



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

Version 5.6



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Note

Before using this information and the product it supports, read the information in:

- “Notices” on page 29
- “Trademarks” on page 31

Edition notice

This edition applies to Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6, User's Guide and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this publication

This book provides instructions for installing the Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6, into Microsoft System Center Operations Manager 2007 or Microsoft System Center Operations Manager 2012, and for using the integrated features to manage systems in your environment.

Conventions and terminology

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

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

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

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

PDF files

View or print documentation that is available in Portable Document Format (PDF).

Downloading Adobe Acrobat Reader

You need Adobe Acrobat Reader to view or print these PDF files. You can download a copy from the Adobe Reader website.

Viewing and printing PDF files

You can view or print any of the PDF files located on the web. The most current version of each document is available on the product download page. Click the following link to locate the individual product pages for each publication: IBM System x Integration Offerings for Microsoft Systems Management Solutions portal.

- Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6 release notes
- Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6 user's guide

World Wide Web resources

The following web pages provide resources for understanding, using, and troubleshooting IBM® System x, Lenovo BladeCenter® servers, and systems management tools.

IBM Systems: technical support site

IBM Systems: technical support site: IBM Support Portal

Locate support for IBM hardware and systems-management software.

IBM website for Microsoft Systems Management Solutions for IBM servers

IBM website for Microsoft Systems Management Solutions for IBM servers: IBM Systems Director systems management solutions for System x

Locate the latest product downloads available for the System Center Virtual Machine Manager for Microsoft System Center Virtual Machine Manager, v4.0 and linkage needed to purchase activation licenses per managed end point.

IBM Systems Management Software: Download/Registration

IBM Systems Management Software: Download/Registration Page:
"http://www-03.ibm.com/systems/director/downloads/agents.html

Download IBM systems-management software, including IBM Systems Director.

IBM System x Systems Management

IBM System x Systems Management page: IBM System x: <http://www-03.ibm.com/systems/x/>

Obtain an overview of IBM systems management using Director Agent or IBM Director Core Services.

IBM ServerProven®

For information about hardware compatibility with IBM System x, Lenovo BladeCenterIBM IntelliStation®, and hardware, refer to IBM ServerProven: Compatibility for hardware, applications, and middleware.

Microsoft System Center Virtual Machine Manager

Microsoft System Center Virtual Machine Manager TechCenter at <http://technet.microsoft.com/library/gg610610.aspx>.

Obtain information about System Center Virtual Machine Manager that describes how to manage the virtualized datacenter. SCVMM provides cross-platform support, Performance and Resource Optimization (PRO), and enhanced high availability (HA) capabilities.

Microsoft System Center Operations Manager

Microsoft System Center Operations Manager TechCenter at <http://technet.microsoft.com/library/hh205987.aspx>

Obtain information about Systems Center Operations Manager that describes how to monitor your IBM systems across large organizations, using IBM and Microsoft applications and operating system knowledge to resolve operational problems.

Chapter 1. Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6

The Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6, provides performance and resource-optimization tips (PRO tips) that describe the hardware health state, alerting information, and virtual machine migration recommendations for the physical systems hosting Hyper-V and Virtual Server.

The Lenovo Hardware PRO Pack, v5.6 also provides monitoring and alerting information for IBM System x rack servers and IBM BladeCenter blade servers that are installed with IBM Director Core Services or Director Agent.

Key features

This topic explains the key features of the Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6.

Key features 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 on IBM System x and blade x86 and x64 virtual host servers
- Advisory PRO tips about existing or potential hardware problems that warrant VMM administrative operations
- Automated VM Migration support based on hardware failures or exceptions to power consumption thresholds for uEFI/IMM System x Servers and Blades 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 System x Servers and Blades running Windows 2008 R2 and the IBM Director Platform Agent v6.2.1 and newer.

- BladeCenter and Blade hardware health correlation and event propagation

Important: The Lenovo Hardware PRO Pack, v5.6 is a fee-based product component of the Lenovo Upward Integration for Microsoft System Center, v5.6 bundle. 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.

Microsoft System Center Virtual Machine Manager overview

Microsoft System Center Virtual Machine Manager is a comprehensive solution for virtualized data centers. System Center Virtual Machine Manager (SCVMM) PRO combines the hardware health knowledge and monitoring capabilities built into Systems Center Operations Manager (SCOM) with the management services for the physical and virtual machines built into SCVMM.

This solution provides administrators with an extensible framework for monitoring the physical resources within their virtual environments.

SCVMM and SCOM servers maintain continuous communication through their respective agents to provide comprehensive health and performance information about the infrastructures that they manage. While SCOM is designed to collect, monitor, and assist the user 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 PRO tips. A PRO tip is a recommendation to help you place, migrate, or re-configure applications, hardware, or virtual machines. These recommendations can then be implemented manually to return the workload to an optimal state.

How Lenovo Hardware PRO Pack supports IBM systems

Lenovo Hardware PRO Pack communicates with individual servers. These servers include BladeCenter blade servers that are running a Windows operating system supported by Hyper-V and Virtual Server with a supported version of IBM Director Core Services or Director Agent installed.

Supported systems

This topic lists the servers supported by Lenovo Hardware PRO Pack, v5.6.

The servers listed in Table 1 are supported by Lenovo Hardware PRO Pack, v5.6.

