

**EMC Support Matrix**  
**Unified VNXe-Series**  
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# EMC's Policies and Requirements for EMC Support Matrix

## EMC's Support Matrix Policies and Requirements

This section describes EMC's policies and requirements for the EMC Support Matrix document.

### Purpose and Limitations of this Document

This document is being provided for informational purposes only and may change at any time. This version supersedes and replaces all previous versions. The information is to serve only as a guide for those configurations/products that EMC has qualified. The information in this document is a subset of the information that can be found on the E-Lab Interoperability Navigator tool which is available for all EMC personnel, customers and partners. The E-Lab Interoperability Navigator site may be reached at <http://elabnavigator.emc.com>.

The information included in this document is intended as a guide in the configuration of systems for EMC's products. It is not intended to be the sole resource for system configuration. For more information or answers to questions not found in this document, please see EMC's website, other EMC documentation, relevant vendor documentation, or contact your EMC Sales or EMC Customer Service representative. For a complete listing of any known issues with the current support matrix content, please review the ESM Errata on E-Lab Interoperability Navigator. To report any issues with the content contained within the support matrix, follow the steps documented on the Contacts link on E-Lab Interoperability Navigator. E-Lab Interoperability Navigator can be reached at <http://elabnavigator.emc.com>.

### Policies for Qualifying Systems

Policies and procedures for support of EMC products are set forth in the customer's applicable agreements. EMC's publication of information relating to system configurations covers only those outlined in this document or by approval from EMC Engineering. Other system configurations not found in this document are not qualified without EMC Engineering approval. EMC has qualified hardware and software provided only by the vendors listed in this document, and host systems, hardware and software from other vendors are not qualified, and may never be. Please contact your EMC Sales or EMC Customer Service representative for updates or information not included in this document.

EMC maintains a large collection of the products listed above as well as third-party application software for qualification with EMC's storage systems and to simulate customer environments, but you must consult the vendors for information about their system internals, such as hardware and associated drivers.

### Policy for Future Qualification of Operating System Software Releases

The information in this document is maintained by EMC and EMC strives to update this document with new releases of hardware, operating systems, firmware, BIOS, switch software, etc., as they become available from the vendors. EMC works with the vendors during their development and release processes in order to be fully informed at the time the vendors release new versions. EMC does not announce qualification prior to vendors' General Availability. In some cases, EMC may choose to perform regression testing following the vendors' GA; in these cases and in cases where advance preparation is not possible, EMC may validate and qualify vendors' products as appropriate after they have been released. For early support of such products, including vendor beta participation, contact your EMC Sales or EMC Customer Service representative.

### Policy for End-of-Life Support

EMC strives to continue support for any installed platforms, but may remove support from this host matrix for new installations within three months after the vendor has announced that this platform has reached the end of life. EMC will continue support for existing installations of hardware, operating systems, and components that the vendor has officially declared to have reached end of life as long as support is available from the vendor. For the full list of EMC product end of life and end of support, please see the "Release and End of Life Dates" pages on the Support section of Powerlink.

## Storage Array Base Connectivity Configuration Notes

EMC recommends shutting down the host server during maintenance procedures that could cause the boot disk to become unavailable to the host. If the paging file is unavailable to the operating system, a crash can occur. (NOTE: EMC supports online microcode upgrades for Windows systems booting from Symmetrix and non-disruptive upgrades for Windows systems booting from CLARiiON arrays.) However, Windows must be able to perform any OS-level I/O functions during this upgrade with only a reasonable delay. To minimize the chance of I/O delay, you can reduce any host I/O to the boot host array ports, and for CLARiiON also ensure that paths are available to both SPs. Due to the Windows sensitivity with the boot device, the upgrade procedure should only be performed with the hosts online when it is not practical to shutdown the hosts. EMC recommends shutting down the boot host server during these maintenance procedures.

EMC has qualified the following hosts. No other hosts are supported at this time. Symmetrix and CLARiiON models and minimum Engenuity and Flare revisions are listed in the footnotes on most tables. CLARiiON CX4-120C8/CX4-240C8/CX4-480C8/CX4-960C8 require minimum Flare revision 04.28.000.5.701 or greater, and do not support Fibre Channel connection at 1Gb/s.

EMC supports Symmetrix and CLARiiON configured as a boot device for the servers listed below, provided that these requirements are followed. The purpose of these requirements is primarily to ensure the best possible response times for boot/root/swap volumes. For qualified configurations, where possible, EMC recommends an alternate mirrored boot volume be configured.

Events that could cause a system to crash when booting from external storage are:

- 1) Lost connection to external storage (pulled or damaged cable connection).
- 2) External storage service/upgrade procedures such as online microcode upgrades and/or configuration changes.
- 3) External storage director failures including failed lasers on Fibre Channel directors.
- 4) External storage power failure.
- 5) Storage area network failures such as Fibre Channel switches, switch components, and switch power failures.
- 6) Storage area network service/upgrade procedures such as firmware upgrades or hardware replacements.

1. Spindles can be shared on Symm4 or later units only.

Do not use a LUN in the CLARiiON DAE2-ATA as a host OS boot device. With Windows 2008 the CLARiiON SCOM Integration Pack provides functionality to fetch CLARiiON Central Monitoring Alerts and presents the alerts to administrators through the Microsoft System Center Operations Manager (SCOM) for reporting purposes. The CLARiiON SCOM Integration Pack can be downloaded from EMC's PowerLink:

[http://powerlink.emc.com/km/appmanager/km/secureDesktop?\\_nfpb=true&\\_pageLabel=servicesDownloadsTemplatePg&internalId=0b014066803fb21a&\\_irrt=true](http://powerlink.emc.com/km/appmanager/km/secureDesktop?_nfpb=true&_pageLabel=servicesDownloadsTemplatePg&internalId=0b014066803fb21a&_irrt=true)

2. Spindles can be shared if they are larger than 9GB in size.

Windows 2000/2003 Servers (Fibre Channel/SCSI) Boot CAUTION: Microsoft Windows uses virtual memory paging files that reside on the boot disk by default. Please refer to the information contained in Microsoft Knowledge Base article Q305547. The article explains how Microsoft supports booting Windows systems through a SAN (storage area network.)

3. For Symmetrix 3000 and 5000 systems, the maximum number of Symmetrix Logical volumes per Symmetrix boot port is 32 (based on parallel SCSI support). For Symmetrix 8000, DMX, and VMAX systems based on FC topology, the max supported number of Symm logical volumes per Symmetrix boot port is above and beyond 128. To implement boot devices, please follow below guidelines: - Booting over direct connect FC initiator port to Symmetrix port is fully supported through FC-AL topology. - EMC does not support FC-AL Hub for booting. - When using a SAN for boot/swap/page device the operation and performance of the server might be affected by external events that might cause the storage device not to be immediately accessible for periods of time. These events might result in slow response times as observed by the operating system and longer boot times. In some cases it can cause the server to crash (please see comments below for W2K).

EMC recommends designing the distribution and mapping of the boot devices on the SAN in a way that will:

-- Minimize the number of components between the server and the boot storage device. -- Single HBA zoning to prevent interaction between each host HBA ports and also reduce the external events that may impact each host HBA. -- Will not present a load that will exceed the limits of the SAN Fabric. -- Use of VCM, VDA or Automatic Provisioning (ACLX) to isolate each host initiator based port and device configuration -- Sufficient bandwidth to allow the host page swap and also host dump due to host panic on all host, SAN and Symmetrix components.

Below are some issues that must be considered when designing your SAN. Please refer to EMC Networked Storage Topology Guide ("Networked Storage Design Considerations/Fabric Design Practices" section) for a complete discussion on the topic.

- Sufficient bandwidth on the link between the switch and the storage port
- Sufficient ISLs in case where boot device and server are more than one hop apart
- ISL utilization

Events that could affect the availability of an external storage device:

Fibre Channel and SCSI environments:

- Lost connection to external storage (pulled or damaged external Fibre/SCSI cable connection).
- External storage service/upgrade procedures such as in some cases, online microcode upgrades and/or configuration changes.
- External storage director failures including failed lasers on Fibre Channel directors.
- External storage power failure.
- HBA failures.

Fibre Channel environment only:

- Storage area network failures such as Fibre Channel switches, switch components, and switch power failures.
- Storage area network service/upgrade procedures such as firmware upgrades or hardware replacements.

4. Boot/root and swap from a single host can be on the same channel.

5. The boot disk should be high SCSI priority, e.g. SCSI TID 6 (0-7, 8-15: higher priority TID is 7, lowest is 8).

6. A dedicated SA or FA is not required for boot devices.

7. The Internal Host Boot Device may be mirrored with the External Symmetrix Boot Device to allow redundant pathing. Does not apply to Microsoft Windows.

