

**Dell EqualLogic Storage Management Pack Suite
Version 6.0 for Microsoft System Center Operations
Manager
Installation Guide**



Notes, cautions, and warnings

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

Contents


1 Overview.....	4
Prerequisites.....	4
Prerequisites for a Distributed Setup.....	5
Contents of the Dell EqualLogic Storage Management Pack Suite.....	5
Supported Operating Systems.....	5
Installing the Dell EqualLogic Storage Management Pack Suite.....	5
Running the Management Pack Installer.....	5
Importing Monitoring Features Using Dell Feature Management Dashboard.....	6
Using the Repair Option of the Installer.....	9
Upgrading From Dell EqualLogic Storage Management Pack Suite Version 5.0 Using Dell Feature Management Dashboard.....	9
Upgrading from previous Operations Manager.....	10
Upgrading from OpsMgr 2012 R2 to OpsMgr 2016.....	10
Upgrading From OpsMgr 2012 SP1 to OpsMgr 2012 R2.....	10
Upgrading From OpsMgr 2012 to OpsMgr 2012 SP1.....	10
Upgrading From OpsMgr 2007 R2 To OpsMgr 2012.....	10
Uninstalling the Dell EqualLogic Storage Management Pack Suite.....	10
Removing Monitoring Features Using Dell Feature Management Dashboard.....	10
Uninstalling the Dell EqualLogic Storage Management Pack Suite.....	11
Disabling Certificate Validation.....	11
2 Troubleshooting.....	12
Feature Management Dashboard does not Populate.....	12
Issues and Resolutions.....	12
Known Limitations	12
Importing the Dell Feature Monitoring Management Pack.....	13
Override Task Parameters.....	13
Enabling Agent Proxy Option.....	13




Overview

This guide provides information to install, configure and use the Dell EqualLogic Storage Management Pack Suite version 6.0 for Microsoft System Center 2016 Operations Manager, Microsoft System Center 2012 R2 Operations Manager, Microsoft System Center 2012 SP1 Operations Manager, Microsoft System Center 2012 Operations Manager, and Microsoft System Center Operations Manager 2007 R2.

The integration of the Dell EqualLogic Storage Management Pack Suite version 6.0 with Microsoft System Center 2016 Operations Manager, Microsoft System Center 2012 R2 Operations Manager, or Microsoft System Center 2012 SP1 Operations Manager, or Microsoft System Center 2012 Operations Manager, or Microsoft System Center Operations Manager 2007 R2 environment allows you to manage, monitor, and ensure the availability of your Dell EqualLogic devices.

 **CAUTION: Perform the procedures in this document only if you have proper knowledge and experience in using Microsoft Windows operating system and the Microsoft System Center 2016 Operations Manager, Microsoft System Center 2012 R2 Operations Manager, or Microsoft System Center 2012 SP1 Operations Manager, or Microsoft System Center 2012 Operations Manager, or Microsoft System Center Operations Manager 2007 R2, to avoid data corruption and/or data loss.**

 **NOTE: All references to OpsMgr in this guide are applicable to Microsoft System Center 2016 Operations Manager, Microsoft System Center 2012 R2 Operations Manager, or Microsoft System Center 2012 SP1 Operations Manager, or Microsoft System Center 2012 Operations Manager, or Microsoft System Center Operations Manager 2007 R2, unless otherwise specified.**

The Management Pack Suite Installer, Installation Guide, and Release Notes files are packaged in a self-extracting executable **Dell_EqualLogic_Storage_Management_Pack_Suite_v6.0_Axx.exe** file (where xx is the Dell EqualLogic Storage Management Pack release number). You can download the executable from dell.com/support.

Read the Management Pack's release notes, which contain the latest information about software and management server requirements, in addition to information about known issues. The release notes is also posted to the Systems Management documentation page at dell.com/support/home.