Note: Power monitoring support is available for the uEFI/IMM System x Servers and Blades denoted below with an asterisk (*), running Windows 2008 R2 and the IBM 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
BladeCenter HS23E	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

Table 1. Supported IBM and Lenovo servers (continued)

Server product name	Machine type
System x3250 M3	4251*, 4252*
System x3250 M4	2583, 2587
System x3250 M5	5458
System x3300 M4	7382
System x3350	4192
System x3400 M3	7378*, 7379*
System x3500 M3	7380*
System x 3500 M4	7383*
System x3530 M4	7160
System x3550	7978
System x3550 M3	7944*
System x3550 M4	7914*
System x3620 M3	7376*
System x3630 M3	7377*
System x3630 M4	7158
System x3650	7979
System x3650 M3	7945*
System x3650 M4	7915*
System x3650 M4 BD	5466
System x3690 X5	7147, 7148*
System x3750 M4	8722, 8733, 8752, 8718
System x3755	7163
System x3755 M3	7164
System x3850 M2	7141
System x3850 X5	7145*, 7146*
System x3850 X6/x3950 X6	3837, 3839
System x3950 M2	7141
System x3950 X5	7145*
System x iDataPlex® dx360 M4	7912*, 7913*

Supported configuration

This topic explains important configuration information.

Important: Installing and using Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6, in an unlicensed environment is not supported. Doing so might cause unexpected results for all monitored hosts.

For best results, when moving from a licensed environment to an unlicensed environment, uninstall Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6.

Installation requirements

This topic explains the software that must be installed on the management server to use the Lenovo Hardware PRO Pack.

Make sure that the following software is installed on the management server:

- For supporting System Center Virtual Machine Manager 2007, Microsoft System Center Operations Manager 2007 SP1, R2 are supported.
- For supporting System Center Virtual Machine Manager 2012, both Microsoft System Center Operations Manager 2007 and Microsoft System Center Operations Manager 2012 are supported.
- Lenovo Hardware Management Pack for Microsoft System Center Operations Manager, v5.6.
- Microsoft System Center Operations Manager 2012 SP1 and Microsoft System Center Virtual Machine Manager 2012 SP1 are both supported.

You can install Lenovo Hardware PRO Pack, v5.6 on a Windows server that is running Microsoft System Center Operations Manager 2007 SP1, 2007 R2, 2012, 2012 SP1, or 2012 R2

Note: Verify that the system has enough disk space to perform this installation.

Microsoft System Center Operations Manager requirements are located on the Microsoft System Center Operations Manager website.

The Lenovo Hardware Management Pack installation and user's guide is located on the IBM System x[®] Integration Offerings for Microsoft Systems Management Solutions website.

You can install Microsoft System Center Virtual Machine Manager 2008 R2, R2 SP1, or 2012 on the 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. The Microsoft System Center Virtual Machine Manager system requirements are located on the Microsoft System Center Virtual Machine Manager website.

Important: When importing the Lenovo Hardware PRO Pack Version 5.6, 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 the Lenovo Hardware PRO Pack Version 5.6.

Chapter 2. 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.

See Configuring Operations Manager Integration with VMM in the System Center Technical Documentation Library for more information.

Configuring the Hyper-V host

This topic provides information about software required to configure the Hyper-V host.

For Lenovo Hardware PRO Pack to monitor the health of the physical host, one of the following 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 Virtualization with Hyper-V.

Configuring Virtual Server 2008 R2 Enterprise Edition Support

This topic refers you to additional configuration information.

Note: System Center Virtual Machine Manager (SCVMM) 2012 no longer supports Virtual Server. The content that follows related to Virtual Server applies only to SCVMM 2007 R2 or R2 SP1.

For more information about software requirements for the host, refer to Microsoft Virtual Server.

Chapter 3. Installing Lenovo Hardware PRO Pack

Use this topic to help you install the Lenovo Hardware PRO Pack.

The integration of the Lenovo Hardware PRO Pack Version 5.6 into Microsoft System Center Operations Manager enhances the management capabilities of IBM systems.

Lenovo Hardware PRO Pack discovers IBM systems that host Hyper-V and virtual servers, and it provides alerts about the health state of IBM System x and BladeCenter server systems.

Downloading and installing Lenovo Hardware PRO Pack

Use the following steps to download and install Lenovo Hardware PRO Pack, Version 5.6.

Before you begin

For an Operations Manager Remote Management Server, install hot fixes applicable to both Windows server operating systems and Microsoft Operations Manager. For information about installing the hot fixes, see 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

Procedure

Download Lenovo Hardware PRO Pack.

1. Go to IBM System x Integration Offerings for Microsoft Systems Management Solutions and select **Microsoft System Center Virtual Machine Manager**. Refer to the content, excluding feature changes, in the Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, Version 5.6.
2. Under File Link, click **Sign in** to sign in with your IBM ID and password. The download page for Lenovo Upward Integration Modules (UIMs) is displayed.
3. Click the **Download Director** or the **Http** tab to download the files using your preferred download method. To download using the Download Director Java™ application, in the IBM Director Upward Integration Modules for Microsoft section, select the check box for the appropriate download package for Lenovo Hardware PRO Pack Version 5.6 for Microsoft System Center Virtual Machine Manager.

Version 5.6 (32-bit and 64-bit):

lnvgy_sw_propack_x.x.x_windows_32-64.exe

Where xx in the name is an internal Lenovo tracking number.

- a. 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, Version 5.6 installation package appropriate for your Microsoft System Center Operations Manager Server to a temporary directory.
- b. When the Security window is displayed, asking if you want to run the application, click **Run**.

- c. When the download completes, click **Close [x]** to close the download window.
4. Click **OK**.

Note: The installer checks for prerequisites. If the installer cannot find all of the prerequisites, a message box is displayed that indicates the prerequisites that cannot be found.

The installer also checks for a previous version of Lenovo Hardware PRO Pack. If a previous version is detected, a message is displayed informing you that this version is not supported for an upgrade by this installer. The previous PRO management 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.

