Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager Installation and User Guide

Version 3.6.0

Note

Before using this information and the product it supports, read the information in Appendix C "Notices" on page 51.

Contents

About this publication

This book provides instructions for installing and using Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager.

For an overview of new functionality in version v3.6.0, as well as important information on known limitations and workarounds, see the *Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager Release Notes*.

The Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager is a plug-in application for Microsoft System Center Virtual Machine Manager that is designed to manage Lenovo System x and Flex System servers and offer value-add features that connect the hardware infrastructure and the virtual infrastructure.

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. Definitions for terms used in this guide

Term, Acronym, or Abbreviation	Definition
baseboard management controller (BMC)	A service processor that consolidates service processor functions and a video controller in a single chip.
Lenovo XClarity Administrator	Provides a single element manager for x86 nodes in both Flex Systems and stand-alone racks.
Lenovo XClarity Integrator (LXCI)	A tool suite that provides IT administrators with the ability to integrate the management features of the System x with Microsoft System Center. Lenovo expands Microsoft System Center server management capabilities by integrating Lenovo hardware management functionality, providing affordable, basic management of physical and virtual environments to reduce the time and effort required for routine system administration. It provides the discovery, configuration, monitoring, event management, and power monitoring needed to reduce cost and complexity through server consolidation and simplified management.
Management Node	A physical or virtual machine on which the SCVMM service, the Lenovo XClarity Integrator Service and the Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager are installed and running
Managed Node	A physical machine managed with SCVMM, on which the SCVMM Agent is installed and running
PFA	Predictive Failure Alert

Table 1. Definitions for terms used in this guide (continued)

Term, Acronym, or Abbreviation	Definition
SCVMM	Microsoft System Center Virtual Machine Manager
UXSP	UpdateXpress System Pack
CA	Certificate Authority
FQDN	Fully Qualified Domain Name

Web resources

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

Lenovo Web site for Microsoft Systems Management Solutions for Lenovo servers

Locate the latest downloads for the Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager:

- Lenovo XClarity Integrator for Microsoft System Center Web site

System Management with Lenovo XClarity Solutions

This Web site 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 Web site

Lenovo technical support portal

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

- Lenovo Support Portal Web site

Lenovo ServerProven pages

Obtain information about hardware compatibility with Lenovo System x, BladeCenter, and IBM IntelliStation hardware.
- Lenovo ServerProven: Compatibility for BladeCenter programs
- Lenovo ServerProven: Compatibility for Flex System Chassis
- Lenovo ServerProven: Compatibility for System x hardware, applications, and middleware

Microsoft System Center Web site

This Web site can assist you in locating Microsoft System Center programs:

- Microsoft System Center Web site

Chapter 1. Lenovo XClarity Integrator Add-in

The Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager is a plug-in application for Microsoft System Center Virtual Machine Manager (SCVMM), which is provided as a Lenovo XClarity Integrator extension. It facilitates the management of Lenovo System x and Flex Servers and offers value-add features to connect the hardware infrastructure and the virtual infrastructure.

About Lenovo XClarity Integrator

The Lenovo XClarity Integrator consists of extensions to Microsoft System Center and VMware vCenter. These extensions provide IT administrators with enhanced management capabilities for Lenovo System x servers, BladeCenter servers, and Flex systems. The Lenovo XClarity Integrator extensions include a set of plug-ins for Microsoft System Center and VMware vCenter, stand-alone applications and service applications.

With Lenovo XClarity Integrator, Lenovo expands the management capabilities of Microsoft System Center and VMware vCenter by integrating Lenovo hardware management functionality and providing affordable, basic management of physical and virtual environments to reduce the time and effort required for routine system administration. This functionality provides for the discovery, configuration, monitoring, event management, and power monitoring needed to reduce cost and complexity through server consolidation and simplified management.

Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager

Through features such as Rolling System Update, which enables firmware to be updated without interrupting serviceability, Lenovo XClarity Integrator Add-in makes it easier to manage Lenovo servers. Through an integrated user interface on the SCVMM Admin panel, you can manage Lenovo hardware assets such as servers. Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager requires the Lenovo XClarity Integrator Service as its back end.

Chapter 2. System requirements

This section provides the hardware and software requirements for the Lenovo XClarity Integrator Add-in.

Hardware requirements

This section lists minimum and recommended hardware requirements for the Lenovo XClarity Integrator Add-in and Lenovo hardware that the add-in can manage.

Hardware requirements for the Lenovo XClarity Integrator Add-in

Table 2. Minimum and recommended hardware requirements for the Lenovo XClarity Integrator Add-in

Item	Minimum requirements	Recommended requirements
Processor/core	Single x86-64	4 x86-64
RAM	2 GB	8 GB
Free hard drive space	20 GB	40 GB
Network card	100 MBPS	10,000 MBPS

Lenovo hardware

Although Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager does not have hardware limitations, the hardware that it manages is limited to the Lenovo System x and Blade servers in the following tables.

*Table 3. **Lenovo** supported hardware*

Lenovo-**supported hardware**	Server number
NeXtScale	- nx360 M5 (5465) - nx360 M5 DWC (5467, 5468, 5469)
System x server	- x3250 M6 (3633, 3943) - x3500 M5 (5464) x3550 M4 (7914) - x3550 M5 (5463, 8869) - x3630 M4 (7158, 8103) - x3650 M4 (7915) - x3650 M5 (5462) - x3750 M4 (8753) - x3850 X6 / x3950 X6 (6241)

Table 3. Lenovo supported hardware (continued)

Lenovo-supported hardware	Server number
ThinkSystem	• SD530 (7X20, 7X21, 7X22) • SN550 (7X16) • SN850 (7X15) • SR150/SR158 (7Y54, 7Y55) • SR250/SR258 (7Y51, 7Y52, 7Y53, 7Y72 and 7Y73) • SR530 (7X07, 7X08) • SR550 (7X03, 7X04) • SR570 (7Y02, 7Y03) • SR590 (7X98, 7X99) • SR630 (7X01, 7X02) • SR650 (7X05, 7X06) • SR850 (7X18, 7X19) • SR860 (7X69, 7X70) • SR950 (7X11, 7X12, 7X13) • ST250/ST258 (7Y45, 7Y46, and 7Y47) • ST550 (7X09, 7X10) • ST558 (7Y15, 7Y16)
Flex Compute Node	• Flex System x240 Compute Node (7162, 2588) • Flex System x240 M5 Compute Node (2591, 9532) • Flex System x440 Compute Node (7167, 2590) • Flex System x280,x480,x880 X6 Compute Node (7196, 4258)

Software requirements

The Lenovo XClarity Integrator Add-in requires the software listed in this section.

Management nodes

- Windows Server 2019, 2016, 2012 SP1 (x64), 2012 R2 (x64)
- NET Framework 4.0 or higher version
- Microsoft System Center Virtual Machine Manager 2019, 2016, 2012 SP1, 2012 R2
- Microsoft Internet Explorer version 10.0.9200.17492 or later
- SQL server client tools connectivity (when SQL server is used as the database of Integrator Service).

  Note: To connect to a remote SQL server, install the SQL-Client-tools-connectivity program on the same server with XClarity Integrator Service. Go to https://www.microsoft.com/en-us/sql-server/sql-server-downloads to download SQL server. The SQL-Client-tools-connectivity program can be found in the SQL server installation image.
- Optional: SQL server 2008 R2 sp3 or later

Notes: To use the SQL server database as the database in XClarity Integrator Service, ensure that the SQL server meets the following requirements:

- Version: SQL server 2008 R2 SP3 or later version

- Authentication mode: SQL Server and Windows Authentication mode

- Disk size: 10 GB free size for 100 managed servers, 30 GB free size for 500 managed servers

- CPU and memory: Four-core 2.66 GHz processor and 16 GB memory (recommended)

To use the PostgreSQL database as the database in XClarity Integrator Service, ensure that the PostgreSQL meets the following requirements:

- Version: 9.2, 9.3, 9.4, 9.5, 9.6, 10.6, 11.1

- Disk size: 10 GB free size for 100 managed servers, 30 GB free size for 500 managed servers

- CPU and memory: Four-core 2.66 GHz processor and 16 GB memory (recommended)

Managed nodes

- Windows Server 2019, 2016, 2012 SP1 (x64), 2012 R2 (x64), 2008 R2 (x64)
- NET Framework 4.0 or higher version
- Microsoft System Center Virtual Machine Manager 2019, 2016, 2012 SP1 , 2012 R2 Agent
- Hyper-V Role

Chapter 3.   Installing Lenovo XClarity Integrator Add-in

Information about installing Lenovo XClarity Integrator Add-in is provided.

Before you begin

You must be logged in as a user with Administrator privileges to install Lenovo XClarity Integrator Add-in.

Procedure

Step 1.   Download the Lenovo XClarity Integrator Add-in Installer from the XClarity Integrator download page at Lenovo XClarity Integrator for Microsoft System Center Web site.

Step 2.   Double-click the Lenovo XClarity Integrator Add-in installer file.
The Welcome screen displays.

Step 3.   Select one of the following installation modes:

Full Installation
This option installs all components, including Lenovo XClarity Integrator Service and the Lenovo XClarity Integrator Add-in console

Console Only
This option installs only console-related components.

Step 4.   Install the package according to prompts on InstallShield wizard.

Step 5.   After the installation completes, follow the steps in "Importing Lenovo XClarity Integrator Add-in" on page 11.

Step 6.   Select one of the following database for Lenovo XClarity Integrator Service based on your actual conditions:

- PostgreSQL database: When selecting this database, a local PostgreSQL that provides PostgreSQL information and Lenovo XClarity Integrator Service should be installed on the same server.

- SQL server database: When selecting this database, SQL server information is required.

Note: For more information about these database, see Lenovo XClarity Integrator Service Installation Guide.

Uninstalling Lenovo XClarity Integrator Add-in

Use this procedure to uninstall Lenovo XClarity Integrator Add-in.

