

**Dell Server Management Pack Suite Version
5.2.0 For Microsoft System Center Operations
Manager
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

This document describes the activities that you can perform with Dell Server Management Pack Suite version 5.2.0 for Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, Microsoft System Center 2012 Operations Manager, and Microsoft System Center Operations Manager 2007 R2.


The integration of Dell Server Management Pack Suite version 5.2.0 with System Center 2012 R2 Operations Manager, System Center 2012 SP1 Operations Manager, System Center 2012 Operations Manager, or System Center Operations Manager 2007 R2, environment allows you to manage, monitor, and also ensure the availability of the Dell devices.


 **CAUTION:** Perform the procedures in this document only if you have proper knowledge and experience in using the Microsoft Windows operating system and System Center 2012 R2 Operations Manager, System Center 2012 SP1 Operations Manager, System Center 2012 Operations Manager, and System Center Operations Manager 2007 R2 to avoid data corruption and/or data loss.


 **NOTE:** Read the Dell Server Management Pack Suite's readme file, which contain the latest information about software and management server requirements, in addition to information about known issues. The readme file is posted to the Systems Management documentation page on dell.com/support/manuals. The readme file is also packaged in the self-extracting executable `Dell_Server_Management_Pack_Suite_v5.2_A00.exe` file.


Terms Used In This Document

The following terms are used throughout this document. Make sure to substitute the actual term wherever appropriate.

 **NOTE:** The term OpsMgr in this document is used to refer to Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, Microsoft System Center 2012 Operations Manager, and Microsoft System Center Operations Manager 2007 R2, unless otherwise specified.

 **NOTE:** The term OpsMgr 2012 in this document is used to refer to Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, and Microsoft System Center 2012 Operations Manager, unless otherwise specified.

 **NOTE:** The term Dell Remote Access Controller (DRAC) devices in this document is used to refer to DRAC 5, iDRAC 6, and iDRAC 7, unless otherwise specified.

 **NOTE:** The term Chassis devices in this document is used to refer to Chassis Management Controller (CMC), unless otherwise specified.

What Is New In This Release

The release highlights of Dell Server Management Pack Suite are:

- Support for detailed monitoring of Dell chassis (Dell PowerEdge M1000e and Dell PowerEdge VRTX)
- Support for monitoring of Dell PowerEdge VRTX chassis storage components; enclosures, controllers, physical disks, and virtual disks
- Support for correlation of chassis storage shared components with Dell modular servers
- Support for new alerts from Dell OpenManage Server Administrator, iDRAC7, and CMC
- Support for latest iDRAC7 and CMC firmware versions
- Support for automatically importing the Dell Server In-band monitoring feature
- Support for automatically importing the Dell Server Out-of-band (agent-free) monitoring feature (if license credentials are provided)

Key Features Of Dell Server Management Pack Suite

This version of Dell Server Management Pack Suite provides the following features for managing the Dell devices:

Table 1. Features and Functionalities

Feature	Functionality
In-band Discovery and Monitoring – Dell Servers	Supports in-band discovery and monitoring of Dell PowerEdge, Dell PowerVault monolithic and modular systems running the supported Windows operating system and supported Dell OpenManage Server Administrator.
Out-of-band Discovery and Monitoring (Agent – free) – Dell Servers	Supports: <ul style="list-style-type: none"> • Out-of-band discovery and monitoring of Dell PowerEdge 12G systems and Dell PowerVault systems. • SNMP traps for out-of-band systems.
Discovery and Monitoring – Chassis Management	Supports: <ul style="list-style-type: none"> • Discovery and monitoring of Dell Chassis and DRAC/MC devices. • Supports discovery of server modules and chassis slot summary for CMC and DRAC/MC chassis. • SNMP traps for Dell Chassis and DRAC/MC devices.
Discovery and Monitoring – Dell Remote Access Controllers (DRAC)	Supports: <ul style="list-style-type: none"> • Discovery and monitoring of supported DRAC devices. • SNMP and PET traps for DRAC devices.

Feature	Functionality
Chassis Blade Correlation	Supports: <ul style="list-style-type: none"><li data-bbox="831 279 1385 327">• Correlation of Dell servers with Server modules of CMC and DRAC/MC chassis.<li data-bbox="831 338 1302 386">• Correlation of Chassis shared storage components with Dell modular servers.

Overview Of Dell Server Management Pack Functionality

The Dell Server Management Pack Suite for OpsMgr enables you to:

- Discover and classify Dell systems – Dell Servers (In-band and Out-of-band), Dell Remote Access Controllers (DRAC 5, iDRAC 6, and iDRAC 7), and Dell Chassis (Dell PowerEdge VRTX and Dell PowerEdge M1000e).
- Monitor the discovered Dell systems.
- Perform various tasks on the discovered Dell systems.
- View reports for discovered Dell systems.

Server In-Band Monitoring Feature

Server In-band monitoring feature supports the discovery, and monitoring of Dell PowerEdge monolithic and modular and PowerVault systems running the supported Windows operating system and supported OpenManage Server Administrator (OMSA). For information on supported OMSA versions, see *Dell Server Management Pack Suite Version 5.2.0 Release Notes*.

The Server In-band monitoring feature is automatically imported by the Dell Server Management Pack Suite installer.

Management Pack Functionality And Dependencies

The following table lists this version's management packs and utilities, and their dependencies with each other:

Table 2. Management Pack Functionality and Dependencies

Management Pack or Utility	Description	Dependency
Dell.Connections.HardwareLibrary.mp	Management pack for defining the Dell Hardware Group and Dell folder in the Monitoring pane of the OpsMgr console.	None
Dell.WindowsServer.Scalable.mp	Management pack for monitoring supported Dell PowerEdge and PowerVault up to component groups level.	Dell.Connections.HardwareLibrary.mp Dell.Model.Server.mp Dell.OperationsLibrary.Server.mp Dell.View.Server.mp
Dell.WindowsServer.Detailed.mp	Management pack for monitoring supported Dell PowerEdge and PowerVault up to component level.	Dell.Connections.HardwareLibrary.mp Dell.Model.Server.mp Dell.OperationsLibrary.Server.mp Dell.View.Server.mp Dell.WindowsServer.Scalable.mp
Dell.WindowsServer.InformationAlertsOn.mp	Management pack to enable monitoring of informational alerts from supported Dell OpenManage System Administrator.	Dell.Connections.HardwareLibrary.mp

Management Pack or Utility	Description	Dependency
		Dell.Model.Server.mp Dell.OperationsLibrary.Server.mp Dell.View.Server.mp Dell.WindowsServer.Scalable.mp

Comparison Of Scalable And Detailed Edition Features

The following table helps you understand the environment in which you can use Scalable and Detailed Edition features.

Table 3. Scalable Management Pack Versus Detailed Management Pack

Features	Scalable Edition	Detailed Edition
Server (In-band) Monitoring	<ul style="list-style-type: none"> Inventory and monitoring of component groups. Also, displays the presence of iDRAC. Reports — Only OpenManage Windows Event log report is available. 	<ul style="list-style-type: none"> Detailed inventory and monitoring of the following components: memory, processors, network interfaces, storage controllers, disks, and volumes. Also, displays BIOS information. Reports — Availability of BIOS configuration, firmware and driver version, and RAID configuration reports.

Discovery And Grouping

The Dell Server Management Pack Suite version 5.2.0 enables you to discover and classify Dell Servers — Monolithic and Modular. The following table lists the details of the hardware discovery and grouping

Table 4. Dell Hardware Discovery and Grouping

Group	Diagram View	Hardware Type
Dell Servers	Dell Monolithic Servers Dell Modular Servers	Dell PowerEdge and PowerVault systems running the supported Windows operating system and supported OpenManage Server Administrator (version 6.4 and later).

Discovering A Dell Server In OpsMgr


Dell servers are discovered through the OpsMgr Agent Management infrastructure.


The Dell server should be discovered in the **Agent Managed** view under the **Administration** section of the OpsMgr console.

To discover a Dell server:

1. Log on to the management server as an OpsMgr administrator.
2. On the OpsMgr console, click **Administration**.
3. At the bottom of the navigation pane, click **Discovery Wizard**.
4. Run the **Discovery Wizard**, select **Windows computers** and follow the instructions on the screen.

For more information, see the OpsMgr documentation at technet.microsoft.com.

 **NOTE:** The installer automatically imports the Server In-band monitoring feature management packs into the OpsMgr. If the installer fails to install the management packs then, import the management packs to OpsMgr using the OpsMgr **Import Management Packs** wizard or the **Feature Management Dashboard**.

 **NOTE:** Dell servers that do not have Dell OpenManage Server Administrator (OMSA) installed, or have OMSA earlier than version 6.4 are grouped as Dell Unmanaged.

Discoveries By The Dell Server (In-Band) Monitoring Feature

Table 5. Dell Server (In-Band) Monitoring Feature Discoveries

Discovery	Description
Dell Server Discovery	Classifies your Dell servers and populates the attributes.
Dell Server Network Interface Discovery	Discovers the network interface at group level of your Dell server.
Dell Server Hardware Components Discovery	Discovers hardware components at a group level (such as sensors, processor, memory, and power supply).
Dell OpenManage Software Services Discovery	Discovers the objects for OpenManage Server Administrator Windows services.
Dell Server Detailed BIOS Discovery	Discovers BIOS objects for each Dell server (Detailed edition only).
Dell Server Detailed Memory Discovery	Discovers memory instances for your Dell server (Detailed edition only).
Dell Server Detailed Power Supply Discovery	Discovers power supply instances for your Dell server (Detailed edition only).
Dell Server Detailed Processor Discovery	Discovers processor instances for your Dell server (Detailed edition only).
Dell Server Detailed Storage Discovery	Discovers the complete storage hierarchy for your Dell server (Detailed edition only).
Dell Windows Server Detailed Network Interfaces Discovery Module	Discovers the physical and teamed network interface instances of your Dell server (Detailed edition only).

Discovery	Description
Dell Windows Server Network Interfaces Group Discovery Module	Discovers the Network Interfaces group.
Dell Unmanaged Server Group Discovery	Discovers Dell servers that are not being monitored either due to the absence of Dell instrumentation, or has an instrumentation version lower than the required version.

Monitoring

The **Monitoring** pane of the OpsMgr is used to select views that provide complete health information of the discovered Dell servers. The [Severity Level Indicators](#) helps you to indicate the health of your Dell servers on the network.

It includes monitoring the health of Dell modular and monolithic systems, and their components, both at regular intervals and on occurrence of events.


Views

Dell Server Management Pack Suite provides the following types of views for Monitoring, under the **Dell** folder on the OpsMgr console:

- [Alerts Views](#)
- [Diagram Views](#)
- [State Views](#)
- [Performance and Power Monitoring Views](#)

Alerts Views

This view is available for managing hardware and storage events from Dell servers. The following alerts are displayed:

- Alerts for events received from Dell OpenManage Server Administrator for Dell servers.
 -  **NOTE:** Informational alerts are turned off by default. To enable informational alerts, run the **Set Informational Alerts On (Server In-band)** task for Dell Server (In-band) Monitoring on the **Feature Management Dashboard**.
- Link-up or Link-down alerts for events received from Broadcom and Intel network interface cards for Dell PowerEdge and PowerVault systems.

Viewing Alerts On The OpsMgr Console

To view alerts on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring**.
2. Click **Dell** → **Alerts Views**.

The following are displayed:

- **Network Interface Alerts** — Link-up and Link-down alerts from the discovered NICs are displayed.
- **Server Alerts** — Server Administrator alerts from Dell servers are displayed.

3. Select any of the **Alerts Views**.

On the right pane of each of the individual **Alerts Views**, alerts that meet the criteria you specify, such as alert severity, resolution state, or alerts that are assigned to you is displayed.

4. Select an alert to view the details in the **Alert Details** pane.

Diagram Views

The **Diagram Views** offers a hierarchical and graphical representation of all Dell servers on your network.

Viewing Diagram Views On The OpsMgr Console

To view the diagram views on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring** → **Dell** → **Diagram Views**.

2. Navigate to the **Diagram Views** folder for the following views:

- [Complete Diagram View](#)
- [Modular Systems Diagram](#)
- [Monolithic Servers Diagram](#)

3. Select any of the **Diagram Views**.

On the right pane the hierarchical and graphical representation of the selected Dell server is displayed.

4. Select a component in the diagram to view its details in the **Detail View** pane.

Complete Diagram View

The **Complete Diagram View** offers a graphical representation of all Dell devices that OpsMgr monitors. You can expand and verify the status of individual devices and their components in the diagram. You can view details for:

- Modular and Monolithic systems
- Chassis Management Controllers and DRAC/MC devices
- Remote Access Controllers
- Dell Unmanaged Servers

Modular And Monolithic Systems

The **Modular Systems Diagram** and **Monolithic Servers Diagram** views offer the following details:

- Physical and teamed network interfaces
- Memory
- Power supply
- Sensors
- Processors
- Dell OpenManage software services
- Storage controller
- BIOS (inventory only)
- iDRAC NIC

Monolithic Servers Diagram

The **Dell Monolithic Systems Diagram View** offers a graphical representation of all Dell monolithic systems and allows you to expand and verify the status of individual devices and their components in the diagram.

Modular Systems Diagram

The **Dell Modular Systems Diagram View** offers a graphical representation of all Dell modular systems and allows you to expand and verify the status of individual devices and their components in the diagram.

Dell Server Instance Diagram

Select a Dell system, from the **Dell Modular System** or **Dell Monolithic System** diagram views, to view the diagram specific to that particular system.

