

Dell™ Server Management Pack Suite  
Version 4.0 For Microsoft® System  
Center Operations Manager 2007 SP1/R2  
and System Center Essentials 2007 SP1

# User's Guide

# Notes and Cautions



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



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

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# Introduction

This document is intended for system administrators who use the Dell™ Server Management Pack Suite v4.0 to manage and monitor Dell systems.

With the integration of the Dell™ Server Management Pack Suite v4.0 with Microsoft® Systems Center Operations Manager (SCOM) 2007 SP1/R2 or System Center Essentials (SCE) 2007 SP1 environment, you can manage, monitor, and ensure the availability of your Dell devices.

 **CAUTION:** The procedures in this document should be performed only by personnel with knowledge and experience in using the Microsoft Windows operating system and the Systems Center Operations Manager 2007 SP1/R2 or System Center Essentials 2007 SP1. Due to the possibility of data corruption and/or data loss, Dell recommends that only such persons use the procedures described in this document.



**NOTE:** Read the Management Pack's readme files, which contain the latest information about software and management station requirements, in addition to information about known issues. The readme files are posted to the Systems Management documentation page on the Dell Support website at [support.dell.com](http://support.dell.com). The readme files are also packaged in the self-extracting executable Dell\_Server\_Management\_Pack\_Suite\_v4.0\_A00.exe file.



**NOTE:** All references to Systems Center Operations Manager (SCOM) 2007 SP1/R2 in this document are also applicable to System Center Essentials (SCE) 2007 SP1.

## Accessing the Management Packs and Documentation

The Dell™ Server Management Pack Suite v4.0 is a set of four Management Packs along with a base folder utility and an override utility.

The four Management Packs are:

- Dell.WindowsServer.Scalable.mp
- Dell.WindowsServer.Detailed.mp
- Dell.OutOfBand.CMC.mp
- Dell.OutOfBand.DRAC.mp

The two utilities are:

- Dell.Connections.HardwareLibrary.mp
- Dell.WindowsServer.InformationalAlertsOn.mp

The four Management Pack files, two utilities, and readme files, along with this user's guide are packaged in a self-extracting executable **Dell\_Server\_Management\_Pack\_Suite\_v4.0\_A00.exe** file. The .exe can be downloaded from the Dell Support website at [support.dell.com](http://support.dell.com).

## What is New in Dell Server Management Pack Suite v4.0

Dell Server Management Pack Suite v4.0 provides scalability and performance improvements over the previous releases by providing four different Management Packs for managing Dell devices.

- Dell Server Management Pack Suite v4.0 provides two Management Packs and an override utility to manage Dell Windows systems.

**Table 1-1. Management Packs and a Utility for Dell Windows Systems**

Management Pack/ Utility Name	File Name
Scalable Server Management Pack	Dell.WindowsServer.Scalable.mp
Detailed Server Management Pack	Dell.WindowsServer.Detailed.mp
Informational-alerts-On override utility	Dell.WindowsServer.InformationalAlertsOn.mp

For more information on these Management Packs and utility, see "Understanding Dell Server Management Pack Suite v4.0."

- The Dell Server Management Pack Suite 4.0 also contains the following two Management Packs:
  - Dell.OutOfBand.CMC.mp - To manage Dell Chassis Management Controller (CMC) and DRAC/MC devices
  - Dell.OutOfBand.DRAC.mp - To manage all Dell Remote Access devices (DRAC 4/DRAC 5/iDRAC 6 modular and iDRAC 6 monolithic only).



**Table 1-2. Management Packs for CMC, DRAC/MC, and Dell Remote Access**

<b>Management Pack Name</b>	<b>File Name</b>
Dell Chassis Management Controller Management Pack	Dell.OutOfBand.CMC.mp
Dell Remote Access Controller Management Pack	Dell.OutOfBand.DRAC.mp

For more information on these Management Packs, see "Understanding Dell Server Management Pack Suite v4.0."

- These four individual Management Packs refer to a common base folder utility - Dell.Connections.HardwareLibrary.mp.

For more information on this utility, see "Understanding Dell Server Management Pack Suite v4.0."

- Apart from the Diagram View, Alert View, and State View, the additional Dell-specific user interface view provided by the Dell Server Management Pack Suite v4.0 in the SCOM framework for monitoring, is the *Performance and Power Monitoring Views*. This folder contains views that display the Dell system counters in a graphical format.

For more information on the user interface views, see "Monitoring."

The previous releases (Dell MP v3.1.1 and earlier) provided only one Management Pack for Server, CMC, and DRAC - the

**Dell.Connections.001.mp**. Dell Server Management Pack Suite v4.0 supports Server, CMC, and DRAC through independent and separate Management Packs to ensure performance improvements.

## **Understanding Dell Server Management Pack Suite v4.0**

### **Dell Hardware Group Definition**

The base folder utility, Dell.Connections.HardwareLibrary.mp, defines the Dell Hardware Group. The four individual Management Packs refer to this base folder utility. After you import this utility and any of the other Management Packs, the corresponding hardware components are placed under Dell Hardware Group. When you delete/uninstall a Dell Management Pack, the corresponding components under Dell Hardware Group are removed.

## Windows Server

- **Scalable Server Management Pack**

The Scalable Server Management Pack models the components at a high level (up to the group level). The components that are included in the top rectangle in Figure 1-1 are modeled by Scalable Server Management Pack. For example, the Memory component is modeled upto the Memory group level. The Memory Unit instances are not modeled by this Management Pack.

To know the exact instance level instrumentation details of the managed system in an Enterprise Datacenter when using the Scalable Server Management Pack, launch the Dell OpenManage™ System Administrator.

Rules, Tasks, and Monitors for the modeled components are defined in this Management Pack. Informational Alerts are by default disabled in this Management Pack.

Scalable Management Pack is useful in scenarios where you have a priority to scale to a large SCOM environment. Dell recommends to use this Management Pack when the number of managed systems exceeds 300 units.

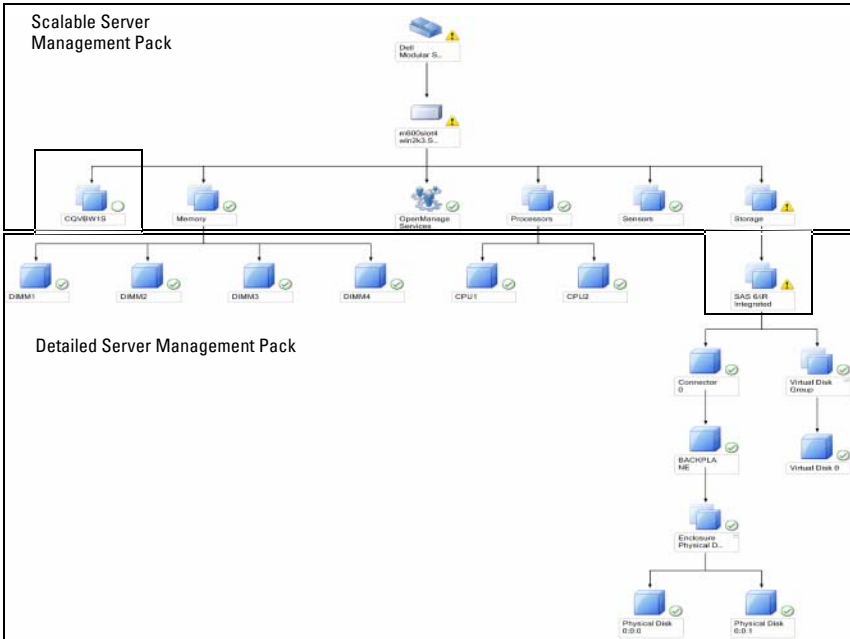
- **Detailed Server Management Pack**

The Detailed Server Management Pack is an extension of the Scalable Server Management Pack. This Management Pack models the details of components modeled in Scalable Server Management Pack. In Figure 1-1, all components which are included in the bottom rectangle are modeled by this Management Pack. For example, the Memory Units are modeled with this Management Pack and this model is attached to the Memory group modeled in Scalable Server Management Pack. Informational Alerts are by default disabled in this Management Pack.

- **Informational-alerts-On Override Utility**

This override utility enables all the informational alerts defined as part of Scalable Server Management Pack, using overrides. Hence, ensure you import Scalable Server Management Pack prior to importing this utility.

**Figure 1-1. Dell Management Pack**



When you migrate from the Detailed version to the Scalable version, the Detailed Server Management Pack is removed from the SCOM console. As a result, you will not be able to view the discovery and attribute information on extended components.