Procedure

Step 1.   From within the Control Panel, open the Programs and Features window.
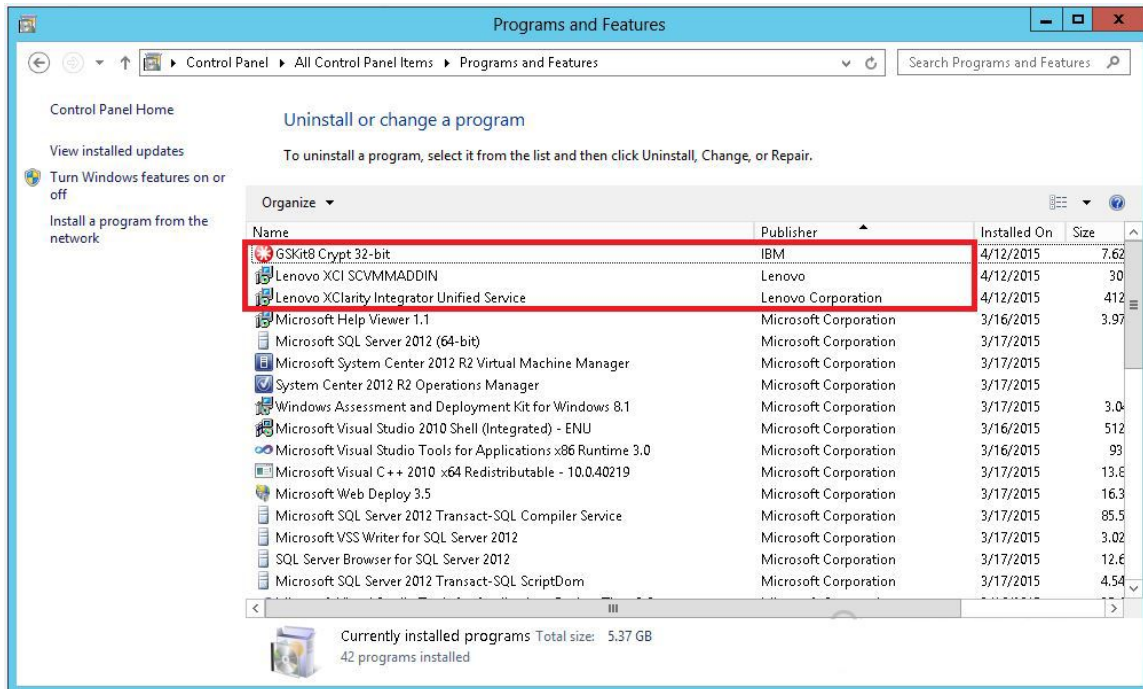
Figure 1. Programs and Features window

Step 2. Uninstall Lenovo XClarity Integrator SCVMMADDIN.

Step 3. Uninstall Lenovo XClarity Integrator Service.

Step 4. Manually remove the Lenovo XClarity Integrator Add-in from SCVMM.For detailed removal instructions, see "Removing the Lenovo XClarity Integrator Add-in from SCVMM" on page 8.

Step 5. Remove the SCVMMADDIN and Lenovo XClarity Integrator Service installation files `%ProgramFiles (x86)%\Lenovo\Lenovo XClarity Integrator Service` and *<installation path>*`\Lenovo\XCI ScvmmAddIn`.

Step 6. Remove database files (see *Uninstalling PostgreSQL* in Lenovo XClarity Integrator Service Installation Guide).

Step 7. Remove the SCVMMADDIN and Integrator Service configuration files `%ProgramData%\Lenovo\LXCI` and `%Users%\`*<user>*`\Lenovo\LXCI`.

> **Note:** Removing SCVMMADDIN and Integrator Service configuration files impacts several functions when you reinstall SCVMMADDIN and Integrator Service. For example, you cannot reuse data in the database, and you cannot migrate data from postgre to SQL server.

Removing the Lenovo XClarity Integrator Add-in from SCVMM

You must manually remove the Lenovo XClarity Integrator Add-in from SCVMM before you are going to import a newly installed one or before/after you uninstall the Lenovo XClarity Integrator Add-in from the system.

Procedure

Step 1. Open the Settings category page from left-bottom of the SCVMM.

Step 2. Select the Lenovo XClarity Integrator Add-in from the add-in list.

Step 3. Click **Remove** from the toolbar at the top of the SCVMM.
A confirmation dialog displays.

Step 4. Click **Yes** on the confirmation dialog.

Upgrading Lenovo XClarity Integrator Add-in from SCVMM

To upgrade Lenovo XClarity Integrator Add-in, you should uninstall it first, and then install the later version.

Procedure

Step 1. Uninstall Lenovo XClarity Integrator Add-in from SCVMM. See "Uninstalling Lenovo XClarity Integrator Add-in" on page 7.

Step 2. Uninstall Lenovo XClarity Integrator Service.

 Note: The `%SystemDrive%\ProgramData\Lenovo\LXCI\UUS` folder and the database files should not be deleted.

Step 3. Install the later version of Lenovo XClarity Integrator Add-in from SCVMM and Lenovo XClarity Integrator Service on the management server.

Migrating the data from the PostgreSQL database to the SQL server database

The following procedure describes how to migrate data from the PostgreSQL database to the SQL server database.

Before you begin

Ensure that the PostgreSQL database and Lenovo XClarity Integrator Service are installed on the same Windows system.

Procedure

Step 1. Log in to Lenovo XClarity Integrator Service.

Step 2. Click **Migrate Data** on the left side of the page.

Step 3. Click **Migrate Data**.

Step 4. Click **OK**. The migration process starts.

Step 5. Click **OK** again after the migration process is finished.

 Notes:
 - Do not delete the data file and the configuration file on the PostgreSQL database.
 - The old data in the SQL server database is overwritten with the migrated data after the migration process.

Uninstalling Lenovo XClarity Integrator Service

The following procedure describes how to uninstall Lenovo XClarity Integrator Service.

Note: Skip steps 4–6 if you want to upgrade it to a later version. Otherwise, permanently delete the database files by doing steps 4–6.

Procedure

Step 1. On the Windows operating system, click **Control Panel ➙ Uninstall a program**. The **Uninstall or change a program** page opens.

Step 2. Right-click **Lenovo XClarity Integrator Service**, and then click **Uninstall**.

Note: For Lenovo SCVMM Add-in v3.3.0 or earlier version, the application name is "Lenovo XClarity Integrator Unified Service".

Step 3. Remove Lenovo XClarity Integrator Service data from the database.

Step 4. Do one of the following to delete the database files based on your needs:
- For SQL server database, delete the `%hostname%LXCIDB` database from the SQL server.
- For PostgreSQL database, delete the `%USERPROFILE%\postgresql_data` folder on Windows 2012 or earlier version, or delete the `%SystemDrive%\ ProgramData\Lenovo\postgresql_data` folder on Windows 2016 or later version.

Step 5. Delete the application folder `%SystemDrive%\Program Files (x86)\Lenovo\Lenovo XClarity Integrator Service`.

Step 6. Delete the configuration files from the folder `%SystemDrive%\ProgramData\Lenovo\LXCI\UUS`.

Chapter 4. Using the Lenovo XClarity Integrator Add-in

This section provides information about importing and starting the Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager. It also provides procedures for setting host authentication, setting Rolling System preferences, and adding an baseboard management controller (BMC).

Importing Lenovo XClarity Integrator Add-in

You must import the Lenovo XClarity Integrator Add-in zip file into SCVMM manually. After the InstallShiled Wizard completes, the Lenovo XClarity Integrator Add-in zip file is copied into a specified folder. Use following the procedure to import it.

Before you begin

Ensure that the Lenovo XClarity Integrator Add-in has not been imported or has been removed. For removal instructions, see "Removing the Lenovo XClarity Integrator Add-in from SCVMM" on page 8.

Procedure

Step 1.   From the SCVMM Console, on the Settings category page, click **Import Console Add-in**. The Import Console Add-in Wizard window displays.
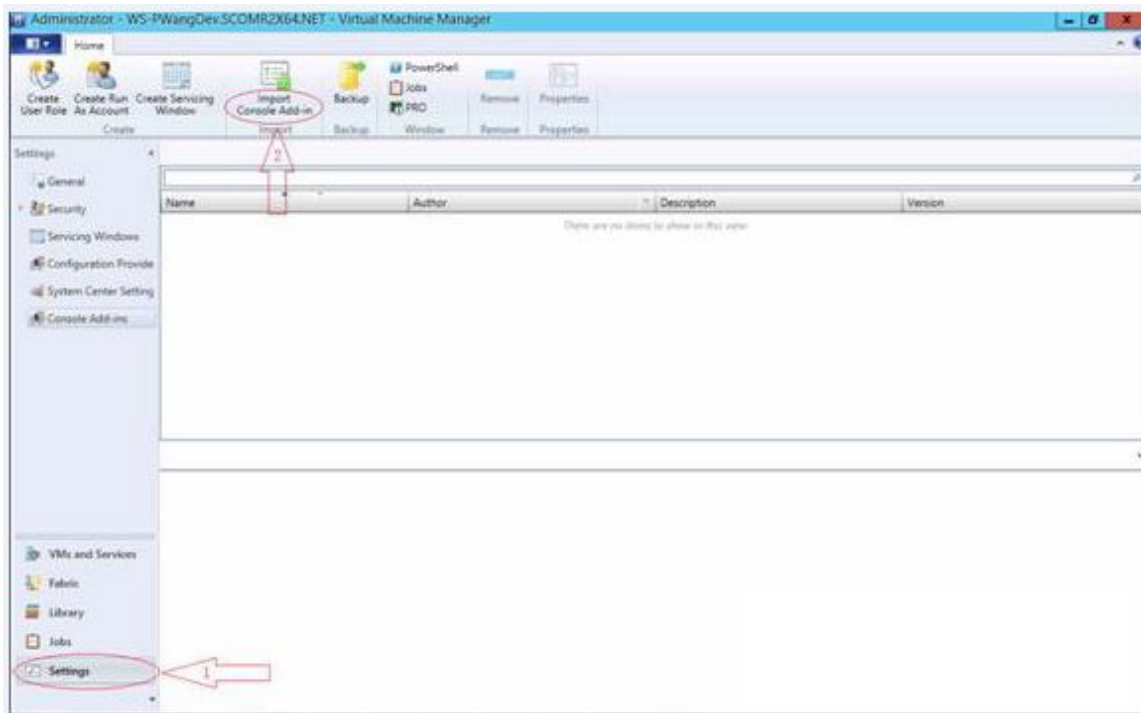
Figure 2. Import Console Add-in selection

Step 2.   In the Import Console Add-in Wizard window, click **Browse**.
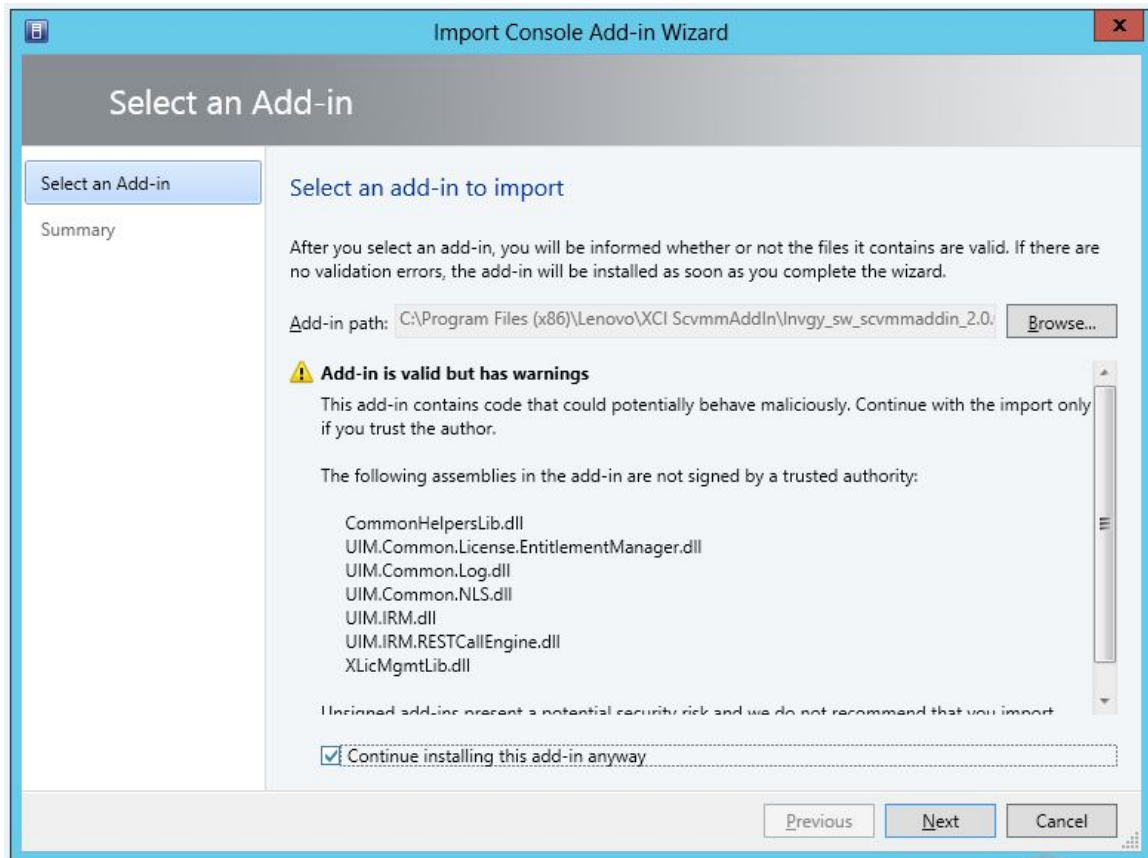
Step 3.   Navigate to the `lnvgy_sw_scvmmaddin_version_windows_32-64.zip` file. The zip file is typically located in the following path: `C:\Program Files (x86)\Lenovo\XCI ScvmmAddIn`.

