Dell Server Management Pack Suite Version 6.1.1 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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2015 - 08

Rev. A00

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1

Introduction

This document describes the activities that you can perform with Dell Server Management Pack Suite version 6.1.1.

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

CAUTION: To avoid data corruption, data loss, or both; perform the procedures in this document only if you have proper knowledge and experience in using Microsoft Windows operating system and 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.

NOTE: Read the Dell Server Management Pack Suite's release notes, which contain the latest information about software and management server requirements, in addition to information about known issues. The release notes is posted to the Systems Management documentation page on **dell.com/OMConnectionsEnterpriseSystemsManagement**. The release notes is also packaged in the self-extracting executable **Dell_Server_Management_Pack_Suite_v6.1.1_Axx.exe** file. (where xx is the Dell Server Management Pack Suite version 6.1.1 release number) file.

Terms used in this document

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

Table 1. Terms used in this document

Term	Refers to
OpsMgr	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.
OpsMgr 2012	Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, and Microsoft System Center 2012 Operations Manager, unless otherwise specified.
Dell Remote Access Controller (DRAC)	iDRAC6, iDRAC7, and iDRAC8, unless otherwise specified.
Chassis	Chassis Management Controller (CMC), unless otherwise specified.
Servers	Servers and Rack Workstations, unless otherwise specified.

Term	Refers to
Agent-based monitoring	Servers and Rack Workstation Agent-based Monitoring, unless otherwise specified.
Agent-free monitoring	Servers and Rack Workstations Agent-free Monitoring, unless otherwise specified.

What is new in this release

The release highlights of Dell Server Management Pack Suite are:

- Support for new platforms; Dell PowerEdge R930, Dell PowerEdge R530xd, and Dell PowerEdge C6320.

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 2. Features and functionalities

Feature	Functionality
Agent-based Discovery and Monitoring — Dell Servers and Rack Workstation	Supports agent-based discovery and monitoring of supported Dell PowerEdge, Dell PowerVault monolithic and modular systems, and Dell Precision Racks running the Windows operating system and Dell OpenManage Server Administrator.
Agent-free Discovery and Monitoring — Dell Servers and Rack Workstation	Supports: • Agent-free discovery and monitoring of 12th generation of Dell PowerEdge servers, Dell PowerVault systems and supported Dell Precision Racks, and 13th generation of Dell PowerEdge servers. • SNMP traps for agent-free monitoring systems.
Discovery and Monitoring — Chassis Management	Supports: • Discovery and monitoring of Dell Chassis devices. • Discovery of server modules and chassis slot summary for CMC chassis. • SNMP traps for Dell Chassis devices.
Discovery and Monitoring — Dell Remote Access Controllers (DRAC)	Supports: • Discovery and monitoring of supported DRAC devices. • SNMP and PET traps for DRAC devices.

Feature	Functionality
Chassis Blade Correlation	Supports: • Correlation of Dell servers with Server modules of CMC chassis. • Correlation of Chassis shared storage components with Dell modular servers (Agent-based monitoring).

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Overview of Dell Server Management Pack Suite Functionality

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

- Discover and classify Dell systems:
  - Dell Servers (Agent-based and Agent-free monitoring)
  - Dell Remote Access Controllers (iDRAC6, iDRAC7, and iDRAC8)
  - Dell Chassis (Dell PowerEdge FX2/ FX2s, Dell PowerEdge VRTX, and Dell PowerEdge M1000e)
  - Supported Dell Precision Racks
- Monitor the discovered Dell systems.
- View, analyze, and resolve alerts using Knowledge Base (KB) articles.
- Perform various tasks on the discovered Dell systems.
- View reports for discovered Dell systems.

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Agent-based Monitoring Feature

Agent-based monitoring feature supports the discovery, and monitoring of Dell PowerEdge monolithic and modular servers, Dell PowerVault storage servers and supported Dell Precision Racks running the supported Windows operating system and OpenManage Server Administrator (OMSA). For information on supported OMSA versions, see *Dell Server Management Pack Suite Version 6.1.1 for Microsoft System Center Operations Manager Release Notes.*

The Dell Server Management Pack Suite installer automatically imports the Agent-based monitoring feature.

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
Agent-based Monitoring	• Inventory and monitoring of component groups. Also, display the presence of iDRAC. • Reports — Only OpenManage Windows Event log report is available.	• Detailed inventory and health monitoring of individual components. • View metrics for memory, processors, network interfaces, sensors, storage controllers, disks and virtual disks. 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 enables you to discover and classify Dell Servers — Monolithic, Modular, Sleds, and supported Dell Precision Racks. 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 PowerEdge systems.

Group	Diagram View	Hardware Type
	Dell Modular Servers Dell Sled Servers	Dell PowerVault storage servers.
Dell Rack Workstations	Rack Workstation Diagram	Dell Precision Racks.

Discovering Dell Server in OpsMgr

Dell servers are discovered through the OpsMgr Agent Management infrastructure.

NOTE: Discover Dell server 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 Agent-based monitoring feature management packs into the OpsMgr. If the installer fails to install the management packs, then, import the management packs 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 unsupported OMSA versions are grouped as Dell Unmanaged.

Discoveries by the Agent-based Monitoring Feature

Table 5. Agent-based Monitoring Feature Discoveries

Discovery	Description
Dell Server Discovery	Classifies the Dell servers and populates the attributes.
Dell Server Network Interface Discovery	Discovers the network interface at group level of the 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).

Discovery	Description
Dell Server Detailed Memory Discovery	Discovers memory instances for the Dell server (Detailed edition only).
Dell Server Detailed Power Supply Discovery	Discovers power supply instances for the Dell server (Detailed edition only).
Dell Server Detailed Processor Discovery	Discovers processor instances for the Dell server (Detailed edition only).
Dell Server Detailed Storage Discovery	Discovers the complete storage hierarchy for the Dell server (Detailed edition only).
Dell Windows Server Detailed Sensor Discovery	Discovers sensor instances for Dell server (Detailed edition only).
Dell Windows Server Detailed Network Interfaces Discovery Module	Discovers the physical and teamed network interface instances of the Dell server (Detailed edition only).
Dell Windows Server Network Interfaces Group Discovery Module	Discovers the Network Interfaces group.
Dell Rack Workstation Group Discovery	Discovers the Dell Rack Workstation 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 the Dell servers on the network.