Dell Server Management Pack Suite v4.0 provides these features for management of Dell Windows systems and out-of-band Dell devices:

- Option to choose Detailed or Scalable Management Pack, to provide scalability
- Option to include Informational alerts or detailed monitoring capability with Dell OpenManage™ Server Administrator
- Discovering and grouping of Dell Monolithic and Modular systems
- In-band attribute inventory for iDRAC, DRAC, and IPMI devices

- Monitoring power and temperature using the **Performance and Power Monitoring Views**
- Managing of Dell hardware at group level for enhanced scalability, instead of instance level data collection, in Scalable mode

## Comparison of Scalable Management Pack and Detailed Management Pack

Table 1-3 helps you understand the environment in which you can use Scalable Management Pack and Detailed Management Pack optimally.

**Table 1-3. Scalable Management Pack vs Detailed Management Pack**

Property	Scalable Management Pack	Detailed Management Pack
Dependency	Scalable Management Pack is dependent on the Base Management Pack.	Detailed Management Pack is dependent on both Base Management Pack as well as the Scalable Management Pack. You can import the Detailed Management Pack only after importing the Scalable Management Pack.
Information level (Attributes)	Scalable Management Pack can show only root level information for nodes such as, Memory, Processors, and Storage Controllers. Less number of Dynamic attributes are supported in comparison to the Detailed Management Pack.	Detailed Management Pack provides an additional level of information about Memory and Processors. For a Storage Controller, it can provide about 3 to 4 levels of information from root, depending on the configuration. Also, an additional node information of BIOS is available with the Detailed Management Pack.

**Table 1-3. Scalable Management Pack vs Detailed Management Pack (continued)**

<b>Property</b>	<b>Scalable Management Pack</b>	<b>Detailed Management Pack</b>
<b>Scalability</b>	Scalable Management Pack can be used for discovering and monitoring of very high number of Dell systems. Dell recommends to use this Management Pack when the number of managed systems exceeds 300 units.	Detailed Management Pack is best suited for discovery and monitoring of a smaller number of systems.
<b>Performance</b>	Inventory and Monitoring using Scalable Management Pack is faster than Detailed Management Pack.	Slower in comparison to Scalable Management Pack.
<b>Reports</b>	Only OpenManage Windows Event log report is available with this Management Pack.	BIOS configuration, Firmware and Driver version, and RAID configuration reports are available with this Management Pack.

### **Dell Chassis Management Controller (CMC)**

This Management Pack supports the discovering, monitoring, and alert processing of Chassis Management Controller and DRAC/MC.

This Management Pack provides the following features in Dell Server Management Pack Suite v4.0:

- Discovering and grouping of CMC and DRAC/MC instances in the **Diagram View**
- Attribute information for CMC and DRAC/MC
- SNMP trap processing and knowledge base for CMC and DRAC/MC
- Health monitoring of CMC and DRAC/MC - both at regular intervals of six hours and on occurrence of SNMP traps
- Launching of DRAC and CMC devices console task

## Dell Remote Access Controller (DRAC)

This Management Pack supports the discovery, monitoring, and alert processing for various generations (DRAC 4, DRAC 5, iDRAC 6 modular, and iDRAC 6 monolithic systems) of Dell Remote Access. These generations of Remote Access devices are grouped under Dell Remote Access Group.

This Management Pack provides the following features in Server Management Pack Suite v4.0:

- Discovering of DRAC 4, DRAC 5, and iDRAC 6 (modular and monolithic) and grouping these devices in the **Diagram View**
- Processing of SNMP traps and knowledge base for Dell Remote Access
- Health monitoring of Dell Remote Access devices - both at regular intervals of six hours and on occurrence of SNMP traps with status poll
- Support for complete set of SNMP traps and Platform Event Traps
- Launching of Dell Remote Access console task



**NOTE:** Dell Remote Access Controller Management Pack does not support the discovery of xx0x iDRAC modular controller out-of-band systems due to iDRAC hardware limitation. To manage iDRAC xx0x modular controller, use Detailed Server Management Pack or Scalable Server Management Pack where xx0x iDRAC would be discovered in-band as a part of the Server Inventory.

## Supported Dell Devices

The following Dell devices are supported for Dell Server Management Pack Suite v4.0:

- Dell PowerEdge™ systems - complete support for systems ranging from x8xx to xx1x (both inclusive) and limited support for x6xx and x7xx systems.
- Dell PowerVault™ systems - complete support for systems ranging from x8xx to xx1x (both inclusive) and limited support (no support for `ipmi.sh` tasks) for x6xx and x7xx systems.



**NOTE:** Both PowerEdge and PowerVault systems are supported with Detailed Server Management Pack and Scalable Server Management Pack.

- DRAC 4, DRAC 5, iDRAC 6 with DRAC Management Pack and CMC, DRAC/MC with CMC Management Pack.

## Supported Operating Systems

For the latest information about operating system support for Dell Server Management Pack Suite v4.0, see the readme files. You can access the readme files from the Systems Management documentation page on the Dell Support website at [support.dell.com](http://support.dell.com) or from the self-extracting executable Management Pack file, `Dell_Server_Management_Pack_Suite_v4.0_A00.exe`. For the list of supported operating systems for the management station for SCOM/SCE, see the Microsoft website at

[http://technet.microsoft.com/hi-in/library/bb309428\(en-us\).aspx](http://technet.microsoft.com/hi-in/library/bb309428(en-us).aspx)

## Supported Firmware Versions For DRAC and CMC Devices

See the readme files for the minimum supported versions of firmware for DRAC and CMC devices. You can access the readme files from the Systems Management documentation page on the Dell Support website at [support.dell.com](http://support.dell.com) or from the self-extracting executable Management Pack file, `Dell_Server_Management_Pack_Suite_v4.0_A00.exe`

## Other Documents You May Need

Besides this *User's Guide*, you may need to refer to the following guides available on the Dell Support website at [support.dell.com](http://support.dell.com):

- The Dell *Integrated Remote Access Controller User's Guide* provides detailed information on configuring and using the iDRAC.
- The Dell *Chassis Management Controller User's Guide* provides detailed information on installing, configuring and using CMC.
- The Dell *OpenManage Installation and Security User's Guide* provides detailed installation procedures and step-by-step instructions for installing, upgrading, and uninstalling Server Administrator for each supported operating system.
- The Dell *OpenManage Software Quick Installation Guide* provides an overview of applications that you can install on your management station (console) and on your managed systems. This document also provides procedures for installing your console and managed system applications on systems running supported operating systems.

- The *Dell OpenManage Server Administrator Compatibility Guide* provides compatibility information about Server Administrator installation and operation on various hardware platforms (or systems) running supported operating systems.
- The *Dell OpenManage Server Administrator CIM Reference Guide* documents the Common Information Model (CIM) provider, an extension of the standard management object format (MOF) file. The CIM provider MOF documents supported classes of management objects.
- The *Dell OpenManage Server Administrator Messages Reference Guide* lists the messages that are displayed in your Server Administrator home page Alert log or on your operating system's event viewer. This guide explains the text, severity, and cause of each service alert message that Server Administrator issues.
- The *Dell OpenManage Server Administrator Command Line Interface User's Guide* documents the complete command line interface for Server Administrator, including an explanation of the command line interface (CLI) commands to view system status, access logs, create reports, configure various component parameters, and set critical thresholds.
- The *Dell OpenManage Baseboard Management Controller Utilities User's Guide* provides additional information about using Server Administrator to configure and manage your system's BMC.
- The *Dell Remote Access Controller 4 User's Guide* provides complete information about installing and configuring a DRAC 4 controller and using DRAC 4 to remotely access an inoperable system.
- The *Dell Remote Access Controller 5 User's Guide* provides complete information about installing and configuring a DRAC 5 controller and using DRAC 5 to remotely access an inoperable system.
- The *Dell Remote Access Controller Racadm User's Guide* provides information about using the racadm command-line utility.
- The *Dell Life Cycle Controller User's Guide* provides information on setting up and using the Life Cycle Controller to perform systems and storage management tasks throughout your system's lifecycle. You can use the Life Cycle Controller to deploy an operating system, configure a Redundant Array of Independent Disks (RAID), and run diagnostics to



validate the system and attached hardware. The Life Cycle Controller can be started during the boot sequence and can function independently of the operating system.

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

## **Obtaining Technical Assistance**

If at any time you do not understand a procedure described in this guide, or if your product does not perform as expected, different types of help are available. For more information see "Getting Help" in your system's *Hardware Owner's Manual*.

