Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager

User's Guide

DELL EMC

Notes, cautions, and warnings

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

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

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

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Introduction

This document describes the activities that you can perform with the Dell EMC Server Management Pack Suite version 7.0 for Microsoft System Center Operations Manager.

The integration of Dell EMC Server Management Pack Suite with Microsoft System Center 2016 Operations Manager, 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 required 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 2016 Operations Manager, 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 EMC Server Management Pack Suite's release notes, which contains 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_EMC_Server_Management_Pack_Suite_v7.0_Axx.exe file. (where xx is the Dell EMC Server Management Pack Suite version 7.0 release number) file.

Before installing this version of Dell EMC Server Management Pack Suite for Microsoft System Center Operations Manager, download the latest documents from **Dell.com/omconnectionsEnterpriseSystemsManagement** or **Dell.com/openmanagemanuals**.

Topics:

Terms used in this document

Table 1. Terms used in this document

Term	Refers to
OpsMgr	Microsoft System Center 2016 Operations Manager, 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 2016	Microsoft System Center 2016 Operations Manager, 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)	DRAC of Dell servers, Dell branded OEM servers, and Dell OEM Ready servers, unless otherwise specified.

Term	Refers to
Integrated Dell Remote Access Controllers (iDRAC)	iDRAC of Dell servers, Dell branded OEM servers, and Dell OEM Ready servers, unless otherwise specified.
Chassis	Chassis Management Controller (CMC), unless otherwise specified.
Servers	PowerEdge servers, PowerVault monolithic and modular servers, supported Rack Workstations, Dell branded OEM servers, and Dell OEM Ready servers, unless otherwise specified.
iDRAC Service Module (iSM)	iDRAC Service Module is a lightweight software that runs on the Server and complements iDRAC with monitoring information from the OS. The Service Module does not expose any new interfaces of its own, rather it complements iDRAC with additional data that users can work with using iDRAC consoles. For more information about iSM and the supported platform, see *iDRAC Service Module Installation Guide* at Dell.com/support.
Servers (iSM)	PowerEdge servers and Precision Rack Workstations discovered using the SCOM agent through iSM.
Servers and Rack Workstation monitoring	PowerEdge servers, PowerVault monolithic and modular servers, supported Rack Workstations, Dell branded OEM servers, and Dell OEM Ready servers, unless otherwise specified. This is a license-free feature.
Servers and Rack Workstation monitoring (Licensed)	PowerEdge servers, PowerVault monolithic and modular servers, supported Rack Workstations, Dell branded OEM servers, and Dell OEM Ready servers, unless otherwise specified. This is a license based feature.

What is new in this release

The 7.0 release of Dell EMC Server Management Pack Suite includes:

- Rebranding changes for Dell Server Management Pack Suite; Dell Server Management Pack Suite is now Dell EMC Server Management Pack Suite.
- Support for 14th generation of the PowerEdge servers
- Support for detailed monitoring of the Dell servers through iDRAC Service Module (iSM) using Windows Management Instrumentation (WMI)
- Supports the following iDRAC features of 14th generation of the PowerEdge servers:
  - System Configuration Lockdown Mode feature
  - iDRAC Group Manager feature
  - Server Port Connection Information
  - iDRAC detection of a failed CMC
- Added Chassis Power Consumption Performance View for Dell Chassis Management Controller discovered through the Chassis Monitoring feature
- Added Event Auto Resolution feature to automatically resolve the Dell device events for the Dell servers discovered through WS-MAN
- Added Capacity Planning feature for Dell Servers discovered through Server and Rack Workstation Monitoring (Licensed) feature
- Added Check Node Interfaces task to check if the Dell devices and their corresponding interfaces are reachable or non-reachable for all the monitoring features.

Key features of Dell EMC Server Management Pack Suite

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

Table 2. Features and Functionalities

Feature	Functionality
Discovery and Monitoring — Servers and Rack Workstation	Supports discovery and monitoring of PowerEdge servers, PowerVault Monolithic and Modular systems, Dell OEM Ready servers, and supported Dell Precision Racks running the supported Windows operating system, using the supported OpenManage Server Administrator (OMSA).

License based Discovery and Monitoring — Servers and Rack Workstation (Licensed)	Supports:
	• License based discovery and monitoring of 12th, 13th and 14th generation of PowerEdge servers, PowerVault systems, supported Dell Precision Racks, Dell branded OEM servers, and Dell OEM Ready servers through:
	  • iDRAC using WS-MAN
	  • iDRAC access via Host OS
	  • iSM using Windows Management Instrumentation (WMI)
	• Discovery and monitoring of 12th, 13th, and 14th generation of PowerEdge servers, PowerVault systems, supported Dell Precision Racks, Dell branded OEM servers, and Dell OEM Ready servers using iDRAC.
	• Discovery and monitoring of 12th, 13th, and 14th generation of PowerEdge servers using iSM. For the complete list of supported servers, see **Supported platforms** in the *iDRAC Service Module Installation Guide* at Dell.com/manuals.
	• SNMP traps for devices discovered through WS-MAN of Servers and Rack Workstation Monitoring (Licensed) feature.

Discovery and Monitoring — Chassis Management	Supports: • Discovery and monitoring of Chassis, and Dell OEM Ready chassis devices. • Discovery of server modules and chassis slot summary for CMC chassis. • SNMP traps for Chassis devices.
Discovery and Monitoring — Dell Remote Access Controllers (DRAC)	Supports: • Discovery and monitoring of supported iDRAC devices — 12th and 13th generation only. • SNMP and PET traps for DRAC devices.

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Overview of Dell EMC Server Management Pack Suite

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

- Discover and classify the following Dell devices:
  - Dell Servers—Using license-free monitoring, and license-based monitoring
  - Dell Remote Access Controllers
  - Dell Chassis—PowerEdge FX2/ FX2s, PowerEdge VRTX, PowerEdge M1000e, and Dell OEM Ready Chassis
  - Supported Dell Precision Racks
- Monitor the discovered Dell devices through OMSA, iDRAC, or iSM based on your requirements.
- View, analyze, and resolve alerts using Knowledge Base (KB) articles.
- Perform various tasks on the discovered Dell devices.
- View reports for discovered Dell devices.

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Server and Rack Workstation Monitoring feature

Server and Rack Workstation Monitoring feature supports the discovery and monitoring of the following devices that are installed with the supported Windows OS, using the OpenManage Server Administrator (OMSA):

- PowerEdge Modular and Monolithic servers
- PowerVault storage servers
- Dell OEM Ready servers
- Dell Precision Racks

Inventory and monitoring of these devices could be done through the server's OpenManage Server Administrator (OMSA) which is a license-free monitoring feature.

For information about the supported OMSA versions, see **Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager Release Notes.**

The Dell EMC Server Management Pack Suite installer automatically imports the Server and Rack Workstation monitoring scalable feature into OpsMgr.

Topics:

Comparison of Scalable and Detailed Edition features

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

Table 3. Scalable management pack versus the Detailed management pack

Features	Scalable Edition	Detailed Edition
Server and Rack Workstation Monitoring Feature	• 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 of 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 EMC 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 Modular Servers Dell Sled Servers	PowerEdge systems. 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 a 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 license-free 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 are running an unsupported OMSA version are grouped as Dell Unmanaged Devices.

Discoveries by the Server and Rack Workstation Monitoring Feature

Table 5. Server and Rack Workstation 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.

discovery	Description
Dell Server Hardware Components discovery	Discovers hardware components at a group level (such as sensors, processor, memory, and power supply).
Dell OpenManage Software Services discovery	Discovers the objects for OpenManage Server Administrator Windows services.
Dell Server Detailed BIOS discovery	Discovers BIOS objects for each Dell server (Detailed edition only).
Dell Server Detailed Memory discovery	Discovers memory instances for 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, an unsupported OMSA version, 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 Modular servers, Monolithic servers, and supported Dell Precision Racks and their components, both at regular intervals and on occurrence of events.

Monitored hardware components

The following table provides information about the monitored hardware components supported in the Scalable and Detailed feature:

Table 6. Monitored hardware components — Scalable and Detailed feature

Hardware components	Scalable	Detailed
iDRAC	Yes	Yes
Memory	Yes	Yes
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

Hardware components	Scalable	Detailed
Power Supplies Unit Instance	No	Yes
Storage Controller Physical Disk Instance	No	Yes
Storage Connector Physical Disk Group	No	Yes
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 EMC Server Management Pack Suite provides the following types of views for monitoring, under **Monitoring** > **Dell** on the OpsMgr console:

- Alerts Views
- Diagram Views
- Performance and Power Monitoring Views
- State Views

Alerts Views

This view is available for managing hardware and storage events from Servers and Rack Workstations. The following alerts are displayed:

- Alerts for events received from OpenManage Server Administrator for the 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 the Server and Rack Monitoring feature on the Feature Management Dashboard.
- Link-up and Link-down alerts for events received from the Broadcom and Intel network interface cards.

Viewing Alerts on OpsMgr Console

To view alerts on the OpsMgr console:

1 Launch the OpsMgr console and click **Monitoring** > **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**—OMSA alerts from the Dell servers and Rack Workstations are displayed.
- **Dell Rack Workstation Alert Views**
  - **Network Interface Alerts** — Alerts—Link-up and Link-down alerts from the discovered NICs are displayed.
  - **Rack Workstation Alerts** —OMSA alerts from Rack Workstations are displayed.

2 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.

3 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 the 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:

- Modular and Monolithic servers
- Sled Group
- 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 **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 **Monolithic Servers Diagram** view offers a graphical representation of all Monolithic systems and allows you to expand and verify the status of individual devices and their components in the diagram.

Sled Servers Diagram

The **Sled Servers Diagram** view offers a graphical representation of all 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 **Modular System** or **Monolithic Servers** diagram views, to view the diagram specific to that particular system.

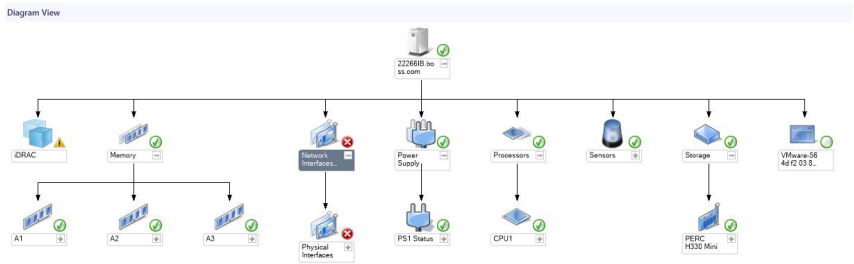

Figure 1. Dell Server Instance Diagram

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 Server and Rack Workstation 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. 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. Search for `Dell Windows Server Physical and Teamed Relationship Discovery Rule` in the **Look for:** field.
5. 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.

6 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.

