

Dell EqualLogic Storage  
Management Pack Suite  
Version 4.1 for Microsoft  
System Center Operations  
Manager 2007 SP1/R2 and  
System Center Essentials 2007  
SP1/2010

**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 potential damage to hardware or loss of data if instructions are not followed.

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# Introduction

The integration of the Dell EqualLogic Management Pack Suite version 4.1 with Microsoft System Center Operations Manager (SCOM) 2007 SP1/R2, System Center Essentials (SCE) 2007 SP1/2010 environment allows you to manage, monitor, and ensure the availability of the Dell EqualLogic PS series storage arrays (EqualLogic storage arrays).



**CAUTION:** Perform the procedures in this document only if you have knowledge and experience in using the Microsoft Windows operating system and SCOM 2007 SP1/R2 or SCE 2007 SP1/2010, to avoid data corruption and/or data loss.



**NOTE:** All references to SCOM 2007 SP1/R2 in this document are also applicable to SCE 2007 SP1/2010.

The readme file packaged with the self-extracting executable contains the latest information about software and management station requirements, and information about known issues. The readme is also available at [support.dell.com/manuals](http://support.dell.com/manuals).

## What is New in Dell EqualLogic Management Pack Suite Version 4.1

Table 1-1 lists the new features of the Dell EqualLogic Management Pack Suite version 4.1.

**Table 1-1. New Features and Functionalities**

New Feature	Functionality
Configurable Monitoring Level	Monitors and displays the consolidated health status of components.  For more information, see <a href="#">Details of Components Modelled by the Dell EqualLogic Management Pack Suite</a> .
Storage Pool Inventory and Monitoring	Displays and monitors the storage pools within a group along with the array members. For more information, see <a href="#">Monitoring</a> .

**Table 1-1. New Features and Functionalities (continued)**

<b>New Feature</b>	<b>Functionality</b>
Link up and Link down Ethernet Interface alerts	Displays link up and link down alerts for events received from Ethernet interface cards on the EqualLogic storage arrays in the <b>Alerts</b> view.
Health state change notification alerts for Volume and Disk groups	Displays alerts to notify change in the health state of the <b>Volume</b> or <b>Disk</b> group on the <b>Operations Console</b> .
New inventory attributes	Support for IPv6 address for Ethernet interface and power supply firmware version.

## Key Features and Functionalities

Table 1-2 lists the key features and functionalities of the Dell EqualLogic Management Pack Suite version 4.1.

**Table 1-2. Key Features and Functionalities**

<b>Feature</b>	<b>Functionality</b>
Discovery and Monitoring	Supports discovery and monitoring of Dell EqualLogic PS series storage arrays with supported firmware versions.
Launch the EqualLogic Group Manager GUI	Launches the EqualLogic Group Manager GUI for a group from the SCOM Console.
Display Alerts from EqualLogic devices	Displays the Simple Network Management Protocol (SNMP) based hardware alerts for the monitored EqualLogic devices in the <b>Alerts</b> view of the <b>SCOM Operations Console</b> .

# About Dell EqualLogic Storage Management Pack Suite Version 4.1

Table 1-3 describes the management packs and their dependencies with each other:

**Table 1-3. Management Pack Functionalities and Dependencies**

<b>Management Pack</b>	<b>Description</b>	<b>Dependency</b>
Dell Base Hardware Library	Management Pack for defining the Dell Hardware Group and Dell folder in the <b>Monitoring</b> pane of the <b>Operations Console</b> .	None
Dell EqualLogic Management Pack	Management Pack for monitoring supported EqualLogic storage arrays. Health monitored is upto <b>Storage Pools</b> group and <b>Volume</b> group.	Dell Base Hardware Library
Dell EqualLogic Detailed Monitoring On - Overrides Management Pack	Management Pack for enabling health monitoring of the EqualLogic storage arrays upto the component groups.	Dell EqualLogic Management Pack version 4.1

## Details of Components Modelled by the Dell EqualLogic Management Pack Suite

The Dell EqualLogic Management Pack Suite consists of three management packs — Dell Base Hardware Library, Dell EqualLogic Management pack, and Dell EqualLogic Detailed Monitoring On - Overrides Management Pack (Detailed Monitoring On Management Pack). Table 1-4 lists the components modelled by each of the management packs.