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

Monitored hardware components

The following table provides information on the monitored hardware components supported in Scalable and Detailed feature.

Table 6. Monitored hardware components — Scalable and Detailed feature

Hardware components	Scalable	Detailed
iDRAC	Yes	Yes
Memory	Yes	Yes

Hardware components	Scalable	Detailed
Network Interfaces Group	Yes	Yes
OpenManage Software Services	Yes	Yes
Power Supplies	Yes	Yes
Processors	Yes	Yes
Storage	Yes	Yes
Storage Controller	Yes	Yes
Sensors	Yes	Yes
Physical Network Interface Instance	No	Yes
BIOS Config Instance	No	No
Battery Sensor	No	Yes
Battery Sensor Group	No	Yes
Current Sensor	No	Yes
Current Sensor Group	No	Yes
Chassis Intrusion Sensor	No	Yes
Fan Sensor	No	Yes
Fan Sensor Group	No	Yes
Memory Unit Instance	No	Yes
Network Interfaces Physical Group	No	Yes
Network Interfaces Teamed Group	No	Yes
Processor Unit Instance	No	Yes
Power Supplies Unit Instance	No	Yes
Storage Controller Physical Disk Instance	No	Yes
Storage Connector Physical Disk Group	No	Yes

Hardware components	Scalable	Detailed
Storage Controller Connector Instance	No	Yes
Storage Controller Enclosure Instance	No	Yes
Storage Controller Sensors	No	Yes
Storage Controller Virtual Disk Group	No	Yes
Storage Enclosure EMM Instance	No	Yes
Storage Enclosure Physical Disk Group	No	Yes
Storage Enclosure Power Supply Group	No	Yes
Storage Enclosure Sensors	No	Yes
Teamed Network Interface Instance	No	Yes
Voltage Sensor	No	Yes
Voltage Sensor Group	No	Yes

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 and Rack Workstations. The following alerts are displayed:

- Alerts for events received from Dell OpenManage Server Administrator for Dell servers and Rack Workstations.

  NOTE: Informational alerts are turned off by default. To enable informational alerts, run the **Set Informational Alerts On** task for Agent-based monitoring feature on the **Feature Management Dashboard**.
- Link-up or Link-down alerts for events received from Broadcom and Intel network interface cards.

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 alerts are displayed:

   - **Network Interface Alerts** — Link-up and Link-down alerts from the discovered NICs are displayed.
   - **Server and Rack Workstation Alerts** — Server Administrator alerts from Dell servers and Rack Workstation are displayed.
   - **Dell Rack Workstation Alert Views**
     - **Network Interface Alerts** — Link-up and Link-down alerts from the discovered NICs are displayed.
     - **Rack Workstation Alerts** — Server Administrator alerts from Dell Rack Workstation 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) are 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 and supported Rack Workstations on the 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
   - **Dell Rack Workstation Diagram Views**
     - Rack Workstation Diagram
   - **Dell Server Diagram Views**
     - Modular Systems Diagram
     - Monolithic Servers Diagram
     - Sled Servers Diagram
3. Select any of the **Diagram Views**.

   On the right pane the hierarchical and graphical representation of the selected Dell server or Rack Workstation 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 the details for the following:

- Dell Modular and Monolithic servers
- Dell Sled Group
- Dell Rack Workstations
- Chassis Management Controllers
- Remote Access Controllers
- Dell Unmanaged systems

Rack Workstation Diagram

The **Dell Rack Workstation Diagram Views** offers a graphical representation of all supported Rack Workstations and allows you to expand and verify the status of individual devices and their components in the diagram. Select a Rack Workstation in the diagram to view its details in the **Detail View** pane.

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 components
- BIOS (inventory only)
- iDRAC

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.

Sled Servers Diagram

The Dell Sled Servers Diagram View offers a graphical representation of all Dell Sled servers and allows you to expand and verify the status of individual devices and their components in the diagram. Select a Sled server in the diagram to view its details in the **Detail View** pane.

Dell Server Instance Diagram

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

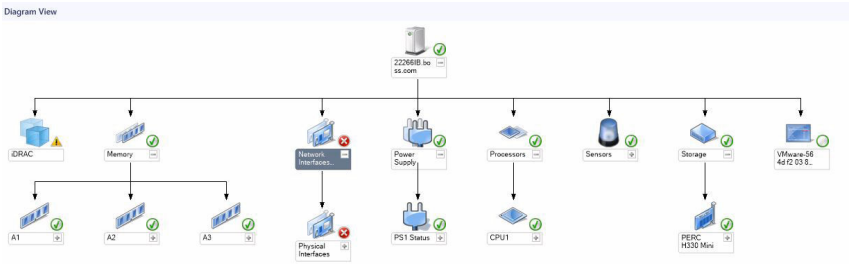

Figure 1. Dell Server Instance Diagram

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 components
- BIOS (inventory only)

The memory, processors, network, sensors, storage, and power supply components are displayed in detail by the Detailed edition of the Agent-based 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 (Agent-based). 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 Dell system displays the health state normal icon, and the **Network Interfaces** group displays the critical or warning icon.

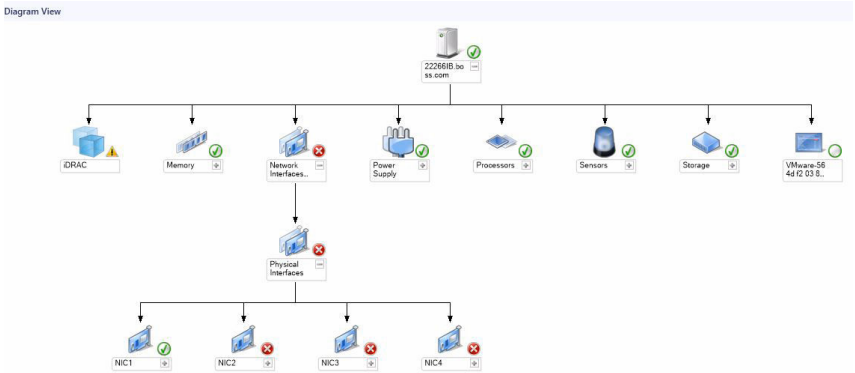

Figure 2. Network Interfaces Diagram View

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 and Rack Workstations. In the OpsMgr console, click **Dell → State Views**, the status of each Dell server and Rack Workstation managed by the OpsMgr on the network is displayed.

