

**Dell Smart Plug-in Version 4.0 For HP
Operations Manager 9.0 For Microsoft
Windows
User's Guide**



Notes, Cautions, and Warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your computer.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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Introduction To Dell SPI For HPOM For Microsoft Windows

The Dell Smart Plug-in (SPI) Version 4.0 for Hewlett Packard Operations Manager (HPOM) 9.0 for Microsoft Windows enables data center management by providing features for monitoring Dell servers, storage, and networking infrastructures in an environment managed by HPOM. The Dell SPI also supports console launch of Dell devices and other Dell tools to perform troubleshooting, configuration, or management activities.

The Dell SPI for HPOM supports the following Dell devices:

- Dell PowerEdge 9th Generation (9G) to 12th Generation (12G) servers
- Dell Remote Access Controller 5 (DRAC5), Integrated Dell Remote Access Controller 6 (iDRAC6), and Integrated Dell Remote Access Controller 7 (iDRAC7)
- Dell PowerEdge 1955 Chassis (DRAC/MC), Dell PowerEdge M1000e (CMC), Dell PowerEdge VRTX (VRTX CMC), and Dell PowerEdge FX2 (FX2 CMC)
- Dell Compellent Storage Arrays, Dell PowerVault MD Storage Arrays, Dell EqualLogic PS-Series Storage Arrays, and Dell PowerVault NX 9th Generation (9G) to 12th Generation (12G) Storage Arrays
- Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series)

With the integration of Dell SPI into HPOM, you can use the HPOM console to monitor the availability of the Dell devices that are classified in HPOM for Microsoft Windows.

 **NOTE:** This document contains information about the prerequisites and supported software necessary for installing the Dell Smart Plug-in (SPI) Version 4.0 for Hewlett Packard Operations Manager (HPOM) 9.0 for Microsoft Windows. If you are installing this version of Dell Smart Plug-in (SPI) Version 4.0 for Hewlett Packard Operations Manager (HPOM) 9.0 for Microsoft Windows after a long time after its release date, check to see if there is an updated version of this document at dell.com/support/manuals.

What Is New In Dell SPI Version 4.0

The following table lists the new features and functionalities of Dell SPI Version 4.0:

Table 1. New Features and Functionalities

New Feature	Functionality
Classification	Classify the following devices: <ul style="list-style-type: none"> • Dell PowerEdge VRTX Chassis Management Controller (VRTX CMC) and Dell PowerEdge FX2 Chassis Management Controller (FX2 CMC) under Dell Chassis • Dell Servers (in-band) and RACs with their respective VRTX CMC • Dell EqualLogic Blade Arrays under their respective Dell Chassis • Dell PowerVault NX Storage Arrays and Dell Compellent Storage Arrays under Dell Storage • Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series) under Dell Network Switches • M-Series Switch under their respective chassis I/O Modules
Monitoring	Monitor the following devices: <ul style="list-style-type: none"> • Dell Chassis (VRTX CMC and FX2 CMC) • Dell Compellent Storage Arrays • Dell PowerVault NX Storage Arrays • Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series)
View and monitor alerts	View and monitor alerts from the following Dell devices with respect to the device specific component's status change like power supply, voltage, temperature, and so on: <ul style="list-style-type: none"> • FX2 CMC • VRTX CMC • Dell PowerVault MD Storage Arrays • Dell Compellent Storage Arrays • Dell PowerVault NX Storage Arrays • Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series)
Trap based health monitoring	Trap based health monitoring of the following Dell devices: <ul style="list-style-type: none"> • FX2 CMC • VRTX CMC • Dell PowerVault MD Storage Arrays • Dell Compellent Storage Arrays • Dell PowerVault NX Storage Arrays • Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series)
Launch consoles and tools	Launch the following Dell consoles and tools to view, monitor, configure, deploy, or update Dell devices: <ul style="list-style-type: none"> • CMC Console for Dell PowerEdge VRTX CMC and FX2 CMC

New Feature	Functionality
	<ul style="list-style-type: none"> • Dell Compellent Storage Manager Console for Dell Compellent Storage Array • Dell Compellent Enterprise Manager Client Console for Dell Compellent Storage Array • OpenManage Switch Administrator Console for Dell 8000 Series Switches and Dell 8100 Series Switches • Dell OpenManage Network Manager Console for Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series) • Dell Switch Telnet Tool for Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series)
Knowledge Base Articles	Knowledge base articles associated with alerts except for Dell Compellent Storage Arrays, Dell PowerVault MD Storage Arrays, and Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, and 8100 Series).

Key Features And Benefits Of Dell SPI

Dell SPI version 4.0 provides the following features for managing the Dell devices:

Table 2. Features And Functionalities

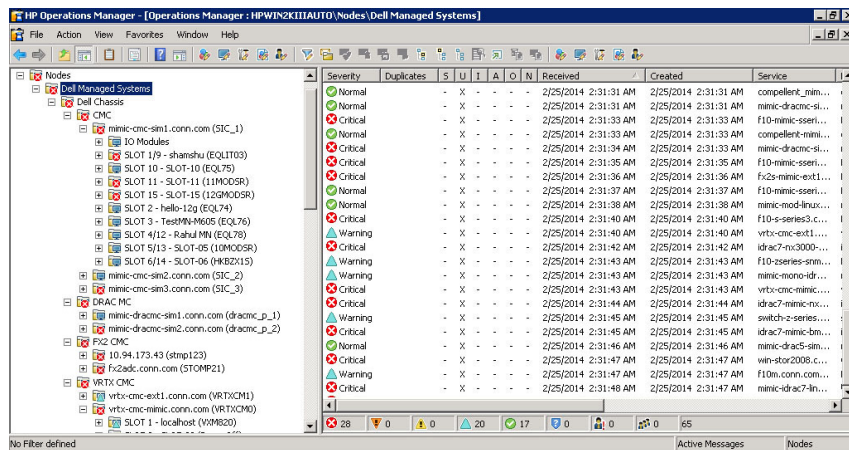
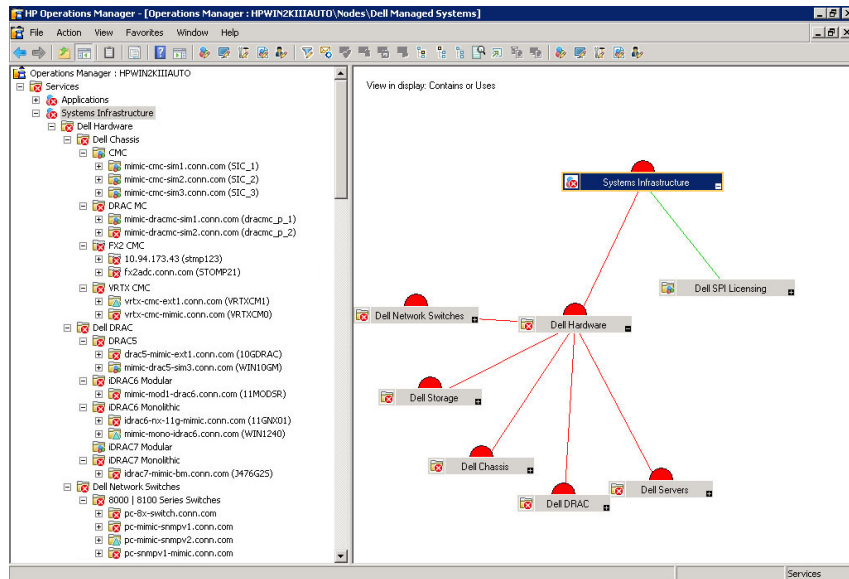
Feature	Functionality
Classification	<p>Classifies the Dell devices and creates the following hierarchies in the HPOM console:</p> <ul style="list-style-type: none"> • Dell Hardware, and Dell SPI Licensing under the Services → Systems Infrastructure hierarchy • Dell Managed Systems under the Nodes hierarchy • Dell Tools under the Tools hierarchy • SPI for Dell Devices the Policy management → Policy groups hierarchy <p>The Dell devices (managed nodes or external nodes) are classified either as Dell Servers, Dell DRAC , Dell Chassis, Dell Storage, and Dell Network Switches within their respective hierarchies. For more information, see Auto-grouping Dell Devices.</p>
Global Health Monitoring	<p>Periodically monitors the global system health of Dell devices grouped under the Dell Hardware services group. For more information, see Monitoring The Health Of Dell Devices.</p>
SNMP Trap Monitoring	<p>Processes Simple Network Management Protocol (SNMP) v1 and v2 traps generated by Dell device SNMP agents running on Dell devices and generates the health message for those devices. For more information, see Processing SNMP Traps From Dell Devices.</p>
Launching Dell Remote Access Controller Console (in-band)	<p>Launches Dell Remote Access Controller (DRAC) Console from the classified Dell PowerEdge servers or Dell PowerVault NX Storage Array to view, configure, or troubleshoot the DRAC (DRAC5, iDRAC6, or iDRAC7) devices in the HPOM console. For more information, see Launching Dell Consoles.</p>
Launching OpenManage Server Administrator (OMSA) Console	<p>Launches OpenManage Server Administrator Console from the classified Dell PowerEdge servers or Dell PowerVault NX Storage Array for troubleshooting the Dell Servers running Windows or Linux operating systems, or Dell PowerVault NX Storage Array running Windows operating systems. For more information, see Launching Dell Consoles.</p>
Launching OpenManage Server Administrator Web Server Console	<p>Launches the Server Administrator Web Server Console from the classified Dell PowerEdge servers running ESXi operating systems or Dell PowerVault NX Storage Array running Windows operating systems to view, configure, or</p>

