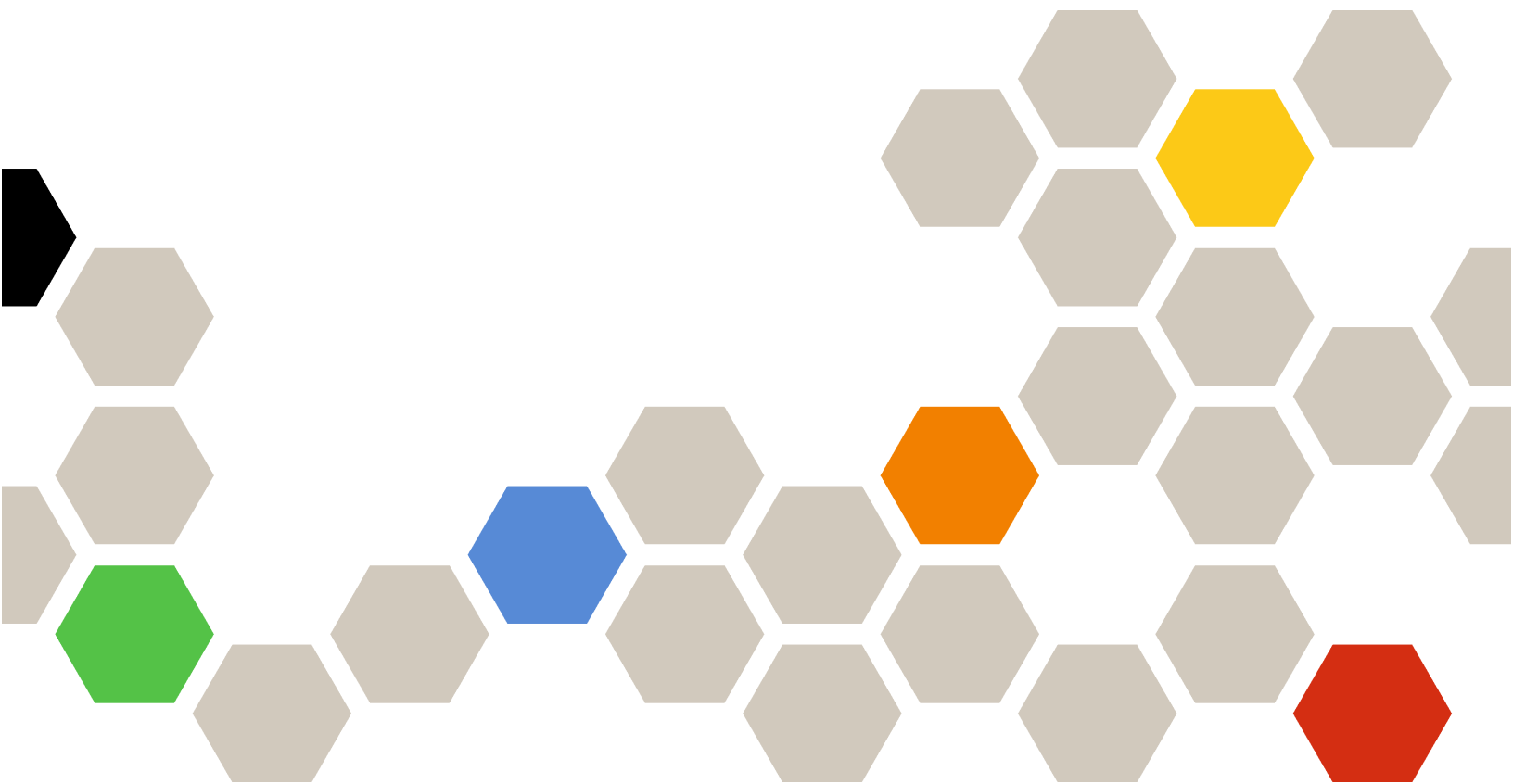




# Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager User Guide



**Version 6.0**

**Note**

Before using this information and the product it supports, read the information in [Appendix B “Notices” on page 29](#).

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## About this publication

This book provides instructions for installing Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager into Microsoft System Center Operations Manager 2007 and 2012, and how to use the integrated features to manage systems in your environment is explained.

---

## 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.

---

## World Wide Web resources

The following websites provide resources for understanding, using, and troubleshooting BladeCenter and Systemx servers and systems management tools.

### 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:

- [cSystem 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](#)

### Lenovo ServerProven pages

Obtain information about hardware compatibility with Lenovo Systemx, BladeCenter, and IBM IntelliStation hardware.

- [Lenovo ServerProven: Compatibility for BladeCenter products](#)
- [Lenovo ServerProven: Compatibility for Flex System Chassis](#)
- [Lenovo ServerProven: Compatibility for System x hardware, applications, and middleware](#)

### Microsoft System Center Virtual Machine Manager

This website provides an overview of Microsoft System Center Virtual Machine Manager and describes how to manage a virtualized datacenter, cross-platform support, Performance and Resource Optimization (PRO), and enhanced high availability (HA) capabilities:

- [Microsoft System Center Virtual Machine Manager website](#)

### Microsoft System Center Operations Manager website

This website provides an overview of Microsoft System Center Operations Manager:

- [Microsoft System Center Operations Manager website](#)





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# Chapter 1. Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager

Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager provides performance and resource-optimization tips (PRO tips) that describe the hardware health state, alerts and virtual machine migration recommendations for the physical systems hosting Hyper-V and Virtual Server.

Lenovo Hardware PRO Pack also provides monitoring and alert information for Systemx rack servers and BladeCenter blade servers that are installed with either IBM Director Core Services or Director Agent.

## Microsoft System Center Virtual Machine Manager overview

Microsoft System Center Virtual Machine Manager is a comprehensive solution for virtualized data centers. Lenovo Hardware PRO Pack combines the hardware health knowledge and monitoring capabilities that are part of Systems Center Operations Manager (SCOM) with the management services for physical and virtual machines provided by System Center Virtual Machine Manager (SCVMM). This solution gives administrators an extensible framework for monitoring the physical resources within their virtual environments.

SCOM and SCVMM servers maintain continuous communication through their respective agents to provide comprehensive health and performance information about the infrastructures they manage. While SCOM is designed to collect, monitor, and assist you in resolving health or performance problems on physical resources, SCVMM is designed to manage the virtualized workloads that can be affected by these types of condition changes.

Alerts are displayed through the SCVMM console in the form of performance and resource-optimization tips (PRO) tips. A PRO tip is a recommendation that can assist you with placing, migrating, or reconfiguring applications, hardware, and virtual machines. These recommendations can then be implemented manually to return the workload to an optimal state.

## Key features

Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager is a fee-based product component of the Lenovo XClarity Administrator.

The key features of Lenovo Hardware PRO Pack include:

- Detailed system health information for physical servers hosting virtual machines while managing Hyper-V or Virtual Server environments
- Comprehensive health state monitoring of physical processors, memory, hard disks, fans, power supplies, temperature, and voltage for Systemx and Blade x86 and x64 virtual host servers
- Advisory PRO tips that indicate existing or potential hardware problems which require Virtual Machine Manager (VMM) administrative operations
- Automated VM Migration support based on hardware failures or exceptions to power consumption thresholds for uEFI/IMM Systemx and BladeCenter blade servers running Windows 2008 R2, Hyper-V or Virtual Server

**Note:** Automated VM Migration support based on power consumption threshold exceptions is supported only on uEFI/IMM Systemx and BladeCenter blade servers and running Windows 2008 R2 and IBM Systems Director Platform Agent v6.2.1 and later versions.

- BladeCenter and Blade hardware health correlation and event propagation

**Important:** To use Lenovo Hardware PRO Pack, you must purchase and implement an activation license. You can purchase an activation license by contacting either your Lenovo representative or Lenovo Business Partner.

