

HP ProLiant Linux and VMware Management Pack for Microsoft System Center User Guide

Abstract

This guide provides information on using the HP ProLiant Linux and VMware Management Pack for System Center to manage and monitor HP ProLiant servers running supported versions of Linux or VMware operating system software. The management pack is used with HP Insight Control for Microsoft System Center. This information is for system administrators who use the HP ProLiant Linux and VMware Management Pack and other HP tools to operate and manage servers in a Microsoft System Center environment. This guide supplements the Microsoft System Center user documentation.



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1 Overview

This guide is designed for system administrators who use the HP ProLiant Linux and VMware Management Pack, Insight Management Agents, and other HP applications and tools to manage HP ProLiant servers running supported versions of Linux or VMware operating system software in a Microsoft System Center environment.

You should be familiar with the configuration and operation of Microsoft Windows, Microsoft Systems Center Operations Manager (SCOM), HP Management Agents for VMware, and HP Insight Management Agents. Because of the potential risk of data loss, only individuals who are experienced with using this software should implement the procedures described in this guide. This guide supplements the Microsoft System Center user documentation.

Introduction

The HP ProLiant Linux and VMware Management Pack for System Center complements and extends Operations Manager. This management pack adds alert processing, state monitoring, and hardware resource lifecycle management for HP ProLiant servers running supported versions of Linux or VMware operating system software. The management pack provides user discovery of servers, predefined views, monitors, event processing rules, and tasks. These features enable administrators to streamline IT operations and ensure increased systems availability by monitoring HP hardware platforms through a common management console.

The HP ProLiant Linux and VMware Management Pack enables user configuration, monitoring, and automatic grouping of the servers into a common view. Default monitoring highlights the state of HP hardware subsystems and components, and presents a consolidated view of the server status.

For advanced hardware lifecycle management and remote administration of servers, the HP ProLiant Linux and VMware Management Pack includes a task that launches HP Integrated Lights-Out web consoles.

Complete information on supported hardware and software is included in the *HP Insight Control for Microsoft System Center Support Matrix (6.3)*.

HP Device Monitor Service, HP Device Monitor Console, and this management pack

The HP Linux and HP VMware servers supported by this management pack cannot have SCOM agents, which require the Windows operating system, loaded locally. Therefore this management pack allows these servers to communicate with instances of the HP Device Monitor Service (DMS). The DMS uses the SCOM agent of the managed node on which the DMS is installed to communicate with the HP management packs on the Operations console.

The HP Device Monitor Console (DMC) communicates with instances of the DMS, allowing you to add or remove HP Linux and HP VMware servers. Servers supported by this management pack must be registered with an instance of the DMS before those servers can be managed in the Operations console. It is possible to run multiple DMS instances, and the DMC can communicate with all of these instances.

You must use the DMC to register servers supported by this management pack with an instance of the DMS before they can be viewed or monitored in the Operations console.

For more information about the DMC and the DMS, see the *HP Device Monitor for Microsoft System Center User Guide*.

2 Using the HP ProLiant Linux and VMware Management Pack with Operations Manager

This chapter describes how to use the various management pack components.

- ① **IMPORTANT:** Before attempting to use the HP ProLiant Linux and VMware Management Pack, ensure that it has been properly installed and configured. For more information, see the appropriate installation documentation.

Using the Monitoring view

The HP ProLiant Linux and VMware Management Pack adds these items to the **Monitoring** view of SCOM (see [Figure 1 \(page 7\)](#)):

- HP Linux Servers

This folder contains these views for HP-monitored servers running supported versions of Linux operating system software:

View	Description
Active Alerts	Displays all active alerts generated by the collection classes provided by this management pack for HP Linux servers.
Group Diagram	Displays a diagram view of all HP Linux servers.
Server State	Displays server state information for all HP Linux servers

- HP VMware Servers

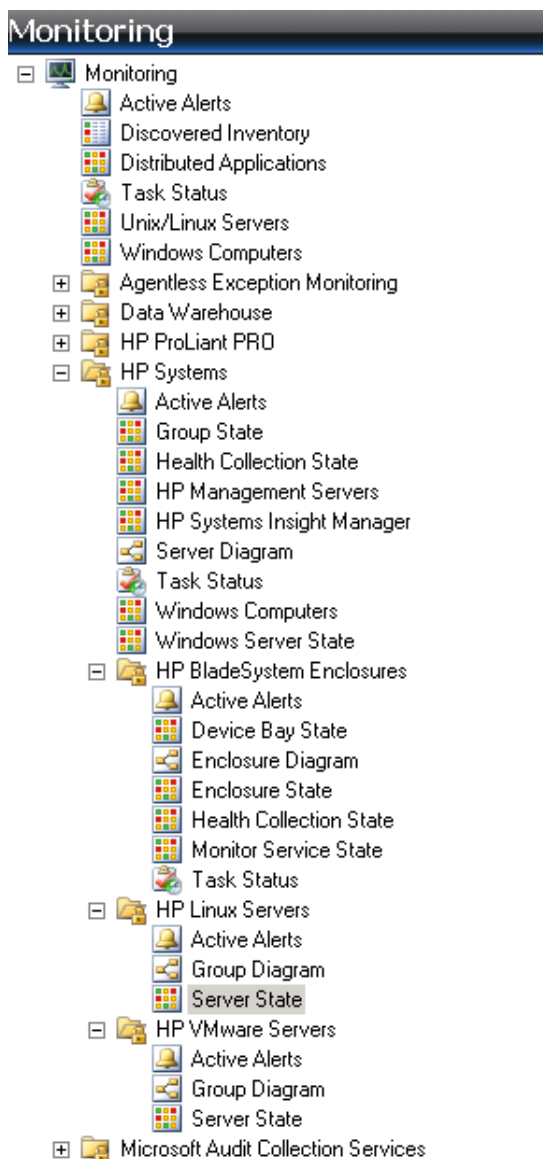
This folder contains these views for HP-monitored servers running supported versions of VMware operating system software:

View	Description
Active Alerts	Displays all active alerts generated by the collection classes provided by this management pack for HP VMware servers.
Group Diagram	Displays a diagram view of all HP VMware servers.
Server State	Displays server state information for all HP VMware servers

The HP ProLiant Linux and VMware Management Pack reports information about the monitored servers to these existing top-level views in the **HP Systems** folder:

- Active Alerts
- Group State
- Health Collection State
- Server Diagram

Figure 1 Monitoring View example



Viewing all HP ProLiant servers that run Linux operating system software

1. In the Operations Manager **Monitoring** view, expand the **HP Systems** folder.

2. Expand the **HP Linux Servers** folder and select one of these options:
 - Select **Server State**. All HP Linux servers are listed in the **Server State** view. You can use the column headings in the **Server State** view to sort by attributes such as state, server name, and operating system.