**Table 1-4. Components Modelled**

<b>Management Pack</b>	<b>Component Details</b>
Dell EqualLogic Management Pack	<p>Contains the unit monitors for all components of the EqualLogic storage arrays, but enables unit monitors only up to the following groups:</p> <ul style="list-style-type: none"><li>• <b>Storage Pools Group</b> — monitors the storage pools group and provides the health as the consolidated health of all the array members in the EqualLogic group.</li><li>• <b>Volumes Group</b> — monitors the volumes and provides the volumes group health as the consolidated health of all the volumes in the EqualLogic group.</li></ul>



**Table 1-4. Components Modelled**

<b>Management Pack</b>	<b>Component Details</b>
Dell EqualLogic Detailed Monitoring On - Overrides Management Pack	<p data-bbox="501 268 1002 395">Enables monitors for all components of the EqualLogic storage arrays and monitors upto the component group levels. Health status for the following component groups is displayed:</p> <ul data-bbox="501 395 1002 837" style="list-style-type: none"><li data-bbox="501 395 1002 475">• <b>Controllers Group</b> — displays the consolidated controller health status.</li><li data-bbox="501 475 1002 555">• <b>Disks Group</b> — displays the consolidated disk health status.</li><li data-bbox="501 555 1002 635">• <b>Ethernet Interfaces Group</b> —displays the consolidated health status of Ethernet interface cards.</li><li data-bbox="501 635 1002 746">• <b>Power Supplies Group</b> —displays the consolidated health status of power supply modules and power supply fans.</li><li data-bbox="501 746 1002 837">• <b>Sensors Group</b> — displays the consolidated health status of fan sensors and temperature sensors.</li></ul>

# Dell EqualLogic Management Pack Support Matrix

Table 1-5 lists the versions of SCOM/SCE, EqualLogic storage arrays, and EqualLogic firmware versions supported by the Dell EqualLogic Management Pack.

**Table 1-5. EqualLogic Storage Arrays Support Matrix**

<b>Supported SCOM/SCE Versions</b>	<b>Supported EqualLogic Storage Arrays</b>	<b>Supported EqualLogic Controller Firmware Versions</b>
<ul style="list-style-type: none"><li>• SCOM 2007 SP1</li></ul>	<ul style="list-style-type: none"><li>• PS4000</li></ul>	<ul style="list-style-type: none"><li>• 4.3</li></ul>
<ul style="list-style-type: none"><li>• SCOM 2007 R2</li></ul>	<ul style="list-style-type: none"><li>• PS4100</li></ul>	<ul style="list-style-type: none"><li>• 5.0</li></ul>
<ul style="list-style-type: none"><li>• SCE 2007 SP1</li></ul>	<ul style="list-style-type: none"><li>• PS5000</li></ul>	<ul style="list-style-type: none"><li>• 5.1</li></ul>
<ul style="list-style-type: none"><li>• SCE 2010</li></ul>	<ul style="list-style-type: none"><li>• PS5500</li><li>• PS6000</li><li>• PS6010</li><li>• PS6100</li><li>• PS6500</li><li>• PS6510</li></ul>	

# Dell EqualLogic Storage Management Pack Suite Operations

## Overview

This chapter describes the various operations that you can perform on Microsoft System Center Operations Manager (SCOM) or System Center Essentials (SCE) using the Dell EqualLogic Storage Management Pack Suite version 4.1.

The EqualLogic Management Pack enables you to:

- Discover and provide detailed inventory information on the EqualLogic groups. For more information, see [Discovery](#).
- Monitor the health of the EqualLogic groups and its constituent components. For more information, see [Monitoring](#).
- Launch the EqualLogic Group Manager GUI as a task from the SCOM/SCE console. For more information, see [Launching EqualLogic Group Manager GUI](#).
- Customize parameters for discovery, monitoring, and event processing of the discovered Dell EqualLogic devices. For more information, see [Customizing the EqualLogic Storage Management Pack](#).

# Discovery

The management pack discovers Dell EqualLogic devices present in the **Network Devices** list of SCOM.