---

## Chapter 2. Planning and installing Lenovo Hardware PRO Pack

Use this procedure to plan for and install Lenovo Hardware PRO Pack.

---

### Supported systems

Lenovo Hardware PRO Pack supports the servers listed in the following table. Power monitoring support is available for the uEFI/IMM Systemx and BladeCenter servers denoted with an asterisk (\*). These systems are running Microsoft Windows 2008 R2 and IBM Systems Director Platform Agent v6.2.1 and later only.

*Table 1. Supported IBM and Lenovo servers*

Server product name	Machine type
BladeCenter HS12	8014, 8028
BladeCenter HS21	8853
BladeCenter HS22	7870*, 7809*
BladeCenter HS22V	7871*
BladeCenter HS23	7875*, 1929
BladeCenterHS23E	8038, 8039
BladeCenter HX5	7872*
BladeCenter LS21	7971
BladeCenter LS22	7901
BladeCenter LS41	7972
BladeCenter LS42	7902
Flex System x220 Compute Node	7906, 2585
Flex System x240 Compute Node	8737, 8738, 7863
Flex System x440 Compute Node	7917
Flex System x280 X6/x480 X6/x880 X6 Compute Node	4259, 7903
NeXtScale Node	5455, 5456
Systemx3250 M3	4251*, 4252*
Systemx3250 M4	2583, 2587
System x3250 M5	5458
Systemx3300 M4	7382
Systemx3350	4192
Systemx3400 M3	7378*, 7379*
Systemx3500 M3	7380*
Systemx 3500 M4	7383*
Systemx3530 M4	7160
Systemx3550	7978

Table 1. Supported IBM and Lenovo servers (continued)

Server product name	Machine type
Systemx3550 M3	7944*
Systemx3550 M4	7914*
Systemx3620 M3	7376*
Systemx3630 M3	7377*
Systemx3630 M4	7158
Systemx3650	7979
Systemx3650 M3	7945*
Systemx3650 M4	7915*
Systemx3650 M4 BD	5466
Systemx3690 X5	7147, 7148*
Systemx3750 M4	8722, 8733, 8752, 8718
Systemx3755	7163
Systemx3755 M3	7164
Systemx3850 M2	7141
Systemx3850 X5	7145*, 7146*
System x3850 X6/x3950 X6	3837, 3839
Systemx3950 M2	7141
Systemx3950 X5	7145*
SystemxiDataPlex dx360 M4	7912*, 7913*

## Configuring Operations Manager integration with System Center Virtual Machine Manager

Microsoft provides information about how to configure Microsoft System Center Operations Manager with Microsoft System Center Virtual Machine Manager.

For more information, see [Configuring Operations Manager Integration with VMM website](#).

## Configuring the Hyper-V host

Lenovo Hardware PRO Pack monitors the health of a physical host.

One of the following supported versions of Director Agent must be installed on the physical Hyper-V host:

- 6.1.2
- 6.2
- 6.2.1
- 6.3
- 6.3.1
- 6.3.2
- 6.3.3

For more information about software requirements for the host, refer to the [Virtualization with Hyper-V](#) web page.

## Configuring Virtual Server 2008 R2 Enterprise Edition support

This topic refers you to additional configuration information for Virtual Server. Only SCVMM 2007 R2 or R2 SP1 support Virtual Server. SCVMM 2012 no longer supports Virtual Server.

For more information about software requirements for a host, refer to [Microsoft Virtual Server](#).

---

## Installing Lenovo Hardware PRO Pack

The topics in this section provide installation considerations, prerequisites, and instructions for downloading, installing, and importing Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager.

### Installation considerations

Installing and using Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager in an unlicensed environment is not supported. Doing so might cause unexpected results for all of the monitored hosts. For the best results when moving from a licensed environment to an unlicensed environment, uninstall Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager.

When importing Lenovo Hardware PRO Pack, a connection to the management group must exist during the installation. To connect to the management group, you must be a member of the Operations Manager Administrators user role. Otherwise, you could encounter problems trying to import Lenovo Hardware PRO Pack.

You can also install or uninstall Lenovo Hardware PRO Pack by using Lenovo XClarity Integrator Installer. For more information, refer to the Lenovo XClarity Integrator Installer for Microsoft System Center *User's Guide* which can be viewed and downloaded from: [Lenovo XClarity Integrator for Microsoft System Center website](#).

### Installation prerequisites

You can install Lenovo Hardware PRO Pack on a Microsoft Windows server that is running a supported version of Microsoft System Center Operations Manager.

Before you perform this installation, verify that the system has enough disk space. Microsoft System Center Operations Manager disk space requirements are located on the [Microsoft System Center Operations Manager website](#).

Lenovo Hardware PRO Pack requires the following software is installed on the management server.

- Lenovo Hardware Management Pack for Microsoft System Center Operations ManagerThe latest version of the software and the documentation is available for download from: [Lenovo Hardware Management Pack for Microsoft System Center Operations Manager website](#).

For more information, see the *Lenovo Hardware Management Pack Installation and User's Guide*.

- A supported version of Microsoft System Center Virtual Machine Manager
  - Microsoft System Center Virtual Machine Manager 2007 requires either:
    - Microsoft System Center Operations Manager 2007 SP1, or
    - Microsoft System Center Operations Manager 2007 R2
  - Microsoft System Center Virtual Machine Manager 2012 requires either:
    - Microsoft System Center Operations Manager 2007, or
    - Microsoft System Center Operations Manager 2012

You can install Microsoft System Center Virtual Machine Manager 2008 R2, R2 SP1, or 2012 on a system that is running as a Microsoft System Center Operations Manager root management server or on a system that is a dedicated Microsoft System Center Virtual Machine Manager server. For more information about Microsoft System Center Virtual Machine Manager system requirements, see:

- [System Requirements: VMM Server webpage](#)
- [System Requirements: VMM 2012 and VMM 2012 SP1 webpage](#)

## File and registry locations

This topic provides details about the default installation directory and registry path for Lenovo Hardware PRO Pack.

By default, the installation file for Lenovo Hardware PRO Pack is saved to:

%ProgramFiles%\Lenovo\

The registry path for the Lenovo Hardware PRO Pack entry is:

HKEY\_LOCAL\_MACHINE\SOFTWARE\Lenovo\System Management Integrations  
\Lenovo HW PRO Pack

## Downloading, installing, and importing Lenovo Hardware PRO Pack

The following procedure describes how to download, install, and import Lenovo Hardware PRO Pack.

### Before you begin

As noted in [“Installation prerequisites” on page 5](#), Lenovo Hardware Management Pack for Microsoft System Center Operations Manager must be installed on the management server prior to installing Lenovo Hardware PRO Pack.

Before installing Lenovo Hardware PRO Pack on a non-RMS server, ensure that the required Lenovo Hardware Management Pack for Microsoft System Center Operations Manager is installed on the non-RMS server.

### About this task

Because the Operations Manager Remote Management server requires that you install hot fixes that are applicable to both the Microsoft Windows server operating system and Operations Manager, by default the **Include prerequisites and co-requisites fixes** option is selected during the download process.

For information about installing hot fixes, see [Microsoft Support – Support for running System Center Operations Manager 2007 Service Pack 1 and System Center Essentials 2007 Service Pack 1 on a Windows Server 2008-based computer webpage](#).

The following procedure, uses the Download Director option.

### Procedure

- Step 1. Download Lenovo Hardware PRO Pack from the [Lenovo Hardware PRO Pack for Microsoft Systems Center Virtual Machine Manager website](#), by clicking the `lnvgy_sw_propack_x.x.x_windows_32-64.exe` file link.
- Step 2. On the Download options page, select **Download using Download Director** and click **Continue**. As previously noted, the **Include prerequisites and co-requisites fixes** option is selected by default.

The Download files using Download Director page opens. The order number and file size is displayed.