NOTE: By default, the **Operating System** column is not shown. To display the **Operating System** column, you must personalize the view.

State	Name	Path	Operating System	HP Log Collection	HP Power Supplies
Critical	localhost.localdo...	RMSCOM.RM.BL...	Red Hat Enterpr...	Healthy	Healthy
Healthy	RM.Blr	RMSCOM.RM.BL...	Red Hat Enterpr...	Healthy	Healthy

- Select **Group Diagram**.
Expand the **HP Linux Group**. All HP Linux servers are shown in the **Group Diagram** view.

Viewing all HP ProLiant servers that run VMware operating system software

1. In the Operations Manager **Monitoring** view, expand the **HP Systems** folder.
2. Expand the **HP VMware Servers** folder and select one of these options:
 - Select **Server State**. All HP VMware servers are listed in the **Server State** view. You can use the column headings in the **Server State** view to sort by attributes such as state, server name, and operating system.

NOTE: By default, the **Operating System** column is not shown. To display the **Operating System** column, you must personalize the view.

- Select **Group Diagram**.
Expand the **HP VMware Group**. All HP VMware servers are shown in the **Group Diagram** view.

Viewing all HP ProLiant servers that run a specific Linux or VMware operating system

1. In the Operations Manager **Monitoring** view, expand the **HP Systems** folder.
2. Expand either the **HP VMware Servers** folder or the **HP Linux Servers** folder.
3. Select **Server State**. All servers in the folder are listed. You can use the column headings in the **Server State** view to sort by operating system.

NOTE: By default, the **Operating System** column is not shown. To display the **Operating System** column, you must personalize the view.

Identifying a failed subsystem

This procedure is similar to the procedure for identifying a failed subsystem using the HP ProLiant Server Management Pack. The HP ProLiant Linux and VMware Management Pack adds support for HP-monitored servers that run Linux or VMware operating system software.

Icons that show a failure status appear next to the item that has a failure or the item that contains an item that has a failure. You can find the item that has the failure using these methods:

- Expanding icons in the **Group Diagram**.
- Using the **Active Alerts** view.

Viewing and analyzing alerts

This procedure is similar to the procedure for viewing alerts using the HP ProLiant Server Management Pack, but the HP ProLiant Linux and VMware Management Pack adds support for HP-monitored servers running supported versions of Linux or VMware operating system software.

1. In the Operations Manager **Monitoring** view, expand the **HP Systems** folder.
2. Expand the either the **HP VMware Servers** folder or the **HP Linux Servers** folder.
3. Select **Active Alerts**.
4. To display details for an individual alert, select the alert in the **Active Alerts** pane. The **Alert Details** pane shows HP Knowledge base text with the Event message in the **Alert Description**.
To view full knowledge information, click **View additional knowledge** in the **Alert Details** pane. Read the Product Knowledge and take action as described in the **Resolutions** section. If necessary, launch the **Console Tasks** defined in the Product Knowledge.

Adding a server

To add an HP Linux server or an HP VMware server, you must use the DMC to register the server with an instance of the DMS. For detailed information about this task, see the *HP Device Monitor for Microsoft System Center User Guide*.

Removing a managed server

To remove an HP Linux server or an HP VMware server from the list of managed servers, you must use the DMC. For detailed information about this task, see the *HP Device Monitor for Microsoft System Center User Guide*.

Launching HP Integrated Lights-Out for a failed subsystem

The HP Integrated Lights-Out management processor enables you to perform advanced, secure, and operating system-independent remote server management using a standard browser interface. The HP ProLiant Linux and VMware Management Pack includes a task that collects HP Integrated Lights-Out management processor data and creates an associated browser link to access the selected server remotely.

To launch HP Integrated Lights-Out:

1. In the **Monitoring** view, select the failed subsystem (see [“Using the Monitoring view”](#) (page 6)).
2. In the **Actions** pane, in **HP Monitored ProLiant Server Tasks**, select **HP Integrated Lights-Out**.
3. Log in to HP Integrated Lights-Out.

Launching the HP System Management Homepage task

The HP System Management Homepage (SMH) provides a consolidated view of system hardware health, configuration, performance, and status information for individual HP servers.

To launch the SMH task:

1. In the **Monitoring** view, select an HP Linux server or an HP VMware server.
2. In the **Actions** pane, in **HP Monitored ProLiant Server Tasks**, select **HP System Management Homepage**.

Launching the HP Device Monitor Console

The HP Device Monitor Console (DMC) communicates with instances of the DMS to allow you to add or remove servers supported by this management pack into SCOM.

You can launch the DMC from the **Start** menu or from the **Monitoring** view:

1. In the **Monitoring** view, select the **HP Management Servers** view.
2. In the **HP Management Servers** view, select an instance of the HP Device Monitor Service (DMS).
3. In the **Actions** pane, in **HP Monitored ProLiant Server Tasks**, select **HP Device Monitor Console**.

For detailed information about using the DMC, see the *HP Device Monitor for Microsoft System Center User Guide*.

Using Run As profiles

The HP ProLiant Linux and VMware Management Pack includes Run As profiles that enable non-default Run As accounts to be used for discovery and monitoring of HP servers. The following Run As profiles are included:

Profile name	Description
HP ProLiant Linux and VMware Servers Discovery Account	Used for discovery of HP ProLiant servers that are running the Linux or VMware operating system.
HP ProLiant Linux and VMware Servers Monitoring Account	Used for monitoring HP ProLiant servers that are running the Linux or VMware operating system.
HP Device Monitor Service Account	Used for discovery and monitoring of HP Device Monitor Services.

The **Agent Action Account** specified in the **Discovery Wizard** is used for discovery and monitoring of HP Servers by default. If the **Local System** account is not selected and another is specified with insufficient privileges, discovery and monitoring of HP Servers might fail.

To configure a Run As profile:

1. Create a Run As account using the **Create Run As Account Wizard**, and then specify an account that has sufficient privileges to perform discovery and monitoring of HP servers.

NOTE: The default **Local System Windows Account** Run As account has sufficient privileges, and can be associated to HP server Run As profiles.

2. Select the **Run As Profile Wizard** for the HP ProLiant Linux and VMware Servers Discovery Account profile and specify the Run As account with sufficient privileges, or select the **Local System Windows Account** Run As account.
3. Select the **Run As Profile Wizard** for the HP ProLiant Linux and VMware Servers Monitoring Account profile, and then specify the Run As account with sufficient privileges, or select **Local System Windows Account** Run As account.