The Welcome to the InstallShield Wizard for Lenovo Hardware PRO Pack Version 5.6 for Microsoft System Center Virtual Machine Manager window is displayed.

Note: Before installing Lenovo Hardware PRO Pack version 5.6 on a non-RMS server, ensure that the required Lenovo Hardware Management Pack, v5.6 is installed on the non-RMS server. If the installer cannot find the required Lenovo Hardware Management Pack, v5.6, the installer stops.

5. Click **Next**. The License Agreement window is displayed.
6. 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 version 5.6 installed, you can select to either repair or remove Lenovo Hardware Management Pack, version 5.6. See the “Repairing and removing Lenovo Hardware PRO Pack” on page 11 topic for more information.
7. Verify the default target location. If necessary, select the target folder for the installation code.
8. Click **Next**. The Import Lenovo Hardware PRO Pack v5.6 Management Pack window is displayed. This window reminds you to import the Lenovo Hardware PRO Pack management pack into the Systems Center Operations Manager console.

Note: For instructions on how to import, open the Systems Center Operations Manager console, select **Administrator**, and then select **Import Management Pack**.

9. To begin the installation, click **Next**.
10. When the installation is complete, read the reminder, and click **Finish**.
11. Open the Operations Console of the Microsoft Systems Center Operations Manager.
12. On the Operations Console, click **Administration > Management Packs > Import Management Pack** to import the Lenovo Hardware PRO Pack. This import process completes the installation.

Note: The Lenovo Hardware PRO Pack management pack is located in the installation directory.

After selecting to import the Lenovo Hardware PRO Pack management pack, 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 the Lenovo Hardware PRO Pack because the Lenovo Hardware PRO Pack is sending event messages between the management server and the host system.

13. Click **Yes**.
14. Verify that the Lenovo Hardware PRO Pack import was successful by ensuring that the Lenovo Hardware PRO Pack, v5.6 for IBM System x and BladeCenter x Blade Servers management pack is displayed in the **Administration > Management Packs** view.

Note:

- 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.
- You can also either install or uninstall Lenovo Hardware PRO Pack by using the Lenovo Upward Integration for Microsoft System Center Installer. Refer to the IBM Upward Integration for Microsoft System Center Integrated Installer User's Guide for more information about the process.

Chapter 4. Uninstalling Lenovo Hardware PRO Pack

To uninstall the Lenovo Hardware PRO Pack, use either the Add or Remove Programs option or the Programs and Features option.

Uninstalling Lenovo Hardware PRO Pack

Procedure

1. To completely uninstall the software package and related files, on the Windows Control Panel, select either the **Add or Remove Programs** or **Programs and Features** program.

Note: These programs silently remove the installed files.

2. Select **Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6**, and select **Uninstall** at the top of the panel. You can also right-click on **Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6** and select **Uninstall**.

Note: The process of uninstalling the Lenovo Hardware PRO Pack begins.

3. To complete the uninstallation, open the Operations Manager console, click **Administration > Management Packs**, select the management pack, and manually delete it.

Note: You can also either install or uninstall Lenovo Hardware PRO Pack easily by using the Lenovo Upward Integration for Microsoft System Center Integrated Installer. Refer to the IBM Upward Integration for Microsoft System Center Integrated Installer User's Guide for more information about how to perform this action.

Repairing and removing Lenovo Hardware PRO Pack

Use the Repair and Remove functions to repair registry files and uninstall Hardware PRO Pack.

About this task

The Repair function reinstalls the program and registry entries on the local server.

The Remove function uninstalls Lenovo Hardware PRO Pack package from the local system, but it does not delete the management pack from the Operations Manager console. You must use the Operations Manager console to delete the management pack from the Operations Manager.

File and registry locations

This topic provides details about the default installation directory and registry path for Lenovo Hardware PRO Pack, v5.6.

By default, the installation files for Lenovo Hardware PRO Pack, v5.6 are placed in the following directory:

%ProgramFiles%\Lenovo\Lenovo Hardware PRO Pack

The registry path for the Lenovo Hardware PRO Pack, v5.6 entry is:

HKEY_LOCAL_MACHINE\SOFTWARE\Lenovo\System Management Integrations\Lenovo HW PRO Pack

Reinstalling Lenovo Hardware PRO Pack

If you recently removed management packs from the Microsoft System Center 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, see the article [Discovery information is missing after you delete and then reimport a management pack in Microsoft System Center Operations Manager](#).

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.

Chapter 5. Working with Lenovo Hardware PRO Pack

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

The Lenovo Hardware PRO Pack enhances the functionality of both Systems Center Operations Manager and System Center Virtual Machine Manager to provide detailed information about managed Hyper-V, Virtual Server, and IBM System x hardware.

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

After you have installed Lenovo Hardware PRO Pack, use the following tasks to learn more about using the Systems Center Operations Manager and System Center Virtual Machine Manager. You can also 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 16 for more information about SCOM and SCVMM.

- Monitor the health of systems and components, as described in the “Monitoring the health of systems and hardware components” on page 14 topic.
- Identify and resolve errors, as described in the Chapter 6, “Using Health Explorer to identify and resolve problems,” on page 23 topic.

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

This topic provides the commands to use to synchronize System Center Virtual Machine Manager 2008 and Systems Center Operations Manager.

About this task

Important: When importing the Lenovo Hardware PRO Pack Version 5.6, 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 the Lenovo Hardware PRO Pack.

Procedure

1. On your SCVMM management server, open a Windows PowerShell window.
2. On the 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 Systems Center Operations Manager

This topic provides the commands to use to synchronize System Center Virtual Machine Manager 2012 and Systems Center Operations Manager.