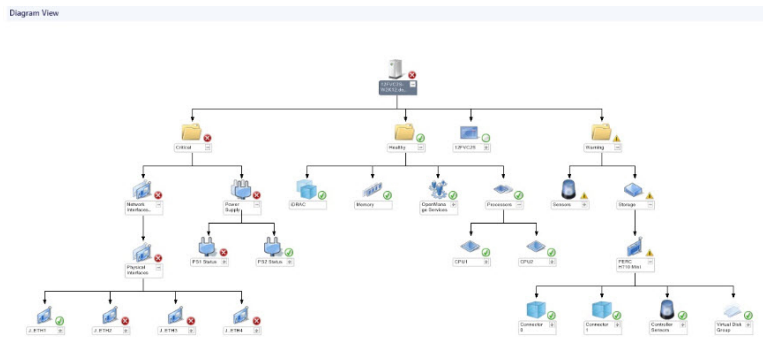


Figure 1. Dell Server Instance Diagram

System-specific diagrams illustrate and indicate the status of the following components:

- Physical and teamed network interfaces
- Memory
- Power supply
- Sensors
- Processors
- Dell OpenManage software services
- Storage controller
- BIOS (inventory only)

The memory, processors, and power supply components are displayed in detail by the Detailed edition of the Server monitoring feature.

Storage Controller Component Hierarchy

Expand the **Storage** component in any Dell system instance diagram view, to view the status and health of components such as physical disks, connectors, virtual disks, controllers, sensors, and enclosures.

Network Interfaces Component Hierarchy

The Network Interfaces group is created only when an Intel or Broadcom network interface card is present and enabled on the Dell Server (In-band). Network interfaces are grouped under **Physical**

Interfaces and **Teamed Interfaces**. If you disable a network interface, the network interfaces group will be removed from management in the next discovery cycle.

A reference relationship is created between a Teamed network interface and its associated Physical network interfaces. You can view the reference relationship *only* when you enable the **Enable Correlation** attribute of **Dell Windows Server Physical and Teamed Relationship Discovery**. For more information, see [Enabling Correlation](#).

Enabling Correlation

To enable the **Enable Correlation** attribute:

1. Launch the OpsMgr console.
2. From the navigation pane, click **Authoring**.
3. In the **Authoring** tab, click **Management Pack Objects** → **Object Discoveries**.
4. Click **Scope** at the top of the screen.
The **Scope Management Pack Objects** screen is displayed.
5. Search for **Dell Windows Server Physical and Teamed Relationship Discovery Rule** in the **Look for:** field.
6. Right-click **Dell Windows Server Physical and Teamed Relationship Discovery Rule** → **Overrides** → **Override the Object Discovery** → **For all objects of class: Teamed Network Interface instance (Enriched)**.
The **Override Properties** page is displayed.
7. Select **Enable Correlation** and set the **Override Value** to **True** and click **OK**.

The status roll-up of network interfaces on the diagram view is displayed only up to the **Network Interfaces** group level. For example, if the remaining components of the Dell server are normal and only one or more of the network interfaces are critical or noncritical, then the normal icon is displayed by the Dell system, and the critical or warning icon is displayed by the **Network Interfaces** group.

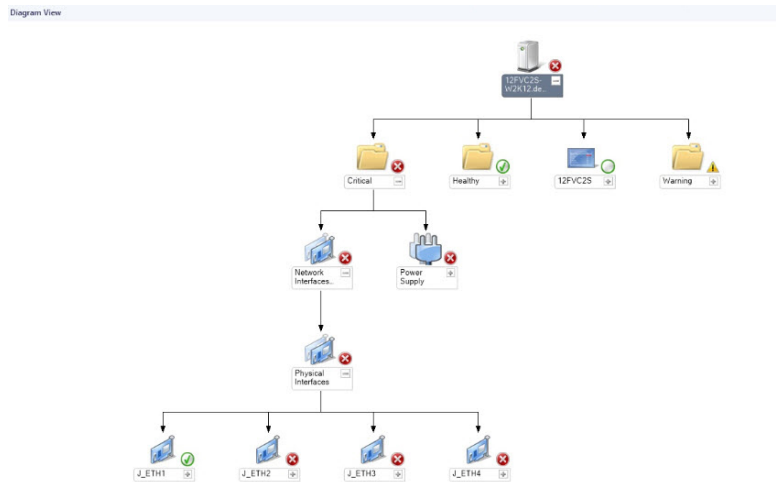


Figure 2. Network Interfaces Diagram View

Enabling Network Interfaces Group To Dell Server Health Roll Up

For the status roll-up to be displayed at the server level, you must enable the **Network Interfaces Group to Dell Server Health Roll up** dependency monitor.

To enable the monitor:

1. Launch the OpsMgr console.
2. From the navigation pane, click **Authoring**.
3. Click **Monitors** on the left pane and select the **Network Interfaces Group monitor**.
4. Click **Entity Health** → **Availability**.
5. Right-click **Network Interfaces Group to Dell Server Health Roll up** and select **Overrides** → **Enable the Monitor** from the menu options.

State Views

This view is available for viewing the health of all Dell servers. In the OpsMgr console, click **Dell** → **State Views**, the status of each Dell server managed by the OpsMgr on your network is displayed.


You can view the status for the Managed servers (In-Band) group.


The health of a component is derived by reviewing the unresolved alerts associated with the component.

Performance And Power Monitoring Views

To view the performance and power monitoring on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring**.
2. In the **Monitoring** pane, click **Dell** → **Performance and Power Monitoring** for the following views:
 - **Ambient Temperature (Centigrade)**
 - **Amperage (Amps)**
 - **Dell Performance View**
 - **Energy Consumption (kWh)**
 - **Peak Amperage (Amps)**
 - **Peak Power (Watts)**
 - **Physical Network Interface**
 - **Power Consumption (Watts)**
 - **Power Consumption (BTU/hr)**
 - **Teamed Network Interface**

 **NOTE:** Power monitoring is applicable only for Dell servers with power monitoring capability for a particular attribute. It is enabled only when the detailed edition of Server In-band monitoring feature is present.

 **NOTE:** Teamed and Physical network interface instances are disabled by default and will appear only when the detailed edition of the Server In-band monitoring feature is installed and imported.

3. Select the counters from the individual performance views and select the time range for which the values are required.

The data collected is represented in a graphical format for each system.

A unit monitor, monitors the performance counter over two successive cycles to check if it exceeds a threshold value. When the threshold value is exceeded, the server changes state and generates an alert. This unit monitor is disabled by default. You can override (enable and modify) the threshold values from the **Authoring** pane of the OpsMgr console. Unit monitor is available under **Monitors for Dell Windows Server objects** for Server In-band monitoring feature.

For more information on performance information collection, see [Performance Collection Rules](#).

Unit Monitors

Unit monitors assess the various conditions that can occur in monitored objects. The result of this assessment determines the health state of a target.

The unit monitors are:

- **Event Monitor** — triggered by the event that the Dell instrumentation logs in the Windows event log, indicating the health of the corresponding object.
- **Periodic Monitor** — triggered by a periodic poll configured as Interval Seconds.

The following tables illustrates the various Dell monitors and the applicable parameters.

Dell Unit Monitors — Scalable Edition

Monitors to assess various conditions that can occur in Server (In-band) — Scalable Edition monitored objects.

Table 6. Dell Unit Monitors — Scalable Edition

Object	Unit Monitor
Memory	
Dell Server Memory Status	Event and Periodic
Dell Server Memory Redundancy Status	Event and Periodic
OpenManage Software Services	
Dell Server Management (DSM) Connection Service Availability Status	Periodic
DSM Data Manager Availability Status	Periodic
DSM Event Manager Availability Status	Periodic
DSM Shared Service Availability Status	Periodic
DSM Storage Service Availability Status	Periodic
Windows Management Instrumentation (WMI) Service Availability Status	Periodic
Power Supplies	
Dell Server Power Supplies Status	Event and Periodic
Processors	

Object		Unit Monitor
	Dell Server Processors Status	Event and Periodic
Sensors		
	Dell Server Battery Status	Event and Periodic
	Dell Server Current Status	Event and Periodic
	Dell Server Fans Status	Event and Periodic
	Dell Server Intrusion Sensor Status	Event and Periodic
	Dell Server Temperature Sensor Status	Event and Periodic
	Dell Server Voltage Sensor Status	Event and Periodic
Storage Controller		
	Storage Controller Status	Event and Periodic
Network Interfaces Group (Basic)		
	Global Network Interfaces (Basic) Connection Status	Event and Periodic
Network Interfaces Group (Enriched)		
	Global Enriched Network Interfaces Status	Event and Periodic
	Global Network Interfaces (Basic) Connection Status	Event and Periodic
iDRAC		
	Dell Server iDRAC Network Interface Monitor	Periodic

Dell Unit Monitors – Detailed Edition

Table 7. Dell Unit Monitors – Detailed Edition

Object		Unit Monitor
Memory Unit Instance		
	Detailed Memory Event Monitor	Event and Periodic
	Detailed Memory Unit Monitor	Event and Periodic
Power Supplies Unit Instance		

Object		Unit Monitor
	Detailed Power Supply	Event and Periodic
Processor Unit Instance		
	Detailed Processor	Event and Periodic
Storage Controller Connector Instance		
	Controller Connector Event Monitor	Event and Periodic
	Controller Connector Unit Monitor	Event and Periodic
Storage Controller EMM Instance		
	Enclosure EMM Event Monitor	Event and Periodic
	Enclosure EMM Unit Monitor	Event and Periodic
Storage Controller Enclosure Instance		
	Controller Enclosure Event Monitor	Event and Periodic
	Controller Enclosure Unit Monitor	Event and Periodic
Storage Controller Physical Disk Instance		
	Controller Physical Disk Event Monitor	Event and Periodic
	Controller Physical Disk Unit Monitor	Event and Periodic
	Enclosure Physical Disk Event Monitor	Event and Periodic
	Enclosure Physical Disk Unit Monitor	Event and Periodic
Storage Controller Power Supply Instance		
	Enclosure Power Supply Event Monitor	Event and Periodic
	Enclosure Power Supply Unit Monitor	Event and Periodic
Storage Controller Sensors		
	Controller Sensor Event Unit Monitor	Event and Periodic
	Controller Sensor Unit Monitor	Event and Periodic
Storage Controller Virtual Disk Group		Event and Periodic

Object	Unit Monitor
Storage Controller Virtual Disk Instance	Event and Periodic
Controller Virtual Disk Event Monitor	Event
Controller Virtual Disk Unit Monitor	Periodic
Storage Enclosure Physical Disk Group	Event and Periodic
Storage Enclosure Sensors	
Enclosure Fan Event Unit Monitor	Event and Periodic
Enclosure Fan Unit Monitor	Event and Periodic
Enclosure Temperature Event Monitor	Event and Periodic
Enclosure Temperature Unit Monitor	Event and Periodic
Physical Network Interface Instance (Basic)	
Connection Status	Event and Periodic
Physical Network Interface Instance (Enriched)	
Administrative Status	Event and Periodic
Connection Status	Event and Periodic
Link Status	Event and Periodic
Operational Status	Event and Periodic
Teamed Network Interface Instance (Basic)	
Teamed Network Interface (Basic) Availability Status	Event and Periodic
Teamed Network Interface Instance (Enriched)	
Teamed Network Interface Instance (Enriched) Administrative Status	Event and Periodic
Teamed Network Interface Instance (Enriched) Connection Status	Event and Periodic
Teamed Network Interface Instance (Enriched) Link Status	Event and Periodic

Object		Unit Monitor
	Teamed Network Interface Instance (Enriched) Operational Status	Event and Periodic
	Teamed Network Interface Instance (Enriched) Redundancy Status	Event and Periodic

Rules

The following section lists the rules specific to the Dell Server In-band monitoring feature.

Dell Systems Event Processing Rules

The Dell Server Management Pack Suite processes rules from Server Administrator and Server Administrator Storage Management events.

Server Administrator

All informational, warning, and critical events for Server Administrator have a corresponding event processing rule.

Each of these rules are processed based on the following criteria:

- Source Name = "Server Administrator"
- Event ID = Actual event ID of the Server Administrator instrumentation event
- Data Provider = Windows system event log

Storage Management

All informational, warning, and critical events for the Server Administrator Storage Management Service have a corresponding event processing rule.

Each of these rules are processed based on the following criteria:

- Source Name = "Server Administrator"
- Event ID = Actual event ID of the Server Administrator Storage Management Service event
- Data Provider = Windows system event log

Performance Collection Rules

In the OpsMgr console, click **Monitoring** → **Dell** → **Performance and Power Monitoring Views** to view the performance information that is collected from Dell servers. By default this feature is disabled, to enable the feature, see [Enabling Performance Collection Rules](#).


The performance collection rules collects information on the following parameters:

- **Ambient Temperature (Centigrade)**
- **Amperage (Amps)**
- **Dell Performance View**
- **Energy Consumption (kWh)**
- **Peak Amperage (Amps)**
- **Peak Power (Watts)**

- **Physical Network Interface**
- **Power Consumption (BTU/hr)**
- **Power Consumption (Watts)**
- **Teamed Network Interface**

 **NOTE:**

- When the Detailed edition of Server Management Feature is imported, the disabled Performance (excluding Network Performance) collection rules are enabled by default.
- Disk Performance — This view displays the **Remaining Rated Write Endurance** of SSDs (Solid State Drives) of a Dell Server (In-band). Search for the object **SSD Performance** to view the data.

 **NOTE:** Network Statistics are defined in Detailed edition of Server monitoring feature only and are disabled by default. To enable the feature, see [Enabling Performance Collection Rules](#).

Enabling Performance Collection Rules

To enable this feature:

1. Launch OpsMgr console and click **Authoring**.
2. Click **Rules** and search for performance collection rules.
3. Right-click the rule you want to enable.
For example, to collect information on Network Interface of all Dell systems, perform step 4 to step 5 for the rules listed below:
 - Total Transmitted Packets
 - Received Bytes
 - Total Received Packets
 - Transmitted Bytes
4. Select **Overrides** → **Override the Rule** → **For all objects of class**.
5. Select **Override** and provide **Override value** as **True**.
6. Click **Apply**.

Tasks

Tasks are available in the **Tasks** pane of the OpsMgr console. When you select a device or a component, the relevant tasks appear in the **Tasks** pane.