- Step 3. Click **Download now**. The IBM Download Director dialog box opens.
- Step 4. Click **Run**. The download applet begins downloading the file.
- Scroll to the bottom of the page and select the check box to accept the license agreement. Then click **I confirm** to begin downloading the Lenovo Hardware PRO Pack installation package appropriate for your Microsoft System Center Operations Manager Server to a temporary directory.
  - When the Security window is displayed, asking if you want to run the application, click **Run**.
  - When the download completes, click **Close [x]** to close the download window.
- Step 5. Under File Link, click **Sign in** to sign in with your IBM ID and password. The download page for Lenovo XClarity Integrator opens.
- Step 6. Click **OK**. The Welcome to the InstallShield Wizard for Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager starts when none of the following issues stops the installer.
- If the installer cannot find all of the prerequisites, a message is displayed indicating the prerequisites that cannot be found. For a complete list of prerequisites, refer to [“Installation prerequisites” on page 5](#).
  - If a previous version of Lenovo Hardware PRO Pack is detected, a message is displayed informing you that this version is not supported for an upgrade by this installer. The previous Lenovo Hardware PRO Pack must be manually deleted from Operations Manager. For more information about how to delete management packs from Operations Manager, refer to the Operations Manager documentation.
- Step 7. Click **Next**. The License Agreement window is displayed.
- Step 8. Read the software license agreement. If you agree with the terms, select **I accept the terms in the license agreement**, and click **Next**.
- If the system already has Lenovo Hardware PRO Pack installed, you can select to either repair or remove it. See [“Repairing and removing Lenovo Hardware PRO Pack” on page 9](#) for more information.
- Step 9. Verify the default target location. If necessary, select the target folder for the installation file.
- By default, the installation file for Lenovo Hardware PRO Pack is saved to:  
%ProgramFiles%\Lenovo\
- Step 10. Click **Next**. The Import Lenovo Hardware PRO Pack Management Pack window is displayed to remind you to import the Lenovo Hardware PRO Pack management pack into the Operations Manager Console.
- Note:** For instructions on how to import Lenovo Hardware PRO Pack,
- Step 11. Click **Next** to start the installation.
- Step 12. When the Lenovo Hardware PRO Pack installation is complete, read the reminder and click **Finish** to begin the import process. Importing Lenovo Hardware PRO Pack is the last step in the installation process.
- Step 13. Open the Operations Manager Console.
- Step 14. To import Lenovo Hardware PRO Pack, click **Administration → Management Packs → Import Management Pack**
- Step 15. Select the Lenovo Hardware PRO Pack management pack from the installation directory.
- By default, the installation file for Lenovo Hardware PRO Pack is saved to:  
%ProgramFiles%\Lenovo\

After the import of the Lenovo Hardware PRO Pack management pack begins, the following message is displayed: One or more Management Packs present a security risk. Are you sure you want to continue?

This message is considered normal behavior for Lenovo Hardware PRO Pack because Lenovo Hardware PRO Pack is sending event messages between the management server and the host system.

Step 16. Click **Yes** to complete the import.

Open the **Administration → Management Packs** view to verify that the Lenovo Hardware PRO Pack import was successful. Sometimes management pack entries do not display immediately after the installation. Either refresh the window or wait a few minutes until the management pack entry is displayed.

---

## Uninstalling and reinstalling Lenovo Hardware PRO Pack

The topics in this section describe how to uninstall, repair, remove, and reinstall Lenovo Hardware PRO Pack.

### Uninstalling Lenovo Hardware PRO Pack

This procedure describes how to uninstall and remove the Lenovo Hardware PRO Pack software package.

#### Procedure

- Step 1. In the Windows Control Panel, select one of the following options:
- Add or Remove Programs
  - Programs and Features
- Step 2. Choose one of the following uninstall methods:
- Click **Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6** and then click **Uninstall**.
  - Right-click **Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6** and then select **Uninstall**.

The process of uninstalling begins.

- Step 3. To complete the uninstallation, open the Operations Manager Console, expand **Administration → Management Packs**, and select the management pack and manually delete it.

**Note:** As noted in [“Installation considerations” on page 5](#), you can also use the Lenovo XClarity Integrator Installer for Microsoft System Center to install or uninstall Lenovo Hardware PRO Pack.

### Reinstalling Lenovo Hardware PRO Pack

If you recently removed the management packs from the Operations Manager Console and you want to reinstall Lenovo Hardware PRO Pack, wait at least 30 minutes for the settings to propagate to the Operations Manager database before reinstalling the application. If you do not wait for the removal of the management pack to register, reinstalling can result in managed clients that are not listed in the Operations Manager Console.

For more information about this known Microsoft System Center Operations Manager limitation, refer to [Discovery information is missing after you delete and then reimport a management pack in Microsoft System Center Operations Manager 2007 webpage](#).

When you delete the management packs from the console, you detach Lenovo Hardware PRO Pack from the Operations Manager server. To add the management pack back into the console view, you must import Lenovo Hardware PRO Pack into Microsoft System Center Operations Manager.



## Repairing and removing Lenovo Hardware PRO Pack

Use the Repair and Remove functions to repair registry files and uninstall Lenovo Hardware PRO Pack on the local system.

### About this task

- The Repair function reinstalls Lenovo Hardware PRO Pack and registry entries.
- The Remove function uninstalls the Lenovo Hardware PRO Pack package, but it does not delete the management pack from the Operations Manager Console. Use the Operations Manager Console to delete the management pack from the Operations Manager. For more information, see [“Uninstalling Lenovo Hardware PRO Pack” on page 8](#).



---

## Chapter 3. Working with Lenovo Hardware PRO Pack

The topics in this section describe how to use Lenovo Hardware PRO Pack.

Lenovo Hardware PRO Pack enhances the functionality of both Microsoft System Center Operations Manager and System Center Virtual Machine Manager, providing detailed information about managed Hyper-V, Virtual Server, BladeCenter and Systemx hardware.

**Note:** System Center Virtual Machine Manager (SCVMM) 2012 no longer supports Virtual Server.

After you have installed Lenovo Hardware PRO Pack, these topics will assist you with learning more about using the Systems Center Operations Manager and System Center Virtual Machine Manager.

- [“Monitoring the health of hardware components and systems” on page 12](#)
- [Chapter 4 “Using Health Explorer to identify and resolve problems” on page 23](#)

For more information about SCOM and SCVMM, refer to the Monitoring page of the Operations Manager Console as described in the topic [“Using the Operations Manager Console with Lenovo Hardware PRO Pack” on page 14](#).

---

### Synchronizing System Center Virtual Machine Manager 2008 and System Center Operations Manager

This topic provides the commands for synchronizing System Center Virtual Machine Manager 2008 and Systems Center Operations Manager.

#### About this task

**Important:** When importing Lenovo Hardware PRO Pack, a connection to the management group must exist during the installation. To connect to the management group, you must be a member of the Operations Manager Administrators user role. Otherwise, you might encounter problems trying to import Lenovo Hardware PRO Pack.

#### Procedure

Step 1. On the SCVMM management server, open a Windows PowerShell window.

Step 2. On a command line, enter the following commands:

```
get-vmmserver<fully qualified domain name of management server>
```

```
set-vmmserver -opsmgrserver<fully qualified domain name of management server>
```

For more information about using Windows PowerShell and the `set-vmmserver` command, refer to Microsoft documentation.

---

### Synchronizing System Center Virtual Machine Manager 2012 and System Center Operations Manager

This topic provides the commands for synchronizing Microsoft System Center Virtual Machine Manager 2012 and Systems Center Operations Manager.

#### About this task

**Important:** When importing Lenovo Hardware PRO Pack, a connection to the management group must exist during the installation. To connect to the management group, you must be a member of the Operations Manager Administrators user role. Otherwise, you might encounter problems trying to import Lenovo Hardware PRO Pack.