Additionally, Dell Enterprise Training and Certification is available; see [www.dell.com/training](http://www.dell.com/training) for more information. This service might not be offered in all locations.



# Getting Started

## Management Station Requirements

### Generic Requirements

- For discovery of Windows systems on your network and installation of SCOM agents through the Operations Console, all the managed systems should have a valid and a fully qualified domain name (FQDN) that can be pinged from the management station.
- For discovery of DRAC 4, DRAC 5, iDRAC 6, DRAC/MC, and CMC, out-of-band network device discovery should be performed and SNMP must be enabled.

### Windows Server

- Dell Server Management Pack Suite v4.0 will still function if the SCOM Management Server Action account has normal user privileges on all Dell managed systems but with a reduced feature set. The Management Server Action Account needs the following privileges for listed additional features:

**Table 2-1. Management Server Action Account Privileges**

Feature	User Privilege
Dell Monolithic server in-Band DRAC discovery and the corresponding DRAC Console launch	Admin or Power user
Clear ESM Log	Admin or Power user

Alternatively, for the **Clear ESM Log** task, if the Management Server Action Account has normal user privileges, operators can, instead of selecting **Use the predefined Run as Account**, enter task credentials with Power User (or higher) privileges to run the **Clear ESM Logs** task.

- To run the Remote Power Control tasks or the LED Identification Control tasks on Dell-managed systems, the BMC Management Utility version 2.0 must be installed on the management station. The **BMC Management Utility** is available on the *Dell Systems Management Tools and Documentation* DVD.
- Enable and configure IPv6 in management station when the managed system's attributes have IPv6 address.

## Managed System Requirements

These are the managed system requirements for Dell systems:

- Install Dell OpenManage™ Server Administrator (including the Server Administrator Storage Management Service.)
  - Dell recommends that you install the latest Dell OpenManage Server Administrator 6.1.
  - The minimum supported version is Dell OpenManage Server Administrator 5.3 and above.

You can download the latest version of Server Administrator from the Dell Support website at [support.dell.com](http://support.dell.com).



**NOTE:** If a system has Server Administrator version lesser than 5.3, it will be grouped under "Unmanaged" and monitoring will be disabled.

- Install the DRAC agent using the *Dell Systems Management Tools and Documentation* DVD, if Dell Remote Access Controller (DRAC) is installed on your Dell system. You can download the latest version of DRAC agent from the Dell Support website at [support.dell.com](http://support.dell.com).
- Configure a valid IP address for your BMC and ensure network connectivity for Advanced power control and LED identification tasks to work without errors.
- For devices to be recognized as Dell systems, management server agents must be installed on the managed system locally or remotely.

## Configuring Management Server Action Account With Normal User Privilege

To configure Management Server Action Account with normal user privilege follow these steps:

- 1 Install SCOM 2007 SP1/R2 on the management station, with Management Server Action Account as a Domain user (non Domain Administrator.)
- 2 Install Operations Manager Agent on the managed system (Auto Agent Push/ Manual Install.) Add the Management Server Action Account (as described in step1 - Domain User) as part of the local admin group for Agent install to work.
- 3 Once discovery and monitoring of managed system is successfully initiated in the Operations Manager Console, demote the Management Server Action Account from the Local Admin group. You may need to reboot to make sure that the user is not an administrator now.
- 4 Once the Management Server Action Account user is non Power user/Administrator user account, Import the Dell Management Pack on management station.
- 5 Wait till the managed system is discovered again by the Management Pack (this will depend on the discovery cycle time.)

## Importing Management Packs into SCOM

While importing a Management Pack or an utility ensure you import:

- Base folder utility prior to importing any of the four individual Management Packs.
- Scalable Server Management Pack prior to importing Detailed Server Management Pack or Informational-alerts-On override utility.

To import the Management Packs or utilities, use the SCOM Import Management Pack wizard:

- 1 Download the Management Packs or utilities from the Dell Support website at [support.dell.com](http://support.dell.com).

This file is a self-extracting .exe file—

Dell\_Server\_Management\_Pack\_Suite\_v4.0\_A00.exe.

- 2 Copy the downloaded file to the destination directory on your local system's hard drive.
- 3 Open the **Dell\_Server\_Management\_Pack\_Suite\_v4.0\_A00.exe** file to extract any of the Management Packs or utilities.
- 4 Click **Start** → **Programs** → **System Center Operations Manager 2007** and select **Operations Console**.
- 5 In the **Operations Console**, click **Administration** on the navigation pane.
- 6 Expand the **Administration** tree, right-click **Management Packs**, and select **Import Management Packs**.
- 7 Click **Add**. Select the **Add from disk** option.
- 8 Type or browse to the location of the Management Pack/utility files, which is usually the same location to which you downloaded and extracted the contents of the **Dell\_Server\_Management\_Pack\_Suite\_v4.0\_A00.exe** file.
- 9 Select the Management Pack/utility you want to import and click **Open**.  
The **Import Management Packs** screen appears with the selected Management Packs/utilities displayed in the **Import List**.
- 10 Click **Install** to complete the task.

### **Post-Import Tasks for the Dell Server Management Pack Suite v4.0**

The BMC Management Utility (BMU) 2.0 or later should be installed on the SCOM management station.

The latest BMC Management Utility can be downloaded from the Dell Support website at [support.dell.com](http://support.dell.com).

Advanced power Control and LED Identification Tasks use the default BMC credentials, including the default English operating system BMU install path (C:\Program Files\Dell\SysMgt\bmc), which cannot be modified.

For Advanced power Control and LED Identification Tasks, if your systems have different BMC credentials, or if BMU is installed on a 64-bit Program Files path, or in a non-default BMU install path on the management station, or if the localized Program files path is different from the English operating system BMU install path, you will need to install BMU 2.0 or later on the Operator Console system and create new console tasks in the **Authoring** pane targeted on **BMC for Dell Server**:

- 1 In the **Authoring** pane, right-click **Tasks** under **Management Pack Objects**, and select **Create new task**.

The **Create Task Wizard** appears.

- 2 In the **Task Type** screen, select **Command line** under **Console Tasks**. Click **Next**.

The **General Properties** screen appears.

- 3 Type **Task name**, **Description**, and select **Dell Windows Server** as the **Task Target** and click **Next**.

The **Command Line** screen appears.

- 4 Type the path of the application **ipmitool.exe** (the path where BMU was installed on the Operator Console) in the **Application** field. For example, `C:\Program Files\Dell\SysMgt\bmc\ipmitool.exe` (default BMU Path may differ based on your operating system language.) For the two LED identification tasks, the application path is `C:\Program Files\Dell\SysMgt\bmc\ipmish.exe` (default BMU Path may differ based on your operating system language.)
- 5 For power control tasks, in the **Parameters** field, enter the command line parameters in the following format:

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

A sample command line parameter entry:

```
-I lan -H $Target/Property[Type=  
"Dell.WindowsServer.Server40025!DellServer.RemoteAccessIP"]$ -U <username> -P  
<password> -k <kgkey> power status
```

- 6 For LED on or off tasks, enter the command line parameters in following format:
  - Type `-ip` and choose the **Remote Access IP with IPMI capability** from drop-down menu.
  - Type `-u <username> -p <password> -k <kgkey> <IPMI task string>`.
- 7 Click **Create** to create the task and repeat this procedure for each new BMC task you want to create.

## Microsoft Guidelines for Performance and Scalability for Operations Manager 2007 SP1/R2

For optimal performance, deploy device-specific Dell Management Packs on different management stations.

For information on Microsoft's recommendations for scalability, see the Microsoft website at

[http://technet.microsoft.com/hi-in/library/bb735402\(en-us\).aspx](http://technet.microsoft.com/hi-in/library/bb735402(en-us).aspx)



**NOTE:** Ensure that the Autogrow Option is enabled in Operations Manager Data Warehouse and/ or Database.

## Upgrading From the Previous Management Packs

Upgrading from the previous Management Pack is not supported.

You must delete the corresponding previous version of Dell Server MP (3.0, 3.1, or 3.1.1) and then install Dell Server Management Pack Suite v4.0 on Systems Center Operations Manager. For information on the steps to import Dell Server Management Pack Suite v4.0 see "Getting Started."



**NOTE:** Ensure you delete Dell Server Management Pack 3.x (Dell.Connections.001.mp) prior to importing any of the Management Packs that are a part of the Dell Server Management Pack Suite v4.0.