Prerequisites

To install the Dell EqualLogic Storage Management Pack Suite version 6.0 on a management server, make sure that you have the following available:

- Microsoft System Center 2016 Operations Manager, Microsoft System Center 2012 R2 Operations Manager, or Microsoft System Center 2012 SP1 Operations Manager, or Microsoft System Center 2012 Operations Manager, or Microsoft System Center Operations Manager 2007 R2.
- Administrator access on the management server to install suite and import the Dell EqualLogic Storage Management Pack.
- Microsoft .NET version 3.5 or later.
- OpsMgr command shell.
- Windows PowerShell 2.0.
- On systems running OpsMgr 2012 SP1, download and apply the Update Rollup 1 for OpsMgr 2012 SP1 provided in the Microsoft knowledge base article KB2790935. For more information see support.microsoft.com/kb/2785682.
- On systems running OpsMgr 2007 R2 with Internet Explorer 9.0, install the **Cumulative Update 5 for System Center Operations Manager 2007 R2**. For more information, see support.microsoft.com/kb/2495674.

Prerequisites for a Distributed Setup

To install the Dell EqualLogic Storage Management Pack Suite version 6.0 in a distributed setup:

- Running OpsMgr 2007 R2, run the installer on all the management servers used for monitoring Dell EqualLogic device.
- Running OpsMgr 2016, OpsMgr 2012 or later:
 - designate a resource pool for monitoring Dell EqualLogic devices
 - run the installer on all the management servers that are part of the resource pool
- Make sure that the Agent proxy option is enabled on all the management servers. For more information, see [Enabling Agent Proxy Option](#).

Contents of the Dell EqualLogic Storage Management Pack Suite

The Dell EqualLogic Storage Management Pack Suite is packaged in the self extracting executable `Dell_EqualLogic_Storage_Management_Pack_Suite_v6.0_Axx.exe` file that contains the following files:

- `Dell_EqualLogic_Management_Pack_Suite_x86_x64.exe` — The installer for installing Dell EqualLogic Storage Management Pack Suite.
- `DellMPv60_EqualLogic_Readme.txt` — The readme file for Dell EqualLogic Storage Management Pack Suite.
- `DellMPv60_EqualLogic_IG.pdf` — Guide for installing Dell EqualLogic Storage Management Pack Suite.

The self extracting executable file is available at dell.com/support.

Supported Operating Systems

Supported operating systems for:

- System Center 2016 Operations Manager, see technet.microsoft.com/en-us/system-center-docs/system-requirements/system-requirements
- System Center 2012 R2 Operations Manager, System Center 2012 SP1 Operations Manager and System Center 2012 Operations Manager, see technet.microsoft.com/en-us/library/hh205990.aspx
- System Center Operations Manager 2007 R2, see technet.microsoft.com/en-us/library/bb309428.aspx.

Installing the Dell EqualLogic Storage Management Pack Suite

To install and enable the Dell EqualLogic Storage management pack:

1. Run the management pack installer to extract the management packs and install the Dell EqualLogic Storage Management Pack Suite.
For more information, see [Running the Management Pack Installer](#).
2. Enable the supported Monitoring features using the **Dell Feature Management Dashboard**.
For more information, see [Importing Monitoring Features Using Dell Feature Management Dashboard](#).


Running the Management Pack Installer

1. Download the self extractable `Dell_EqualLogic_Storage_Management_Pack_Suite_v6.0_Axx.exe` (where xx is the Dell EqualLogic Storage Management Pack release number) from dell.com/support.
2. Run the self-extractable file and specify a path to extract its contents.
3. Launch the `Dell_EqualLogic_Management_Pack_Suite_x86_x64.exe` file from the extracted location.
The welcome screen for the Dell EqualLogic Storage Management Pack is displayed.
4. Click **Next**.
The license agreement is displayed.



5. To continue the installation, accept the license terms after reading them, and click **Next**.
6. Click **Change** (if required) to change the default installation folder and click **Next**.
The **Ready to Install the Program** screen is displayed.
7. Click **Install**.