You can view the status for the following:

- **Servers and Rack Workstations (Agent-based)**
- **Dell Rack Workstation State Views**
  - **Managed Rack Workstation (Agent-based)**
- **Dell Server State Views**
  - **FM Servers**

– **Sled Servers (Agent-based)**

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:
   - **Agent-based Disk Performance (%)**
   - **Ambient Temperature (Centigrade)**
   - **Amperage (Amps)**
   - **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 Agent-based monitoring feature is present.

   NOTE: Agent-based Disk Performance (%), Teamed and Physical network interface instances are disabled by default and appears only when the detailed edition of the Agent-based 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 Dell 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 Agent-based 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 Agent-based — Scalable Edition monitored objects.

Table 7. Dell Unit Monitors — Scalable Edition

Object		Unit Monitor
Memory		
	Dell Server Memory 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		
	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

Object		Unit Monitor
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 8. 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		
	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

Object		Unit Monitor
	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
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

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

Object		Unit Monitor
Battery Sensor		
	Battery Sensor Unit Monitor	Periodic
Chassis Intrusion Sensor		
	Chassis Intrusion Sensor Unit Monitor	Periodic

Rules

The following section lists the rules specific to the Dell Agent-based 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 collect information on the following parameters:

- **Agent-based Disk Performance (%)**
- **Ambient Temperature (Centigrade)**
- **Amperage (Amps)**
- **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 the Agent-based monitoring feature is imported, the disabled Performance (excluding Network Performance) and Agent-based Disk Performance (%) collection rules are enabled by default.
- **Agent-based Disk Performance (%)** — This view displays the **Remaining Rated Write Endurance** of Solid-State Drives (SSDs) of a Dell server (Agent-based). Search for the object **SSD** to view the data.

NOTE: Network Statistics are defined in Detailed edition of Agent-based 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.

Task Summary

Performing Dell Tasks

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

Table 9. Dell Tasks

Task	Description
Launch Dell OpenManage Server Administrator	Launches the Dell OpenManage Server Administrator.
Launch Dell OpenManage Power Center	Launches the Dell OpenManage Power Center console on the Management Server.
Launch Dell Remote Access Console	Launches the DRAC console for the Agent-based discovered DRAC.
Launch Dell License Manager on X64 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	Check 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. **NOTE:** An active internet connection is required to retrieve the warranty information.

Dell Windows Server 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 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 **Tasks** pane, select **Dell Windows Server Tasks** → **Launch 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 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** → **Check Power Status.**

Power Cycle

The **Power Cycle** task allows you to turn off the Dell server 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 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 Cycle**.

Force Power Off

The **Force Power Off** task allows you to turn off the Dell server 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 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** → **Force Power Off**.

Power Off Gracefully

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

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 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 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 Dell server.

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 Dell server.

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 Dell server.

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 Dell server.

NOTE: An active Internet connection is required to retrieve the warranty information.

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 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 available only in the Detailed Edition of Server (Agent-based) management pack.

Accessing Reports

To access reports:

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

Generating BIOS Configuration Report

To create a report for the BIOS configuration:

1. On the OpsMgr console, click **Reporting**.
2. Click **Dell Windows Server (Detail Edition).**
3. Click **BIOS Configuration**, then click **Open** in the **Tasks** pane.
4. Select a time period for which you want the report generated.
5. Click **Add Object**.
6. Search for objects of class `Dell Windows Server` and click **Add**.
   You will find the object in the **Selected object** pane.
7. Choose the required **Properties.**
8. 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. Click **Dell Windows Server (Detail Edition).**
3. Click **Firmware and Driver Versions**, then click **Open** on the **Task** pane.
4. Select a time period for which you want the report generated.
5. Click **Add Object**.
6. Search for objects of class `Dell Windows Server` and click **Add**.
   You will find the object in the **Selected object** pane.
7. 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. Click **Dell Windows Server (Detailed Edition).**
3. Click **RAID Configuration**, then click **Open** on the **Task** pane.
4. Select a time period for which you want the report generated.
5. Click **Add Object**.
6. Search for objects of class `Dell Windows Server` and click **Add**.
   You will find the object in the **Selected object** pane.
7. Choose the required **Properties.**
8. Click **Run.**
   The **RAID Configuration** report is generated.

4

Agent-free Monitoring Feature

Agent-free monitoring feature provides detailed inventory and monitoring of Dell PowerEdge servers (12th generation of Dell PowerEdge servers or later) through the server's iDRAC; using WSMAN and SNMP.

Dell Server Management Pack Suite installer automatically imports the Agent-free monitoring feature if the prerequisites are met.

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 10. Scalable Management Pack Versus Detailed Management Pack

Features	Scalable Edition	Detailed Edition
Agent-free Monitoring	• Inventory up to individual components. • Health monitoring at server, Rack Workstation and component group level.	• Inventory and health monitoring of individual components. • View metrics for power, temperature, and network interface cards, processor, memory, CUPS (Compute Usage per Second), PCIe SSD wear percentage and IO performance metrics.

Discovery and grouping

The Dell Server Management Pack Suite enables you to discover and classify Dell servers.

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

Table 11. Dell Hardware discovery and grouping

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

Group	Diagram View	Hardware Type
	Dell Sled Group	
Dell Rack Workstation	Rack Workstation Diagram	Dell Precision Racks

Discovering a Dell Server using Agent-free Monitoring Feature

NOTE: Install Microsoft SMASH Library (MPB) file before discovering a Dell Server using Agent-free monitoring feature. For information on installing the Microsoft SMASH Library (MPB) file, see the "Installing the WS-Management and SMASH Device Template" section of the *Dell Server Management Pack Suite Version 6.1.1 for Microsoft System Center Operations Manager Installation Guide* at **dell.com/OMConnectionsEnterpriseSystemsManagement** .