8. The Boot path must not include a hub in the topology.

9. The maximum number of boot devices per port is equal to Fanout values listed in the Storage Array Properties table.

Note: All of the requirements below are necessary for Symmetrix 3/5000 Series. It is recommended, however, that they be considered for Symmetrix 8000 Series also.

CX200LC configurations are limited to direct attach configurations under the CX200 section. PowerPath and AccessLogix are not supported on CX200LC.

1. The Boot Device may not be a striped Meta Device on a Symmetrix 4.x.

2. One spindle cannot house both boot/root and swap for any single host (does not apply to Microsoft Windows).

3. One spindle cannot house boot/root for a given host and either boot/root or swap from another host.

4. One spindle should not house swap from more than one host, nor should there be excessive swapping.

5. The maximum number of hypervisors per Symmetrix spindle is 8.

- 6. A spindle housing boot/root for a given host should be behind a different Director than the spindle housing swap for that host.
- 7. Remaining hyper volumes on boot/root or swap spindle should be low-utilization and not high write content.

Where replication of boot LUN is supported, any use of the replicated boot LUN other than in original host may lead to hardware/configuration mismatch that render the replicated boot LUN unusable. Any issues that arise in trying to use the boot LUN in a host that is non-identical to the source host is outside of the scope of what EMC can support. Also, in any case due to environment failure where I/O is not written back to the source LUN, or if the source LUN is not left in a stable state by the source host, the replicated LUN is not guaranteed to be any more usable than the source. Also, there may be specific software licensing that needs to be investigated when duplicating the boot LUN.

**Oracle Solaris**

**Oracle**

**NEC**

NEC								
No.	Host System	Operating System	Host Bus	Minimum OS Revision	Host Bus Adapter	Topology	Storage Array	External Boot
1	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
2	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 3 (11/06)16	Emulex: LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
3	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 3 (11/06)16	Emulex: LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
4	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
5	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
6	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 3 (11/06)16	Emulex: LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
7	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 3 (11/06)16	Emulex: LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
8	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
9	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
10	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
11	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
12	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Emulex: LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
13	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Emulex: LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
14	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Oracle SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N: (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37; Oracle SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N: (QLE2460)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40, (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40; Oracle SG-XPCIE2FC-EM4: (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37; Oracle SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N: (QLE2462)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40, (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
15	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12

16	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	Oracle: SG-XPICIE1FC-QF8-Z/SG-XPICIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPICIE2FC-QF8-Z/SG-XPICIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
17	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update 4 (08/07)16	QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 35, 41, 43, 50, QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, 35, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24, 35	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
18	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update: 3 (11/06)16, 4 (08/07)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
19	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI	S10 Update: 3 (11/06)16, 4 (08/07)16	Emulex: LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
20	NEC CX5000 E: T5140, T5240	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
21	NEC CX5000 E: T5120, T5220	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
22	NEC CX5000 E: T5140, T5240	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	Oracle: SG-XPICIE1FC-EM4/SG-XPICIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, SG-XPICIE1FC-QF4/SG-XPICIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40, SG-XPICIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, SG-XPICIE2FC-QF4/SG-XPICIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
23	NEC CX5000 E: T5120, T5220	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	Oracle: SG-XPICIE1FC-EM4/SG-XPICIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPICIE1FC-QF4/SG-XPICIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPICIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPICIE2FC-QF4/SG-XPICIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
24	NEC CX5000 E: T5120, T5140, T5220, T5240	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	Oracle: SG-XPICIE1FC-EM8-Z/SG-XPICIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPICIE2FC-EM8-Z/SG-XPICIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
25	NEC CX5000 E: T5120, T5140, T5220, T5240	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	Oracle: SG-XPICIE1FC-QF8-Z/SG-XPICIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPICIE2FC-QF8-Z/SG-XPICIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
26	NEC CX5000 E: T5140, T5240	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 35, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 35, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, 35, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24, 35	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
27	NEC CX5000 E: T5120, T5220	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express	S10 Update 4 (08/07)16	QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
28	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP9002-E (LP9002L-E1), 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
29	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP9002-E (LP9002L-E1), 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
30	NEC CX5000 E: M4000100, M5000100, M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex: LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
31	NEC CX5000 E: M4000100, M5000100, M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex: LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
32	NEC CX5000 E: M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49

33	NEC CX5000 E: M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex: LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
34	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCH1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCH2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
35	NEC CX5000 E: M4000100, M5000100, M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCH2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
36	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, SG-XPCH1FC-QF8-Z/SG-XPCH1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCH2FC-QF8-Z/SG-XPCH2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
37	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9
38	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCH1FC-EM8-Z/SG-XPCH1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCH2FC-EM8-Z/SG-XPCH2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
39	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
40	NEC CX5000 E: M4000100, M5000100, M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34	PCI Express, PCI-X	S10 Update 3 (11/06)16	QLogic: QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
41	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
42	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
43	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
44	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
45	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Emulex: LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
46	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Emulex: LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
47	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 36, 37, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 36, 37, 41, 42, 43	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
48	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
49	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express	S10 Update 3 (11/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49

50	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express	S10 Update 3 (11/06)16	Oracle: SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
51	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express	S10 Update 3 (11/06)16	Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
52	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express	S10 Update 3 (11/06)16	Oracle: SG-XPCIE1FC-QF8-Z/SG-XPCIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCIE2FC-QF8-Z/SG-XPCIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
53	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express	S10 Update 3 (11/06)16	QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 36, 37, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 36, 37, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
54	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
55	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPC11FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, SG-XPC11FC-EM4-Z/SG-XPC11FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPC11FC-EM4/SG-XPC11FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPC11FC-QF4/SG-XPC11FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPC12FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, SG-XPC12FC-EM4-Z/SG-XPC12FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPC12FC-EM4/SG-XPC12FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
56	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPC12FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, SG-XPCIE1FC-QF8-Z/SG-XPCIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCIE2FC-QF8-Z/SG-XPCIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62, X6768A (SG-XPC12FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
57	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPC12FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, X6768A (SG-XPC12FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9
58	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
59	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI Express, PCI-X	S10 Update 3 (11/06)16	QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
60	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
61	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle SG-XPC11FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
62	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65	PCI	S10 Update 2 (06/06)16	Emulex LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
63	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65	PCI	S10 Update 2 (06/06)16	Oracle SG-XPC11FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
64	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Emulex LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49

65	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Oracle SG-XPCH1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
66	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65, 66	PCI	Solaris 10 (03/05)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 37, 47, 55, 56, 57, 58, 59, 60, 79, LP10000DC-E1, 2, 3, 4, 5, 24, 37, 47, 55, 56, 57, 58, 59, 60, 79, LP11000-E1, 2, 3, 4, 5, 36, 37, 47, 52, 53, 54, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
67	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65, 66	PCI	Solaris 10 (03/05)16	Oracle: SG-XPCH1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, 55 SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCH2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, 55 SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
68	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65, 66	PCI	Solaris 10 (03/05)16	Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 71, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 37, 67, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
69	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, 65, 66	PCI	Solaris 10 (03/05)16	QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
70	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
71	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
72	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
73	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Emulex: LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
74	NEC CX5000 F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Emulex: LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
75	NEC CX5000 F490	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Emulex: LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
76	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Oracle: SG-XPCH1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCH2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36 SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCH2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
77	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Oracle: SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, SG-XPCH2FC-QF8-Z/SG-XPCH2FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCH2FC-QF8-Z/SG-XPCH2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
78	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Oracle: SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9
79	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	Oracle: SG-XPCH2FC-EM8-Z/SG-XPCH2FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCH2FC-EM8-Z/SG-XPCH2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12

80	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI	S10 Update 2 (06/06)16	QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
81	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
82	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Oracle: SG-XPCI1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCI1FC-EM4-Z/SG-XPCI1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPCI1FC-EM4/SG-XPCI1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCI1FC-QF4/SG-XPCI1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCI2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCI2FC-EM4-Z/SG-XPCI2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPCI2FC-EM4/SG-XPCI2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
83	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Oracle: SG-XPCI2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, SG-XPCIE1FC-QF8-Z/SG-XPCIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCIE2FC-QF8-Z/SG-XPCIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62, X6768A (SG-XPCI2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
84	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Oracle: SG-XPCI2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, X6768A (SG-XPCI2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9
85	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
86	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
87	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06)16	Oracle: SG-XPCI1FC-QF4/SG-XPCI1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 38, 39, 40, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
88	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06)16	QLogic: QLA2460-E-SP18, 19, 20, 21, 24, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 42, 43, 51	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
89	NEC CX5000 E: M4000100, M5000100, M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Emulex LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
90	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle SG-XPCI1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
91	NEC CX5000 E: M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCI1FC-QF4/SG-XPCI1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 38, 39, 40, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 38, 39, 40, SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
92	NEC CX5000 E: M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
93	NEC CX5000 E: M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle: SG-XPCIE1FC-QF8-Z/SG-XPCIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCIE2FC-QF8-Z/SG-XPCIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
94	NEC CX5000 E: M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	QLogic: QLA2460-E-SP18, 19, 20, 21, 24, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 42, 43, 51, QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17