Feature	Functionality
	troubleshoot the Dell Servers. For more information, see Launching Dell Consoles .
Launching DRAC Console	Launches DRAC Console from the classified Dell DRAC (DRAC5, iDRAC6, and iDRAC7) devices to view, configure, or troubleshoot the DRAC devices in the HPOM console. For more information, see Launching Dell Consoles .
Launching OpenManage Server Administrator Console	Launches OpenManage Server Administrator Console from the classified iDRAC7 (OOB Servers) to view, configure, or troubleshoot the Dell PowerEdge servers or Dell PowerVault NX Storage Array in the HPOM console. For more information, see Launching Dell Consoles .
Launching Chassis Management Controller (CMC) Console	Launches CMC Console from the classified Dell Chassis (CMC , VRTX CMC, or FX2 CMC) to view, configure, or troubleshoot the Dell Chassis device in the HPOM console. For more information, see Launching Dell Consoles .
Launching Dell Remote Access Controller/ Modular Chassis (DRAC MC) Console	Launches DRAC MC Console from the classified Dell DRAC/MC to view, configure, or troubleshoot the device in the HPOM console. For more information, see Launching Dell Consoles .
Launching EqualLogic Group Manager Console	Launches EqualLogic Group Manager Console from the classified Dell EqualLogic PS-Series Storage Array to view, configure, or troubleshoot the Dell EqualLogic device in the HPOM console. For more information, see Launching Dell Consoles .
Launching PowerVault MD Storage Manager Console	Launches MD Storage Manager Console from the classified Dell PowerVault MD Storage Array to view, configure, or troubleshoot the device in the HPOM console. For more information, see Launching Dell Consoles .
Launching Dell Compellent Storage Manager Console	Launches Dell Compellent Storage Manager Console from the classified Dell Compellent Storage Array to view, configure, or troubleshoot the device in the HPOM console. For more information, see Launching Dell Consoles .
Launching Dell Compellent Enterprise Manager Client Console	Launches Dell Compellent Enterprise Manager Client Console from the classified Dell Compellent Storage Array to view, configure, or troubleshoot the Dell Compellent devices in the HPOM console. For more information, see Launching Dell Consoles .
Launching Dell OpenManage Switch Administrator Console	Launches Dell OpenManage Switch Administrator Console from the classified Dell 8000 or Dell 8100 Series Switches to view, configure or troubleshoot the Dell

Feature	Functionality
	network switch in the HPOM console. For more information, see Launching Dell Consoles .
Launching Dell OpenManage Network Manager Console	Launches Dell OpenManage Network Manager Console from the classified Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, or 8100 Series) to configure or troubleshoot the Dell network switches in the HPOM console. For more information, see Launching Dell Consoles .
Launching Dell Switch Telnet Tool	Launches Dell Switch Telnet Tool from the classified Dell Network Switches (S-Series, M-Series, Z-Series, 8000 Series, or 8100 Series) to configure or troubleshoot the Dell network switches in the HPOM console. For more information, see Launching Dell Consoles .
Launching OpenManage Essentials (OME) Console	Launches the OpenManage Essentials Console from the classified Dell Devices to view, configure, or troubleshoot the Dell device in the HPOM console. For more information, see Launching Dell Consoles .
Launching OpenManage Power Center (OMPC) Console	Launches the OpenManage Power Center Console from the classified Dell devices to monitor and manage power consumption and temperature in the data center through the management console. For more information, see Launching Dell Consoles .
Launching Warranty Report	Launches the Warranty Report from a classified Dell Device to retrieve the warranty information for that device in the HPOM console. For more information, see Launching Dell Consoles .
Launching Dell Connections Manager Console	Launches the Dell Connections License Manager Console to view the number of licenses used in the HPOM console. For more information, see Launching Dell Consoles .
Association of Dell Devices	Associates Dell EqualLogic Blade Arrays, modular servers and their corresponding RACs, and the Dell M-Series network switches with their respective chassis. For more information, see Association Of Dell Devices .
Dell Unresponsive Devices	Classifies unreachable Dell devices as Dell Unresponsive Devices . For more information, see Dell Unresponsive Devices .
Knowledge Base (KB) Articles	View knowledge base article that contains information about summary, causes, and steps to resolve the alert condition. For more information, see Viewing Knowledge Base Articles .

Dell SPIv4.0 Deployed On HPOM Console

The following screenshots display the Dell SPIv4.0 for HPOM console.



Dell Smart Plug-in Policies

The Dell SPI consists of the following policies:

1. Dell Hardware Autogroup Policy
2. Dell Device Generic Trap Policy
3. Dell Connections License Manager Scheduled Status Poll
4. Dell Server
 - Dell DRAC and Chassis Scheduled Status Poll
 - Dell DRAC and Chassis Traps
 - Dell DRAC and Chassis Traps (Manual Ack)
 - Dell OOB Server Traps
 - Dell OOB Server Traps (Manual Ack)
 - Dell Server Scheduled Status Poll
 - Dell Server Traps
 - Dell Server Traps (Manual Ack)
5. Dell Storage
 - Dell Compellent Storage Array Traps
 - Dell Compellent Storage Array Traps (Manual Ack)
 - Dell Compellent Storage Array Scheduled Status Poll
 - Dell EqualLogic Arrays Scheduled Status Poll
 - Dell EqualLogic Traps
 - Dell EqualLogic Traps (Manual Ack)
 - Dell MD Storage Arrays Scheduled Status Poll
 - Dell PowerVault MD Storage Array Traps (Manual Ack)
 - Dell PowerVault NX Storage Arrays Scheduled Status Poll
6. Dell Switches
 - Dell 8000 | 8100 Network Switch Scheduled Status Poll
 - Dell 8000 | 8100 Network Switch Traps (Manual Ack)
 - Dell 8000 | 8100 Network Switch Traps
 - Dell Enterprise Series Switch Traps (Manual Ack)
 - Dell Enterprise Series Switch Scheduled Status Poll

Table 3. Policy Files And Their Description

Policy File	Description
Dell Hardware Autogroup Policy	Classifies all the managed and external nodes, identifies the supported Dell Servers, DRACs, Chassis, Storage, and Network Switches and groups them in Dell Hardware under the Services