The minimum permissions required by the Run As account to discover and monitor HP servers are:

- Full control access to registry key `HKKEY_LOCAL_MACHINE\SOFTWARE\Hewlett-Packard\HP SCOM Management Packs\HPDeviceMonitorService`
- Read, execute, and write access to the HP Device Monitor Service folder located in `%ProgramFiles%\HP SCOM Management Packs\HP Device Monitor Service\`

NOTE: The **Local System Windows Account** Run As account has sufficient privileges to discover and monitor HP servers.

3 Reference information about the HP ProLiant Linux and VMware Management Pack

This chapter provides more background information about the HP ProLiant Linux and VMware Management Pack components. The following management pack components are copied to the management database:

- Classes
- Views
- Tasks
- Discoveries
- Monitors
- Rules

These components are discussed in the following sections.

Classes

HP ProLiant Linux and VMware Management Pack provides these classes:

- HP Device Monitor Server Class (ID=HewlettPackard.Servers.HPDMServer)
Includes discovered instances of the HP ProLiant servers running supported versions of Linux or VMware operating system software. Properties include:

Server property	Description	Example
Network Name	FQDN of managed system	myserver.local
Manufacturer	Manufacturer of managed system	HP
Model	Model of managed system	ProLiant DL380 G6
System UUID	System GUID (not virtual GUID) of managed system	c123456c-0cac-4ee9-aa25-f5cf0c76b3bd
Operating System	Name of operating System	SUSE LINUX Enterprise Server 11
Serial Number	Serial number of managed system	USM62500TE
System Firmware	System Firmware of managed system	114-10-29-2010
System Type	OS system type; indicates whether this is x86 or x64.	64 bit
Physical Memory	Total physical memory for system in MB	8192

Server property	Description	Example
Total Disk	Total disk space for system in GB	136.7
Management Version	Versions of all HP management software delimited by "/"	HP Insight Management Agents 8.70.0.0
Monitoring Source	HP Management Software used to manage systems.	HP Insight Management Agents
IP Address	IPv4 address of managed system (for managed network interface)	192.168.0.101
Insight Lights Out	IPv4 iLO Address	192.168.0.100
Health State	System health	Warning

- HP Monitored ESX Server (ID=HewlettPackard.Servers.Monitored.HPESXServer)
Includes discovered instances of the HP ProLiant servers running supported versions of VMware operating system software.
- HP Monitored Linux Server (ID=HewlettPackard.Servers.Monitored.HPLinuxServer)
Includes discovered instances of the HP ProLiant servers running supported versions of Linux operating system software.

The HP ProLiant Linux and VMware Management Pack also uses the HP Device Monitor Console and HP Device Monitor Service classes. These classes are described in detail in the *HP Device Monitor for Microsoft System Center User Guide*.

Views

The Operations console provides a collection of folders and windows for viewing information stored in the management database. The HP ProLiant Linux and VMware Management Pack views filter information according to the operating system that is running on the monitored server. The HP ProLiant Linux and VMware Management Pack adds these views:

- HP Linux Servers
This folder contains these views for HP-monitored servers running supported versions of Linux operating system software:

View	Description
Active Alerts	Displays all active alerts generated by the collection classes provided by this management pack for HP Linux servers.
Group Diagram	Displays a diagram view of all HP Linux servers.
Server State	Displays server state information for all HP Linux servers

- HP VMware Servers

This folder contains these views for HP-monitored servers running supported versions of VMware operating system software:

View	Description
Active Alerts	Displays all active alerts generated by the collection classes provided by this management pack for HP VMware servers.
Group Diagram	Displays a diagram view of all HP VMware servers.
Server State	Displays server state information for all HP VMware servers

The HP ProLiant Linux and VMware Management Pack adds information to these top-level views:

- HP Systems

This is the root folder that includes all views related to HP-monitored servers. All other folders in this list are in the **HP Systems** folder.

- Active Alerts

This view displays all active alerts generated by collection classes for all HP systems and devices, including collection classes provided by this management pack.

- Group State

This view displays the state view by groups, including the groups provided by this management pack.

- Health Collection State

This view displays the state view by collection classes, including the collection classes provided by this management pack.

- Server Diagram

This view includes the groups provided by this management pack:

HP Monitored ProLiant Server Group, which contains these groups:

HP Linux Group

HP VMware Group

Active Alerts view for HP Linux and HP VMware servers

Event processing rules included with the management pack identify and display events received in the Windows Event Log as Operations Manager alerts. These events are generated by the DMS associated with this server and are forwarded to the NT event log of the server running the DMS.

The **Active Alerts** view in the **HP Linux Servers** folder displays active alerts that are associated with HP Linux servers. The **Active Alerts** view in the **HP VMware Servers** folder displays active alerts associated with HP VMware servers.

To display details for an alert, select the alert from the **Active Alerts** pane. The **Alert Details** pane displays HP Knowledge base text in the **Alert Description**.

The following information appears in the **Alert Details** pane:

Name	Name of the alert. For example, <i>Power subsystem degraded or failed</i> .
Source	The display name of the entity that issued the alert. For example: HP Insight Management Agents
Path	The path to the server that is affected by the alert.

Alert Rule	Name of the alert rule used when reporting this alert.
Created	The time the alert was created.
Alert description	A brief description of the alert.
Knowledge	Detailed information about the alert, including: <ul style="list-style-type: none"> • Causes • Summary • Resolution with embedded console tasks • Related links • View additional knowledge... (link to Alert Properties dialog)

Active Alerts (3)

Look for: Find Now Clear

Path	Source	Name	Resolution State	Created
Severity: Critical (1)				
DL360G6-VM2...net;DL360G6-VM2...	dl360g6-esx	Network Interface failed.	New	6/27/2011 4:14:02 PM
Severity: Warning (2)				
DL360G6-VM2...net;DL360G6-VM2...	dl360g6-esx	Power subsystem degraded or failed.	New	6/27/2011 4:13:50 PM
DL360G6-VM2...net;DL360G6-VM2...	dl360g6-esx	Power subsystem degraded or failed.	New	6/27/2011 4:13:41 PM

Alert Details

Power subsystem degraded or failed.

Source: dl360g6-esx

Path: DL360G6-VM2.mveeng80.hpdev.net\HP Device Monitor Service\dl360g6-esx

Alert Rule: Power subsystem degraded or failed.

Created: 6/27/2011 4:13:41 PM

Alert Description

Power Supply Removed (6034)

A Fault Tolerant Power Supply h

Source IP Address: '192.168.90.