About this task

Important: When importing the Lenovo Hardware PRO Pack Version 5.6, 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 the Lenovo Hardware PRO Pack.

Procedure

1. On your SCVMM management server, open a Windows PowerShell window.
2. On the command line, enter the following commands:
 - a. **Test-SCPROTip**

This command creates a test PRO Tip, which is a roundtrip test that checks whether the VMM to Operations Manager integration 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

This topic explains host discovery, or latency, which refers to the amount of time it takes for a Lenovo system to be displayed in the Licensed SCVMM-Managed Hosts Status view after the installation of Lenovo Hardware PRO Pack host.

After installation, it might take two or more minutes for a Lenovo system to be displayed in the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views) > Licensed SCVMM-Managed Hosts Status** view. The time for all hardware components to be discovered and to start indicating their health state can take five minutes or longer.

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: Latency for discovery is normal behavior for Microsoft System Center Operations Manager. However, you can override the default monitoring interval values to set a shorter interval.

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 systems and hardware components

This topic explains what Lenovo Hardware PRO Pack monitors and the steps you need to take to facilitate monitoring.

About this task

Lenovo Hardware PRO Pack, v5.6 discovers and monitors only the following hardware components of a Microsoft virtual machine host:

- Processors
- Memory
- Network adapters
- Storage
- Management controllers
- Power supplies
- Fans
- Temperature sensors
- Voltage sensors
- Power[®] usage sensors

For best practices, use Lenovo Hardware Management Pack to verify that all of the necessary management software is installed on all managed hosts.

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

Component discovery and health monitoring depend on firmware support, hardware compatibility, and management software support. Because of the various factors involved, not all components are always discoverable. If a component is not discovered, it cannot be monitored or managed.

There are three locations where you can monitor system health with the Lenovo Hardware PRO Pack:

- Systems Center Operations Manager console
- System Center Virtual Machine Manager
- Applications Event log

Procedure

1. On the Systems Center Operations Manager console navigation panel, click **Monitoring**.
2. Expand the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** folder. It contains the folders and views that Lenovo Hardware PRO Pack adds to the Operations Manager console.
3. To view any critical or warning alerts associated with your Lenovo hardware, click **Active PRO Alerts**. The following screen capture depicts how active alerts might be displayed:

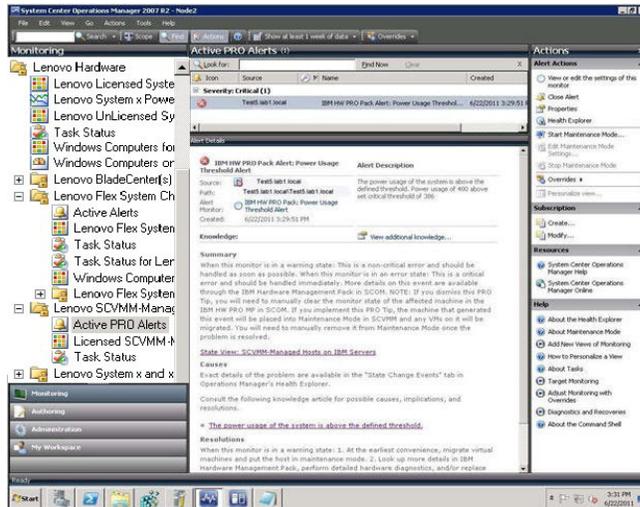


Figure 1. Active alerts displayed

4. To view the status and health of your Lenovo systems' hardware, expand the **Lenovo SCVMM-Managed Licensed Hosts (PRO Views)** folder.

Using the Operations Manager console with Lenovo Hardware PRO Pack

This topic provides the steps for using the Operations Manager console with Lenovo Hardware PRO Pack.

About this task

After installing Lenovo Hardware PRO Pack, use the Monitoring page in the Operations Manager console to monitor systems. The Lenovo SCVMM-Managed Licensed Hosts (PRO Views) folder and views on the Monitoring page provide a complete view of the health of your PRO-Enabled Hyper-V and Virtual Server IBM System x hardware.

To see what Lenovo Hardware PRO Pack adds, perform the following procedure to become familiar with the Monitoring page of the Operations Manager console.

Procedure

1. On the left panel of the Operations Manager console, click **Monitoring**.
2. Open the Lenovo SCVMM-Managed Licensed Hosts (PRO Views) folder. This folder includes Active PRO Alerts, task status, and the view for all discovered PRO-enabled virtual server and Hyper-V System x hardware.