Policy File	Description
	hierarchy and Dell Managed Systems under the Nodes hierarchy respectively in the HPOM console.
Dell Device Generic Traps	Processes the generic SNMPv2 traps generated by Dell Devices and sends appropriate messages to the HPOM console. It supports auto-correlation of traps.
Dell Connections License Manager Scheduled Status Poll	Periodically polls the Dell Connections License Manager (DCLM) health, license availability, verifies the DCLM configuration parameters and provides the corresponding status information to the HPOM console.
Dell DRAC and Chassis Scheduled Status Poll	Periodically polls the DRAC and Chassis devices grouped in Dell Hardware under the Services hierarchy and retrieves the global system health status information.
Dell DRAC and Chassis Traps	Processes the SNMP traps generated by DRAC (DRAC5 or iDRAC6), and Chassis (DRAC/MC, CMC, VRTX CMC, or FX2 CMC) and sends the appropriate messages to HPOM console. It performs auto-correlation of the traps.
Dell DRAC and Chassis Traps (Manual Ack)	Processes the SNMP traps generated by DRAC (DRAC5 or iDRAC6), and Chassis (DRAC/MC, CMC, VRTX CMC, or FX2 CMC), and sends appropriate messages to the HPOM console. You have to acknowledge these messages manually.
Dell OOB Server Traps	Processes the SNMP traps generated by Dell OOB servers (iDRAC7) and sends appropriate messages to the HPOM console. It supports auto-correlations of messages.
Dell OOB Server Traps (Manual Ack)	Processes the SNMP traps generated by Dell OOB servers (iDRAC7) and sends appropriate messages to the HPOM console. You have to acknowledge these messages manually.
Dell Server Scheduled Status Poll	Periodically polls both the Dell PowerEdge Servers and Dell OOB servers (iDRAC7) grouped in Dell Hardware under the Services hierarchy and provides the global system health status information to the HPOM console.
Dell Server Traps	This policy processes the SNMP traps generated by Dell OpenManage Server Administrator (OMSA) and Dell OpenManage Storage Management (OMSS) agents on the Dell PowerEdge servers and Dell PowerVault NX Storage Arrays and sends appropriate messages to the HPOM console. This policy supports auto-correlation of the traps.
Dell Server Traps (Manual Ack)	Processes the SNMP traps generated by Dell OpenManage Server Administrator (OMSA) and OpenManage Storage Management (OMSS) agents on the Dell PowerEdge servers and Dell PowerVault NX Storage Arrays and sends appropriate messages to the HPOM. You have to acknowledge these messages manually.

Policy File	Description
Dell Compellent Storage Array Scheduled Status Poll	Periodically polls the Dell Compellent Storage Arrays grouped in Dell Hardware under the Services hierarchy and provides the global system health status information to the HPOM console.
Dell Compellent Storage Array Traps	Processes the SNMP traps generated by Dell Compellent Storage Arrays and sends appropriate messages to the HPOM console. It supports auto-correlations of messages.
Dell Compellent Storage Array Traps (Manual Ack)	Processes the SNMP traps generated by Dell Compellent Storage Arrays and sends appropriate messages to the HPOM console. You have to acknowledge these messages manually.
Dell EqualLogic Arrays Scheduled Status Poll	This policy periodically polls the EqualLogic PS-Series Storage Arrays grouped in Dell Hardware under the Services hierarchy and provides the global system health status information to the HPOM console.
Dell EqualLogic Traps	Processes the SNMP traps generated by Dell EqualLogic PS-Series Storage Arrays and sends appropriate messages to the HPOM console. It supports auto-correlations of messages.
Dell EqualLogic Traps (Manual Ack)	Processes the SNMP traps generated by Dell EqualLogic PS-Series Storage Arrays and sends appropriate messages to the HPOM console. You have to acknowledge these messages manually.
Dell MD Storage Arrays Scheduled Status Poll	Periodically polls the Dell PowerVault MD Storage Arrays grouped in Dell Hardware under the Services hierarchy and provides the system health status information to the HPOM console.
Dell PowerVault MD Storage Array Traps (Manual Ack)	Processes the SNMP traps generated by the Dell Modular Disk Storage Manager (MDSM) for the Dell PowerVault MD Storage Array grouped under Dell Managed Systems and sends appropriate messages to the HPOM console. This policy does not correlate the traps. You have to acknowledge these messages manually.
Dell PowerVault NX Storage Arrays Scheduled Status Poll	Periodically polls the Dell PowerVault NX Storage Arrays grouped in Dell Hardware under the Services hierarchy and provides the global system health status information to the HPOM console.
Dell 8000 8100 Network Switch Scheduled Status Poll	Periodically polls the Dell 8000 Series and 8100 Series Network Switches grouped in Dell Hardware under the Services hierarchy and provides the global system health status information to the HPOM console.
Dell 8000 8100 Network Switch Traps	Processes the SNMP traps from the Dell 8000 Series or 8100 Series Network Switches and sends appropriate messages to the HPOM console. It supports auto-correlation of messages.
Dell 8000 8100 Network Switch Traps (Manual Ack)	Processes the SNMP traps from the Dell 8000 Series or 8100 Series Network Switches and sends appropriate messages to the

Policy File	Description
	HPOM console. You have to acknowledge these messages manually.
Dell Enterprise Switch Scheduled Status Poll	Periodically polls the Dell Enterprise Switches such as the Dell M-Series, S-Series, and Z-Series Switches grouped in Dell Hardware under the Services hierarchy and provides the global system health status information to the HPOM console.
Dell Enterprise Series Switch Traps (Manual Ack)	Processes the SNMP traps from the Dell Enterprise Switches such as the Dell M-Series, S-Series, or Z-Series and sends appropriate messages to the HPOM console. You have to acknowledge these messages manually.

Deploying Smart Plug-in Policies


The following Dell policies are automatically deployed on the management server when you install the Dell SPI and run as per the default schedule:


- Dell Hardware Autogroup Policy
- Dell Device Generic Traps
- Dell Connections License Manager Scheduled Status Poll
- Dell Server Traps
- Dell Server Scheduled Status Poll
- Dell OOB Server Traps
- Dell DRAC and Chassis Traps
- Dell DRAC and Chassis Scheduled Status Poll
- Dell Compellent Storage Array Traps
- Dell Compellent Storage Arrays Scheduled Status Poll
- Dell EqualLogic Traps
- Dell EqualLogic Arrays Scheduled Status Poll
- Dell MD Storage Arrays Scheduled Status Poll
- Dell PowerVault MD Storage Arrays Traps (Manual Ack)
- Dell PowerVault NX Storage Arrays Scheduled Status Poll
- Dell 8000 | 8100 Network Switch Traps
- Dell 8000 | 8100 Network Switch Scheduled Status Poll
- Dell Enterprise Series Switch Traps (Manual Ack)
- Dell Enterprise Series Switch Scheduled Status Poll

The Dell SPI policies can be deployed manually after you install the Dell SPI:

To deploy the policies manually:

1. Launch the HPOM console and navigate to **Policy Management** → **Policy Groups** → **SPI for Dell Devices**.
2. Right-click and then click **All Tasks** → **Deploy on**.
The **Deploy policies on** screen is displayed.
3. Select the management server and click **OK**.

 **NOTE:** Ensure that you deploy the policies only on the management server and not on the managed nodes.

 **NOTE:** You can deploy only one policy at a time; that is, you can deploy either auto acknowledged traps or manually acknowledged traps on the management server.

Supported Operating Systems

The following operating systems are supported for the management server and the managed nodes.

Management Server

The following table lists the supported operating systems on the management server:

Table 4. Supported Operating Systems On The Management Server

Windows
Windows Server 2012
Windows Server 2008 R2 SP1
Windows Server 2008 R2

For more information about the supported operating systems on the management server, see *HP Operations Manager 9.0 for Windows Installation Guide*.