The **Installing Dell EqualLogic Storage Management Pack** progress screen is displayed.

 **NOTE: The installer will take a few minutes to check for certificates. To ignore this check, open Internet Options and click the Advanced tab. Under Settings, clear the Check for publisher's certificate revocation and Check for server certificate revocation options.**

8. Click **Finish** on the **Install Shield Wizard Completed** screen.

The Dell EqualLogic Storage Management Pack Suite is installed in the selected location and the installer registers the `DellDeviceHelper.dll` on the management server.

The management packs are extracted to the location; `C:\Program Files\Dell Management Packs\EqualLogic Storage Mgmt Suite\6.0`.

To import the management packs and enable monitoring features, see [Importing Monitoring Features Using Dell Feature Management Dashboard](#).

 **NOTE: The Dell Feature Monitoring management pack is automatically imported if the installation has completed successfully. If the installer fails to import the Dell Feature Monitoring management pack, then, manually import it. For more information, see [Importing the Dell Feature Monitoring Management Pack](#).**

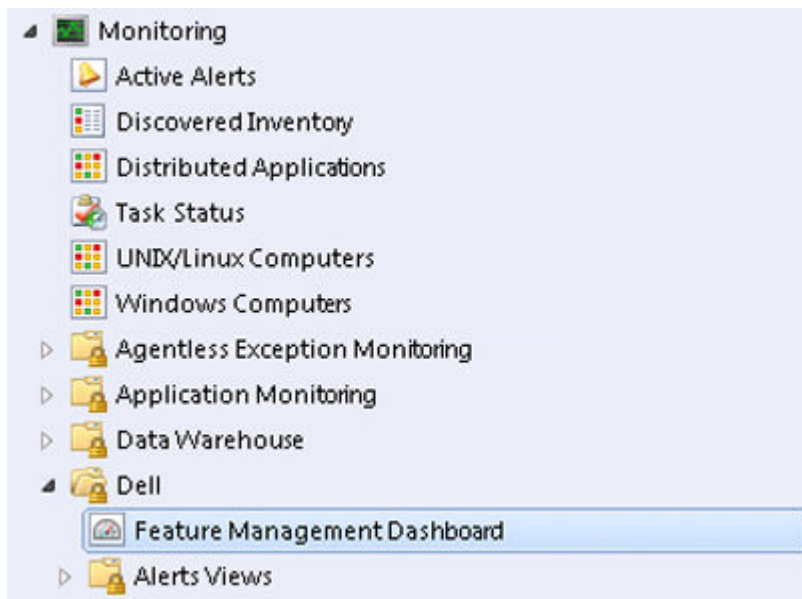
Importing Monitoring Features Using Dell Feature Management Dashboard

Dell Feature Management Dashboard allows you to view the available Dell EqualLogic Management Pack Suite's monitoring features and enable them automatically for importing, upgrading, and removing the management packs that are required by a particular feature.

In a distributed setup (including distributed resource pool in OpsMgr 2016 and OpsMgr 2012), the management server on which the Dell Server Management Pack suite is installed first, is selected to host all feature management activities such as discoveries, alerts and tasks.

To import monitoring features:

1. Launch OpsMgr console.
2. From the **Navigation** pane, click **Monitoring**.
3. Expand **Monitoring** → **Dell** → **Feature Management Dashboard**.



On the **Feature Management Dashboard** pane you can view the list of features installed, the version currently in use, the version you can upgrade to, and the level of monitoring.