Step 4.   Select the **Continue installing this add-in anyway** check box.

Step 5.   Click **Next** to continue.

Step 6.   Click **Finish** to continue with the import procedure.
The status of the import procedure is presented in the Jobs report console.

Starting Lenovo XClarity Integrator Add-in

After importing the Lenovo XClarity Integrator Add-in zip file, use the procedure in this section to start the Lenovo XClarity Integrator Add-in.

Before you begin

Important: Lenovo XClarity Integrator Add-in provides some functions that enable you to operate hosts, clusters, chassis, racks, and Lenovo XClarity Administrator. To avoid unauthorized operation, only Domain Administrators and accounts with a delegated administrator user role can access the Lenovo XClarity Integrator Add-in.

Procedure

Step 1.   Open the SCVMM Console.

Step 2.   Select **VMs and Services** or **Fabric** from the lower left corner of SCVMM Console.
A navigation pane displays.

Step 3.   Select **All Hosts**.

Step 4. Click the **Lenovo XClarity Integrator** icon at the top of the SCVMM Console.

Step 5. From either the Fabric category page or the VMs and Services page, click the **Lenovo XClarity Integrator** icon at the top of the window.
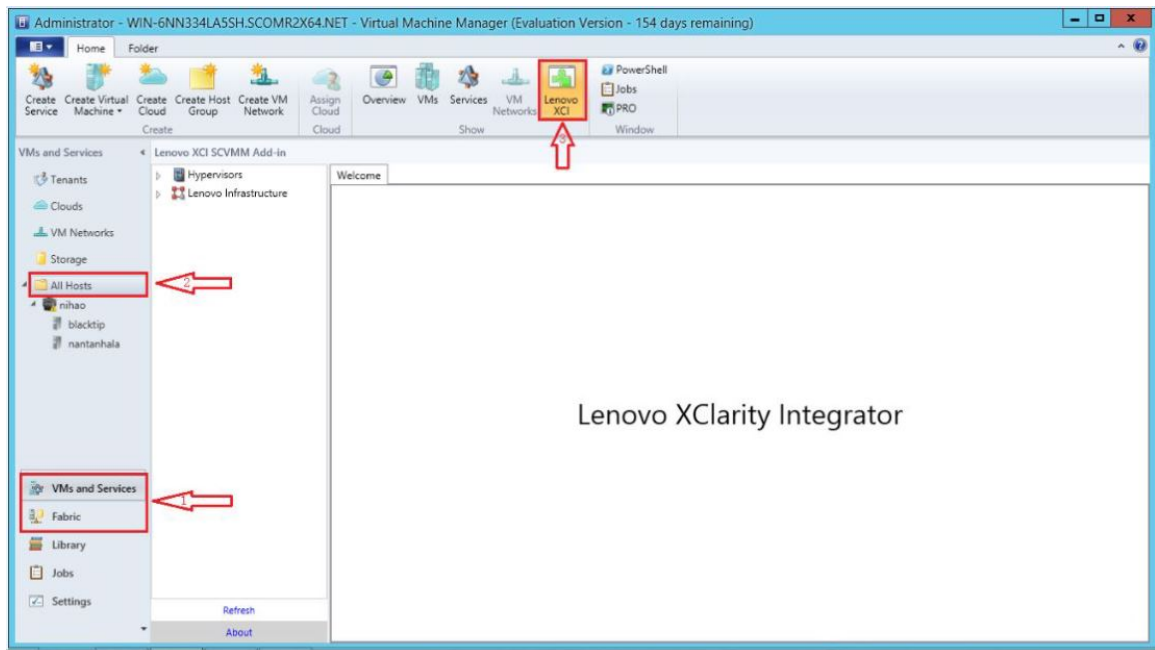
Figure 3. Starting Lenovo XClarity Integrator Add-in

The interface for Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager console comprises two sections. On the left side is a navigation pane containing managed assets, including host clusters and their managed hosts that are synchronized with SCVMM configuration; and Lenovo XClarity Administrator instances and their managed chassis. On the right side is the main frame, which displays the current operation relevant to the asset selected in the left tree view. To refresh or reload assets in left navigation pane, press Ctrl+F5 or click **Refresh** at the bottom of the navigation pane.

Logging in to Integrator Service

After clicking the **Lenovo XClarity Integrator** icon at the top of the SCVMM console, the Integrator Service login page is displayed. You can use this page to log in to Integrator Service from a local or remote SCVMM server to perform operations hosts, clusters, chassis, racks, and Lenovo XClarity Administrator instances that are managed by the target Integrator Service.

Server name
> Specify the FQDN of target server where Integrator Service is installed and the SCVMM server is connected. You cannot change the FQDN or log in using a different server unless you reconnect SCVMM using other address.

Port
> Specify the port of Integrator Service on the target server. The port was set during the installation of Integrator Service. The default port is 9500.

Password
> Specify password to log in to Integrator Service on the target server. This password was set during the installation of Integrator Service.

Remember password

Select to save the password to the configuration file and automatically connect using these settings next time. These settings are only saved and effective for the Windows current user.

Configuration file path

system drive\users\current user\Lenovo\LXCI\ScvmmAddin\config.json.txt

Certification

Lenovo XClarity Integrator ensures the security of your connection to the Integrator Service by verifying the certificates. You will be warned if the certificates are not secure.

Notes: Lenovo XClarity Integrator uses a self-signed certificate chain in default settings. You can see the warning that the CA root certificate is untrusted during login. Check **Trust the certificate permanently** if you are sure the certificates are valid, or uncheck it to ignore the checking of this connection. If you choose not to trust the certificate permanently, several system warnings will be displayed, depending on the security settings of your system:

1. "Content within this application coming from the Web site listed below is being blocked by Internet Explorer Enhanced Security Configuration." The listed Web site could be one of "about:blank", "about: internet", or "security_VmmAdminUI.exe".

   • Click **Close** to suppress the warning, or click **Add...** to add a permanent exception.

2. "Navigation to the webpage was canceled"

   Right-click on the page and select **Refresh**, or hit F5.

3. "There is a problem with this Web site's security certificate."

   Click **Continue to this Web site (not recommended).**.

How to check if you are connecting to Lenovo XClarity Integrator?

1. Go to `%ProgramFiles(x86)%\Lenovo\Lenovo XClarity Integrator Service\WebServer\conf` on your SCVMM server.

2. Double click **ca.root** or **ca.root.cer**.

3. Compare the Thumbprint with the one displayed in the warning. They should be identical.

Setting host authentication

Use the Hypervisor node to view information about the host.

The authentication information is required to collect detailed system information, such as Machine Type, and to enable some XClarity Integrator functions, such as Rolling System Update and Rolling System Reboot. To set host authentication information, you can expand Hypervisor from the navigation pane of the Lenovo XClarity Integrator Add-in, and then expand the cluster and click one host. On the Host General page, you can see **Authentication OS**. Click it to enter the Host Authentication Information dialog. You must set the following information to finish host authentication.

Run As Account

Specify the domain\administrator account for Lenovo XClarity Integrator to run tasks through SCVMM to the client host.

The SCVMM Run As account is used for the SCVMM service to run scripts on the target host. Use the domain\administrator account to ensure that all Lenovo XClarity Integrator Add-in functions work correctly.

Username and Password

A user account with domain administrator permission is required to connect to a specific host via WMI to collect system information, to execute scripts and applications, or to access the SMB share folder (typically C$) of a specific host.

Note: Ensure that the SMB and WMI services of the managed hosts are enabled. After being encrypted, the authentication information is stored in the Lenovo XClarity Integrator Service database.

Click **Set Auth Info** on the bottom of the host General tab. Then complete the fields on the Set Authentication Information window. The information can be applied to either the selected host, the hosts in the same cluster, or to all hosts listed in the navigation pane. Wait after applying the information. The information is verified and the result is shown in the UI.
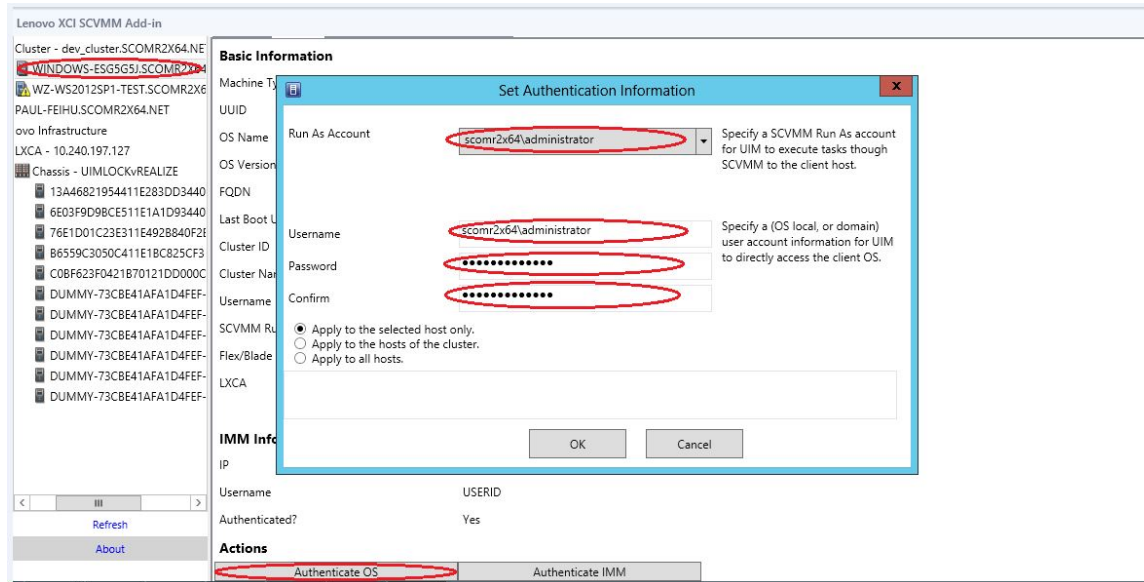
Figure 4. Setting host authentication

Setting Rolling System Update Preferences

Setting Rolling System Update Preferences is a precondition of the Rolling System Update without policy functions. Use following the procedure.