### Procedure

Step 1. On the SCVMM management server, open a Windows PowerShell window.

Step 2. On a command line, enter the following commands:

a. `Test-SCPROTip`

This command creates a PRO Tip test, that checks whether the integration for SCVMM and Operations Manager is set up correctly to receive PRO Tips.

b. `Write-SCOpsMgrConnection`

This command pushes all the objects that were previously undiscovered to Operations Manager. The discovery refresher runs every 6 hours in VMM to push objects to Operations Manager at regular intervals.

---

## Lenovo Hardware PRO Pack host discovery

Host discovery latency is the amount of time it takes for a system to display in the Licensed SCVMM-Managed Hosts Status view after installing the Lenovo Hardware PRO Pack host.

After the installation completes, it might take two or more minutes for a system to display in the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views) → Licensed SCVMM-Managed Hosts Status** view. It could take five or more minutes for all of the discovered hardware components to begin indicating their health state.

Latency is determined by multiple influences:

- The number of managed systems in the discovery task
- The performance of the Operations Manager database
- The amount and speed of network traffic

**Note:** You can override the default monitoring interval values to set shorter time intervals.

For more information about overriding the default monitoring intervals, view the online help by clicking **Resources → System Center Operations Manager Help**.

---

## Monitoring the health of hardware components and systems

This topic lists the components that Lenovo Hardware PRO Pack monitors and the steps that are necessary to facilitate monitoring. Component discovery and health monitoring depend on firmware support, hardware compatibility, and management software support. Therefore, all of the components are not always discoverable. If a component is not discovered, it cannot be monitored or managed.

### About this task

Lenovo Hardware PRO Pack, discovers and monitors the following hardware components of a Microsoft virtual machine host:

- Fans
- Management controllers
- Memory
- Network adapters

- Power supplies
- Power usage sensors
- Processors
- Storage
- Temperature sensors
- Voltage sensors

**Note:** Lenovo Hardware PRO Pack health state reporting is limited to the components listed above and requires that all dependencies are met and functioning properly.

You can use Lenovo Hardware Management Pack to verify that all of the necessary management software is installed on all of the managed hosts.

Lenovo Hardware PRO Pack monitors and reports system health using the:

- Operations Manager Console
- System Center Virtual Machine Manager
- Applications Event log

### Procedure

In the navigation pane of the Operations Manager Console click **Monitoring** and select one of the following folder views:

- Expand the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** folder to view the folders and views added by Operations Manager Console.
- Click **Active PRO Alerts** to view warning or critical alerts associated with your hardware. The following figure provides an example of how active alerts might be displayed:

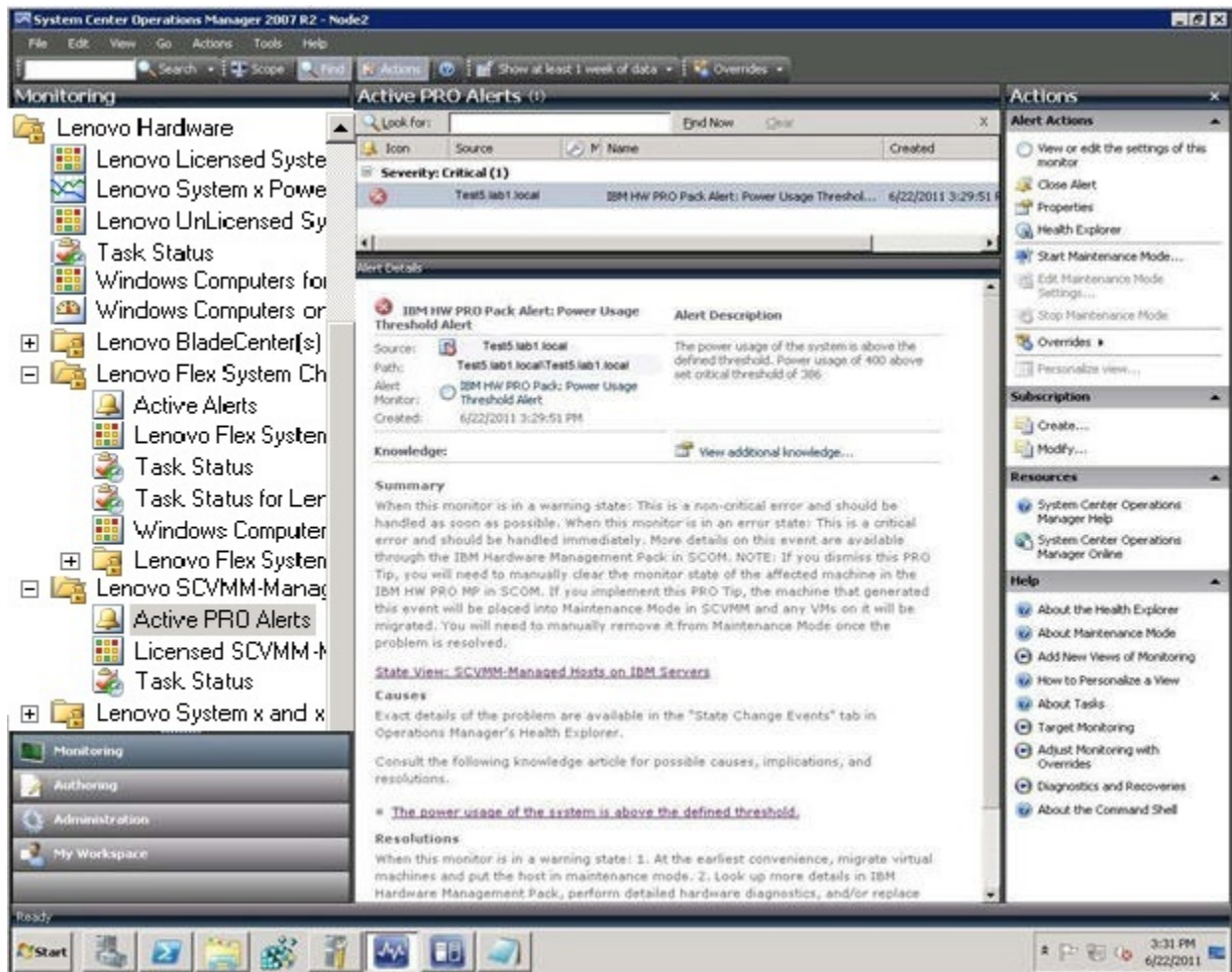


Figure 1. Active alerts

- Expand the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** folder to view the status and health of system hardware.

## Using the Operations Manager Console with Lenovo Hardware PRO Pack

The following procedure describes how to use the Operations Manager Console with Lenovo Hardware PRO Pack to view alerts, health states, task status and detailed information for systems being monitored.

### About this task

After installing Lenovo Hardware PRO Pack, you can use the Monitoring page in the Operations Manager Console to monitor systems. The **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** folder on the Monitoring page provides a complete view of the health of your PRO-Enabled Hyper-V and Virtual Server Systemx hardware.

### Procedure

- Step 1. In the navigation pane of the Operations Manager Console, click **Monitoring**.
- Step 2. Expand the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** folder.