## Discovering a Dell EqualLogic Device


To discover a Dell EqualLogic device:

- 1 Log on to the system with an account that has the SCOM Administrator role for the Management Group.
- 2 Launch the **Operations Console** and click **Administration**.
- 3 Right-click on **Network Devices** and select **Discovery Wizard** from the pop-up menu. The **Introduction** screen appears.
- 4 Read the instructions and click **Next**.
- 5 On the **Computer and Device Management Wizard** menu, select **Network Devices**, and click **Next**.
- 6 Type the **Start** and **End** of the IP address range that you want to scan, the SNMP community string, and select the SNMP version.

For discovery and monitoring of the Dell EqualLogic devices, the supported SNMP version is SNMPv2.

 **NOTE:** These steps may be different in SCOM 2007 SP1 and SCE 2007 SP1.

- 7 Set the **Discovery Timeout** and click **Discover**. The **Discovery Progress** page is displayed.
- 8 On the **Select Objects to Manage** screen, select the devices you want to manage and click **Next**.
- 9 Click **Finish**.

 **NOTE:** You must use only the EqualLogic group IP address to perform discovery of the devices when the group does not have a management network configured. When the device is configured for management mode, use the EqualLogic management IP for discovering.

# Monitoring

The Dell EqualLogic Management Pack Suite version 4.1 enables you to monitor the discovered Dell EqualLogic devices. The [Health Status Indicators](#) help you to monitor the health of your Dell EqualLogic devices on the network.

Monitoring of Dell EqualLogic devices include:

- The health of Dell EqualLogic Group and its components.
  - If you import only the Dell EqualLogic Management Pack, you can monitor the Storage Pools Group and Volumes Group.
  - If you import the Dell EqualLogic Detailed Monitoring - On Management Pack, you can monitor the health of EqualLogic members and their components under the Storage Pools Group.
- Process the SNMP alerts for the events received from the EqualLogic devices.

You can monitor the Dell EqualLogic devices through the various views that the Dell EqualLogic Management Pack Suite provides on the SCOM console.





The different views are:

- [Alerts View](#)
- [Diagram View](#)
- [State View](#)

## Health Status Indicators

Table 2-1 lists the icons that indicate the health status of the discovered Dell EqualLogic devices on the **Operations Console**. For more information on severity propagation, see [State View](#).

**Table 2-1. Health Status Indicators**

Icon	Health Status
	Normal/OK. The component is working as expected.
	Warning/Non-critical. 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 replacement. Data loss may have occurred.
	The specific component is not monitored.

## Alerts View

The **Alerts View** displays the alerts for:

- SNMP traps received from the individual EqualLogic devices that you are monitoring. Alerts are associated with the Ethernet interface card of the device.
- Health state change notification from **Volumes** group and **Disks** group unit monitors. These alerts are automatically resolved when the health state of the groups changes to normal.
- Incorrect installation of the Dell EqualLogic Management Pack Suite. This alert is automatically resolved after you repair the installation.



**NOTE:** If you manually close an auto-resolving alert, it is cleared from the **Operations Console Alerts View** and not generated again.

## Viewing Alerts on the Operations Console

To view the alerts for the Dell EqualLogic devices you are monitoring:

- 1 In the **Operations Console**, click **Monitoring**.
- 2 In the **Monitoring** pane, navigate to the **Dell** folder.
- 3 Click **Alerts View** → **EqualLogic Device Alerts**.

The **Operations Console** displays the alerts for all the arrays that you are monitoring in the **EqualLogic Device Alerts** pane. These alerts meet the criteria you specified in the **Authoring** pane, such as severity, resolution state, age, or alerts that are assigned to you.

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

## Using the Custom Field for SNMP Alerts

To view the SNMP alerts received from an EqualLogic group or member, you can use the **Custom Field 1**. The **Custom Field 1** is a combination of the EqualLogic group name and the EqualLogic member name that is added to each alert. You can sort the **Alerts** view on this field to list the alerts that belong to a particular EqualLogic group.

## Diagram View

The **Diagram** view offers a hierarchical and graphical representation of all Dell EqualLogic devices discovered and monitored by the Dell EqualLogic Management Pack. The **Diagram** view displays icons for the various components of the Dell EqualLogic group.