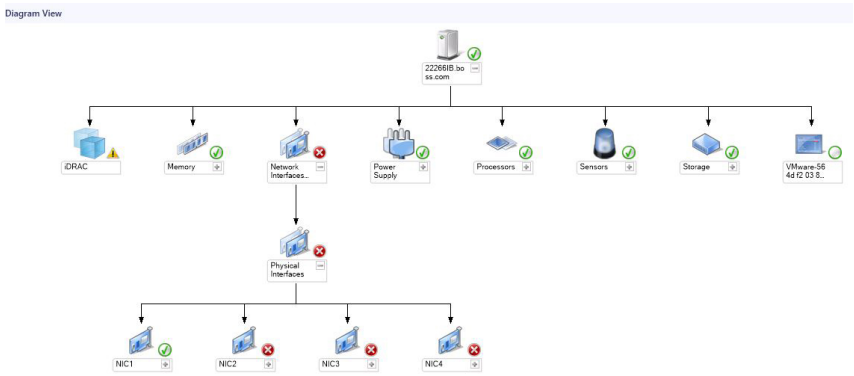

Figure 2. Network Interfaces Diagram View

Enabling Network Interfaces Group to Dell Server Health Roll Up

For the status roll-up to be displayed at the server level, 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 then, search **Network Interfaces Group** for the type of server you want to enable the functionality. For example, Dell Windows Server.

4 Click **Entity Health** > **Availability**.

5 Right-click **Network Interfaces Group to Dell Server Health Roll up** and select **Overrides** > **Override the Monitor** > **For all objects of class: Dell Windows Server**

The **Override Properties** screen is displayed.

6 Select **Enabled** and set the **Override Value** to **True**.

7 Under **Management Pack**, either select a management pack created from the **Select destination management pack:** drop-down menu or create a management pack by clicking **New...**

To create a management pack:

a Click **New...**

The **Create a Management Pack** screen is displayed.

b 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**.

c Click **Create**.

The management pack you created is selected in the **Select destination management pack:** drop-down menu.

8 Click **Apply**.

Performance and Power Monitoring Views

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

1 Launch the OpsMgr console and click **Monitoring.**

2 In the **Monitoring** pane, click **Dell** > **Performance and Power Monitoring** for the following views:

- **Ambient Temperature (Centigrade)**
- **Amperage (Amps)**
- **Disk Performance View(%)**
- **Energy Consumption (kWh)**
- **Peak Amperage (Amps)**
- **Peak Power (Watts)**
- **Physical Network Interface**
- **Power Consumption (BTU/hr)**
- **Power Consumption (Watts)**
- **Teamed Network Interface**

> **NOTE: Power monitoring is applicable only for Dell servers with power monitoring capability for a particular attribute. It is enabled only when the detailed edition of Server and Rack Workstation Monitoring feature is present.**

> **NOTE: Disk Performance View (%), Teamed and Physical network interface instances are disabled by default and appears only when the detailed edition of the Server and Rack Workstation 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) the threshold values from the **Authoring** pane of the OpsMgr console. Unit monitors are available under **Dell Windows Server** objects for Server and Rack Workstation Monitoring feature. To enable the threshold values of unit monitors, see Enabling Performance and Power Monitoring Unit Monitors.

For more information on performance information collection, see Performance Collection Rules.

Enabling Performance and Power Monitoring Unit Monitors

To enable the unit monitors for Performance and Power Monitoring Views:

1 Launch OpsMgr console and click **Authoring**.

2 Click **Management Pack Objects** > **Monitors**, and then search for **Performance** in the **Look for:** field.

3 Click **Dell Windows Server** > **Performance**.

4 Right-click the unit monitor you want to enable.

5 Select **Overrides** > **Override the Monitor** and select an option based on your requirement.

For example, to override the unit monitors for all objects of class: Dell Windows Server, select **For all objects of class: Dell Windows Server**

The **Override Properties** screen is displayed.

6 Select **Enabled** and set the **Override Value** to **True**.

7 Under **Management Pack**, either select a management pack created from the **Select destination management pack:** drop-down menu or create a management pack by clicking **New...**

To create a management pack:

a Click **New...**

The **Create a Management Pack** screen is displayed.

b 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**.

c Click **Create**.

The management pack you created is selected in the **Select destination management pack:** drop-down menu.

8 Click **Apply**.

State Views

This view is available for viewing the health of all Dell servers and Rack Workstations. To view the status of each Dell Server or Rack Workstation managed by the OpsMgr on the network, click **Monitoring** > **Dell** > **State Views** in the OpsMgr console.

You can view the status of the Dell Servers and Rack Workstations in the following views:

- **Servers and Rack Workstations**
- **Dell Rack Workstation State Views**
  - **Managed Rack Workstation**
- **Dell Server State Views**
  - **FM Servers**
  - **Sled Servers**

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

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 illustrate the various Dell monitors and the applicable parameters.

Dell Unit Monitors — Scalable Edition

Monitors to assess various conditions that can occur in the license-free monitoring feature — Scalable Edition monitored objects.

Table 7. Dell Unit Monitors — Scalable Edition

Object		Unit Monitor
Memory		
	Dell Server Memory Status	Event and Periodic
	Dell Server Memory Redundancy Status	Event and Periodic

Object		Unit Monitor
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
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		

Object		Unit Monitor
	Dell Server iDRAC Network Interface Monitor	Periodic
Dell OM Performance		
	Ambient Temperature Average Threshold AlertMonitor	Periodic
	Amperage Average Threshold AlertMonitor	Periodic
	EnergyConsumption Average Threshold AlertMonitor	Periodic
	PowerConsumption (BTU/hr) Average Threshold	Periodic
	PowerConsumption (Watts) Average Threshold AlertMonitor	Periodic
	Dell OM Server Unsupported Unit 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
	Enclosure EMM Unit Monitor	Event and Periodic
Storage Controller Enclosure Instance		

Object		Unit Monitor
	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
	Enclosure Temperature Unit Monitor	Event and Periodic
Physical Network Interface Instance (Basic)		
	Connection Status	Event and Periodic
Physical Network Interface Instance (Enriched)		

Object		Unit Monitor
	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
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 Server and Rack Workstation Monitoring feature.

Dell Systems Event Processing Rules

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

Server Administrator

All informational, warning, and critical events for OMSA have 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:

- **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 Server and Rack Workstation Monitoring feature is imported, the disabled Performance (excluding Network Performance) and license-free Disk Performance (%) collection rules are enabled by default.
- **Disk Performance (%)** — This view displays the **Remaining Rated Write Endurance** of Solid-State Drives (SSDs) of a Dell server. Search for the object **SSD** to view the data.

NOTE: Network Statistics are defined in Detailed edition of the Server and Rack Workstation 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 `Enriched` in the **Look for:** field.

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 **Enabled** and set the **Override Value** to **True.**.

6 Under **Management Pack**, either select a management pack created from the **Select destination management pack:** drop-down menu or create a new management pack by clicking **New...**

To create a new management pack:

a Click **New...**

The **Create a Management Pack** screen is displayed.

b 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**.

c Click **Create**.

The management pack you created is selected in the **Select destination management pack:** drop-down menu.

7 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 Windows Server tasks

Task	Description
Check Node Interfaces	Checks if the selected Dell server and its corresponding interface; WMI is reachable or non-reachable.
Check Power Status	Check the overall power status of the system.

Task	Description
Clear ESM Logs	Backs up the content of the Embedded System Management (ESM) log and clears the ESM log file for a selected system.
Force Power Off	Turns off the system power without shutting down the operating system.
Get Warranty Information	Retrieves the warranty information for the selected system. **NOTE: An active internet connection is required to retrieve the warranty information.**
Launch Dell License Manager on X64 bit Management Server	Launches the Dell license manager on management systems running 64-bit operating system.
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 Dell Servers discovered using the Server and Rack Workstation Monitoring feature.
Launch OpenManage Server Administrator	Launches the OpenManage Server Administrator.
Launch Remote Desktop	Launches the remote desktop for the selected 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.

Dell Windows Server Tasks

Check Node Interfaces

The **Check Node Interfaces** task checks if the selected Dell server and its corresponding interface; WMI is reachable or non-reachable. To check the node interfaces:

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 Dell **Diagram Views**, **State Views**, or an alert in the **Alerts Views**.
3 In the **Tasks** pane, select **Dell Windows Server Tasks** > **Check Node Interfaces**.

The task provides a summary of the reachability check, and interface check after the successful completion of the task.

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 View**, **State View**, or **Alert View**.
2. Select the desired Dell server in any of the **Diagram View** or **State View** or an alert in the **Alerts View**.
3. In the **Tasks** pane, select **Dell Windows Server Tasks** > **Check Power Status.**

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.

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**.

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 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.**

Launch Dell OpenManage Power Center

You can use this task to launch the OpenManage Power Center console.
To launch 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 **Tasks** pane, select **Dell Windows Server Tasks** > **Launch Dell Remote Access Console**.

Launch OpenManage Server Administrator

To launch OpenManage Server Administrator:

1 In the OpsMgr console, navigate to 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 EMC 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.

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**.

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**.

Reports

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

NOTE:

- Server and Rack Workstation Monitoring feature supports Reports only for object-level.
- Dell server BIOS, firmware, and RAID configuration reports are available only in the Detailed Edition.

Accessing Reports

To access reports:

1 Click **Reporting** on the OpsMgr console.

2 Click **Dell Windows Server (Scalable Edition)** for the **OpenManage Windows Event Log** and click **Dell Windows Server (Detail Edition)** for **BIOS Configuration**, **Firmware and Driver Versions**, and **RAID Configuration** reports.

NOTE: 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

Server and Rack Workstation Monitoring (Licensed) Feature

Server and Rack Workstation Monitoring (Licensed) feature provides detailed or scalable inventory, based on your method of discovery, and monitoring of the following devices:

- 12th, 13th, and 14th generation of PowerEdge servers
- PowerVault systems
- Dell Precision Racks
- Dell branded OEM servers
- Dell OEM Ready servers

Inventory and monitoring of these devices could be done through iDRAC or iDRAC Service Module (iSM) installed on the managed Server or Rack Workstation through one of the following methods based on your monitoring preference:

- iDRAC using WS-MAN
- iDRAC access via Host OS
- iSM using WMI

This is a licensed feature.

For more information about monitoring servers through iDRAC using WS-MAN or Host OS, see the section Server and Rack Workstation Monitoring (Licensed) Feature in the *Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager User's Guide.*

For the list of Supported Platforms for iSM, see the *iDRAC Service Module Installation Guide* at Dell.com/manuals.

Dell EMC Server Management Pack Suite installer automatically imports the Server and Rack Workstation Monitoring (Licensed) feature if the prerequisites are met.

Topics:

iDRAC using WS-MAN or iDRAC access via Host OS

This section describes how you can monitor Dell devices through the servers's iDRAC using WS-MAN (iDRAC IP) or iDRAC access via Host OS (Host IP). The latter is an experimental feature.

This option provides detailed inventory and monitoring of the following Dell devices:

- 12th, 13th, and 14th generation of PowerEdge servers
- PowerVault systems
- Dell Precision Racks
- Dell branded OEM servers

- Dell OEM Ready servers

NOTE: PowerVault systems are not supported for iDRAC Service Module (iSM).

For more information about discovering Dell devices, see Discovering a Dell Server

For more information about using the iDRAC access via Host OS (Experimental Feature), see the Integrated Dell Remote Access Controller7/8/9 with Lifecycle Controller User's Guide at **Dell.com/idracmanuals**.

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
Server and Rack Workstation Monitoring (Licensed)	• 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, Compute Usage per Second (CUPS), PCIe SSD wear percentage and IO performance metrics.

Discovery and grouping

The Dell EMC 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 Server and Rack Monitoring (Licensed) feature through iDRAC using WS-MAN.

