish**.
- For Firefox:
 1. In an open browser, click **Firefox → Options → Advanced → Certificates → View Certificates → Servers → Add Exception**.
 2. In the **Location** field, enter the fully-qualified domain name or the IP address of the host where you installed Lenovo XClarity Integrator.
 3. Click **Get Certificate**.
 4. Click **Confirm Security Exception** and then refresh your browser.

Cannot see Lenovo XClarity Integrator on the vSphere Web Client after installation

After you install Lenovo XClarity Integrator and register it with vCenter successfully, vSphere Web Client might fail to download and deploy the Lenovo XClarity Integrator plugin. In this case, you will not see Lenovo XClarity Integrator on the vSphere Web Client.

Procedure

Check the vsphere_client_virgo.log file for the following error message:

```
Error downloading https://[*****LXCI IP*****]:9500/IVPUI.zip. Make sure that the URL is reachable; then logout/login to force another download. java.net.ConnectionException: Network is unreachable.
```

Note: The log file is located in the C:\ProgramData\VMware\vCenterServer\logs\vsphere-client\logs or /storage/log/vmware/vsphere-client/logs directory, depending on version of vCenter.

If the error message is present in the log file, perform one of the following steps:

- For windows vCenter, open a web browser on the VMware vCenter Server and access the URL that is displayed in the error message (for example, `https://[*****LXCI IP*****]:9500/IVPUI.zip`). If it doesn't work, verify that Lenovo XClarity Integrator servers are running.
- For vCenter virtual appliance, run the command `curl <URL>` on the VMware vCenter Server, where `<URL>` is the URL that is displayed in the error message (for example, `https://[*****LXCI IP*****]:9500/IVPUI.zip`).

If an error messages is displayed similar to "SSL certificate problem, verify that the CA cert is OK " or "Certificate verify failed", import the Lenovo XClarity Integrator certificate to the VMware vCenter Server appliance by performing the following steps:

1. Copy the `ca.pem` file from the Lenovo XClarity Integrator for VMware vCenter\LightTPD\cert directory to the VMware vCenter Server appliance.
2. Run the command `cat ca.pem >> /etc/apache2/ssl.crt/ca-bundle.crt`

Note: The file path to the `ca-bundle.crt` file might vary depending the on version of vCenter.

3. Run the command `service vsphere-client restart` to restart the web client service.
4. Log out of vSphere Web Client, and then log in again to force another download.

Appendix B. Accessibility features

Accessibility features help users who have physical disabilities, such as restricted mobility or limited vision, to use information technology products successfully.

Lenovo strives to provide products with usable access for everyone, regardless of age or ability.

The *Lenovo XClarity Integrator for VMware vCenter Installation and User's Guide* supports the accessibility features of the system-management software in which they are integrated. Refer to your system management software documentation for specific information about accessibility features and keyboard navigation.

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