Managed Nodes

The following table lists the supported operating systems on the managed nodes:

Table 5. Supported Operating Systems On The Managed Nodes

ESXi	Windows	Linux
VMware ESXi 5.1 Server	Windows Server 2012 R2	Red Hat Enterprise Linux 6.5 (64 bit)
VMware ESXi 5.0 U1 Server	Windows Server 2012	Red Hat Enterprise Linux 6.3 (64 bit)
VMware ESXi 5.0 P1 Server	Windows Small Business Server 2011 Standard	Red Hat Enterprise Linux 6.0 (64 bit)
VMware ESXi 4.1 U3 Server	Windows Small Business Server 2011 Essentials	Red Hat Enterprise Linux 6.0 SP1 (64 bit)
VMware ESXi 4.1 U2 Server	Windows Essential Business Server 2008 SP1	Red Hat Enterprise Linux 5.9 (32 and 64 bit)
VMware ESXi 4.1 U1 Server	Windows Server 2008 R2 SP1	Red Hat Enterprise Linux 5.5 (64 bit)
VMware ESXi 4.1 Server	Windows Server 2008 R2	Red Hat Enterprise Linux 5.3 (64 bit)
VMware ESXi 4.0 U3 Server	Windows Server 2008 HPC Edition R2 SP1	Red Hat Enterprise Linux 5 (64 bit)

ESXi	Windows	Linux
VMware ESXi 4.0 U2 Server	Windows Server 2008 HPC Edition R2	Red Hat Enterprise Linux 4.8 (32 and 64 bit)
VMware ESXi 4.0 U1 Server	Windows Server 2008 x86	Red Hat Enterprise Linux 4.7 (32 and 64 bit)
VMware ESXi 4.0 Server	Windows Small Business Server 2008 R2	SUSE Linux Enterprise Server 11 SP3 (64 bit)
	Windows Small Business Server 2008 SP2	SUSE Linux Enterprise Server 11 SP2 (64 bit)
	Windows Server 2008	SUSE Linux Enterprise Server 11 SP1 (64 bit)
	Windows Small Business Server 2003 R2 SP2	SUSE Linux Enterprise Server 11 (64 bit)
	Windows Storage Server 2003 R2 SP2	SUSE Linux Enterprise Server 10 SP4 (64 bit)
	Windows Storage Server 2003	SUSE Linux Enterprise Server 10 SP3 (64 bit)
	Windows Server 2003 R2 SP2	SUSE Linux Enterprise Server 10 SP2 (64 bit)
		SUSE Linux Enterprise Server 10 (64 bit)

Using Dell Smart Plug-in (SPI) Features

This chapter discusses the various operations that you can perform after you install the Dell SPI on the HP Operations Manager (HPOM) management server.

Classifying Dell Devices

The **Dell Hardware Autogroup Policy** is a scheduled task. By default, the policy is scheduled to run at 04:00 hours every Sunday. You can change this default schedule as per your requirement.

Classifying Dell devices under the Services hierarchy

Click **Systems Infrastructure** → **Dell Hardware** under **Services** in the HPOM console to view the Dell devices.

The auto-grouping policy identifies and classifies the Dell PowerEdge servers, Dell DRACs, Dell Chassis, Dell Storage, and Dell Network Switches under the **Dell Hardware** services hierarchy on the HPOM console as listed in the following section:

- Creates **Windows Servers** service group for the Dell PowerEdge servers running Windows, **ESXi Servers** service group for the Dell servers running ESXi, and the **Linux Servers** service group for the Dell servers running Linux operating systems along with the `<hostname (service tag)>` under **Dell Servers** in the **Services** hierarchy on the HPOM console.
- Creates **DRAC5** service group for DRAC5 devices, **iDRAC6 Modular** service group for iDRAC6 Modular devices, **iDRAC6 Monolithic** service group for iDRAC6 Monolithic devices, **iDRAC7 Modular** service group for iDRAC7 Modular devices, and **iDRAC7 Monolithic** service group for iDRAC7 Monolithic devices, along with the `<hostname (service tag)>` under **Dell DRAC** in the **Services** hierarchy on the HPOM console.
- Creates **DRAC MC** service group for DRAC/MC devices, **CMC** service group for CMC devices, and **VRTX CMC** service group for VRTX CMC devices, and **FX2 CMC** service group for FX2 CMC devices along with the `<hostname (service tag)>` under **Dell Chassis** in the **Services** hierarchy on the HPOM console.
- Creates **Compellent Storage Arrays** service group for Dell Compellent Storage Arrays, **EqualLogic PS Series Arrays** service group for Dell EqualLogic PS-Series Storage Arrays, **PowerVault MD Storage Arrays** service group for MD Storage Arrays, and **PowerVault NX Storage Arrays** service group for Dell PowerVault NX Storage Arrays under **Dell Storage** in the **Services** hierarchy on the HPOM console.
- Creates **M-Series Switches**, **S-Series Switches**, and **Z-Series Switches**, and **8000 | 8100 Series Switches** service group for Dell 8000 Series and 8100 Series network switches, service group under **Dell Network Switches** in the **Services** hierarchy on the HPOM console.
- Creates **Agent Free Server Monitoring v3** service group under **Dell SPI Licensing** in the **Services** hierarchy on the HPOM console.


Classifying Dell devices under the Node hierarchy


Click **Dell Managed Systems** under **Nodes** hierarchy in the HPOM console to view the Dell devices.

The auto-grouping policy identifies and classifies the following Dell servers, Dell DRACs, Dell Chassis, Dell Storage, and Dell Network Switches under the **Dell Managed Systems** node group on the HPOM console as listed in the following section:

- Classifies the Dell Servers and its associated RACs under the following categories according to their hardware configuration:

- **Dell Modular Servers**
- **Dell Monolithic Servers**
- Classifies the DRAC devices under the following categories according to their hardware configuration:
 - **DRAC5**
 - **iDRAC6 Modular**
 - **iDRAC6 Monolithic**
 - **iDRAC7 Modular**
 - **iDRAC7 Monolithic**
- Classifies the Dell Chassis under the following categories according to their hardware configuration:
 - **DRAC MC**
 - **CMC**
 - **VRTX CMC**
 - **FX2 CMC**
- Classifies the Dell Storage under the following categories according to their hardware configuration:
 - **Dell EqualLogic PS-Series Arrays**
 - **Dell PowerVault MD Storage Arrays**
 - **Dell Compellent Storage Arrays**
 - **Dell PowerVault NX Storage Arrays**
- Classifies the Dell Network Switches under the following categories according to their hardware configuration:
 - **M-Series Switches**
 - **S-Series Switches**
 - **Z-Series Switches**
 - **8000 | 8100 Series Switches**
- Classifies the previously classified Dell devices that are not reachable or have failed to respond to SNMP, WS-MAN, or Symbol SDK queries under the following category:
 - **Unresponsive Dell Devices**

 **NOTE:** The auto-grouping policy classifies the iDRAC7 devices only if valid licenses are available in the Dell Connections License Manager (DCLM).
Before classifying the iDRAC7 devices, configure the Dell Connections License Manager Webservice URL and the required credentials. For more information, see **Configuring Dell Connections License Manager Webservice URL** section from *Dell Smart Plug-in Version 4.0 for HP Operations Manager 9.0 For Microsoft Windows Installation Guide*.

 **NOTE:** To monitor Dell Compellent Storage Arrays, use the Dell Compellent Storage Array Management IP.

Monitoring The Health Of Dell Devices

You can monitor the health of Dell devices using the scheduled policies. Scheduled policies update the global system status of the Dell devices at 02:00 A.M. every day. These policies poll each Dell device grouped under the **Services** → **Systems Infrastructure** → **Dell Hardware** hierarchy to obtain the global system status and send corresponding severity messages to the active message browser of the HPOM console.