## Deleting the Management Packs

While deleting a Management Pack or a utility ensure you delete:

- Detailed Server Management Pack prior to deleting the Scalable Server Management Pack
- Informational-alerts-On override utility prior to deleting the Scalable Server Management Pack

Also, ensure the four independent Management Packs are deleted prior to deleting the base folder utility.

To delete any of the Management Packs or utilities:

- 1 Select **Administration** → **Management Packs** in the Systems Center Operations Manager 2007 Operations Console.
- 2 Select the Dell Management Pack/utility you want to delete from the **Management Packs** pane.
- 3 Right-click the selected Dell Management Pack/utility and click **Delete**.

After deleting a Management Pack/utility, Dell recommends closing and reopening the SCOM Console.



**NOTE:** Deleting any of the Management Packs may affect the scope of some user roles.

## Security Considerations

Operations Console access privileges are handled internally by SCOM. This can be setup using the **User Roles** option under **Administration** → **Security** feature on the SCOM console. The profile of the role assigned to you determines what actions you can perform. For more information on security considerations see the *Microsoft Operations Manager 2007 SP1/ Microsoft Systems Centre Essentials SP1 online help*.



# Understanding Dell Server Management Pack Suite Operations

## Discovery and Grouping

Dell Windows systems are discovered through the SCOM Agent Management infrastructure. Dell systems that do not have Dell OpenManage™ Server Administrator installed, have unresponsive instrumentation service, or have Server Administrator earlier than 5.3 are grouped as Dell "Unmanaged".

## Windows Servers

- Discovers and monitors Dell™ PowerEdge™ and PowerVault™ systems and groups systems (Modular and Monolithic) running OpenManage Server Administrator (version 5.3 to 6.1), so that the systems are easily identifiable and manageable
- Categorizes the discovered Windows systems and groups them under Monolithic Server Group, Modular Systems Group, and Dell Unmanaged Servers Group
- Provides an inventory of detailed storage controller information
- Collects attribute information on Dell™ Lifecycle Controller and Remote Access hardware
- Hardware component discovery consists of discovery of Memory, Power Supply, Processor, Sensors (Current, Battery, Fan, Temperature, Voltage and Intrusion), Life Cycle Controller, BIOS, and Remote Access

## Dell Modular Chassis Remote Access

- Discovers and monitors CMC, DRAC/MC instances on the network
- CMC and DRAC/MC instances are grouped under Dell Modular Chassis Group

## Dell Remote Access Controller

- Discovers and monitors DRAC 4, DRAC 5, and iDRAC 6 (modular and monolithic) devices on the network
- The DRAC 4, DRAC 5, iDRAC 6 modular, and iDRAC 6 monolithic instances are grouped under the Dell Remote Access 4 Group, Dell Remote Access 5 Group, iDRAC 6 Modular Group, and iDRAC 6 Monolithic Group respectively



**NOTE:** Dell Remote Access Controller Management Pack does not support the discovery of xx0x iDRAC modular controller out-of-band systems due to iDRAC hardware limitation. To manage iDRAC xx0x modular controller, use Detailed Server Management Pack or Scalable Server Management Pack where xx0x iDRAC would be discovered in-band as a part of the Server Inventory.

## Alerts and Traps

- Displays alerts for events received from Dell OpenManage Server Administrator for Dell PowerEdge systems
- Provides an option to include Informational alerts
- Provides trap support for DRAC 4, DRAC 5, iDRAC 6, DRAC/MC, and CMC
- Provides Platform Event Trap (PET) support for Dell systems

## Tasks

- Provides Tasks for Server Management Packs:
  - Launching Server Administrator
  - Launching Dell Modular Chassis Remote Access Console
  - Launching InBand Dell RemoteAccess Console
  - Clearing ESM log for Dell systems
- Provides Tasks for Remote Access Management Packs:
  - Launching Dell RemoteAccess console
  - Launching Dell CMC console

- Provides Intelligent Platform Management Interface (IPMI) tasks for Dell systems with the BMC:
  - Check Power Status
  - Power On
  - Force Power Off
  - Power Off Gracefully
  - Power Cycle
  - Power Reset
  - Turn LED Identification On
  - Turn LED Identification Off

## Reports

Provides Reports for:

- OpenManage Windows Event Log
- Dell Server BIOS, Firmware, and RAID Configuration Reports

## Customizing

Allows you to customize and configure your Dell devices for discovery and monitoring.

## Web Console

The Web console server enables you to monitor and manage your Dell devices with Dell Server Management Pack Suite using a browser instead of the Operations Manager 2007 console. You can use the Web console server without installing the Operations console. Using the Web console has the following limitations:

- provides only the Monitoring feature for all Management Packs
- displays only Clear ESM Log task for the Server Management Packs

- For the DRAC and CMC Management Packs:
  - Console launch tasks are not available
  - Administration, Authoring, and Reporting are not available
  - Personalize view is not available
  - Information alerts are suppressed even after importing Information-On override utility
  - Only first 200 alerts are displayed in the Alert view

## Discovery

To discover Dell devices, the devices must appear in the **Agent Managed** view under the **Administration** section of the Operations Console.

To add a Dell system to the **Agent Managed** list:

- 1 Log on to the system with an account that has the SCOM Administrators role, for the SCOM Management Group.
- 2 In the Operations Console, click **Administration**.
- 3 At the bottom of the navigation pane, click **Discovery Wizard**. The **Introduction** screen appears.
- 4 Click **Next** after reading the instructions on the **Introduction** screen.
- 5 To discover Dell Modular and Monolithic systems, select **Automatic Computer Discovery** and click **Next**.
  - a Provide user account details on the **Administrator Account** screen and click **Discover**. The **Discovery Progress** page appears.
  - b On the **Select Objects to Manage** page, select the devices you want to manage and click **Next**.
  - c On the **Summary** screen, specify the path for **Agent Installation Directory**, specify the credentials for **Agent Action Account**, and click **Finish**.



**NOTE:** Dell windows systems that do not have the instrumentation component running or that do not have server administrator later than 5.3 installed are grouped under Dell Unmanaged systems.

## Dell Network Devices

To discover Dell DRAC and CMC devices, perform the following steps:

- 1 Follow steps 1 to 4 as described under "Discovery."
- 2 Select **Advanced Computer Discovery**, select **Network Devices** in the **Computer & Device Types** menu, and click **Next**.
- 3 Type the **Start** and **End** of the IP address range that you want to scan, type the SNMP Community, and select the SNMP version.
- 4 Click **Discover**. The **Discovery Progress** page appears.
- 5 On the **Select Objects to Manage** page, select the devices you want to manage and click **Next**.
- 6 Click **Finish**.



**NOTE:** You can override the discovery intervals from the Authoring pane of the Operations console. To override the discovery intervals for iDRAC 6 modular, modify the discovery interval period for both the discoveries - **DRAC5/iDRAC Discovery** and **Dell Integrated Remote Access (Modular) Discovery**.

## Monitoring

With the Dell Server Management Pack Suite v4.0 you will be able to work with these views:

### Alert View

This view is available for managing Dell Windows systems, Dell CMC and DRAC/MC, and Dell Remote Access devices. The following individual Alerts Views are displayed:

- Server
- Remote Access
- CMC
- DRAC MC
- PET Traps



**NOTE:** The Remote Access view displays DRAC 4, DRAC 5, and iDRAC 6 alerts.

In the **Monitoring** section of the Operations Console, **Dell →Alerts Views → Server Alerts** displays alerts that meet your specific criteria, such as alert severity, resolution state, or alerts that are assigned to you. Select an alert to view its details in the **Alert Details** pane.

When an alert listed in the Alert View associated with the server is selected, the **Launch Server Administrator** and **Clear ESM Logs** launch points appear under **Dell Windows Server Tasks** in the **Actions** pane. When an alert listed in the Alert View associated with a DRAC/MC device is selected, the **Launch Dell Modular Chassis Remote Access Console** appears in the **Actions** pane. When an alert listed in the Alert View associated with a CMC device is selected, the **Launch Dell CMC Console** appears in the **Actions** pane. When an alert listed in the Alert View associated with a DRAC device is selected, the **Launch Dell RemoteAccess Console** appears in the **Actions** pane.