To view the diagrams on the **Operations Console**:

- 1** Launch the **Operations Console** and click **Monitoring**.
- 2** In the **Monitoring** pane on the left side, navigate to the Dell folder to display the following views:
  - [Complete Diagram View](#)
  - [EqualLogic Devices](#)
- 3** Select any of the Diagram Views.

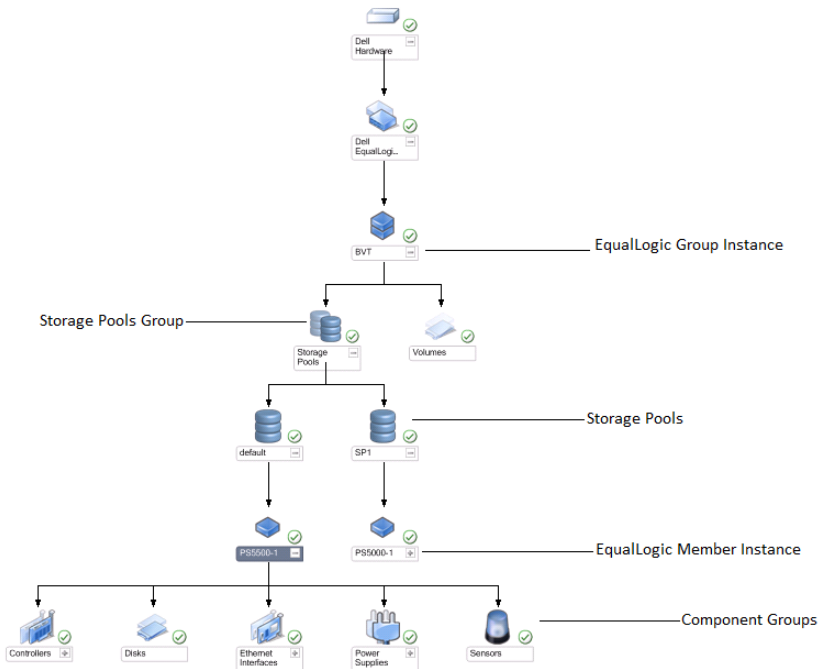
The right pane displays the hierarchical and graphical representation of the selected Dell device.
- 4** Select a component in the diagram to view its details in the **Detail View**.



## Complete Diagram View

The **Complete Diagram View** offers a graphical representation of all Dell devices that SCOM manages, and allows you to expand and verify the status of individual devices and their components in the diagram. The root node for this view is the **Dell Hardware** group.

**Figure 2-1. Dell Devices in a Large-Scale Datacenter**



## EqualLogic Devices

The **EqualLogic Devices** diagram view offers a graphical representation of all Dell EqualLogic devices that SCOM manages and allows you to expand and verify the status of individual devices, and their components in the diagram. The root node for this view is the **Dell EqualLogic** group.

If you import only the Dell EqualLogic Management Pack, all the components are displayed, but monitoring is available only up to the **Storage Pools** group and **Volumes** group.

If you import the **Dell EqualLogic Detailed Monitoring On - Overrides Management Pack**, all the components are displayed and monitoring is up to the component group level.

The **Diagram** view displays the following hierarchy of the EqualLogic storage arrays and their components under the **Dell EqualLogic** group:

- EqualLogic group
  - Storage Pools group
    - Storage Pool(s)
  - Volumes group

The following hierarchy is displayed under each **Storage Pool**:

- Member
  - Controllers group
  - Disks group
  - Ethernet Interfaces group
  - Power Supplies group
  - Sensors group

## Health Status in the Diagram View

Table 2-2 describes the details of each of the groups in the Diagram view and the health status for the EqualLogic Management Pack:

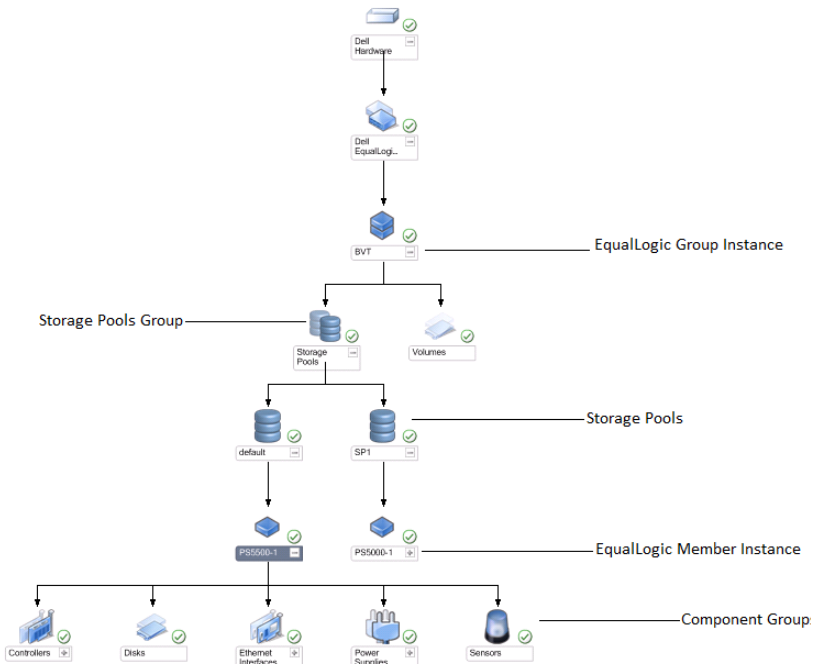
**Table 2-2. Health Status**

<b>Group Name</b>	<b>Display Details</b>	<b>Health Status</b>
EqualLogic Group	The Storage Pools group and Volumes group.	Displays the consolidated health of Volumes group and Storage Pools group.
Volumes Group	Only the Volumes group and not the individual volumes.	Displays the consolidated health of the volumes within the group.
Storage Pools Group	Storage Pools within an EqualLogic group.	This group displays the consolidated health of the storage pools within an EqualLogic group.
Storage Pool	Members in the storage pool.	Displays the consolidated health of the individual member instances within the storage pool.
Controllers Group	All the controllers in the EqualLogic member.	Displays the consolidated health of the controllers within the EqualLogic member.  The individual controllers are unmonitored.
Disks Group	Only the Disk group and not the individual disks.	Displays the consolidated health of the disks within the EqualLogic member.
Ethernet Interfaces Group	All the Ethernet interfaces in the EqualLogic member.	Displays the consolidated health of the Ethernet interfaces within the EqualLogic member.  The individual ethernet interfaces are unmonitored.

**Table 2-2. Health Status (continued)**

Group Name	Display Details	Health Status
Power Supplies Group	All the power supplies in the EqualLogic member.	Displays the consolidated health of the individual power supplies within the EqualLogic member.  The individual power supplies are unmonitored.
Sensors Group	Only the Sensors group and not the individual sensors.	Displays the consolidated health of the sensors within the member.

**Figure 2-2. Dell EqualLogic PS Series Arrays Managed by SCOM**



## State View

The **State View** displays the overall health state of all the EqualLogic groups, which includes the health of Volumes group and Storage Pools group.

To access the **State View**:

- 1 In the **Operations Console**, click **Monitoring**.
- 2 In the **Monitoring** pane, navigate to the **Dell** folder and click the folder to display the different views.
- 3 Click **State View**→ **EqualLogic Devices**.

The **Operations Console** displays the status of all the Dell EqualLogic groups that you are monitoring, on the right pane.

- 4 Select the device to view its details in the **Detail View** pane.



**NOTE:** If you upgrade from EqualLogic Management Pack version 4.0 to 4.1, the **State View** may not display the **Storage Pools** group. You must personalize the **State View** to add the **Storage Pools** group to the pane and view the overall health status. To personalize a view, see the *SCOM/SCE Online Help*.

## Launching EqualLogic Group Manager GUI

You can launch the EqualLogic Group Manager GUI from the **Actions** pane of the **Operations Console**.

When you select an EqualLogic group in the **Diagram** view or **State** view, the **Launch EqualLogic Group Manager GUI** task appears under **Dell EqualLogic Member Group Tasks** in the **Actions** pane.

Click **Launch EqualLogic Group Manager GUI** to perform various functions on the EqualLogic group.

# Customizing the EqualLogic Storage Management Pack

You can customize the Dell EqualLogic Management Pack by using overrides.