To discover a Dell server using the Agent-free 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 is displayed.
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 is displayed.
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 Agent-free 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 Agent-free 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 Dell servers on the 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 OpsMgr completes the automatically triggered SMASH discovery, the Dell servers appear in **Monitoring** → **WS-Management and SMASH Monitoring** → **SMASH Device State** screen.
20. Enable the Agent-free monitoring feature through **Feature Management Dashboard**.

Automatic trap destination configuration

To receive SNMP traps, the Agent-free Monitoring Feature automatically configures the IP address of the management server as a trap destination on the iDRAC during the discovery of Dell servers. Make sure that you have selected the **State** option to enable the alert destination on iDRAC.

Discoveries by the Dell Agent-free Monitoring Feature

Table 12. Dell Agent-free Monitoring Feature Discoveries

Discovery Object	Description
Dell Server Discovery	Classifies the Dell servers and populates the key attributes and components.
Dell Device Helper Discovery	Discovers the **DellDeviceHelper** as an object.
Dell Host NIC Correlation Discovery	Correlates the Host NIC interfaces with Physical interfaces. NOTE: Teamed network interfaces will show only one of the NICs in the team.

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 Agent-free monitoring feature discovers and monitors the health of the Dell servers. The Severity Level Indicators indicates the health of the Dell servers on the network. It includes monitoring health of Dell modular, monolithic systems and supported Dell Precision Racks and their components at regular intervals and on occurrence of events.

As the system components monitored through Agent-based monitoring feature and Agent-free monitoring feature are not exactly the same, it is possible that the overall server health that is shown through Agent-based (OMSA) and Agent-free (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.

Monitored hardware components

The following table provides information on the monitored hardware components supported in Scalable and Detailed feature.

Table 13. Monitored hardware components — Scalable and Detailed feature

Hardware components	Scalable	Detailed
BIOS	No	No
Battery Sensor	No	Yes
Battery Sensor Group	No	Yes
Current Sensor	No	Yes
Current Sensor Group	No	Yes
Fan Sensor	No	Yes
Fan Sensor Group	No	Yes
Host NIC	No	Yes
iDRAC Network Interface	No	Yes
iDRAC	No	No
Intrusion Sensor	No	Yes
Intrusion Sensor Group	No	Yes
License Group	Yes	No
License	No	Yes
Memory	No	No
Memory Unit Instance	No	No
Physical Network Interface	No	Yes
Processors	Yes	No
Processor Group	Yes	No
Power Supply	No	Yes
PCIeSSD Extender	No	Yes

Hardware components	Scalable	Detailed
PCIeSSD Backplane	No	Yes
PCIeSSD Physical Disk	No	Yes
Server Sensors	No	Yes
Storage Controller Connector	No	Yes
Storage Controller	No	Yes
Storage Controller Sensor	No	Yes
Storage Controller Battery Group	No	Yes
Storage Controller Battery	No	Yes
Storage Virtual Disk Group	No	Yes
Storage Virtual Disk	No	Yes
Storage Controller Physical Disk Group	No	Yes
Storage Controller Physical Disk	No	Yes
Storage Controller Enclosure	No	Yes
Storage Controller Enclosure EMM	No	Yes
Storage Controller Enclosure Fan Sensor	No	Yes
Storage Controller Enclosure Fan Sensor Group	No	Yes
Storage Controller Enclosure Power Supply	No	Yes
Storage Controller Enclosure Power Supply Group	No	Yes
Storage Controller Enclosure Temperature Sensor Group	No	Yes
Storage Controller Enclosure Temperature Sensor	No	Yes
Storage Controller Enclosure Sensor	No	Yes

Hardware components	Scalable	Detailed
SD Card Group	No	Yes
SD Card	No	Yes
Server Host NIC Group	No	Yes
Server Host NIC	No	No
Temperature Sensor	No	Yes
Temperature Sensor Group	No	Yes
Voltage Sensor	No	Yes
Voltage Sensor Group	No	Yes

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 and Rack Workstations. The following alerts and traps are displayed by the Agent-free monitoring feature:

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

Viewing Alerts on the OpsMgr Console

To view Agent-free monitoring feature alerts on the OpsMgr console:

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

   The following **Alerts Views** are displayed:

   - **Server and Rack Workstation Alerts** — SNMP traps for 12th and 13th generation of Dell PowerEdge servers, PowerVault storage servers and Dell Precision Racks with iDRAC7 or iDRAC8 are displayed.
   - **Dell Rack Workstation Alert Views**
     - **Rack Workstation Alerts**
3. Select **Server and Rack Workstation Alerts** or **Rack Workstation 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 and supported Rack Workstations on the network.

Viewing Diagram Views on the OpsMgr console

To view the Agent-free Monitoring 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
   - **Dell Rack Workstation Diagram Views**
     - Rack Workstation Diagram
   - **Dell Server Diagram Views**
     - Modular Systems Diagram
     - Monolithic Servers Diagram
     - Sled 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.

Rack Workstation Diagram

The **Dell Rack Workstation Diagram Views** offers a graphical representation of all supported Rack Workstations and allows you to expand and verify the status of individual devices and their components in the diagram. Select a Rack Workstation in the diagram to view its details in the **Detail View** pane.

Modular and Monolithic Systems

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

- Physical network interfaces
- Memory
- Power supply
- Sensors
- Processors
- Storage components
- BIOS (inventory only)
- iDRAC NIC
- Host NIC
- SD Card
- License

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.

Sled Servers Diagram

The Dell Sled Servers Diagram View offers a graphical representation of all Dell Sled servers and allows you to expand and verify the status of individual devices and their components in the diagram. Select a Sled server in the diagram to view its details in the **Detail View** pane.