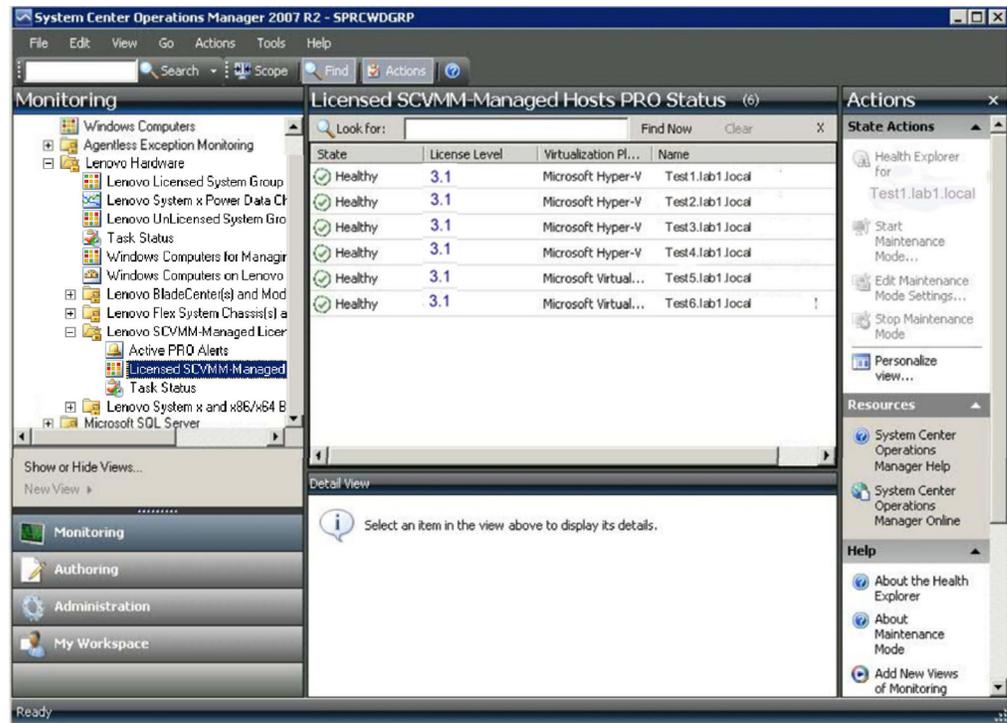


Figure 2. Available views

Lenovo Hardware PRO Pack adds the following views:

Active PRO alerts

The Active PRO Alerts window provides a state view of alerts for all discovered and PRO-enabled virtual server and Hyper-V IBM System x hardware.

Note: 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 6. Using Health Explorer to identify and resolve problems."

Lenovo SCVMM-Managed Licensed Hosts (PRO Views)

Lenovo SCVMM-Managed Licensed Hosts (PRO Views) is a state view of all discovered PRO-enabled virtual server and Hyper-V IBM systems. Use this view in the same way you use the **Monitoring > Computers** view. The difference between the two views is that the SCVMM-Managed Licensed Hosts (PRO Views) view contains only computers that are PRO-enabled, running Virtual Server or Hyper-V, and are on IBM System x hardware.

Note:

- If you remove a managed client from the operations console, remove the client from the VMM as well. Otherwise, the client is disabled in the **Licensed SCVMM-Managed Host PRO Status** from Operation Console .
- If you upgrade the Director Agent from an older version (for example, from 6.2.1 to 6.3) on a target server, remove and re-install the PRO Pack, restart the SCOM services, and follow the instructions in synchronize the SCVMM 2008 and SCOM servers or synchronize the SCVMM 2012 and SCOM servers based on your SCVMM version. Otherwise, the older version of the director agent entry may still show under the Licensed SCVMM-Managed Host PRO Status from the Operations Manager console.

Task status

Task Status is the state view of all discovered and PRO-enabled virtual server and Hyper-V IBM System x hardware.

Viewing alerts in System Center Virtual Machine Manager

This topic describes how to view alerts in System Center Virtual Machine Manager.

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

Viewing alerts from the main console page for SCVMM 2008

This topic shows describes how to view alerts from the main console page for SCVMM 2008.

Procedure

1. In the navigation panel, click **Jobs**.
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: If **Automatically implement PRO Tips** for this host group is checked on the PRO tab in the properties for **Hosts > All Hosts > group_name**, all PRO tips in this view will be displayed as resolved even if an alert is active.

The screenshot shows the System Center Virtual Machine Manager interface. The main window displays a 'Host Summary' for 'Test5.lab1.local'. The summary includes a 'Lenovo HW PRO Pack Alert: Power U...' with a description of power usage exceeding a threshold. The 'Host Summary' section shows Average CPU at 70%, Memory at 16%, and Storage at 50%. The interface also displays a list of jobs and various navigation options.

Name	Status	Start Time	Result Name	Owner
Set state of a PRO Tip	Completed	6/22/2011 3:36:03 PM	Lenovo HW PRO Pack...	LA...
Set state of a PRO Tip	Completed	6/22/2011 3:36:02 PM	Lenovo HW PRO Pack...	LA...
Set state of a PRO Tip	Completed	6/22/2011 3:35:56 PM	Lenovo HW PRO Pack...	LA...
Dismiss a PRO Tip	Completed	6/22/2011 3:35:55 PM	PRO CPU Utilization	LA...
Set state of a PRO Tip	Completed	6/22/2011 3:35:55 PM	Lenovo HW PRO Pack...	LA...
Set state of a PRO Tip	Completed	6/22/2011 3:35:48 PM	Lenovo HW PRO Pack...	LA...
Set state of a PRO Tip	Completed	6/22/2011 3:35:47 PM	Lenovo HW PRO Pack...	LA...

Figure 3. Host summary

Viewing alerts from the main console page for SCVMM 2012

This topic describes how to view alerts from the main console page for SCVMM 2012.