 **NOTE:** In OpsMgr 2007 R2, the **Tasks** pane is referred to as **Actions** pane.


Task Summary





Performing Dell Tasks

Following table provides a summary of the Dell tasks that you can perform on the OpsMgr:

Table 8. Dell Tasks

Task	Description
Launch Dell OpenManage Server Administrator	Launches the Dell OpenManage Server Administrator.

Task	Description
	 NOTE: Launching OpenManage Server Administrator is possible, only if Dell OpenManage Server Administrator is installed on the managed node.
Launch Dell OpenManage Power Center	Launches the Dell OpenManage Power Center console on the Management Server.
Launch InBand Dell Remote Access Console	Launches the DRAC console for the in-band discovered DRAC.
Launch Dell License Manager On 32 bit Management Server	Launches the Dell license manager on management systems running 32-bit operating system.
Launch Dell License Manager On 64 bit Management Server	Launches the Dell license manager on management systems running 64-bit operating system.
Clear ESM Logs	Backs up the content of the Embedded System Management (ESM) log and clears the ESM log file for a selected system.
Launch Remote Desktop	Launches the remote desktop for the selected system.
Check Power Status	Checks the overall power status of the system.
Force Power Off	Turns off the system power without shutting down the operating system.
Power Cycle	Turns off the power, and after a delay, turns it on again.
Power Off Gracefully	Shuts down the operating system first, then turns off the system power.
Power On	Turns on the system power. This option is available only if the system is off.
Power Reset	Turns off the system power and turns it on again.
Turn LED Identification On	Turns on the identify LED for 255 seconds on the selected system.
Turn LED Identification Off	Turns off the identify LED on the selected system.
Get Warranty Information	Retrieves the warranty information for the selected system.

Task	Description
	 NOTE: An active Internet connection is required to retrieve the warranty information.
Launch Remote Desktop Monolithic Server	Launches the remote desktop for the selected system.  NOTE: Launching remote desktop is possible only if Windows operating system is installed and remote desktop is manually enabled in the managed node.
Launch Dell OpenManage Power Center	Launches the Dell OpenManage Power Center console for the selected system.  NOTE: Launching OpenManage Power Center is possible only if Windows or Linux operating system and, OpenManage Server Administrator is installed, and Dell OpenManage Power Center are installed on the managed node.
Get Warranty Information	Retrieves the warranty information for the selected system.  NOTE: An active Internet connection is required to retrieve the warranty information.
Launch Dell Modular Chassis Remote Access Console	Launches the CMC or the DRAC/MC console.

Dell Modular and Monolithic Systems Tasks

Clear ESM Logs

The Server Administrator Embedded Server Management (ESM) log, also referred to as the hardware log, maintains a list of all system events generated by the hardware, such as error-correcting code (ECC), system reset and boot, and probe threshold changes. You can refer to this log when hardware errors appear or when the system is not functioning properly.

To run the **Clear ESM Logs** task:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell system in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Clear ESM Logs**.
The **Run Tasks** window is displayed.
4. Click **Run** to clear the ESM logs of the device that you selected.

When you run the **Clear ESM Logs** task, on the task execution screen only the result of the task initiating is displayed. For example, the task execution screen may show a success result even if the ESM logs are not cleared. This means that the **Clear ESM Logs** task initiation was successful.

Launch Dell OpenManage Server Administrator

To launch Server Administrator:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Launch Server Administrator**.



NOTE: The Dell Server Management Pack Suite tasks launch the remote console in the Internet Explorer.

Launch Remote Desktop

To launch remote desktop:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Launch Remote Desktop**.



NOTE: Launching remote desktop is possible only if the remote desktop is enabled manually in the managed node.

Launch InBand Dell Remote Access Console

To launch InBand Dell Remote Access console:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Launch InBand Dell Remote Access Console**.

Check Power Status

You can check the power status and allow power control tasks through the IPMI shell.




NOTE: To enable Advanced Power Control, install Baseboard Management Controller Management Utility (BMU) in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To check the power status of a system:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alert Views**.
2. Select the desired Dell system in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Check Power Status**.

Power Cycle

The **Power Cycle** task allows you to turn off the Dell system and turn it on again after a delay.


 **NOTE:** To enable **Advanced Power Control**, install BMU in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To run the power cycle:

1. In the OpsMgr console, navigate to a **Diagram Views**, **State Views**, or **Alert Views**.
2. Select the desired Dell system in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Power Cycle**.

Force Power Off

The **Force Power Off** task allows you to turn off the system without shutting down the operating system.


 **NOTE:** To enable **Advanced Power Control**, install BMU in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To power off the system:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alert Views**.
2. Select the desired Dell system in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Force Power Off**.

Power Off Gracefully

The **Power Off Gracefully** task allows you to shut down the operating system and power off the system.


 **NOTE:** To enable **Advanced Power Control**, install BMU in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To power off the system gracefully:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alert Views**.
2. Select the desired Dell system in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Power Off Gracefully**.

Power On

The **Power On** task allows you to power on the server. This option is available even if the system power is off.


 **NOTE:** To enable **Advanced Power Control**, install BMU in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To power on a system:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Power On**.

Power Reset

The **Power Reset** task allows you to power off and then power on the system.


 **NOTE:** To enable **Advanced Power Control**, install BMU in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To reset the power of the system:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Power Reset**.

Turn LED Identification On

The **Turn LED Identification On** task allows you to turn on the LED identification on the selected system.


 **NOTE:** To enable **Advanced Power Control**, install BMU in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To turn on LED identification:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Turn LED Identification On**.

Turn LED Identification Off

The **Turn LED Identification Off** task allows you to to turn off the LED identification on the selected system.

 **NOTE:** To enable **Advanced Power Control**, install BMU in the default path. If BMU is not installed in the default path, create a new console task. For more information on creating a new console task, see [Creating Advanced Power Control And LED Identification Tasks](#).

To turn off LED identification:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Turn LED Identification Off**.


Get Warranty Information

The **Get Warranty Information** task allows you to view the warranty status of the selected system.

To get warranty information:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Get Warranty Information**.

Launch Dell OpenManage Power Center

 **NOTE:** Launching OpenManage Power Center is possible only if Windows or Linux operating system and OpenManage Server Administrator are installed on the managed node.


The **Launch Dell OpenManage Power Center** task allows you to launch the OpenManage Power Center console.

To launch Dell OpenManage Power Center:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Server Tasks** → **Launch Dell OpenManage Power Center**.

Launch Dell License Manager On X32 Bit Management Server

The **Launch Dell License Manager on X32 bit Management Server** task allows you to launch the Dell License Manager on a management server running 32-bit operating system. Dell License Manager is a one-to-many license deployment and reporting tool for Dell iDRAC licenses.


 **NOTE:** If the Dell License Manager has not been installed in the default path, create a new task to launch Dell License Manager. For more information, see [Creating A Launch License Manager Task](#).

To launch Dell License Manager:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Launch Dell License Manager on X32 bit Management Server**.

Launch Dell License Manager On X64 Bit Management Server

The **Launch Dell License Manager on X64 bit Management Server** task allows you to launch the Dell License Manager on management systems running 64-bit operating system. Dell License Manager is a one-to-many license deployment and reporting tool for Dell iDRAC licenses.


 **NOTE:** If the Dell License Manager has not been installed in the default path, create a new task to launch Dell License Manager. For more information, see [Creating A Launch License Manager Task](#).


To launch Dell License Manager:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Launch Dell License Manager on X64 bit Management Server**.

Reports

The reporting feature allows you to create reports for Dell OpenManage Windows Event Log, Dell Server BIOS, Firmware, and RAID configuration.

 **NOTE:** Dell Server BIOS, firmware, and RAID configuration reports are only available in the Detailed Edition of Server (In-band) management pack.

 **NOTE:** In System Center Operations Manager 2007 R2, the **Tasks** pane is referred to as **Actions** pane.

Accessing Reports

To access the reporting:

1. Click **Reporting** in your OpsMgr console.
2. Expand **Reporting** → **Application Monitoring** in the navigation pane.
3. Click on **Dell Windows Server (Scalable Edition)** for the Windows Event Log and click on **Dell Windows Server (Detail Edition)** for BIOS, firmware and driver versions, and RAID reports.


You can also access **Reporting** from the **Diagram View** by clicking on the server instance. The option for **Dell Reports** is located in the **Tasks** pane under the Dell System instance reports along with the default Microsoft reports.

Generating OpenManage Windows Event Log Report

To create a report for OpenManage Windows Event Logs:

1. On the OpsMgr console, click **Reporting**.
2. Expand **Reporting** → **Application Monitoring** in the navigation pane.
3. Click **Dell Windows Server (Scalable Edition)**.
4. Click **OpenManage Windows Event Log** then click **Open** in the **Tasks** pane.
5. Select a time period for which you want the report generated.
6. Click **Add Object**.
7. Search for `Dell Server` and click **Add**.
You will find the object in the **Selected object** pane.
8. Choose the **Severity** of the events whose report you want to generate.
9. Click **Run**.
The **OpenManage Windows Event Log** report is generated.

Generating BIOS Configuration Report

 **NOTE:** You can create BMC reports only if BMU is installed on the Management Server.

To create a report for the BIOS configuration:

1. On the OpsMgr console, click **Reporting**.
2. Expand **Reporting** → **Application Monitoring** in the navigation pane.
3. Click **Dell Windows Server (Detail Edition)**.
4. Click **BIOS Configuration**, then click **Open** in the **Tasks** pane.
5. Select a time period for which you want the report generated.
6. Click **Add Object**.
7. Search for `Dell Server` and click **Add**.
You will find the object in the **Selected object** pane.
8. Choose the required **Properties**.

9. Click **Run**.
The **BIOS Configuration** report is generated.

Generating Firmware And Driver Versions Report

To create a report for firmware and driver versions:

1. On the OpsMgr console, click **Reporting**.
2. Expand **Reporting** → **Application Monitoring** in the navigation pane.
3. Click **Dell Windows Server (Detail Edition)**.
4. Click **Firmware and Driver Versions**, then click **Open** on the **Task** pane.
5. Select a time period for which you want the report generated.
6. Click **Add Object**.
7. Search for `Dell Server` and click **Add**.
You will find the object in the **Selected object** pane.
8. Click **Run**.
The **Firmware and Driver Versions** report is generated.

Generating RAID Configuration Report

To create a report for RAID configuration:

1. On the OpsMgr console, click **Reporting**.
2. Expand **Reporting** → **Application Monitoring** in the navigation pane.
3. Click **Dell Windows Server (Detailed Edition)**.
4. Click **RAID Configuration**, then click **Open** on the **Task** pane.
5. Select a time period for which you want the report generated.
6. Click **Add Object**.
7. Search for `Dell Server` and click **Add**.
You will find the object in the **Selected object** pane.
8. Choose the required **Properties**.
9. Click **Run**.
The **RAID Configuration** report is generated.

Server Out-Of-Band Monitoring Feature

Server Out-of-band monitoring feature supports the discovery, and monitoring of Dell PowerEdge monolithic and modular servers and Dell PowerVault storage servers, using WSMAN and SNMP.

Management Pack Functionality And Dependencies

The following table lists this version's management packs and utilities, and their dependencies with each other:

Table 9. Management Pack Functionality and Dependencies

Management Pack or Utility	Description	Dependency
Dell.Server.OOB.mp	Management Pack for discovering and monitoring Dell PowerEdge and PowerVault systems up to component groups level.	Dell.Connections.HardwareLibrary.mp Dell.Model.Server.mp Dell.OperationsLibrary.Server.mp Dell.View.Server.mp Dell.OperationsLibrary.Common.mp
Dell.Server.OOB.DetailedMonitoringOn.mp	Management Pack for monitoring Dell PowerEdge and PowerVault systems up to component level.	Dell.Connections.HardwareLibrary.mp Dell.Server.OOB.mp

Comparison Of Scalable And Detailed Edition Features

The following table helps you understand the environment in which you can use Scalable and Detailed Edition of Dell Server Out-of-band management pack.

Table 10. Scalable Management Pack Versus Detailed Management Pack

Features	Scalable Edition	Detailed Edition
Server (Out-of-band) Monitoring	<ul style="list-style-type: none"> Inventory up to individual components. Health monitoring only at server and component group level. 	<ul style="list-style-type: none"> Inventory and health monitoring of individual components. View metrics for power, temperature, and network interface cards.

Discovery And Grouping


The Dell Server Management Pack Suite version 5.2.0 enables you to discover and classify Dell Servers.

The following table lists the details of the hardware discovery and grouping by the Dell Server Out-of-band monitoring feature.

Table 11. Dell Hardware Discovery and Grouping

Group	Diagram View	Hardware Type
Dell Servers	Dell Monolithic Servers Dell Modular Servers	Dell PowerEdge systems Dell PowerVault systems


Discovering A Dell Server Using The Server (Out-Of-Band) Monitoring Feature

 **NOTE:** The Microsoft SMASH Library (MPB) file has to be installed. For information on installing the Microsoft SMASH Library (MPB) file, see the "Installing The Out-Of-Band Monitoring Template" section of the *Dell Server Management Pack Suite Version 5.2.0 For Microsoft System Center Operations Manager Installation Guide* at dell.com/support/manuals.

To discover a Dell server using the Dell Server (Out-of-band) monitoring feature:

1. Log on to OpsMgr 2012 as an administrator for the OpsMgr Management group.
2. On the OpsMgr console, click **Authoring**.
3. At the bottom of the navigation pane, click **Add Monitoring Wizard**.
The **Add Monitoring Wizard** screen appears.
4. On the **Select Monitoring Type** screen, select **WS-Management and SMASH Device Discovery** and click **Next**.
5. On the **General Properties** screen, in the **Name** field provide a name for the wizard.
6. Under **Management pack**, click **New**.
The **Create a Management Pack** screen appears.
7. Provide a name for the management pack in the **Name** field and click **Next**.
For information on creating a management pack, see the OpsMgr documentation at technet.microsoft.com.
8. Click **Create**.
The management pack you created is selected in the **Management pack** drop-down box.
9. Click **Next**.
10. On the **Specify the target** drop-down menu, select a resource pool for monitoring out-of-band devices and click **Next**.
11. On the **Specify the account to be used to run discovery** screen, click **New** and create a Simple Authentication Run As Account.
For more information on creating a Simple Authentication type Run As Account, see [Creating A Simple Authentication Run As Account](#).
12. Select the Run As Account you created from the **Run As Account** drop-down menu and click **Next**.
13. Click **Add**.