## Diagram View

This view is available for managing Dell Windows systems, Dell CMC and DRAC/MC, and Dell Remote Access devices. In the **Monitoring** section of the Operations Console, **Dell →Diagram Views** offers a hierarchical, graphical representation of all Dell devices on your network that SCOM manages. The Dell Server Management Pack Suite v4.0 offers the following diagram views:


- Complete Diagram View
- Modular Systems Diagram
- Monolithic Servers Diagram
- Chassis Management Controllers Group
- Remote Access Controllers Group

The Complete Diagram View allows you to monitor the following devices and components:

- Modular and Monolithic Systems
  - Power Supply
  - Sensors
  - Memory
  - Processors.
  - Dell OpenManage Software services

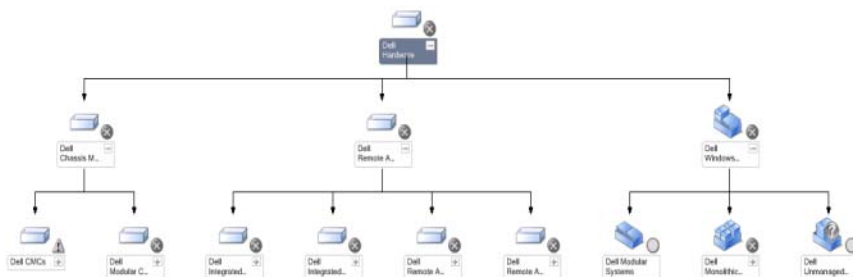


- Storage controller
- BIOS object (only inventory)
- DRAC devices
- CMC and DRAC/MC devices

 **NOTE:** You can launch device/component specific tasks from the **Actions** pane of the Operations Console. See "Tasks" for more information on launching Tasks.


## All Groups Diagram

**Figure 3-1. Dell All Groups Diagram - Detailed Management Pack**



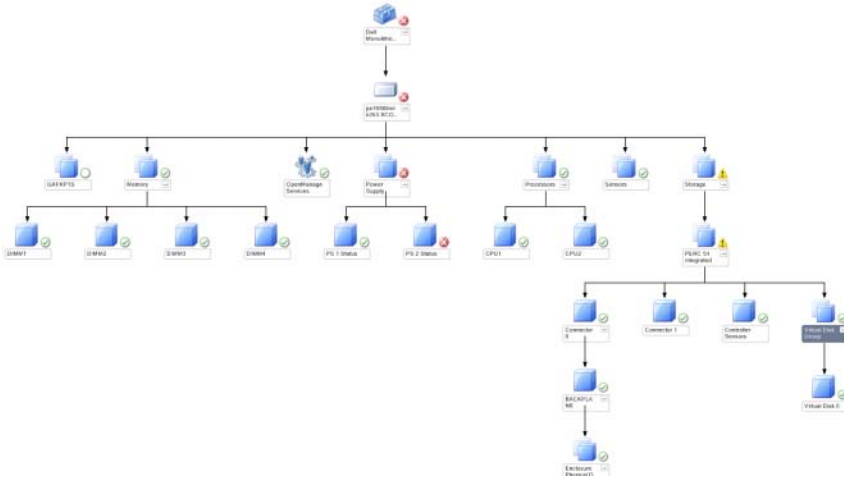
To access the Dell Complete Diagram View in the Operations Console, click **Dell** → **Diagram Views** → **Complete Diagram View**.

The **Complete Diagram View** offers a graphical representation of all Dell devices that SCOM 2007 SP1/R2 manages and allows you to expand and verify the status of individual devices and their components in the diagram. You can view details for **Modular Systems**, **Monolithic Systems**, **Chassis Management Controllers Group**, and **Remote Access Controllers Group** with the **Complete Diagram View**. Select a component in the diagram to view its details in the **Detail View** pane.

 **NOTE:** The Dell Hardware Group is defined in the Base Management Pack.

## Dell Server Instance Diagram

Figure 3-2. Dell Server Instance Diagram - Detailed Management Pack



Select a Dell Server instance, from any of the Dell diagram views, to view the diagram specific to that particular system. System-specific diagrams illustrate and indicate the status of your Dell system’s memory, power supply, processors, sensors, OpenManage services, and storage controllers.

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

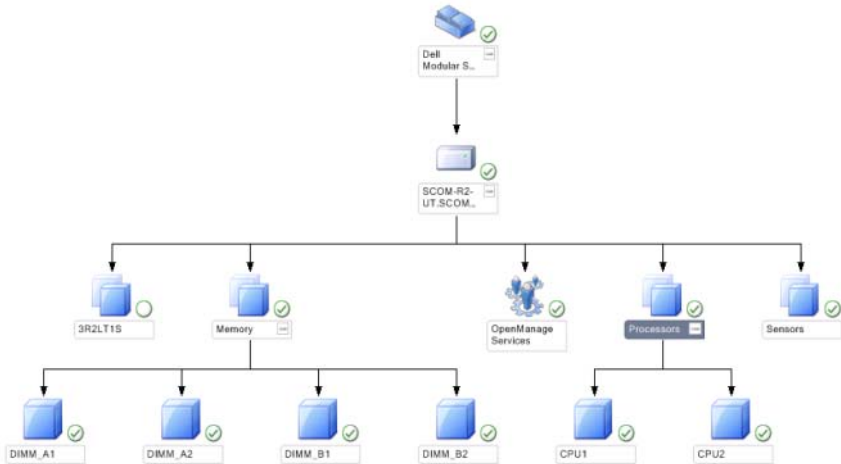
The Detailed Management Pack displays memory, processors, and power supply components in detail.

### Storage Controller Diagram

On expanding the **Storage** component from any Dell System instance diagram view, you will be able to view the status and health of components like Physical Disks, Connectors, and Virtual Disks. Click on a component to view its details in the **Detail View** pane. Each Connector instance contains the Sensors and Physical Disk components.

## Dell Modular Servers Diagram

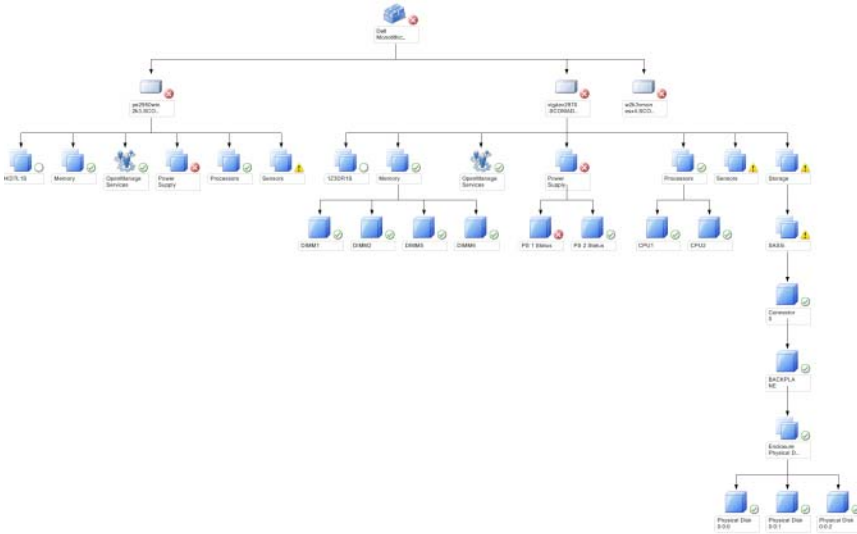
Figure 3-3. Dell Modular Servers Diagram - Detailed Management Pack



The **Dell Modular Servers Diagram** 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. Select a component in the diagram to view its details in the **Detail View** pane.

## Dell Monolithic Servers Diagram

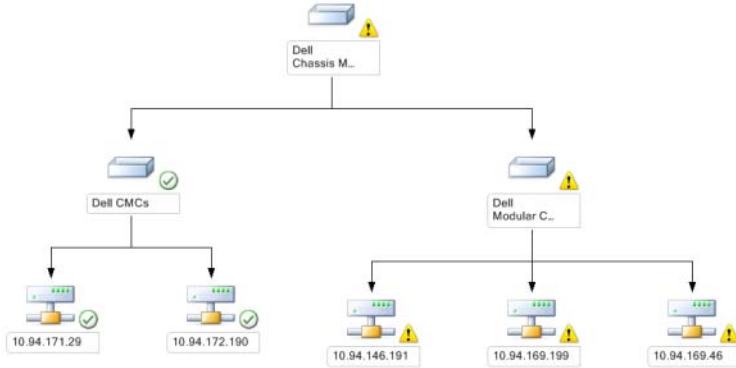
Figure 3-4. Dell Monolithic Servers Diagram - Detailed Management Pack



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

## Chassis Management Controllers Group Diagram

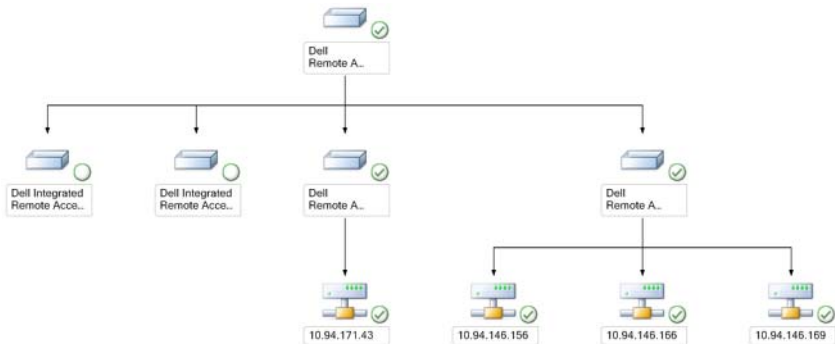
Figure 3-5. Chassis Management Controllers Group Diagram



The Chassis Management Controllers Group diagram offers a graphical representation of all Dell CMC, DRAC/MC devices. Select a component in the diagram to view its details in the **Detail View** pane.