Dell Server Instance Diagram

Select a Dell server, 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 components
- Host NIC
- License
- PCIe/ SSD
- SD Card
- BIOS (inventory only)
- iDRAC NIC

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 of all Dell servers and supported Rack Workstations. In the OpsMgr console, click **Dell → State Views**, the status of each Dell server and Rack Workstation managed by OpsMgr on the network is displayed.

You can view the status for the following groups:

- **Servers and Rack Workstations (Agent-free)**
- **Dell Rack Workstation State Views**
  - **Managed Rack Workstation (Agent-free)**

- **Dell Server State Views**
  - **FM Servers**
  - **Sled Servers (Agent-free)**
  - **Unmanaged Servers (Agent-free)**

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.

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:
   - **Agent-free Disk Performance (%)**
   - **Dell Performance View**
   - **System Board Usage**
     - **CPU Usage (%)**
     - **IO Usage (%)**
     - **Memory Usage (%)**
     - **Overall System Usage (%)**

   NOTE: All performance metric rules are disabled by default for Agent-free 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 Agent-free monitoring feature.

Dell Unit Monitors for Agent-free Monitoring Feature

Monitors to assess various conditions that can occur in Agent-free monitored objects.

Table 14. Dell Unit Monitors For Agent-free Monitoring

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

Object		Unit Monitor
	Dell Server Power Supply Unit	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		
	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

Object		Unit Monitor
	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 iDRAC Network Interface		
	Dell Server iDRAC Network Interface Unit	Periodic
Dell Server Host NIC		
	Dell Server Host NIC	Periodic
Dell Server License		
	Dell Server License	Periodic
Dell Server License Group		
	Dell Server License Group	Periodic
Physical Network Interface		
	Dell Server Network Interface Unit	Periodic
PCIe SSD Backplane		
	Dell Server PCIeSSD Backplane	Periodic
PCIe SSD Extender		
	Dell Server PCIeSSD Extender	Periodic
PCIe SSD Physical Disk		

Object		Unit Monitor
	Dell Server PCIeSSD Physical Disk Predictive Failure Disk	Periodic
	Dell Server PCIeSSD Physical Disk Primary Status	Periodic
Dell Server SD Card		
	Dell Server SD Card	Periodic
	Dell Server SD Card Group	Periodic
Dell Server Connector Enclosure		
	Dell Server Connector Enclosure	Periodic
Dell Storage Controller Enclosure EMM		
	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

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

Rules

The following section lists the rules specific to the Dell Agent-free 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 Dell Agent-free 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.

Task Summary

Performing Dell Tasks Using Dell Agent-free Monitoring Feature

Following table provides a summary of the Dell tasks that you can perform using Dell Server Agent-free monitoring feature:

Table 15. Dell Tasks Using Dell Agent-free Monitoring Feature

Task	Description
Launch Dell Remote Access Console	Launches the iDRAC console for the agent-free discovered Dell servers and Rack Workstations.
Launch Dell License Manager	Launches the Dell License Manager on the management system. **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 Server Tasks

Get Warranty Information

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

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 Dell OpenManage Server Administrator (Monolithic Server)

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

To launch Server Administrator from the OpsMgr console on Monolithic Servers:

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 Server Administrator (Monolithic Server).**

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

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 on the managed system.

NOTE: Remote Desktop task uses hostname to connect to the management server of a system. If the management server cannot resolve the hostname then, add the hostname and the IP address to a route to the server using its hostname that is configured on the management server.

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.**

5

DRAC Monitoring Feature

DRAC monitoring feature supports discovery, and monitoring for the various generations of iDRAC (iDRAC6, iDRAC7, and iDRAC8 systems) using SNMP.

Discovery and grouping

The Dell Server Management Pack Suite 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 16. Dell Hardware discovery and grouping

Group	Diagram View	Hardware Type
Dell Remote Access Controllers	Remote Access Controller Group	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 Agent-based 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 17. DRAC Monitoring Feature Discoveries

Discovery Object	Description
iDRAC Discovery	Discovers all supported Integrated Dell 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.
iDRAC6 Modular Discovery	Discovers the iDRAC6 (Modular) group.
iDRAC6 Monolithic Discovery	Discovers the iDRAC6 (Monolithic) group.
iDRAC7 Modular Discovery	Discovers the iDRAC7 (Modular) group.
iDRAC7 Monolithic Discovery	Discovers the iDRAC7 (Monolithic) group.
iDRAC8 Modular Discovery	Discovers the iDRAC8 (Modular) group.
iDRAC8 Monolithic Discovery	Discovers the iDRAC8 (Monolithic) group.
Dell Remote Access Group Discovery	Discovers the Dell Remote Access group and populates iDRAC.
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 the 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** are displayed. These alerts contains information on SNMP traps from iDRAC6, iDRAC7 and iDRAC8 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 the 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.

Remote Access Controllers Group

The **Remote Access Controllers Group** diagram view offers a graphical representation of all iDRAC6, iDRAC7 and iDRAC8 devices. Select a component in the diagram to view its details in the **Detail View** pane.

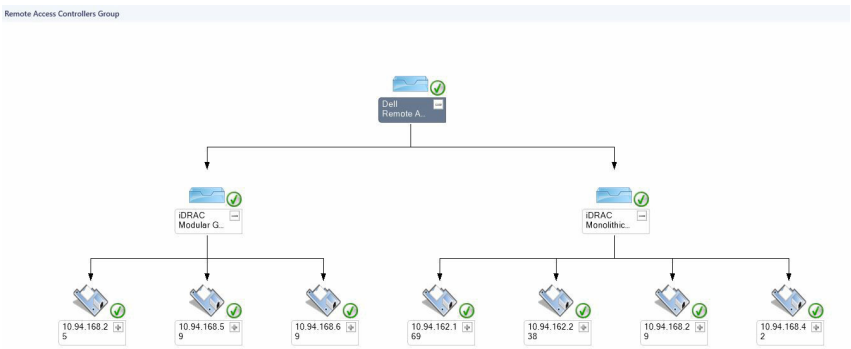

Figure 3. Remote Access Controllers Group Diagram

State Views

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

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 18. Dell Unit Monitors for DRAC Monitoring Feature

Object		Unit Monitor
iDRAC6 Modular		
	Dell Remote Access Status	Event and Periodic
iDRAC6 Monolithic		
	Dell Remote Access Status	Event and Periodic
iDRAC7 Modular **NOTE:** For iDRAC7 modular and monolithic servers, 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

Object		Unit Monitor
iDRAC7 Monolithic		
	Dell Remote Access Status	Event and Periodic
	Controller Global Status	Event and Periodic
	Controller Global Storage Status	Event and Periodic
iDRAC8 Modular NOTE: For iDRAC8 modular and monolithic servers, 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
iDRAC8 Monolithic		
	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 name or ip"
- OID = Actual trap ID of the DRAC /CMC 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.