Dell SPI provides the following scheduled policies:


- Dell Server Scheduled Status Poll
- Dell DRAC and Chassis Scheduled Status Poll
- Dell Compellent Storage Arrays Scheduled Status Poll
- Dell EqualLogic Arrays Scheduled Status Poll
- Dell MD Storage Arrays Scheduled Status Poll
- Dell PowerVault NX Storage Arrays Scheduled Status Poll
- Dell 8000 | 8100 Network Switch Scheduled Status Poll
- Dell Enterprise Series Switch Scheduled Status Poll

The global health status is the overall health of the device. However, the health of the individual components of the device may differ. To view the health of the individual components of the Dell devices, launch the respective tools associated with the Dell devices.

Table 6. Dell SPI scheduled policies and their description

Policy Name	Description
Dell Server Scheduled Status Poll	<p>This policy periodically polls both the Dell PowerEdge servers and iDRAC7 (OOB servers) and provides the global system health status information to the HPOM console in the active message browser of the HPOM console.</p> <p>To view the health of the individual components for:</p> <ul style="list-style-type: none"> • Windows or Linux systems, launch the Server Administrator tool. For more information, see Launching Dell Consoles. • ESXi systems, launch the Server Administrator Web Server Console tool to access Server Administrator. For more information, see Launching Dell Consoles. • iDRAC7 (OOB servers) devices, launch the DRAC Console tool. For more information, see Launching Dell Consoles.
Dell DRAC and Chassis Scheduled Status Poll	<p>This policy periodically polls the DRAC (DRAC5 and iDRAC6) and Chassis (DRAC/MC, CMC, VRTX CMC, and FX2 CMC) devices grouped under Dell Managed Systems and retrieves the global system health status information.</p> <p>To view the health of the individual components for:</p> <ul style="list-style-type: none"> • Dell DRAC devices, launch the DRAC Console tool. For more information, see Launching Dell Consoles. • Dell Chassis, launch the CMC Console tool. For more information, see Launching Dell Consoles.
Dell Compellent Storage Arrays Scheduled Status Poll	<p>This policy periodically polls the Dell Compellent Storage Arrays grouped under Dell Managed Systems and provides the global system health status information to the HPOM console.</p> <p>To view the health of the individual components for:</p> <ul style="list-style-type: none"> • Dell Compellent arrays, launch the Dell Compellent Storage Manager Console tool. For more information, see Launching Dell Consoles.
Dell EqualLogic Arrays Scheduled Status Poll	<p>This policy periodically polls the EqualLogic PS-Series Storage Arrays grouped under Dell Managed Systems and provides the global system health status information to the HPOM console.</p> <p>To view the health of the individual components for:</p>


Policy Name	Description
	<ul style="list-style-type: none"> Dell EqualLogic devices, launch the EqualLogic Group Manager Console tool. For more information, see Launching Dell Consoles.
Dell MD Storage Arrays Scheduled Status Poll	<p>This policy periodically polls the PowerVault MD Storage Arrays grouped under Dell Managed Systems and provides the system health status information to the HPOM console.</p> <p>To view the health of the individual components for:</p> <ul style="list-style-type: none"> Dell PowerVault MD Storage Array , launch the MD Storage Manager Console tool. For more information, see Launching Dell Consoles.
Dell PowerVault NX Storage Arrays Scheduled Status Poll	<p>This policy periodically polls the Dell PowerVault NX Storage Arrays grouped under Dell Managed Systems and provides the global system health status information to the HPOM console.</p> <p>To view the health of the individual components for:</p> <ul style="list-style-type: none"> Dell PowerVault NX Storage Array, launch the OpenManage Server Administration Console tool. For more information, see Launching Dell Consoles.
Dell 8000 8100 Network Switch Scheduled Status Poll	<p>This policy periodically polls the Dell 8000 Series and 8100 Series Network Switches grouped under Dell Managed Systems and provides the global system health status information to the HPOM console.</p> <p>To view the health of the individual components for:</p> <ul style="list-style-type: none"> Dell 8000 8100 Series switches, launch the OpenManage Switch Administrator Console tool. For more information, see Launching Dell Consoles.
Dell Enterprise Series Switch Scheduled Status Poll	<p>This policy periodically polls the Dell Enterprise Switches such as the Dell M-Series, S-Series, and Z-Series Switches grouped under Dell Managed Systems and provides the global system health status information to the HPOM console.</p> <p>To view the health of the individual components for:</p> <ul style="list-style-type: none"> Dell M-Series, S-Series, or Z-Series switches, launch the Dell OpenManage Network Manager Console or the Dell Switch Telnet tool. For more information, see Launching Dell Consoles.

 **NOTE:** The global health status of the Dell devices is not displayed on the HPOM console until the **Dell Hardware Autogroup Policy** runs for the first time, and the Dell devices are grouped under the Dell Managed Systems and the Dell Hardware group. The policies then update the health status of the devices under the corresponding Dell Device's Global System Status under the Services and the Nodes tree.

Monitoring Dell Connections License Manager

You can monitor the Dell Connections License Manager by using the Dell Connections License Manager Scheduled Status Poll policy which is scheduled to run every 3 hours. This policy monitors the Dell Connections License Manager (DCLM) health, license availability, verifies the DCLM configuration parameters and sends corresponding severity messages to the active message browser of the HPOM console.

To view the status of the number of licenses available, launch the Dell Connections License Manager Console Launch Tool. For more information, see [Launching Dell Consoles](#).

 **NOTE:** The global health status of the Dell Connections License Manager is not displayed on the HPOM console until the Dell Hardware Autogroup Policy runs for the first time, and the Dell devices are classified.


Processing SNMP Traps From Dell Devices

The Dell SPI uses the SNMP interceptor policies to process SNMP traps. They have predefined rules to process all the SNMP traps sent by the Dell devices to the management server, generate formatted messages, and send them to the HPOM console.

Dell SPI provides the following two categories of SNMP policies:

1. Auto acknowledged traps
 - Dell Server Traps
 - Dell OOB Server Traps
 - Dell DRAC and Chassis Traps
 - Dell Compellent Storage Array Traps
 - Dell EqualLogic Traps
 - Dell 8000 | 8100 Network Switch Traps
2. Manually acknowledged traps
 - Dell Server Traps (Manual Ack)
 - Dell OOB Server Traps (Manual Ack)
 - Dell DRAC and Chassis Traps (Manual Ack)
 - Dell PowerVault MD Storage Array Traps (Manual Ack)
 - Dell Compellent Storage Array Traps (Manual Ack)
 - Dell EqualLogic Traps (Manual Ack)
 - Dell 8000 | 8100 Network Switch Traps (Manual Ack)
 - Dell Enterprise Series Switch Traps (Manual Ack)

For more information about deploying the preceding Dell SPI policies, see [Deploying Smart Plug-in Policies](#).

 **NOTE:** Dell SPI version 4.0 does not support Dell Compellent SNMPv2 traps.

Understanding Dell SPI Trap Message Severity

Traps often contain information about values recorded by probes or sensors. Probes and sensors monitor critical components for values such as amperage, voltage, and temperature. When an event occurs on the Dell system, it sends a trap having one of the following severities:

- **Normal** — An event that describes the successful operation of a unit, such as a power supply turning on, or a sensor reading returning to normal.
- **Warning** — An event that is not necessarily significant, but may indicate a possible future problem, such as crossing a warning threshold.

- **Critical** — A significant event that indicates actual or imminent loss of data or loss of function, such as crossing a failure threshold or a hardware failure.

SNMP Trap Based Severity Propagation

The following table describes the severity propagation for the **Nodes** hierarchy based on SNMP traps.

Table 7. SNMP Trap Based Severity Propagation

View	Description
Nodes hierarchy	The node status displays the highest severity of all the active messages. This status is propagated to the parent node groups. To know the actual health of the node, view the status in the Global System Status for the node under the Services hierarchy.