4. Select the **EqualLogic Monitoring** feature from the **Feature Management State** pane.

Feature Management Dashboard

Feature Management State (1)

Feature Name	Description	Monitoring Level	In Use Version	Available Version	Total Node Lic...	License In Use	Current License Us...
EqualLogic Monitoring	Monitor Dell EqualLogic Storage Array devices	Not Installed	Not Installed	6.0	Not Applicable	Not Applicable	Not Applicable

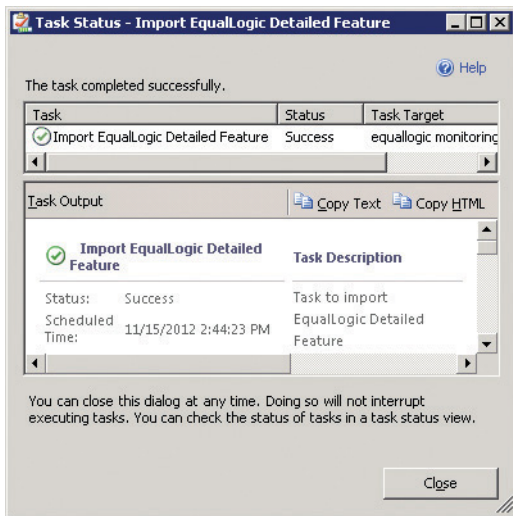
Figure 1. Feature Management Dashboard

5. Under the **Tasks** pane, expand **Dell Monitoring Feature Tasks**.

 **NOTE:** In System Center Operations Manager 2007 R2, the Tasks pane is referred to as Actions pane.

Dell Monitoring Feature Tasks ^

6. Click on **Import EqualLogic Scalable Feature** or **Import EqualLogic Detailed Feature** task to import or upgrade a feature. For more information, see [Feature Management Tasks](#).
7. On the run task screen, make sure that the **Use the predefined Run As Account** option is selected.
8. Click **Run**.
9. After the task has successfully completed, click **Close**.



 **NOTE:** Wait for a task to complete before launching another task using the Feature Management Dashboard.

Feature Management Tasks

The following table lists the tasks available on the **Feature Management Dashboard**.

 **NOTE:** In the OpsMgr event log, ignore the error events about the already existing management packs being re-imported in to OpsMgr. These errors occur when Feature Management Dashboard imports the dependent management packs that were already present in OpsMgr.

 **NOTE:** Wait for a task to complete (view the state update change in the dashboard) before launching another task using the Feature Management Dashboard.

Table 1. Feature Management Tasks for Dell EqualLogic Storage Management Suite.

Tasks	Description
Configure License Server	Dell EqualLogic Storage Management Pack Suite version 6.0 does not require licenses to run.
Import EqualLogic Scalable Feature	If the Dell EqualLogic Monitoring feature is not present, the Scalable edition of Dell EqualLogic Storage Monitoring feature is imported. For more information, see the “Details Of Components Modelled by the Dell EqualLogic Storage Management Pack Suite” section of the <i>Dell EqualLogic Storage Management Pack Suite Version 6.0 for Microsoft System Center Operations Manager User’s Guide</i> at dell.com/support/home .
Import EqualLogic Detailed Feature	If the Dell EqualLogic Monitoring feature is not present, then the Detailed edition of Dell EqualLogic Storage monitoring feature is imported. For more information, see the “Details Of Components Modelled By The Dell EqualLogic Storage Management Pack Suite” section of the <i>Dell EqualLogic Storage Management Pack Suite Version 6.0 for Microsoft System Center Operations Manager</i> at dell.com/support/home .
Set to EqualLogic Scalable Feature	If the Detailed edition of Dell EqualLogic Storage monitoring feature is running on the system, the Feature Management Dashboard switches from EqualLogic Detailed feature to EqualLogic Scalable feature.



Tasks	Description
Set to EqualLogic Detailed Feature	If the Scalable edition of Dell EqualLogic Storage monitoring feature is running on the system, the feature Management Dashboard switches from EqualLogic Scalable feature to EqualLogic Detailed feature.
Refresh Dashboard	Updates the Feature Management Dashboard if it was not automatically updated.
Remove EqualLogic Feature	Removes the Dell EqualLogic Storage monitoring feature.