14. On the **Add Devices** screen specify the iDRAC IP address of the systems you want to monitor using the Server (out-of-band) monitoring feature. You can specify the iDRAC IP address of the systems by:
 - Scanning the **IP Subnet** that you provided.
 - Scanning a specified **IP Range**.
 - Importing a text file containing the list of iDRAC IP addresses.
15. Click **Advanced Options**, select the **Skip CA Check** and **Skip CN Check** option and click **OK**.
16. Click **Scan for Devices** to search for Dell PowerEdge 12G systems on your network.
The IP addresses are listed under **Available Devices**.
17. Click **Add** to add the list of IP addresses you want to monitor and click **OK**.
18. On the **Specify the devices you want to monitor** screen, click **Create**.
19. Click **Close**.
The scanned Dell servers initially appear in **Monitoring** → **WS-Management and SMASH Monitoring** → **WS-Management Device State** screen. After the automatically triggered SMASH discovery is completed by the OpsMgr, the Dell servers appear in **Monitoring** → **WS-Management and SMASH Monitoring** → **SMASH Device State** screen.
20. Enable the Server (Out-of-band) monitoring feature by importing the required management packs, or through **Feature Management Dashboard**. For more information on importing the required management packs see, [Management Pack Functionality And Dependencies](#).

 **NOTE:** Before discovering a Dell server using the Server (Out-of-Band) monitoring feature, the Dell Connections License Server URL has to be configured and setup. For more information, see the [Configuring Dell Connections License Manager URL](#).

Discoveries By The Dell Server (Out-Of-Band) Monitoring Feature

Table 12. Dell Server (Out-of-Band) Monitoring Feature Discoveries

Discovery Object	Description
Dell Server Discovery	Classifies your Dell server and populates the key attributes and components.
Dell Device Helper Discovery	Discovers the DellDeviceHelper as an object.

Monitoring

After you install the Dell Server Management Pack Suite, you can use the **Monitoring** pane of the OpsMgr to select views that provide health information of the discovered Dell servers. The Server Out-of-band monitoring feature discovers and monitors the health of the Dell servers. The [Severity Level Indicators](#) indicates the health of your Dell servers on the network. It includes monitoring health of Dell modular and monolithic systems and their components at regular intervals and on occurrence of events.

As the system components monitored through Server (In-band) monitoring feature and Server (Out-of-band) are not exactly the same, it is possible that the overall server health that is shown through In-band (OMSA) and Out-of-band (iDRAC) methods could be different. Drill-down to the specific component status when you observe such discrepancies to resolve specific problem conditions in the system component to bring the overall health of the server to **OK** state.

Views

Dell Server Management Pack Suite provides the following types of views for Monitoring, under the **Dell** folder on the OpsMgr console:

- [Alerts Views](#)
- [Diagram Views](#)
- [State Views](#)
- [Performance and Power Monitoring Views](#)

Alerts Views

This view is available for managing hardware and storage events from Dell servers. The following alerts and traps are displayed by the Server Out-of-band monitoring feature:

- Link up or Link down alerts for events received from Broadcom and Intel network interface cards for Dell PowerEdge and PowerVault systems.
- Platform Event Traps (PET) for Dell servers.

Viewing Alerts On The OpsMgr Console

To view Server Out-of-band monitoring feature alerts on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring**.
2. Click **Dell** → **Alerts Views**.

The following individual **Alerts Views** is displayed:

- **Server Alerts** — SNMP traps for Dell PowerEdge 12G and PowerVault servers with iDRAC 7 are displayed.
3. Select **Server Alerts**.
On the right pane of each of the individual **Alerts Views**, alerts that meet the criteria you specify, such as alert severity, resolution state, or alerts that are assigned to you is displayed.
 4. Select an alert to view the details in the **Alert Details** pane.

Diagram Views

The **Diagram Views** offers a hierarchical and graphical representation of all Dell servers on your network.

Viewing Diagram Views On The OpsMgr Console

To view the Server In-band diagram views on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring** → **Dell** → **Diagram Views**.
2. Navigate to the **Diagram Views** folder for the following views:

- [Complete Diagram View](#)
- [Modular Systems Diagram](#)
- [Monolithic Servers Diagram](#)

3. Select any of the **Diagram Views**.

On the right pane the hierarchical and graphical representation of the selected Dell device is displayed.

4. Select a component in the diagram to view its details in the **Detail View** pane.

Complete Diagram View

The **Complete Diagram View** offers a graphical representation of all Dell devices that OpsMgr monitors. You can expand and verify the status of individual devices and their components in the diagram. You can view details for:

- Modular and Monolithic systems
- Chassis Management Controllers and DRAC/MC devices
- Remote Access Controllers
- Dell Unmanaged Servers

Modular And Monolithic Systems

The **Modular Systems Diagram** and **Monolithic Servers Diagram** views offer the following details:

- Physical and teamed network interfaces
- Memory
- Power supply
- Sensors
- Processors
- Dell OpenManage software services
- Storage controller
- BIOS (inventory only)
- iDRAC NIC

Modular Systems Diagram

The **Dell Modular Systems Diagram View** offers a graphical representation of all Dell modular systems and allows you to expand and verify the status of individual devices and their components in the diagram.

Monolithic Servers Diagram

The **Dell Monolithic Systems Diagram View** offers a graphical representation of all Dell monolithic systems and allows you to expand and verify the status of individual devices and their components in the diagram.

Dell Server Instance Diagram

Select a Dell system, from the **Dell Modular System** or **Dell Monolithic System** diagram views, to view the diagram specific to that particular system.

System-specific diagrams illustrate and indicate the status of the following components:

- Physical interfaces
- Memory
- Power supply
- Sensors
- Processors
- Storage controller
- BIOS (inventory only)
- iDRAC NIC

The memory, processors, and power supply components are displayed in detail by the Detailed edition of the Server monitoring feature.

Storage Controller Component Hierarchy

Expand the **Storage** component in any Dell system instance diagram view, to view the status and health of components such as physical disks, connectors, virtual disks, controllers, sensors, and enclosures.

State Views

This view is available for viewing the health state of Dell servers (Out-of-band). In the OpsMgr console, click **Dell** → **State Views**, the status of each Dell server managed by OpsMgr on your network is displayed.

You can view the status for the following groups:

- **Managed servers (Out-Of-Band)**
- **Unmanaged servers (Out-Of-Band)**

Performance And Power Monitoring Views

To view the performance and power monitoring on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring**.
2. In the **Monitoring** pane, click **Dell** → **Performance and Power Monitoring** → **Dell Performance View**.



NOTE: All performance metric rules are disabled by default for Server Out-of-band monitoring feature.

3. Select the counters from the individual performance views and select the time range for which the values are required.

The data collected is represented in a graphical format for each system.

A unit monitor, monitors the performance counter over two successive cycles to check if it exceeds a threshold value. When the threshold value is exceeded, the server changes state and generates an alert. This unit monitor is disabled by default. You can override (enable and modify) the threshold values from the **Authoring** pane of the OpsMgr console. Unit monitor is available under **Monitors for Dell Server objects** for Server (Out-of-band) monitoring feature.

For more information on performance information collection, see [Performance Collection Rules](#).

Dell Unit Monitors For Server (Out-of-Band) Monitoring Feature

Monitors to assess various conditions that can occur in Server (Out-of-band) monitored objects.

Table 13. Dell Unit Monitors For Server (Out-of-Band) Monitoring

Object	Unit Monitor
Dell Server	
Dell Server Run As Account Association	Periodic

Object	Unit Monitor
Dell Server Unit Monitor	Periodic
Dell Server Memory	
Dell Server Memory Unit	Periodic
Dell Server Memory Group	
Dell Server Memory Group	Periodic
Dell Server Power Supply	
Dell Server Power Supply Unit	Periodic
Dell Server Power Supply Group	
Dell Server Power Supply Group	Periodic
Dell Server Processor	
Dell Server Processor	Periodic
Dell Server Processor Group	
Dell Server Processor Group	Periodic
Dell Storage Controller	
Dell Server Storage Controller	Periodic
Dell Server Controller Battery	
Dell Server Controller Battery Unit	Periodic
Dell Battery Sensor	
Dell Server Battery Sensor Health	Periodic
Dell Battery Sensor Group	
Dell Server Battery Group Sensor Health	Periodic
Dell Current Sensor	
Dell Server Current Sensor Health	Periodic
Dell Fan Sensor	

Object	Unit Monitor
Dell Server Fan Sensor Health	Periodic
Dell Fan Sensor Group	
Dell Server Fan Group Sensor Health	Periodic
Dell Intrusion Sensor	
Dell Server Intrusion Sensor Health	Periodic
Dell Modular Blade Server With Operating System	
Dell Server Run As Account Association	Periodic
Dell Server Unit Monitor	Periodic
Dell Modular Blade Server Without Operating System	
Dell Server Run As Account Association	Periodic
Dell Server Unit Monitor	Periodic
Dell Monolithic Server With Operating System	
Dell Server Run As Account Association	Periodic
Dell Server Unit Monitor	Periodic
Dell Monolithic Server Without Operating System	
Dell Server Run As Account Association	Periodic
Dell Server Unit Monitor	Periodic
Dell Network Interfaces Group	
Dell Server Network Interface Group	Periodic
Dell Physical Network Interface	
Dell Server Network Interface Unit	Periodic
Dell Server Connector Enclosure	
Dell Server Connector Enclosure	Periodic
Dell Storage Controller Enclosure EMM	

Object	Unit Monitor
	Dell Server Enclosure EMM Periodic
Dell Storage Controller Enclosure Fan Sensor	
	Dell Server Enclosure Fan Sensor Periodic
Dell Storage Controller Enclosure Physical Disk	
	Dell Server Enclosure External Physical Disk Periodic
Dell Storage Controller Enclosure Power Supply	
	Dell Server Enclosure Power Supply Periodic
Dell Storage Controller Enclosure Temperature Sensor	
	Dell Server Temperature Sensor Periodic
Dell Storage Controller Internal Physical Disk	
	Dell Server Internal Physical Disk Unit Periodic
Dell Storage Controller Physical Disk	
	Dell Server Controller Direct Attached Physical Disk Periodic
Dell Storage Group	
	Dell Server Storage Periodic
Dell Storage Virtual Disk	
	Dell Server Controller Virtual Disk Unit Periodic
Dell Temperature Sensor	
	Dell Server Temperature Sensor Health Periodic
Dell Temperature Sensor Group	
	Dell Server Temperature Sensor Group Health Periodic
Dell Voltage Sensor	
	Dell Server Voltage Sensor Health Periodic

Object	Unit Monitor	
Dell Voltage Sensor Group		
	Dell Server Sensors Voltage Group	Periodic

Rules

The following section lists the rules specific to the Dell Server Out-of-band monitoring feature.

Dell Systems Event Processing Rules

The Dell Server Management Pack Suite processes rules from Dell Servers.

Dell Servers

All informational, warning, and critical SNMP traps for Dell servers discovered using Server (Out-of-band) monitoring feature, have a corresponding SNMP trap rule.

Each of these rules are processed based on the following criteria:

- Source Name = "Dell Server ip"
- OID = Actual trap ID of the trap event
- Data Provider = SNMP trap event provider

Tasks

Tasks are available in the **Tasks** pane of the OpsMgr console. When you select a device or a component, the relevant tasks appear in the **Tasks** pane.

 **NOTE:** In OpsMgr 2007 R2, the **Tasks** pane is referred to as **Actions** pane.





Task Summary

Performing Dell Tasks Using Dell Server (Out-Of-Band)

Following table provides a summary of the Dell tasks that you can perform using Dell Server (Out-of-band):

Table 14. Dell Tasks Using Dell Server (Out-of-band)

Task	Description
Launch Dell Remote Access Console	Launches the iDRAC console for the out-of-band discovered servers.
Launch Dell License Manager	Launches the Dell License Manager on the management system.

Task	Description
	 NOTE: Launching Dell License Manager is possible only if a Windows or Linux operating system is installed and Dell License Manager is also installed.
Launch Remote Desktop Monolithic Server	Launches the remote desktop for the selected system.  NOTE: Launching remote desktop is possible only if Windows operating system is installed and remote desktop is manually enabled in the managed node.
Launch Dell OpenManage Power Center	Launches the Dell OpenManage Power Center console for the selected system.  NOTE: Launching OpenManage Power Center is possible only if Windows or Linux operating system and, OpenManage Server Administrator is installed, and Dell OpenManage Power Center are installed on the managed node.
Get Warranty Information	Retrieves the warranty information for the selected system.  NOTE: An active Internet connection is required to retrieve the warranty information.

Dell Modular and Monolithic Systems Tasks (Out-Of-Band)


Get Warranty Information

You can use this task to see the warranty status of the selected system.

To get warranty information:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Server Tasks** → **Get Warranty Information**.

Launch Remote Desktop (Monolithic Server)

 **NOTE:** Launching remote desktop is possible only if the Windows operating system is installed and remote desktop is manually enabled in the managed node.

To launch Remote Desktop from the OpsMgr console:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.

3. In the **Tasks** pane, select **Dell Server Tasks** → **Launch Remote Desktop (Monolithic Server)**.

Launch Dell OpenManage Power Center

You can use this task to launch the OpenManage Power Center console.

To launch Dell OpenManage Power Center:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** → **Launch Dell OpenManage Power Center**.


Launch Dell Remote Access Console

To launch Dell Remote Access Console:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Task** pane, select **Dell Server Tasks** → **Launch Dell Remote Access Console**.

Launch Dell License Manager

The **Launch Dell License Manager** task allows you to launch the Dell License Manager on management systems. Dell License Manager is a one-to-many license deployment and reporting tool for Dell iDRAC licenses.