## Remote Access Controllers Group Diagram




Figure 3-6. Remote Access Controllers Group Diagram



The **Remote Access Controllers Group** diagram offers a graphical representation of all DRAC 4, DRAC 5, and iDRAC 6 (modular and monolithic) devices. Select a component in the diagram to view its details in the **Detail View** pane.

### State Components and Severity Levels

**Table 3-1. Severity Level Indicators**

Icon	Severity Level
	<b>Normal/OK.</b> The component is working as expected.
	<b>Warning/Noncritical.</b> 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.
	<b>Critical/Failure/Error.</b> 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.
White	The health status is not applicable for the specific component.
Grey	The service is unavailable.

### State View

This view is available for managing Dell Windows systems, Dell CMC and DRAC/MC, and Dell Remote Access devices. In the Operations Console **Dell →State Views** displays the status of each Dell device managed by SCOM 2007 SP1/R2 on your network. The Management Pack provides a list of Dell severity level indicators to help you monitor the health of your Dell devices on the network.

Select the device group for which you want to see the State view. For example, click **Servers** to view the status of your Dell Monolithic and Modular systems. You will be able to view the status of the following groups:

- CMC
- Servers
- DRAC 4
- DRAC 5
- DRAC/MC

- iDRAC 6 Enterprise Modular
- iDRAC 6

The health of a component is derived by reviewing the unresolved alerts associated with the component. Table 3-1 explains the various state components that the Dell Server Management Pack Suite v4.0 uses with their corresponding severity levels.

## Performance and Power Monitoring Views

This view is available for managing Dell Windows systems only. In the Operations Console, **Dell→Performance and Power Monitoring Views** displays the power management information that is collected as performance data from Dell Systems. Power monitoring includes the following parameters:

- Amperage Per Power supply
- Power Consumption (in Watts)
- Power Consumption (in BTU/hr)
- Energy Consumption
- Peak Power
- Peak Amperage
- Ambient Temperature



**NOTE:** Power Monitoring is applicable for specific Dell Systems with Power Monitoring capability for that particular attribute.

Select the counters (under legend), 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 condition is breached, the server changes state and generates an alert. This unit monitor is disabled by default. You can override (enable and modify) the threshold values from the **Authoring** pane of the Operations console, under **Monitors for Dell Windows Server objects**.

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

# Tasks

Tasks are available in the **Actions** pane of the Operations Console. When you select a device or a component in any of the Dell diagram views, the relevant tasks appear in the **Actions** pane.

You can run the tasks **Launch Server Administrator** and **Clear ESM Logs**, from the Diagram view, State view, or Alert view.

A summary of the Dell Tasks that you can perform using the Dell Management Packs are explained in Table 3-2:

**Table 3-2. Dell Tasks Using the Management Pack for SCOM 2007 SP1/R2**

<b>Dell Task</b>	<b>Description</b>
<b>Dell Modular and Monolithic System Tasks</b>	
Clear ESM Logs	Backs up the content of the Embedded System Management (ESM) log and clear the ESM log file for a selected system
Launch Server Administrator	Launches the Dell OpenManage Server Administrator
Check Power Status	Checks the overall power status of the system
Forced Power Off	Turns off the system's power without shutting down the operating system
Launch InBand Dell Remote Access Console	Launches the DRAC console for the in-band discovered DRAC
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's power
Power On	Turns on the system power. This option is available only if the system's power is turned off.
Power Reset	Turns off the system's power and turns it on again
Turn LED Identification On	Turns on the Identify LED of the selected system for 255 seconds
Turn LED Identification Off	Turns off the Identify LED of the selected system



**Table 3-2. Dell Tasks Using the Management Pack for SCOM 2007 SP1/R2 (continued)**

<b>Dell Task</b>	<b>Description</b>
<b>DRAC 4/ DRAC 5/ iDRAC Tasks</b>	
Launch Dell RemoteAccess Console	Launches the DRAC console for the discovered DRAC
<b>Dell CMC, DRAC/MC Tasks</b>	
Launch Dell CMC Console	Launches the CMC console
Launch Dell Modular Chassis Remote Access Console	Launches the DRAC/MC Console

## **Dell Modular and Monolithic Systems Tasks**

### **Clear ESM Logs**

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

- 1** In the Operations Console, navigate to a diagram view.
- 2** Expand the diagram and select the required Dell system.
- 3** Click **Clear ESM Logs** under **Dell Windows Server Tasks** in the **Actions** pane. The **Run Tasks** window appears.
- 4** Click **Run** to clear the ESM logs of the device that you selected.

When the Clear ESM Logs task is executed, the task execution screen displays the result of the task initiation and has nothing to do with the execution result of the task. For example, the task execution screen may show a success result even if the ESM logs are not cleared. This means that the Clear ESM Logs task initiation was successful.

### Launch Server Administrator

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand the diagram and select the desired Dell system.
- 3 Click **Launch Server Administrator** under **Dell Windows Server Tasks** in the **Actions** pane.



**NOTE:** You can run the tasks, **Launch Server Administrator** and **Clear ESM Logs**, from the Diagram view, State view, or Alert view.



**NOTE:** Dell Management Pack Tasks launch the Remote Console in Internet Explorer.

### Check Power Status

Checks the overall power status of the system. You can check the power status and allow power control tasks through the IPMI shell.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the **Actions** pane, select **Dell Windows Server Tasks** → **Check Power Status**.

### Power Cycle

Allows you to turn off the power, and after a delay, turn it on again. You can use this task to power cycle the server.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the **Actions** pane, select **Dell Windows Server Tasks** → **Power Cycle**.

### Force Power Off

Turns off the system's power without shutting down the operating system. You can use this task to power off the server.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the **Actions** pane, select **Dell Windows Server Tasks** → **Force Power Off**.

### **Power Off Gracefully**

Shuts down the operating system first, then turns off the system's power. You can use this task to power off the server.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the Actions pane, select **Dell Windows Server Tasks →Power Off Gracefully**.

### **Power On**

Turns on the system power. This option is available only if the system's power is turned off. You can use this task to power on the server.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the Actions pane, select **Dell Windows Server Tasks →Power On**.

### **Power Reset**

Turns off the system's power and turns it on again. You can use this task to reset the power of the server.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the Actions pane, select **Dell Windows Server Tasks →Power Reset**.

### **Turn LED Identification Off**

You can use this task to turn off the LED identification of the selected system.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the Actions pane, select **Dell Windows Server Tasks →Turn LED Identification Off**.

### **Turn LED Identification On**

Turns on the Identify LED of the selected system for 255 seconds. You can use this task to turn on the LED identification on the system.

- 1 In the Operations Console, navigate to a Dell diagram view.
- 2 Expand and select the desired Dell system.
- 3 In the Actions pane, select **Dell Windows Server Tasks → Turn LED Identification On**.

### **Dell Remote Access Controller (DRAC) Tasks**

#### **DRAC 4/ DRAC 5/ iDRAC 6**

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

- 1 In the Operations Console, navigate to a Dell diagram view, state view, or alert view.
- 2 Expand and select the desired DRAC system
- 3 In the Actions pane, select **SNMP Network Device Tasks → Launch Dell RemoteAccess Console**.

### **Dell Chassis Management Controller (CMC) Tasks**

#### **CMC**

You can use this task to launch the CMC Console.

- 1 In the Operations Console, navigate to the Dell Diagram view, State view or Alert view.
- 2 Select the CMC device.
- 3 In the Actions pane, select **SNMP Network Device Tasks → Launch Dell CMC Console**.