Table 11. Dell Hardware discovery and grouping

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

Discovering a Dell Server

Prerequisites:

- Common prerequisites:
  - Install Microsoft SMASH Library (MPB) file before discovering a Dell Server using Server and Rack Monitoring (Licensed) feature. For more information about installing the Microsoft SMASH Library (MPB) file, see the "Installing the WS-Management and SMASH Device Template" section in the *Dell EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager Installation Guide* at **dell.com/OMConnectionsEnterpriseSystemsManagement**.

- For iDRAC access via Host OS:
  - Required iSM version is installed on the managed node.
  - iDRAC access via Host OS is enabled.

    This is an experimental feature. For more information, see the **iDRAC access via Host OS (Experimental Feature)** section in the *Integrated Dell Remote Access Controller7/8 with Lifecycle Controller User's Guide* at *Dell.com/idracmanuals*.

To discover a Dell server though iDRAC using WS-MAN or iDRAC access via Host OS:

1 Log on to OpsMgr 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 these 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.

NOTE: If you are using AD domain credentials for iDRAC, then, enter the credentials in the following format: `username@domainname.com`.

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` (if your preferred discovery method is iDRAC using WS-MAN) or the `Host IP` (if your preferred discovery method is iDRAC access via Host OS) address of the systems you want to discover, based on your monitoring preference. You can specify the preferred 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/ Host IP addresses.

   For more information, see **Configuration by using iSM PowerShell script** in the *Integrated Dell Remote Access Controller7/9 with Lifecycle Controller User's Guide* at *Dell.com/idracmanuals*.
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 your network.
The IP addresses are listed under **Available Devices**.
17 Click **Add** to add the list of IP addresses you want to monitor and click **OK**.
18 On the **Specify the devices you want to monitor** screen, click **Create**.
19 Click **Close**.
The scanned Dell servers initially appear in **Monitoring** > **WS-Management and SMASH Monitoring** > **WS-Management Device State** screen. After the automatically triggered SMASH discovery is completed by the OpsMgr, the Dell servers appear in **Monitoring** > **WS-Management and SMASH Monitoring** > **SMASH Device State** screen.
20 Enable the Server and Rack Monitoring (Licensed) feature through Feature Management Dashboard.

Object discoveries by iDRAC using WS-MAN

Table 12. Objects discovered through iDRAC using WS-MAN

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 EMC Server Management Pack Suite, you can use the **Monitoring** pane of the OpsMgr to select views that provide health information of the discovered Dell servers. The **Server and Rack Workstation Monitoring (Licensed)** feature discovers and monitors the health of the Dell servers.

NOTE: To receive SNMP alerts from devices discovered through the iDRAC access via Host OS feature, you must install SNMP services on the Managed Node and set the Management Server IP address as the trap destination in the `SNMP Services`.

To install SNMP services on the Managed Node, perform the following steps:

1. Navigate to **Server Manager** > **Roles and Features** > **Features** for the managed node.
2. Install `SNMP Services`.
3. From the list of available services, right-click `SNMP Services` and select **Properties**.
4. In the **SNMP Services Properties (Local Computer)** window, select the **Traps** tab.
5. Set a Community string in the **Community name** field and provide the Management Server IP address in the **Trap Destinations** field and then click OK.

You will now be able to receive SNMP traps for the node discovered through iSM using the iDRAC access via Host OS (Experimental) method.

The Severity Level Indicators indicates the health of the Dell servers on the network. It includes monitoring health of Modular, Monolithic systems and supported Dell Precision Racks and their components at regular intervals.

As the system components monitored through **Server and Rack Workstation Monitoring**, which is a license free monitoring feature, and the **Server and Rack Workstation Monitoring (Licensed)** feature are not exactly the same, it is possible that the overall server health that is shown through license-free (OMSA) and licensed (iDRAC using WS-MAN, iDRAC access via Host OS, or iSM using WMI) 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 about the monitored hardware components supported in Scalable and Detailed feature for devices discovered through iDRAC using WS-MAN.

Table 13. Monitored hardware components — Scalable and Detailed feature (iDRAC using WS-MAN)

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

Hardware components	Scalable	Detailed
Power Supply	No	Yes
PCIeSSD Extender	No	Yes
PCIeSSD Backplane	No	Yes
PCIeSSD Physical Disk	No	Yes
Server Sensors	No	Yes
Server Storage	Yes	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 Group	No	Yes
Storage Controller Enclosure Fan Sensor	No	Yes
Storage Controller Enclosure Power Supply Group	No	Yes
Storage Controller Enclosure Power Supply	No	Yes
Storage Controller Enclosure Temperature Sensor Group	No	Yes
Storage Controller Enclosure Temperature Sensor	No	Yes
Storage Controller Enclosure Sensor	No	Yes
SD Card Group	No	Yes
SD Card	No	Yes

Hardware components	Scalable	Detailed
Temperature Sensor Group	No	Yes
Temperature Sensor	No	Yes
Voltage Sensor Group	No	Yes
Voltage Sensor	No	Yes

Views

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

- Alerts Views
- Diagram Views
- Performance and Power Monitoring Views
- State Views

Alerts Views

This view is available for managing hardware and storage events from Dell Servers and Rack Workstations. The following alerts are displayed by the Server and Rack Workstation Monitoring (Licensed) feature:

- Link-up and Link-down alerts for events received from Broadcom and Intel network interface cards for PowerEdge servers, PowerVault systems and supported Dell Precision Racks.

Viewing Alerts on the OpsMgr Console

To view Server and Rack Monitoring (Licensed) 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:

- **Network Interface Alerts** — Link-up and Link-down alerts from the discovered NICs are displayed.
- **Server and Rack Workstation Alerts** — SNMP traps for 12th, 13th, and 14th generation of PowerEdge servers, PowerVault storage servers and Dell Precision Racks with iDRAC7, iDRAC8 or iDRAC9 are displayed.
- **Dell Rack Workstation Alert Views**
  - **Network Interface Alerts**
  - **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 PowerEdge servers and supported Precision 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
   - Modular Systems Diagram
   - Monolithic Servers Diagram
3 Select any of the **Diagram Views**.
   On the right pane the hierarchical and graphical representation of the selected Dell device is displayed.
4 Select a component in the diagram to view its details in the **Detail View** pane.

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

Monolithic Servers Diagram

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

Sled Servers Diagram

The **Sled Servers Diagram** view offers a graphical representation of all 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 **Modular System** or **Monolithic Server** 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.

Performance and Power Monitoring Views

NOTE:

- System Board Usage metrics are supported only on some of the 13th generation of the PowerEdge servers. For more information on performance information collection, see Performance Collection Rules. Also, enable the Dell Server Performance rule.
- **Dell Performance View** displays the performance index of CPU, memory, I/O utilization, and system level CUPS index in a graphical format.

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:

- **Dell Performance View**

- **Disk Performance - Licensed (%)**

  NOTE: All performance metric rules are disabled by default for Server and Rack Workstation Monitoring (Licensed) feature.

3 To view the **System Board Usage** metrics, click **Performance and Power Monitoring** > **System Board Usage** for the following views:
   - **CPU Usage (%)**
   - **IO Usage (%)**
   - **Memory Usage (%)**
   - **Overall System Usage (%)**
4 Select the counters from the individual performance views and select the time range for the values 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) the threshold values from the **Authoring** pane of the OpsMgr console. Unit monitors are available under the **Dell Server** objects for the Licensed monitoring feature. To enable the threshold values of unit monitors, see Enabling Performance and Power Monitoring Unit Monitors.

For more information on performance information collection, see Performance Collection Rules.

Enabling Performance and Power Monitoring Unit Monitors

To enable the unit monitors for Performance and Power Monitoring Views:

1 Launch OpsMgr console and click **Authoring**.
2 Click **Management Pack Objects** > **Monitors**, and then search for **Performance** in the **Look for:** field.
3 Click **Dell Server** > **Performance**.
4 Right-click the unit monitor you want to enable.
5 Select **Overrides** > **Override the Monitor** and select an option based on your requirement.
   For example, to override the unit monitors for all objects of class: Dell Server, select **For all objects of class: Dell Server**

   The **Override Properties** screen is displayed.
6 Select **Enabled** and set the **Override Value** to **True**.
7 Under **Management Pack**, either select a management pack created from the **Select destination management pack:** drop-down menu or create a management pack by clicking **New...**
   To create a management pack:

   a Click **New...**
      The **Create a Management Pack** screen is displayed.
   b 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**.
   c Click **Create**.
      The management pack you created is selected in the **Select destination management pack:** drop-down menu.
8 Click **Apply**.

State Views

This view is available for viewing the health of all Dell servers and supported Rack Workstations. In the OpsMgr console, click **Monitoring** > **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 (Licensed)**
- **Dell Rack Workstation State Views**
  - **Managed Rack Workstation (Licensed)**
- **Dell Server State Views**
  - **FM Servers**
  - **Sled Servers (Licensed)**
  - **Unmanaged Servers (Licensed)**

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 EMC Server Management Pack Suite uses with their corresponding severity levels.

Key features of Server and Rack Workstation Monitoring (Licensed) Feature

This section lists the key features for servers discovered through Server and Rack Workstation Monitoring (Licensed) feature.

- System Configuration Lockdown Mode
- iDRAC Group Manager
- Event Auto Resolution
- Capacity Planning
- iDRAC detection of failed CMC
- Server Port Connection Information

System Configuration Lockdown Mode

System Configuration Lockdown mode feature is available in iDRAC for 14th generation of the PowerEdge servers which locks the system's configuration including firmware updates. Once, the System Configuration Lockdown Mode is enabled, you cannot change the system's configuration. This feature is intended to protect the system from unintentional changes. Using iDRAC console, you can enable or disable the System Configuration Lockdown mode.

When the System Configuration Lockdown mode is enabled, you cannot configure the trap destination information in the servers. Hence, alerts are not generated for monitoring. In such a case, you are notified with a critical alert conveying that System Configuration Lockdown mode is enabled, and trap destination information for alerts is not configured.

NOTE: It is recommended to update the *Dell OM : System configuration lockdown* alert rule interval, immediately after the server discovery interval is updated or modified. This recommendation ensures that the System Lockdown mode alert is generated after the completion of server discovery with a certain interval.

You can view the details of the System Configuration Lockdown mode in the **Detail View** pane of the **Diagram View**. For more information about this feature, see *Integrated Dell Remote Access Controller 9 Version 3.00.00.00 User's Guide*.

This feature is available for servers discovered through both, iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

iDRAC Group Manager

iDRAC Group Manager feature is available for 14th generation of the PowerEdge servers to offer simplified basic management of iDRAC, and associated servers on the same local network. Group Manager feature allows one-to-many console experience without involving a

separate application. Using iDRAC Group Manager, you can view the details of a set of servers by permitting more powerful management than by inspecting servers visually for faults and other manual methods.

You can view the details of the iDRAC Group Manager; iDRAC Group Manager Status, and iDRAC Group Name under the **iDRAC** object in the **Detail View** pane of the **Diagram View**. For more information about this feature, see *Integrated Dell Remote Access Controller 9 Version 3.00.00.00 User's Guide*.

This feature is available for servers discovered through both, iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

Event Auto Resolution

This section describes the automatic resolution or acknowledgement of the Dell device events using the Event Auto Resolution feature.

Dell EMC Server Management Pack Suite receives, and processes the events from the Dell devices. These events can be broadly classified as problem, information, and resolution events. All these events remain on the console until they are manually closed. Even after the problem gets resolved at the node, the problem event, and the corresponding resolution event remains in the console until they are manually acknowledged. Event Auto Resolution feature automatically resolves or acknowledges such Dell device events.