## Specifying Override Parameters

To specify override parameters for management pack objects:

- 1 Launch the SCOM console, click the **Authoring** tab, and select **Management Pack Objects**.
- 2 Select the management pack object you want to override — **Monitors**, **Object Discoveries**, or **Rules**.
- 3 Right-click the management pack object you selected, and from the pop-up menu select **Overrides**→ **Override the <management pack object>**. You can choose to override this monitor for objects of a specific type or for all objects within a group.

The **Override Properties** window is displayed.

- 4 Select the object, and change the override value(s).
- 5 Click **Apply**.



**NOTE:** You can also change the **Severity** setting for the **Rules** option.

## Unit Monitors

You can customize the following parameters of the EqualLogic Management Pack unit monitors by using overrides:

- **Enabled** — Allows you to enable or disable monitors. You can set the **Override Setting** to either **True** or **False**.
- **Interval in Seconds** — The frequency (in seconds) with which the Management Pack polls the Dell device to check the health of a component. The default setting for the interval in seconds is 3700 (62 minutes).
- **SNMP Timeout Intervals** — The time specified for the SNMP Stack to wait till the same request is retried. The default setting for the SNMP timeout is 60 seconds.
- **SNMP Retries** — The number of times the management pack retries polling in case of an SNMP timeout. The default setting for the SNMP retry is 5.



**NOTE:** For optimal performance, it is recommended that you specify the same value for all unit monitors.

**Table 2-3. Unit Monitors — Dell EqualLogic Storage Management Pack**

<b>Group Name</b>	<b>Monitor Type</b>	<b>Description</b>	<b>Default Periodic Poll Setting</b>
<b>Monitors enabled in the Default Management Pack</b>			
Dell EqualLogic Group	Dependency rollup	Rolls up the health status of individual EqualLogic groups to the Dell EqualLogic group.	Not applicable
Dell EqualLogic Member Group	Dependency rollup	Rolls up the health status of Storage Pools group to the EqualLogic group.	Not applicable
	Dependency rollup	Rolls up the health status of Volumes group to the EqualLogic group.	Not applicable
Dell EqualLogic Volumes Group	Unit monitor	Polls the health status of the Volumes group at regular intervals.	3700 seconds
Storage Pool Group	Unit monitor	Polls the health status of Storage Pools group at regular intervals.	3700 seconds
<b>Monitors enabled after you import the Detailed Monitoring On Management Pack</b>			
Storage Pool Group	Dependency rollup	Rolls up the health status of Storage Pool(s) to the Storage Pools group.	Not applicable.
Controller Group	Unit monitor	Polls the health status of Controllers at regular intervals.	3700 seconds
Ethernet Interfaces Group	Unit monitor	Polls the health status of Ethernet interfaces at regular intervals.	3700 seconds
	Unit monitor (event-based)	Computes the health status of Ethernet interfaces when a link up or link down event is received.	Not applicable



**Table 2-3. Unit Monitors — Dell EqualLogic Storage Management Pack (continued)**

<b>Group Name</b>	<b>Monitor Type</b>	<b>Description</b>	<b>Default Periodic Poll Setting</b>
Power Supply Group	Unit monitor	Polls the health status of power supplies at regular intervals.	3700 seconds
Dell EqualLogic Storage Pool	Dependency rollup	Rolls up the health status of the members to the Storage Pool.	Not applicable
Dell EqualLogic Member	Unit monitor	Polls the health status of the members at regular intervals.	3700 seconds
Dell EqualLogic Disk Group	Unit monitor	Polls the health status of the physical disks at regular intervals.	3700 seconds
Dell EqualLogic Member Sensors Group	Unit monitor	Polls the health status of the sensors at regular intervals.	3700 seconds

## Object Discoveries

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

- **Enabled** — Allows you to enable or disable discoveries. You can set 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 86399 seconds (24 hours).
- **SNMP Query Timeout in Seconds** — The time specified for the SNMP stack to wait till the same request is retried. The default setting is 4 seconds.
- **Number of SNMP Query Retries** — The number of times the management pack retries polling in case of an SNMP timeout. The default setting is 3.

## Rules

There are 28 rules, which process SNMP traps from the EqualLogic device and display them as **Dell EqualLogic Alerts** in the **SCOM Alerts** view.