Using the Repair Option of the Installer

The Repair option in the installer repairs installation errors. You can use this option to re-install the management pack, missing files, and correct the registry entries. To repair the installation of the Dell EqualLogic Storage Management Pack Suite:

1. Run the `Dell_EqualLogic_Management_Pack_Suite_x86_x64.exe` file from the extracted location to launch the installer.
The welcome screen is displayed.
2. Click **Next**.
3. Select **Repair** and click **Next**.
The **Ready to Repair the Program** screen is displayed.
4. Click **Install**.
A progress screen displays the progress of the installation. After the installation is complete, the **InstallShield Wizard Completed** window is displayed.
5. Click **Finish**.

Upgrading From Dell EqualLogic Storage Management Pack Suite Version 5.0 Using Dell Feature Management Dashboard

It is recommended to use the Dell Feature Management Dashboard to upgrade the monitoring features. To upgrade the monitoring features using the Dell Feature Management Dashboard:

1. Run the installer for Dell EqualLogic Storage Management Pack Suite version 6.0.
For more information, see [Running the Management Pack Installer](#).
2. Launch OpsMgr console.
3. From the navigation pane, click **Monitoring**.
4. Expand **Monitoring** → **Dell** → **Feature Management Dashboard**.
The **Feature Management Dashboard** displays the list of management packs present in OpsMgr.
5. Select **EqualLogic Monitoring** from the **Feature Management State** pane.
6. Under **Tasks**, expand **Dell Monitoring Feature Tasks**.
 -  **NOTE: In OpsMgr 2007 R2, the Tasks pane is referred to as Actions pane.**
7. Select **Set to EqualLogic Scalable Feature** or **Set to EqualLogic Detailed Feature** to upgrade the monitoring feature.
For more information, see [Feature Management Tasks](#).
8. On the run task screen, select **Use the predefined Run As Account** option.
 -  **CAUTION: If there are any dependencies or associations that you must override, which will result in data loss, the task will fail with the appropriate message. To proceed with the task, click Override and set the AutoResolve Warnings/Errors override to True. For more information, see [Override Task Parameters](#).**
9. Click **Run**.



While upgrading, any overrides (customizations to discovery, monitors, rules, and so on) from previous versions of Dell EqualLogic Storage Management Pack Suite are migrated to Dell EqualLogic Storage Management Pack Suite version 6.0.

10. After the task is complete, click **Close**.

Upgrading from previous Operations Manager

You can upgrade to OpsMgr from previous versions as per Microsoft guidelines. Refer to Microsoft System Center documentation for the supported upgrade scenarios.

Upgrading from OpsMgr 2012 R2 to OpsMgr 2016

Upgrading to OpsMgr 2016 does not affect the existing Dell EqualLogic Management Pack Suite features and functionalities. For information about upgrading from OpsMgr 2012 R2 to OpsMgr 2016, see [Technet.microsoft.com/en-us/system-center-docs/om/deploy/upgrading-to-system-center-2016-operations-manager](http://technet.microsoft.com/en-us/system-center-docs/om/deploy/upgrading-to-system-center-2016-operations-manager).

Upgrading From OpsMgr 2012 SP1 to OpsMgr 2012 R2


Upgrading to OpsMgr 2012 R2 will not impact the existing Dell EqualLogic Management Pack Suite features and functionalities. For information about upgrading from OpsMgr 2012 SP1 to OpsMgr 2012 R2, see technet.microsoft.com/en-us/library/dn249707.aspx.

Upgrading From OpsMgr 2012 to OpsMgr 2012 SP1

Upgrading to OpsMgr 2012 SP1 will not impact the existing Dell EqualLogic Storage Management Pack Suite features and functionalities. For information about upgrading from OpsMgr 2012 to OpsMgr 2012 SP1, see technet.microsoft.com/en-us/library/jj899854.aspx.

Upgrading From OpsMgr 2007 R2 To OpsMgr 2012

For details on how to upgrade from OpsMgr 2007 R2 to OpsMgr 2012, see technet.microsoft.com/en-us/library/hh476934.aspx.