Procedure

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

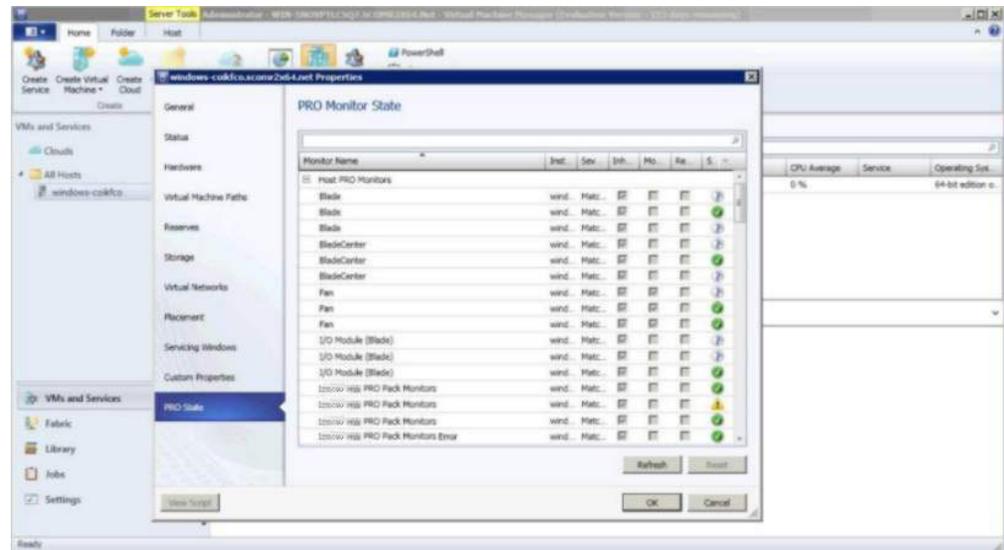


Figure 4. Detailed view of PRO

Viewing alerts from the PRO Tips view for SCVMM 2008

This topic describes how to view alerts from the PRO Tips view for SCVMM 2008.

Procedure

1. On the horizontal toolbar, click **PRO Tips**. Any active alerts are displayed.

Note: If **Automatically implement PRO Tips on this Host Group** is selected on the **PRO** tab in the properties for **Hosts > All Hosts > group_name**, you will see PRO Tips in this view as resolved even if an alert is active.

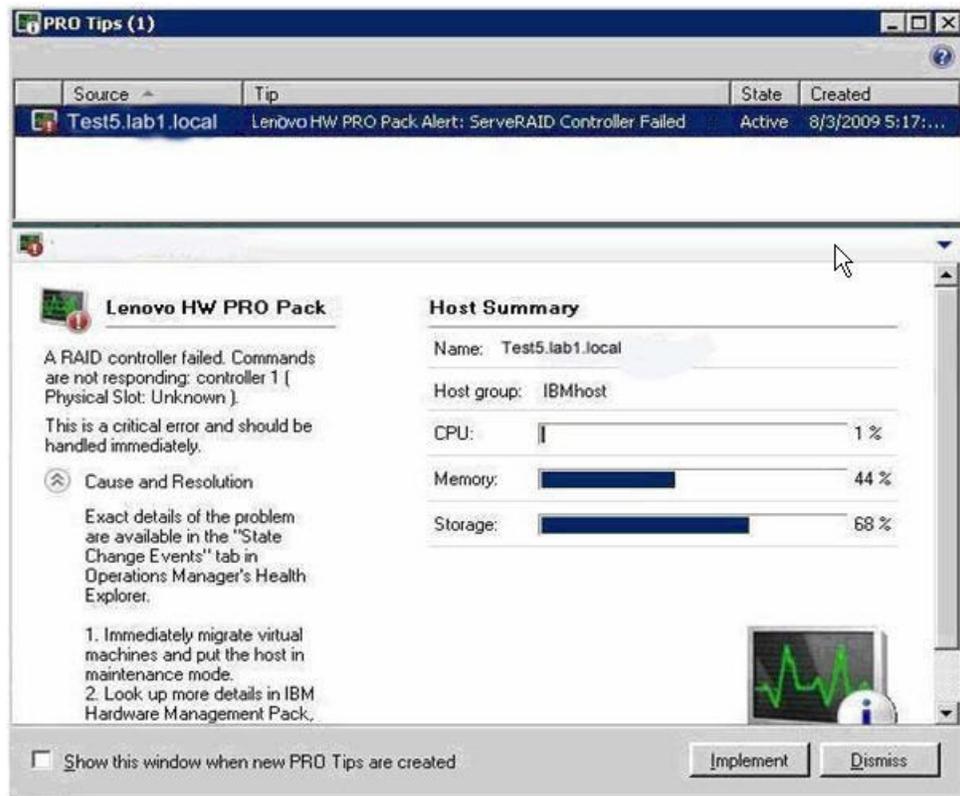


Figure 5. Host summary

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 the Health Explorer to identify, examine, and resolve critical problems. See Chapter 6, "Using Health Explorer to identify and resolve problems," on page 23 for more information.

Viewing alerts from the PRO Tips view for SCVMM 2012

This topic shows how to view alerts from the PRO Tips view for SCVMM 2012.

Procedure

On the horizontal toolbar, click **PRO Tips**. Any active alerts are displayed here.

Note: In some cases, text may not display completely in the PRO tip window. To show all the text, maximize the window.