95	NEC CX5000: E T2000101, F T2000101	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 63	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
96	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 63, 64, 65, 66	PCI	Solaris 10 (03/05)16	Emulex: LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 37, 55, 56, 57, 58, 80, 81, 82, 83, LP9002DC-E1, 2, 3, 6, 24, 37, 55, 56, 57, 58, 80, 81, 82, 83, 84, 85, LP9802-E1, 2, 3, 6, 24, 37, 55, 56, 57, 58, 59, 60, 79, 80, 81	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
97	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 63, 64, 65, 66	PCI	Solaris 10 (03/05)16	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
98	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 63, 64, 65, 66	PCI	Solaris 10 (03/05)16	Oracle X6767A (SG-XPCI1FC-QF2)15, 19, 20, 21, 24, 37, 67, 69, 70, 86	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
99	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 63, 65	PCI	S10 Update 2 (06/06)16	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
100	NEC CX5000: F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 63, 65	PCI Express, PCI-X	S10 Update 2 (06/06)16	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
101	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 64	PCI	S10 Update 3 (11/06)16	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
102	NEC CX5000 E: M8000, M9000	Oracle Solaris 10 SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 64	PCI Express, PCI-X	S10 Update 3 (11/06)16	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
103	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06)16	Emulex LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
104	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, 64, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06)16	Oracle SG-XPCI1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
105	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
106	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Oracle: SG-XPCI1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCI1FC-EM4-Z/SG-XPCI1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPCI1FC-EM4/SG-XPCI1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCI1FC-QF4/SG-XPCI1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCI2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCI2FC-EM4-Z/SG-XPCI2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPCI2FC-EM4/SG-XPCI2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
107	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	Oracle: SG-XPCI2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, X6768A (SG-XPCI2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
108	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63	PCI	S10 Update 3 (11/06)16	QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17

109	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06) <sup>16</sup>	Oracle SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462) <sup>14, 15, 19, 20, 21, 36, 37, 38, 39, 40</sup>	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
110	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06) <sup>16</sup>	Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000) <sup>1, 2, 3, 4, 14, 15, 24, 47</sup> , SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002) <sup>1, 2, 3, 4, 14, 15, 24, 47</sup>	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
111	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06) <sup>16</sup>	Oracle: SG-XPCIE1FC-QF8-Z/SG-XPCIE1FC-QF8-N (QLE2560) <sup>14, 15, 19, 20, 21, 24, 61, 62</sup> , SG-XPCIE2FC-QF8-Z/SG-XPCIE2FC-QF8-N (QLE2562) <sup>14, 15, 19, 20, 21, 24, 62</sup>	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
112	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 63, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 64	PCI	S10 Update 3 (11/06) <sup>16</sup>	QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
113	NEC CX5000: F490, F890	Oracle Solaris 10: SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, SPARC16, 25, 26, 27, 28, 29, 30, 31, 32, 33, 63	PCI	S10 Update 3 (11/06) <sup>16</sup>	Oracle SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462) <sup>14, 15, 19, 20, 21, 36, 38, 39, 40</sup>	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
114	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 11 SPARC	PCI		Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 37, 47, 55, 56, 57, 58, 59, 60, 79, LP10000DC-E1, 2, 3, 4, 5, 24, 37, 47, 55, 56, 57, 58, 59, 60, 79, LP11000-E1, 2, 3, 4, 5, 36, 37, 47, 52, 53, 54, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 37, 55, 56, 57, 58, 80, 81, 82, 83, LP9002DC-E1, 2, 3, 24, 37, 55, 56, 57, 58, 80, 81, 82, 83, 84, 85, LP9802-E1, 2, 3, 6, 24, 37, 55, 56, 57, 58, 59, 60, 79, 80, 81	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
115	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83, LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
116	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60, LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83, LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
117	NEC CX5000 F890	Oracle Solaris 11 SPARC	PCI		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
118	NEC CX5000 F890	Oracle Solaris 11 SPARC	PCI		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
119	NEC CX5000 F490	Oracle Solaris 11 SPARC	PCI		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
120	NEC CX5000 F490	Oracle Solaris 11 SPARC	PCI		Emulex: LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49

121	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 11 SPARC	PCI		Oracle: SG-XPCH1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, 55 SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCH2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, 55 SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
122	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Oracle: SG-XPCH1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, 38, 39, 40, SG-XPCH2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 38, 39, 40, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 38, 39, 40, SG-XPCH2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, SG-XPCH2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
123	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, SG-XPCH1FC-QF8-Z/SG-XPCH1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCH2FC-QF8-Z/SG-XPCH2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
124	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9
125	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 11 SPARC	PCI		Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 71, X6767A (SG-XPCH1FC-QF2)15, 19, 20, 21, 24, 37, 67, 69, 70, 86, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 37, 67, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
126	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Oracle: SG-XPCH1FC-EM8-Z/SG-XPCH1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCH2FC-EM8-Z/SG-XPCH2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
127	NEC CX5000: F20K, F2900, F490, F4900, F6900, F890	Oracle Solaris 11 SPARC	PCI		QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
128	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		QLogic: QLA2460-E-SP18, 19, 20, 21, 24, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 42, 43, 51, QLE2460-E-SP18, 19, 20, 21, 24, 35, 41, 43, 50, QLE2460-E-SP18, 19, 20, 21, 24, 36, 37, 41, 43, 50, QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 36, 37, 41, 42, 43, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, 35, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24, 35	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
129	NEC CX5000 E: T5140, T5240	Oracle Solaris 11 SPARC	PCI Express		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
130	NEC CX5000 E: T5140, T5240	Oracle Solaris 11 SPARC	PCI Express		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 35, 47, 52, 53, 54, LPe12000-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 35, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 35, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
131	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 11 SPARC	PCI Express		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
132	NEC CX5000 E: T5120, T5220	Oracle Solaris 11 SPARC	PCI Express		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
133	NEC CX5000 E: T5120, T5220	Oracle Solaris 11 SPARC	PCI Express		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
134	NEC CX5000 E: T1000101, T5120, T5220;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		Emulex: LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49

135	NEC CX5000 E: T1000101, T5120, T5220;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		Emulex: LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
136	NEC CX5000 E: T5140, T5240	Oracle Solaris 11 SPARC	PCI Express		Oracle: SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40, SG-XPCIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 35, 36, 37, SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 35, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
137	NEC CX5000 E: T1000101, T5120, T5220;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		Oracle: SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40, SG-XPCIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
138	NEC CX5000 E: T1000101, T5120, T5140, T5220, T5240;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y9, 10, 12
139	NEC CX5000 E: T1000101, T5120, T5140, T5220, T5240;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		Oracle: SG-XPCIE1FC-QF8-Z/SG-XPCIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCIE2FC-QF8-Z/SG-XPCIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y9, 11, 13
140	NEC CX5000 E: T5140, T5240	Oracle Solaris 11 SPARC	PCI Express		QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 35, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 35, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, 35, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24, 35	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
141	NEC CX5000: E T1000101, F T1000101	Oracle Solaris 11 SPARC	PCI Express		QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 36, 37, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 36, 37, 41, 42, 43	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
142	NEC CX5000 E: T5120, T5220	Oracle Solaris 11 SPARC	PCI Express		QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
143	NEC CX5000 E: T1000101, T5120, T5220;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		QLogic: QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
144	NEC CX5000 E: M4000100, M5000100, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LP10000-E1, 2, 3, 4, 5, 6, 24, 47, 55, 56, 57, 58, 59, 60, LP10000DC-E1, 2, 3, 4, 5, 24, 47, 55, 56, 57, 58, 59, 60	FC-AL, FC-SW	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
145	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNxe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
146	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245,	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LP11000-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LP11002-E1, 2, 3, 4, 5, 24, 36, 37, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNxe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49