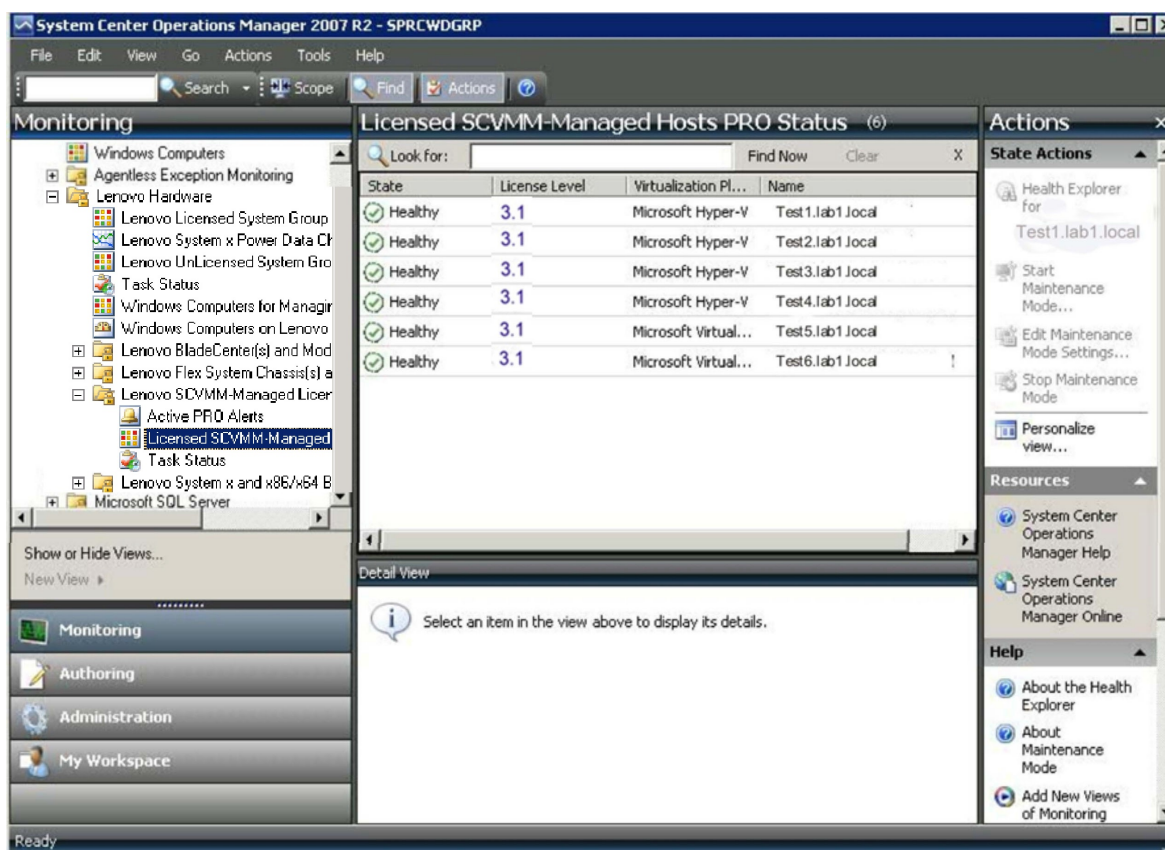


Figure 2. Available views

Lenovo Hardware PRO Pack adds the following views:

#### Active PRO alerts:

Provides a state view of alerts for all discovered and PRO-enabled virtual servers and Hyper-V Systemx hardware.

Alert text for many events is generic and might cover multiple events affecting the same hardware component.

For more detailed information about alerts, see [Chapter 4 “Using Health Explorer to identify and resolve problems” on page 23](#).

#### Licensed SCVMM-Managed Hosts PRO Status

A state view of all discovered PRO-enabled virtual servers and Hyper-V systems.

Use this view in the same way you use the **Monitoring → Computers** view.

The difference between these two views is that the **Licensed SCVMM-Managed Hosts PRO Status** view contains only computers that are PRO-enabled, running Virtual Server or Hyper-V on Systemx hardware.

#### Notes:

- If you remove a managed client from the Operations Manager Console, you also need to remove the client from VMM. Otherwise, the client is disabled in the **Licensed SCVMM-Managed Host PRO Status** view of Operations Manager Console.
- If you upgrade Director Agent from a prior version (for example, from 6.2.1 to 6.3) on a target server, complete the following steps:
  1. Remove and reinstall the PRO Pack.

2. Restart the SCOM services.
3. Based on your SCVMM version, follow the instructions in [“Synchronizing System Center Virtual Machine Manager 2008 and System Center Operations Manager” on page 11](#) or [“Synchronizing System Center Virtual Machine Manager 2012 and System Center Operations Manager” on page 11](#).

If these steps are not completed, the prior version of the Director Agent entry might still display in **Licensed SCVMM-Managed Host PRO Status** in the Operations Manager Console.

**Task status:**

The state view of all discovered and PRO-enabled virtual servers and Hyper-V Systemx hardware.

## Viewing alerts in Virtual Machine Manager

These topics describe how to view alerts using the System Center Virtual Machine Manager console in System Center Virtual Machine Manager 2008 and the **PRO Tip** view in Microsoft System Center Virtual Machine Manager 2012.

### Viewing alerts in System Center Virtual Machine Manager 2008

This task uses the System Center Virtual Machine Manager console.

**Procedure**

- Step 1. In the navigation pane, click **Jobs**.
- Step 2. Locate jobs with the name **Set State of a PRO Tip**, or a result name that starts with either **Lenovo HW PRO Pack Alert** or **Lenovo Hardware PRO Pack Alert**.

**Note:** By selecting **Hosts** → **All Hosts** → *group\_name* properties and **Automatically implement PRO Tips** on the **PRO** tab, the view will be displayed as resolved even if an alert is active.



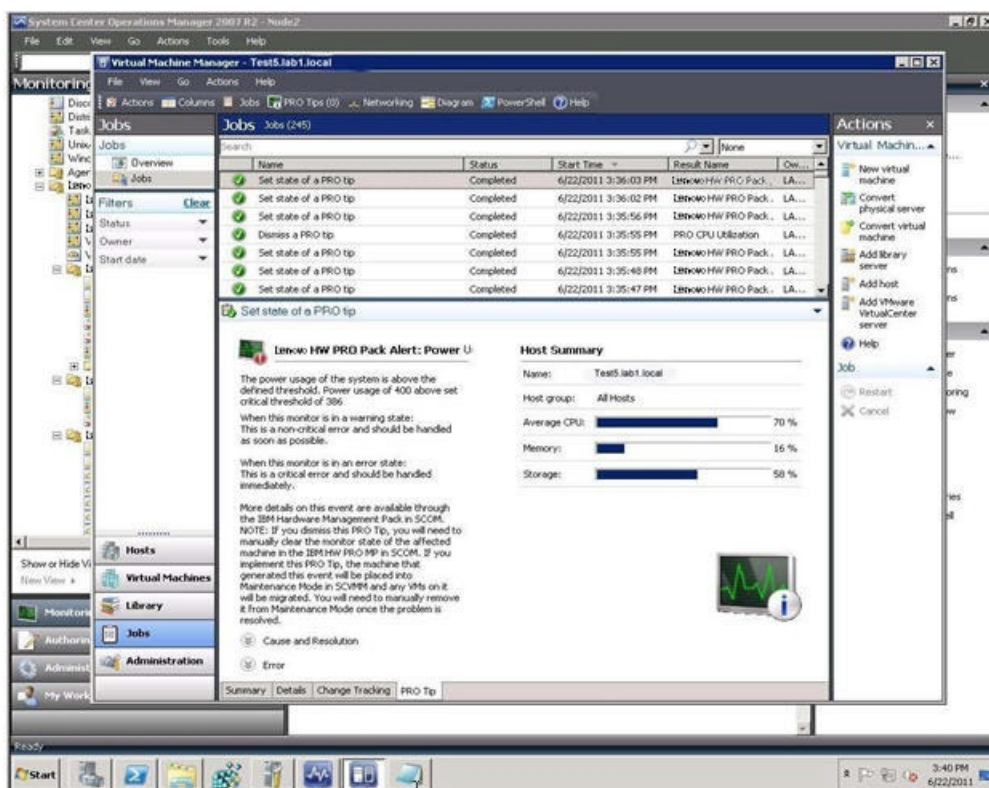


Figure 3. Host summary

## View alerts in Microsoft System Center Virtual Machine Manager 2012

This task uses **PRO Tips**

### Procedure

On the toolbar, click **PRO Tips**. Active alerts are displayed

## Viewing alerts using System Center Virtual Machine Manager 2008

You can view alerts in System Center Virtual Machine Manager 2008 from either the main console page or from the PRO Tip view.