Source System GUID: '363

Chassis: '0';

Bay: '0';

[SNMP TRAP: 6034 in CPQHLTH.]

View additional knowledge..

Knowledge:

Summary

Power subsystem has degraded or failed.

Causes

This could be caused by the following:

Server State views







The **Server State** view displays the overall status of HP hardware associated with the listed servers. To view detailed state information for HP health collections for a computer, select the server, and launch **Health Explorer** from the context menu or from the link in the **Actions** panel.

NOTE: By default, the **Operating System** column is not shown. To display the **Operating System** column, you must personalize the view.


Figure 2 Server State view for an HP ProLiant Server running Linux operating system software

Server State (2)

Look for: Find Now Clear

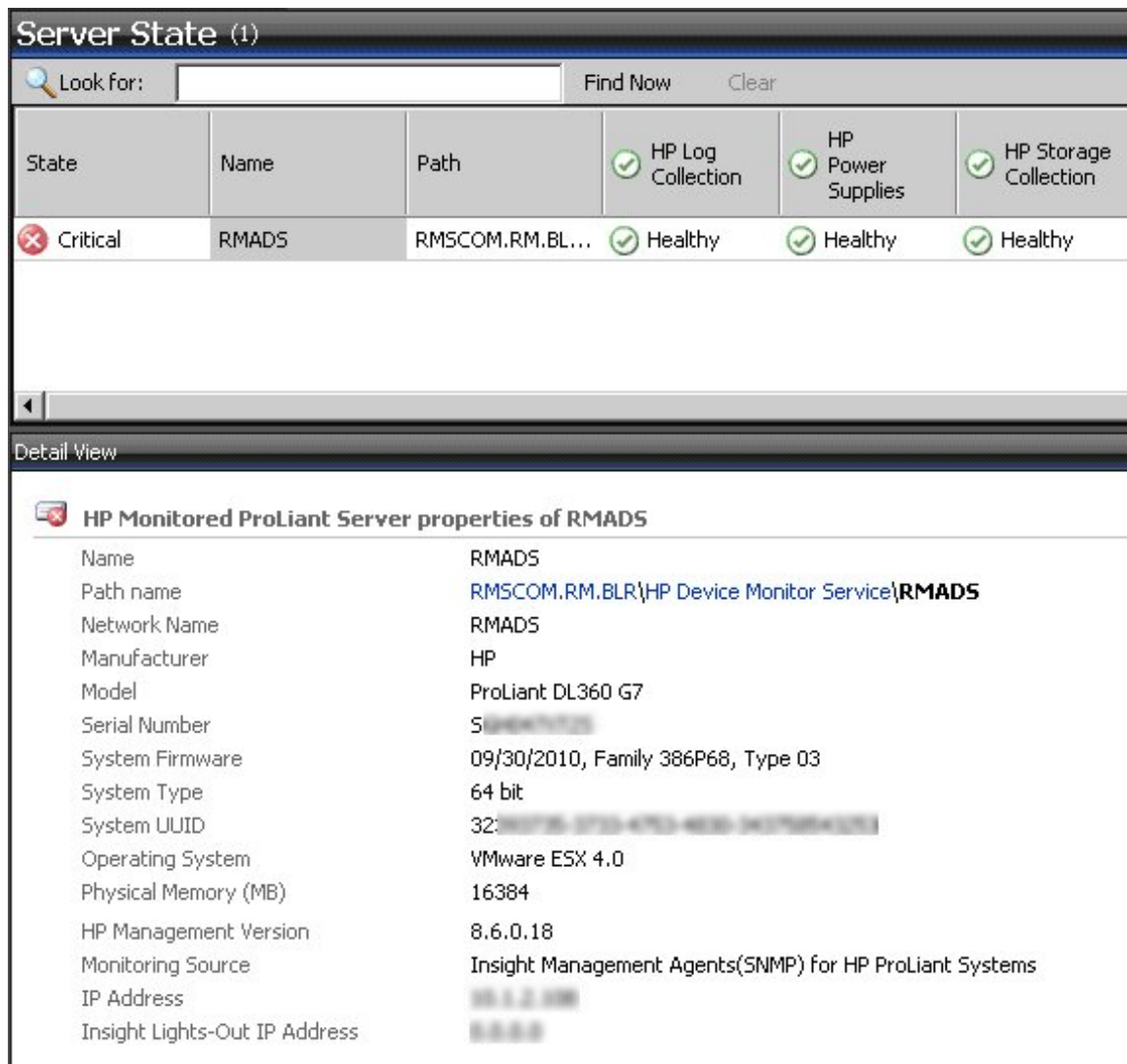
State	Name	Path	Operating System	HP Log Collection	HP Power Supplies
 Critical	localhost.localdo...	RMSCOM.RM.BL...	Red Hat Enterpr...	 Healthy	 Healthy
 Healthy	RM.Blr	RMSCOM.RM.BL...	Red Hat Enterpr...	 Healthy	 Healthy

Detail View

 **HP Monitored ProLiant Server properties of RM.Blr**

Name	RM.Blr
Path name	RMSCOM.RM.BLR\HP Device Monitor Service\RM.Blr
Network Name	RM.Blr
Manufacturer	HP
Model	ProLiant DL360 G7
Serial Number	S123456789
System Firmware	09/30/2010, Family 386P68, Type 03
System Type	32 bit
System UUID	323456789-1234-5678-9101-234567890101
Operating System	Red Hat Enterprise Linux Red Hat Enterprise Linux Server release 5
Physical Memory (MB)	16384
HP Management Version	8.6.0.18
Monitoring Source	Insight Management Agents(SNMP) for HP ProLiant Systems
IP Address	10.100.1.10
Insight Lights-Out IP Address	10.100.1.10

Figure 3 Server State view for an HP ProLiant Server running VMware operating system software



Server State (1)

Look for: Find Now Clear

State	Name	Path	HP Log Collection	HP Power Supplies	HP Storage Collection
Critical	RMADS	RMSCOM.RM.BL...	Healthy	Healthy	Healthy