 **NOTE:** If the Dell License Manager has not been installed in the default path create a new task to launch Dell License Manager. For more information, see [Creating A Launch License Manager Task](#).


To launch Dell License Manager:

1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. In the **Task** pane, select **Dell Windows Server Tasks** → **Launch Dell License Manager**.

Configuring Dell Connections License Manager URL

Perform this task before importing the Server (Out-of-band) monitoring feature, as Dell servers are discovered only after the Dell Connections License Server is configured.

 **NOTE:** If you have already imported the Server (Out-of-band) monitoring feature, the Dell servers are discovered only in the next discovery cycle and an alert is generated in the **Feature Management Dashboard** prompting you to configure the Dell Connections License Manager URL. For more information, see [Feature Management Alerts](#).

 **NOTE:** If the management server has been restarted, the discovered Dell servers will appear only after the next discovery cycle.

1. Install the Dell Connections License Manager. For more information, see *Dell Connections License Manager Version 1.1 Installation Guide* at dell.com/support/manuals.
2. Obtain licenses for the monitoring feature. For more information, see the "Managing Connections License Manager" section in the *Dell Connections License Manager Version 1.1 User's Guide* at dell.com/support/manuals.
3. Launch the OpsMgr 2012 console.

4. From the navigation pane, click **Monitoring**.
5. Expand **Monitoring** → **Dell** → **Feature Management Dashboard**.
6. Select **Server (Out-of-band) Monitoring** feature.
7. From the **Dell Monitoring Feature Tasks** pane, select **Configure License Server**.
The **Run Task - Configure License Server** screen is displayed.
8. Click **Override**.
The **Override Task Parameters** screen is displayed.
9. In the **LicenseWebServiceURL** parameter, under the **New Value** column type the license web service URL (the license webservice URL uses the default port as 8543) in the following format **http://<License Server IP>: <port number>/**.
For example: `http://10.56.123.255:8543/`.
10. In the **LicenseWebUIURL** parameter, under the **New Value** column type the license web UI URL (the license web UI URL uses the default port as 8544) in the following format **http://<License Server IP>: <port number>/**.
For example: `http://10.56.123.255:8544/`.
11. Click **Override**.
The **Run Task - Configure License Server** screen is displayed.
12. Click **Run**.
The **Task Status - Configure License Server** screen is displayed. The **Configure License Server** task takes several minutes to complete.



NOTE: Wait for the task to complete (view the state update change in the dashboard) before launching another task through the **Feature Management Dashboard**.

DRAC Monitoring Feature

DRAC monitoring feature supports discovery, and monitoring for various generations (DRAC 5, iDRAC 6 modular, iDRAC 7 modular and monolithic systems) using SNMP.

Management Pack Functionality And Dependencies

The following table lists Dell Server Management Pack Suite management packs and utilities, and their dependencies with each other:

Table 15. Management Pack Functionality and Dependencies

Management Pack or Utility	Description	Dependency
Dell.DRAC.OM07.MP Dell.DRAC.OM12.MP	Management pack for discovering and monitoring Dell Remote Access Cards - DRAC 5, iDRAC Modular and iDRAC Monolithic.	Dell.Connections.HardwareLibrary.mp Dell.Model.DRAC.mp Dell.OperationsLibrary.DRAC.mp Dell.View.DRAC.mp Dell.OperationsLibrary.Common.mp

Comparison Of Scalable And Detailed Edition Features

The following table helps you understand the environment in which you can use Scalable and Detailed Edition features.

Table 16. Scalable Management Pack Versus Detailed Management Pack


Features	Scalable Edition	Detailed Edition
Chassis Monitoring	<ul style="list-style-type: none"> Chassis inventory Chassis slots summary Health monitoring of chassis 	Inventory and health monitoring of individual chassis components.

Discovery And Grouping

The Dell Server Management Pack Suite version 5.2.0 enables you to discover and classify Dell Remote Access Controllers (DRAC), and integrated DRAC (iDRAC).

The following table lists the details of the hardware discovery and grouping by the Dell DRAC monitoring feature.

Table 17. Dell Hardware Discovery and Grouping

Group	Monitoring Feature	Diagram View	Hardware Type
Dell Remote Access Controllers	Dell DRAC Monitoring	Remote Access Controller Group	DRAC 5, iDRAC modular, and iDRAC monolithic instances.  NOTE: DRAC monitoring feature does not support the discovery of xx0x iDRAC modular controllers. You can manage these devices using the Scalable Edition of Server (In-band) monitoring feature.

Discovering DRAC Devices

The DRAC devices must be discovered as network devices under the **Administration** section of the OpsMgr console.

To discover DRAC devices:

1. Log on to the management server as an OpsMgr administrator.
2. On the OpsMgr console, click **Administration**.
3. At the bottom of the navigation pane, click **Discovery Wizard**.
4. Run the **Discovery Wizard**, select **Network devices** and follow the instructions on the screen.
For more information, see the OpsMgr documentation at technet.microsoft.com.
5. On the **Add a Device console** screen in OpsMgr 2012, type the IP address that you want to scan, select the appropriate **Run As account** from the SNMP V1 or V2 **Run As account** drop-down box.
6. Enable the DRAC monitoring feature using **Feature Management Dashboard**.

Scalability Recommendation For OpsMgr 2012

When managing large number of network devices in a distributed setup, use dedicated resource pools of Management Servers for each device type, if the same Management Group is also used to manage agent-based devices.


Discoveries By The DRAC Monitoring Feature

Table 18. DRAC Monitoring Feature Discoveries

Discovery Object	Description
DRAC 5 or iDRAC Discovery	Discovers all supported Dell Remote Access 5 Controllers and Integrated Remote Access Controllers.
Dell Integrated Remote Access Modular Discovery	Discovers the Chassis Name and Chassis Service Tag of Dell Integrated Remote Access Controllers for Modular systems.
iDRAC 6 Modular Discovery	Discovers the iDRAC 6 (Modular) group.
iDRAC 6 Monolithic Discovery	Discovers the iDRAC 6 (Monolithic) group.
iDRAC 7 Modular Discovery	Discovers the iDRAC 7 (Modular) group.
iDRAC 7 Monolithic Discovery	Discovers the iDRAC 7 (Monolithic) group.
Dell Remote Access Group Discovery	Discovers the Dell Remote Access group and populates iDRAC.
Dell Remote Access 5 Group Discovery	Discovers the Dell Remote Access 5 group with Dell Remote Access 5 Controllers.
Dell Integrated Remote Access Monolithic Group Discovery	Discovers the Dell Integrated Remote Access Monolithic group and iDRAC (Monolithic).
Dell Integrated Remote Access Modular Group Discovery	Discovers and populates the iDRAC (Modular) group.

Monitoring

After you install the Dell Server Management Pack Suite, you can use the **Monitoring** pane of the OpsMgr to select views that provide complete health information of the discovered Dell DRAC devices. The DRAC monitoring feature discovers and monitors the health of the Dell DRAC devices. It includes monitoring health of Dell DRAC devices, both at regular intervals and on occurrence of events. The [Severity Level Indicators](#) indicates the health of your Dell DRAC devices on the network.

 **NOTE:** To monitor the health of DRAC devices, associate the community string Run As account with the SNMP Monitoring Account with the target as Dell Remote Access Controller class or respective DRAC object (if you have different Run As accounts for different DRAC devices).

Alerts Views

This view is available for managing hardware and storage events from Dell DRAC devices. SNMP traps sent by DRAC devices are displayed by the DRAC monitoring feature.

Viewing Alerts On The OpsMgr Console

To view DRAC alerts on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring**.
2. Click **Dell** → **Alerts Views** → **Remote Access Alerts**.
The **Remote Access Alerts** is displayed. These alerts contains information on SNMP traps from DRAC 5, iDRAC 6, and iDRAC 7 devices.
3. Select an alert to view the details in the **Alert Details** pane.
On the right pane of each of the individual **Alerts Views**, alerts that meet the criteria you specify, such as alert severity, resolution state, or alerts that are assigned to you is displayed.

Diagram Views

The **Diagram Views** offers a hierarchical and graphical representation of all Dell DRAC devices on your network.

Viewing Diagrams On The OpsMgr Console

To view the diagrams for DRAC monitoring feature on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring** → **Dell** → **Diagram Views**.
2. In the **Monitoring** pane on the left side, navigate to the **Diagram Views** folder for the following views:
 - [Complete Diagram View](#)
 - [Remote Access Controllers Group](#)
3. Select any of the **Diagram Views**.
On the right pane the hierarchical and graphical representation of the selected Dell device is displayed.
4. Select a component in the diagram to view its details in the **Detail View** pane.

Complete Diagram View

The **Complete Diagram View** offers a graphical representation of all Dell devices that OpsMgr monitors. You can expand and verify the status of individual devices and their components in the diagram. You can view details for:

- Modular and Monolithic systems
- Chassis Management Controllers and DRAC/MC devices
- Remote Access Controllers
- Dell Unmanaged Servers

Remote Access Controllers Group

The **Remote Access Controllers Group** diagram view offers a graphical representation of all DRAC 5, iDRAC 6, and iDRAC 7 (modular and monolithic) devices. Select a component in the diagram to view its details in the **Detail View** pane.

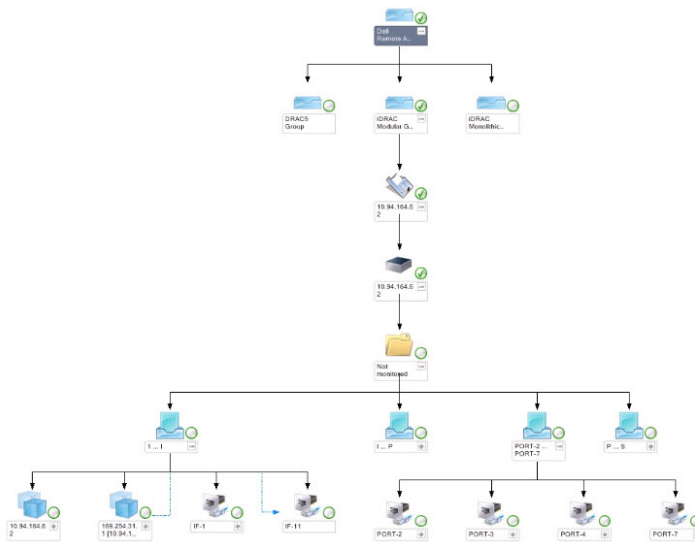


Figure 3. Remote Access Controllers Group Diagram

State Views

This view is available for viewing the health of the Dell DRAC devices. In the OpsMgr console, click **Dell** → **State Views**, the status of each Dell DRAC device managed by OpsMgr on your network is displayed.


Select the Dell DRAC device group for which you want to see the State view. You can view the status of the DRAC/MC device group.


The health of a component is derived by reviewing the unresolved alerts associated with the component. [Severity Level Indicators](#) explains the various state components that the Dell Server Management Pack Suite uses with their corresponding severity levels.

Dell Unit Monitors For DRAC Monitoring Feature

Monitors to assess various conditions that can occur in DRAC monitored objects.

Table 19. Dell Unit Monitors For DRAC Monitoring Feature

Object	Unit Monitor
Dell Remote Access Controller 5	
Dell Remote Access Status	Event and Periodic  NOTE: DRAC 5 and iDRAC 6 share the same unit monitor.
iDRAC 6 Modular	
Dell Remote Access Status	Event and Periodic

Object	Unit Monitor
iDRAC 6 Monolithic	
Dell Remote Access Status	Event and Periodic
iDRAC 7 Modular	
Dell Remote Access Status	Event and Periodic
Controller Global Status	Event and Periodic
Controller Global Storage Status	Event and Periodic
iDRAC 7 Monolithic	
 NOTE: For iDRAC 7 modular and iDRAC 7 monolithic devices, the Dell RAC periodic-based and Dell RAC triggered-based unit monitors are disabled.	
Dell Remote Access Status	Event and Periodic
Controller Global Status	Event and Periodic
Controller Global Storage Status	Event and Periodic

Rules

The following section lists the rules specific to the Dell DRAC monitoring feature.

Dell Systems Event Processing Rules


The Dell Server Management Pack Suite processes rules from DRAC traps.

DRAC Devices

All informational, warning, and critical SNMP traps for the DRAC devices have a corresponding SNMP trap rule.

Each of these rules are processed based on the following criteria:

- Source Name = "DRAC/CMC/DRAC/MC name or ip"
- OID = Actual trap ID of the DRAC /CMC/DRAC/MC SNMP trap event
- Data Provider = SNMP trap

 **NOTE:** Informational alerts are turned off by default. To receive these alerts, import informational alerts management pack.

Tasks

Tasks are available in the **Tasks** pane of the OpsMgr console. When you select a device or a component, the relevant tasks appear in the **Tasks** pane.



 **NOTE:** In OpsMgr 2007 R2, the **Tasks** pane is referred to as **Actions** pane.

Task Summary

Performing Dell Tasks Using DRAC

Following table provides a summary of the Dell tasks that you can perform using the DRAC:

Table 20. Dell Tasks Using The DRAC

Task	Description
Launch Dell Remote Access Console	Launches the DRAC console for the discovered DRAC.
Launch Dell License Manager	Launches the Dell License manager on the management system.
Launch Remote Desktop	Launches the remote desktop for the selected system.  NOTE: This feature is available only on systems with iDRAC 7.
Launch Dell OpenManage Server Administrator	Launches the Dell OpenManage Server Administrator.  NOTE: This feature is available only on systems with iDRAC 7.

Dell Remote Access Controller (DRAC) Tasks

Launch Dell Remote Access Console

You can use this task to launch the Dell Remote Access Console, if the DRAC is installed on your Dell system.

To launch Dell Modular Chassis Remote Access console:


1. In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the desired DRAC/iDRAC device in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. *On systems running System Center Operations Manager 2007 R2 :*
In the **Actions** pane, select **SNMP Network Device Tasks** → **Launch Dell Remote Access Console**.