	F445							
147	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83 LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
148	NEC CX5000 E: M4000100, M5000100	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LP9002-E (LP9002L-E)1, 2, 3, 6, 24, 56, 57, 58, 80, 81, 82, 83 LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
149	NEC CX5000 E: M8000, M9000, T2000101; NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
150	NEC CX5000 E: M8000, M9000, T2000101; NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe11000-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11000-E1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe11002-E-G1, 2, 3, 4, 5, 24, 47, 52, 53, 54, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
151	NEC CX5000 E: M4000100, M5000100, T2000101; NEC CX5000 F T2000101	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
152	NEC CX5000: E T2000101, F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
153	NEC CX5000 E: M4000100, M5000100, M8000, M9000	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
154	NEC CX5000 E: M8000, M9000; NEC CX5000: F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe12000-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12000-E-G1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
155	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101; NEC CX5000 F T2000101	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
156	NEC CX5000: F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: LPe12002-E1, 2, 3, 24, 44, 45, 46, 47, 48, LPe12002-E-G1, 2, 3, 24, 44, 45, 46, 47, 48	FC-AL, FC-SW	EMC Unified Storage VNXe3100 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
157	NEC CX5000 E: M4000100, M5000100, T2000101; NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Oracle: SG-XPCI1FC-EM2 (LP10000)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCI1FC-QF4/SG-XPCI1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCI2FC-EM2 (LP10000DC)1, 2, 3, 4, 5, 6, 14, 15, SG-XPCI2FC-QF4/SG-XPCI2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 36, 38, 39, 40, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
158	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101; NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Oracle: SG-XPCI1FC-EM4-Z/SG-XPCI1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, SG-XPCI1FC-EM4/SG-XPCI1FC-EM4-Z-N (LP11000)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCI2FC-EM4-Z/SG-XPCI2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 24, 36, 81, SG-XPCI2FC-EM4/SG-XPCI2FC-EM4-Z-N (LP11002)1, 2, 3, 4, 5, 6, 14, 15, 36, SG-XPCIE1FC-EM4/SG-XPCIE1FC-EM4-N (LPe11000)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE2FC-EM4 (LPe11002)1, 2, 3, 4, 5, 6, 14, 15, 36, 37, SG-XPCIE2FC-QF4/SG-XPCIE2FC-QF4-N (QLE2462)14, 15, 19, 20, 21, 36, 37, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13

159	NEC CX5000 E: M8000, M9000	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Oracle: SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 19, 20, 21, 38, 39, 40, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 19, 20, 21, 38, 39, 40, SG-XPCIE1FC-QF4/SG-XPCIE1FC-QF4-N (QLE2460)14, 15, 19, 20, 21, 38, 39, 40	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
160	NEC CX5000 E: M4000100, M5000100, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 19, 20, 21, 24, 70, 71, 86, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 19, 20, 21, 24, 70, 86, X6768A (SG-XPCH2FC-QF2)15, 19, 20, 21, 24, 68, 69, 70	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
161	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Oracle: SG-XPCIE1FC-EM8-Z/SG-XPCIE1FC-EM8-N (LPe12000)1, 2, 3, 4, 14, 15, 24, 47, SG-XPCIE2FC-EM8-Z/SG-XPCIE2FC-EM8-N (LPe12002)1, 2, 3, 4, 14, 15, 24, 47	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 10, 12
162	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Oracle: SG-XPCIE1FC-QF8-Z/SG-XPCIE1FC-QF8-N (QLE2560)14, 15, 19, 20, 21, 24, 61, 62, SG-XPCIE2FC-QF8-Z/SG-XPCIE2FC-QF8-N (QLE2562)14, 15, 19, 20, 21, 24, 62	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, 11, 13
163	NEC CX5000 E: M4000100, M5000100, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		QLogic: QLA2340-E-SP19, 20, 21, 24, 73, 74, 75, 76, 77, 78, QLA2342-E-SP19, 20, 21, 24, 72, 73, 74, 75, 76, 77, QLA2460-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 36, 37, 42, 43, 51	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
164	NEC CX5000 E: M8000, M9000	Oracle Solaris 11 SPARC	PCI Express, PCI-X		QLogic: QLA2460-E-SP18, 19, 20, 21, 24, 42, 43, 51, QLA2462-E-SP18, 19, 20, 21, 24, 42, 43, 51	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
165	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		QLogic: QLE2460-E-SP18, 19, 20, 21, 24, 41, 43, 50, QLE2462-E-SP18, 19, 20, 21, 24, 41, 42, 43, QLE2560-E-SP18, 19, 20, 21, 22, 23, 24, QLE2562-E-SP18, 19, 20, 21, 22, 23, 24	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
166	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC102	PCI		Emulex: LP10000-E4, 5, 6, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP10000DC-E4, 5, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP11000-E4, 5, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP11002-E4, 5, 24, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP9002-E (LP9002L-E)6, 37, 56, 57, 58, 80, 81, 82, 83, 103, 104, 105, 106, LP9002DC-E37, 56, 57, 58, 80, 81, 82, 83, 84, 85, 103, 104, 106, 110, 111, LP9802-E6, 24, 37, 56, 57, 58, 59, 60, 79, 80, 81, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
167	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC102	PCI		Oracle: SG-XPCH1FC-EM2 (LP10000)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 24, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108, SG-XPCH2FC-EM2 (LP10000DC)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 24, 36, 81, 103, 104, 105, 106, 108, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
168	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC102	PCI		Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 24, 70, 71, 103, 104, 105, 106, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 24, 70, 71, 103, 104, 105, X6767A (SG-XPCH1FC-QF2)15, 24, 37, 67, 69, 70, 86, 103, 104, 105, 106, X6768A (SG-XPCH2FC-QF2)15, 24, 37, 67, 68, 69, 70, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
169	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC102	PCI		QLogic: QLA2340-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, QLA2342-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, 109, QLA2460-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108, QLA2462-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17

170	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC102	PCI Express, PCI-X		Emulex: LP10000-E4, 5, 6, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP10000DC-E4, 5, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP11000-E4, 5, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP11002-E4, 5, 24, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP9002-E (LP9002L-E)6, 37, 56, 57, 58, 80, 81, 82, 83, 103, 104, 105, 106, LP9002DC-E37, 56, 57, 58, 80, 81, 82, 83, 84, 85, 103, 104, 106, 110, 111, LP9802-E6, 24, 37, 56, 57, 58, 59, 60, 79, 80, 81, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
171	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC102	PCI Express, PCI-X		Oracle: SG-XPCH1FC-EM2 (LP10000)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 24, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108, SG-XPCH2FC-EM2 (LP10000DC)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 24, 36, 81, 103, 104, 105, 106, 108, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
172	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC102	PCI Express, PCI-X		Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 24, 70, 71, 103, 104, 105, 106, 106, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 24, 70, 71, 103, 104, 105, X6767A (SG-XPCH1FC-QF2)15, 24, 37, 67, 69, 70, 86, 103, 104, 105, 106, X6768A (SG-XPCH2FC-QF2)15, 24, 37, 67, 68, 69, 70, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
173	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC102	PCI Express, PCI-X		QLogic: QLA2340-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, QLA2342-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, 109, QLA2460-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108, QLA2462-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
174	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC16, 102	PCI	04/0416	Emulex: LP10000-E4, 5, 6, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP10000DC-E4, 5, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP11000-E4, 5, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP11002-E4, 5, 24, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP9002-E (LP9002L-E)6, 37, 56, 57, 58, 80, 81, 82, 83, 103, 104, 105, 106, LP9002DC-E37, 56, 57, 58, 80, 81, 82, 83, 84, 85, 103, 104, 106, 110, 111, LP9802-E6, 24, 37, 56, 57, 58, 59, 60, 79, 80, 81, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
175	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC16, 102	PCI	04/0416	Oracle: SG-XPCH1FC-EM2 (LP10000)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 24, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108, SG-XPCH2FC-EM2 (LP10000DC)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 24, 36, 81, 103, 104, 105, 106, 108, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
176	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC16, 102	PCI	04/0416	Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 24, 70, 71, 103, 104, 105, 106, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 24, 70, 71, 103, 104, 105, X6767A (SG-XPCH1FC-QF2)15, 24, 37, 67, 69, 70, 86, 103, 104, 105, 106, X6768A (SG-XPCH2FC-QF2)15, 24, 37, 67, 68, 69, 70, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
177	NEC CX5000: F20K107, F2900, F490, F4900, F6900, F890	Oracle Solaris 9 SPARC16, 102	PCI	04/0416	QLogic: QLA2340-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, QLA2342-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, 109, QLA2460-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108, QLA2462-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
178	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC16, 102	PCI Express, PCI-X	04/0416	Emulex: LP10000-E4, 5, 6, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP10000DC-E4, 5, 37, 47, 56, 57, 58, 59, 60, 79, 103, 104, 105, 106, LP11000-E4, 5, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP11002-E4, 5, 24, 36, 37, 47, 52, 53, 54, 103, 104, 105, 106, 108, LP9002-E (LP9002L-E)6, 37, 56, 57, 58, 80, 81, 82, 83, 103, 104, 105, 106, LP9002DC-E37, 56, 57, 58, 80, 81, 82, 83, 84, 85, 103, 104, 106, 110, 111, LP9802-E6, 24, 37, 56, 57, 58, 59, 60, 79, 80, 81, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 49
179	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC16, 102	PCI Express, PCI-X	04/0416	Oracle: SG-XPCH1FC-EM2 (LP10000)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH1FC-EM4-Z/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 24, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-EM4/SG-XPCH1FC-EM4-Z-N (LP11000)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH1FC-QF4/SG-XPCH1FC-QF4-N (QLA2460)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108, SG-XPCH2FC-EM2 (LP10000DC)4, 5, 6, 14, 15, 103, 104, 105, 106, SG-XPCH2FC-EM4-Z/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 24, 36, 81, 103, 104, 105, 106, 108, SG-XPCH2FC-EM4/SG-XPCH2FC-EM4-Z-N (LP11002)4, 5, 6, 14, 15, 36, 103, 104, 105, 106, 108, SG-XPCH2FC-QF4/SG-XPCH2FC-QF4-N (QLA2462)14, 15, 36, 38, 39, 40, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13
180	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC16, 102	PCI Express, PCI-X	04/0416	Oracle: SG-XPCH1FC-QL2 (QLA2340)14, 15, 24, 70, 71, 103, 104, 105, 106, SG-XPCH2FC-QF2-Z (X6768A)14, 15, 24, 70, 71, 103, 104, 105, X6767A (SG-XPCH1FC-QF2)15, 24, 37, 67, 69, 70, 86, 103, 104, 105, 106, X6768A (SG-XPCH2FC-QF2)15, 24, 37, 67, 68, 69, 70, 103, 104, 105, 106	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9, Y9, 11, 13
181	NEC CX5000: F215, F245, F445	Oracle Solaris 9 SPARC16, 102	PCI Express, PCI-X	04/0416	QLogic: QLA2340-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, QLA2342-E-SP24, 73, 74, 75, 76, 77, 78, 103, 104, 105, 106, 109, QLA2460-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108, QLA2462-E-SP18, 24, 36, 37, 42, 43, 51, 103, 104, 105, 106, 108	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7, 8, 9, 10, 11, 12, 13, 17
182	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC25, 28, 29, 30, 32, 33	PCI	S10 Update 8 (10/09)	Oracle: SG-XPCH1FC-QE2-Q-SR (QLE8142 CNA)18, 19, 20, 21, 24, 35, 93, SG-XPCH1FC-QE2-Q-TA (QLE8152 CNA)18, 20, 21, 24, 35, 92, 93, 94; QLogic: QLE8140-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8142-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8150-CU-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99	FCoE	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N