The auto resolution of events can be classified as:

- Problem to problem— One problem event resolves another problem event. For example, a temperature sensor sends a warning event when it crosses the warning threshold. If there is no action, after certain time, the same sensor sends critical event when it crosses the critical event. In this case, there is no importance of the warning event, as it does not exist. Hence, the warning event is acknowledged, and only critical event is shown on the console.
- Problem to resolution— One resolution or a normal event resolves a problem event. For example, a temperature sensor sends a warning event when it crosses the warning threshold. When the administrator takes appropriate action; the same sensor sends the resolution event or normal event after certain amount of time. In this case, there is no importance of the warning event, as it does not exist. Hence, the warning event is acknowledged, and only normal event is shown on the console.

This feature is available only for servers discovered through iDRAC using WS-MAN. By default, the **Event Auto Resolution** is set to **Disabled**. Enable this feature using the **Enable Event Auto Resolution** task. The tasks; **Enable Event Auto Resolution**, and **Disable Event Resolution** are available under **Dell** > **Feature Management Dashboard** > **Server and Rack Workstation Monitoring (Licensed)** > **Dell Monitoring Feature Tasks**.

Capacity planning

You can monitor if the server's utilization has exceeded the configured capacity threshold value using the unit monitor; **Dell Server Capacity Check**. The unit monitor **Dell Server Capacity Check** monitors the average system or CUPS usage for the last one day of each server against the configured capacity threshold value. By default, this unit monitor is set to **Disabled**. To enable the **Dell Server Capacity Check** unit monitor, see the Enabling Dell Server Capacity Check unit monitor.

The minimum threshold value is 1, and the maximum threshold value is 99. The default threshold value is 60. You can configure the threshold values within the specified range i.e 1–99. In case, you provide a threshold value other than the specified ranges, that threshold is reset to its default value.

A warning event per server is generated when the average system or CUPS usage for the last one day exceeds the configured threshold value. The warning event is auto resolved when the average system or CUPS usage for the last one day returns within the configured threshold value.

You can view the details of the warning alert in the **Alert Details** pane under **Monitoring** > **Dell** > **Alerts Views** > **Server and Rack Workstation Alerts**.

You can view the health state obtained from the unit monitor; **Dell Server Capacity Check** under **Monitoring** > **Dell** > **State Views** > **Server and Rack Workstation Alerts (Licensed)** > **Dell Server Capacity Threshold Check**. You can also view the component **Dell Server Capacity Threshold Check** under the **Dell Server** object in **Diagram Views**.

NOTE: By default, the Dell Server Capacity Threshold Check column under State Views is disabled.

Capacity Planning feature also provides a performance graph to show the trend for the Average SYS Usage/Day.

To view the performance graph for the capacity planning feature:

1 Click **Monitoring** > **Dell** > **Performance and Power Monitoring Views** > **System Board Usage** > **Overall System Usage (%)**.

2 Select **Capacity Check System Board Average Sys Usage(last day)** under the **Counter** column for the desired Dell device and select the time range for the values required

.

The data collected is represented in a graphical format for the selected Dell device.

This feature is available for servers discovered through both, the iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

Enabling Dell Server Capacity Check unit monitor

This section explains how to enable the Dell Server Capacity Check unit monitor.
To enable the Dell server capacity check unit monitor:

1 Launch OpsMgr console, and click **Authoring**.

2 Click **Management Pack Objects** > **Monitors**, and then search for `Dell Server Capacity Check` in the **Look for:** field.

3 Click **Entity Health** > **Availability**.

4 Right-click **Dell Server Capacity Check** and select **Overrides** > **Override the Monitor** > **For all objects of class: Dell Server Capacity Threshold Check**.

The **Override Properties** screen is displayed.

5 Select **Enabled** and set the **Override Value** to **True**.

6 Under **Management Pack**, either select a management pack created from the **Select destination management pack:** drop-down menu or create a management pack by clicking **New...**

To create a management pack:

a Click **New...**

The **Create a Management Pack** screen is displayed.

b 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.

c Click **Create**.

The management pack you created is selected in the **Select destination management pack:** drop-down menu.

7 Click **Apply**.

iDRAC detection of failed CMC

Using the feature; iDRAC detection of a failed CMC, the iDRAC of a Rack Style Management (RSM) enabled modular server detects a failed or an unavailable chassis controller. By using this feature, you can take immediate remedial action to bring the failed CMC to a normal state.

The **Dell Chassis Controller Sensor** indicates the presence or failure of a CMC.

You can view the health state obtained from the unit monitor; **Dell Chassis Controller Sensor** under **Sensors** in **Diagram Views**.

NOTE:

- The **Dell Chassis Controller Sensor** is available in both; Scalable and Detailed Management Pack.
- iDRAC detection of failed CMC is supported for 13th and 14th generation of the PowerEdge FX2 Chassis.

Server port connection information

Server port connection information feature provides details of the physical mapping of switch ports to server ports, and iDRAC dedicated port connections. This feature helps you to reduce cabling error debugging by identifying which switch ports are connected to a server's network ports, and iDRAC dedicated port.

You can view the details of the Server port connection information under **iDRAC NIC** and **NIC** objects in the **Detail View** pane of the **Diagram View**. Along with the inventory information of each NIC; chassis ID information of the switch and the port ID information is populated.

This feature is available for servers discovered through both, the iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

NOTE: This feature is supported for 14th generation of the PowerEdge servers only.

Dell Unit Monitors for Server and Rack Workstation Monitoring (Licensed) feature

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

Table 14. Dell Unit Monitors for Server and Rack Workstation Monitoring (Licensed) feature

Object		Unit Monitor
Dell Server		
	Dell Server Run As Account Association	Periodic
	Dell Server Unit Monitor	Periodic
Dell Server Power Supply		
	Dell Server Power Supply Unit	Periodic
Dell Server Processor Group		
	Dell Server Processor Group	Periodic
Dell Server Chassis Controller Sensor		
	Dell Server Chassis Controller Sensor	Periodic
Dell Storage Controller		
	Dell Server Storage Controller	Periodic

Object		Unit Monitor
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
	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

Object		Unit Monitor
Dell Network Interfaces Group		
	Dell Server Network Interface Group	Periodic
Dell iDRAC Network Interface		
	Dell Server iDRAC Network Interface Unit	Periodic
Dell Server Capacity Threshold Check		
	Dell Server Capacity Threshold Check	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		
	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

Object		Unit Monitor
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
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 Server and Rack Workstation Monitoring (Licensed) feature.

Dell Systems Event Processing Rules

The Dell EMC Server Management Pack Suite processes rules from Dell servers.

Dell Servers

All informational, warning, and critical SNMP traps for Dell servers discovered using Server and Rack Monitoring (Licensed) 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 tasks using Server and Rack Workstation Monitoring (Licensed) Feature

Following table provides a summary of the tasks that you can perform using Server and Rack Workstation Monitoring (Licensed) feature:

Table 15. Summary of the Dell tasks discovered using Server and Rack Workstation Monitoring (Licensed) Feature

Task	Description
Check Node Interfaces	Checks if the selected Dell server and its corresponding interfaces; WS-MAN or SNMP is reachable or non-reachable.
Get Warranty Information	Retrieves the warranty information for the selected system. **NOTE: An active Internet connection is required to retrieve the warranty information.**
Launch Dell 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.**

Task	Description
Launch Dell OpenManage Power Center	Launches the OpenManage Power Center console for the selected system. **NOTE: Launching OpenManage Power Center is possible only if the Windows or Linux operating system, OpenManage Server Administrator, and OpenManage Power Center are installed on the managed node.**
Launch Dell OpenManage Server Administrator (Monolithic Server)	Launches the OpenManage Server Administrator console for the selected system. **NOTE: Launching OpenManage Server Administrator is possible only if a Windows or Linux operating system and OpenManage Server Administrator are installed on the managed node.**
Launch Dell Remote Access Console	Launches the iDRAC console for the discovered Dell Servers and Rack Workstations that are license based.
Launch Remote Desktop (Monolithic Server)	Launches the remote desktop for the selected system. **NOTE: Launching remote desktop is possible only if the Windows operating system is installed and remote desktop is manually enabled in the managed node.**

Dell Server Tasks

Check Node Interfaces

The **Check Node Interfaces** task checks if the selected Dell server and its corresponding interfaces; WS-MAN or SNMP is reachable or non-reachable.
To check the node interfaces:

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 Dell **Diagram Views**, **State Views**, or an alert in the **Alerts Views**.
3 In the **Tasks** pane, select **Dell Server Tasks** > **Check Node Interfaces**.

The task provides a summary of the reachability check, and interface check after the successful completion of the task.

Get Warranty Information

You can use this task to see the warranty status of the selected Dell 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 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 Server Tasks** > **Launch Dell License Manager.**

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 the 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 OpenManage Server Administrator (Monolithic Server)

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

To launch OMSA 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 Dell OpenManage Server Administrator (Monolithic Server).**

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

Launch Dell Remote Access Console

To launch the 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 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).**

iSM using WMI

This section describes how you can monitor Dell devices with iSM using Windows Management Instrumentation (WMI) to retrieve details from the supported Dell devices.

This option provides scalable inventory and monitoring of the 12th, 13th, and 14th generation of PowerEdge servers, and supported Dell Precision Rack Workstations. For more information about the supported platforms, see the *iDRAC Service Module Installation Guide* at **Dell.com/manuals**. This is a licensed feature.

Dell EMC Server Management Pack Suite installer automatically imports the Server and Rack Workstation Monitoring (Licensed) 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 the Scalable and Detailed edition features for devices discovered through iSM. These devices are classified as **Servers (iSM)** in the OpsMgr console.

Table 16. Scalable Management Pack versus Detailed Management Pack

Features	Scalable Edition	Detailed Edition
Servers (iSM)	• 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, energy, network interface cards, processor, memory, Compute Usage per Second (CUPS), the PCIe SSD wear percentage, and IO performance metrics.

Discovery and grouping

The Dell EMC 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 Server and Rack Monitoring (Licensed) feature through iSM using WMI.

Table 17. Dell Hardware discovery and grouping

Group	Diagram View	Hardware Type
Dell Servers	Dell Monolithic Servers Dell Modular Servers Dell Sled Group	PowerEdge servers.
Dell Rack Workstation	Rack Workstation Diagram	Dell Precision Rack Workstations.

Discovering Dell Server in OpsMgr

Ensure that the following prerequisites are met before you discover the Dell devices through iSM using WMI:

- Required version of iSM is installed on the managed node.

  NOTE: If you are monitoring devices through iSM using WMI feature on systems running Microsoft Nano server, see the section Installing iDRAC Service Module on Nano operating system in the *iDRAC Service Module Installation Guide* at Dell.com/support.

- Windows Management Instrumentation (WMI) feature is enabled on the host.

  For more information, see the section **Windows Management Instrumentation providers** in the *Integrated Dell Remote Access Controller7/8/9 with Lifecycle Controller User's Guide* at **Dell.com/idracmanuals**.

- In the Feature Management Dashboard, the **Enable Agent Proxying** task is run for the Server and Rack Workstation (Licensed) monitoring feature.

Dell servers are discovered through the OpsMgr Agent Management infrastructure.