Task Summary

Performing Dell Tasks Using DRAC

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

Table 19. 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 iDRAC7, and iDRAC8.
Launch Dell OpenManage Server Administrator	Launches the Dell OpenManage Server Administrator. **NOTE:** This feature is available only on systems with iDRAC7, and iDRAC8.

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 the Dell system.

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 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 DRAC /iDRAC device 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 iDRAC7, and iDRAC8.

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 DRAC/ iDRAC device 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 iDRAC7, and iDRAC8.

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 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 OpenManage Server Administrator.**

On systems running OpsMgr 2012 :

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

6

Chassis Monitoring Feature

Chassis monitoring feature supports discovery and monitoring of Chassis Management Controller (CMC) on Dell PowerEdge FX2/ FX2s chassis, Dell PowerEdge VRTX chassis, and Dell PowerEdge M1000e chassis using SNMP and WS-Man.

Chassis monitoring feature also supports Detailed monitoring of individual chassis components in OpsMgr 2012.

Discovery and grouping

The Dell Server Management Pack Suite enables you to discover and classify Dell Chassis Management Controllers (CMC), Dell PowerEdge FX2/ FX2s, 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 20. Dell Hardware discovery and grouping

Group	Diagram View	Hardware Type
Dell CMC	Dell Chassis Management Controllers (CMC) group	CMC instances on the network, chassis slot summary and server modules for CMC.
Dell PowerEdge M1000e	Dell M1000e Chassis group	Dell PowerEdge M1000e
Dell PowerEdge VRTX	Dell VRTX Chassis group	Dell PowerEdge VRTX
Dell FX2	Dell FX2 Chassis Group	Dell PowerEdge FX2

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 6.1.1 for Microsoft System Center Operations Manager Installation Guide* at **dell.com/OMConnectionsEnterpriseSystemsManagement**.

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 21. Dell Chassis Monitoring Feature Discoveries

Discovery Object	Description
Dell CMC Discovery	Discovers all supported Dell CMCs, Dell PowerEdge FX2, Dell PowerEdge VRTX, and Dell PowerEdge M1000e.
Dell CMC Slot Discovery	Discovers slots on the CMC device.
Dell Chassis Detailed Discovery	Discovers all Dell chassis components.

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 devices. The Chassis monitoring feature discovers and monitors the health of the Dell CMC devices. The Severity Level Indicators indicates the health of the Dell CMC devices on the network.

Chassis Monitoring includes monitoring the health of Dell chassis 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.

Monitored hardware components

The following table provides information on the monitored hardware components supported in Scalable and Detailed feature.

Table 22. Monitored hardware components — Scalable and Detailed feature

Hardware Components	Scalable	Detailed
CMC Slot Information	No	No
CMC Slot	No	No
Fan Group	No	Yes

Hardware Components	Scalable	Detailed
Fan	No	Yes
IO Module	No	Yes
IO Module Group	No	Yes
PCIe Device Group	No	No
PCIe Device	No	No
Power Supply Group	No	Yes
Power Supply	No	Yes
Storage	No	Yes
Storage Controller	No	Yes
Storage Controller Virtual Disk Group	No	Yes
Storage Controller Virtual Disk	No	Yes
Storage Controller Physical Disk Group	No	Yes
Storage Controller Physical Disk	No	Yes
Storage Enclosure	No	Yes

Alerts Views

This view is available for managing hardware and storage events from Dell CMC devices. SNMP traps sent by Chassis 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.
   - **Dell M1000e Chassis Alerts** — SNMP traps from the discovered Dell PowerEdge M1000e chassis devices are displayed.
   - **Dell VRTX Chassis Alerts** — SNMP traps from the discovered Dell PowerEdge VRTX chassis devices are displayed.
   - **Dell FX2 Chassis Alerts** — SNMP traps from the discovered Dell PowerEdge FX2 chassis devices 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 FX2, Dell M1000e, and Dell VRTX on the 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 FX2 Chassis Diagram View**.
     - **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.

Chassis Management Controllers group

The **Chassis Management Controllers Group** diagram view offers a graphical representation of all Dell CMC, Dell PowerEdge FX2, Dell PowerEdge M1000e, and Dell PowerEdge VRTX, and their inventory. For Chassis discovery, see Discovering Chassis devices.

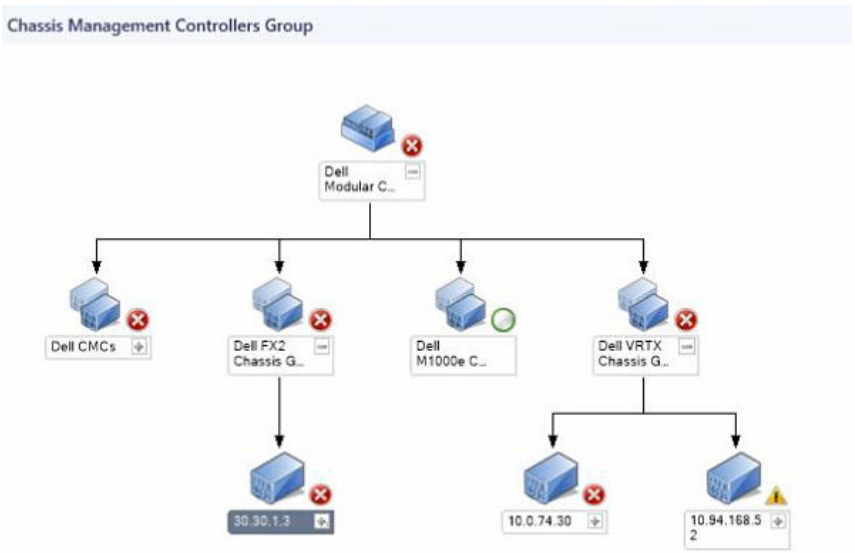

Figure 4. Chassis Management Controllers group diagram

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

Slot names modified on CMC chassis are reflected in the diagram view.