Procedure

Step 1.   Expand Hypervisor from the navigation pane of the Lenovo XClarity Integrator Add-in, and then select the target cluster.

Step 2.   From the top of the main frame, select Rolling System Update.

Step 3.   Click the Preferences link on the Rolling System Update page.

Step 4.   Assign a **Local / Remote Repository Folder** that is used to save or download firmware payloads for firmware updates.

Step 5.   Specify credentials (username and password) that is used to access the Windows share folder, if needed. If you use a local folder, Lenovo XClarity Integrator Add-in automatically shares this folder using the name `Repository`, so a Windows account that has the correct privileges is required. The Lenovo XClarity Integrator Add-in supports only the Windows share folder. Assigning a Linux or other share folder might cause to a fatal failure in some Lenovo XClarity Integrator Add-in functions, such as Rolling System Update.

Step 6.   Perform one of the following steps:
- If you have update packages available, copy them into the Local Repository Folder path.

- If you do not have update packages available, set the Check Updates from Lenovo Web site Section to download update packages from the Lenovo Web site automatically:
    1. Select the **Download Updates from Lenovo Web site** check box.
    2. Configure your Internet settings.
    3. Choose the frequency for downloading update packages automatically, and then save your changes. If you want to download an update package immediately, click **Check Now**. The download process begins after you click the button.

Step 7. Click **Save** to save the settings.
If the settings save successfully, nothing happens.

Step 8. Click the Go Back link to return to the Rolling System Update Task Manager page.

Adding a baseboard management controller (BMC)

Adding an baseboard management controller (BMC) into the Lenovo XClarity Integrator Add-in is a precondition for some functions, such as the PFA function.

There are two steps to add BMC:
1. BMC discovery
2. BMC authentication

BMC discovery

This function is to discover BMC entries.

Procedure

Step 1. Select the **Hypervisors** or the **Lenovo Infrastructure** root entry in the navigation pane of the Lenovo XClarity Integrator Add-in.

Step 2. Choose the BMC Management page on the top of the main frame.

Step 3. Click **Discover**.
The BMC Discovery dialog displays.

Step 4. Enter one IP address or a range of IP addresses.IPv4 and IPv6 are supported.

Step 5. Click **OK** in the BMC Discovery dialog.

The dialog closes immediately if the **Run in the background** option is selected. Otherwise, the dialog closes when the discovery process has successfully completed. Successful completion means that the request has been handled and returned regardless of the number of BMC entries actually discovered.

If the request has successfully completed, the newly discovered BMC entries are updated on the BMC table on the BMC Management page.

The dialog remains open when there is a failure in handling the request. This can occur when the request has not reached to the server due to a communication failure.

BMC authentication

This function is to input username and password information for BMC entries. The information is saved in the XClarity Integrator database for future use in other functions.

Procedure

Step 1. Select the **Hypervisors** or the **Lenovo Infrastructure** root entry in the navigation pane of the Lenovo XClarity Integrator Add-in.

Step 2. Choose the BMC Management page on the top of the main frame.

Step 3. Select the check boxes next to the BMCs to be authenticated.

Step 4. Click **Authenticate**.
The BMC Authentication dialog displays.

Step 5. Enter username and password information.

Step 6. Click **OK**. If the request has successfully completed, the BMC table on the BMC Management page is updated.

Adding Lenovo XClarity Administrator

Adding Lenovo XClarity Administrator into the Lenovo XClarity Integrator Add-in is prerequisite for certain functions, such as viewing general information about Lenovo XClarity Administrator and viewing a chassis map of its managed chassis. Use the steps in this section to add Lenovo XClarity Administrator into Lenovo XClarity Integrator Add-in.

Procedure

Step 1. Click Lenovo Infrastructure from the navigation pane.

Step 2. Click the **LXCA Registration** tab at the top of the main frame.
The Registered LXCA page is displayed on the main frame. All registered Lenovo XClarity Administrator instances are displayed on the page.

Step 3. Click **Register** to begin Lenovo XClarity Administrator registration.
A Lenovo XClarity Administrator registration dialog is displayed.

Step 4. Enter the IP address, User Name, Password, and Port for the Lenovo XClarity Administrator. Then do one of the following to authenticate Lenovo XClarity Administrator:
  • Use an existing account.

    Ensure that this account has "lxc-supervisor" or "lxc-operator, lxc-fw-admin, lxc-hw-admin, lxc-os-admin" role groups. If **Resource Access Control** is enabled on Lenovo XClarity Administrator, ensure that this account can access the server.
  • Create a new account.

    Create a new account in Lenovo XClarity Administrator and use this account for further communication. The new account has "lxc-operator, lxc-fw-admin, lxc-hw-admin, lxc-os-admin" role groups. Do not create a new account when Lenovo XClarity Administrator is using LDAP or the local account is disabled. If **Resource Access Control** is enabled on Lenovo XClarity Administrator, ensure that "lxc-operator, lxc-fw-admin, lxc-hw-admin, lxc-os-admin" role groups can access the server.

    Click **OK**, the Lenovo XClarity Integrator Add-in connects to the Lenovo XClarity Administrator to authenticate.

Step 5. If the View Certificate page is displayed, click **Trust this certificate** to confirm that Lenovo XClarity Administrator is trusted, and then click **Close**.

Step 6. After you register, click **Refresh** to update the navigation pane.

What to do next

Notes:
• Ensure that the user-authentication method in Lenovo XClarity Administrator *is not* configured as **Allow logons from LDAP users**.
• Ensure that the specified Lenovo XClarity Administrator user account has supervisor privilege.

- If you registered a Lenovo XClarity Administrator instance using an earlier version of Lenovo XClarity Integrator, manually download the server certificate for the Lenovo XClarity Administrator instance, and import it in to Lenovo XClarity Integrator by click **Manage trusted certificates → Add**. If the server certificate is not added to Lenovo XClarity Integrator, Lenovo XClarity Integrator will not connect to Lenovo XClarity Administrator.
- If your Lenovo XClarity Administrator works only in IPv6 environment, you can only manually import its certificate to Lenovo XClarity Integrator by click **Manage trusted certificates → Add**. Otherwise, Lenovo XClarity Administrator will not be registered.

Other Lenovo XClarity Administrator Registration Operations:

After completing the registration, you can perform these actions:
- Edit Lenovo XClarity Administrator by clicking **Edit** and making any necessary changes.
- 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 Management 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 Management page. by clicking **LXCA Registration**.

Chapter 5. Working with functions

This section introduces Lenovo XClarity Integrator Add-in functions.

Collecting information

Lenovo XClarity Integrator Add-in collects information about hosts, chassis, and Lenovo XClarity Administrator in order to aid in managing systems.

Viewing host information

You can get general information about hosts inside of a host cluster that is configured in SCVMM.

For information on how to configure a host cluster in SCVMM, see the Microsoft System Center – Managing Host Clusters Web page.

To view host information, expand Hypervisor from the navigation pane of the Lenovo XClarity Integrator Add-in, and then expand the cluster and click one host.

To see general information for a host inside a cluster, expand the **Hypervisor** node from the navigation pane of the Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager UI, select the cluster where the host resides, and select the host.

To see the general information for a host outside a cluster, expand the **Hypervisor** node from the navigation pane of the Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager UI, then select the host.

Viewing general information about Lenovo XClarity Administrator

You can view general information about Lenovo XClarity Administrator and the chassis that Lenovo XClarity Administrator manages.

To view general information of Lenovo XClarity Administrator, you must first register Lenovo XClarity Administrator. See chapter 4 for more information.

Then expand Lenovo Infrastructure from the navigation pane, and select one of Lenovo XClarity Administrator instances you targeted. General Information about the Lenovo XClarity Administrator displays on the main frame like this:
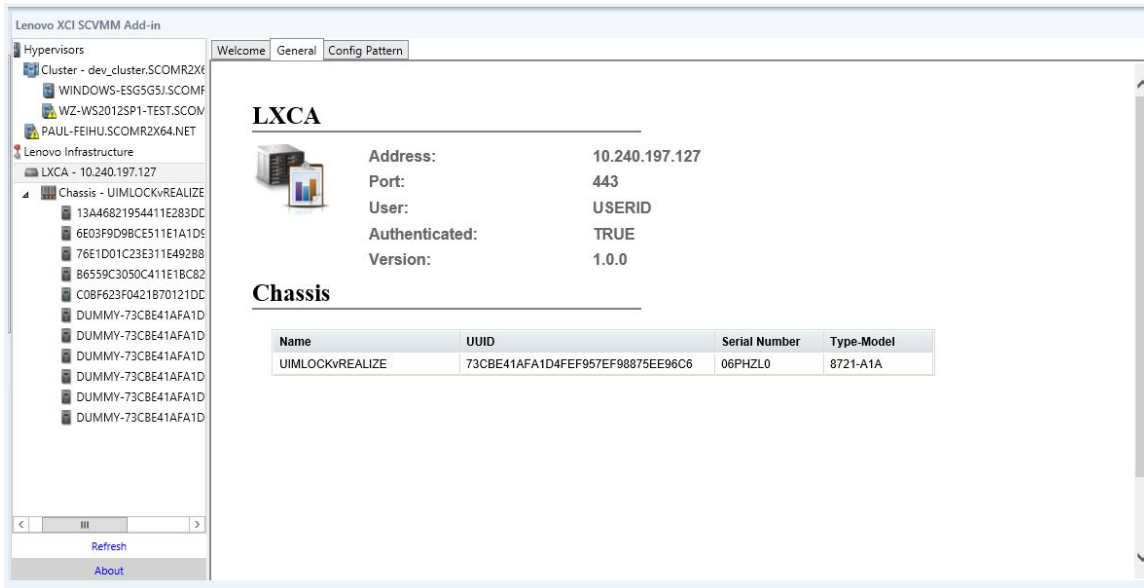
Figure 5. Lenovo XClarity Administrator general information

Viewing a chassis map

After Lenovo XClarity Administrator is registered in the Lenovo XClarity Integrator Add-in, you can review the chassis map for a chassis that is managed by the Lenovo XClarity Administrator.

Procedure

Step 1.   Locate a chassis or a server in a specific chassis and select it from the asset tree pane of the Lenovo XClarity Integrator Add-in console.

The chassis should be managed by Lenovo XClarity Administrator under the Lenovo Infrastructure node in the Lenovo XClarity Integrator Add-in console's asset tree pane.

Step 2.   Click the Chassis Map tab from the work area on the Lenovo XClarity Integrator Add-in console.