Auto Acknowledged Traps

These trap policies intercept and process the SNMP traps generated by the respective Dell device and display the corresponding alert messages on the HPOM console. This policy has the trap-correlation feature enabled and is auto-deployed when you are installing the Dell SPI.

For every trap received from the Dell device, the Dell SPI processes the traps in the following manner:

1. Sends a message to the active message browser of the node on the HPOM console.
2. For all **Normal** traps, the policy auto-acknowledges the messages and moves them from the active message browser to the acknowledged message browser.
3. For all **Critical** and **Warning** traps, it retains the messages in the active message browser and auto-correlates the trap once it receives a corresponding **Critical**, **Warning**, or **Normal** trap.
4. Retrieves the global system status of the node and sends a message with the global system status to the active message browser of the node.

If a node is not DNS resolvable, the Dell SPI may not update the global health status for that node.

 **NOTE:** Auto correlation is not supported for the following Dell Devices:

- Dell Remote Access Controller (RAC)
- Dell Remote Access Controller/Modular Chassis (DRAC/MC)
- Dell Chassis Management Controller (CMC)
- Dell EqualLogic Storage Arrays
- Dell PowerVault MD Storage Arrays
- Dell Enterprise Switches (S-Series, M-Series and Z-Series)

All **Normal**, **Warning**, and **Critical** traps are retained in the active message browser.

Manually Acknowledged Traps

These trap policies intercept and process the SNMP traps generated by the respective Dell device and display the corresponding alert messages on the HPOM console. The manually acknowledged traps have to be manually deployed after installing the Dell SPI and does not automatically acknowledge the received traps.

For every trap received from the Dell device, it processes the traps in the following manner:

1. Sends a message to the active message browser of the node on the HPOM console.




2. Retains all the **Normal**, **Critical**, and **Warning** traps in the active message browser of the node. You must manually acknowledge the traps.
3. Retrieves the global system status of the node and sends a message with the global system status to the active message browser of the node.
If a node is not DNS resolvable, the Dell SPI may not update the global health status for that node.

Launching Dell Consoles

The Dell SPI for HPOM enables you to launch various Dell consoles to get more information about the Dell devices you are monitoring. You can launch the Dell consoles for a Dell device from any of the following hierarchies:

- **Services** → **Dell Hardware**. For more information, see [Launching Dell Console from Services](#).
- **Nodes** → **Dell Managed Systems**. For more information, see [Launching Dell Consoles From Nodes](#).
- **Tools** → **Dell Tools**. For more information, see [Launching Dell Consoles From Tools](#).
- **Alert Messages**. For more information, see [Launching Dell Consoles From Alert Messages](#).

Table 8. Dell One to One console launches

Dell Device	Console launch tools
Dell Servers	<ul style="list-style-type: none"> • OpenManage Server Administrator Console • Dell Remote Access Controller Console (in-band) • OpenManage Server Administrator Web Server Console <p> NOTE: The OpenManage Server Administrator (OMSA) Web Server URL has to be configured by using the Dell SPI config utility to launch the OMSA Web Server console.</p>
Dell DRACs	<ul style="list-style-type: none"> • OpenManage Server Administrator Console • Dell Remote Access Controller Console (in-band) <p> NOTE: The OpenManage Server Administrator Console can be launched only from iDRAC7 devices.</p>
Dell Chassis	<ul style="list-style-type: none"> • CMC Console • DRAC/MC Console <p> NOTE: The CMC Console can be launched from CMC, VRTX CMC, and FX2 CMC devices.</p>
Dell Storage	<ul style="list-style-type: none"> • Dell Compellent Storage Arrays: <ul style="list-style-type: none"> – Dell Compellent Storage Manager Console • Dell EqualLogic Storage Arrays: <ul style="list-style-type: none"> – EqualLogic Group Manager Console • Dell PowerVault NX Storage Arrays: <ul style="list-style-type: none"> – OpenManage Server Administrator Console – Dell Remote Access Controller Console (in-band) – OpenManage Server Administrator Web Server Console
Dell Switches	<ul style="list-style-type: none"> • Dell switches (M-Series, S-Series, Z-Series, 8000 Series, and 8100 Series): <ul style="list-style-type: none"> – Dell Switch Telnet tool







Dell Device	Console launch tools
	<p> NOTE: You must configure the Telnet Client on the management server as a prerequisite to using this feature.</p> <ul style="list-style-type: none"> Dell 8000 Series and 8100 Series switches: <ul style="list-style-type: none"> OpenManage Switch Administrator Console
Any Dell device	<ul style="list-style-type: none"> Any Dell device <ul style="list-style-type: none"> Warranty Console <p> NOTE: An active Internet connection is required to retrieve the warranty information.</p>

Table 9. Dell One to Many console launches

Dell Device	Description
Any Dell device	<ul style="list-style-type: none"> Any Dell device <ul style="list-style-type: none"> OpenManage Essentials (OME) Console <p> NOTE: If OME is installed in a non-default location, then you need to manually configure the location where the OME is installed in the OME Console Launch Tools.</p> <ul style="list-style-type: none"> OpenManage Power Center (OMPC) Console OMPC console launch is used to launch the supported Dell Devices.
Dell Storage	<ul style="list-style-type: none"> Dell Compellent Storage Arrays: <ul style="list-style-type: none"> Dell Compellent Enterprise Manager Client Console <p> NOTE: If the Dell Compellent Enterprise Manager Client Console is installed in a non-default location, then you need to manually configure the location where the Dell Compellent Enterprise Manager Client Console is installed.</p> Dell PowerVault MD Storage Arrays <ul style="list-style-type: none"> MD Storage Manager Console <p> NOTE: If the MD Storage Manager Client is installed in a non-default location, then you need to manually configure the location where the MD Storage Manager Client is installed in the MD Storage Manager Console Tools.</p>
Dell Switches	<ul style="list-style-type: none"> Dell switches (M-Series, S-Series, Z-Series, 8000 Series, and 8100 Series): <ul style="list-style-type: none"> Dell OpenManage Network Manager Console
Dell Connections License Manager Server	<ul style="list-style-type: none"> Dell Connections License Manager <ul style="list-style-type: none"> Dell Connections License Manager Console Launch Tool <p> NOTE: If DCLM is installed in a non-default location, then you need to manually configure the location where DCLM is installed in the DCLM Console Launch Tools.</p>

Launching Dell Consoles From Services

You can launch a console for a specific Dell Device from the Services hierarchy. The devices include Dell Servers, Dell Chassis, Dell Remote Access Controllers, Dell Storage, and Dell Network Switches. For more information about Dell consoles, see Table 7 and Table 8 in the [Launching Dell Consoles](#) section.

To launch a Dell device specific console from the **Services** hierarchy:

1. Navigate to **Services** → **Systems Infrastructure** → **Dell Hardware** and expand any Dell device group.

Example:

To launch the **Dell Compellent Storage Manager Console** for the Dell Compellent Storage Arrays, navigate to **Services** → **Systems Infrastructure** → **Dell Hardware** → **Dell Storage** → **Compellent Storage Arrays**.

2. Right-click the desired **Dell Device** for which you want to launch the console. The **Select the Tool to Execute** window is displayed for that Dell device.
3. Select the respective **Dell Device** Console and click **Launch**.
The respective Dell Device Console is launched in the default browser in the system.

Launching Dell Consoles From Tools

You can launch a console for a specific Dell Device from the Tools hierarchy. The devices include Dell Servers, Dell Chassis, Dell Remote Access Controllers, Dell Storage, and Dell Network Switches. For more information about Dell devices, see Table 7 and Table 8 in the **Launching Dell Consoles** section. For more information about Dell consoles, see Table 7 and Table 8 in the [Launching Dell Consoles](#) section.