On systems running OpsMgr 2012 :

In the **Tasks** pane, select **Dell Remote Access Controller Tasks** → **Launch Dell DRAC Console**.

Launch Dell License Manager


The **Launch Dell License Manager** task allows you to launch the Dell License Manager on management systems. Dell License Manager is a one-to-many license deployment and reporting tool for Dell iDRAC licenses.

 **NOTE:** If the Dell License Manager has not been installed in the default path, create a new task to launch Dell License Manager. For more information, see [Creating A Launch License Manager Task](#).

To launch Dell License Manager:

1. In the OpsMgr console, navigate to a Dell **Diagram Views, State Views, or Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views or State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Remote Access Controller Tasks → Launch Dell License Manager**.

Launch Dell OpenManage Server Administrator


 **NOTE:** The Dell OpenManage Server Administrator feature is available only on systems with iDRAC 7.

To launch Dell OpenManage Server Administrator:


1. In the OpsMgr console, navigate to a Dell **Diagram Views, State Views, or Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views or State Views** or an alert in the **Alerts Views**.
3. In the **Tasks** pane, select **Dell Remote Access Controller Tasks → Launch Dell OpenManage Server Administrator**.
4. *On systems running System Center Operations Manager 2007 R2 :*
In the **Actions** pane, select **SNMP Network Device Tasks → Launch Dell OpenManage Server Administrator**.


On systems running OpsMgr 2012 :

In the **Tasks** pane, select **Dell Remote Access Controller Tasks → Launch Dell OpenManage Server Administrator**.

 **NOTE:** Server Management Pack Suite Tasks launches the Remote Console in Internet Explorer.

Launch Remote Desktop

 **NOTE:** The remote desktop feature is available only on systems with iDRAC 7.

 **NOTE:** Launching remote desktop is possible only if remote desktop is enabled manually in the managed node.

To launch remote desktop:

1. In the OpsMgr console, navigate to a Dell **Diagram Views, State Views, or Alerts Views**.
2. Select the desired Dell server in any of the **Diagram Views or State Views** or an alert in the **Alerts Views**.
3. *On systems running System Center Operations Manager 2007 R2 :*
In the **Actions** pane, select **SNMP Network Device Tasks → Launch Dell OpenManage Server Administrator**.

On systems running OpsMgr 2012 :

In the **Tasks** pane, select **Dell Remote Access Controller Tasks → Launch Dell OpenManage Server Administrator**.

Chassis Monitoring Feature

Chassis monitoring feature supports discovery, and monitoring of Chassis Management Controller (CMC) on, Dell PowerEdge VRTX chassis, and Dell PowerEdge M1000e chassis using SNMP and WS-Man.

Management Pack Functionality And Dependencies

The following table lists Dell Server Management Pack Suite management packs and utilities, and their dependencies with each other:

Table 21. Management Pack Functionality and Dependencies

Management Pack or Utility	Description	Dependency
Dell.CMC.OM07.mp Dell.CMC.OM12.mp	Management pack for discovering and monitoring CMC (M1000e, PowerEdge VRTX), and DRAC/MC.	Dell.Connections.HardwareLibrary.mp Dell.Model.CMC.mp Dell.OperationsLibrary.CMC.mp Dell.View.CMC.mp Dell.OperationsLibrary.Common.mp
Dell.Chassis.Detailed.mp	Management pack for monitoring CMC (M1000e, PowerEdge VRTX), and DRAC/MC up to component level.	Dell.Connections.HardwareLibrary.mp Dell.Model.CMC.mp Dell.OperationsLibrary.CMC.mp Dell.View.CMC.mp Dell.OperationsLibrary.Common.mp

Discovery And Grouping

The Dell Server Management Pack Suite version 5.2.0 enables you to discover and classify Dell Chassis Management Controllers (CMC), Dell PowerEdge M1000e, and Dell PowerEdge VRTX.

The following table lists the details of the hardware discovery and grouping by the Dell CMC monitoring feature.

Table 22. Dell Hardware Discovery and Grouping

Group	Diagram View	Hardware Type
Dell CMC	Dell Chassis Management Controllers (CMC) group	CMC, DRAC/MC instances on the network, chassis slot summary and server modules for CMC and DRAC/MC.
Dell PowerEdge M1000e	Dell M1000e Chassis group	Dell PowerEdge M1000e
Dell PowerEdge VRTX	Dell VRTX Chassis group	Dell PowerEdge VRTX

Discovering Chassis Devices

The Chassis devices should be discovered as network devices under the **Administration** section of the OpsMgr console.

To discover Chassis devices:

1. Log on to the management server as an OpsMgr administrator.
2. On the OpsMgr console, click **Administration**.
3. At the bottom of the navigation pane, click **Discovery Wizard**.
4. Run the **Discovery Wizard**, select **Network devices** and follow the instructions on the screen.

For more information, see the OpsMgr documentation at technet.microsoft.com.



NOTE: Select the **Run As accounts** created for discovering the chassis devices. For more information, see the "Configuring Dell Chassis Management Controller Feature For Correlating Server Modules With Chassis Slot Summary" section of the *Dell Server Management Pack Suite Version 5.2.0 For Microsoft System Center Operations Manager Installation Guide* at dell.com/support/manuals.

5. On the **Add a Device console** screen in OpsMgr 2012, type the IP address that you want to scan, select the appropriate Run As account from the SNMP V1 or V2 **Run As account** drop-down box.
6. Enable the Chassis monitoring feature using the **Feature Management Dashboard**.

Discoveries By The Dell Chassis Monitoring Feature


Table 23. Dell Chassis Monitoring Feature Discoveries

Discovery Object	Description
Dell CMC Discovery	Discovers all supported Dell CMCs, PowerEdge VRTX, and PowerEdge M1000e.
Dell CMC Slot Discovery	Discovers slots on the CMC device.
Dell Chassis Detailed Discovery	Discovers all Dell chassis components.
Dell DRAC/MC Discovery	Discovers all supported Dell DRAC/MCs.
Dell DRAC/MC Slot Discovery	Discovers slots and chassis slot summary.

Monitoring

After you install the Dell Server Management Pack Suite, you can use the **Monitoring** pane of the OpsMgr to select views that provide complete health information of the discovered Dell CMC and DRAC/MC devices. The Chassis monitoring feature discovers and monitors the health of the Dell CMC and DRAC/MC devices. The [Severity Level Indicators](#) indicates the health of your Dell CMC and DRAC/MC devices on the network.

Chassis Monitoring includes monitoring the health of Dell chassis, and DRAC/MC devices, both at regular intervals and on occurrence of events.

 **NOTE:** To perform Chassis Detailed monitoring, create Run As Accounts with WS-Man credentials needed for accessing the Dell CMCs and associate it to the profiles – Dell CMC Login Account Run As Profiles.

Alerts Views

This view is available for managing hardware and storage events from Dell CMC and DRAC/MC devices. SNMP traps sent by Chassis and DRAC/MC devices are displayed by the Chassis monitoring feature.

Viewing Alerts On The OpsMgr Console

To view Chassis Monitoring alerts on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring**.
2. Click **Dell** → **Alerts Views**.

The following individual **Alerts Views** are displayed:

- **CMC Alerts** – SNMP traps from the discovered Chassis devices are displayed.
 - **DRAC/MC Alerts** – Events and SNMP traps from the discovered DRAC/MC devices, and SNMP traps (for NICs) for 12th generation PowerEdge servers with iDRAC 7 are displayed.
 - **Dell M1000e Chassis Alerts**– SNMP traps from the discovered Dell PowerEdge M1000e chassis device are displayed.
 - **Dell VRTX Chassis Alerts**– SNMP traps from the discovered Dell PowerEdge VRTX chassis device are displayed.
3. Select any of the **Alerts Views**.
On the right pane of each of the individual **Alerts Views**, alerts that meet the criteria you specify, such as alert severity, resolution state, or alerts that are assigned to you is displayed.
 4. Select an alert to view the details in the **Alert Details** pane.

Diagram Views

The **Diagram Views** offers a hierarchical and graphical representation of all Dell CMC devices, Dell M1000e, and Dell VRTX on your network.

Viewing Diagrams On The OpsMgr Console

To view the diagrams for chassis monitoring feature on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring** → **Dell** → **Diagram Views**.
2. Navigate to the **Diagram Views** folder for the following views:
 - [Complete Diagram View](#)
 - [Chassis Management Controllers Group](#)
 - [Dell Chassis Diagram Views](#)
 - Dell M1000e Chassis Diagram View
 - Dell VRTX Chassis Diagram View
3. Select any of the **Diagram Views**.
On the right pane the hierarchical and graphical representation of the selected Dell device is displayed.
4. Select a component in the diagram to view its details in the **Detail View** pane.

Complete Diagram View

The **Complete Diagram View** offers a graphical representation of all Dell devices that OpsMgr monitors. You can expand and verify the status of individual devices and their components in the diagram. You can view details for:

- Modular and Monolithic systems
- Chassis Management Controllers and DRAC/MC devices
- Remote Access Controllers
- Dell Unmanaged Servers

Chassis Management Controllers Group

The **Chassis Management Controllers Group** diagram view offers a graphical representation of all Dell CMC, DRAC/MC, Dell PowerEdge M1000e and Dell PowerEdge VRTX, and their inventory. For Chassis discovery, see [Discovering Chassis Devices](#).

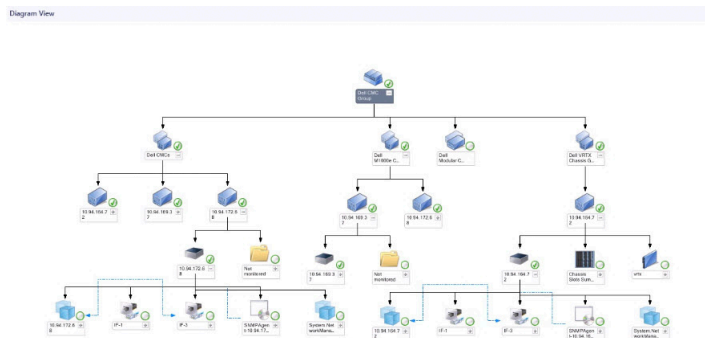




Figure 4. Chassis Management Controllers Group Diagram

For discovered CMC and DRAC/MC chassis, you can view the occupied and free slot summary in the **Chassis Slots Summary**.

Slot names modified on CMC and DRAC/MC chassis are reflected in the diagram view.

The correlation of Dell servers with the server modules of CMC and DRAC/MC chassis are displayed in the **Chassis Management Controllers Group** diagram. The Dell system is visible under the slot in the diagram.

 **NOTE:** Create **Run As Account** for CMC and DRAC/MC slots discovery with simple, basic, or digest authentication only. For more information, see "Configuring the Dell Chassis Management Controller Feature For Correlating Server Modules With Chassis Slot Summary" section of the *Dell Server Management Pack Suite Version 5.2.0 For Microsoft System Center Operations Manager Installation Guide* at dell.com/support/manuals.

 **NOTE:** The iDRAC firmware of the modular systems should be compatible with the CMC firmware, failing which, the Service Tag is displayed as **Not Available** and the Chassis Blade Correlation may not be possible.

Dell Chassis Diagram Views

The Dell Chassis diagram view offers a graphical representation of Dell PowerEdge M1000e chassis, and Dell PowerEdge VRTX chassis devices. Select a component in the diagram to view its details in the **Detail View** pane.

State Views

This view is available for viewing the health of the Dell CMC devices. In the OpsMgr console, click **Dell** → **State Views**, the status of each Dell device managed by OpsMgr on your network is displayed.

Select the Dell CMC device group for which you want to see the State view. You can view the status of the CMC device group.

The health of a component is derived by reviewing the unresolved alerts associated with the component. [Severity Level Indicators](#) explains the various state components that the Server Management Pack Suite uses with their corresponding severity levels.

Dell Unit Monitors For Chassis Monitoring Feature

Monitors to assess various conditions that can occur in Chassis monitored objects.

Table 24. Dell Unit Monitors For Chassis Monitoring Feature

Object	Unit Monitor
Dell CMC	
Dell CMC Status	Event and Periodic
DRAC/MC	
Dell DRAC/MC Status	Event and Periodic
Dell Chassis IO Module	
Dell Chassis IO Module Health Poll Based UnitMonitor	Periodic

Object	Unit Monitor
Dell Modular ChassisFan	
Dell Chassis Fan Health Poll Based UnitMonitor	Periodic
Dell Chassis Modular Controller	
Dell Chassis CMC Health Poll Based UnitMonitor	Periodic
Dell Chassis Modular Controller Group	
Dell Chassis CMC Group Health Poll Based UnitMonitor	Periodic
Dell Chassis Modular Power Supply	
Dell Chassis Power Supply Health Poll Based UnitMonitor	Periodic
Dell Chassis Modular Power Supply Group	
Dell Chassis Power Supply Group Health PollBased UnitMonitor	Periodic
Dell Chassis Modular PCIe Device	
Dell Chassis PCIe Device Health PollBased UnitMonitor	Periodic
Dell Chassis Storage Enclosure	
Dell Chassis Storage Enclosure Health PollBased UnitMonitor	Periodic
Dell Chassis Storage Controller	
Dell Chassis Storage Controller Health Poll Based UnitMonitor	Periodic
Dell Chassis Storage Controller Battery Health Poll Based UnitMonitor	Periodic
Dell Chassis Storage Controller Virtual Disk	
Dell Chassis Storage VirtualDisk Health Poll Based UnitMonitor	Periodic
Dell Chassis Storage Controller Enclosure Internal Physical Disk	
Dell Chassis Storage Internal PhysicalDisk Primary Health Status Poll Based UnitMonitor	Periodic

Object	Unit Monitor
Dell Chassis Storage Internal PhysicalDisk Predictive Failure Health Status Poll Based UnitMonitor	Periodic
Dell Chassis Storage Controller Enclosure External Physical Disk	
Dell Chassis Storage External PhysicalDisk Primary Health Status Poll Based UnitMonitor	Periodic
Dell Chassis Storage External PhysicalDisk Predictive Failure Health Status Poll Based UnitMonitor	Periodic

Rules

The following section lists the rules specific to the Dell Chassis monitoring feature.