The correlation of Dell servers with the server modules of CMC 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 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 6.1.1 for Microsoft System Center Operations Manager Installation Guide* at **dell.com/support/home**.

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 FX2, 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 the 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 23. Dell Unit Monitors for Chassis Monitoring Feature

Object		Unit Monitor
Dell CMC		
	Dell CMC Status	Event and Periodic
Dell Chassis Overall Health		
	Dell Chassis Overall Health Unit Monitor	Event and Periodic
Dell Chassis IO Module		
	Dell Chassis IO Module Health Poll Based UnitMonitor	Periodic
Dell Modular Chassis Fan		
	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		

Object		Unit Monitor
	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
	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 name or ip"
- OID = Actual trap ID of the DRAC /CMC 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.

Task Summary

Performing Dell Task Using the Dell Chassis

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

Table 24. Dell Task Using The Dell Chassis

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

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Chassis Modular Server Correlation Feature

Chassis Modular Server Correlation feature supports:

- Correlation of Dell Modular Servers with Chassis slots.

  NOTE: CMC slot discovery is disabled by default. Hence, enable CMC slot discovery for the correlation feature to work.

- Correlation of Chassis Shared Storage components with Dell servers.

  NOTE: Imports Chassis detailed monitoring for the correlation of chassis shared components with Dell servers.

Discoveries by the Chassis Modular Server Correlation Feature

Table 25. 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 (Agent-based).

8

Feature Management Dashboard

The Feature Management Dashboard provides facilities for the configuration of Dell Server Management Pack Suite monitoring features to monitor the various Dell systems — Dell servers, Dell Precision Racks, Dell Remote Access Controllers (DRAC), Dell PowerEdge FX2/ FX2s, Dell PowerEdge VRTX, Dell PowerEdge M1000e, and integrated DRAC (iDRAC). The Feature Management Dashboard provides the following monitoring features.

- Agent-based Monitoring Feature
- Agent-free Monitoring Feature
- DRAC Monitoring Feature
- Chassis Monitoring Feature
- Chassis Modular Server Correlation Feature

Discovery by Dell Feature Management Pack

Table 26. Dell Feature Management Pack Discovery

Discovery Object	Description
Dell Feature Management Host Discovery	Populates the dashboard if the management server is the feature management pack host. The management server on which 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.

Feature Management Tasks

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

NOTE: In the Event log, ignore the errors pertaining to reimporting of existing management packs under the error logs. 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 27. Feature Management Tasks

Tasks		Description
Server and Rack Workstation Agent-free Monitoring		
	Import Agent-free Scalable Feature	Imports the Scalable feature of Agent-free monitoring feature.
	Import Agent-free Detailed Feature	Imports the Detailed feature of Agent-free monitoring feature.
	Set to Agent-free 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 Agent-free 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.
	Set Agent-free as Preferred Monitoring Method	This task enables the Agent-free monitoring feature as the preferred monitoring method for the Dell servers and Rack Workstations, when the Dell servers and Rack Workstations in the setup are monitored through both, Agent-based monitoring feature, and Agent-free monitoring feature.
	Associate Run-As Account	This task associates the Run As Account used for SMASH discovery with all Dell Server objects, required for health monitoring. For more information, see Associate Run-As Account Task.
	Refresh Node Count	Updates the node count.
	Refresh Dashboard	Updates the **Feature Management Dashboard**.
	Remove Agent-free Monitoring Feature	Removes the Agent-free monitoring feature.
Server and Rack Workstation Agent-based Monitoring		
	Import Agent-based Detailed Feature	Imports the Detailed feature of the Agent-based monitoring feature.
	Import Agent-based Scalable Feature	Imports the Scalable feature of the Agent-based monitoring feature.
	Set Agent-based as Preferred Monitoring Method	This task enables the Agent-based monitoring feature as the preferred monitoring method for

Tasks		Description
		the Dell servers and Rack Workstations, when the Dell servers and Rack Workstations in the setup are monitored through both, Agent-based monitoring feature, and Agent-free monitoring feature.
	Set to Agent-based 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 Agent-based 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 Agent-based	Enables agent proxying for Dell servers.
	Set Informational Alerts On	Informational alerts are turned on when the Agent-based Scalable Monitoring is in use.
	Set Informational Alerts Off	Informational alerts are turned off when the Agent-based Scalable Monitoring is in use.
	Refresh Node Count	Updates the node count.
	Refresh Dashboard	Updates the **Feature Management Dashboard**.
	Remove Agent-based Monitoring Feature	Removes the Agent-based 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**.
	Refresh Node Count	Updates the node count.
	Remove DRAC Monitoring Feature	Removes the DRAC monitoring feature.
Chassis Monitoring		
	Import Chassis Monitoring Scalable Feature	Imports the chassis scalable monitoring feature.
	Import Chassis Monitoring Detailed 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

Tasks		Description
		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. On upgrading from a previous version, run this task to use the latest version for this monitoring feature.
	Refresh Node Count	Updates the node count.
	Refresh Dashboard	Updates the **Feature Management Dashboard**.
	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**.
	Remove Chassis Modular Server Correlation Feature	Removes the chassis modular server correlation monitoring feature.

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Licensing for Dell Server Management Pack Suite

License Information

Agent-free monitoring feature in Dell Server Management Pack Suite for OpsMgr is licensed. Information on the process for obtaining software licenses is as follows.

Licenses

Licenses are available as tiered bundles of 1, 50, 200, and Unlimited node(s). One node license is available for evaluation purposes at no additional charge. You are required to purchase at least one license per OpsMgr Management group.