NOTE: Discover the Dell servers 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 the **Windows computers**, and follow the instructions on the screen.

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

NOTE: The installer automatically imports the Server and Rack Workstation Monitoring (Licensed) 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.

The discovered devices are displayed under **State Views** under **Servers (iSM)** as shown in the following figure:

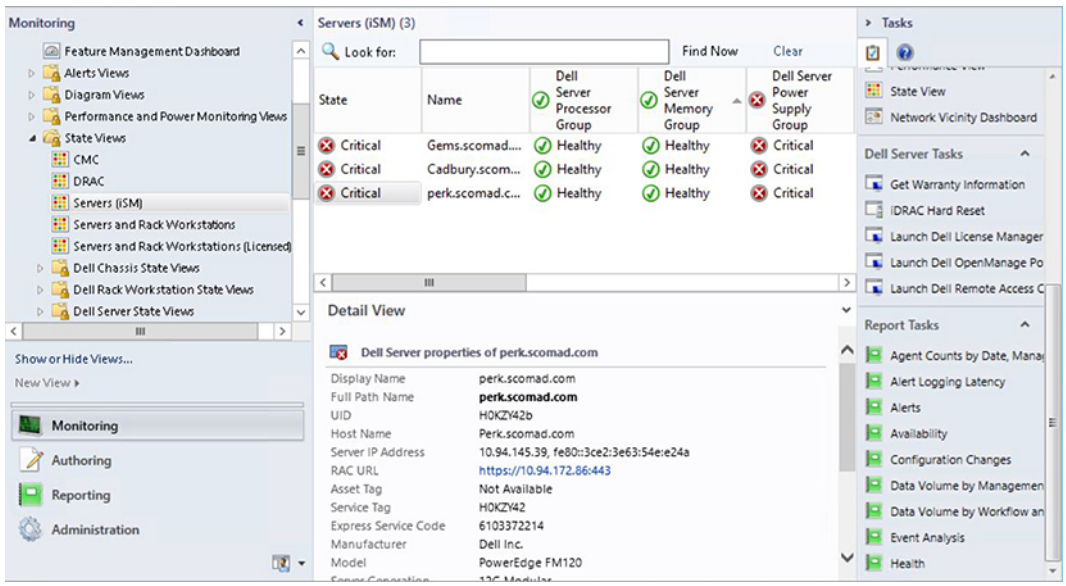

Figure 3. Servers (iSM)

A `Dell Server (iSM) informational alert` is generated when a Dell server is discovered through iDRAC Service Module (iSM) for the first time. This informational alert is a one-time alert.

Object discoveries for iSM using WMI

Table 18. Objects discovered through iSM using WMI.

Discovery Object	Description
Dell Server Discovery	Classifies the Dell servers and populates the key attributes and components.

Monitoring

The **Monitoring** pane of the OpsMgr is used to select views that provide 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 Modular and Monolithic servers, and Dell Precision Rack Workstations at their group level, both at regular intervals and on occurrence of events.

Monitored Hardware components

The following table provides information about the monitored hardware components supported in the Scalable and Detailed feature for servers discovered through iSM:

Table 19. Monitored hardware components—Scalable and Detailed Feature

Hardware components	Scalable	Detailed
Battery Sensor Group	Yes	Yes
Battery Sensor	No	Yes
BIOS Instance	No	No
Current Sensor Group	No	No
Current Sensor	No	No
Fan Sensor Group	Yes	Yes
Fan Sensor	No	Yes
iDRAC	No	No
Host NIC Group	Yes	Yes
Host NIC	No	Yes
iDRAC License Group	Yes	Yes
iDRAC License	No	Yes

Hardware components	Scalable	Detailed
iDRAC Network Interface	Yes	Yes
Intrusion Sensor Group	Yes	Yes
Intrusion Sensor	No	Yes
Memory Group	Yes	Yes
Memory Instance	No	Yes
Network Interfaces Group	Yes	Yes
Network Interfaces	No	Yes
PCIeSSD Backplane	No	Yes
PCIeSSD Physical Disk	No	Yes
PCIeSSD Extender	No	Yes
Processor Group	Yes	Yes
Processor Instance	No	Yes
Power Supply Group	Yes	Yes
Power Supply Instance	No	Yes
SD Card Group	Yes	Yes
SD Card	No	Yes
Storage Group	Yes	Yes
Storage Controller	No	Yes
Storage Controller Battery Group	No	Yes
Storage Controller Battery	No	Yes
Storage Connector internal/external/direct attached Physical Disk Group	No	Yes
Storage Controller internal/external/direct attached Physical Disk Instance	No	Yes
Storage Controller Enclosure Fan Sensor Group	No	Yes
Storage Controller Enclosure Fan Sensor	No	Yes
Storage Controller Enclosure Instance	No	Yes
Storage Controller Sensors	No	Yes

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

Views

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

- Alerts Views
- Diagram Views
- Performance and Power Monitoring Views
- State Views

Alerts Views

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

- Link-up or Link-down alerts for events received from Broadcom and Intel network interface cards.

Viewing Alerts on the OpsMgr Console

To view the 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** — SNMP traps for 12th, 13th, and 14th generation of PowerEdge servers, PowerVault storage servers and Dell Precision Racks with iDRAC7, iDRAC8 or iDRAC9 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**

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 its 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.

Diagram view for Dell servers discovered through iSM using WMI.

The following figure represents the servers discovered through iSM using WMI in the Diagram View:

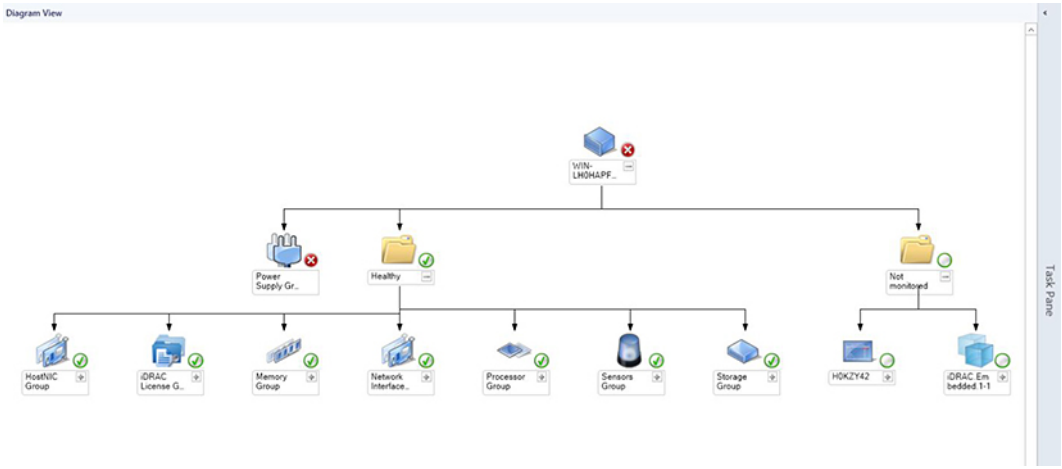

Figure 4. Servers (iSM) Diagram

Complete Diagram View

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

- 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:

- Network Interfaces Group
- Memory Group
- Power Supply Group
- Sensors Group
- Processor Group
- Storage Components Group
- BIOS
- iDRAC
- Host NIC Group
- SD Card Group

- iDRAC License Group

Modular Systems Diagram

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

Monolithic Servers Diagram

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

Sled Servers Diagram

The **Sled Servers Diagram View** offers a graphical representation of all 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 **Modular System** or **Monolithic Server** diagram views, to view the diagram specific to that particular system.

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

- Network Interfaces Group
- Memory Group
- Power Supply Group
- Sensors Group
- Processor Group
- Storage Components Group
- Host NIC Group
- iDRAC License Group
- PCIe/ SSD Group
- SD Card Group
- BIOS (inventory only)
- iDRAC

Performance and Power Monitoring Views

NOTE:

- System Board Usage metrics are supported only on some of the 13th generation of the PowerEdge servers. For more information on performance information collection, see Performance Collection Rules. By default, the Dell Server Performance rule is set to Disabled.
- The **Dell Performance View** displays the performance index of CPU, Memory and I/O utilization index, and system level CUPS index in a graphical format.

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:

- **Dell Performance View (iSM)**
- **Disk Performance - iSM (%)**

  NOTE: All performance metric rules are disabled by default for Server and Rack Workstation Monitoring (Licensed) feature.

3 To view the **System Board Usage** metrics, click **Performance and Power Monitoring** > **System Board Usage** for the following views:
   - **CPU Usage - iSM (%)**
   - **IO Usage - iSM (%)**
   - **Memory Usage - iSM (%)**
   - **Overall System Usage - iSM (%)**
4 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 the configured critical threshold value. When the critical threshold value is exceeded, the server changes state and generates a critical alert. This unit monitor is disabled by default. You can override (enable) the threshold values from the **Authoring** pane of the OpsMgr console. Unit monitors are available under the **Dell Server** objects for the Licensed monitoring feature. To enable the unit monitors and set threshold values of unit monitors, see Enabling Performance and Power Monitoring Unit Monitors.

For more information on performance information collection, see Performance Collection Rules.

Enabling Performance and Power Monitoring Unit Monitors

To enable the unit monitors for Performance and Power Monitoring Views:

1 Launch OpsMgr console and click **Authoring**.
2 Click **Management Pack Objects** > **Monitors**, and then search for **Performance** in the **Look for:** field.
3 Click **Dell Server** > **Performance**.
4 Right-click the unit monitor you want to enable.
5 Select **Overrides** > **Override the Monitor** and select an option based on your requirement.
   For example, to override the unit monitors for all objects of class: Dell Server, select **For all objects of class: Dell Server**

   The **Override Properties** screen is displayed.
6 Select **Enabled** and set the **Override Value** to **True**.
7 Under **Management Pack**, either select a management pack created from the **Select destination management pack:** drop-down menu or create a management pack by clicking **New...**
   To create a management pack:

   a Click **New...**
      The **Create a Management Pack** screen is displayed.
   b 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.
   c Click **Create**.
      The management pack you created is selected in the **Select destination management pack:** drop-down menu.
8 Click **Apply**.

State Views

This view is available for viewing the health of all Dell servers and supported Rack Workstations. In the OpsMgr console, click **Monitoring** > **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 (iSM)**
- **Dell Server State Views**
  - **Sled Servers (iSM)**

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 EMC Server Management Pack Suite uses with their corresponding severity levels.

Key features of Server and Rack Workstation Monitoring (Licensed) Feature

This section lists the key features for servers discovered through Server and Rack Workstation Monitoring (Licensed) feature.

- System Configuration Lockdown Mode
- iDRAC Group Manager
- Event Auto Resolution
- Capacity Planning
- iDRAC detection of failed CMC
- Server Port Connection Information

System Configuration Lockdown Mode

System Configuration Lockdown mode feature is available in iDRAC for 14th generation of the PowerEdge servers which locks the system's configuration including firmware updates. This feature is intended to protect the system from unintentional changes. Using iDRAC console, you can enable or disable the System Configuration Lockdown mode. Once, the System Configuration Lockdown Mode is enabled, you cannot change the system's configuration.

You can view the details of the System Configuration Lockdown mode in the **Detail View** pane of the **Diagram View**. For more information about this feature, see *IIntegrated Dell Remote Access Controller 9 Version 3.00.00.00 User's Guide*.