To launch a Dell device specific console from the **Tools** hierarchy:

1. Navigate to **Tools** → **Dell Tools** and expand any Dell device group.

Example:

To launch the **Dell Compellent Storage Manager Console** for the Dell Compellent Storage Arrays, navigate to **Tools** → **Dell Tools** → **Dell Storage** → **Compellent Storage Arrays**.

2. In the right pane, right-click the desired **Console Launch Tool** for the selected Dell device group.
3. Select **All Tasks** → **Launch Tool** from the pop-up menu.
The **Edit Parameters** window is displayed.
4. Expand either **Nodes** or **Services** hierarchy, navigate to the respective **Dell Device**, and click **Launch**.
You can only select a single Dell device. If you select more than one Dell device, the following message is displayed:

Tool cannot be launched on multiple nodes.

The desired **Dell Device** Console is launched in the default browser in the system.



NOTE: HPOM enables you to select non-Dell devices. However, you cannot launch the Dell Device console for troubleshooting a non-Dell device.

Launching Dell Consoles From Nodes

You can launch a console for a specific Dell Device from the **Nodes** hierarchy. The devices include Dell Servers, Dell Chassis, Dell Remote Access Controllers, Dell Storage, and Dell Network Switches. For more information about Dell devices, see Table 7 and Table 8 in the **Launching Dell Consoles** section. For more information about Dell consoles, see Table 7 and Table 8 in the [Launching Dell Consoles](#) section.

To can launch a Dell device specific console from the Nodes hierarchy:

1. Navigate to **Nodes** → **Dell Managed Systems** and select any Dell device under the parent node.

Example:

To launch the **Dell Compellent Storage Manager Console** for the Dell Compellent Storage Arrays, navigate to **Nodes** → **Dell Managed Systems** → **Dell Storage** → **Compellent Storage Arrays** and select any Dell Compellent device.

2. Right-click the desired **Dell Device**, and select **All Tasks** → **Launch Tool** from the pop-up menu. The **Select the Tool to Execute** window is displayed.
3. Select the respective **Dell Device** Console and click **Launch**.

The respective **Dell Device Console** is launched in the default browser in the system.

Launching Dell Consoles From Alert Messages

You can launch a console for a specific Dell Device from the Alert Messages associated with that Dell device. The devices include Dell Servers, Dell Chassis, Dell Remote Access Controllers, Dell Storage, and Dell Network Switches. For more information about Dell devices, see Table 7 and Table 8 in the **Launching Dell Consoles** section.

For more information about Dell consoles, see Table 7 and Table 8 in the [Launching Dell Consoles](#) section.

To launch a Dell device specific console from the Alert Messages:

1. Select any alert message associated with a Dell device in the Active Message Browser.
2. Right-click and select **Launch Tool** → **Message**, **Launch Tool** → **Nodes**, or **Launch Tool** → **Services** from the pop-up menu.

Example:

To launch the **Dell Compellent Storage Manager Console** for the Dell Compellent Storage Arrays, right- click any alert message associated with a Dell Compellent Storage Array in the right pane and select **Launch Tool** → **Message**, **Launch Tool** → **Nodes**, or **Launch Tool** → **Services** from the pop-up menu.

The **Select the Tool to Execute** window is displayed.



NOTE: For external nodes, only the **Launch Tool** → **Message** option is available.

3. Select the respective **Dell Device** Console and click **Launch**.

The respective Dell Device Console is launched in the default browser in the system.

Association Of Dell Devices

The **Dell Hardware Autogroup Policy** classifies all the Dell devices under their respective hierarchies based upon the underlying hardware of each of the Dell device. After a Dell Chassis is classified, its corresponding blade servers and their Remote Access Controllers (RACs), and Dell EqualLogic Blade Arrays get associated with their respective slots, and the IO modules (Modular Switches) get associated

with their respective Dell chassis. In case of Dell PowerEdge 12G servers, the iDRAC7 gets associated with its respective host server.

Dell SPI supports the following associations:

- Dell Servers With DRAC/MC Devices
- Dell Servers With CMC, VRTX CMC, or FX2 CMC Devices
- Dell EqualLogic Blade Array With CMC Devices
- Blade IO (Dell M-Series Switches) With CMC Devices

Associating Dell Servers With DRAC/MC Devices

You can view and monitor the health of the classified in-band modular servers that are associated with DRAC/MC devices in the **Nodes** view of the HPOM console.

1. Click **Nodes** → **Dell Managed Systems** → **Dell Chassis** → **DRAC/MC** → **DRAC/MC Node (Service Tag)**.

The **DRAC/MC (Chassis Service Tag)** nodes are displayed along with their Service Tags.

2. Expand any **DRAC/MC** node to view the Dell servers associated with that DRAC/MC device.

The service tags of the Dell PowerEdge servers associated with the DRAC/MC devices are displayed under the chassis tag of the DRAC/MC device.

3. Click a service tag to view the associated managed node.

Associating Dell Servers With CMC Devices

You can view and monitor the health of the classified in-band or out-of-band modular servers and their corresponding RACs that are associated with CMC devices in the **Nodes** view of the HPOM console.

1. Click **Nodes** → **Dell Managed Systems** → **Dell Chassis** → **CMC** → **CMC Node (Service Tag)**.

The **CMC (Chassis Service Tag)** nodes are displayed.

2. Expand the **CMC** node to view all the CMC slots of the discovered Dell servers and the RACs associated with that CMC Device.

3. Click a service tag to view the managed nodes of the servers and their corresponding RACs that are associated with CMC.

Associating Dell Servers With VRTX CMC Devices

You can view and monitor the health of the classified in-band or out-of-band (OOB) modular servers and the corresponding RACs that are associated with VRTX CMC devices in the **Nodes** view of the HPOM console.

1. Click **Nodes** → **Dell Managed Systems** → **Dell Chassis** → **VRTX CMC** → **VRTX CMC Node (Service Tag)**.

The **VRTX CMC (Chassis Service Tag)** nodes are displayed.

2. Expand **VRTX CMC** node to view the service tags of the Dell servers and the corresponding RACs associated with that VRTX CMC node.

3. Click a service tag to view the managed nodes of the servers and their corresponding RACs that are associated with VRTX CMC.

Associating Dell Servers With FX2 CMC Devices

You can view and monitor the health of the classified in-band or out-of-band modular servers and their corresponding RACs that are associated with FX2 CMC devices in the **Nodes** view of the HPOM console.

1. Click **Nodes** → **Dell Managed Systems** → **Dell Chassis** → **FX2 CMC** → **FX2 CMC Node (Service Tag)**.
2. Expand the **FX2 CMC (Chassis Service Tag)** node.

All the FX2 CMC slots of the classified Dell servers and its RACs associated with that FX2 CMC Device are displayed.

The FX2 CMC slots are represented as follows:

SLOT <number> - <Server Service Tag>



NOTE: For Dell PowerEdge FM120x4 server nodes associated with FX2 CMC devices, the `Server Node ID` is used in the slot representation as shown below:

<SLOT Number> - < Slot Name (Server Node ID)>

3. Click a service tag to view the managed nodes of the servers and their corresponding RACs that are associated with FX2 CMC.

Associating Dell EqualLogic Blade Array With CMC Devices

You can view and monitor the health of the Dell EqualLogic Blade Arrays that are associated with CMC devices in the **Nodes** view of the HPOM console.

1. Click **Nodes** → **Dell Managed Systems** → **Dell Chassis** → **CMC** → **CMC Node (Chassis Service Tag)**.
2. Expand the **CMC Node (Chassis Service Tag)**.

The CMC slots of the discovered modular EqualLogic Blade Arrays associated with that CMC device are displayed.