For more information on licensing, go to **Dell TechCenter** website and then **OpenManage Integration Suite** for Microsoft System Center wiki page.

Purchasing Licenses

To leverage the Agent-free monitoring feature functionalities, you must first purchase the appropriate License Key SKU (based on the desired number of managed nodes). You can purchase licenses from Dell Sales. The order confirmation and license is sent as an email to the email ID that you have specified in My Account — Dell. The purchased licenses are also downloadable from the Dell Online Licensing portal — **dell.com/support/licensing**.

Checking License Usage

A Console requires a license to manage PowerEdge servers. To view the PowerEdge servers managed by Agent-free monitoring feature for OpsMgr: In OpsMgr, select **Monitoring → Dell → Feature Management Dashboard**

The number of nodes consumed is displayed in the **Total Node Count** column.

When the number of PowerEdge servers increase in a data center, you can purchase the appropriate license bundle.

Change from Dell Server Management Pack Suite Version 6.0 for OpsMgr

Until Dell Server Management Pack Suite Version 6.0 for OpsMgr; Dell Connections License Manager (DCLM) was required to manage licenses. For Dell Server Management Pack Suite Version 6.1 and later, you do not require DCLM.

There is no longer a license-count enforcement due to DCLM being removed. You can continue to manage the Dell PowerEdge servers using Agent-free monitoring feature for OpsMgr even after reaching

or exceeding the limit of the number of licenses purchased from Dell. The Checking License Usage section presents the steps to help you determine the number of nodes being managed to ensure that you have the appropriate number of license entitlements from Dell Inc. Purchase additional licenses if the number of nodes you are managing exceed the number of licenses you have purchased.

Licenses that you have purchased for Dell Server Management Pack Suite Version 6.0 for OpsMgr are still applicable to Dell Server Management Pack Suite Version 6.1 and later for OpsMgr. So, after a product upgrade, the earlier license is still valid and you can still manage servers per the permissible count mentioned in the previously purchased license.

License terms and conditions

The licenses are also governed by the same license terms as the product EULA. You can get the latest updated license terms at **dell.com/learn/us/en/uscorp1/terms?s=corp**. For further queries, contact Dell Sales and Support.

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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 see the following guides available at **dell.com/support/home**.

- *Integrated Dell Remote Access Controller 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 OpenManage Port Information Guide*
- *Dell Lifecycle Controller User's Guide*
- *Dell Chassis Management Controller User's Guide*
- *Dell Chassis Management Controller for Dell PowerEdge VRTX User's Guide*
- *Dell Chassis Management Controller for Dell PowerEdge FX2 User's Guide*

The *Dell Systems Management Tools and Documentation DVD* contains a release notes file for Server Administrator and additional release notes 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.

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Appendix A — Issues And Resolutions

Issues and resolutions

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

Table 28. 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
Server Modules and Chassis Slot Summary Information are not visible under CMC.	• Make sure that OpenManage Server Administrator (OMSA) or DRAC tools are installed on the management server managing the CMC. • Make sure that you have configured the **RunAsAccounts** for CMC devices and associated them with "Dell CMC Login Account". • Make sure that **Dell CMC Slot Discovery** and 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 6.0 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 *Dell Server Management Pack Suite Version 6.1.1 for Microsoft System Center Operations Manager Installation Guide*.	Dell Server Management Pack Suite
If there is a delayed response while discovering a CMC device, 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.	Increase the **Script Timeout** value on the **Override Properties** screen for the CMC device which is experiencing a delayed response. For more information on **Overrides**, see the OpsMgr documentation at **technet.microsoft.com**.	Dell Chassis Monitoring Feature

Issue	Resolution	Applicable To
Feature management host server health service is nonfunctional.	If the selected management server has stopped functioning, the executed Feature Management task 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**. Select a management server from the remaining management servers, and override the FMPHostFQDN of Feature Management Host Discovery.	Dell Server Management Pack Suite
Dell OM: Server and its component health computation failed alert is displayed under **Monitoring** → **Alerts Views** → **Server Alerts** on the console.	Manually associate the **Run As Account** for monitoring Dell server. For more information, see Associating Run As Account for monitoring a Dell Server using Agent-free Monitoring Feature.	Dell Agent-free Monitoring Feature

Known Limitations

Table 29. 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 *Unavailable* 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

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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 Agent-free 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 Agent-free 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 30. 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.

Associate Run As-Account task — Agent-free Monitoring Feature

Associate Run As-Account task associates the Run As Account used for SMASH discovery with all Dell Server objects, required for health monitoring. This task is available as an option for performing object-level association.

WARNING: Perform the Associate Run As-Account task only if necessary. This task affects the configuration of all Dell Server objects. Dell Server Run As Account Association unit monitor automatically performs the object-level association.

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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 the 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: For the following steps, 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 the view the password in plain text. Create a task only if necessary and consider the security aspects before you proceed.

To create a 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. Enter **Task name**, **Description**, and select **Dell Windows Server** as the **Task Target** and click **Next.**

   The **Command-Line** screen is displayed.
6. Enter 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 the operating system language).
7. For power control tasks, in the **Parameters** field, enter the command-line parameters in the following format:
   - Enter `-I lanplus -H` and then choose the **Remote Access IP with IPMI capability** from the drop-down menu.
   - Enter `-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 lanplus -H $Target/Property[Type="Dell.WindowsServer.Server"]/
RemoteAccessIP$ -U root -P <password> -k <kgkey> power status
```

8. For LED on or off tasks, enter the command-line parameters in the following format:
   - Enter `-ip` and choose `the` **Remote Access IP with IPMI capability** from drop-down menu.
   - Enter `-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 the 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. Enter **Task name**, **Description**, and set the **Task Target** with one of the following:
   - Dell Windows Server (for Agent-based Monitoring)
   - Dell Server (for Agent-free Monitoring)
   - Dell iDRAC7 or iDRAC8 (for DRAC Monitoring)
6. Click **Next**.

   The **Command Line** screen is displayed.
7. Enter 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 the operating system language).
8. Click **Create** to create the task and repeat this procedure for each new DLM task.