183	NEC CX5000 E: T1000101, T5120, T5140, T5220, T5240;  NEC CX5000 F T1000101	Oracle Solaris 10 SPARC25, 28, 29, 30, 32, 33	PCI Express	S10 Update 8 (10/09)	Oracle: SG-XPCIEFCOE2-Q-SR (QLE8142 CNA)18, 19, 20, 21, 24, 35, 93, SG-XPCIEFCOE2-Q-TA (QLE8152 CNA)18, 20, 21, 24, 35, 92, 93, 94;  QLogic: QLE8140-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8142-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8150-CU-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99	FCoE	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
184	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 10 SPARC25, 28, 29, 30, 32, 33	PCI Express, PCI-X	S10 Update 8 (10/09)	Oracle: SG-XPCIEFCOE2-Q-SR (QLE8142 CNA)18, 19, 20, 21, 24, 35, 93, SG-XPCIEFCOE2-Q-TA (QLE8152 CNA)18, 20, 21, 24, 35, 92, 93, 94;  QLogic: QLE8140-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8142-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8150-CU-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99	FCoE	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
185	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Oracle: SG-XPCIEFCOE2-Q-SR (QLE8142 CNA)18, 19, 20, 21, 24, 35, 93, SG-XPCIEFCOE2-Q-TA (QLE8152 CNA)18, 20, 21, 24, 35, 92, 93, 94;  QLogic: QLE8140-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8142-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8150-CU-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99	FCoE	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
186	NEC CX5000 E: T1000101, T5120, T5140, T5220, T5240;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		Oracle: SG-XPCIEFCOE2-Q-SR (QLE8142 CNA)18, 19, 20, 21, 24, 35, 93, SG-XPCIEFCOE2-Q-TA (QLE8152 CNA)18, 20, 21, 24, 35, 92, 93, 94;  QLogic: QLE8140-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8142-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8150-CU-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99	FCoE	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
187	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Oracle: SG-XPCIEFCOE2-Q-SR (QLE8142 CNA)18, 19, 20, 21, 24, 35, 93, SG-XPCIEFCOE2-Q-TA (QLE8152 CNA)18, 20, 21, 24, 35, 92, 93, 94;  QLogic: QLE8140-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8142-SR-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99, QLE8150-CU-E-SP (CNA)18, 19, 20, 21, 24, 35, 93, 99	FCoE	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
188	NEC CX5000: F490, F890	Oracle Solaris 10 SPARC16, 25, 28, 29, 30, 32, 33	PCI	S10 Update 8 (10/09)16	Emulex: OCe10102-FM-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe10102-FX-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe11102-FM-E (CNA)1, 2, 24, 87, 88, 89, 90, 91, OCe11102-FX-E (CNA)1, 2, 24, 87, 88, 89, 90, 91	FCoE, Network: IP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
189	NEC CX5000 E: T1000101, T5120, T5140, T5220, T5240;  NEC CX5000 F T1000101	Oracle Solaris 10 SPARC16, 25, 28, 29, 30, 32, 33	PCI Express	S10 Update 8 (10/09)16	Emulex: OCe10102-FM-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe10102-FX-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe11102-FM-E (CNA)1, 2, 24, 87, 88, 89, 90, 91, OCe11102-FX-E (CNA)1, 2, 24, 87, 88, 89, 90, 91	FCoE, Network: IP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
190	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 10 SPARC16, 25, 28, 29, 30, 32, 33	PCI Express, PCI-X	S10 Update 8 (10/09)16	Emulex: OCe10102-FM-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe10102-FX-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe11102-FM-E (CNA)1, 2, 24, 87, 88, 89, 90, 91, OCe11102-FX-E (CNA)1, 2, 24, 87, 88, 89, 90, 91	FCoE, Network: IP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
191	NEC CX5000: F490, F890	Oracle Solaris 11 SPARC	PCI		Emulex: OCe10102-FM-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe10102-FX-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe11102-FM-E (CNA)1, 2, 24, 87, 88, 89, 90, 91, OCe11102-FX-E (CNA)1, 2, 24, 87, 88, 89, 90, 91	FCoE, Network: IP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
192	NEC CX5000 E: T1000101, T5120, T5140, T5220, T5240;  NEC CX5000 F T1000101	Oracle Solaris 11 SPARC	PCI Express		Emulex: OCe10102-FM-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe10102-FX-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe11102-FM-E (CNA)1, 2, 24, 87, 88, 89, 90, 91, OCe11102-FX-E (CNA)1, 2, 24, 87, 88, 89, 90, 91	FCoE, Network: IP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N