This feature is available for servers discovered through both, the iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

iDRAC Group Manager

iDRAC Group Manager feature is available for 14th generation of the PowerEdge servers to offer simplified basic management of iDRAC, and associated servers on the same local network. Group Manager feature allows one-to-many console experience without involving a separate application. Using iDRAC Group Manager, you can view the details of a set of servers by permitting more powerful management than by inspecting servers visually for faults and other manual methods.

You can view the details of the iDRAC Group Manager; iDRAC Group Manager Status, and iDRAC Group Name under the **iDRAC** object in the **Detail View** pane of the **Diagram View**. For more information about this feature, see *Integrated Dell Remote Access Controller 9 Version 3.00.00.00 User's Guide*.

This feature is available for servers discovered through both, iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

Capacity planning

You can monitor if the server's utilization has exceeded the configured capacity threshold values using the unit monitor; **Dell Server Capacity Check**. The unit monitor **Dell Server Capacity Check** monitors the average system or CUPS usage for the last one day of each

server against the configured capacity threshold value. By default, this unit monitor is set to **Disabled**. To enable the **Dell Server Capacity Check** unit monitor, see the Enabling Dell Server Capacity Check unit monitor.

The minimum threshold value is 1, and the maximum threshold value is 99. The default threshold value is 60. You can configure the threshold values within the specified range i.e 1–99. In case, you provide a threshold value other than the specified ranges, the default threshold value is considered.

A warning event per server is generated when the average system or CUPS usage for the last one day exceeds the configured threshold value. The warning event is auto resolved when the average system or CUPS usage for the last one day returns within the configured threshold value.

You can view the details of the warning alert in the **Alert Details** pane under **Monitoring** > **Dell** > **Alerts Views** > **Server and Rack Workstation Alerts**.

You can view the health state obtained from the unit monitor; Dell Server Capacity Check under **Monitoring** > **Dell** > **State Views** > **Servers (iSM)** > **Dell Server Capacity Threshold Check**. You can also view the component;**Dell Server Capacity Threshold Capacity Check** under the **Dell Server Capacity** object in **Diagram Views**.

Capacity Planning feature also provides a performance graph to show the trend for the Average SYS Usage/Day.

To view the performance graph for the capacity planning feature:

1 Click **Monitoring** > **Dell** > **Performance and Power Monitoring Views** > **System Board Usage** > **Overall System Usage - iSM (%)**.

2 Select **Capacity Check System Board Average Sys Usage(last day)** under the **Counter** column for the desired Dell device and select the time range for the values required

.

The data collected is represented in a graphical format for the selected Dell device.

This feature is available for servers discovered through both, the iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

iDRAC detection of failed CMC

Using the feature; iDRAC detection of a failed CMC, the iDRAC of a Rack Style Management (RSM) enabled modular server detects a failed or an unavailable chassis controller. By using this feature, you can take immediate remedial action to bring the failed CMC to a normal state.

The **Dell Chassis Controller Sensor** indicates the presence or failure of a CMC.

You can view the health state obtained from the unit monitor; **Dell Chassis Controller Sensor** under **Sensors** in **Diagram Views**.

NOTE:

- The **Dell Chassis Controller Sensor** is available in both; Scalable and Detailed Management Pack.
- iDRAC detection of failed CMC is supported for 14th generation of the PowerEdge FX2 Chassis only.

Server port connection information

Server port connection information feature provides details of the physical mapping of switch ports to server ports, and iDRAC dedicated port connections. This feature helps you to reduce cabling error debugging by identifying which switch ports are connected to a server's network ports, and iDRAC dedicated port.

You can view the details of the Server port connection information under **iDRAC NIC** and **NIC** objects in the **Detail View** pane of the **Diagram View**. Along with the inventory information of each NIC; chassis ID information of the switch and the port ID information is populated.

This feature is available for servers discovered through both, the iDRAC and iSM methods of Server and Rack Workstation Monitoring (Licensed) feature.

NOTE: This feature is supported for 14th generation of the PowerEdge servers only.

Dell Unit Monitors for Server and Rack Workstation Monitoring (iSM) feature

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

Table 20. Dell Unit Monitors for Server and Rack Workstation Monitoring (iSM) feature

Object		Unit Monitor
Dell Server		
	Dell Server Run As Account Association	Periodic
	Dell Server Unit Monitor	Periodic
Dell Server Power Supply		
	Dell Server Power Supply Unit	Periodic
Dell Server Processor Group		
	Dell Server Processor Group	Periodic
Dell Server Chassis Controller Sensor		
	Dell Server Chassis Controller Sensor	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		

Object		Unit Monitor
	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
	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 Capacity Threshold Check		
	Dell Server Capacity Threshold Check	Periodic
Dell Server Host NIC		

Object		Unit Monitor
	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		
	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		

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

Rules

The following section lists the rules specific to the Server and Rack Workstation Monitoring (Licensed) feature.

Dell Systems Event Processing Rules

The Dell EMC Server Management Pack Suite processes rules from Dell servers.

Dell servers

All informational, warning, and critical events for Dell servers discovered using Server and Rack Monitoring (Licensed) feature, have a corresponding event rule.

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

- Source Name = “Lifecycle controller Log”
- Event no= Actual event ID of the event
- Data Provider = Windows System Event Log

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 tasks using Server and Rack Workstation Monitoring (Licensed) Feature

Following table provides a summary of the tasks that you can perform using Server and Rack Workstation Monitoring (Licensed) feature:

Table 21. Summary of the tasks discovered using iSM method of Server and Rack Workstation Monitoring (Licensed) Feature

Task	Description
Check Node Interfaces	Checks if the selected Dell server and its corresponding interface; WMI is reachable or non-reachable.
Get Warranty Information	Retrieves the warranty information for the selected system. **NOTE: An active Internet connection is required to retrieve the warranty information.**
iDRAC Hard Reset	Performs a remote iDRAC reset operation without having to shut down the server. **NOTE: This task is available only for servers discovered through iSM.**
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 Dell OpenManage Power Center	Launches the Dell OpenManage Power Center console for the selected system.

Task	Description
	NOTE: Launching OpenManage Power Center is possible only if the Windows or Linux operating system, OpenManage Server Administrator, and Dell OpenManage Power Center are installed on the managed node.
Launch Dell Remote Access Console	Launches the iDRAC console for the discovered Dell servers and Rack Workstations that are License based.
Launch Remote Desktop (Monolithic Server)	Launches the remote desktop for the selected system. **NOTE: Launching remote desktop is possible only if the Windows operating system is installed and remote desktop is manually enabled in the managed node.**

Check Node Interfaces

The **Check Node Interfaces** task checks if the selected Dell server and its corresponding interfaces; WMI is reachable or non-reachable. To check the node interfaces:

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 Dell **Diagram Views**, **State Views**, or an alert in the **Alerts Views**.
3 In the **Tasks** pane, select **Dell Server Tasks** > **Check Node Interfaces**.

The task provides a summary of the reachability check, and interface check after the successful completion of the task.

Get Warranty Information

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

Remote iDRAC hard reset

This feature allows the administrator to perform a remote iDRAC reset operation without having to shut down the server.
Using iDRAC, you can monitor the supported servers for critical system hardware, firmware, or software issues. Sometimes, the iDRAC may become unresponsive due to various reasons. During such scenarios, you may have to turn off the server by unplugging it from the socket, after which the iDRAC will be reset.

Using the Remote iDRAC hard reset feature, whenever iDRAC becomes unresponsive, you can perform a remote iDRAC reset operation without the need to power off (iDRAC hard reset) the server. By default, the remote iDRAC hard reset feature is enabled.

This feature is available for servers discovered through iSM using WMI. For more information about this feature, see the *iDRAC Service Module Installation Guide* and the section **Remote iDRAC Hard Reset** in the *iDRAC 8/7 v2.30.30.30 User's Guide* at support.dell.com.

Performing a remote iDRAC hard reset

This section explains the steps to perform a remote iDRAC hard reset for a device discovered thorugh iSM using WMI.
To reset the iDRAC remotely, you must first ensure that you have administrative privileges on the host OS.
To reset the iDRAC remotely, perform the following steps:

1 Launch the OpsMgr console and click **Monitoring**.
2 Click **Dell** > **State Views** > **Servers (iSM)**.
The state details are displayed and the servers discovered though iSM using WMI are listed in the right pane.
3 Select a server for which you want to reset the iDRAC remotely.
4 From the list of **Dell Server Tasks** displayed in the right pane, click **iDRAC Hard Reset**.
The Run Task - iDRAC Hard Reset window is displayed.
5 Click **Run** to confirm.
The **Task Status - iDRAC Hard Reset** window is displayed with the status of the reset.
6 Click **Close**.

The iDRAC has been remotely reset successfully.

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 Server Tasks** > **Launch Dell License Manager.**

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 the 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 Remote Access Console

To launch the 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 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).**

5

DRAC Monitoring Feature

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

Topics:

Discovery and grouping

The Dell EMC 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 22. 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 the Server and Rack Workstation 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, 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

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 devices discovered through the Server and Rack Workstation Monitoring feature.

Discoveries by the DRAC Monitoring Feature

Table 23. 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 EMC 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 the 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 the Dell Remote Access Controller class or respective DRAC object (if you have different Run As accounts for different DRAC devices).

Views

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

- Alerts Views
- Diagram Views
- State Views

Alerts Views

This view is available for managing hardware and storage events from Dell DRAC devices. SNMP traps and Platform Event Traps (PET) 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**.

The following **Alerts Views** are displayed.

- **PET Traps** — These alerts contain information on PET traps from iDRAC6, iDRAC7, and iDRAC8 devices.
- **Remote Access Alerts** — 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.

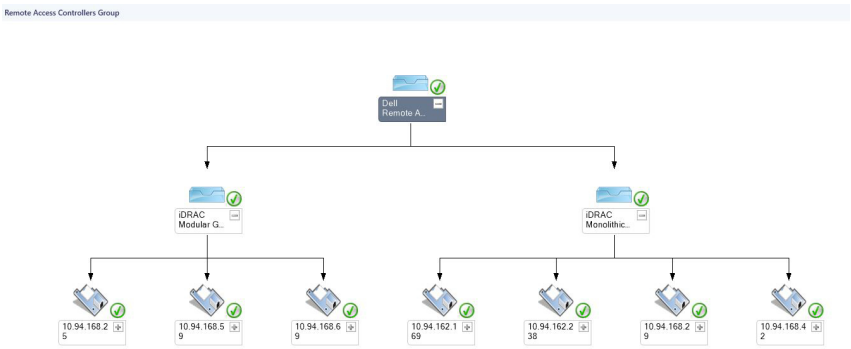

Figure 5. Remote Access Controllers Group Diagram

State Views

This view is available for viewing the health of the Dell DRAC devices. In the OpsMgr console, click **Monitoring** > **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 EMC 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 24. 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

Object		Unit Monitor
	Controller Global Status	Event and Periodic
	Controller Global Storage Status	Event and Periodic
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 EMC 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 tasks using DRAC

Following table provides a summary of the tasks that are performed using the DRAC:

Table 25. Tasks using DRAC

Task	Description
Check Node Interfaces	Checks if the selected Dell DRAC/iDRAC device and its corresponding interface; SNMP is reachable or non-reachable.
Launch Dell License Manager	Launches the Dell License manager on the management system.
Launch Dell Remote Access Console	Launches the DRAC console for the discovered DRAC.
Launch Remote Desktop	Launches the remote desktop for the selected system. **NOTE: This feature is available only on systems with iDRAC7, and iDRAC8.**
Launch Server Administrator	Launches the Server Administrator. **NOTE:** • Server Administrator console is launched only if the Server Administrator is configured on the default port. • This feature is available only on systems with iDRAC7, and iDRAC8.