Dell Systems Event Processing Rules


The Dell Server Management Pack Suite processes rules from Chassis traps.

Chassis Devices

All informational, warning, and critical SNMP traps for the Chassis devices have a corresponding SNMP trap rule.

Each of these rules are processed based on the following criteria:

- Source Name = "DRAC/CMC/DRAC/MC name or ip"
- OID = Actual trap ID of the DRAC /CMC/DRAC/MC SNMP trap event
- Data Provider = SNMP trap

 **NOTE:** Informational alerts are turned off by default. To receive these alerts, import informational alerts management pack.

Tasks

Tasks are available in the **Tasks** pane of the OpsMgr console. When you select a device or a component, the relevant tasks appear in the **Tasks** pane.

 **NOTE:** In OpsMgr 2007 R2, the **Tasks** pane is referred to as **Actions** pane.

Task Summary

Performing Dell Tasks Using The Dell Chassis

Following table provides a summary of the Dell tasks that you can perform using the Dell chassis:

Table 25. Dell Tasks Using The Dell Chassis

Task	Description
Launch Dell CMC Console	Launches the CMC console.
Launch Dell Modular Chassis Remote Access Console	Launches the DRAC/MC console.

Dell Chassis Tasks

Launch Dell CMC Console

You can use this task to launch the CMC console.

1. In the OpsMgr console, navigate to the Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the CMC device in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. *On systems running System Center Operations Manager 2007 R2 :*
In the **Actions** pane, select **SNMP Network Device Tasks** → **Launch Dell CMC Console**.

On systems running OpsMgr 2012 :

In the **Tasks** pane, select **Dell CMC Tasks** → **Launch Dell CMC Console**.

Launch Dell Modular Chassis Remote Access Console

You can use this task to launch the DRAC/MC console.

1. In the OpsMgr console, navigate to the Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2. Select the DRAC/MC device in any of the **Diagram Views** or **State Views** or an alert in the **Alerts Views**.
3. *On systems running System Center Operations Manager 2007 R2 :*
In the **Actions** pane, select **SNMP Network Device Tasks** → **Launch Dell Modular Chassis Remote Access Console**.

On systems running OpsMgr 2012 :

In the **Tasks** pane, select **Dell DRAC/MC Tasks** → **Launch Dell Modular Chassis Remote Access Console**.

Chassis Modular Server Correlation Feature

Chassis Modular Server Correlation feature supports:

- Correlation of Dell Modular Servers with Chassis slots.
 - ✎ **NOTE:** Enable CMC slot discovery and/or DRAC/MC slot discovery for the correlation feature to work.
- Correlation of Chassis Shared Storage components with Dell servers.
 - ✎ **NOTE:** Enable Chassis detailed monitoring for the correlation of chassis shared components with Dell servers.

Management Pack Functionality And Dependencies

The following table lists Dell Server Management Pack Suite management packs and utilities, and their dependencies with each other:

Table 26. Management Pack Functionality and Dependencies

Management Pack or Utility	Description	Dependency
Dell.ChassisModularServer.Correlation.mp	Management pack for: <ul style="list-style-type: none"> • Correlating Dell Modular systems with CMC and DRAC/MC slots. • Correlating chassis storage shared components with Dell Modular servers 	Dell.Connections.HardwareLibrary.mp Dell.WindowsServer.Scalable.mp Dell.Model.Server.mp Dell.CMC.OM07.MP or Dell.CMC.OM12.MP

Discoveries By The Chassis Modular Server Correlation Feature

Table 27. Chassis Modular Server Correlation Feature Discoveries

Discovery Object	Description
Dell CMC Chassis to Modular Server Correlation Discovery	Discovers the correlation between the CMC chassis and the Dell modular systems.
Dell Chassis Storage to Blade Server Correlation Discovery	Discovers the correlation between chassis shared components with Dell Servers (In-band).

Discovery Object	Description
Dell DRAC/MC Chassis to Modular Server Correlation Discovery	Discovers the correlation between DRAC/MC chassis and Dell modular systems.

Dell Feature Management Dashboard

The Dell Feature Management Dashboard enhances the management of the Dell systems — Dell servers, Dell Remote Access Controllers (DRAC), Dell Chassis Management Controller (CMC) in the OpsMgr by providing the following monitoring features.

- Server In-Band Monitoring Feature
- Server Out-Of-Band Monitoring Feature
- DRAC Monitoring Feature
- Chassis Monitoring Feature
- Chassis Modular Server Correlation Feature

Management Pack Functionality And Dependencies

The following table lists Dell Server Management Pack Suite management packs and utilities, and their dependencies with each other:

Table 28. Management Pack Functionality and Dependencies

Management Pack or Utility	Description	Dependency
Dell.FeatureManagement.Pack.mp	Management pack for discovering, monitoring, and upgrading, the available Dell Management Packs Suite features in OpsMgr.	Dell.Connections.HardwareLibrary.mp

Discoveries By The Dell Feature Management Pack

Table 29. Dell Feature Management Pack Discoveries

Discovery Object	Description
Dell License Configuration Discovery	Configures the Dell Connections License Manager web server url.
Dell Feature Management Host Discovery	Populates the dashboard if the management server is the feature management pack host. The management servers where the Dell Server Management Pack Suite is installed first, is selected as the feature management pack host.


Tasks

Tasks are available in the **Tasks** pane of the OpsMgr console. When you select a device or a component, the relevant tasks appear in the **Tasks** pane.

 **NOTE:** In OpsMgr 2007 R2, the **Tasks** pane is referred to as **Actions** pane.

Feature Management Tasks

The following table lists the tasks available on the **Feature Management Dashboard**. Some tasks listed below appear only after you have imported a particular monitoring feature.

 **NOTE:** Ignore the errors pertaining to reimporting of existing management packs under the error logs in the Event log. These errors occur when **Feature Management Dashboard** reimports all the dependent management packs that are already imported while importing a monitoring feature.





 **NOTE:** Wait for a task to complete (view the state update change in the dashboard) before launching another task using the **Feature Management Dashboard**.

Table 30. Feature Management Tasks

Tasks	Description
Server (Out-of-band) Monitoring	
Configure License Server	Configures the Dell Connections License Manager. For more information, see Configuring Dell Connections License Manager URL .  NOTE: Perform this task before importing the Server (Out-of-band) monitoring feature, as the Dell servers are discovered only after the Dell Connections License Server is configured.
Launch Dell Connections License Manager	Launches the Dell Connections License Manager console. For more information, see <i>Dell Connections License Manager User's Guide</i> at dell.com/support/manuals .  NOTE: While configuring the Dell Connections License Manager, the License Manager task is enabled only after the configuration of the LicenseWebUI URL is completed. For more information, see Configuring Dell Connections License Manager URL .  NOTE: The Configure License Server and Launch Connections License Manger are common tasks for all the monitoring features on Feature Management Dashboard .

Tasks	Description
Import Server (Out-of-band) Scalable Feature	Imports the Scalable feature of Server (Out-of-band) monitoring feature.
Import Server (Out-of-band) Detailed Feature	Imports the Detailed feature of Server (Out-of-band) monitoring feature.
Set to Server (Out-of-band) Scalable Feature	<p>If the Detailed feature is running on the system, the Feature Management Dashboard switches from the Detailed feature to the Scalable feature.</p> <p>On upgrading from the previous version, run this task to use the latest version for this monitoring feature.</p>
Set to Server (Out-of-band) Detailed Feature	<p>If the Scalable feature is running on the system, the Feature Management Dashboard switches from the Scalable feature to the Detailed feature.</p> <p>On upgrading from the previous version, run this task to use the latest version for this monitoring feature.</p>
Set Server (Out-of-band) Monitoring as Preferred Monitoring Method	This task enables the Out-of-band monitoring feature as the preferred monitoring method for your Dell server, when the Dell servers in the setup are monitored through both, In-band monitoring feature, and Out-of-band monitoring feature.
Refresh Dashboard	Updates the Feature Management Dashboard if it was not automatically updated.
Remove Server (Out-of-band) Feature	Removes the Server (Out-of-band) monitoring feature.
Server (In-band) Monitoring	
Import Server (In-band) Detailed Feature	Imports the Detailed feature of the Server (In-band) monitoring feature.
Import Server (In-band) Scalable Feature	Imports the Scalable feature of the Server (In-band) monitoring feature.
Set Server (In-band) Monitoring as Preferred Monitoring Method	This task enables the In-band monitoring feature as the preferred monitoring method for your Dell server, when the Dell servers in the setup are monitored through both, In-band monitoring feature and Out-of-band monitoring feature.
Set to Server (In-band) Scalable Feature	If the Detailed feature is running on the system, the Feature Management Dashboard switches from the Detailed feature to the Scalable feature.

Tasks	Description
	On upgrading from the previous version, run this task to use the latest version for this monitoring feature.
Set to Server (In-band) Detailed Feature	If the Scalable feature is running on the system, the Feature Management Dashboard switches from the Scalable feature to the Detailed feature. On upgrading from the previous version, run this task to use the latest version for this monitoring feature.
Enable Agent Proxying for Dell Servers (In-band)	Enables agent proxying for Dell Servers (In-band).
Set Informational Alerts On (Server In-band)	Informational alerts are turned on when the Server (In-band) Scalable Monitoring is in use.
Set Informational Alerts Off (Server In-band)	Informational alerts are turned off when the Server (In-band) Scalable Monitoring is in use.
Refresh Dashboard	Updates the Feature Management Dashboard if it was not automatically updated.
Remove Server (In-band) Feature	Removes the Server (In-band) monitoring feature.
DRAC Monitoring	
Import DRAC Monitoring Feature	Imports the DRAC monitoring feature.
Upgrade DRAC Monitoring Feature	Upgrades to the latest version of the DRAC monitoring feature.
Refresh Dashboard	Updates the Feature Management Dashboard if it was not automatically updated.
Remove DRAC Monitoring Feature	Removes the DRAC monitoring feature.
Chassis Monitoring	
Import Chassis Scalable Monitoring Feature	Imports the chassis scalable monitoring feature.
Import Chassis Detailed Monitoring Feature	Imports the chassis detailed monitoring feature.
Set to Chassis Scalable Feature	If the Detailed feature is running on the system, the Feature Management Dashboard switches from the Detailed feature to the Scalable feature. On upgrading from the previous version, run this task to use the latest version for this monitoring feature.
Set to Chassis Detailed Feature	If the Scalable feature is running on the system, the Feature Management Dashboard switches from the Scalable feature to the Detailed feature.

Tasks	Description
	On upgrading from a previous version, run this task to use the latest version for this monitoring feature.
Refresh Dashboard	Updates the Feature Management Dashboard if it was not automatically updated.
Remove Chassis Monitoring Feature	Removes the chassis monitoring feature (both scalable and detailed monitoring feature).
Chassis Modular Server Correlation	
Import Chassis Modular Server Correlation Feature	Imports the chassis modular server correlation feature.
Upgrade Chassis Modular Server Correlation Feature	Upgrades to the latest version of the chassis modular server correlation feature.
Refresh Dashboard	Updates the Feature Management Dashboard if it was not automatically updated.
Remove Chassis Modular Server Correlation Feature	Removes the chassis modular server correlation monitoring feature.


Related Documentation And Resources

This chapter gives the details of documents and references to help you work with Dell Server Management Pack Suite.

Microsoft Guidelines For Performance And Scalability For Operations Manager

For optimal performance, deploy device-specific Server Management Pack Suite on different management servers.

For information on Microsoft's recommendations for scalability, see the Microsoft website at technet.microsoft.com.

 **NOTE:** Make sure that the **Autogrow** option is enabled in Operations Manager Data Warehouse and/or Database for improved performance.

Other Documents You May Need

Besides this *User's Guide*, you may need to refer to the following guides available at dell.com/support/manuals.

- *Integrated Dell Remote Access Controller 7 Version User's Guide*
- *Dell Chassis Management Controller Version 4.50 User's Guide*
- *Dell OpenManage Installation and Security User's Guide*
- *Dell OpenManage Server Administrator Installation Guide*
- *Dell OpenManage Server Administrator Compatibility Guide*
- *Dell OpenManage Server Administrator CIM Reference Guide*
- *Dell OpenManage Server Administrator Messages Reference Guide*
- *Dell OpenManage Server Administrator Command Line Interface User's Guide*
- *Dell OpenManage Baseboard Management Controller Utilities User's Guide*
- *Dell Remote Access Controller 5 User's Guide*
- *Dell Remote Access Controller Racadm User's Guide*
- *Dell Life Cycle Controller User's Guide*
- *Dell Remote Access Controller/ Modular Chassis User's Guide*
- *Dell Chassis Management Controller Version 1.30 for Dell PowerEdge VRTX*

The *Dell Systems Management Tools and Documentation DVD* contains a readme file for Server Administrator and additional readme files for other systems management software applications found on the DVD.

Accessing Documents From Dell Support Site

To access the documents from Dell Support site:

1. Go to **dell.com/support/manuals**.
2. In the **Tell us about your Dell system** section, under **No**, select **Choose from a list of all Dell products** and click **Continue**.
3. In the **Select your product type** section, click **Software and Security**.
4. In the **Choose your Dell Software** section, click the required link from the following:
 - **Client System Management**
 - **Enterprise System Management**
 - **Remote Enterprise System Management**
 - **Serviceability Tools**
5. To view the document, click the required product version.



NOTE: You can also directly access the documents using the following links:

- For Enterprise System Management documents — **dell.com/openmanagemanuals**
- For Remote Enterprise System Management documents — **dell.com/esmmanuals**
- For Serviceability Tools documents — **dell.com/serviceabilitytools**
- For Client System Management documents — **dell.com/OMConnectionsClient**
- For OpenManage Connections Enterprise systems management documents — **dell.com/OMConnectionsEnterpriseSystemsManagement**
- For OpenManage Connections Client systems management documents — **dell.com/OMConnectionsClient**

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**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down menu at the top of page.
4. Select the appropriate service or support link based on your need.