Detail View

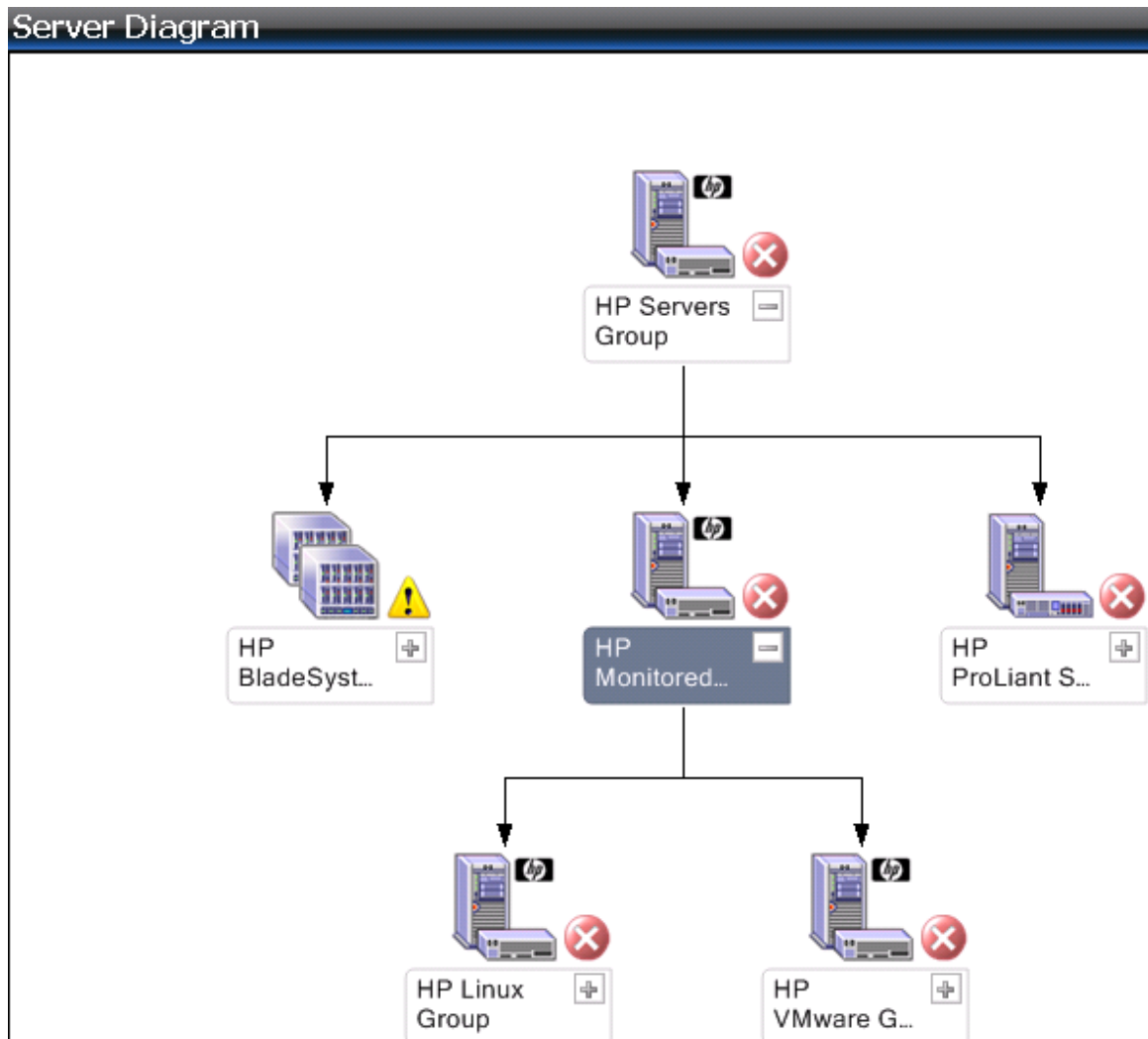
HP Monitored ProLiant Server properties of RMADS

Name	RMADS
Path name	RMSCOM.RM.BLR\HP Device Monitor Service\RMADS
Network Name	RMADS
Manufacturer	HP
Model	ProLiant DL360 G7
Serial Number	S14647123
System Firmware	09/30/2010, Family 386P68, Type 03
System Type	64 bit
System UUID	32: 007B-0720-4750-4E50-3427B4422E
Operating System	VMware ESX 4.0
Physical Memory (MB)	16384
HP Management Version	8.6.0.18
Monitoring Source	Insight Management Agents(SNMP) for HP ProLiant Systems
IP Address	10.1.2.100
Insight Lights-Out IP Address	0.0.0.0

Server Diagram and Group Diagram views

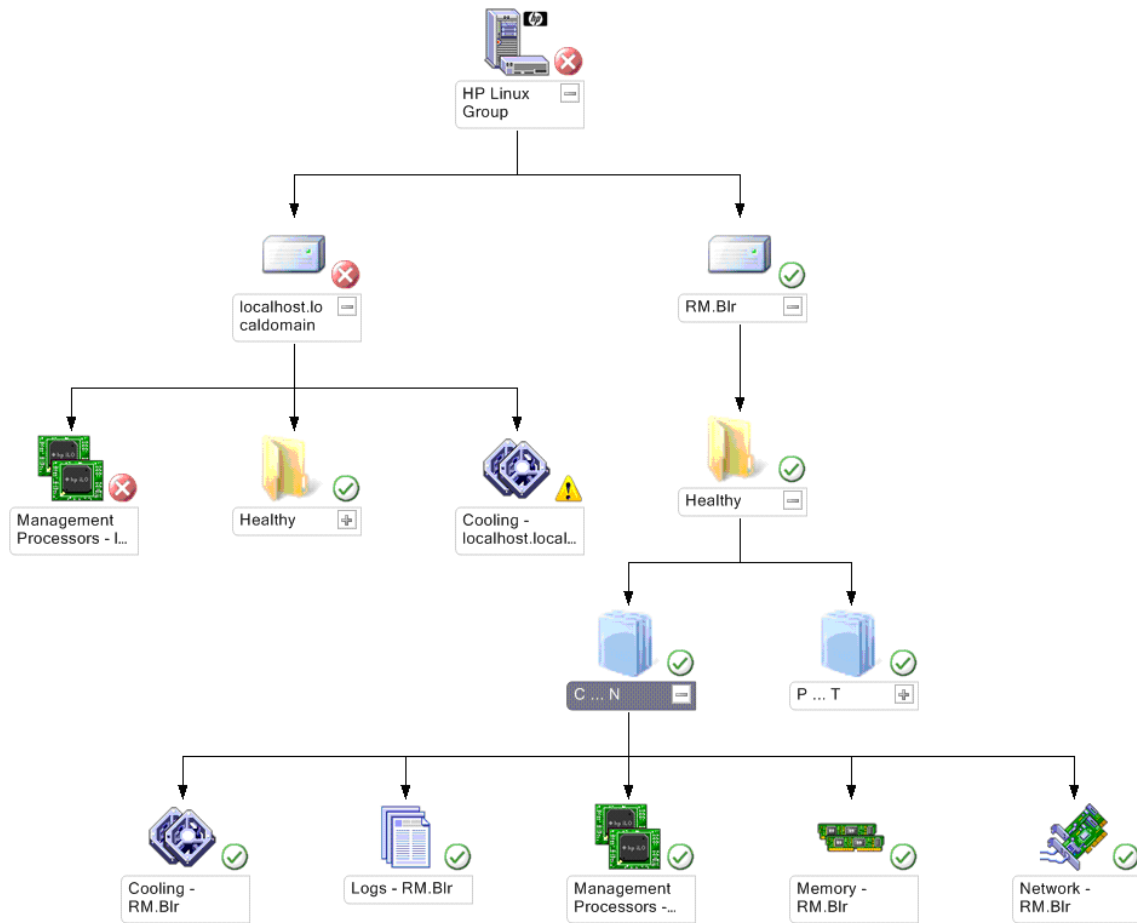
The **Server Diagram** view in the **HP Systems** folder provides a graphical display of all groups, all associated HP servers, and all subsystems (collections). For each diagram, you can expand each icon node to view the next level of information. For example, you can find the HP Linux servers by expanding the **HP Servers Group**, then the **HP Monitored Servers Group**, and then the **HP Linux Group**.