### Viewing alerts from the VMM 2008 console

This task uses the System Center Virtual Machine Manager 2008 console.

### Procedure

- Step 1. In the navigation pane, click **Jobs**.
- Step 2. Locate jobs with the name **Set State of a PRO Tip** or with a result name that starts with either **Lenovo HW PRO Pack Alert** or **Lenovo Hardware PRO Pack Alert**.

**Note:** By selecting **Hosts** → **All Hosts** → *group\_name* properties and **Automatically implement PRO Tips** on the **PRO** tab, the view will be displayed as resolved even if an alert is active.

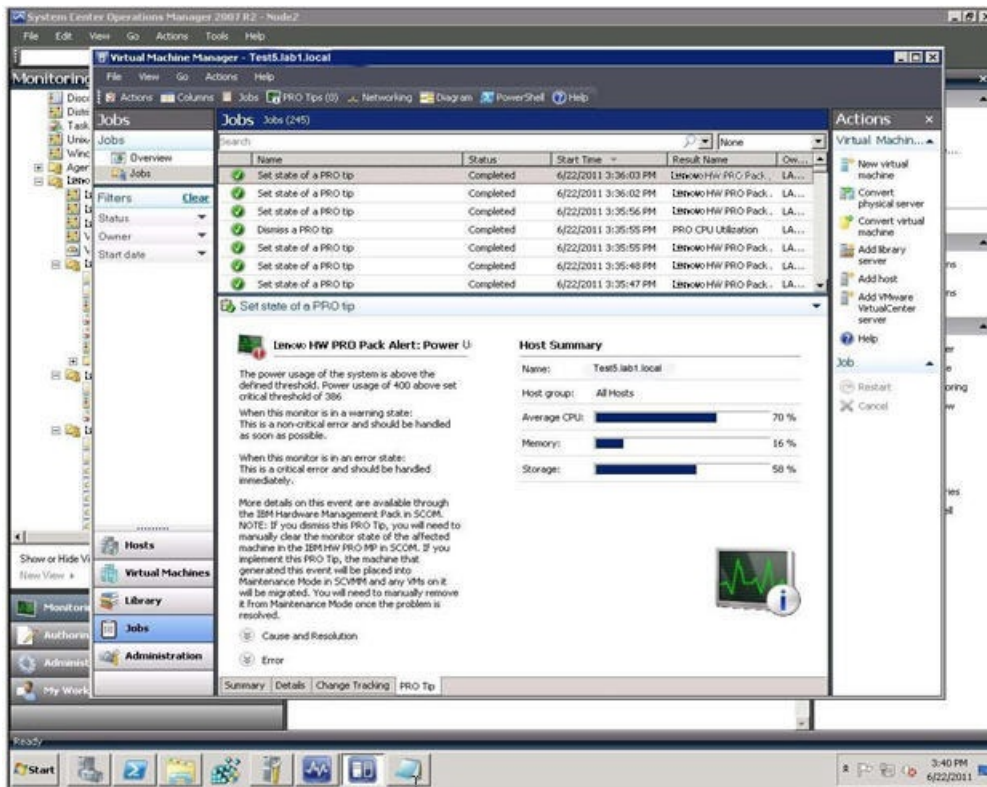


Figure 4. Host summary

## Viewing alerts from the PRO Tips view

This task uses the **PRO Tips** view for viewing alerts.

Step 1. On the toolbar, click **PRO Tips**. Active alerts are displayed.

**Note:** By selecting **Hosts** → **All Hosts** → *group\_name* properties and **Automatically implement PRO Tips** on the **PRO** tab, the view will be displayed as resolved even if an alert is active.

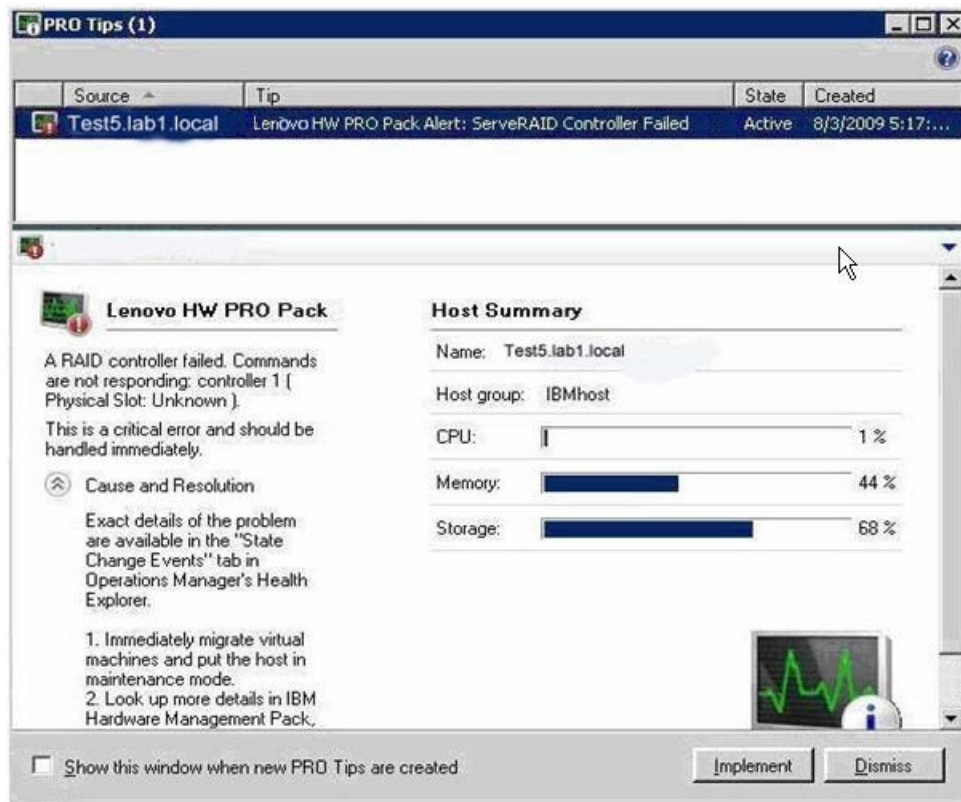


Figure 5. Host summary

- Step 2. From the server manager, expand **Diagnostics → Event Viewer → Windows Logs → Application**. The Lenovo Hardware PRO Pack events are displayed with a source of VMM PRO.

### What to do next

Learn how to use Health Explorer to identify, examine, and resolve critical problems. See [Chapter 4 “Using Health Explorer to identify and resolve problems” on page 23](#) for more information.

## Viewing alerts using System Center Virtual Machine Manager 2012

You can view alerts in System Center Virtual Machine Manager 2012 from either the main console or from the PRO Tip view.

### Viewing alerts from the VMM 2012 console

This task uses the System Center Virtual Machine Manager 2012 console.

#### Procedure

- Step 1. In the navigation pane, click **VMs and Services**.
- Step 2. Right-click the client machine, and then click **Properties**.
- Step 3. In the Properties window, click **PRO State**.  
The detail view of PRO is displayed on the right side of the window.