You can:

- Click a component in the chassis to view its basic inventory and status information from a prompt.
- Apply various overlays to show different information or status for components in the chassis.
- Enable the overlays that you are interested in from the toolbar on the top of the Chassis Map view. TheTable 4 "Hardware map overlays" on page 22 table provides more details about the overlays.

Figure 6. Chassis map

Table 4. Hardware map overlays

Overlay	Icon	Description
Hardware status		Use the hardware status overlay to show the status of each of the components. You can choose one or more of the following status criteria to show: • **Critical**. Components have one or more critical alerts and immediate user action is required. • **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. • **Synchronizing**. Lenovo XClarity Administrator is waiting for the components to provide updated status. • **Offline**. Components are not online. • **Unknown**. Lenovo XClarity Administrator is not able to retrieve the status from one or more components in a chassis. User investigation might be needed. • **Normal**. Components are operating normally. Hover over a specific component to get more information about the current status.
Highlight front panel LEDs		Use the highlight front panel LEDs overlay to see the LEDs that are available for each of the components. You can choose one or more of the following LEDs to show: • **Power LED**. Display the current power LED for each component. • **Event Log LED**. Display the event log LED, which is lit when there are events specific to a component in the Lenovo XClarity Administrator event log. • **Location LED**. Display the location LED, which can be turned on from the CMM to help you identify where a component is physically located. • **Fault LED**. Displays the status of the Fault LED for each component. • **Other LED**. Display all other LEDs that are available for each component. • **Only Active LEDs**. Display only the LEDs that are currently lit. Hover over a specific component to get more information about all LEDs for a component. For detailed information about each of the LEDs that can be displayed for a component, see the product documentation that is available for that component.
Component names and properties		Use the component names and properties overlay to display the name for each component in the chassis. When you hover over a component, additional properties about that component, such as IP address and UUID are displayed.
Compliance		Use the compliance 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 the Configuration Pattern overlay to determine which server patterns are assigned to each compute node.

Viewing details for a managed chassis

You can view the detailed information about the managed chassis from the Lenovo XClarity Administrator when you click the Open Lenovo XClarity Administrator for Details link.

These details include firmware levels, IP addresses, and universally unique identifiers (UUIDs).

All Action button

There is an **All Action** button on the Chassis Map page. By clicking this button, you can access the BMC interface and control one selected host remotely.

Launch Management Module Interface
If you select a chassis or host in the Chassis Map page, you can open an BMC web page in new window.

Launch Remote Control
You can open a Remote Control if you select a host in the Chassis Map view.

Searching for assets

The "searching for assets" feature provides the search capability for quickly locating specific servers, clusters, chassis, and/or Lenovo XClarity Administrator instances among the assets from theLenovo XClarity Integrator Add-in console with a keyword.

Keywords

Keyword matching is case-insensitive. A keyword does not support wildcards or regular expressions.

Search fields

Search fields vary according to search targets. A match is found when the search text is included in any one of the fields of a search target.

For servers, the search fields are:
- **OS FQDN**
- **OS IP address**
- **OS Name**
- **Machine type**
- **Server UUID**
- **IMM IP address**
- **IMM model**
- **IMM part number**
- **IMM serial number**
- **IMM UUID**

For chassis, the search fields are:
- **Domain name**
- **Machine type**
- **Model**
- **Name**
- **Part number**
- **Serial number**
- **CMM IP address**
- **Product name**
- **UUID**

For Lenovo XClarity Administrator, the search field is:
- **IP address**

For cluster, the search fields are:
- **Cluster ID**
- **Cluster Name**

Search results

The search results display in the asset tree in the hierarchical structure. Matches are highlighted in blue. The upper-level nodes of a match node are expanded. A match node that has subordinate nodes without matches is collapsed.

From within the search results, you can select one node and operate it as usual. Its functions operate normally as well.

The asset tree stops automatically refreshing while displaying the search results.

Starting a search

The "start a search" function enables you to search for specific assets of servers, clusters, chassis, and/or Lenovo XClarity Administrator instances.

Procedure

Type keyword text into the **Search** field, which is located at the top of the Lenovo XClarity Integrator Add-in asset tree. The results are revealed automatically as you type.

Clearing search results

The "clear search results" function enables you to clear results from a search so that full assets of servers, clusters, chassis, and/or Lenovo XClarity Administrator instances display.

Procedure

Perform one of the following steps:

1. Clear the **Search** field.
2. Press the Esc key.
3. Click **Clear the Search**.

Monitoring

This section covers managing RAS, setting policy, disabling VM auto-migration function from server nodes, and viewing Event History.

PFA management

This feature provides the virtual machine (VM) automatic migration capability on specified hardware events.

Before you begin

This feature is cluster-based. Before you continue with the operations, you must create clusters in SCVMM and add hosts in clusters. The Cluster Shared Volume (CSV) is also required. For additional details, refer to the Microsoft System Center topic Microsoft System Center – Creating a Hyper-V Host Cluster in VMM Overview Web page.

You must also perform the steps in "Adding a baseboard management controller (BMC)" on page 16.

Setting a policy

With the set policy function, you can enable VM auto-migration to selected server nodes with specific conditions and event categories.

Before you begin

Complete the prerequisites in "PFA management" on page 24.

Procedure

Step 1. Select the **Hypervisors** root entry, or a cluster, or a hypervisor node in a cluster in the left host navigation pane.

Step 2. Choose the **PFA Management** page on the top of the right pane.
The RAS Management page opens.

Step 3. Click **Set Policy**.
The Set Policy dialog displays.

Step 4. Choose the Enable VM migration on hardware events option from the drop-down list at the top.

Step 5. Select or clear Conditions, Event Categories, and Hosts if it is necessary. A host is not selectable if its BMC has not been discovered or has not authenticated.

Step 6. Click **OK**.
A page that prompts you to confirm the settings displays.

Step 7. Click **OK**.

Step 8. Click the Back link on the bottom to go back to the RAS Management page.

Disabling VM auto-migration function from server nodes

This function allows you to disable VM auto-migration from selected server nodes.

Before you begin

Complete the prerequisites in "PFA management" on page 24.

Procedure

Step 1. Select the **Hypervisors** root entry, or a cluster, or a hypervisor node in a cluster in the left host navigation pane.

Step 2. Choose the **PFA Management** page on the top of the right pane.
The RAS Management page opens.

Step 3. Click **Set Policy**.
The Set Policy dialog displays.

Step 4. Choose the Disable VM migration on hardware events option from the drop-down list at the top.

Step 5. Change the selection of hosts if it is necessary.

Step 6. Click **OK**.
A page that prompts you to confirm the settings displays.

Step 7. Click **OK**.

Step 8. Click the Back link on the bottom to go back to the RAS Management page.

View Event History

The View Event History function enables you to view hardware events and what has been done to the events.

Before you begin

Complete the prerequisites in "PFA management" on page 24.

Procedure

Step 1. Select the **Hypervisors** root entry, or a cluster, or a hypervisor node in a cluster in the left host navigation pane.

Step 2.   Choose the **PFA Management** page on the top of the right pane.
The RAS Management page opens.

Step 3.   Click **View Event History**.
The **RAS Events** page displays, showing the RAS events and the operation history of the events present for the hosts shown in the table on the PFA Management page.

Step 4.   Click the Back link on the bottom to go back to the RAS Management page.

Updating servers

This chapter provides information about Rolling System Reboot and Rolling System Update.

Rolling System Update

The Rolling System Update function helps you to update the servers while the system continues running without interruption to application services on server hosts.

Before you begin

- Firmware download is not supported for IBM servers.
- ThinkServer servers are not supported.
- The Rolling System Update function does not support the servers with the follow machine types if the operation system is Windows Server 2016.

   Machine types: 7875,1929, 8038, 8039, 2582, 5457, 2583, 5458, 7382, 7383, 7160, 7914, 7158, 7159, 7915, 5460, 5466, 8722, 8733, 8752, 8718, 7145, 7146, 3837, 3839, 7143, 7191, 3837, 3839, 7918, 7919, 7912, 7913, 8737, 8738, 7863, 8956, 7906, 2585, 7916, 7917, 4259, 7903, 4259, 7903, 4259, 7903, 5455

- Install Microsoft Internet Explorer update KB3087038 using the instructions in "Installing Microsoft Internet Explorer update KB3087038" on page 46.

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 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.
  – Host machines must be added to and managed by Lenovo XClarity Administrator.
  – Firmware-compliance policies must be created in Lenovo XClarity Administrator.
  – Firmware is 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 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 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 steps in "Setting host authentication" on page 14 must be completed when you create a task of type **Update without Policy**.
  – The steps in "Setting Rolling System Update Preferences" on page 15 must be completed when you create a task of type **Update without Policy**.

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 migration 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.

If the preferences have not been set before, the Preferences page is displayed. If preferences have been set already, the Rolling System Update Task Manager page is displayed, and you can click the **Preferences** link to display the Preferences 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.

Target	Status	Description
	Failed	The causes of host failure: • 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.

Rolling System Reboot

The Rolling System Reboot (RSR) function reboots the servers while the system continues running without interruption to application services on server hosts.

Before you begin
- You must set the information described in "Setting host authentication" on page 14.
- You must complete the steps in "Setting Rolling System Update Preferences" on page 15.

About this task

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.

The Task Manager provides the following task options:
- Create a Rolling System Reboot task. Each cluster can have only one active task whatever the task type is:
  - Update Only
  - Update and Reboot
  - Reboot Only
- Edit a Rolling System Reboot task that has not been started
- Remove a Rolling System Reboot task from the Task List
- Cancel a Rolling System Reboot task that is running
- View Rolling System Reboot task status

Procedure

Step 1. Expand Hypervisor from the navigation pane of the Lenovo XClarity Integrator Add-in, and then select target cluster.

Step 2. Select Rolling System Reboot on the top of main frame.
The Task Management page displays.

Step 3. Perform one of the following:
- Create 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 6. Rolling System Reboot task status

Target	Status	Description
Rolling Reboot	Not Started	The task has not started.
Task	Running	The task is running.
	Canceled	The task is canceled.
	Failed	Causes of task failure: • Rebooting host failed • VM migration failed
	Finished	The task has completed.
Host	Not Started	The reboot 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 reboot and exit Maintenance succeeded.
	Failed	The causes of host failure: • Cannot enter maintenance mode • Cannot reboot the host • Cannot exit maintenance mode

Configuring Lenovo XClarity Integrator Add-in

All the functionality described in this section is based on Lenovo XClarity Administrator and describes how to work with configuration patterns.

Configuration Pattern

The Configuration Pattern function helps you to deploy a Configuration Pattern easily. Configuration 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 Configuration Pattern is used as an overall pattern to quickly configure multiple servers simultaneously.

Before you begin

- You must complete the steps in "Adding Lenovo XClarity Administrator" on page 17.

- You must log on to the Lenovo XClarity Administrator and create a Configuration Pattern on its Web site.

To open the Configuration Pattern page, follow the steps in the procedure.

Procedure

Step 1. In the navigation pane, expand Lenovo Infrastructure, then click an Lenovo XClarity Administrator, or items under the Lenovo XClarity Administrator.