Figure 4 Server Diagram example



The **Group Diagram** view shows only those servers that are members of the selected group. For example, the **Group Diagram** view for the HP Linux Servers group shows only discovered ProLiant servers running supported versions of the Linux operating system software.

Figure 5 HP Linux Server Group Diagram example



Groups

This management pack provides these groups:

- HP Monitored All Instance Group
- HP ESX Instance Group
- HP Monitored ProLiant Server Group
- HP VMware Group
- HP Linux Group

Predefined tasks

The HP ProLiant Linux and VMware Management Pack includes predefined tasks that can be used to access in-depth HP server information, carry out advanced remote server administration, and perform lifecycle management on multiple servers. HP tasks appear in the **Actions** pane from an associated class instance. Not all tasks appear in every view because tasks are associated with specific classes.

The management pack includes the following tasks:

- HP Device Monitor Console (see [“Launching the HP Device Monitor Console”](#) (page 10))
- HP Integrated Lights-Out (see [“Launching HP Integrated Lights-Out for a failed subsystem”](#) (page 9))
- HP System Management Homepage (SMH) (see [“Launching the HP System Management Homepage task”](#) (page 9))

Security for HP tasks

Security settings are required to run HP tasks properly:

- For console tasks that launch an external tool that communicates with the DMS, such as the DMC, the interface carries current user credentials to verify access to resources on the system where the DMS is running. Only Local or Domain Administrators can access the interface.
- Console tasks that launch an external tool that does not communicate with the Operations Manager interface, such as HP Integrated Lights-Out, are launched locally using the current user's credentials. These include the password validation process that asks for login information individually. The tools depend on the user's credentials and the security management of the tool.

Discovery rules

This management pack provides these discovery rules:

Rule	Description
HP Monitored ProLiant Server Discovery	Discovers HP ProLiant servers running supported versions of Linux or VMware operating system software
HP ProLiant Server VMware Instances Group Discovery	Discovers instances of the HP VMware Group
HP ESX Server All Instances Group Discovery	Discovers instances of the HP ESX Instance Group
HP ProLiant Server Linux Instances Group Discovery	Discovers instances of the HP Linux Group
HP Servers Group Monitored ProLiant Group Membership Rule	Determines whether to add an HP Monitored ProLiant Group to the HP Servers Group
HP Monitored ProLiant Group ESX Servers Group Membership Rule	Determines whether to add a server to the HP ESX Instance Group within the HP Monitored ProLiant Group
HP Monitored ProLiant Group Linux Servers Group Membership Rule	Determines whether to add a server to the HP Linux Group within the HP Monitored ProLiant Group
HP VMware Group ESX Server Membership Rule	Determines whether to add an ESX server to the HP VMware Group
HP Linux Group Linux Server Membership Rule	Determines whether to add a server to the HP Linux Group

Health monitors

This management pack provides these health monitors:

- HP Linux and VMware Server Health Monitor
- HP Linux and VMware Server Memory Collection Health Monitor
- HP Linux and VMware Server Realtime Monitor Collection Health Monitor
- HP Linux and VMware Server Management Processor Collection Health Monitor
- HP Linux and VMware Server Log Collection Health Monitor
- HP Linux and VMware Server Storage Collection Health Monitor
- HP Linux and VMware Server Network Collection Health Monitor
- HP Linux and VMware Server Cooling Health Monitor

- HP Linux and VMware Server Power Supplies Health Monitor
- HP Linux and VMware Server Temperature Sensor Health Monitor
- HP Linux and VMware Server Processors Health Monitor

Propagation monitors

The HP ProLiant Linux and VMware Management Pack for System Center provides these propagation monitors:

- HP ESX Server To HP VMware Group Health Rollup Monitor
- HP Linux and VMware Servers Cooling to HP Linux and VMware Server Health Rollup Monitor
- HP Linux and VMware Servers Log Collection To HP Linux and VMware Server Health Rollup Monitor
- HP Linux and VMware Servers Management Processor Collection to the HP Linux and VMware Servers Health Rollup Monitor
- HP Linux and VMware Servers Memory to the HP Linux and VMware Server Health Rollup Monitor
- HP Linux and VMware Servers Network Collection to HP Linux and VMware Server Health Rollup Monitor
- HP Linux and VMware Servers Power Supplies to HP Linux and VMware Server Health Rollup Monitor
- HP Linux and VMware Servers Processors to HP Linux and VMware Server Health Rollup Monitor
- HP Linux and VMware Servers Realtime Monitor Collection to the HP Linux and VMware Servers Health Rollup Monitor
- HP Linux and VMware Servers Storage Collection to HP Linux and VMware Server Health Rollup Monitor
- HP Linux and VMware Servers Temperature Sensors to HP Linux and VMware Server Health Rollup Monitor
- HP Linux Group To HP Monitored ProLiant Group Health Rollup Monitor
- HP Linux Server To HP Linux Group Health Rollup Monitor
- HP Monitored ProLiant Group To HP Servers Group Health Rollup Monitor
- HP VMware Group To HP Monitored ProLiant Group Health Rollup Monitor

Diagnostic scripts

This management pack does not provide any diagnostic scripts.

4 Event rules for HP Linux and HP VMware servers

Base hardware events

All events in this table target the HP Monitored ProLiant Server class.