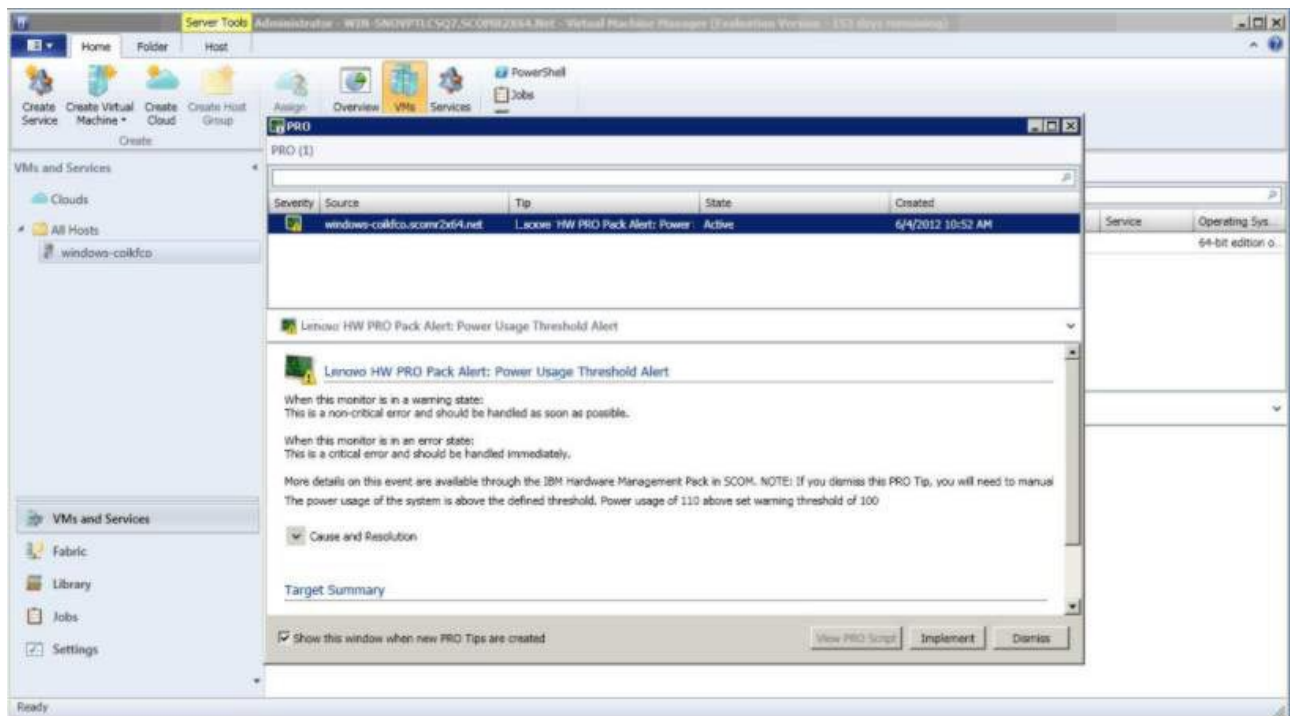


Figure 7. Host summary

## Viewing server alerts

You can use Microsoft System Center Operations Manager to view alerts that are sent from appropriately configured PRO-enabled virtual servers and Hyper-V Systemx hardware.

### About this task

After a PRO Tip is implemented, Lenovo Hardware PRO Pack automatically resets the health status. However, dismissed or cancelled PRO Tips require you to manually reset the health status to a normal health state of components after the condition or problem has been investigated and resolved.

To view the alerts for a system, complete the following steps.

### Procedure

- Step 1. From the Operations Manager Console, expand **Monitoring → Lenovo SCVMM-Managed Licensed Hosts (PRO Views) → Licensed SCVMM-Managed Hosts Status**.
- Step 2. Right-click on a server to open views for monitoring. You can monitor alerts by using the Alert View, Diagram View, Event View, and State View.





## Chapter 4. Using Health Explorer to identify and resolve problems

Health Explorer can assist you in identifying and resolving error states that are displayed for monitored systems and hardware components. You can also use Health Explorer to view state changes and other issues that occur for a monitored object.

For a quick view of the status, you can check either **Active PRO Alerts** or **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)**. These views show existing hardware alerts.

**Note:** Alert text for many events is generic and might cover multiple events that affect the same hardware component.

The following figure provides an example of a critical error for a managed host.

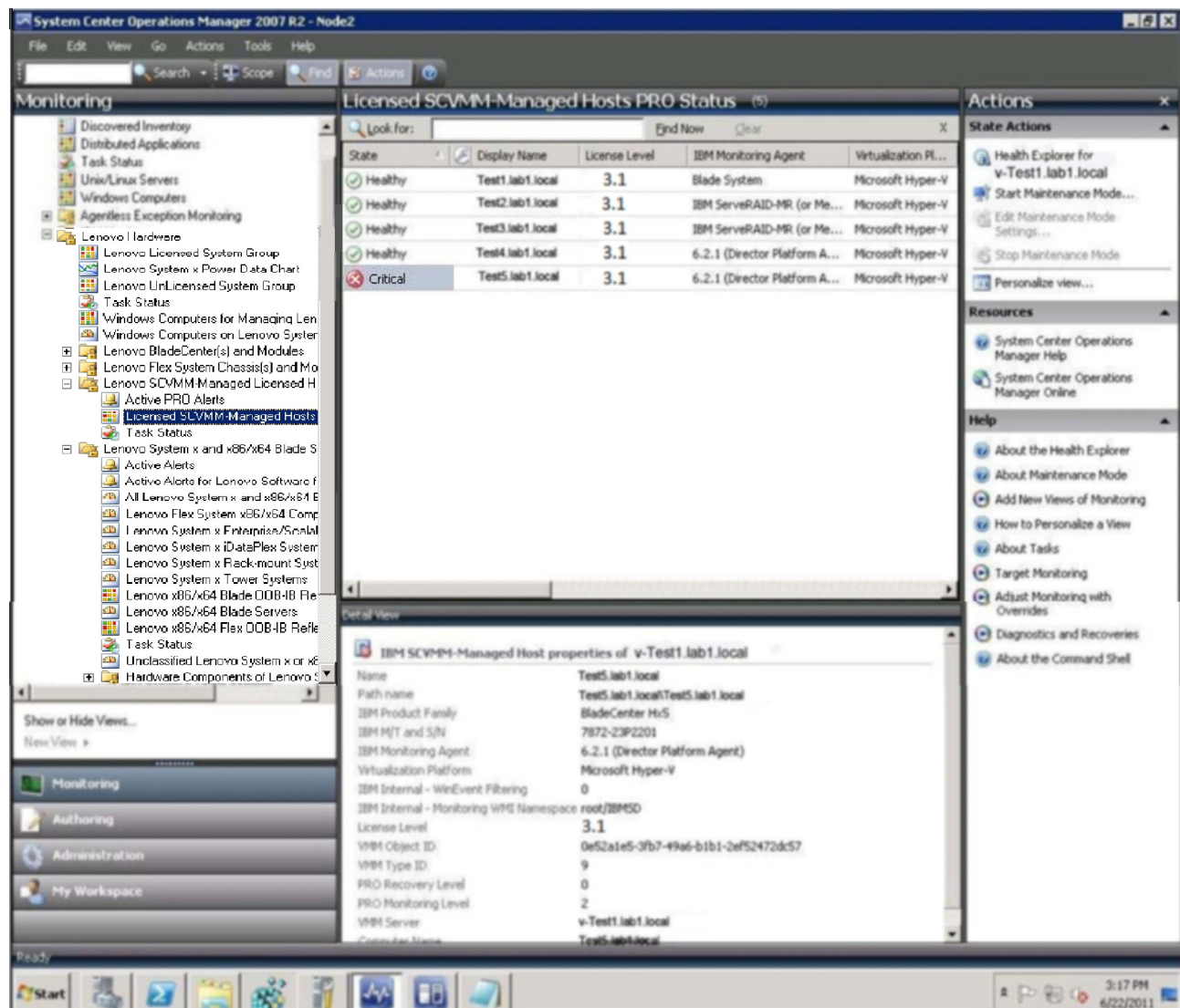


Figure 8. Critical error for a managed host

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## Identifying and resolving a critical error

This procedure explains how to use Health Explorer to identify and resolve a critical error.

### Procedure

Step 1. From the Operations Manager Console, expand **Monitoring → SCVMM → Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** to open Health Explorer.