#### **DRAC/MC**

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

- 1 In the Operations Console, navigate to the Dell Diagram view, State view or Alert view.
- 2 Select the DRAC/MC device.

In the **Actions** pane, select **SNMP Network Device Tasks**→**Launch Dell Modular Chassis Remote Access Console**.

## Reports

The Reporting feature is available with the Dell Server Management Pack Suite v4.0. It allows you to create pre-canned reports for OpenManage Windows Event Log, Dell Server BIOS, Firmware, and RAID configuration.

Dell Server BIOS, Firmware, and RAID Configuration Reports are only available in Detailed Server Management Pack. You will not see these reports if you choose to have only the Scalable Server Management Pack.

To access the Reporting feature perform the following steps:

- 1 Click **Reporting** in your Operations Console.
- 2 Expand **Reporting** in the navigation pane.
- 3 Click on **Dell Windows Server Scalable Edition** for the Windows Event Log and click on **Dell Windows Server Detail Edition** for BIOS, firmware, and RAID reports.

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

### OpenManage Windows Event Log

- 1 Click on **OpenManage Windows Event Log**. Click **Open** in the **Actions** pane.
- 2 Select a time period for which you want the report generated.
- 3 Click on **Add Object** or **Add Group**.
- 4 Click **Search**, to search for an object or group. Choose add (you can add multiple objects). You will find the object in the selected object pane.
- 5 Choose the severity of the events whose report you want to generate.
- 6 Click **Run**. The OpenManage Windows Event Log report is generated.

## BIOS Configuration

To create a report for the BIOS configuration follow these steps:

- 1 Click on **BIOS Configuration**. Click **Open** in the **Actions** pane.
- 2 Select a time period for which you want the report generated.
- 3 Click on **Add Object** or **Add Group**.
- 4 Click **Search**, to search for an object or group. Choose add (you can add multiple objects). You will find the selected object in the selected object pane.
- 5 Choose the required **Properties**.
- 6 Click **Run**. The BIOS configuration report is generated.



**NOTE:** You will be able to create BMC reports only if BMU is installed on the Management Server.

## Firmware and Driver Versions

To create a report for Firmware and Driver Versions follow these steps:

- 1 Click on **Firmware and Driver Versions**. Click **Open** on the **Actions** pane.
- 2 Select a time period for which you want the report generated.
- 3 Click on **Add Object** or **Add Group**.
- 4 Click **Search**, to search for an object or group. Choose add (you can add multiple objects). You will find the selected object in the selected object pane.
- 5 Choose the required **Properties**.
- 6 Click **Run**. The Firmware and Driver versions report is generated.

## RAID Configuration

- 1 Click on **RAID Configuration**. Click **Open** on the **Actions** pane.
- 2 Select a time period for which you want the report generated.
- 3 Click on **Add Object** or **Add Group**.
- 4 Click **Search**, to search for an object or group. Choose add (you can add multiple objects). You will find the selected object in the selected object pane.
- 5 Choose the required **Properties**.
- 6 Click **Run**. The RAID configuration report is generated.

# Customizing the Dell Server Management Pack Suite

The Dell Server Management Pack Suite v4.0 allows you to customize discovery, monitoring, and event processing of your Dell devices. You can customize the following components of the Dell Management Packs:

- **Monitors:** Monitors to assess various conditions that can occur in monitored objects. The result of this assessment determines the health state of a target and the alerts that are generated.
- **Object Discoveries:** Object discoveries are used to find objects on a network that need to be monitored.
- **Rules:** Rules are used to collect data, such as events generated by managed objects.



**NOTE:** See the Microsoft System Center Operations Manager 2007 SP1/ R2 documentation for more information.

## Unit Monitors

You can customize the following parameters of the Dell Server Management Pack Suite v4.0 unit monitors by using overrides:

- **Enabled:** Allows you to enable or disable Monitors. You can choose the **Override Setting** to be **True** or **False**.
- **Interval in Seconds:** The frequency (in seconds) with which the Dell Management Pack polls the Dell device to check the health of a component.

The unit monitors can be:

- **Event Monitor:** This Monitor is triggered by the event that the Dell instrumentation logs in the Windows event log, indicating the health of the corresponding object.
- **Unit Monitor:** This Monitor is triggered by a periodic poll configured as `IntervalSeconds`.

Table 3-3 illustrates the various Dell monitors and the applicable parameters for your Dell devices.

**Table 3-3. Dell Unit Monitors in Management Pack**

<b>Groups</b>	<b>Unit Monitor</b>
Memory Group Object	Event and Periodic
Memory Unit Instance	Event and Periodic
<b>OpenManage Software Services</b>	
• DSM Connection Service	Windows Service
• DSM Data Manager	Windows Service
• DSM Event Manager	Windows Service
• DSM Shared Service	Windows Service
• DSM Storage Service	Windows Service
• WMI Service	Windows Service
Power Supplies Group Object	Event and Periodic
Power Supplies Unit Instance	Event and Periodic
Processor Group Object	Event and Periodic
Processor Unit Instance	Event and Periodic
<b>Sensor Group Object</b>	
• Battery	Event and Periodic
• Current	Event and Periodic
• Fan	Event and Periodic
• Intrusion	Event and Periodic
• Temperature	Event and Periodic
• Voltage	Event and Periodic
Storage Controller	Event and Periodic
Storage Controller Connector Instance	Event and Periodic
Storage Controller EMM Instance	Event and Periodic
Storage Controller Enclosure Instance	Event and Periodic



**Table 3-3. Dell Unit Monitors in Management Pack (continued)**

<b>Groups</b>	<b>Unit Monitor</b>
Storage Controller Physical Disk Instance	Event and Periodic
Storage Controller Power Supply Instance	Event and Periodic
Storage Controller Sensors Instance	Event and Periodic
Storage Controller Virtual Disk Instance	Event and Periodic
Storage Enclosure Physical Disk Instance	Event and Periodic
Storage Enclosure Power Supply Instance	Event and Periodic
Storage Enclosure Sensors Instance	Event and Periodic

### Object Discoveries

You can customize the following Dell Management Pack discovery parameters, using overrides:

**Enabled:** Allows you to enable or disable discoveries. You can choose the **Override Setting** to be **True** or **False**.

**Interval in Seconds:** The frequency (in seconds) with which the Dell Management Pack discovers the component instance and attributes of your Dell device. The default value for this attribute is 24 hours (one day).

**Table 3-4. Dell Discoveries**

<b>Discovery Object</b>	<b>Description</b>
Dell Server BIOS Discovery	Discovers BIOS object for each Dell System.
Dell Server	Classifies your Dell System and populates the basic attributes.
Dell Server Hardware Components Discovery	Discovers hardware components at a group level (Sensors, Processor, Memory, and Power Supplies) and attributes (such as launch points for OpenManage Server Administrator, DRAC, Remote Access IP with IPMI capability, and so on) for your Dell system.
OpenManage Software Services Discovery	Discovers the objects for Dell OpenManage™ Server Administrator Windows services and the WMI.

**Table 3-4. Dell Discoveries (continued)**

<b>Discovery Object</b>	<b>Description</b>
Dell Server Detailed Memory Discovery	Discovers memory instances for your Dell system.
Dell Server Detailed Power Supply Discovery	Discovers power supply instances for your Dell system.
Dell Server Detailed Processor Discovery	Discovers processor instances for your Dell system.
Dell Server Detailed Storage Discovery	Discovers the complete storage hierarchy for your Dell system.

## **Rules**

### **Dell Systems Event Processing Rules**

The Dell Management Pack processes rules from Server Administrator, Server Administrator Storage Management events, DRAC, and CMC traps.

#### **Server Administrator**

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

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

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

### **DRAC / CMC**

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

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

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

### **Performance Collection Rules**

There are seven performance collection rules that collect information on the following parameters:

- Amperage Per Power supply
- Power Consumption (Watts)
- Power Consumption (in BTU/hr)
- Energy Consumption
- Peak Power
- Peak Amperage
- Ambient Temperature

In the Operations Console, **Dell→Performance and Power Monitoring Views** displays the performance information that is collected from Dell Systems. This feature is available on installation of Scalable Server Management Pack. By default this feature is disabled. To enable this feature perform the following:

- 1** Open the **Authoring** pane in the Operations Console.
- 2** Select **Rules**.
- 3** Right-click the rule you want to enable.

For example, to enable information to be collected on energy consumption of Dell Systems, select Dell Server Energy Consumption collection rule.

- 4** Select **Overrides** → **Override the rule** → **For all objects of class**
- 5** Select **Override** and provide **Override value** as True.
- 6** Click **Apply**.