SNMP trap ID	Base hardware event description
6047 6051 6052 6053 6064 6068	Memory degraded
6067	Memory board or cartridge failed
6065	Memory board or cartridge removed
6016	Memory error tracking disabled
6027	POST degraded
6028 6032 6034 6049 6050 6069	Power subsystem degraded or failed
1005	Processor degraded
6043 6044 6045	DC-DC power converter degraded or failed
22013	Rack power supply failed
22018	Rack power subsystem not redundant
22019 22020 22034	Rack power subsystem degraded
22022 22023	Rack server power subsystem degraded
22024 22025 22027 22030 22031 22032 22033 22035 22036	Rack enclosure power subsystem degraded

Environmental hardware events

All events in this table target the HP Monitored ProLiant Server class.

SNMP trap ID	Environmental hardware event description
6017 6040	Temperature failed and system shutdown
6018 6041	Temperature degraded
6020 6023 6036	Fan failed
6021 6035 6037	Fan degraded

Remote management processor events

All events in this table target the HP Monitored ProLiant Server class.

SNMP trap ID	Remote management processor event description
9004	Remote Management Processor battery failed
9005	Remote Management Processor failed
9006	Remote Management Processor degraded
9007	Remote Management Processor battery connector degraded
9008	Remote Management Processor keyboard connector degraded
9009	Remote Management Processor mouse connector degraded
9010	Remote Management Processor power connector degraded

Network interface events

All events in this table target the HP Monitored ProLiant Server class.

SNMP trap ID	Network interface event description
18002 18006 180012	Network interface failed
18008	NIC Teaming failed

Server storage events

All events in this table target the HP Monitored ProLiant Server class.

SNMP trap ID	Server storage event description
14005	ATA RAID Logical Drive degraded
3039	Drive Array Accelerator data degraded or failed
3034	Drive Array Logical Drive degraded
3047	Drive array spare drive degraded
3046	Drive array physical drive degraded
3038 3040	Drive array accelerator degraded or failed or battery failed
3041 3043 3045	Drive Array Tape Drive degraded
3042	Drive Array Tape Library door degraded
16017 16018 16019	External Array Accelerator failed or data failed or battery failed
16014 16020 16008	External Array Controller degraded or failed
16022	External Array Logical Drive failed
16016	External Array Physical Drive failed
16023 16024 16002	External Tape Drive degraded
16026	External Tape Library degraded
16027	External Tape Library door degraded
16028	Fibre Channel Controller degraded
14004	IDE ATA Disk degraded
5022	SAS/SATA physical drive degraded
5023	SAS/SATA logical drive degraded
5025	SAS tape drive degraded
5020	SAS physical drive failed
5008 5009	SCSI Tape Drive degraded
5019	SCSI Tape Drive failed
5018	SCSI Tape Library failed
8008 8022	Storage system fan degraded

SNMP trap ID	Server storage event description
8029 8020	
8015 8031	Storage system fault tolerant power supply degraded
8024 8021	Storage system power supply degraded
8018	Storage system power supply UPS degraded
8025	Storage System Recovery Server degraded
8013	Storage System Side Panel degraded
8010 8019 8023 8030	Storage system temperature degraded
8009	Storage system temperature failed
8032	Storage system connection degraded
3033 3048	Drive array controller degraded

5 Troubleshooting

Introduction

The following information is designed to help resolve some common operating issues that might occur when you use this management pack.

The troubleshooting issues are organized into the following categories:

- “Discovery issues” (page 25)
- “Authoring issues” (page 25)
- “Operational and usage issues” (page 26)
- “Device Monitor (DMC and DMS) operational and usage issues” (page 27)

Discovery issues

Operations Manager does not discover HP Linux or HP VMware servers

Every HP ProLiant server running Linux or VMware must be registered with a DMS.

Use the DMC to review each monitored server state. If a red state appears on a server, resolve the issue, and then update the server registration information.

The updated registration information appears immediately in the DMC but the Operations Manager discovery process does not occur immediately. The discovery results do not appear on the Operations console until after the next discovery cycle. (The default discovery interval is 3600 seconds). For information about registering servers with a DMS, see the *HP Device Monitor for Microsoft System Center User Guide*.

In addition to registering servers, you must perform the following actions:

- Ensure that a discovery cycle has completed since you registered the server.
- Check all current Active Alerts, including Active Alerts related to instances of the DMS, in the domain of Operations Manager. Resolve all active alert issues, and then close the **Active Alerts** view.
- Check the Operation Manager Log. Review the Error and Warning entries that can cause issues with the system. Report these issues to Microsoft.

Authoring issues

The following section provides troubleshooting information for authoring issues with the Operations Manager.

Adding custom information to HP Management Packs by adding a custom task to an HP class and overriding a parameter to HP rules

Adding custom information such as company knowledge, custom tasks, and overriding rules to HP Management Packs will create a dependency from the custom management pack to the HP Management Packs. HP Management Packs are sealed and protected from any modification, so the custom task is stored in an external management pack. Creating a new custom management pack for custom information management specific to HP Management Packs is recommended as this will ease future upgrades and migration paths.

Operational and usage issues

Alert notifications repeat value displayed in Path, and Path and Source values appear to be swapped

In alert notifications for devices managed by HP:

- The value for **Source** indicates the entity that generated the alert, such as the HP Insight Management Agents.
- The value for **Path** indicates the target server or device that is affected by the alert.
- The actual value for **Path** is displayed twice, separated by a semicolon.

Sample alert notification:

```
Alert: HP Smart Array SAS/SATA Event Notification Service failed.
Source: HP Insight Management Agents
Path: bcalfelb2cnet.mylab.net;bcalfelb2cnet.mylab.net
Last modified by: System
Last modified time: 3/16/2011 5:01:02 PM
Alert description: The HP Insight Management Agents have failed;
the HP Smart Array SAS/SATA Event Notification service is not running.
```

Detail View shows incorrect Model and HP Management Version HP VMware servers

The **Detail View** in the Operations console does not show the correct Model or HP Management Version for HP VMware servers when Insight Management Agents older than version 8.70 are installed. To show the correct information, upgrade the Insight Management Agents to version 8.70 or later.

Researching state monitoring

Servers running Linux or VMware software are monitored in two ways after initially importing the HP ProLiant Linux and VMware Management Pack:

- Discovery and state monitoring
- Event monitoring

The discovery and state monitoring displays the current state of the server. The event monitoring displays historical alerts from the time that monitoring begins. After you initially configure server monitoring, only discovery and state monitoring display current issues. Resolve all current issues on each server to use event monitoring.

