

**Dell EqualLogic Storage Management Pack Suite  
Version 5.0 For Microsoft System Center Operations  
Manager And System Center Essentials  
User's Guide**



# Notes, Cautions, and Warnings

-  **NOTE:** A NOTE indicates important information that helps you make better use of your computer.
-  **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
-  **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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# Introduction

The integration of the Dell EqualLogic Storage Management Pack Suite version 5.0 with Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, System Center 2012 Operations Manager, System Center Operations Manager 2007 R2, and Microsoft System Center Essentials (SCE) 2010 environment allows you to monitor, and ensure the availability of the Dell EqualLogic PS series storage arrays (EqualLogic storage arrays).

 **CAUTION:** To avoid data corruption and/or data loss, perform the procedures in this document only if you have knowledge and experience in using the Microsoft Windows operating system and Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, Microsoft System Center 2012 Operations Manager, Microsoft System Center Operations Manager 2007 R2, and Microsoft System Center Essentials 2010.

 **NOTE:** All references to OpsMgr in this guide are applicable to Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, Microsoft System Center 2012 Operations Manager, Microsoft System Center Operations Manager 2007 R2, and Microsoft System Center Essentials 2010, unless otherwise specified.

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

## What Is New In This Version Of Dell EqualLogic Storage Management Pack Suite

New Feature	Functionality
System Center 2012 Operations Manager	Supports Dell EqualLogic Storage Management Pack Suite on systems running System Center 2012 R2 Operations Manager, System Center 2012 SP1 Operations Manager and System Center 2012 Operations Manager.
Windows Server	Windows Server 2012 R2 as management server operating system.
Latest platform and EqualLogic firmware versions	Supports Dell EqualLogic PS4110, PS-M4110, and PS6110. EqualLogic firmware versions 5.1, 5.2, and 6.0.
Feature Monitoring Dashboard	Allows you to import, upgrade, and remove all the Management Packs and their dependencies that are required by a particular Monitoring Feature.
Clustered Remote Management Server (RMS) support	Monitors Dell EqualLogic devices on OpsMgr 2007 R2 clustered RMS.
Alerts	Support for SNMP alerts <ul style="list-style-type: none"> <li>• RFC 1157 Traps</li> <li>• SCSI Traps</li> </ul>

New Feature	Functionality
	<ul style="list-style-type: none"> <li>iSCSI Traps</li> </ul>
	For the complete list of alerts, see <a href="#">Rules</a> .
Inventory attributes	Supports the following inventory attributes: <ul style="list-style-type: none"> <li>Storage Pool Borrowing Enabled (for Storage Pool)</li> <li>Volume Recovery Enabled (for Group)</li> <li>Member Chassis Flags (for Member Array)</li> <li>Data Center Bridging Capability (for Ethernet Interface)</li> </ul>

## Key Features And Functionalities

Feature	Functionality
Discovery and Monitoring	Supports discovery and monitoring of Dell EqualLogic devices with supported firmware versions.
Launch the EqualLogic Group Manager GUI	Launches the EqualLogic Group Manager GUI for a group from the OpsMgr console.
Alerts from Dell EqualLogic devices	Displays the Simple Network Management Protocol (SNMP) based hardware alerts for the monitored Dell EqualLogic devices in the <b>Alerts Views</b> of the OpsMgr console.
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 Storage Management Pack Suite</a> .

## About Dell EqualLogic Storage Management Pack Suite

Supported OpsMgr Version	Management Pack	Dependency
OpsMgr 2007 R2 and SCE 2010	Dell EqualLogic (SCOM 2007 R2/SCE 2010) MP	Dell Base Hardware Library MP Dell Common Operations Library Dell EqualLogic Model MP
OpsMgr 2012 and OpsMgr 2012 SP1	Dell EqualLogic (SCOM 2012) MP	Dell EqualLogic Operations Library MP Dell EqualLogic View MP Dell EqualLogic Monitoring Library Dell EqualLogic Detailed Monitoring On - Overrides Management Pack

## Details Of Components Modelled By The Dell EqualLogic Storage Management Pack Suite

The Dell EqualLogic Storage Management Pack Suite consists of Scalable and Detailed feature. The following table lists the components modelled by each feature.