193	NEC CX5000 E: M4000100, M5000100, M8000, M9000, T2000101;  NEC CX5000: F T2000101, F215, F245, F445	Oracle Solaris 11 SPARC	PCI Express, PCI-X		Emulex: OCe10102-FM-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe10102-FX-E (CNA)1, 2, 3, 24, 87, 90, 91, 95, 96, 97, 98, OCe1102-FM-E (CNA)1, 2, 24, 87, 88, 89, 90, 91, OCe1102-FX-E (CNA)1, 2, 24, 87, 88, 89, 90, 91	FCoE, Network: IP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
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1. Driver Version V2.60h (Solaris Patch 145098-04)
2. Driver Version V2.60k (Solaris Patch 145953-06)
3. Driver Version V2.50p (Solaris Patch 145098-02)
4. FCode Value 3.01a1
5. FCode Value 3.00a2
6. FCode Value 1.50a9
7. Requires at least Rev 03 of LP8000-N1 HBA (part # 118031355-03)
8. QCP2202F-E-SP/QLA234x-E-SP requires fcode v2.00.06. Fcode should be loaded on all HBA's at the time of installation.
9. For FC-AL hub connection not supported for boot device.
10. Note: Boot with DS-8B/DS-16B switches using 2.2.1a or 2.3 switch firmware requires HBA fcode v1.12a1 or higher.
11. FCode 1.17 is the minimum necessary for boot from SAN.
12. Boot from SAN support is maximum of 10 servers per EMC array port.
13. The minimum firmware requirement for boot support is 2.10a10.
14. This adapter has another name without the "X" in front of "PCI", such as SG-PCI....
15. Support firmware revision that comes along with Solaris Leadville driver. The driver automatically updates the firmware on Sun-branded cards to the correct supported version.
16. Minimum supported OS revision with the server
17. Support for CX700, CX500, CX300, CX600, CX400, FC4500, FC4700, and FC5300. (FC5300 requires copper to Fibre transceiver.)
18. FCode Value 3.15
19. Driver Version V3.00 (Solaris Patch 143957-03)
20. Driver Version V3.00p (Solaris Patch 143957-05)
21. Driver Version V3.05 (Solaris Patch 146489-05)
22. FCode Value Fcode 2.00 (Flash image 2.01)
23. FCode Value FCode 2.04 (Flash image 2.12)
24. SNIA HBA API Supported.
25. EMC recommends as a best practice that customers upgrade to the most recent Solaris 10 SPARC patch bundle released on the Oracle website:<http://www.sunsolve.sun.com>
26. Supports S10 Update 7 (05/09)
27. Supports S10 Update 4 (08/07).
28. The Snapshot and Clone features of ZFS are supported only through Oracle Corporation.
29. Supports S10 Update 10 (8/11).
30. Supports S10 Update 8 (10/09)
31. Supports S10 Update 5 (05/08)
32. For LDOM support, please refer to the 'Virtualization Server Support' table available via EMC PowerLink:  
[https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization\\_Server\\_Support.pdf](https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization_Server_Support.pdf)
33. Supports S10 Update 9 (9/10)
34. Supports S10 Update 6 (10/08)
35. Fcode should be loaded on all HBA's at the time of initial installation. This should only be done before configuring devices, and should not be done after devices are configured. If HBA does not contain Fcode and Fcode is loaded after devices are configured, the device paths will change and this could result in loss of data.
36. Symmetrix-only attached hosts with Sun Leadville driver used with Powerpath 4.5.0 or greater and Solutions Enabler, the following is required (as per the workaround outlined in emc108113):  
# powermt unmanage class=hphsx  
# powermt save  
# reboot
37. Must add "set ssd:ssd\_max\_throttle=20" in /etc/system for CLARiiON or Symmetrix attach.  
Must add "forceload: drv/ssd" in the /etc/system when these HBA's are installed for Clarioni or Symmetrix attach with PowerPath. (do not include the quotes on either entry).  
Driver version SAN 4.3 or older is not supported for MPxIO on EMC storage arrays.
38. FCode Value 1.24 (Solaris Patch 123305-02)
39. FCode Value 2.01 (Solaris Patch 123305-04)
40. FCode Value 1.17 FCode 1.17 is the minimum necessary for boot from SAN.
41. FCode Value 2.00 (Flash image 1.69)
42. FCode Value 1.24 (Flash image 1.56) Fcode should be loaded on all HBA's at the time of initial installation. This should only be done before configuring devices, and should not be done after devices are configured. If HBA does not contain Fcode and Fcode is loaded after devices are configured, the device paths will change and this could result in loss of data.
43. FCode Value 2.04 (Flash image 1.79)
44. Firmware Version 2.00a3
45. Firmware Version 1.10a5
46. FCode Value 3.01a1 Fcode V3.01a1 is minimum requirement for boot from SAN with LPe12000/2 Emulex HBAs.
47. FCode Value 3.10a3
48. Firmware Version 1.11a5
49. See the EMC price book for HBA vendor ordering information. This HBA is not sold by EMC.
50. FCode Value 1.24. (Flash image 1.56)
51. FCode Value 2.00 (Flash image 1.69) Fcode should be loaded on all HBA's at the time of initial installation. This should only be done before configuring devices, and should not be done after devices are configured. If HBA does not contain Fcode and Fcode is loaded after devices are configured, the device paths will change and this could result in loss of data.
52. Firmware Version 2.80a4
53. Firmware Version 2.82a4
54. Firmware Version 2.82a3
55. For Solaris 10 versions prior to S10-U1, there are 2 packages SUNWemlx and SUNWemlxu that are required before installing required patch 120222-04. These packages are available on the Sun website:  
<http://www.sun.com/download/products.xml?id=42c4317d>
56. Driver Version 6.11cx2
57. Driver Version 6.10gx1
58. Driver Version 6.11cx3
59. Firmware Version 1.92a1
60. Firmware Version 1.91a5
61. FCode Value 2.03
62. FCode Value 2.04
63. Supports S10 Update 3 (11/06)
64. If setting the boot disk from SAN with Solaris 10, its Target/LUN must be defined in the /kernel/drv/sd.conf file.
65. Supports S10 Update 2 (06/06)
66. Supports S10 Update 1 (01/06)
67. Symmetrix-only attached hosts with Sun Leadville driver (X6767A and X6868A) used with Powerpath 4.3.1 or greater and Solutions Enabler, the following is required (as per the workaround outlined in emc108113):  
# powermt unmanage class=hphsx  
# powermt save  
# reboot
68. FCode Value 1.17
69. FCode Value 1.16
70. FCode Value 1.14.15
71. FCode Value 1.14.09
72. FCode Value 2.00.06
73. FCode Value 2.00.09 Fcode should be loaded on all HBA's at the time of initial installation. This should only be done before configuring devices, and should not be done after devices are configured. If HBA does not contain Fcode and Fcode is loaded after devices are configured, the device paths will change and this could result in loss of data.
74. FCode Value 1.14.15 Fcode should be loaded on all HBA's at the time of initial installation. This should only be done before configuring devices, and should not be done after devices are configured. If HBA does not contain Fcode and Fcode is loaded after devices are configured, the device paths will change and this could result in loss of data.
75. Driver Version 4.17
76. Driver Version 4.22
77. Driver Version 4.15.03
78. FCode Value 2.00.06 Fcode should be loaded on all HBA's at the time of initial installation. This should only be done before configuring devices, and should not be done after devices are configured. If HBA does not contain Fcode and Fcode is loaded after devices are configured, the device paths will change and this could result in loss of data.
79. Firmware Version 1.91a1
80. FCode Value 1.50a4
81. FCode Value 1.50a8
82. Firmware Version 3.93a0
83. BIOS 2.01a2 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
84. FCode Value 1.41a4
85. The LP9002DC-E will EOSL on Feb 2012 and it will be removed from the Marc 2012 ESM.

- 86. FCode Value 1.14.11
- 87. Must add "set pci:pci\_max\_mps=0" in the /etc/system file for Symmetrix or CLARiiON attach. Do not include quotes on the entry.
- 88. BIOS 3.703.397.34
- 89. Firmware Version 3.703.397.34
- 90. BIOS 4.0.360.3
- 91. Firmware Version 4.0.360.3
- 92. Copper connection only. Supported with Passive and Active Twinax cables.
- 93. Firmware Version 05.03.02
- 94. Driver Version V3.00 (Solaris Patch 143-957-03)
- 95. Firmware Version 2.702.200.17 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 96. Firmware Version 2.103.269.2818
- 97. Firmware Version 2.703.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 98. BIOS 2.703.397.34
- 99. FCode Value 3.09
- 100. Cx-based snapshot is not supported on Ibrx Fusion Snapshot feature
- 101. Supports Logical Domain (LDOM) with MPxIO and Sun Volume Manager (SVM) on Solaris 10 11/06. PowerPath 5.1 or higher is supported on the Control domain and I/O domain.
- 102. EMC recommends as a best practice that customers upgrade to the most recent Solaris 9 SPARC patch bundle released on the Oracle website.<http://www.sunsolve.sun.com>
- 103. Driver Version SAN 4.4.15
- 104. Driver Version SAN 4.4.14
- 105. Driver Version SAN 4.4.13
- 106. For servers running Solaris 8 or 9 with the Sun SAN driver, the following applies:  
Must add "set fcp:ssfc\_enable\_auto\_configuration=1" (do not include quote marks) in /etc/system to fix the following problems:  
1. VxVM - rootdg can not be imported during boot  
2. SVM - Volume Manager can not be started after system boot  
3. PowerPath 4.x - error message "All paths to (array type) (array name) vol(volume number) are dead"
- 107. Use of the LP9002DC or QLA2342 requires FCO A0218-1 from Sun for HBA's to operate in 66mhz mode. Without this FCO the HBA's will only come up in 33mhz mode which could have an impact on performance.
- 108. SDS support on Solaris 8 requires minimum SDS version 4.2.1 with patch 108693-16 or later version.
- 109. FCode Value 1.14.13 Fcode should be loaded on all HBA's at the time of initial installation. This should only be done before configuring devices, and should not be done after devices are configured. If HBA does not contain Fcode and Fcode is loaded after devices are configured, the device paths will change and this could result in loss of data.
- 110. Driver Version SAN 4.4.13
- 111. Driver Version SAN 4.4.12

**VMware ESX**

**VMware**

**Hewlett Packard**

Hewlett Packard							
No.	Host System	Operating System	Host Bus	Host Bus Adapter	Topology	Storage Array	External Boot
1	Hewlett Packard Proliant BL685c (dual core processor) <sup>6</sup>	VMware ESX 4.1 (vSphere 4) <sup>7, 8, 9, 10, 11, 12, 13, 14</sup>	PCI Express	Hewlett Packard: Emulex LPe1105-HP 4Gb FC HBA for HP c-Class Bladesystem (403621-B21) <sup>3, 25, 26, 27</sup> , QLogic QMH2462 4Gb FC HBA for HP c-Class Bladesystem (403619-B21) <sup>1, 2, 3</sup>	FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>4, 5</sup>
2	Hewlett Packard Proliant BL685c (dual core processor) <sup>6</sup>	VMware ESX 4.1 (vSphere 4) <sup>7, 8, 9, 10, 11, 12, 13, 14</sup>	PCI Express	Hewlett Packard HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter (580151-B21) <sup>15, 16, 18, 19, 20, 21, 22, 23, 24</sup>	FCoE <sup>17</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>4, 5</sup>

