EQUALLOGIC

Dell EqualLogic Multipathing Extension Module

Release Notes

Version 1.1

For vSphere Version 5.0

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November 2011

Part Number: 110-6092-EN-R2

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1 Welcome to the Dell EqualLogic Multipathing Extension Module

This document contains important product information and restrictions for the Dell EqualLogic Multipathing Extension Module (MEM) Version 1.1.

Installation Prerequisites

Table 1 lists the minimum revisions of software and firmware required for supporting the installation of the MEM.

Table 1: Minimum Software and Firmware Requirements

Product	Revision
PS Series firmware	Version 4.3.7 or later. Check the Dell technical support website for the latest firmware updates.
VMware ESXi	Version 5.0. See VMware documentation for required license level to enable Storage APIs for Multipathing.
vSphere Client	Version 5.0
vSphere vMA or CLI	Version 5.0

Unsupported VMware Environments

The following are not supported by the Dell EqualLogic MEM:

- Windows 2003 and Windows 2008 Virtual Machine Failover Clusters using raw device mapping (RDM) files as cluster resources.
- In environments where the VMkernel ports and PS group are configured with IPv6 addresses, the ESX iSCSI initiator only supports link local addressing for both the ESX and PS group IPv6 addresses.
- The ESX iSCSI initiator requires that iSCSI target names use ASCII characters only.
- The only supported distributed virtual switch (dvs) is the VMware vNetwork Distributed Switch (vDS).
- ESX iSCSI multipathing requires a non-routed network between the host the the iSCSI storage. For details, see the following VMware knowledge base article: http://kb.vmware.com/kb/1009524

Using the EqualLogic Plugin with HBAs

The EqualLogic MEM fully supports the Broadcom NetXtreme II family with iSCSI offload. This adapter allows third party components such as the EqualLogic Host Connection Manager (EHCM) to add and remove iSCSI sessions. Such programmatic iSCSI session management allows the EHCM to maintain the optimal path configuration to each iSCSI target and thereby realize the full benefit of the EqualLogic MEM.

Independent HBAs, such as the QLogic QLE406xC, do not support iSCSI session management. Since iSCSI session management is an important piece of the EqualLogic MEM functionality, you will not see any performance gain when using the MEM in conjunction with these HBAs.

You can use the Broadcom iSCSI offload initiator in conjunction with the VMware software initiator. However, the two initiators must not be sharing physical NICs or VMkernel ports.

Each dependent HBA may have different scaling limits and may have different MTU support for jumbo frames. See the latest *VMware Compatibility Guide* or check with your hardware vendor for details for specific devices.

As the total number of iSCSI sessions approaches the adapter limit, the EHCM will reduce the number of sessions it creates to each iSCSI target in order to distribute the available sessions equitably. The EHCM will reserve a limited number of iSCSI sessions for discovering and logging in to new iSCSI targets. If the number of new iSCSI targets presented to the ESX server exceeds the number of reserved sessions, an additional rescan will need to be performed for the iSCSI initiator to discover and connect to all the new targets.

New In This Release

The following features are new in Version 1.1 of the Dell EqualLogic MEM:

- Support for VMware ESXi 5.0

  This version of the MEM adds support for the 5.0 release of ESXi.

- Integrated esxcli commands

  Management of the MEM can now be performed through commands that are integrated in the vSphere CLI esxcli tool.

- Support for vSphere AutoDeploy

  The Dell EqualLogic MEM provides a host profile plugin to expose the important configurable MPIO parameters through the host profile framework.

2 Known Issues

The following are restrictions and known issues for the Dell EqualLogic MEM.

VMkernel Port Binding and Host Profiles

Host profiles do not necessarily create the VMkernel ports in the same order they were created in originally. As a result, the vmk numbers may differ, which will cause the binding of specific VMkernel ports to the iSCSI initiator to fail.

MEM Set To Be Default PSP on Reboot

The Path Selection Policy (PSP) of the Dell EqualLogic MEM is set to be the default PSP for any new EqualLogic disks at the time of installation or after subsequent reboots. This setting only affects the default for new disks, it does not change any PSP assignments made for existing disks.

EqualLogic Plugin Cannot Be Installed Using Relative Path

If you attempt to install the MEM using a relative path, the installation will fail. You must supply the full path name when specifying the offline bundle zip file.

Restarting hostd After Installing the EqualLogic Plugin

The MEM functionality is available immediately after an installation. However, the new esxcli commands used to control and report status of the plugin are not available until the `hostd` process is restarted. This can be done without rebooting the server by connecting to the ESXi console and executing the following command:

```
/etc/init.d/hostd restart
```

See the following VMware Knowledge Base article for more information on this issue:

http://kb.vmware.com/kb/2004078

Upgrading From ESX 4.x

When upgrading from ESX 4.x to 5.0, any third party modules will not be transferred to the new operating system. After you have completed the operating system upgrade, you can install the MEM 1.1.0, which supports ESX 5.0.

Verifying the vSphere CLI installation

The setup.pl script relies on a valid installation of the vSphere CLI. If you encounter difficulty with the script, confirm your vSphere CLI installation is valid by running the following command:

```
esxcli --server=<hostname> system version get
```

Failure On One Physical Network Port Can Prevent iSCSI Session Rebalancing

In some cases, a network failure on a single physical NIC can affect kernel traffic on other NICs. This occurs if the physical NIC with the network failure is the only uplink for the VMKernel port that is used as the default route for the subnet. This affects several types of kernel network traffic, including ICMP pings which the EqualLogic MEM uses to test for connectivity on the SAN. The result is that the iSCSI session management functionality in the plugin will fail to rebuild the iSCSI sessions to respond to failures of SAN changes.

Installation Not Possible From VM Running on the ESXi Host

Because installation requires putting the ESXi host in maintenance mode, it is not possible to perform the installation from a vCenter Server, vCenter Update Manager, or VMware Management Assistant that is running as a VM on the ESXi host. The VMs must first be migrated to another ESXi host so they can continue running during the installation.

iSCSI HBA Limitations

At the time of this release, the Broadcom iSCSI adapter has the following limitations:

- Jumbo frames are not supported.
- The maximum number of iSCSI sessions that can be created from a single adapter port is 64.

For the latest capabilities, see the VMware Compatibility Guide. It is available at:

http://www.vmware.com/support/pubs

setup.pl Will Not Accept an Empty Password

The `setup.pl` script does not allow an empty password to be provided on the command line. If you are configuring an ESXi host using an account that does not have a password, omit the password option from the command line and the script will prompt you for a password at which point you can leave the field empty.