Table 2-4 lists the **Dell EqualLogic Alerts**.

**Table 2-4. List of Dell EqualLogic Alerts**

<b>Alert</b>	<b>Description</b>	<b>Severity</b>
Dell EqualLogic: Temperature Sensor High Threshold Alert	High Threshold Enclosure Temperature sensor <temperature sensor name> is at <value> degrees C. Temperature sensor is now in <status> state.	Based on current state of temperature threshold
Dell EqualLogic: Temperature Sensor Low Threshold Alert	Low Threshold Enclosure Temperature sensor <temperature sensor name> is at <value> degrees C. Temperature sensor is now in <status> state.	Based on current state of temperature threshold
Dell EqualLogic: Fan Speed High Threshold Alert	Speed of enclosure fan (fan name) is <speed> rpm. Sensor is now in <status> state.	Based on current state of fan speed threshold
Dell EqualLogic: Fan Speed Low Threshold Alert	Speed of enclosure fan (fan name) is <speed> rpm. Sensor is now in <status> state.	Based on current state of fan speed threshold
Dell EqualLogic: Power Supply Fan Status Alert	Status of Power Supply Fan <power supply> has changed to <status>.	Based on power supply fan health
Dell EqualLogic: Power Supply Status Alert	Status of Power Supply module <power supply> has changed to <status>.	Based on power supply health
Dell EqualLogic: RAID Set Double Faulted Alert	Double fault has been detected in the RAID set. User intervention is required	Critical

**Table 2-4. List of Dell EqualLogic Alerts (continued)**

<b>Alert</b>	<b>Description</b>	<b>Severity</b>
Dell EqualLogic: Both the Fan Trays Removed Alert	Both fan trays of the member have been removed from the chassis.	Critical
Dell EqualLogic: RAID Lost Cache Alert	RAID driver is unable to recover the battery-backed cache. User intervention is required to initialize the disk array.	Critical
Dell EqualLogic: One Fan Tray Removed Alert	One of the fan trays of the member has been removed from the chassis.	Critical
Dell EqualLogic: RAID Lost Block Table Full Alert	RAID lost block table is full.	Critical
Dell EqualLogic: Battery Less Than 72 Hours Alert	Insufficient battery charge to last a 72 hour power outage.	Warning
Dell EqualLogic : RAID Orphan Cache Alert	RAID driver found data in the battery-backed cache with no matching disk. User intervention is required.	Critical
Dell EqualLogic: Multiple RAID Sets Found Alert	Multiple RAID sets found. The array cannot choose which one to initialize.	Critical
Dell EqualLogic: NVRAM Battery Failed Alert	NVRAM battery failed and cannot be used.	Critical
Dell EqualLogic: Critical Hardware Component Failed Alert	A critical hardware component of the member has failed.	Critical
Dell EqualLogic: Incorrect Control Module Inserted Alert	An incorrect control module has been inserted in the chassis.	Critical

**Table 2-4. List of Dell EqualLogic Alerts (continued)**

<b>Alert</b>	<b>Description</b>	<b>Severity</b>
Dell EqualLogic: High Battery Temperature Alert	Cache battery temperature exceeds the upper limit.	Critical
Dell EqualLogic: Low Ambient Temperature Alert	One or more sensors is below the low ambient temperature range.	Critical
Dell EqualLogic: Enclosure Open for Long Time Alert	The enclosure is open for a long time.	Critical
Dell EqualLogic: Ops Panel Missing or Broken Alert	Operations Panel is missing or broken.	Critical
Dell EqualLogic: EMM Link Failure Alert	Enclosure Management Services are unavailable.	Critical
Dell EqualLogic: Both the Channel Cards Missing Alert	Both the channel cards are missing.	Critical
Dell EqualLogic: EIP Card Failed in Channel Card Alert	EIP card failed in channel cards.	Critical
Dell EqualLogic: Both the Channel Cards Failed Alert	Both the channel cards have failed.	Critical
Dell EqualLogic: EqualLogic Disk Status Change Alert	Status of EqualLogic disk at Slot ( <i>Slot#</i> ) has changed to <i>&lt;status&gt;</i> .	Based on disk health
Dell EqualLogic: Network Interface Link Down Alert	One of the Network interface links is down.	Critical
Dell EqualLogic: Network Interface Link Up Alert	One of the network interface links is up.	Informational

## Web Console

The SCOM web console enables you to monitor and manage your Dell devices with the EqualLogic Management Pack using a browser instead of the Operations Manager console. You can use the web console without installing the **Operations Console**. Using the web console has the following limitations:

- Provides only the **Monitoring** feature for all Management Packs.
- The **Personalize** view is not available.
- **Console Launch** tasks are not available.
- Informational alerts are suppressed.
- Only the first 200 alerts are displayed in the **Alerts** view.