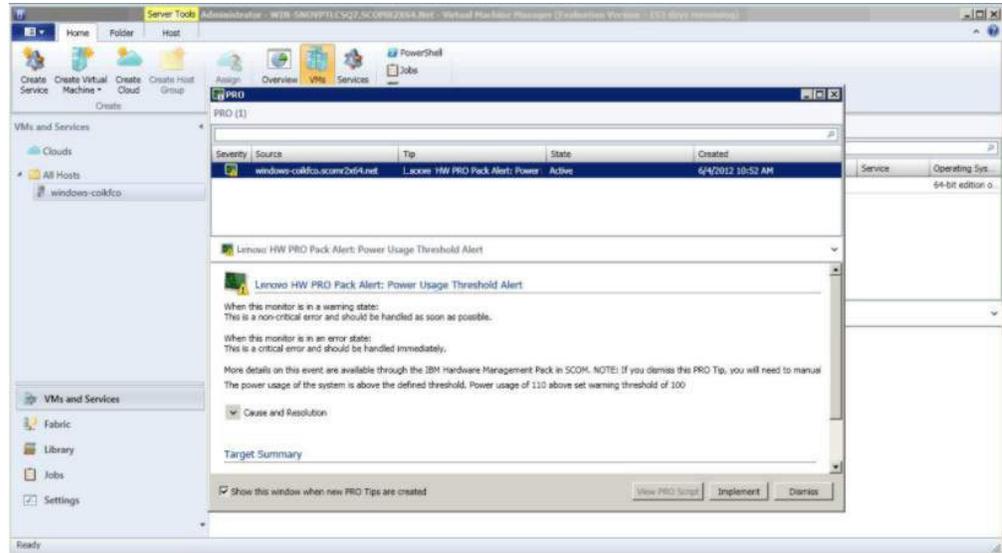


Figure 6. Host summary

Viewing alerts from servers

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

About this task

After a PRO Tip is implemented, Lenovo Hardware PRO Pack, v5.6 automatically resets the health status. However, dismissed or cancelled PRO Tips require you to manually reset the health status to the 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

1. Navigate to **Monitoring > Lenovo SCVMM-Managed Licensed Hosts (PRO Views) > Licensed SCVMM-Managed Hosts Status**.
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 6. Using Health Explorer to identify and resolve problems

You can use the Health Explorer to identify and resolve error states that are displayed when monitoring Lenovo systems and hardware components.

For a quick view of the status, look at Active PRO Alerts or Lenovo SCVMM-Managed Licensed Hosts (PRO Views). These views show any existing alerts on your Lenovo hardware.

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

Use the Health Explorer to view, learn about, and act on alerts, state changes, and other issues that occur for the monitored object. The following image depicts how a critical error is displayed for a managed host.

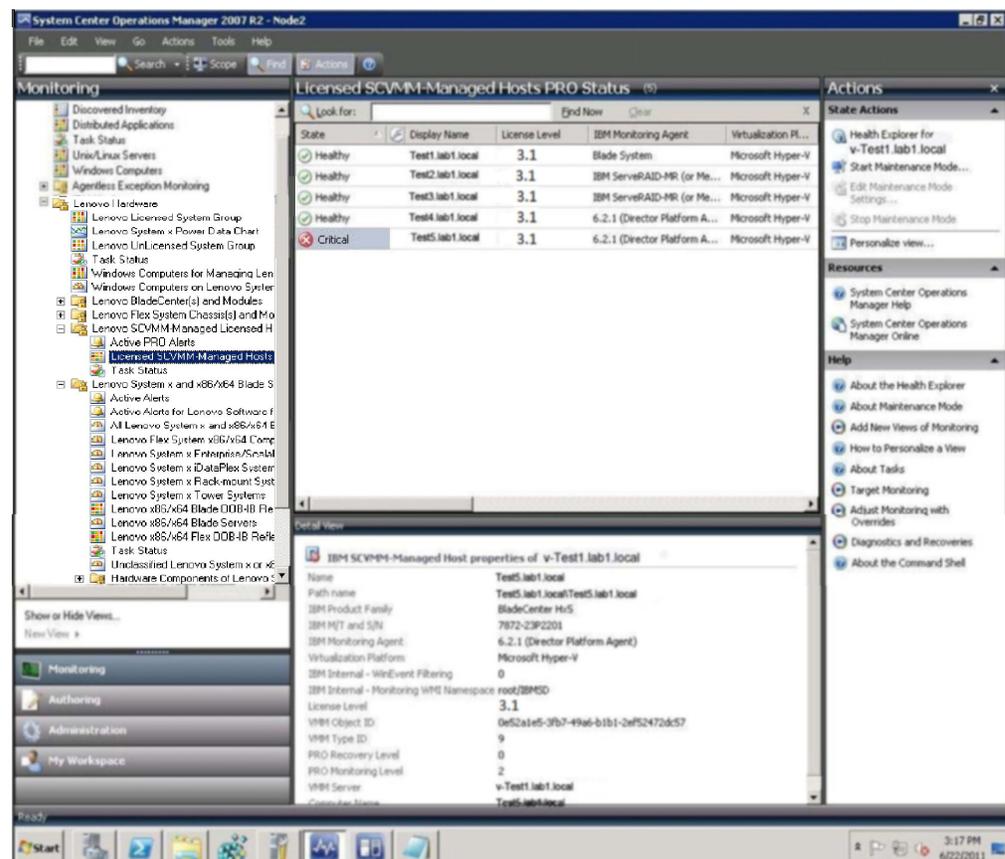


Figure 7. Critical error for a managed host

Identifying and resolving a critical error

Use the Health Explorer to identify and resolve error states that are displayed when monitoring Lenovo systems and hardware components.

About this task

To identify and resolve a critical error, complete the following steps.

Procedure

1. Open the Health Explorer by navigating to **Monitoring > SCVMM > Lenovo SCVMM-Managed Licensed Hosts (PRO Views)**.
2. Double-click the state. By default, the Health Explorer opens with all failed monitors in an expanded view.