Step 2. Click the **Config Pattern** tab at the top of the main frame. The Config Pattern page displays.

Figure 7. Configuration Pattern page

Deploying a Configuration Pattern

Using the Configuration Pattern page, you can follow the steps in this section to deploy a Configuration Pattern.

Procedure

Step 1.   Select **Deploy Pattern** as your action.

Step 2.   Select the pattern you want to deploy.If there are no items in the **Pattern to Deploy** list, you must log in to the Lenovo XClarity Administrator to create one.

Step 3.   Make your choice about how you want to activate the Configuration Pattern.

- **Full** means activate all settings and restart the server now.

- **Partial** means activate BMC settings but do not restart the server. uEFI and server settings will be active after the next restart.

Step 4.   Select the systems you want to target to deploy the Configuration Pattern.

Step 5.   Click **Deploy**. A summary dialog displays, allowing you to confirm your choice.
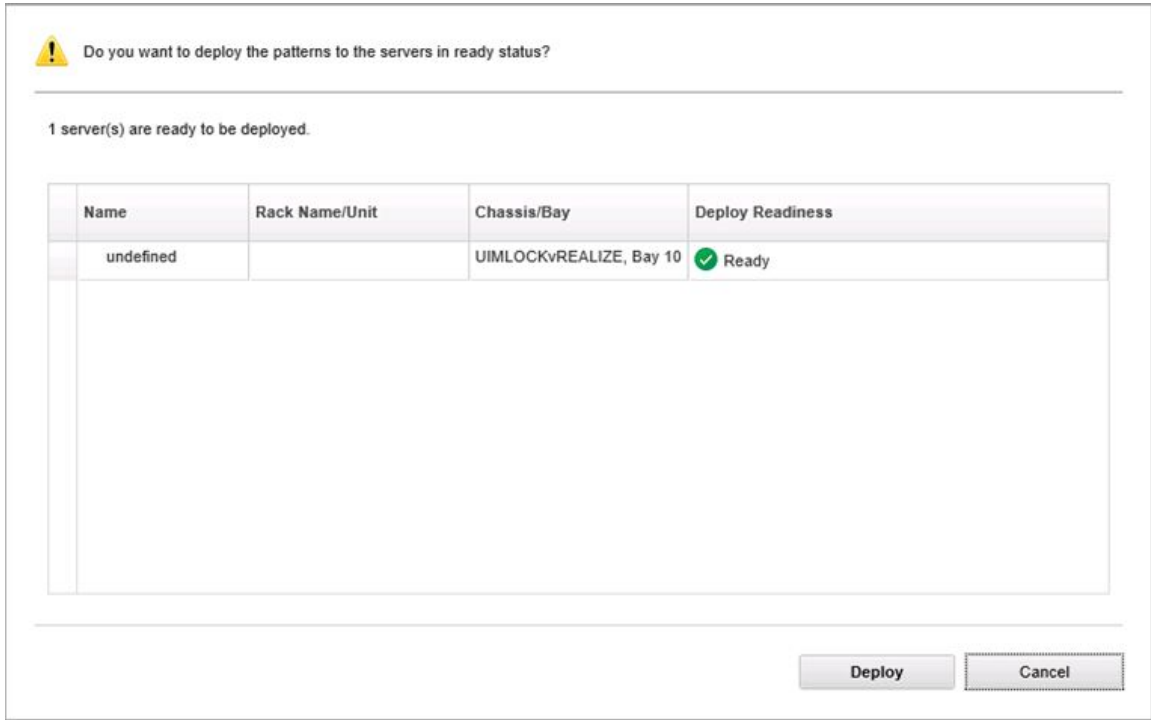
Figure 8. Configuration Pattern deployment summary dialog

Step 6. Click **Deploy**.

A confirmation window showing that the deployment request is being submitted displays.

Figure 9. Deployment request confirmation window

When the submission is complete, another confirmation window displays.
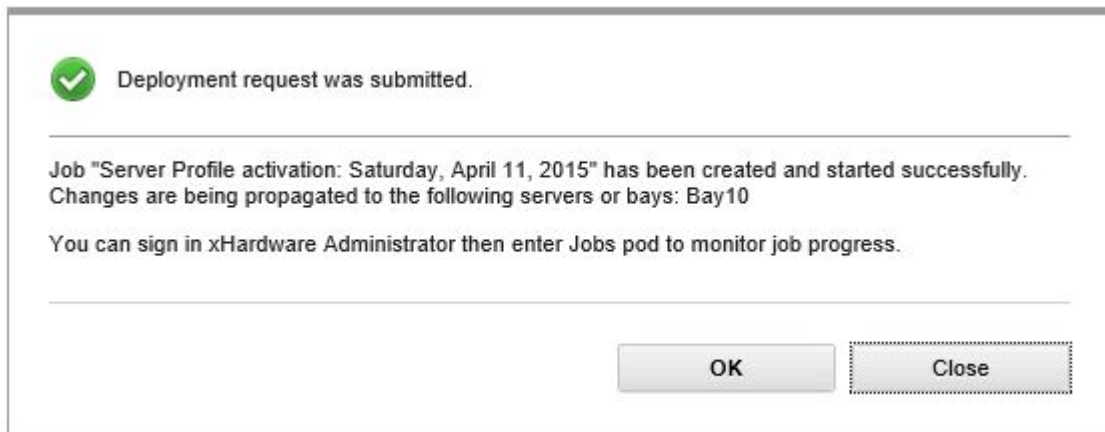
Figure 10. Deployment request submitted confirmation window

To view the details of a server pattern, click the Click to show pattern details link in the Deploy Server Pattern windows. The details of a server pattern display similar to the example in the screen below.

Figure 11. Server pattern details

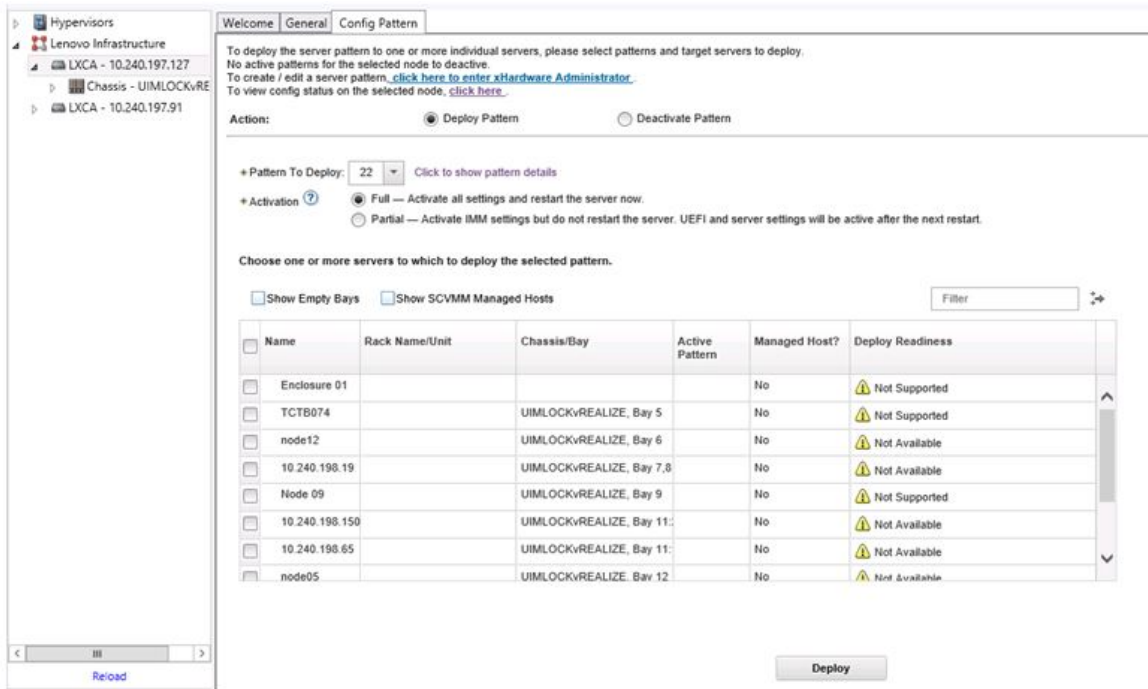## Deactivating a Configuration Pattern

Using the Configuration Pattern page, you can follow the steps in this section to deactivate a Configuration Pattern.

Procedure

Step 1. Select **Deactivate Pattern** as your action.
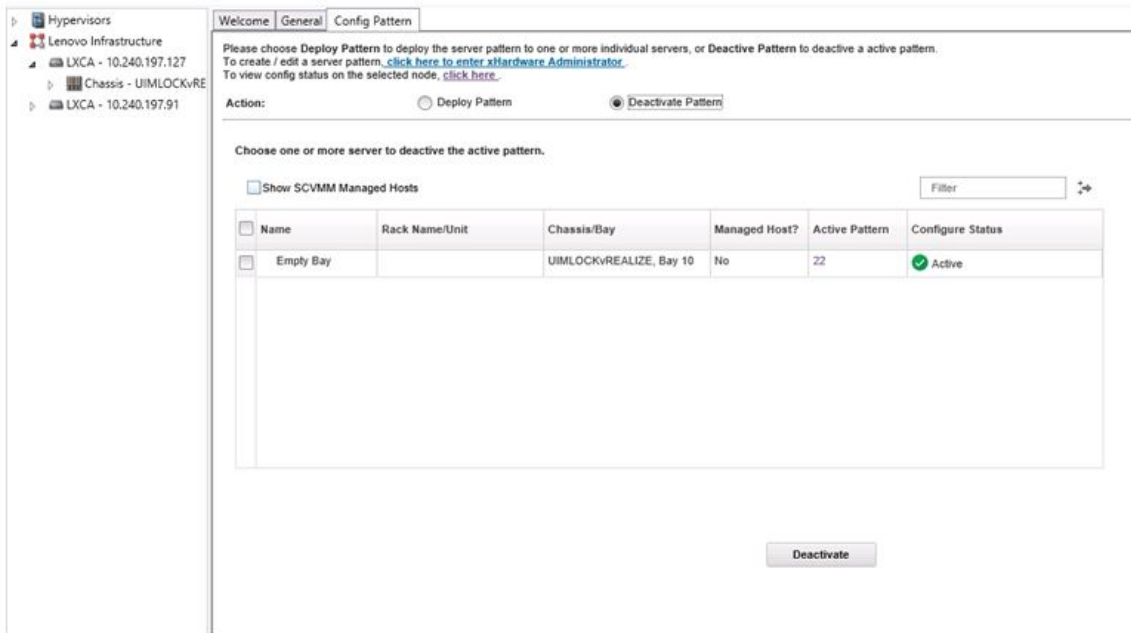
Figure 12. Deactivating a Configuration Pattern

Step 2. Select one or more check boxes next to the Configuration Patterns that you want to deactivate.