The discovery and state monitoring provides the latest HP server inventory and state results to the Operations console. This monitoring displays a near realtime state of the HP server, and provides the state of each hardware subsystem (collection).

Event monitoring provides the best possible information for failed descriptions and failed components. If event monitoring generates an alert on the Operations console, you must resolve the issue immediately. Events are generated only once. If a state change was observed, look at the **Active Alerts** view to find detailed information about the issue.

Expected associated classes are not displaying in the Server State view or the Health Collection view

By default, the **Server State** view and the **Health Collection State** view do not display the expected associated class instances. The layout of the view can be different according to the installation order of the management packs, the discovery results, and the user's console operation. To include the associated classes and properties you want to see in each view, open the **Personalize View** dialog box and select the associated class and properties to be included.

Event View and Performance View are empty

The HP ProLiant Linux and VMware Management Pack does not have data collection rules for events or performances. Though the Event and Performance views are accessible from HP Classes, data does not appear in these views.

To view an NT Event:

1. Launch the Computer Management task.
2. View the Event Viewer folder under System Tools.

Events from the HP Device Monitor Service are stored in the HP Device Monitor log.

Tasks cannot be launched from the Health Explorer properties page or the Product Knowledge page

Links to tasks such as the HP Device Monitor Console are displayed in the **Alert Properties** view on the Health Explorer properties page and the Product Knowledge page. Clicking the link does not launch a task. To launch these tasks, launch them from the **Actions** pane.

Diagram view displays initials of folder names

Operations Manager groups the health components of the HP ProLiant Linux and VMware Management Pack into subfolders, and displays only the initial letters of the first and last health component names within the folder. Expand the folders to view the entire health component of the management pack for a specific health collection.

Active Alerts view displays only one alert when there are multiple device state changes

The event processing rules of the HP ProLiant Linux and VMware Management Pack are designed to consolidate similar events and to not repeat issues. The consolidated status appears by enabling the Repeat Count property in the **Active Alerts** view settings. If events are consolidated, the alert description in the **Alert Details** pane shows the most recent event only.

Console displays the same server multiple times

If a server is registered to multiple instances of the DMS, the Operations console might display the same server multiple times. Register different server under different monitor services to fix this issue. For detailed information about registering a server with a monitor service, see the *HP Device Monitor for Microsoft System Center User Guide*.

Health Explorer does not display Knowledge information for computers and certain Windows components

Knowledge bases are components of Microsoft Management Pack and display limited or no information.

HP Custom Data Manager cannot be used in the HP ProLiant Linux and VMware Management Pack

The HP Custom Data Manager (CDM) is accessible from the HP Linux Servers and HP VMware Servers groups on the Diagram and State views, however CDM only supports HP ProLiant servers running supported versions of Windows operating system software for custom data management.

Device Monitor (DMC and DMS) operational and usage issues

For troubleshooting information related to the DMC and the DMS, see the *HP Device Monitor for Microsoft System Center User Guide*.

6 Support and other resources

Information to collect before contacting HP

Be sure to have the following information available before you contact HP:

- Software product name
- Hardware product model number
- Operating system type and version
- Applicable error message
- Third-party hardware or software
- Technical support registration number (if applicable)

How to contact HP

Use the following methods to contact HP technical support:

- See the Contact HP worldwide website:
<http://www.hp.com/go/assistance>
- Use the Contact hp link on the HP Support Center website:
<http://www.hp.com/go/hpsc>
- In the United States, call +1 800 334 5144 to contact HP by telephone. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, conversations might be recorded or monitored.

Registering for software technical support and update service

Insight Management includes one year of 24 x 7 HP Software Technical Support and Update Service. This service provides access to HP technical resources for assistance in resolving software implementation or operations problems.

The service also provides access to software updates and reference manuals in electronic form as they are made available from HP. Customers who purchase an electronic license are eligible for electronic updates.

With this service, Insight Management customers benefit from expedited problem resolution as well as proactive notification and delivery of software updates. For more information about this service, see the following website:

<http://www.hp.com/services/insight>

Registration for this service takes place following online redemption of the license certificate.

How to use your software technical support and update service

As HP releases updates to software, the latest versions of the software and documentation are made available to you. The Software Updates and Licensing portal gives you access to software, documentation and license updates for products on your HP software support agreement.

You can access this portal from the HP Support Center:

<http://www.hp.com/go/hpsc>

After creating your profile and linking your support agreements to your profile, see the Software Updates and Licensing portal at <http://www.hp.com/go/hpssoftwareupdatesupport> to obtain software, documentation, and license updates.

Warranty information

HP will replace defective delivery media for a period of 90 days from the date of purchase. This warranty applies to all Insight Management products.

HP authorized resellers

For the name of the nearest HP authorized reseller, see the following sources:

- In the United States, see the HP U.S. service locator website:
http://www.hp.com/service_locator
- In other locations, see the Contact HP worldwide website:
<http://www.hp.com/go/assistance>

Documentation feedback

HP welcomes your feedback. To make comments and suggestions about product documentation, send a message to:

docsfeedback@hp.com

Include the document title and part number in your message. All submissions become the property of HP.

Related information

There are separate user guides for each of the features in HP Insight Control for Microsoft System Center. For the complete set of documentation, including the support matrix, see the HP Insight Software Information Library website:

<http://www.hp.com/go/icsc/docs>

Typographic conventions

This document uses the following typographical conventions:

Book title

The title of a book. On the web, this can be a hyperlink to the book itself.

Command

A command name or command phrase, for example `ls -a`.

Computer output

Information displayed by the computer.

Ctrl+x or **Ctrl-x**

A key sequence that indicates you must hold down the keyboard key labeled **Ctrl** while you press the letter *x*.

ENVIRONMENT VARIABLE

The name of an environment variable, for example, `PATH`.

Key

The name of a keyboard key. **Return** and **Enter** both refer to the same key.

Term

A term or phrase that is defined in the body text of the document, not in a glossary.

User input

Indicates commands and text that you type exactly as shown.

Replaceable

The name of a placeholder that you replace with an actual value.

[]

In command syntax statements, these characters enclose optional content.

{ }

In command syntax statements, these characters enclose required content.

|

The character that separates items in a linear list of choices.

...

Indicates that the preceding element can be repeated one or more times.

WARNING

An alert that calls attention to important information that, if not understood or followed, results in personal injury.

CAUTION

An alert that calls attention to important information that, if not understood or followed, results in data loss, data corruption, or damage to hardware or software.

IMPORTANT

An alert that calls attention to essential information.

NOTE

An alert that contains additional or supplementary information.

TIP

An alert that provides helpful information.

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