 **NOTE: To make sure that the feature management workflows are functioning at an optimal level, restart the root management server after upgrading to OpsMgr 2012.**

Uninstalling the Dell EqualLogic Storage Management Pack Suite

To uninstall the Dell EqualLogic Storage Management Pack:

1. Remove the Dell EqualLogic monitoring feature from OpsMgr using the **Dell Feature Management Dashboard**. For more information, see [Removing Monitoring Features Using Dell Feature Management Dashboard](#).
2. Uninstall the Dell EqualLogic Storage Management Pack Suite. For more information, see [Uninstalling the Dell EqualLogic Storage Management Pack Suite](#).

Removing Monitoring Features Using Dell Feature Management Dashboard

It is recommended to use the **Dell Feature Management Dashboard** to remove the management packs. Before removing any of the monitoring features, close or resolve all open alerts. While removing a monitoring feature, the **Dell Feature Management Dashboard** exports all overrides references to the Windows Temp folder.

To remove your management pack using the **Dell Feature Management Dashboard**:


1. Launch OpsMgr console.
2. From the navigation pane, click **Monitoring**.
3. Expand **Monitoring** → **Dell** → **Feature Management Dashboard**.
The **Feature Management Dashboard** displays the list of management packs present in OpsMgr.
4. Select the **EqualLogic Monitoring** from the **Feature Management State** pane.

5. Under the **Tasks** pane, expand **Dell Monitoring Feature Tasks**.

 **NOTE:** In System Center Operations Manager 2007 R2, the Tasks pane is referred to as Actions pane.

6. Click **Remove EqualLogic Feature**.

7. On the run task screen, select the **Use the predefined Run As Account** option.


 **CAUTION:** If there are any dependencies or associations that have to be overridden, which result in data loss, the task will fail with the appropriate message. To proceed with the task, click **Override** and set the **AutoResolve Warnings/Errors override** to **True**. For more information, see [Override Task Parameters](#).

8. Click **Run**.

9. Click **Close** after the task is complete.

 **NOTE:** Removing any of the features may affect the scope of some user roles.

Uninstalling the Dell EqualLogic Storage Management Pack Suite

 **NOTE:** In a distributed setup (including distributed resource pool in OpsMgr 2016, OpsMgr 2012 R2, OpsMgr 2012 SP1 or OpsMgr 2012), if your management pack suite includes both Dell Server Management Pack Suite version 6.0 and Dell EqualLogic Storage Management Pack Suite version 6.0, after uninstalling Dell EqualLogic Storage Management Pack Suite, the dashboard entries may not update accordingly. The updated dashboard entries will appear only in the next discovery cycle of the Feature Management Dashboard.

To uninstall the Dell EqualLogic Storage Management Pack Suite:

1. Click **Start** → **Control Panel** → **Uninstall a program**.

 **NOTE:** On systems running Windows Server 2012, launch the Start screen and click **Control Panel** → **Uninstall a program**.

2. Right-click **Dell EqualLogic Storage Management Pack Suite v6.0** and click **Uninstall**.
3. Follow the instructions on the screen to complete the uninstallation process.

Or double-click the installer, select **Remove**, and follow the instructions on the screen.

Disabling Certificate Validation

To disable the certificate verification:

1. Edit the file **DellEQLHelper.dll.config** under the Library folder where **Dell EqualLogic Storage Management Pack Suite v6.0** is installed.
2. Set the value of **generatePublisherEvidence** to **false**.

Troubleshooting

The following chapter provides information for troubleshooting installation related errors.

Feature Management Dashboard does not Populate

In a distributed setup, the management server where the Dell EqualLogic Storage Management Pack suite is installed first is selected to host all feature management activities such as discoveries, alerts and tasks. The management server on which the Dell EqualLogic Storage Management Pack suite is installed first populates the Feature Management Dashboard. However, if you have manually imported the Feature Monitoring management pack without running the installer on the management server, the Feature Management Pack host is not selected and hence, the **Feature Management Dashboard** will not be populated.