NOTE: The CMC slots are represented as follows:

SLOT <number> - < SLOT Name (EqualLogic Service Tag)>

Example: SLOT 3/4 - SNAC (3ZKXS2F)

3. Click the required service tag to view the associated Dell EqualLogic Blade Array member node.

Association Of Blade IO (Dell M-Series Switches) With CMC Devices

You can view and monitor the health of the Dell M-Series network switches that are associated with CMC devices in the **Nodes** view of the HPOM console.

1. Click **Nodes** → **Dell Managed Systems** → **Dell Chassis** → **CMC** → **CMC Node (Service Tag)** → **IO Modules**.

2. Expand **IO Modules**.

The service tags of the Dell M-Series network switches associated with the CMC devices are displayed under the chassis tag of the CMC device.


3. Click the required IO Module to view the associated Dell M-Series network switch.


Dell Unresponsive Devices

If a previously classified Dell device does not respond to a subsequent auto-grouping cycle, then that device will be classified under the **Dell Unresponsive Device** group.

You can attribute such non responsiveness to the following conditions:

- Nodes not responding to SNMP, WSMAN, or Symbol SDK queries
- SNMP services has stopped
- WSMAN parameters are incorrect or not configured
- Cannot ping the devices' IP address
- Device is powered off or shutdown

 **NOTE:** None of the **Dell Tools** will get associated with any of the nodes listed under the **Dell Unresponsive Devices** group.

 **NOTE:** In a particular auto-grouping cycle, if an unreachable device becomes reachable, then this device is removed from the **Dell Unresponsive Devices** folder and classified under its corresponding device classification.

Viewing Dell Unresponsive Devices

To view the Dell Unresponsive devices from the **Nodes** hierarchy:

Navigate to **Nodes** → **Dell Managed Systems** and click **Dell Unresponsive Devices**.

The Dell unresponsive devices are displayed.

Viewing Knowledge Base Articles

You can view knowledge base (KB) articles associated with all alert messages for Dell devices. The KB articles contain the summary, causes and steps to resolve the alert condition.

To view the KB article:

1. Select the desired Dell device from the **Nodes** hierarchy.
2. Right-click any alert message associated with the device in the right pane and select **Properties** from the pop-up menu.
3. In the **Properties** screen, click the **Instructions** tab.
4. Click on the HyperText Markup Language (HTML) link provided.

Troubleshooting Dell Smart Plug-in (SPI)

This section lists the problems that you may encounter while using the Dell SPI.

Installer Takes Time To Launch

Problem

When the Dell SPI installer is run for the first time on the management server, there is a delay of 40-45 seconds to launch the installer if the system does not have access to the internet.

Reason

This problem occurs because the .NET Framework managed assembly that has an Authenticode signature takes longer than usual to load. The signature is always verified when the .NET Framework managed assembly that has an Authenticode signature is loaded.

Solution

To resolve this, ensure that the management server is connected to the Internet when you run the installer.

DellSPIConfigUtility Displays An Error


Problem

DellSPIConfigUtility displays an error for a Local User when the user access control (UAC) is enabled.

Solution

When UAC is enabled, run the DellSPIConfigUtility using Run as Administrator command prompt.

1. Select the command prompt application, right-click and then select **Run as Administrator**.
2. Configure the SNMP and WSMAN parameters in the administrator command line.

 **NOTE:** You should have Administrators and HP_OVE_Admins privileges; otherwise, you must provide the required security credentials.

SNMP Trap Messages Are Not Created

Problem

The SNMP Interceptor policy may not display the SNMP trap messages in the active message browser of the node from which it receives the traps.

Solution

To resolve this, ensure that the trap destinations and the community strings on the Dell managed nodes are configured correctly and communication is established between the managed node and the management server.

SNMP Traps Received At Wrong Nodes Due To Error In DNS Cache

Problem

After you start monitoring the Dell systems grouped under Dell Managed Systems group, if you interchange the IP addresses of the nodes, then the SNMP traps are received on the wrong nodes. For example, if you have two nodes A and B under **Dell Managed Systems** → **Dell Monolithic Servers group** and you interchange the IP addresses of the two nodes, then the traps from A are displayed as messages in the active message browser of B and vice versa.

Solution

To resolve this:

1. Launch the Server Configuration Editor on the HP Operations Manager (HPOM) console.
2. Under the **Node Cache Settings** option, set the **DNS cache** value to **False** to disable the DNS caching. The nodes now display the traps correctly.

Global System Status Not Retrieved For Dell Devices

Problem

The **Dell Server Scheduled Status Poll** policy does not retrieve the global system status of the classified Dell devices until the devices are grouped under the **Dell Managed Systems** group.

Solution

The global status update policy is scheduled to run at 02:00 hours every day and starts polling systems for global system status. If you choose to auto-deploy the policy files during the Dell SPI installation, the policies start running as per the default schedule. However, the auto grouping policy is scheduled to run only at 04:00 hours every week. Therefore, until the **Dell Hardware Autogroup Policy** runs and the Dell devices are grouped under the **Dell Managed Systems** group, the global system status of the devices are not displayed on the HPOM console.

Trap Correlation Feature Is Not Working After The Dell SPI Repair Operation

Problem

After the repair operation, correlation of traps do not occur for some groups of Dell devices.

Reason

The Dell SPI does not identify and disable the policies that have been manually deployed on the management server prior to using the repair feature. After using the repair feature of the Dell SPI, the default policies are deployed along with the previously deployed Manual Ack policies, if any. For more information about Dell SPI default and Manual Ack policies, see [Deploying Smart Plug-in Policies](#).

Solution

It is recommended to either have correlation policies or Manual Ack policies enabled for the Dell devices you want to monitor at any given time. To have trap correlation feature for a Dell device, disable the device specific Manual Ack policy.

Related Documents And Resources

This chapter gives you the details of other documents and resources to help you work with the Dell Smart Plug-in version 4.0.


Other Documents You May Need

In addition to this guide, you can access the following guides available on the Dell Support website at dell.com/support/manuals. On the Manuals page, click **Software** → **Systems Management**. Click the appropriate product link on the right-side to access the documents:

- *HP Operations Manager 9.0 for Windows Installation Guide*
- *Dell OpenManage Installation and Security User's Guide*
- *Dell OpenManage Server Administrator User's Guide*
- *Dell OpenManage Server Administrator Compatibility Guide*
- *Dell OpenManage Server Administrator Messages Reference Guide*
- *Dell OpenManage Server Administrator Command Line Interface User's Guide*
- *Dell OpenManage With VMware ESX/ESXi Systems Management Guide*. To access this guide, click **Software** → **Virtualization Solutions** → **VMware Software** on dell.com/support/manuals.
- *SNMP Trap Correlation Guide*
- *Dell Chassis Management Controller User's Guide*
- *Dell Chassis Management Controller for Dell PowerEdge VRTX User's Guide*
- *Dell Chassis Management Controller for Dell PowerEdge FX2/FX2s User's Guide*
- *Dell Integrated Remote Access Controller User's Guide*
- *Dell Remote Access Controller 5 User's Guide*
- *Dell Remote Access Controller/ Modular Chassis User's Guide*
- *Dell OpenManage Essentials User's Guide*
- *Dell OpenManage Power Center User's Guide*
- *Dell OpenManage Network Manager User's Guide*
- *Dell Connections License Manager User's Guide*
- To view the *Dell PowerVault MD Storage Arrays User's Guide*, pertaining to a MD Storage Arrays device, select the desired Dell MD Storage Arrays device under **Systems** → **PowerVault Storage** on dell.com/support/manuals
- To view the *Dell EqualLogic User's Guide* click **Systems** → **Dell EqualLogic** → **Dell EqualLogic Documentation** on dell.com/support/manuals.

For information on terms used in this document, see the *Glossary* on the Dell Support website at dell.com/support/manuals.

Contacting Dell

 **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit **dell.com/support/manuals**.
2. Select your support category.
3. If you are not a U.S. customer, select your country code at the bottom of the **dell.com/support** page, or select **All** to see more choices.
4. Select the appropriate service or support link based on your need.