Appendix A — Issues And Resolutions

Issues And Resolutions

The following table lists the known issues, resolutions, and where the issues are applicable.

Table 31. Issues And Resolutions

Issue	Resolution	Applicable To
In the Diagram View for Dell network devices, the basic attributes are not displayed for the Dell DRAC and chassis objects.	To resolve this issue, you can view the detailed set of attributes by clicking the objects in the State View .	Dell Chassis Monitoring Feature
Licensing configuration alerts are not automatically resolved.	To resolve this issue, on the OpsMgr console right-click the licensing configuration alert and click Close .	Dell Server Management Pack Suite
Server Modules and Chassis Slot Summary Information are not visible under CMC or DRAC/MC.	<ul style="list-style-type: none"> • Make sure that OpenManage Server Administrator (OMSA) or DRAC tools are installed on the management server managing the CMC or DRAC/MC. • Make sure that you have configured the RunAsAccounts for CMC or DRAC/MC devices and associated them with "Dell CMC Login Account" or "Dell DRAC/MC Login Account". • Make sure that Dell CMC Slot Discovery and Dell DRAC/MC Slot Discovery rules are enabled from the Authoring Pane of the OpsMgr console. 	Dell Chassis Monitoring Feature
Errors while running the Repair option on Dell Server Management Pack version 5.2.0 from the Add/Remove Programs or Uninstall or change a program window.	Use the Repair option in the installer. For more information, see "Using The Repair Option In The Installer" section of the <i>Dell Server Management Pack Suite Version 5.2.0 For Microsoft System Center Operations Manager Installation Guide</i> .	Dell Server Management Pack Suite
Dell servers that are discovered through the Dell	To resolve this issue, 1. Click Start → Run .	Dell Server Management Pack Suite

Issue	Resolution	Applicable To
<p>Server (Out-of-band) monitoring feature are listed even after the Dell Server (Out-of-band) license has been deleted.</p>	<ol style="list-style-type: none"> 2. In the command prompt, type the command <code>DcomCnfg</code> to open the DCOM Configuration window. 3. Expand Component Services → Computers → My Computer → COM+ Applications → Dell Device Helper. 4. Right-click Dell Device Helper and click Shut down. 5. Right-click Dell Device Helper and click Start. 	
<p>If there is a delayed response while discovering a CMC/ DRAC MC devices, then the latest information from the device is not updated, the Script Timeout Error is generated or the log files in the Temp folder are not cleared.</p>	<p>Increase the Script Timeout value on the Override Properties screen for the CMC or DRAC/MC devices which are experiencing a delayed response. For more information on Overrides, see the OpsMgr documentation at technet.microsoft.com.</p>	<p>Dell Chassis Monitoring Feature</p>
<p>Feature management host server health service has gone down.</p>	<p>If the selected management server has stopped functioning, the executed Feature Management tasks fails. In such an instance, where the selected management server is corrupt or the health service cannot be obtained, decommission the management server to remove stale objects. For more information, see technet.microsoft.com/en-us/library/hh456439.aspx.</p> <p>Select a management server from the remaining management servers, and override the FMPHostFQDN of Feature Management Host Discovery.</p>	<p>Dell Server Management Pack Suite</p>
<p>Dell OM: Server and its component health computation failed alert is displayed under Monitoring → Alerts Views → Server Alerts on the console.</p>	<p>Manually associate the Run As Account for monitoring Dell server. For more information, see Associating Run As Account For Monitoring A Dell Server Using The Server (Out-Of-Band) Monitoring Feature.</p>	<p>Dell Server (Out-Of-Band) Monitoring Feature</p>

Known Limitations

Table 32. Known Limitations

Limitation	Applicable to
Dell MP, Power Control, and LED tasks use only the default credentials. When you create a new task in the Authoring pane and view it, you can see the username and the password you specified. The credentials are not hidden when you view the task.	Dell Server Management Pack Suite
While using health explorer, some unit monitors in Server Management Pack Suite (under Sensors and OpenManage Services instances) may display a green status though the sub-instance does not exist. This is because unit monitors cannot have an <i>Unavailable</i> state when the target class is present and the unit monitor has been executed.	Dell Server Management Pack Suite
Intrusion unit monitor status under sensors is only for chassis and does not include health of bezel intrusion.	Dell Server Management Pack Suite

Feature Management Alerts

The following alerts are generated in the Feature Management Alerts on the dashboard, if the Dell Device Helper Utility or the Dell Connections License Manager server is not correctly installed, or the license server has insufficient licenses for monitoring Dell servers using the Dell Server (Out-of-band) monitoring feature.


Table 33. Feature Management Alerts

Alert Text	Alert State	Cause	Resolution
Dell FMP: Dell Device Helper Utility is either not present or incompatible with Dell Server (out-of-band) Management Pack.	Critical	The Dell Device Helper Utility version 5.2.0 was not found or the Dell Device Helper Utility is corrupted. A version higher than 5.2.0 of Dell Device Helper Utility was found. A version lower than 5.2.0 of Dell Device Helper Utility was found.	Run the Dell Server Management Pack Suite version 5.2.0 installer on the management server.
Dell FMP: Dell License Server is not configured properly.	Critical	The Dell Connections License Server is not configured.	Install and configure the Dell Connections License Server URL. For more information, see

Alert Text	Alert State	Cause	Resolution
			Configuring Dell Connections License Manager URL.
Dell FMP: Dell License Server is not reachable.	Critical	Unable to contact the Dell Connections License Server.	<p>Make sure that the Dell Connections License Server URL is configured correctly. For more information, see Configuring Dell Connections License Manager URL.</p> <p>Check if the Dell Connections License Server is accessible.</p>
Dell FMP: Dell Licenses for a feature are insufficient or not available.	Critical	<p>Licenses are not present on the Dell Connections License Server.</p> <p>License usage for a monitoring feature has exceeded the monitoring capacity.</p>	Purchase additional licenses and import them into the Dell Connections License Server.
	Warning	License usage for a monitoring feature is approaching the total monitoring capacity.	Purchase additional licenses and import them into the Dell Connections License Server.
	Critical	Unable to process licenses for a monitoring feature.	<p>Make sure that the Dell Connections License Server is configured correctly. For more information, see <i>Dell Connections License Manager Version 1.1 User's Guide</i> at dell.com \support\manuals.</p> <p>Check if the Dell Connections License Server is accessible.</p> <p>Check the access privileges for getting the license from the Dell Connections License Server.</p>

Appendix B

Creating A Simple Authentication Run As Account



1. Log on to OpsMgr 2012 as an administrator for the OpsMgr Management Group.
 2. On the OpsMgr console, click **Administration**.
 3. Right-click **Accounts**, and then click **Create Run As Account**.
The **Create Run As Account Wizard** screen is displayed.
 4. Click **Next**.
 5. From the **Run As Account type** drop-down menu, select **Simple Authentication**.
 6. Provide a display name in the **Display Name** text box.
 7. Provide a brief description in the **Description** text box and click **Next**.
 8. On the **Credentials** screen provide the iDRAC login credentials for the systems you want to discover using the Server (Out-Of-Band) monitoring feature.
 9. Click **Next**.
 10. Select the **Less secure** or **More secure** option as appropriate.
For more information, see the OpsMgr documentation at technet.microsoft.com/en-us/library/hh321655.aspx.
-  **NOTE:** If the iDRAC login credentials are different for each of the systems, create a separate **Run As Account** for each of them.
11. Click **Create**.
 12. After the **Run As Account** has been created, click **Close**.

Associating Run As Account For Monitoring A Dell Server Using The Server (Out-Of-Band) Monitoring Feature

For monitoring the Dell server, the **Run As account** used to discover it must be associated with the **Dell server in the SMASH Device Monitoring Profile**. The management pack performs the association automatically. But in some cases, you have to manually associate the Run As account.

To manually associate the Run As account in the SMASH Device Monitoring Profile:






1. Launch OpsMgr 2012, and click **Administration**.
2. In the **Administration** pane, browse to **Run As Configuration** → **Profiles**.
3. From the list of available profiles, right-click **SMASH Device Monitoring Profile** and click **Properties**.
The **Introduction** screen is displayed.
4. Click **Next**.
The **Specify the Run As profile's general properties** screen is displayed.
5. Click **Next**.
The **Run As accounts** screen is displayed.

6. Click **Add**.
The **Add a Run As account** screen is displayed.
 7. Select the run as account used to discover the Dell server from the **Run As account** drop-down list.
 -  **NOTE:** If you are using multiple Run As accounts to discover devices, associate each device with its associated Run As account.
 8. Click **A selected class, group, or object** and add the association for the server in the SMASH Monitoring Profile.
 - Click **Select** → **Class** option, use **Dell server** as the selection.
 - Click **Select** → **Group** option, use the group containing the Dell server objects as the selection.
 - Click **Select** → **Object** option, use the individual Dell server object as the selection.
 9. Click **OK**.
 10. Click **Save** and **Close**.
-  **NOTE:** If the Run As Account association is not done, the alert **Dell OM: Server and its component health computation failed** is displayed under **Monitoring** → **Alerts View** → **Server Alerts** on the console.

Severity Level Indicators

The following table lists the icons that indicate the severity levels of the discovered Dell devices on the OpsMgr console.

Table 34. Severity Level Indicators

Icon	Severity Level
	Normal/OK – The component is working as expected.
	Warning/Noncritical – A probe or other monitoring device has detected a reading for the component that is above or below the acceptable level. The component may still be functioning, but it could fail. The component may also be functioning in an impaired state.
	Critical/Failure/Error – The component has either failed or failure is imminent. The component requires immediate attention and may need to be replaced. Data loss may have occurred.
	The health status is not applicable for the specific component.
	The service is unavailable.


Appendix C - Enabling External Program Tasks

For tasks provided by the Dell Server Management Pack Suite that launch external programs have to be installed in the default location. Create new tasks to launch the application if the program is not installed in the default location.

Creating Advanced Power Control And LED Identification Tasks

Advanced power control and LED identification tasks use the default BMC credentials and install path (C:\Program Files\Dell\SysMgt\bmc).

If your systems deviate from the default BMC credentials and install path, install BMU 2.0 or later on the management server and create new console tasks.

 **CAUTION:** The below steps require you to create a task and set the password in plaintext. If BMC is not installed on management server, the OpsMgr Console may display an error with the entire command in a dialog box, and reveal the password. If you export the created override management pack containing this task to a disk, you can open the exported management pack in a common text editor or OpsMgr Authoring Console and view the password in plain text. Create a new task only if absolutely required and consider the security aspects before you proceed.

To create a new task:

1. Launch the OpsMgr console and click **Authoring**.
2. In the **Authoring** pane, right-click **Tasks** under **Management Pack Objects**, and select **Create new task**.
3. In the **Task Type** screen, select **Command line** under **Console Tasks**.
4. Select the destination management pack and click **Next**.
5. Type **Task name**, **Description**, and select **Dell Windows Server** as the **Task Target** and click **Next**. The **Command Line** screen is displayed.
6. Type the path of the application **ipmitool.exe** (the path where BMU was installed on the management server) in the **Application** field.

For example, C:\Program Files\Dell\SysMgt\bmc\ipmitool.exe. For the two LED identification tasks, the application path is C:\Program Files\Dell\SysMgt\bmc\ipmish.exe (default BMU path may differ based on your operating system language).

7. For power control tasks, in the **Parameters** field, type the command line parameters in the following format:

- Type `-I lan -H` and then choose the **Remote Access IP with IPMI capability** from the drop-down menu.
- Type `-U <username> -P <password> -k <kgkey> <IPMI Task String>`
- Replace `<IPMI Task String>` with one of the following options:
 - `power status` (for **Check Power Status** task)
 - `power on` (for **Power On** task)
 - `power soft` (for **Power Off Gracefully** task)
 - `power off` (for **Force Power Off** task)
 - `power cycle` (for **Power Cycle** task)
 - `power reset` (for **Power Reset** task)
 - `identify on` (for **LED Identification On** task)
 - `identify off` (for **LED Identification Off** task)

Example:

```
-I lan -H $Target/Property[Type="Dell.WindowsServer.Server"]/RemoteAccessIP$  
-U root -P <password> -k <kgkey> power status
```

8. For LED on or off tasks, type the command line parameters in the following format:

- Type `-ip` and choose the **Remote Access IP with IPMI capability** from drop-down menu.
- Type `-u <username> -p <password> -k <kgkey> <IPMI task string>`.

9. Click **Create** to create the task and repeat this procedure for each new BMC task.

Creating A Launch License Manager Task

Launch License Manager Task uses the default Dell License Manager (DLM) install path (`%PROGRAMFILES(X86)%\Dell\SysMgt\LicenseManager\Dell.DlmUI.exe` or `%PROGRAMFILES%\Dell\SysMgt\LicenseManager\Dell.DlmUI.exe`), that cannot be modified.

If your systems deviate from this, install DLM on the management server and create new console tasks in the **Authoring** pane targeted on **DLM for Dell Server**.

To create a new task:

1. Launch OpsMgr console and click **Authoring**.
2. In the **Authoring** pane, right-click **Tasks** under **Management Pack Objects**, and select **Create new task**.
3. In the **Task Type** screen, select **Command line** under **Console Tasks**.
4. Select the destination management pack and click **Next**.
5. Type **Task name**, **Description**, and set the **Task Target** with one of the following:
 - Dell Windows Server (for Dell Server In-band Monitoring)
 - Dell Server (for Dell Server Out-of-band Monitoring)
 - Dell iDRAC7 (for DRAC Monitoring)
6. Click **Next**.
The **Command Line** screen is displayed.

7. Type the path of the application *Dell.DlmUI.exe* (the path where DLM was installed on the management server) in the **Application** field.
For example, `C:\Program Files\Dell\SysMgt\LicenseManager\Dell.DlmUI.exe` (default DLM path may differ based on your operating system language).
8. Click **Create** to create the task and repeat this procedure for each new DLM task.