Monitoring Feature	Component Details
Dell EqualLogic Scalable Monitoring	<p>Provides full inventory for the Dell EqualLogic devices. Contains the unit monitors for all components of the Dell EqualLogic devices, 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 Dell 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 Dell EqualLogic group.</li> </ul>
Dell EqualLogic Detailed Monitoring	<p>Enables unit monitors up to the component groups level of Dell EqualLogic devices. Health status for the following component groups is displayed:</p> <ul style="list-style-type: none"> <li>• <b>Controllers Group</b> — displays the consolidated controller health status.</li> <li>• <b>Disks Group</b> — displays the consolidated disk health status.</li> <li>• <b>Ethernet Interfaces Group</b> — displays the consolidated health status of Ethernet interface cards.</li> <li>• <b>Power Supplies Group</b> — displays the consolidated health status of power supply modules and power supply fans.</li> <li>• <b>Sensors Group</b> — displays the consolidated health status of fan sensors and temperature sensors.</li> </ul>

## Dell EqualLogic Storage Management Pack Support Matrix

The following table lists the support versions of OpsMgr, Dell EqualLogic devices, and EqualLogic firmware versions.

### Supported OpsMgr Versions

- System Center 2012 R2 Operations Manager
- System Center 2012 SP1 Operation Manager
- System Center 2012 Operation Manager
- System Center Operation Manager 2007 R2
- System Center Essentials 2010

### Supported EqualLogic Controller Firmware Versions

- 5.1.x
- 5.2.x
- 6.0.x

### Supported Dell EqualLogic Devices

- PS4000
- PS4100
- PS4110
- PS-M4110
- PS5000
- PS5500

- PS6000
- PS6010
- PS6100
- PS6110
- PS6500
- PS6510

# Using Dell EqualLogic Storage Management Pack Suite

This chapter describes the various operations that you can perform on OpsMgr using the Dell EqualLogic Storage Management Pack Suite version 5.0.

The 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 OpsMgr 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 OpsMgr.

### Discovering Dell EqualLogic Devices

To discover a Dell EqualLogic device:

1. Log on to the system with an account that has the OpsMgr Administrator role for the Management Group.
2. Launch the OpsMgr console and click **Administration**.
3. Expand **Administration** → **Network Management**.
4. Right-click on **Network Devices** and select **Discovery Wizard** from the pop-up menu.
5. On the **Computer and Device Management Wizard** menu, select **Network Devices**, and click **Next**.

Follow the instructions on the screen to discover your Dell EqualLogic devices. For more information, see the Microsoft documentation for OpsMgr at [technet.microsoft.com](http://technet.microsoft.com).

 **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 Storage Management Pack Suite version 5.0 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 Dell EqualLogic devices include:

- The health of Dell EqualLogic Group and its components.

- If you import the Dell EqualLogic Scalable feature, you can monitor the health of Storage Pools Group and Volumes Group.
- If you import the Dell EqualLogic Detailed feature , you can monitor the health of EqualLogic members and their component groups.
- Process the SNMP alerts for the events received from the Dell EqualLogic devices.

 **NOTE:** To receive traps from a Dell EqualLogic device on a management server, the IP address of the management server must be added to the trap destination list of the device. For a clustered RMS (in OpsMgr 2007 R2), add the cluster IP address.

## Health Status Indicators

The following table lists the icons that indicate the health status of the discovered Dell EqualLogic devices on the OpsMgr console. For more information on severity propagation, see [State Views](#).

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.
	Not Monitored — The specific component is not monitored.

## Views

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

The different views are:

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

### Alerts Views

The Alerts Views displays the alerts for:

- SNMP traps received from the individual Dell 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 change to normal.
- Incorrect installation of the Dell EqualLogic Storage 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 **Alerts Views** of the OpsMgr console and not generated again.

### ***Viewing Alerts On The OpsMgr Console***

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

1. In the OpsMgr console, click **Monitoring**.
2. In the **Monitoring** pane, navigate to the **Dell** folder.
3. Expand **Alerts Views** → **EqualLogic Device Alerts**.

The OpsMgr 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 the 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 **Custom Field 1**. **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 Views** on this field to list the alerts that belong to a particular EqualLogic group.