To populate the **Feature Management Dashboard**:

1. In the OpsMgr console, click **Authoring**.
2. In **Authoring**, expand **Management Pack Objects**.
3. Click **Object Discoveries**.
4. In the **Look for:** field, search **Dell Feature Management Host Discovery for EqualLogic Monitoring Feature**.
5. Right-click **Dell Feature Management Host Discovery for EqualLogic Monitoring Feature** and select **Overrides** → **Override the Object Discovery** → **For all objects of class: Dell Feature Management Host Discovery for EqualLogic Monitoring Feature**.
6. Select **FmpHostFqdn** and set the override value to FQDN of the management server where the feature management activities have to run.

 **NOTE:** To schedule the feature management workflows in OpsMgr 2007 R2 clustered environment; override the **FmpHostFqdn** value to the cluster's FQDN.

Issues and Resolutions

Table 2. Issues and Resolutions

Issue	Resolutions
Unable to repair the Dell EqualLogic Storage Management Pack Suite installation from the Uninstall or change a program/ Add or Remove programs window.	Use the repair option of the installer, for more information see Using the Repair Option of the Installer .

Known Limitations

Table 3. Known Limitations

Limitation	Applicable to
On systems running OpsMgr 2012 SP1, the Feature Management Dashboard tasks to remove a Monitoring Feature, like the EqualLogic Monitoring feature, fails if there are any overrides made to the management pack. Delete the management packs from the OpsMgr's Administrators tab. For	<ul style="list-style-type: none"> • Dell EqualLogic Storage Management Pack Suite • OpsMgr 2012 SP1

Limitation	Applicable to
more information, see the OpsMgr's online documentation at technet.microsoft.com .	

Importing the Dell Feature Monitoring Management Pack

If the installer fails to import the Feature Monitoring management pack:

1. Launch the OpsMgr console.
2. From the navigation pane, click **Administration**.
3. Expand **Administration**.
4. Right-click **Management Packs**, and select **Import Management Packs**.
5. On the **Select Management Packs** screen, click **Add** → **Add from disk**.
6. Type the location details or navigate to the location where you have installed the **Dell EqualLogic Storage Management Pack Suite**.
If you installed the management pack in the default directory, then navigate to `C:\Program Files\Dell Management Packs\EqualLogic Storage Mgmt Suite\6.0` to access the Dell Feature Monitoring management pack.
7. Select the `Dell.OperationsLibrary.Common.mp` and `Dell.Connections.HardwareLibrary.mp` (located inside the **Library** folder) and click **Open**.
8. On the **Select Management Packs** screen, click **Add** → **Add from disk**.
9. Select the `Dell.FeatureManagement.Pack.mp` and click **Open**.
The **Import Management Packs** screen appears with the management packs displayed in the **Import List**.
10. Click **Install**.

Override Task Parameters

 **CAUTION: Overriding task parameters will result in management pack or operational data loss.**

1. Launch OpsMgr console.
2. From the navigation pane, click **Monitoring**.
3. Expand **Monitoring** → **Dell** → **Feature Management Dashboard**.
The **Feature Management Dashboard** pane displays the list of monitoring features present in OpsMgr and the management pack version you can to which you can upgrade.
4. Select the monitoring feature and then click on the task you want to override.
5. On the run task screen, click **Override**.
The **Override Task Parameters** screen is displayed.
6. In the **New Value** column, set the value of **AutoResolve Warnings/Errors** to **True**.
7. Click **Override**.
8. Click **Run** to run the task.

Enabling Agent Proxy Option

To enable agent proxy:

1. Launch the OpsMgr console.
2. From the navigation pane, click **Administration**.
3. Expand **Administration** → **Device Management** and click **Management Servers**.
4. Right-click on your management server, click **Properties**
The **Management Server Properties** screen is displayed.



5. Click the **Security** tab
6. Under **Server Proxy** select **Allow this server to act as a proxy and discover managed objects on other computers.**