Dell Remote Access Controller (DRAC) tasks

Check Node Interfaces

The **Check Node Interfaces** task checks if the selected Dell DRAC/iDRAC device and its corresponding interface; SNMP is reachable or non-reachable.
To check the node interfaces:

1 In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.
2 Select the desired Dell DRAC/iDRAC in any of the Dell **Diagram Views**, **State Views**, or an alert in the **Alerts Views**.
3 In the **Tasks** pane, select **Dell Remote Access Controller Tasks** > **Check Node Interfaces**.

The task provides a summary of the reachability check, and interface check after the successful completion of the task.

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

Launch Remote Desktop

NOTE:

- The remote desktop feature is available only on systems with iDRAC7, and iDRAC8.
- 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 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 Remote Desktop**.

Launch OpenManage Server Administrator

NOTE:

- OpenManage Server Administrator (OMSA) console is launched only if the Server Administrator is configured on the default port.
- Server Administrator feature is available only on systems with iDRAC7, and iDRAC8.

To launch Server Administrator:

1. In the OpsMgr console, navigate to 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 Server Administrator.**

6

Chassis Monitoring Feature

The chassis monitoring feature supports discovery and monitoring of Chassis Management Controller (CMC) on PowerEdge FX2/FX2s chassis, PowerEdge VRTX chassis, PowerEdge M1000e chassis, and Dell OEM Ready chassis using SNMP or WS-MAN protocol.

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

Topics:

Discovery and grouping

The Dell EMC Server Management Pack Suite enables you to discover and classify Dell Chassis Management Controllers (CMC), PowerEdge FX2/ FX2s, PowerEdge M1000e, and PowerEdge VRTX.

The following table lists the details of the hardware discovery and grouping by the Chassis monitoring feature:

Table 26. 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	PowerEdge M1000e
Dell PowerEdge VRTX	Dell VRTX Chassis group	PowerEdge VRTX
Dell FX2	Dell FX2 Chassis Group	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 Account 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 EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager Installation Guide* at dell.com/OMConnectionsEnterpriseSystemsManagement.

5 On the **Add a Device console** screen in OpsMgr, 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 Chassis Monitoring Feature

Table 27. Chassis Monitoring Feature Discoveries.

Discovery Object	Description
Dell CMC Discovery	Discovers all supported Dell CMCs, PowerEdge FX2, PowerEdge VRTX, PowerEdge M1000e, and Dell OEM Ready chassis.
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 EMC 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 the Dell chassis devices, both at regular intervals and on occurrence of events.

NOTE: To perform the Chassis Detailed monitoring, associate the WS-MAN credentials Run As account required for accessing the Dell CMCs with the target as Dell Modular Chassis class or respective CMC object (if you have different Run As accounts for different CMC devices) to the profile—Dell CMC Login Account Run As Profile

Monitored hardware components

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

NOTE:

- Some inventory attributes and health will not be available if RACADM utility is not present. Hence, an one-time warning alert is generated asking you to install RACADM utility.
- In absence of RACADM utility CMC Group, CMC component, IO Module component, IO Module Group, and Power Supply Group components will be in **Warning** state. To monitor CMC Group, CMC component, IO Module component, IO Module Group, and Power Supply Group components; enable RACADM utility.

Table 28. Monitored hardware components — Scalable and Detailed feature.

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

Views

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

- Alerts Views
- Diagram Views
- State Views

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 the 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 Chassis Alert Views**
  - **Dell FX2 Chassis Alerts** —SNMP traps from the discovered PowerEdge FX2 chassis devices are displayed.
  - **Dell M1000e Chassis Alerts** —SNMP traps from the discovered PowerEdge M1000e chassis devices are displayed.
  - **Dell VRTX Chassis Alerts** —SNMP traps from the discovered PowerEdge VRTX 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, PowerEdge FX2, M1000e, and 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, PowerEdge FX2, PowerEdge M1000e, and PowerEdge VRTX, and their inventory. For the Chassis discovery, see the Discovering Chassis devices.

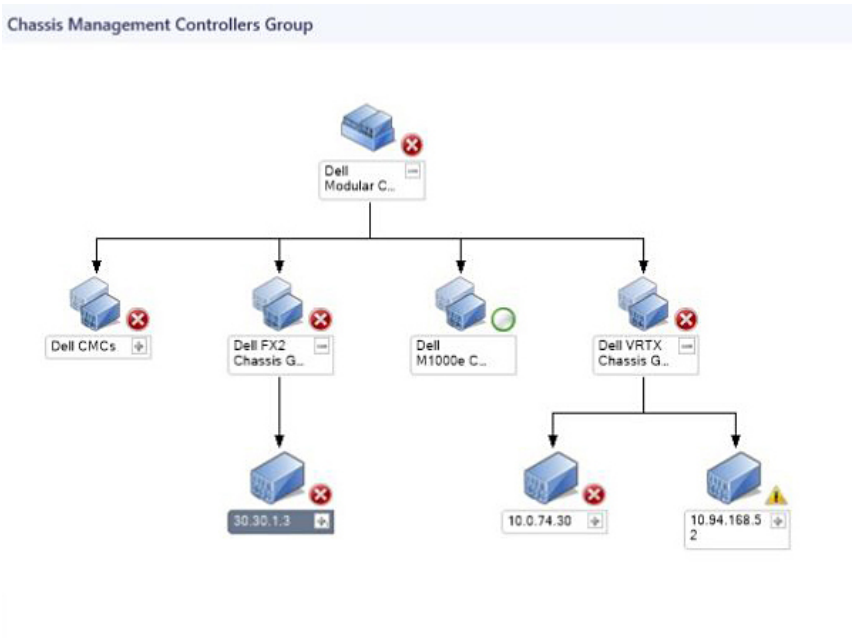

Figure 6. Chassis Management Controllers group diagram

For discovered CMC chassis, enable slot discovery which is disabled by default to view:

- The occupied and free slot summary in the **Chassis Slots Summary**
- The slot-inventory details modified on CMC chassis that are reflected in the **Diagram View.**
- The correlation of discovered Dell servers using Licensed or license-free monitoring feature with the server modules of CMC chassis that 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 slot 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 EMC Server Management Pack Suite Version 7.0 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 PowerEdge FX2, PowerEdge M1000e chassis, and PowerEdge VRTX chassis devices. Select a component in the diagram to view its details in the **Detail View** pane.

Performance and Power Monitoring Views

NOTE: Chassis Power Consumption view is available only when the detailed feature of the Chassis Monitoring feature is installed, and the Chassis Performance Collection rule is enabled. By default, the Chassis Performance Collection rule is set to Disabled. To enable the rule, see Enabling Chassis Performance Collection Rule.

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 Views** to view:

- Chassis Power Consumption

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.

State views

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

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

- **CMC**
- **Dell Chassis State Views**
  - **Dell FX2 Chassis State View**
  - **Dell M1000e Chassis State View**
  - **Dell VRTX Chassis State View**

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 EMC 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 29. 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 Unit Monitor	Periodic

Object		Unit Monitor
Dell Modular Chassis Fan		
	Dell Chassis Fan Health Poll Based Unit Monitor	Periodic
Dell Chassis Modular Controller		
	Dell Chassis CMC Health Poll Based Unit Monitor	Periodic
Dell Chassis Modular Controller Group		
	Dell Chassis CMC Group Health Poll Based Unit Monitor	Periodic
Dell Chassis Modular Power Supply		
	Dell Chassis Power Supply Health Poll Based Unit Monitor	Periodic
Dell Chassis Modular Power Supply Group		
	Dell Chassis Power Supply Group Health Poll Based Unit Monitor	Periodic
Dell Chassis Modular PCIe Device		
	Dell Chassis PCIe Device Health Poll Based Unit Monitor	Periodic
Dell Chassis Storage Enclosure		
	Dell Chassis Storage Enclosure Health Poll Based Unit Monitor	Periodic
Dell Chassis Storage Controller		
	Dell Chassis Storage Controller Health Poll Based Unit Monitor	Periodic
	Dell Chassis Storage Controller Battery Health Poll Based Unit Monitor	Periodic
Dell Chassis Storage Controller Virtual Disk		
	Dell Chassis Storage Virtual Disk Health Poll Based Unit Monitor	Periodic
Dell Chassis Storage Controller Enclosure Internal Physical Disk		
	Dell Chassis Storage Internal Physical Disk Primary Health Status Poll Based Unit Monitor	Periodic
	Dell Chassis Storage Internal Physical Disk Predictive Failure Health Status Poll Based Unit Monitor	Periodic
Dell Chassis Storage Controller Enclosure External Physical Disk		
	Dell Chassis Storage External Physical Disk Primary Health Status Poll Based Unit Monitor	Periodic

Object		Unit Monitor
	Dell Chassis Storage External Physical Disk Predictive Failure Health Status Poll Based Unit Monitor	Periodic

Rules

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

Dell Systems Event Processing Rules

The Dell EMC 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.

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 Chassis. By default this feature is disabled, to enable the feature, see Enabling Chassis Performance Collection Rule.

The performance collection rules collect information on **Chassis Power Consumption**.

Enabling Chassis Performance Collection Rule

To enable Chassis performance collection rule:

1 Launch the OpsMgr console, and click **Authoring**.
2 Click **Rules** and search for `Dell Performance` in the **Look for:** field.
3 Right-click **Dell Performance: Chassis Power Consumption collection rule (Watts)**.
4 Select **Overrides** > **Override the Rule** > **For all objects of class**.
5 Select **Enabled** and set the **Override Value** to **True**.
6 Under **Management Pack**, either select a management pack created from the **Select destination management pack:** drop-down menu or create a new management pack by clicking **New...**

   To create a new management pack:

   a Click **New...**

   The **Create a Management Pack** screen is displayed.

   b 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**.

c Click **Create**.

The management pack you created is selected in the **Select destination management pack:** drop-down menu.

d 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 tasks using Dell Chassis

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

Table 30. Tasks using Dell Chassis

Task	Description
Check Node Interfaces	Checks if the selected Dell CMC device and its corresponding interface; WS-MAN or SNMP is reachable or non-reachable.
Launch Dell CMC Console	Launches the CMC console.

Dell Chassis tasks

Check Node Interfaces

The **Check Node Interfaces** task checks if the selected Dell CMC device and its corresponding interface are reachable or non-reachable. To check the node interfaces:

1 In the OpsMgr console, navigate to a Dell **Diagram Views**, **State Views**, or **Alerts Views**.

2 Select the desired Dell CMC in any of the Dell **Diagram Views**, **State Views**, or an alert in the **Alerts Views**.

3 In the **Tasks** pane, select **Dell CMC Tasks** > **Check Node Interfaces**.

Launch Dell CMC console

To launch the CMC console.

1 In the OpsMgr console, navigate to 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**.

7

Chassis Modular Server Correlation Feature

Chassis Modular Server Correlation feature supports:

- Correlation of discovered Modular Servers using the licensed or license-free monitoring feature 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 31. 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 discovered through the Server and Rack Workstation Monitoring.