### **Diagram Views**

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

### ***Viewing Diagrams In The OpsMgr Console***

To view the diagrams on the OpsMgr console:

1. Launch the OpsMgr console and click **Monitoring**.
2. In the **Monitoring** pane on the left side, navigate to the **Dell** folder.
3. Expand **Diagram Views**. The options available are:

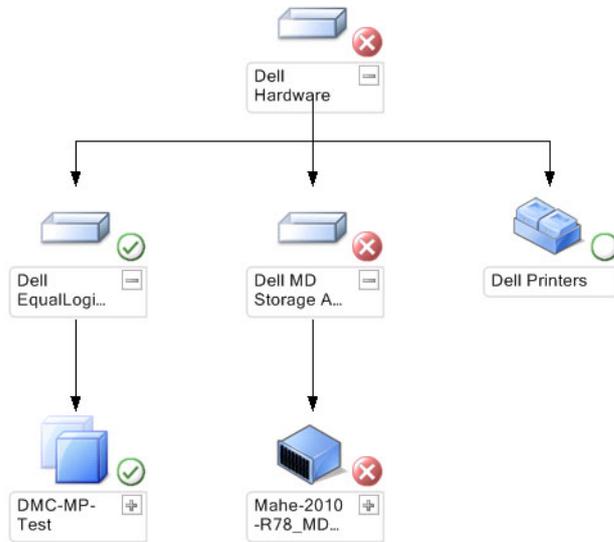
- [Complete Diagram View](#)
- [EqualLogic Diagram View](#)

4. Select any of the options.

The right pane displays the hierarchical and graphical representation of the selected Dell device.

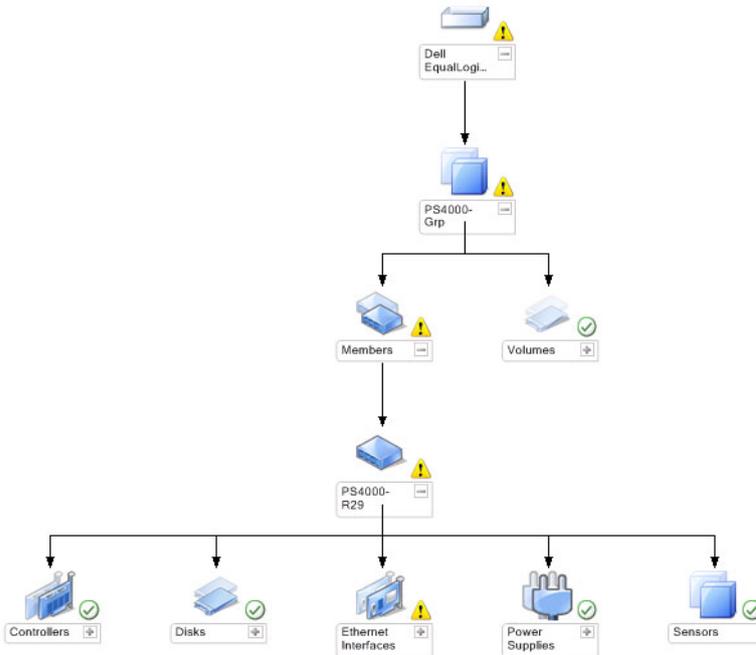
5. Select a component in the diagram to view the details in the **Detail View** pane.

### Complete Diagram View



The **Complete Diagram View** offers a graphical representation of all Dell devices that OpsMgr 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.

### EqualLogic Diagram View



The **EqualLogic Diagram View** offers a graphical representation of all Dell EqualLogic devices that OpsMgr 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 Scalable Feature**, 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 Feature**, all the components are displayed and monitoring is available up to the component group level.

The **Diagram Views** 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 Views***

The following table describes the details of each of the groups in the Diagram views and the health status for the Dell EqualLogic Storage Management Pack:

**Table 1. Health Status In The Diagram Views**

Group Name	Display Details	Health Status
EqualLogic Group	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.	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.

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.

### State Views

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

#### *Accessing State Views*

To access the **State Views**:

1. In the OpsMgr 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 Views** → **EqualLogic Devices**.  
The OpsMgr console displays the status of all the Dell EqualLogic groups that you are monitoring, on the right pane.
4. Select the device to view the details in the **Detail View** pane.