Step 3. Click **Deactivate**.
The Deactivate Server Pattern dialog displays.
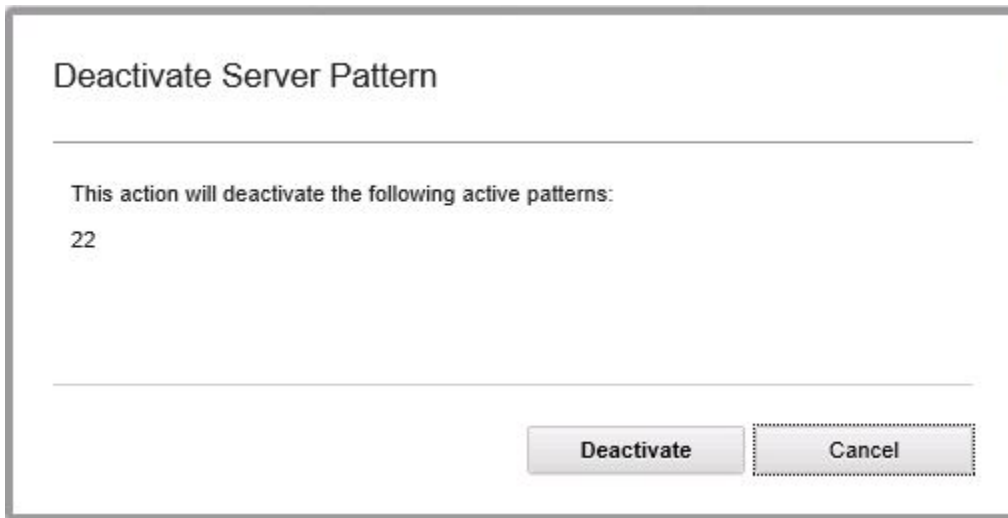
Figure 13. Deactivate Server Pattern dialog

Step 4. Click **Deactivate** to confirm that you want to deactivate the Configuration Pattern

A status dialog displays while the Configuration Pattern is being deactivated.

Figure 14. Deactivate status dialog

When the deactivation is complete, the Pattern Deactivation Summary dialog displays.
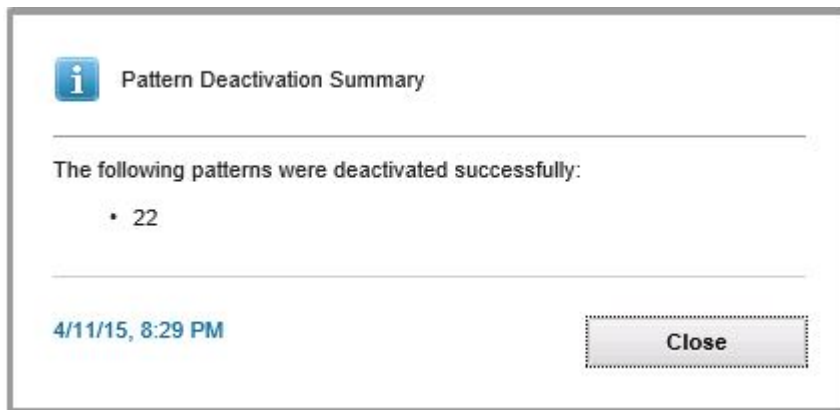
Figure 15. Pattern Deactivation Summary dialog

Step 5. Click **Close** to return to the Configuration Pattern page.

Chapter 6. Configuring Lenovo XClarity Integrator Add-in

This section introduces how to configure Lenovo XClarity Integrator Add-in.

Opening Lenovo XClarity Integrator Management

Before you begin

Ensure that you are logged in to Lenovo XClarity Integrator Service.

Procedure

Complete the following steps to open Lenovo XClarity Integrator Management.

Step 1.   Expand the side bar on the left of Lenovo XClarity Integrator Add-in.

Step 2.   Click **Lenovo XClarity Integrator Management**.

Step 3.   Log in using the user name and password for Integrator Service.

Changing password for Integrator Service

You can change the password for Integrator Service.

Procedure

Complete the following steps to change the password for Integrator Service.

Step 1.   Click **Change Password** in the upper-right corner.

Step 2.   Enter the existing password and new password.

> **Note:** The new password must conform to the password rules.

Step 3.   Click **Change**.

Collecting service data

You can collect log files and set the log level.

Collecting log files

You can collect and download log files.

Procedure

Step 1.   Click **Collect Log**.

Step 2.   Click **Download Log**.

Changing the log level

You can change the log level. Log levels include debug, information, warning and error.

Procedure

Click the drop-down menu to change log level.
- **debug**. The log file records error, warning, information, and debug messages.

- **information**. The log file records error, warning and information messages.
- **warning**. The log file records warning and error messages.
- **error**. The log file records only error messages.

Managing security

You can set the BMC communication protocol and manage root certificates.

Setting the BMC communication protocol

You can choose to communicate with all managed baseboard management controllers (BMCs) using the HTTPS protocol.

Before you begin

Ensure that the HTTPS protocol is enabled on all BMCs. If not enabled, HTTPS and HTTP are tried in sequence

Procedure

Step 1.   Click the **Security Setting** tab

Step 2.   Select the checkbox

Step 3.   Click **Save**.

Viewing database information

You can display database information.

Procedure

To display database information, click the **Database Information** tab.

Migrating data from PostgreSQL to SQL

You can migrate existing data from a PostgreSQL to SQL database server.

Before you begin

During the uninstallation of the earlier version, the configuration file must not be deleted, and the PostgreSQL server must not be uninstalled.

During the installation of the later version, you must choose the SQL server as the database solution.

After the migration completes successfully, existing data in the new database is overwritten with the migrated data.

Procedure

Complete the following steps to change the password for Integrator Service.

Step 1.   Click the **Migrate Data** tab on the left side of the page.

Step 2.   Click the **Migrate Data** tab on the right side of the page.

Step 3.   Click **OK**.

Step 4.   After the migration completes successfully, click **OK**.

Working with security certificates

Lenovo XClarity Integrator and the supporting software establish secure connections between each others by using SSL certificates. 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 installing the customized server certificate in Lenovo XClarity Integrator, you shall provide the certificate bundle that contains the entire CA signing chain.

Before you begin

If the new server certificate is not signed by a trusted international third party, a security message will be displayed the next time you connect to Add-in. To avoid the security message, check the **Trust the certificate permanently** and click **Next**.

Procedure

Step 1. Generate the Certificate Signing Request (CSR) for Lenovo XClarity Integrator.

    a. Select **Server Certificate** to display the Server Certificate page.

    b. Click the **Generate Certificate Signing Request (CSR)** tab.

    c. Fill in all fields in the Generate Certificate Signing Request (CSR) page, including Country, State or Province, City or Locality, Organization, Organization Unit (optional) and Common Name.

       Note: Select a common name that matches the host name of Lenovo XClarity Integrator. If a wrong value is selected, the connection will be untrusted. You can allow Lenovo XClarity Integrator to generate the common name automatically by keeping the default value **Generated by LXCI**.

    d. Select **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: Create the uploading certificate in the CSR that recently created by clicking the **Generate CSR File** button. The uploaded file shall contain the complete certificate chain, including the root certificates and the intermediate certificates. The priority of certificates shall be: server certificate, intermediate certificates, and root certificate.

    a. Click **Security Settings** in the Lenovo XClarity Integrator menu.

    b. Click **Server Certificate** on the setting page.

    c. Click **Upload Certificate** to upload the certificate file (.cer).

       Note: Restart the System Center Virtual Machine Manager after the new server certificate is uploaded.

Regenerating the Lenovo XClarity Integrator-generated server certificate

If the Lenovo XClarity Integrator uses the customized server certificate, you can reinstate the certificate generated in the Lenovo XClarity Integrator by generating a new server certificate. The customized server certificate will be replaced by the new self-signed server certificate.

Procedure

Step 1.   Click **Server Certificate** on the setting page.

Step 2.   Click the **Regenerate Server Certificate** tab.

Step 3.   Fill in the following fields: Country, State or Province, City or Locality, Organization, Organization Unit (optional) and Common Name.

>   **Note:** Select a common name that matches the host name of Lenovo XClarity Integrator. If a wrong value is selected, the connection will be untrusted. You can allow Lenovo XClarity Integrator to generate the common name automatically by keeping the default value **Generated by LXCI**.

Step 4.   Click **Regenerate Certificate**.

Regenerating the Lenovo XClarity Integrator-generated root certificate

This section describes how to regenerate the root certificate.

Procedure

Step 1.   Click the **Certificate Authority** tab on setting page.

Step 2.   Click the **Regenerate Certificate Authority Root Certificate**.

Step 3.   Check the generated certificate and click **OK**.

>   **Note:** If Lenovo XClarity Integrator does not use the customized server certificate, it will generate a new server certificate and replace the old one automatically. If Lenovo XClarity Integrator uses a customized server certificate, it will only regenerate a root certificate.

Downloading the root certificate

This section describes how to download and install the root certificate.

Procedure

Step 1.   Click the **Certificate Authority** tab on the setting page.

Step 2.   Click **Download Certificate Authority Root Certificate** to finish.

Downloading the server certificate

This section describes how to download the server certificate.

Procedure

Step 1.   Select **Server Certificate** on the setting page.

Step 2.   Select the **Download Certificate** tab.

Step 3.   Click **Download Certificate**.

Enabling or disabling BMC automatic management

XClarity Integrator can automatically discover and manage supported Lenovo servers managed by SCVMM. When enabling or disabling BMC automatic management, a user account with domain administrator permission is required. After host authentication is finished, XClarity Integrator automatically manages the servers. During the automatic management, XClarity Integrator creates a new credential with a secured random password in the BMC for each server.

Procedure

Step 1.   Select or clear the **Automatically manage the BMC of servers already managed by SCVMM (System Center Virtual Machine Manager)** check box.

Step 2.   Click **Save**.

Chapter 7. Troubleshooting

This section describes situations that sometimes occurs with Add-in and how you can solve them, as well as a detailed table against which you can set your firewall settings.

Lenovo XClarity Integrator Service fail to get BMC IP address and fail to authenticate BMC automatically after OS authentication

Generally, Lenovo XClarity Integrator Service can discover BMC and authenticate BMC automatically after the OS authentication. However, this process might be failed if some BMC configuration settings are inappropriate.

Procedure

To get BMC IP address and to authenticate BMC successfully, do the following:
1. Ensure that the BMC-password-change interval is shorter than the time of the BMC auto-discovery process.
2. Ensure that the user account with domain administrator permission is connected to a specific host through WMI.
3. Ensure that the BMC not only uses LDAP authentication.
4. Ensure that the BMC local account is enabled.
5. Authenticate the OS again.

Rolling System Update scan job failed due to system error 22029

Use this information to troubleshoot an `Error (22029) VMM could not create a process for the script command C:\UIM_RIM\UIM.IRM.OneCliManagement.exe.` error message in the SCVMM job. This error indicates that the Rolling update without policy function cannot get installed version of target server.

Either a required impersonation level was not provided, or the provided impersonation level is invalid (0x80070542).

Procedure

Complete one or more of the following steps to resolve this issue.
- Use domain\administrator as the run as account of the target server
- If the SCVMM Run As account is in the administrator group but it is not administrator, disable the security option of **Run all administrators in Admin Approval Mode** on the target server. When this policy setting is disabled, the Security Center notifies you that the overall security of the operating system has been reduced. For more information, see the Microsoft TechNet: User Account Control: Run all administrators in Admin Approval Mode Web site.