8

Feature Management Dashboard

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

- Server and Rack Workstation Monitoring Feature
- Server and Rack Workstation Monitoring (Licensed) Feature
- DRAC Monitoring Feature
- Chassis Monitoring Feature
- Chassis Modular Server Correlation Feature

Topics:

Discovery by Dell Feature Management Pack

Table 32. 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 EMC 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. These errors occur when **Feature Management Dashboard** reimports all the dependent management packs that were already imported while importing a monitoring feature.
- Wait for a task to complete (view the state update change in the dashboard) before launching another task using the **Feature Management Dashboard**.
- The **Refresh dashboard** task may not update the dashboard immediately; it might take a few minutes to update the dashboard contents.

Table 33. Feature Management Tasks.

Tasks		Description
Chassis Modular Server Correlation		
	Import Chassis Modular Server Correlation Feature	Imports the chassis modular server correlation feature.
	Refresh Dashboard	Updates the **Feature Management Dashboard**.
	Refresh Node Count	Updates the node count.
	Remove Chassis Modular Server Correlation Feature	Removes the chassis modular server correlation monitoring feature.
	Upgrade Chassis Modular Server Correlation Feature	Upgrades to the latest version of the chassis modular server correlation feature.
Chassis Monitoring		
	Import Chassis Monitoring Detailed Feature	Imports the chassis detailed monitoring feature.
	Import Chassis Monitoring Scalable Feature	Imports the chassis scalable monitoring feature.
	Refresh Dashboard	Updates the **Feature Management Dashboard**.
	Refresh Node Count	Updates the node count.
	Remove Chassis Monitoring Feature	Removes the chassis monitoring feature (both scalable and detailed monitoring feature).
	Set to Chassis Detailed Monitoring 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.
	Set to Chassis Scalable Monitoring 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.
DRAC Monitoring		
	Import DRAC Monitoring Feature	Imports 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.
	Upgrade DRAC Monitoring Feature	Upgrades to the latest version of the DRAC monitoring feature.

Tasks		Description
Server and Rack Workstation Monitoring		
	Enable Agent Proxying	Enables agent proxying for Dell servers.
	Import Detailed Feature	Imports the Detailed feature of the Server and Rack Workstation Monitoring feature.
	Import Scalable Feature	Imports the Scalable feature of the Server and Rack Workstation Monitoring feature.
	Refresh Dashboard	Updates the **Feature Management Dashboard**.
	Refresh Node Count	Updates the node count.
	Remove Monitoring Feature	Removes the Server and Rack Workstation Monitoring feature.
	Set as Preferred Monitoring Method	This task enables the Server and Rack Workstation Monitoring feature as the preferred monitoring method for the Servers and Rack Workstations, when the Servers and Rack Workstations in the setup are monitored through both the Server and Rack Workstation Monitoring feature, and the Server and Rack Workstation Monitoring (Licensed) feature.
	Set Informational Alerts Off	Informational alerts are turned off when the Server and Rack Workstation Monitoring Scalable Monitoring is in use.
	Set Informational Alerts On	Informational alerts are turned on when the Server and Rack Workstation Monitoring Scalable Monitoring is in use.
	Set to 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 to 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.
Server and Rack Workstation Monitoring (Licensed)		
	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.
	Enable Agent Proxying	Enables agent proxying for Dell servers running the supported iSM version and also triggers discovery of these servers.
	Enable Event Auto-Resolution	Enables the Event Auto-Resolution feature.
	Disable Event Auto-Resolution	Disables the Event Auto-Resolution feature.
	Refresh Dashboard	Updates the **Feature Management Dashboard**.
	Refresh Node Count	Updates the node count.

Tasks		Description
	Remove Monitoring Feature (Licensed)	Removes the Server and Rack Workstation Monitoring (Licensed) feature.
	Set as Preferred Monitoring Method (Licensed)	This task enables the Server and Rack Workstation Monitoring (Licensed) feature as the preferred monitoring method for the Servers and Rack Workstations, when the Servers and Rack Workstations in the setup are monitored through both, Server and Rack Workstation Monitoring feature, and Server and Rack Workstation Monitoring (Licensed) feature.
	Set to Detailed Feature (Licensed)	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 to Scalable Feature (Licensed)	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.

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Licensing for Dell EMC Server Management Pack Suite

License Information

The Server and Rack Workstation Monitoring (Licensed) feature in Dell EMC Server Management Pack Suite for OpsMgr is licensed. Information on the process for obtaining software licenses is as follows.

Licenses

Licenses must be purchased based on the desired number of nodes you want to monitor.

Purchasing Licenses

To leverage the Server and Rack Workstation Monitoring (Licensed) feature functionalities, you must purchase licenses (based on the desired number of managed nodes) from Dell. The order confirmation and license is sent as an e-mail to the e-mail ID that you have specified in My Account — Dell. The purchased licenses are also downloadable from the Dell Digital Locker portal at http://www.dell.com/support/licensing. If you are unable to download your licenses, email Dell Customer Support by going to www.dell.com/support/incidents-online/in/en/indhs1/email/order-support.

Checking License Usage

A Console requires a license to manage PowerEdge servers. To view the PowerEdge servers managed by Server and Rack Workstation Monitoring (Licensed) feature for OpsMgr: In OpsMgr, select **Monitoring** > **Dell** > **Feature Management Dashboard**

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

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 post DCLM being removed. You can continue to manage the PowerEdge servers using Server and Rack Workstation Monitoring (Licensed) 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 exceeds 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 EMC Server Management Pack Suite.

Topics:

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 with Life Cycle Controller User's Guide*
- *iDRAC Service Module Installation 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.

Appendix A—Issues and resolutions

Issues and resolutions

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

Table 34. Issues and resolutions

Issue	Resolution	Applicable To
Discovery through iSM using WMI fails when a managed node is running Windows Server 2008 R2 and the Management server is running **OpsMgr** 2012 R2.	Ensure that you have installed Windows Management Framework version 4.0. On the management server, apply the Microsoft Security update for Update Rollup 7 (or later) for System Center 2012 R2 Operations Manager. For more information, see Support.microsoft.com. You can install the following updates from Catalog.update.microsoft.com. Ensure that you install these updates in the order listed below: 1 Update Rollup for Microsoft System Center 2012 R2 - Operations Manager Server 2 Update Rollup for Microsoft System Center 2012 R2 - Operations Manager Console Discover the server running Windows Server 2008 R2 operating system.	Server and Rack Workstation Monitoring (Licensed) Feature. This issue pertains to discovery through ASM using WMI only.
Set as the Preferred Monitoring Method task fails to remove the duplicate objects in either or both of the following scenarios: · Correlation of the Dell Modular servers with chassis slots · Monitoring FM servers	To remove the duplicate objects, perform the following steps: 1 Navigate to the **Feature Management Dashboard**, select the **Chassis Modular Server Correlation** feature, and then click **Remove Chassis Modular Server Correlation Feature** from the **Dell Monitoring Feature Tasks** menu in the right pane. Re-import the **Chassis Modular Server Correlation**. You will now be able to use the **Set as Preferred Monitoring Method** task functions to remove the duplicate objects. 2 If the task is still failing, then perform the following steps: a Disable the **Dell CMC Chassis to the Modular Blade Server Correlation Discovery** object discovery.	Chassis Modular Server Correlation Feature

Issue	Resolution	Applicable To
	b Disable the object discovery corresponding to the method used for discovering the modular servers. For example: If the duplicate object is discovered through OMSA, then navigate to **Authoring** > **Object Discoveries** and then search for `Dell Server Discovery`; which is targeted at the `Windows Computer` and disable the **Discovery** attribute for that object. **NOTE: In case the duplicate object has been created for FM servers, then disable the following object discoveries for FM servers:** · `Dell FM Server Agent-based Discovery` · `Dell FM Server Agent-free Discovery` · `Dell FM Server iSM Discovery` 3 Run the following command from the **Operations Manager Shell**: `Remove-SCOMDisabledClassInstance`. **NOTE: This step may take up to 48 hours to complete.**	
The **Agent proxy not enabled** alerts are displayed in the **Active Alerts** list for the Dell servers discovered through iSM.	To resolve this issue, perform the following steps: 1 Navigate to the Feature Management Dashboard, and click Server and Rack Workstation Monitoring (Licensed). 2 In the right pane, under **Dell Monitoring Feature Tasks**, click **Enable Agent Proxying**. The **Run Task - Enable Agent Proxying** window is displayed. 3 Click **Override**, and then click the field under New Value for the **AutoResolve Warnings/Errors** parameter and set the value as **True**. 4 Now click Override and then click **Run**. 5 Close the task status window. Clear the existing alerts from the active alerts list. These alerts will no longer be displayed for future discoveries.	Server and Rack Workstation Monitoring (Licensed) Feature
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**.	Chassis Monitoring Feature

Issue	Resolution	Applicable To
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 **Run As Account** 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.	Chassis Monitoring Feature
Errors while running the **Repair** option in Dell EMC Server Management Pack Suite 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 EMC Server Management Pack Suite Version 7.0 for Microsoft System Center Operations Manager Installation Guide.*	Dell EMC Server Management Pack Suite
If there is a delayed response while discovering a chassis, 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**.	Chassis Monitoring Feature
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 EMC 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 the Server and Rack Workstation Monitoring (Licensed) Feature.	Server and Rack Workstation Monitoring (Licensed) Feature

Known limitations

Table 35. 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	Dell EMC Server Management Pack Suite

Limitation	Applicable to
view it, you can see the username and the password you specified. The credentials are not hidden when you view the task.	
While using health explorer, some unit monitors in Dell EMC 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 EMC Server Management Pack Suite
Intrusion unit monitor status under sensors is only for chassis and does not include health of bezel intrusion.	Dell EMC Server Management Pack Suite

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Appendix B

Creating a Simple Authentication Run As Account

1 Log on to OpsMgr as an administrator for the OpsMgr Management Group.
2 On the OpsMgr console, click **Administration.**
3 Click **Run As Configuration** > **Accounts**.
4 Right-click **Accounts**, and then click **Create Run As Account.**
The **Create Run As Account Wizard** screen is displayed.
5 Click **Next.**
6 From the **Run As account type:** drop-down menu, select **Simple Authentication.**
7 Provide a display name in the **Display name:** text box.
8 Provide a brief description in the **Description (optional):** text box and click **Next.**
9 On the **Credentials** screen provide the iDRAC login credentials for the systems you want to discover using the Server and Rack Workstation Monitoring (Licensed) feature.
10 Click **Next.**
11 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.

12 Click **Create**.
13 After the **Run As Account** has been created, click **Close**.

Associating a Run As Account for monitoring a Dell server using the Server and Rack Workstation Monitoring (Licensed) 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 sometimes, 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, 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 Account 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 successful, 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 36. 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 — Server and Rack Workstation Monitoring (Licensed) 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.

Appendix C - Enabling External Program Tasks

For tasks provided by the Dell EMC 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.

Topics:

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**.
   Create Task Wizard scree is displayed.
3. In the **Select a 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 the 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 task:

1 Launch OpsMgr console, and click **Authoring.**

2 In the **Authoring** pane, right-click **Tasks** under **Management Pack Objects**, and select **Create a New Task**.

3 In the **Task Type** screen, select the **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 Server and Rack Workstation Monitoring feature
- Dell Server—for Server and Rack Workstation Monitoring (Licensed) feature)
- 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.