The following image shows how an error might be displayed in the Health Explorer:

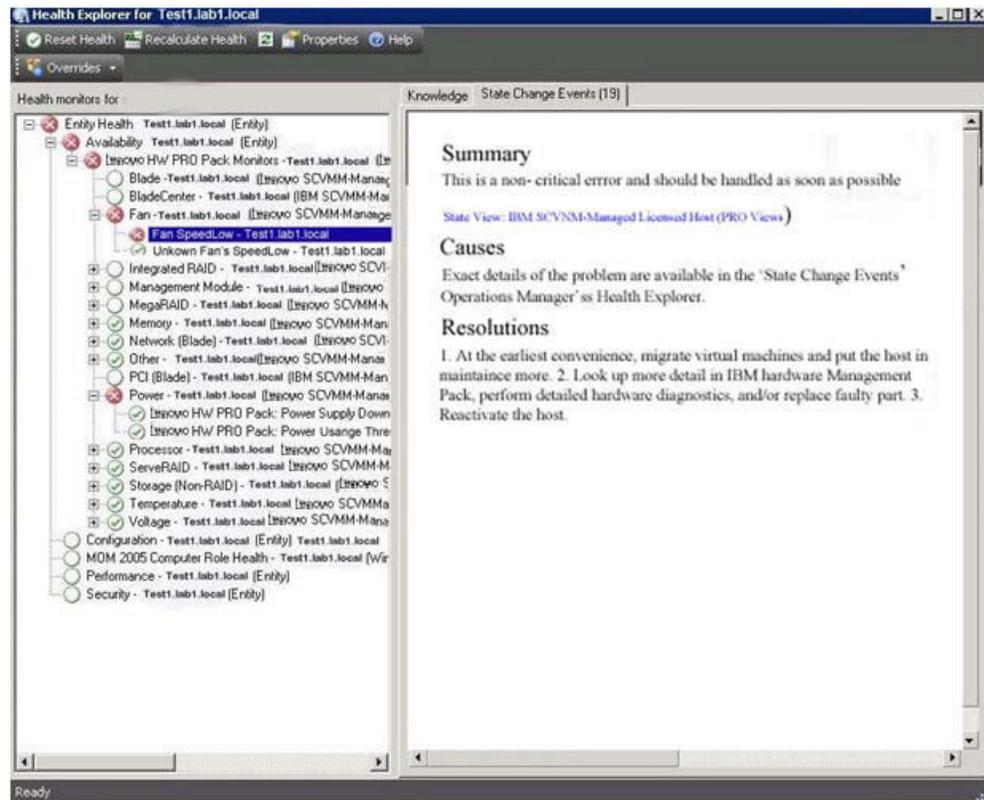


Figure 8. Error displayed in Health Explorer

Note: If there is no warning or critical alert, select and right-click the Lenovo system in the Lenovo SCVMM-Managed Licensed Hosts (PRO Views) view to show its context menu. Click **Open**, and click **Health Explorer for system name**.

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

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

4. To resolve the error, manually complete the steps listed in the Resolutions section.
5. On the right panel, click **State Change Events** for details about the latest state change event.

You can see the date and the time that the fan entered the error state. You can also read details about the error.

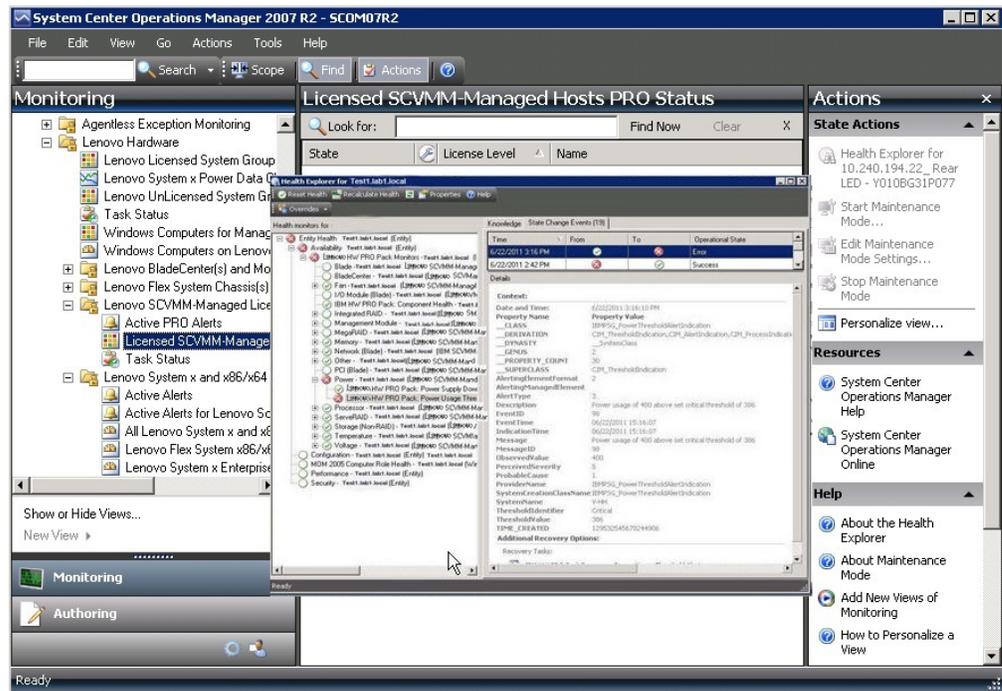


Figure 9. Error details

What to do next

For details about accessing and using the IBM knowledge pages, check the Lenovo Hardware Management Pack for Microsoft System Center Operations Manager, v5.6 documentation.

Appendix. References

These topics contain additional reference information to help you.

Accessibility for Lenovo Hardware PRO Pack

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

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

Accessibility features

For specific information about accessibility features and keyboard navigation, refer to the Microsoft System Center Virtual Machine Manager software documentation.

The following list includes the major accessibility features in Lenovo System Updates:

- 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

You can view the publications for Lenovo Hardware PRO Pack for Microsoft System Center Virtual Machine Manager, v5.6, in Adobe Portable Document Format (PDF) using the Adobe Acrobat Reader available from the Adobe Reader website. You can access the PDFs from the Lenovo Hardware PRO Pack, v5.6 download site.

Keyboard navigation

This product uses standard Microsoft® Windows navigation keys.

Lenovo and accessibility

For information about the commitment that Lenovo has to accessibility, see the Lenovo Accessibility Features website.

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