Failed to save preferences for Rolling System Update due to system error 1219

Use this information to troubleshoot an `Error (1219)` error message in the SCVMM job. This error might occur when you attempt to use a remote shared folder as the repository.

Procedure

To resolve this issue, install the latest Windows updates, and select a different folder.

The Lenovo XClarity Integrator Service session becomes invalid

The Lenovo XClarity Integrator Add-in console logs in to the background daemon (Lenovo XClarity Integrator Service) when the console starts. That is, a new session is created.

About this task

The session does not expire if the console stays open and the daemon stays in service without interruption.

When the daemon is interrupted (for example, by being restarted), the session becomes invalid.

When a session becomes invalid, the following symptoms occur:
- The asset tree pane in Lenovo XClarity Integrator Add-in displays only root nodes, or asset changes are not displayed in the asset tree pane.
- The functional UI pages are blank or contain no data when the data should display.

To fix the problem, restart the SCVMM Console and the Lenovo XClarity Integrator Add-in console.

Note: For instructions on how to check log-on history, see Appendix B "Checking Lenovo XClarity Integrator Service sessions" on page 49.

Procedure

Complete the following steps to restart the SCVMM Console and the Lenovo XClarity Integrator Add-in console.

Step 1.   Click the left-most button to expand the sidebar.

Step 2.   Click **Reload**.

Pre-authenticated IMM might lose connection after it is managed by Lenovo XClarity Administrator

For an IMM to which you have requested access using a local IMM account before in Lenovo XClarity Integrator, Lenovo XClarity Integrator loses access to the IMM after you manage the IMM with Lenovo XClarity Administrator.

Lenovo XClarity Administrator disables all local IMM accounts after it manages the IMM, so Lenovo XClarity Integrator cannot access the IMM using the local IMM account that you provided before.

Procedure

Use the account that you configured in Lenovo XClarity Administrator to request IMM access again in Lenovo XClarity Integrator.

Functions are not available for a System x server when selected from the asset tree view

Functions are not available for System x servers when selected from the asset tree view of Lenovo XClarity Integrator Add-in if the server's machine type is not determined.

Procedure

Complete one or more of the following steps to obtain machine type for a server.

- Make the UUS server service run with a Windows/domain log-on that has the WMI read permission to the target Hyper-V system. To change the user account of a Windows service, see the Microsoft TechNet: Configure How a Service Is Started Web page.
- Authenticate a hypervisor node with a Windows/domain log-on that has the WMI read permission to the target Hyper-V system.
- Manage the server with a Lenovo XClarity Administrator, and register the Lenovo XClarity Administrator in Lenovo XClarity Integrator Add-in.
- Discover the IMM for the specific server.

Failed to register Lenovo XClarity Administrator with IPv6 address

When you use an IPv6 address to register Lenovo XClarity Administrator, the message `Loading, Please wait …` is displayed but does not return because Lenovo XClarity Integrator Service could not get the certificate chain from the IPv6 address. This issue is a limitation of Lenovo XClarity Integrator.

Procedure

To resolve the problem, manually download the certificate from Lenovo XClarity Administrator, and add the certificate to Lenovo XClarity Integrator by clicking **Manage trusted certificates ➔ Add**.

Note: Think servers only support the Rolling reboot. This is a limitation of Lenovo XClarity Integrator Add-in.

Host is visible in SCVMM host list but not in Lenovo XClarity Integrator Add-in

Sometimes a host appears in the SCVMM host list but not in the Lenovo XClarity Integrator Add-in. You can work around this issue by manually adding the host into SCVMM.

Occasionally, a host is absent from the Lenovo XClarity Integrator Add-in host list, even though it is visible in the SCVMM host list. This happens when the SCVMM Service/Agent applications fail to collect the hardware system UUID from the BIOS of the host. It is possible that the SCVMM Service/Agent applications will successfully collect the information later, but whether this will happen and how long it will take is unpredictable. To ensure that the host is listed in Lenovo XClarity Integrator Add-in, you can manually add it by following these steps.

1. From the SCVMM Admin page, manually remove the host from the SCVMM host list.
   a. Select the host from the host list.
   b. Click **Host**, and select **Start Maintenance Mode**.
   c. Depending upon whether the host is in a cluster or not, perform one of the following steps.
      - If the host is not in a cluster, from the **Host** menu, select **Remove**.
      - If the host is in a cluster, from the **Host** menu, select **Remove Cluster Node**.

      Notes: Sometimes the above instructions in step 1 do not work. If that happens, run the following PowerShell commands:
      - `import-module virtualmachinemanager $RunAsAccount = Get-SCRunAsAccount -Name "RunAsAccount01" Get-SCVMHost -ComputerName "VMHost01"`
      - `remove-SCVMHost -Credential $RunAsAccount`

2. From the Admin UI, manually add the host into the SCVMM or cluster.
   a. Select the Hypervisor node in the Lenovo XClarity Integrator Add-in list.
   b. Click **Synchronize** above the tree to reload the list.

3. If the host does not appear in the Lenovo XClarity Integrator Add-in host list, restart the host and then perform the previous steps again.

Installer fails with error message

On rare occasions, the Lenovo XClarity Integrator Add-in installer fails and displays an error message.

The error usually occurs when the installer runs for the first time on a system.

If the installer fails, perform the following steps:

1. Close the message window to stop the installation.
2. Run the installer again.

After running the installer a second time, it will work correctly, and the Lenovo XClarity Integrator Add-in will be installed.

Installing Microsoft Internet Explorer update KB3087038

Some Lenovo XClarity Integrator Add-in for Microsoft System Center Virtual Machine Manager functions require that Microsoft Internet Explorer be patched with the KB3087038 or later update.

Procedure

Step 1. Check to see whether your version of Microsoft Internet Explorer requires a patch.

    a. Open the About Internet Explorer dialog.

        Note: The steps you use to open the dialog may vary among Internet Explorer versions.

    b. Check the version number.If the version number is less than 10.0.9200.17492, then you need to patch Internet Explorer with Internet Explorer update KB3087038. If the value is equal to or greater than 10.0.9200.17492, then you do not need to patch it.

    c. If you need to patch Internet Explorer, proceed to the next step. If you do not need to patch Internet Explorer, stop here.

Step 2. Download and install the KB3087038 patch.

    a. Navigate to the appropriate Microsoft web page:
- For X64-based systems, go to Cumulative Security Update for Internet Explorer 11 for Windows Server 2012 R2 (KB3087038).
- For X86-based systems, go to Cumulative Security Update for Internet Explorer 11 for Windows Embedded Standard 7 (KB3087038).

    b. Follow the instructions on the page to download and install the KB3087038 patch.

Lenovo XClarity Administrator certificate fails to import when using Internet Explorer 10

When you manually import a Lenovo XClarity Administrator certificate (PEM) file into Lenovo XClarity Integrator, the import might failed with the following message: `Fail to upload certificate file`. This is an known problem with Internet Explorer 10.

Procedure

Perform one of the following steps to workaround this problem:
- Upgrade Internet Explorer to a later version or use another web browser.
- When importing the certificate, select **Paste certificate in PEM format**. Do not use **Add from a file (PEM)** to add the certificate.

Appendix A. System firewall settings

Use the table in this section to set firewall exceptions.

The following table lists the ports used by Add-in for Microsoft System Center Virtual Machine Manager

Table 7. Ports used by Add-in for Microsoft System Center Virtual Machine Manager

Source			Target			Protocol
Port	Location	Component	Port	Location	Component	
Not specified	Management server	SCVMM Add-in console (localhost/127.0.0.1)	TCP 9500*	Management server	LXCI Service	HTTPS
Not specified	Managed server	Hyper-V/Windows clients managed with SCVMM	TCP 9500*	Management server	LXCI Service	HTTPS
Not specified	Management server	LXCI Service (localhost/127.0.0.1)	TCP 5432*	Management server	PostgreSQL	N/A
Not specified	Management server	LXCI Service	TCP 5988	Managed server	BMC	HTTP, CIM
Not specified	Management server	LXCI Service	UDP 427	Managed server	BMC	HTTPS, CIM
Not specified	Management server	LXCI Service	UDP 427	Managed server	BMC	SLP
Not specified	Management server	LXCI Service	TCP 80	External resource	IBM/Lenovo Web site	HTTP
Not specified	Management server	LXCI Service	TCP 443	External resource	IBM/Lenovo Web site	HTTPS
Not specified	Management server	LXCI Service	TCP 443	External resource	LXCA	HTTPS
Not specified	Management server	LXCI Service	TCP 135	Managed server	Host OS - WMI Server	CIM
Not specified	Management server	LXCI Service	UDP 137	Managed server	Host OS - Samba Server	NetBIOS name service (NMBD)
Not specified	Management server	LXCI Service	UDP 138	Managed server	Host OS - Samba Server	SMB
Not specified	Management server	LXCI Service	TCP 139	Managed server	Host OS - Samba Server	SMB
Not specified	Management server	LXCI Service	TCP 389	Managed server	Host OS - Samba Server	LDAP
Not specified	Management server	LXCI Service	TCP 445	Managed server	Host OS - Samba Server	NetBIOS

Table 7. Ports used by Add-in for Microsoft System Center Virtual Machine Manager (continued)

Source			Target			Protocol
Port	**Location**	**Component**	**Port**	**Location**	**Component**	
Not specified	Management server	LXCI Service	TCP 901	Managed server	Host OS - Samba Server	SWAT
Not specified	Managed server	Hyper-V/Windows clients managed with SCVMM	UDP 137	Management server	OS - Samba Server	NetBIOS name service (NMBD)
Not specified	Managed server	Hyper-V/Windows clients managed with SCVMM	UDP 138	Management server	OS - Samba Server	SMB
Not specified	Managed server	Hyper-V/Windows clients managed with SCVMM	TCP 139	Management server	OS - Samba Server	SMB
Not specified	Managed server	Hyper-V/Windows clients managed with SCVMM	TCP 389	Management server	OS - Samba Server	LDAP
Not specified	Managed server	Hyper-V/Windows clients managed with SCVMM	TCP 445	Management server	OS - Samba Server	NetBIOS
Not specified	Managed server	Hyper-V/Windows clients managed with SCVMM	TCP 901	Management server	OS - Samba Server	SWAT
Notes: • The ports marked with an asterisk (*) are registered by LXCI. You can change these ports if LXCI is installed. • You can change the BMC HTTP/HTTPS ports in BMC portal. • You can download firmware from IBM/Lenovo Web site through HTTP proxy. • The port TCP 443 depends on LXCI configuration. You should input the correct port when registering LXCA in LXCI.						

Appendix B. Checking Lenovo XClarity Integrator Service sessions

You can check all sessions or currently active sessions owned by the Lenovo XClarity Integrator Service daemon to which the current Lenovo XClarity Integrator Add-in connects. Use the steps in this section to check the log-on history.

Procedure

Step 1.   Select Lenovo Infrastructure from the Lenovo XClarity Integrator Add-in console's asset tree pane.

Step 2.   Click the Integrator Service Sessions tab on the top of the main frame.
By default, only active sessions display. Select **Show historical sessions** to show all sessions.

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