## Tasks

### Launching EqualLogic Group Manager GUI

You can launch the **EqualLogic Group Manager GUI** from the **Tasks** pane of the OpsMgr console.

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

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

## Customizing The Dell EqualLogic Storage Management Pack

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

### Specifying Override Parameters

To specify override parameters for management pack objects:

1. Launch the OpsMgr console, click **Authoring**.
2. Expand **Authoring** → **Management Pack Objects**.
3. Select the management pack object you want to override — **Monitors**, **Object Discoveries**, or **Rules**.
4. Right-click on any of the components of a management pack object you selected, and from the pop-up menu select **Overrides** → **Override the <management pack object>**.  
You can choose to override **all objects of the selected class, for all groups, specific object of the selected class, or for all objects of another class**.  
The **Override Properties** window is displayed.
5. Select the object and change the override value(s).

6. Click **Apply**.

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

## Customizing Unit Monitors

You can customize the following parameters of the Dell EqualLogic Storage Management Pack unit monitors by the following 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.

### Unit Monitors

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

Group Name	Monitor Type	Description	Default Periodic Poll Setting
<b>Monitors enabled by the EqualLogic Scalable Feature</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
Dell EqualLogic Volumes Group	Dependency rollup	Rolls up the health status of Volumes group to the EqualLogic group.	Not applicable
	Unit monitor	Polls the health status of the Volumes group at regular intervals.	3700 seconds
Dell EqualLogic Storage Pool Group	Unit monitor	Polls the health status of Storage Pool(s) group at regular intervals.	3700 seconds
EqualLogic Helper Utility	Unit monitor	Rolls up the version information of Dell EqualLogic helper utility.	3700 seconds
<b>Monitors enabled by the EqualLogic Detailed Feature</b>			
Dell EqualLogic Storage Pool Group	Dependency rollup	Rolls up the health status of Storage Pool(s) to the Storage Pools group.	Not applicable
Dell EqualLogic Controller Group	Unit monitor	Polls the health status of Controllers at regular intervals.	3700 seconds

Group Name	Monitor Type	Description	Default Periodic Poll Setting
Dell EqualLogic 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
Dell EqualLogic Power Supply Group	Unit monitor	Polls the health status of power supplies at regular intervals.	3700 seconds
Dell EqualLogic Storage Pool	Dependency rollout	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 Dell EqualLogic Storage Management Pack discovery parameters, using the following 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 36 rules, which process SNMP traps from the EqualLogic device and display them as Dell EqualLogic Alerts in the OpsMgr Alerts view.

The following table lists the **Dell EqualLogic Alerts**.

**Table 3. Rules — Dell EqualLogic Storage Management Pack**

Alert	Description	Severity
Dell EqualLogic: Temperature Sensor High Threshold Alert	High Threshold Enclosure Temperature sensor <i>&lt;temperature sensor name&gt;</i> is at <i>&lt;value&gt;</i> °C. Temperature sensor is now in <i>&lt;status&gt;</i> state.	Based on current state of temperature threshold.
Dell EqualLogic: Temperature Sensor Low Threshold Alert	Low Threshold Enclosure Temperature sensor <i>&lt;temperature sensor name&gt;</i> is	Based on current state of temperature threshold.

Alert	Description	Severity
	at <i>&lt;value&gt;</i> °C. Temperature sensor is now in <i>&lt;status&gt;</i> state.	
Dell EqualLogic: Fan Speed High Threshold Alert	Speed of enclosure fan <i>&lt;fan name&gt;</i> is <i>&lt;speed&gt;</i> rpm. Sensor is now in <i>&lt;status&gt;</i> state.	Based on current state of fan speed threshold.
Dell EqualLogic: Fan Speed Low Threshold Alert	Speed of enclosure fan <i>&lt;fan name&gt;</i> is <i>&lt;speed&gt;</i> rpm. Sensor is now in <i>&lt;status&gt;</i> state.	Based on current state of fan speed threshold.
Dell EqualLogic: Power Supply Fan Status Alert	Status of power supply fan <i>&lt;power supply&gt;</i> has changed to <i>&lt;status&gt;</i> .	Based on power supply fan health.
Dell EqualLogic: Power Supply Status Alert	Status of Power Supply module <i>&lt;power supply&gt;</i> has changed to <i>&lt;status&gt;</i> .	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
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
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