## Related Documentation and Resources

This chapter gives the details of documents and resources to help you work with the Dell EqualLogic Management Pack Version 4.1.

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

For optimal performance, deploy the Dell EqualLogic Management Pack Suite version 4.1 on a dedicated management station.

For information on Microsoft's recommendations for scalability, see the Microsoft website at [support.microsoft.com/kb/975057](http://support.microsoft.com/kb/975057).

### **Other Documents You May Need**

Besides this *User's Guide*, you can find the following guide at [support.dell.com/manuals](http://support.dell.com/manuals):

- The *Overview of Dell EqualLogic Products and Resources* gives you an overview of Dell EqualLogic products.

For information on terms used in this document, see the Glossary at [support.dell.com/manuals](http://support.dell.com/manuals).

You can also see the EqualLogic documents at <http://www.equallogic.com/resourcecenter/documentcenter.aspx>.

## 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.



# Appendix

## Issues and Resolutions

The following table lists the known issues, resolutions applicable to Microsoft System Center Operations Manager (SCOM) 2007 SP1 and System Center Essentials (SCE) 2007 SP1.

**Table 4-1. Issues and Resolutions**

Issue	Resolution
<p>Dell alerts are not sorted according to their age.</p>	<p>Check the registry on the managed system that has this problem. There could be a left-over view definition that has set the sorting flags to 'false'. In some instances, when you import a management pack with changes to the sorting flags, the sorting flags may not get updated in the registry. If you delete the settings for the view in the registry, they are recreated from the new management pack when you navigate to that view again. You can also edit the sorting flags in the registry for the view.</p> <p>Registry edit:</p> <pre> HKEY_CURRENT_USER\Software\Microsoft\Microsoft Operations Manager\3.0\Console\%GUID.ViewTitle%AlertsView\Age </pre> <p>To enable sorting of alerts, ensure that the keys <b>IsSortable</b> and <b>IsSorted</b> are set to 1.</p>
<p>Under certain conditions, alerts related to <b>Handle Count Threshold</b> and <b>Private Bytes Threshold</b> are displayed on the <b>Operations Console</b> of the management server.</p>	<p>Microsoft <b>KB968760</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.</p>

**Table 4-1. Issues and Resolutions (continued)**

Issue	Resolution
Under certain conditions, an error message is displayed on the <b>Operations Console</b> of the management server with the Event ID – <b>623</b> and Event Source – <b>Health Service ESE Store</b> .	Microsoft <b>KB975057</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.
The System Center Operations Manager 2007 console crashes on certain operating systems.	Microsoft <b>KB951327</b> and <b>KB951526</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.
You may experience one or more of the following situations:	Microsoft <b>KB954049</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.
<ul style="list-style-type: none"><li>• The web console does not open.</li><li>• The <b>My Workspace</b> page does not display.</li><li>• <b>Performance and Power Monitoring</b> views do not display.</li><li>• <b>Health Service</b> does not start up on the system.</li></ul>	
The reports do not appear as expected in the <b>Reporting</b> space of the <b>Administration</b> console.	Microsoft <b>KB954643</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.

**Table 4-1. Issues and Resolutions (continued)**

<b>Issue</b>	<b>Resolution</b>
The SCOM console intermittently displays the following error message - Health service Host Process encountered a problem and needed to close of this Health Service crash. You may notice unexpected behavior in the discovery and monitoring of Dell devices.	Microsoft <b>KB951526</b> available on the Microsoft support site at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.
SCOM 2007 cannot receive SNMP trap data when you use a Windows Server 2008-based computer or a Windows Vista-based computer as a proxy agent for SNMP devices.	Microsoft <b>KB958936</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.