Alternatively, when the Detailed Server Management Pack is imported, these disable Performance collection rules are enabled by default.

# Appendix A- Known Issues in SCOM 2007 SP1/SCE SP1

These are the known issues in SCOM 2007 SP1/R2:

- 1 The Dell™ Management Pack Diagram Views displays a blank screen intermittently.**

The Diagram View in SCOM 2007 SP1 displays a blank screen intermittently. The actual diagram view will not come up even after refreshing the screen several times.

- 2 Dell systems disappear from the SCOM console when WMI service is stopped in managed system.**

When SCOM has discovered a Windows system displayed in the diagram view, with the WMI service stopped on that system, the discovered Windows system disappears from the SCOM console.

- 3 Dell alerts not getting sorted according to age**

Check the registry on the machine that has this problem. There could be a left over view definition that has the sorting flags set to 'false'. In some instances, when you import an MP with changes to the sort flags, it may not get updated in the registry. If you delete the settings for the view in the registry, they will be recreated from the new MP when you navigate to that view again. You can also edit the sort flags in the registry for the view.

Registry edit:

```
HKEY_CURRENT_USER\Software\Microsoft\Microsoft Operations  
Manager\3.0\Console\%GUID.ViewTitle%AlertViewAge
```

For sorting to be enable ensure the keys IsSortable and IsSorted are set to 1.

- 4 Under certain conditions, the following error messages are displayed on the Operations console of the management station:**
  - `MonitoringHost.exe Handle Count Threshold Alert Message (Management Server)`

- MonitoringHost.exe Private Bytes Threshold Alert Message (Management Server)

Microsoft KB968760 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

- 5 Under certain conditions, an error message is displayed on the Operations console of the management station with an Event ID 623 and Event Source as Health Service ESE Store.

Microsoft KB975057 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

## Known Limitations

### SCOM / SCE

**Path Name attribute value is not unique and proper for all Dell Hardware devices.**

The format of Path Name attribute value for Agent-based discovered devices and SNMP-based discovered devices are different. This is according to the design of SCOM 2007.

### SCE

In the diagram view, for Dell network devices (DRAC/CMC), you can view the SNMP interface objects under the Dell network device object. This is implemented in Microsoft's Management Pack - `Microsoft.SystemCenter.NetworkDevice.Monitoring.Library.mp`.

### SCOM / SCE and Dell Server Management Pack Suite v4.0

- **Security:** For Dell MP power control and LED tasks, passwords are revealed in Clear Text while Authoring MP.

The Dell Management Pack exposes the BMC login credentials in the Operator Console Authoring Pane. This is due to the current design of `ipmitool` (which accepts credentials as plain text command line arguments) not matching with `OpsMgr` user credential management using `RunAsAccounts`.

- When using health explorer, some unit monitors in Dell Management Pack (under Sensors and OpenManage Services instances) may show green status though the sub-instance does not exist. This is because unit monitors cannot have an "Unavailable" state when the target class is present and the unit monitor has been executed.

## **Dell Server Management Pack Suite v4.0**

- The health of your Dell system's hardware log is not monitored by the Dell Management Pack. However, you can view your Dell system's hardware log on the Server Administrator.
- The Dell Management Pack does not populate any Event view data for Dell Management Pack objects.
- OpenManage Lifecycle controller storage size is shown as "Not applicable" in OpenManage 6.1 though the hardware is present.
- In the Diagram view for Dell network devices, the basic attributes are displayed for the Dell DRAC and CMC objects. You can view the detailed set of attributes by clicking on the objects in the State View.
- Intrusion unit monitor status under sensors is only for chassis and does not include health of bezel intrusion.

## **Microsoft® Fixes for SCOM 2007 SP1**

### **1 The SCOM console throws up a run time error.**

A run time error (Microsoft Visual C++ Runtime Library) with the following message pops up once in a while - Runtime Error! Program: C:\Program Fil... R6025 - pure virtual function call. We observed more than one window in our development/test setup. Microsoft KB951526 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

### **2 The System Center Operations Manager 2007 console may crash in Windows Server 2008 or in Windows Vista™ when you open the Health Explorer window.**

In the Alerts view, when you right-click an item to open the Health Explorer window, the System Center Operations Manager 2007 console may crash. You cannot use Health Explorer to see any monitored objects in Windows Server 2008 or in Windows Vista.

Microsoft KB951327 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

- 3 When you upgrade an Operations Manager agent system from Windows Server 2003 to Windows Server 2008, the Health Service does not start on the computer.**

This issue occurs because the upgrade removes the certificate store in which the Health Service includes its certificate for secure storage data encryption. When the secure storage manager component of the Health Service initializes, it fails if there is a certificate serial number that is set, but the store does not exist.

Microsoft KB954049 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

- 4 The Operations Manager Web Console does not display pages correctly because of changes in User Access Control (UAC) in Windows Server 2008.**

You may experience one or more of the following situations:

- The Web Console does not open.
- The My Workspace page does not display.
- Performance and Power Monitoring Views do not display.

Microsoft KB954049 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

- 5 After you upgrade a computer that performs the Operations Manager Management Server role from Windows Server 2003 to Windows Server 2008, the Operations Manager performance counters are not registered.**

Microsoft KB954049 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

- 6 The reports do not appear as expected in the Reporting space of the Administration console.**

When you install a System Center Operations Manager Management Pack that includes reports on a Microsoft System Center Operations Manager 2007 Service Pack 1 (SP1) server, or you install a System Center Essentials Management Pack that includes reports on a Microsoft System



Center Essentials 2007 SP1 server, the reports do not appear as expected in the Reporting space of the Administration console.

Microsoft KB954643 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.

**7 The SCOM console shows a Health service error message. SCOM generates the error - "Health service host process has stopped working".**

The error message - "Health service Host Process encountered a problem and needed to close" pops up once in a while. As a result of this Health Service Crash, you may notice unexpected behavior in the discovery and monitoring of Dell devices.

Microsoft KB951526 available on the Microsoft support site at [support.microsoft.com](http://support.microsoft.com) resolves this.



# Glossary

The following list defines or identifies technical terms, abbreviations, and acronyms used in this document.

## **BMC**

Abbreviation for baseboard management controller, which is a controller that provides the intelligence in the IPMI structure.

## **CMC**

Acronym for Chassis Management Controller.

## **DRAC**

Abbreviation for Dell Remote Access Controller.

## **DRAC/MC**

DRAC / modular chassis

## **EMM**

Enclosure management module

## **FQDN**

Abbreviation for fully qualified domain name. An FQDN is the human-readable name corresponding to the TCP/IP address of a network interface, as found on a computer, router, or other networked devices. It includes both its host name and its domain name.

## **iDRAC**

Acronym for Integrated Dell Remote Access Controller.

## **Intelligent Platform Management Interface (IPMI)**

A specification that defines a set of common interfaces for computer hardware and firmware. It is used to monitor system health and manage the system.

## **in-band DRAC**

Refers to the DRAC object discovered through the Server OS and Dell instrumentation over the primary NIC IP.

**managed system**

A managed system is any system that is monitored and managed using Server Administrator. Systems running Server Administrator can be managed locally or remotely through a supported Web browser.

**management station**

A management station can be any Microsoft® Windows-based computer (laptop, desktop, or server) used to remotely manage one or more managed systems from a central location.

**modular system**

A system that can include multiple server modules. Each server module functions as an individual system. To function as a system, a server module is inserted into a chassis that includes power supplies, fans, a system management module, and at least one network switch module. The power supplies, fans, system management module, and network switch module are shared resources of the server modules in the chassis. See *server module*.

**monolithic system**

Stand-alone or tower servers that, unlike modular systems, carry a single server module.

**out-of-band DRAC**

Refers to the DRAC object discovered directly through the DRAC card's NIC IP.

**server module**

A modular system component that functions as an individual system. To function as a system, a server module is inserted into a chassis that includes power supplies, fans, a system management module, and at least one network switch module. The power supplies, fans, system management module, and network switch module are shared resources of the server modules in the chassis. See modular system.

**state**

Refers to the condition of an object that can have more than one condition. For example, an object may be in the "not ready" state.

**status**

Refers to the health or functioning of an object. For example, a temperature probe can have a normal status if the probe is measuring acceptable temperatures. When the probe begins reading temperatures that exceed limits set by the user, it reports a critical status.

**task**

Tasks are actions that you launch to diagnose or resolve a problem, or to automate repetitive actions. Tasks are launched from the Operations Manager 2007 Operators Console.



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