Step 2. Double-click a state.

By default, Health Explorer opens with all of the failed monitors in an expanded view.

The following figures provides an example of how an error might be displayed in Health Explorer.

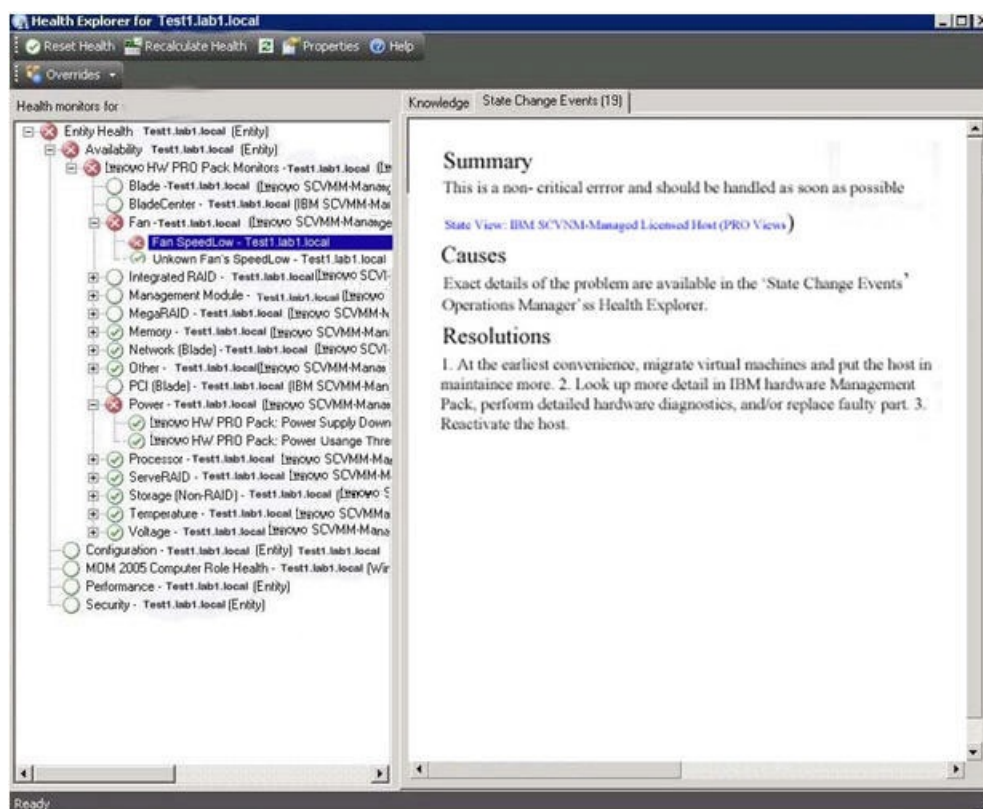


Figure 9. Error displayed in Health Explorer

**Note:** If there is no warning or critical alert, right-click the system in the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** and from the list, select **Open** and **Health Explorer for system name**.

Step 3. Identify the basal-level health monitor that is indicating an error. The indication should refer to a particular component instance.

In the figure below, the cause of the error is a power usage setting that is higher than the critical power threshold.

Step 4. To resolve the error, manually complete the steps listed in the Resolutions section.

Step 5. In the right pane, click **State Change Events** to view details about the latest state change event that include the date and the time that the fan entered the error state.



You can also read details about the error.

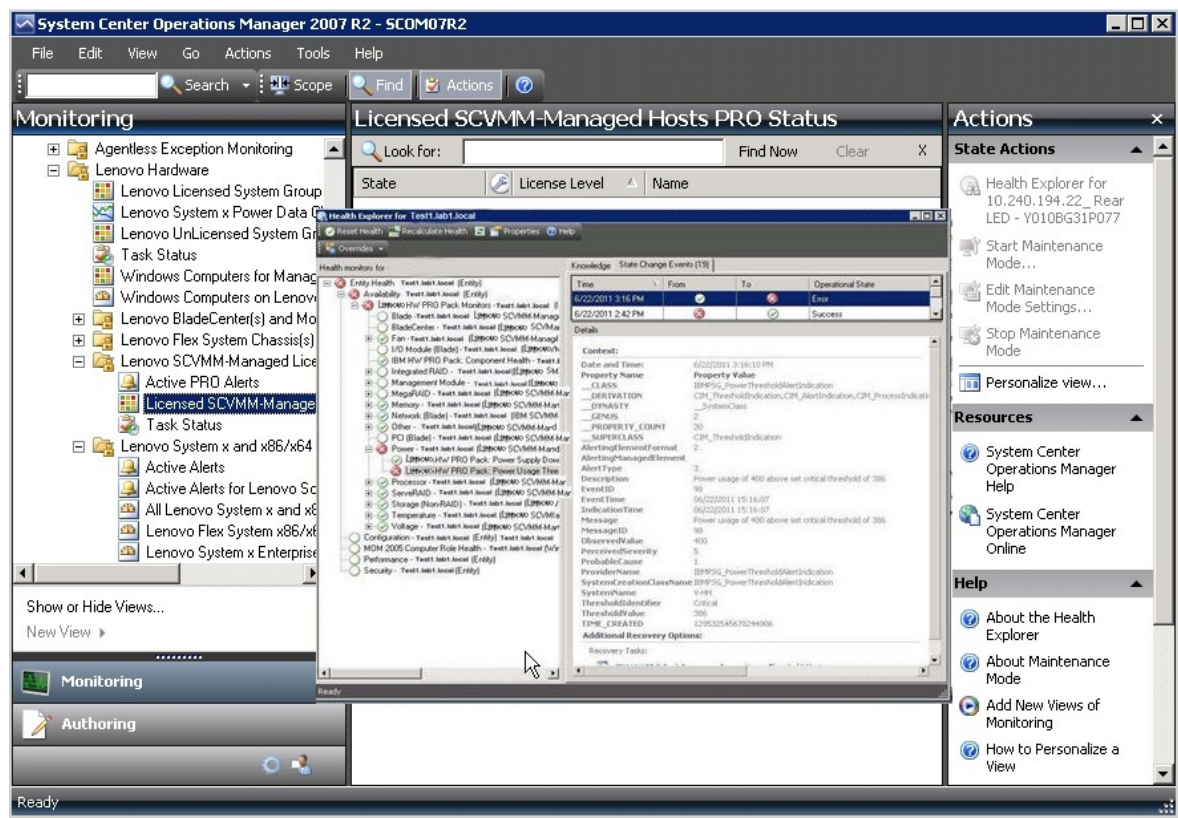


Figure 10. Error details

## What to do next

You can find additional information in the IBM Knowledge pages. For instructions on how to access and use the IBM Knowledge pages, see the *Lenovo Hardware Management Pack for Microsoft System Center Operations Manager Users Guide*. This document can be viewed or downloaded from the [Lenovo Hardware Management Pack for Microsoft System Center Operations Manager website](#).



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## Appendix A. Accessibility features

Accessibility features help users who have a physical disability, 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.

For specific information about accessibility features and keyboard navigation, refer to the [System Center Virtual Machine Manager website](#).

The following list includes the major accessibility features in Lenovo Hardware PRO Pack:

- Can be operated using only the keyboard
- Communicates all information independent of color
- Inherit system settings for font, size, and color
- Supports interfaces commonly used by screen readers and screen magnifiers

### Keyboard navigation

Lenovo Hardware PRO Pack uses standard Microsoft® Windows navigation keys.

### Lenovo and accessibility

See the [Lenovo Accessibility website](#) for more information about the commitment that Lenovo has to accessibility.



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## Appendix B. Notices

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## Important notes

Processor speed indicates the internal clock speed of the microprocessor; other factors also affect application performance.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1 024 bytes, MB stands for 1 048 576 bytes, and GB stands for 1 073 741 824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.

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