



# Dell EqualLogic Multipathing Extension Module Version 1.7 Release Notes

**Current Release Version:** 1.7  
**Previous Release Version:** 1.6

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

## Revision History

Revision	Date	Description
R1	April 2020	Version 1.7 initial release
R2	June 2021	Clarify ESXi support

## Installation Prerequisites

The following table lists the minimum revisions of software and firmware that is required for supporting the installation of the Dell EqualLogic MEM:

**Table 1. Installation Prerequisites**

Product	Revision
PS Series firmware	Version 10.0.3 or later
VMware ESXi	Versions 6.0, 6.5, 6.7
vSphere Client	vSphere 6.0, vSphere 6.5, vSphere 6.7
vSphere vMA or CLI	vSphere 6.0, vSphere 6.5, vSphere 6.7

**NOTE:** VMware Management Assistant (vMA) is no longer supported beginning with vSphere version 6.7.

**NOTE:** For vSphere CLI version 6.5 or 6.7, you also need to install Strawberry Perl 5.24 or higher separately. Refer to the *Dell EqualLogic Multipathing Extension Module Installation and User's Guide* for more information.

**NOTE:** The capability to import EqualLogic storage to a PowerStore array requires VMware ESXi version 6.5 U2 or VMware ESXi version 6.7 U3.

## Versions of Individual VIBs

The Dell EqualLogic MEM is distributed as an offline bundle that contains multiple VIBs. The version numbers of the individual VIBs do not necessarily match the version of the offline bundle.

## New and Changed Features

This version of the Multipathing Extension Module includes the following new and changed features:

- Support for PS Series firmware version 10.0.3
- Support for importing EqualLogic storage to Powerstore (requires VMware ESXi version 6.5 U2 or VMware ESXi version 6.7 U3.)

## Unsupported VMware Environments

The following environments are not supported by the Dell EqualLogic MEM:

- Offloaded data transfer (ODX)
  - Dell recommends using VMware VAAI as an alternative to ODX.
  - See the following Microsoft Tech Note: <https://technet.microsoft.com/JJ200627> for the procedure to disable ODX.
- The ESXi iSCSI initiator does not support IPv6 addressing for iSCSI multipathing.
- The only supported distributed virtual switch (dvs) is the VMware vNetwork Distributed Switch (vDS).
- ESXi iSCSI multipathing requires a non-routed network between the host and the iSCSI storage. For details, see this VMware Knowledge Base article: <https://kb.vmware.com/s/article/1009524>

**NOTE:** If you plan to import EqualLogic volumes to a PowerStore array, see the *Importing External Storage to PowerStore Guide* for supported operating systems.

## Changing the Multipathing Setting After Adding PE Targets

If you add protocol endpoint (PE) targets to support VVols in your environment after your initial configuration of the MEM, set the multipathing to `DELL_PSP_EQL_ROUTED` using the `setup.pl` script, `esxcli`, or vSphere UI. For details, see the *Dell EqualLogic Multipathing Extension Module Installation and User's Guide*.

Importing EqualLogic storage to PowerStore arrays is not supported when PE is configured on the host.

## Using the EqualLogic Plugin with HBAs


The 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 realize the full benefit of the EqualLogic MEM.

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

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

Each dependent HBA can have different scaling limits and can have different Maximum Transmission Unit (MTU) support for jumbo frames. See the latest *VMware Compatibility Guide* or check with your hardware vendor for details about specific devices.

As the total number of iSCSI sessions approaches the adapter limit, the EqualLogic Host Connection Manager (EHCM) will reduce the number of sessions it creates to each iSCSI target 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 extra rescan will need to be performed for the iSCSI initiator to discover and connect to all the new targets.

 **NOTE:** iSCSI HBAs are not supported when importing EqualLogic storage to PowerStore arrays.

## Known Issues

The following restrictions and known issues apply to version 1.7 of the Dell EqualLogic MEM.

### Console Error Message

The following console error message can be safely ignored. This message might be displayed during the installation or upgrade of the MEM.

```
<date/timestamp> cpu<#>:
Jumpstart dependency error; Initialization barrier "vmkeventd" is not provided
by any plugin but the following plugins require it: "psp-eql"
```

### Long Recovery Time After a Network Port Failure

If a network port fails, it can take up to 6 minutes for the status to be reflected in the MEM iSCSI connection status.

See the *Dell EqualLogic PS Series Release Notes* for descriptions of any additional array recovery issues.

bnx2i Broadcom iSCSI HBA drivers occasionally report an incorrect transfer length

Certain versions of the bnx2i Broadcom iSCSI HBA driver report an incorrect transfer length on iSCSI commands issued by the MEM. This error prevents the MEM from successfully reading the volume layout information. This limitation does not cause any data consistency errors, but impacts performance.

If you experience this problem, you see the following error messages in the `vmkernel.log` file (lines are wrapped here):

```
2013-03-26T11:12:29.839Z cpu2:10071)WARNING: dell_psp_eql_routed:
PspEqlReadRoutingTable:1138:Unable to read page table
2013-03-26T11:12:29.855Z cpu7:10071)WARNING: dell_psp_eql_routed:
PspEqlReadRoutingTable:1100:Invalid size in page table packet (length 4096,expected 484)
```

This issue is not seen in the driver shipped with ESXi 5.1, but has been observed in driver updates as recent as Version 2.76.56.v50.2, Build: 472560. At the time of this release, no fix is available from Broadcom.

### vSphere Client Warns About Loss of Redundant Paths

When the MEM closes iSCSI sessions, either as the result of a configuration change or to rebalance sessions across host and array network ports, the vSphere client logs a warning referring to loss of redundant paths. This behavior is expected and these warnings can be safely ignored in this case. These VMware KB articles provide more detail:

<https://kb.vmware.com/s/article/1009554>

<https://kb.vmware.com/s/article/1009555>

### iSCSI HBA Limitations

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

- Jumbo frames are supported for both dependent and independent hardware iSCSI adapters.
- 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* at the VMware documentation site.

### 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 that your vSphere CLI installation is valid by running this command:

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

# Installation

For instructions on installing the Dell EqualLogic Multipathing Extension Module , see the *Dell EqualLogic Multipathing Extension Module Installation and User's Guide*.

## 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. Go to **Dell.com/support**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.

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