Alert	Description	Severity
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 (Slot#) has changed to <status>.	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
Dell EqualLogic : SCSI Logical Unit Status Changed	Status of a SCSI logical unit has changed to <status>.	Based on the logical unit status.
Dell EqualLogic : iSCSI Target Login Failure Alert	The login credentials for the iSCSI device is incorrect.	Critical
Dell EqualLogic : SCSI Target Device Status Changed	Status of a SCSI target device has changed to <status>	Based on the target device status.
Dell EqualLogic : iSCSI Initiator Login Failure Alert	The login credentials are incorrect.	Critical
Dell EqualLogic : iSCSI Initiator Session Failure Alert	iSCSI session between the initiator and the array iSCSI Ethernet ports has failed.	Critical
Dell EqualLogic : Authentication Failure Alert	The credentials entered are incorrect.	Critical
Dell EqualLogic : Warm Start Alert	The Dell EqualLogic device was restarted.	Informational
Dell EqualLogic : Cold Start Alert	The Dell EqualLogic device was powered on.	Informational

## Related Documentation And Resources

This chapter gives the details of documents and resources to help you work with the Dell EqualLogic Storage Management Pack Version 5.0.

### Microsoft Guidelines For Performance And Scalability For Microsoft Operations Manager 2007 R2

For optimal performance, deploy the Dell EqualLogic Storage Management Pack Suite version 5.0 on a dedicated management station.

For information on Microsoft's recommendations for scalability, see [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 [dell.com/support/manuals](http://dell.com/support/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 [dell.com/support/manuals](http://dell.com/support/manuals).

You can also see the EqualLogic documents at [equallogic.com/resourcecenter/documentcenter.aspx](http://equallogic.com/resourcecenter/documentcenter.aspx).

### Contacting Dell

 **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit [dell.com/support](http://dell.com/support)
2. Select your support category.
3. Verify your country or region in the Choose a Country/Region drop-down menu at the top of page.
4. Select the appropriate service or support link based on your need.



# Troubleshooting

The following table lists the known issues and resolutions.

**Table 4. Troubleshooting**

Issue	Resolution
<p>Dell alerts are not sorted by the duration of the alerts.</p>	<p>When importing a management pack with changes to the sorting flags, the sorting flags may not get updated in the registry. Check if the sorting flags are set to 'false' in the view definition in the registry with the problem on the management system. If you delete the settings in the registry, the settings will get recreated from the new management pack when you navigate to that view again. You can also edit the sorting flags in the registry.</p> <p><b>Registry edit:</b>  <b>HKEY_CURRENT_USER\Software\Microsoft\Microsoft Operations Manager\3.0\Console\%&lt;GUID.ViewTitle&gt;%AlertsView\Age</b></p> <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 OpsMgr console 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>
<p>Under certain conditions, an error message is displayed on the OpsMgr console of the management server with the Event ID – <b>623</b> and Event Source – <b>Health Service ESE Store</b>.</p>	<p>Microsoft <b>KB975057</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.</p>
<p>The OpsMgr 2007 R2 console crashes on certain operating systems.</p>	<p>Microsoft <b>KB951327</b> and <b>KB951526</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.</p>
<p>You may experience one or more of the following situations:</p> <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</b> and <b>Power Monitoring</b> views do not display.</li> <li>• <b>Health Service</b> does not start up on the system.</li> </ul>	<p>Microsoft <b>KB954049</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.</p>
<p>The reports do not appear as expected in the <b>Reporting</b> space of the <b>Administration</b> console.</p>	<p>Microsoft <b>KB954643</b> available at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.</p>
<p>The OpsMgr 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.</p>	<p>Microsoft <b>KB951526</b> available on the Microsoft support site at <a href="http://support.microsoft.com">support.microsoft.com</a> resolves this issue.</p>

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Issue	Resolution
OpsMgr 2007 R2 cannot receive SNMP trap data when you use a Microsoft Windows Server 2008-based computer or a Microsoft 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.
The OpsMgr 2007 R2 console crashes on systems running Internet Explorer 9.	Install the Cumulative Update 5 for System Center Operations Manager 2007 R2. For more information, see <a href="http://support.microsoft.com/kb/2495674">support.microsoft.com/kb/2495674</a> .