- 1. BIOS 2.15 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- 2. BIOS 2.16 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- 3. Driver Version In-box driver This driver is included in the VMware ESX kernel. Driver upgrades not supported.
- 4. Virtual machines running on VMware ESX are supported booting from the array.
- 5. VMware ESX Server itself is supported booting from external array.
- 6. Please see the HP website for supported BL c-Class model numbers.  
The supported model numbers are available in the quickspecs documents available for each BL c-Class blade.
- 7. For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
- 8. EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
- 9. For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
- 10. Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://vmware.com/support/policies/oracle-support.html>
- 11. Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS.  
The following SCSI Controllers are supported with VMware and MSCS:  
Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel.  
You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.
- 12. All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
- 13. Supported with vMotion.
- 14. Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.
- 15. Firmware Version 2.104.28.1.0 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 16. BIOS 2.702.517.703
- 17. FCoE support only with ESX 4.0. No iSCSI support
- 18. Firmware Version v4.0.360.15 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 19. Firmware Version 2.702.517.703
- 20. Driver Version 8.2.1.78.22 Fibre Channel Driver Available at [http://downloads.vmware.com/d/info/datacenter\\_downloads/vmware\\_vsphere\\_4/4#drivers\\_tools](http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_4/4#drivers_tools)
- 21. Driver Version 8.2.0.79.25 Fibre Channel Driver Available at [http://downloads.vmware.com/d/info/datacenter\\_downloads/vmware\\_vsphere\\_4/4#drivers\\_tools](http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_4/4#drivers_tools)
- 22. Driver Version 2.102.518.0 Ethernet Driver Available at [http://downloads.vmware.com/d/info/datacenter\\_downloads/vmware\\_vsphere\\_4/4#drivers\\_tools](http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_4/4#drivers_tools)
- 23. BIOS v4.0.360.15 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 24. BIOS 2.104.28.1.0 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 25. Firmware Version 2.80a4 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 26. BIOS 3.11a5 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
- 27. Firmware Version 2.82a4 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>

**Hitachi**

Hitachi							
No.	Host System	Operating System	Host Bus	Host Bus Adapter	Topology	Storage Array	External Boot
1	Hitachi: HA8000/RS210 AL, HA8000/RS220 AL, HA8000/TS20 AL	VMware ESX 4.1 (vSphere 4) <sup>3, 4, 5, 6, 7, 8, 9, 10, 11</sup>	PCI	Hitachi: GQ-CC7811/7812-EX (LPe1250-F8) <sup>12, 13, 14, 15</sup> , GQ-CC7821/7822-EX (LPe12002-M8) <sup>12, 13, 14, 15</sup>	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>1, 2</sup>
2	Hitachi HA8000/RS440 AL	VMware ESX 4.1 (vSphere: 4) <sup>3, 4, 5, 6, 7, 8, 9, 10, 11, 16, 4)3, 4, 5, 6, 7, 8, 9, 10, 16</sup>	PCI	Hitachi: GQ-CC7811/7812-EX (LPe1250-F8) <sup>12, 13, 14, 15</sup> , GQ-CC7821/7822-EX (LPe12002-M8) <sup>12, 13, 14, 15</sup>	FC-AL, FC-SW	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>1, 2</sup>

- 1. Virtual machines running on VMware ESX are supported booting from the array.
- 2. VMware ESX Server itself is supported booting from external array.
- 3. For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
- 4. EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
- 5. For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
- 6. Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://vmware.com/support/policies/oracle-support.html>
- 7.

- Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS. The following SCSI Controllers are supported with VMWare and MSCS:
- Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel.
  - You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.
8. All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
  9. Supported with vMotion.
  10. Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.
  11. Supported from VMware ESX4.1 or later
  12. SNIA HBA API Supported.
  13. Firmware Version 1.10a5 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  14. Driver Version In-box driver This driver is included in the VMware ESX kernel. Driver upgrades not supported.
  15. BIOS 2.02a2 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  16. Supported only from VMware ESX4.1 U1 or later

## ISCSI to FC Routing Configuration Notes

### Microsoft Windows 2003 [x64]

#### Microsoft

Microsoft									
No.	Operating System	Host Bus Adapter	Driver	Network Configuration	Bridge	Firmware Revision	External Boot	Storage Array	Comments
1	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1007, 10, 24, 25, GbE7, 10, 24, 25	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.049, 21, 22, 23	LAN Only <sup>2</sup>	Cisco MDS 9216A, Cisco MDS 9509, Cisco MDS 9513	NX-OS 4.2.(7b), NX-OS 5.0.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16, 26</sup>
2	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1007, 10, 24, 25, GbE7, 10, 24, 25	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.049, 21, 22, 23	LAN Only <sup>2</sup>	Cisco MDS 9216i	SAN-OS is 3.2.(1a), SAN-OS is 3.3.(1c), SAN-OS is 3.3.(2)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16, 26</sup>
3	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1007, 10, 24, 25, GbE7, 10, 24, 25	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.049, 21, 22, 23	LAN Only <sup>2</sup>	Cisco MDS 9222i	NX-OS 4.2.(7b), NX-OS 5.0(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16, 26</sup>

4	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>	Generic Vendor NIC: 10/1007, 10, 24, 25, GbE7, 10, 24, 25	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.049, 21, 22, 23	LAN Only <sup>2</sup>	Cisco MDS 9506	NX-OS 4.2.(7b), NX-OS 5.1.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16, 26</sup>
5	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>	Generic Vendor NIC: 10/1007, 10, 24, 25, GbE7, 10, 24, 25	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.049, 21, 22, 23	LAN Only <sup>2</sup>	McDATA (Nishan) IPS 33001, 3, 18, McDATA (Nishan) IPS 43001, 3, 18	EOSi 4.5	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16, 26</sup>
6	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>	Generic Vendor NIC: 10/1007, 10, 24, 25, GbE7, 10, 24, 25	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.049, 21, 22, 23	LAN Only <sup>2, 5</sup>	EMC Connectrix MP 162019, EMC Connectrix MP 26401.2, 3, 4, McDATA Eclipse 26401.3, 4, 20	EOSi 5.1	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16, 26</sup>
7	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>	Generic Vendor NIC: 10/1007, 10, 24, 25, GbE7, 10, 24, 25	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.049, 21, 22, 23	LAN Only <sup>2, 5</sup>	McDATA Eclipse 16201, 3, 17, 18, 19	EOSi 4.7.0	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16, 26</sup>
8	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p>	QLogic: QLA4050-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2</sup>	Cisco MDS 9216A, Cisco MDS 9509, Cisco MDS 9513	NX-OS 4.2.(7b), NX-OS 5.0.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>

	<p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>								
9	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>	<p>QLogic: QLA4050-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14</p>	<p>2.1.3.26, 2.1.3.28</p>	LAN Only <sup>2</sup>	Cisco MDS 9216i	<p>SAN-OS is 3.2.(1a), SAN-OS is 3.3.(1c), SAN-OS is 3.3.(2)</p>	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
10	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>	<p>QLogic: QLA4050-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14</p>	<p>2.1.3.26, 2.1.3.28</p>	LAN Only <sup>2</sup>	Cisco MDS 9222i	<p>NX-OS 4.2.(7b), NX-OS 5.0(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)</p>	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
11	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2</p>	<p>QLogic: QLA4050-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14</p>	<p>2.1.3.26, 2.1.3.28</p>	LAN Only <sup>2</sup>	Cisco MDS 9506	<p>NX-OS 4.2.(7b), NX-OS 5.1.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)</p>	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
12	<p>Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;</p> <p>Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;</p> <p>Microsoft</p>	<p>QLogic: QLA4050-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14</p>	<p>2.1.3.26, 2.1.3.28</p>	LAN Only <sup>2</sup>	<p>McDATA (Nishan) IPS 33001, 3, 18, McDATA (Nishan) IPS 43001, 3, 18</p>	EOSi 4.5	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>

	Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2								
13	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2, 5</sup>	EMC Connectrix MP 1620 <sup>19</sup> , EMC Connectrix MP 2640 <sup>1, 2, 3, 4</sup> , McDATA Eclipse 2640 <sup>1, 3, 4, 20</sup>	EOSi 5.1	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
14	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP6, 7, 8, 9, 10, 11, 12, 13, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2, 5</sup>	McDATA Eclipse 1620 <sup>1, 3, 17, 18, 19</sup>	EOSi 4.7.0	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
15	Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4010-E-SP7, 9, 10, 11, 12, 14, QLA4010C-E-SP7, 9, 10, 11, 12, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2</sup>	Cisco MDS 9216A, Cisco MDS 9509, Cisco MDS 9513	NX-OS 4.2.(7b), NX-OS 5.0.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
16	Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4010-E-SP7, 9, 10, 11, 12, 14, QLA4010C-E-SP7, 9, 10, 11, 12, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2</sup>	Cisco MDS 9216i	SAN-OS is 3.2.(1a), SAN-OS is 3.3.(1c), SAN-OS is 3.3.(2)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
17	Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4010-E-SP7, 9, 10, 11, 12, 14, QLA4010C-E-SP7, 9, 10, 11, 12, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2</sup>	Cisco MDS 9222i	NX-OS 4.2.(7b), NX-OS 5.0.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
18	Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4010-E-SP7, 9, 10, 11, 12, 14, QLA4010C-E-SP7, 9, 10, 11, 12, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2</sup>	Cisco MDS 9506	NX-OS 4.2.(7b), NX-OS 5.1.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>

19	Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4010-E-SP7, 9, 10, 11, 12, 14, QLA4010C-E-SP7, 9, 10, 11, 12, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2</sup>	McDATA (Nishan) IPS 3300 <sup>1, 3, 18</sup> , McDATA (Nishan) IPS 4300 <sup>1, 3, 18</sup>	EOSi 4.5	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
20	Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4010-E-SP7, 9, 10, 11, 12, 14, QLA4010C-E-SP7, 9, 10, 11, 12, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2, 5</sup>	EMC Connectrix MP 1620 <sup>19</sup> , EMC Connectrix MP 2640 <sup>1, 2, 3, 4</sup> , McDATA Eclipse 2640 <sup>1, 3, 4, 20</sup>	EOSi 5.1	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
21	Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	QLogic: QLA4010-E-SP7, 9, 10, 11, 12, 14, QLA4010C-E-SP7, 9, 10, 11, 12, 14	2.1.3.26, 2.1.3.28	LAN Only <sup>2, 5</sup>	McDATA Eclipse 1620 <sup>1, 3, 17, 18, 19</sup>	EOSi 4.7.0	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>

- There can only be one Eclipse or IPS switch in each SAN island.
- Routed networks (layer 3) require iSCSI digest to be enabled.
- Multivendor switches (any combination of Brocade, McDATA and Cisco switches) within a single SAN island are not supported.
- max number of zones in the fabric (SAN Island) where the Eclipse/IPS switch connected to is 1024
- Copper GE SFPs are supported in GE ports only if they are approved by McdData
- Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
- Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
- PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
- SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
- Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
- QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
- Microsoft Dynamic Disks are not supported.
- Equivalent to EMC Connectrix MP-1620M
- max number of zones in the fabric (SAN Island) where the Eclipse/IPS switch connected to is 512
- Use of Copper Fast Ethernet RJ45 ports on MP1620 is not supported. The iFCP and iSCSI solutions must use the GigE SFP ports (Optics SFP and Copper SFP supplied by Brocade)
- max number of initiator logged into the iSCSI target port is 12
- EMC recommends that on hosts with multiple NICs that the Software Initiator Source\_IP default selection not be used, and a NIC be explicitly selected for maximum path availability. Refer to the EMC Host Connectivity Guide for more detailed information.
- Microsoft iSCSI Initiator software.
- NIC teaming with Microsoft iSCSI Initiator is not supported.
- The following NICs are not supported: 3COM-3C996B
- Any Microsoft supported server/NIC for the listed operating system revision is supported.
- EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.

**Microsoft Windows 2003 [x86]**

**Microsoft**

Microsoft									
No.	Operating System	Host Bus Adapter	Driver	Network Configuration	Bridge	Firmware Revision	External Boot	Storage Array	Comments
1	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/100, GbE	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.04, Microsoft iSCSI Initiator 2.05, Microsoft iSCSI Initiator 2.06	LAN Only	Brocade 48000 <sup>19, 20, 21, 22</sup>	5.2.1a, 5.2.2, 5.3.0a, 6.0.0b, 6.0.0c	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
2	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft	Generic Vendor NIC: 10/100/5, 6, 7, 8, GbE <sup>5, 6, 7, 8</sup>	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.04 <sup>1, 2, 3, 4</sup>	LAN Only <sup>9</sup>	Cisco MDS 9216A, Cisco MDS 9509, Cisco MDS 9513	NX-OS 4.2 (7b), NX-OS 5.0 (1a), NX-OS 5.2.1, SAN-OS 3.3 (5a)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>10, 11, 12</sup>

	Windows 2003 [x86] Standard Edition: R2 SP2, SP2								
3	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1005, 6, 7, 8, GbE5, 6, 7, 8	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.041, 2, 3, 4	LAN Only <sup>9</sup>	Cisco MDS 9216i	SAN-OS is 3.2.(1a), SAN-OS is 3.3.(1c), SAN-OS is 3.3.(2)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See10, 11, 12
4	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1005, 6, 7, 8, GbE5, 6, 7, 8	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.041, 2, 3, 4	LAN Only <sup>9</sup>	Cisco MDS 9222i	NX-OS 4.2.(7b), NX-OS 5.0(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See10, 11, 12
5	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1005, 6, 7, 8, GbE5, 6, 7, 8	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.041, 2, 3, 4	LAN Only <sup>9</sup>	Cisco MDS 9506	NX-OS 4.2.(7b), NX-OS 5.1.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See10, 11, 12
6	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1005, 6, 7, 8, GbE5, 6, 7, 8	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.041, 2, 3, 4	LAN Only <sup>9</sup>	McDATA (Nishan) IPS 3300 <sup>24, 25, 29</sup> , McDATA (Nishan) IPS 4300 <sup>24, 25, 29</sup>	EOSi 4.5	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See10, 11, 12
7	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1005, 6, 7, 8, GbE5, 6, 7, 8	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.041, 2, 3, 4	LAN Only <sup>9, 23</sup>	EMC Connectrix MP 1620 <sup>27</sup> , EMC Connectrix MP 2640 <sup>9, 24, 25, 26</sup> , McDATA Eclipse 2640 <sup>24, 25, 26, 28</sup>	EOSi 5.1	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See10, 11, 12
8	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC: 10/1005, 6, 7, 8, GbE5, 6, 7, 8	Microsoft iSCSI Initiator 2.03, Microsoft iSCSI Initiator 2.041, 2, 3, 4	LAN Only <sup>9, 23</sup>	McDATA Eclipse 1620 <sup>24, 25, 27, 29, 30</sup>	EOSi 4.7.0	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See10, 11, 12

9	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)6, 7, 13	2.1.1.5, 2.1.3.26	LAN Only <sup>9</sup>	Cisco MDS 9216A, Cisco MDS 9509, Cisco MDS 9513	NX-OS 4.2.(7b), NX-OS 5.0.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
10	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)6, 7, 13	2.1.1.5, 2.1.3.26	LAN Only <sup>9</sup>	Cisco MDS 9216i	SAN-OS is 3.2.(1a), SAN-OS is 3.3.(1c), SAN-OS is 3.3.(2)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
11	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)6, 7, 13	2.1.1.5, 2.1.3.26	LAN Only <sup>9</sup>	Cisco MDS 9222i	NX-OS 4.2.(7b), NX-OS 5.0.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
12	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)6, 7, 13	2.1.1.5, 2.1.3.26	LAN Only <sup>9</sup>	Cisco MDS 9506	NX-OS 4.2.(7b), NX-OS 5.1.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
13	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)6, 7, 13	2.1.1.5, 2.1.3.26	LAN Only <sup>9</sup>	McDATA (Nishan) IPS 3300 <sup>24, 25, 29</sup> , McDATA (Nishan) IPS 4300 <sup>24, 25, 29</sup>	EOSi 4.5	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
14	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)6, 7, 13	2.1.1.5, 2.1.3.26	LAN Only <sup>9, 23</sup>	EMC Connectrix MP 1620 <sup>27</sup> , EMC Connectrix MP 2640 <sup>9, 24, 25, 26</sup> , McDATA Eclipse 2640 <sup>24, 25, 26, 28</sup>	EOSi 5.1	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
15	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)6, 7, 13	2.1.1.5, 2.1.3.26	LAN Only <sup>9, 23</sup>	McDATA Eclipse 1620 <sup>24, 25, 27, 29, 30</sup>	EOSi 4.7.0	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12

	Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2								
16	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4050C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4052C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18	2.1.3.26, 2.1.3.28	LAN Only <sup>9</sup>	Cisco MDS 9216A, Cisco MDS 9509, Cisco MDS 9513	NX-OS 4.2.(7b), NX-OS 5.0.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
17	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4050C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4052C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18	2.1.3.26, 2.1.3.28	LAN Only <sup>9</sup>	Cisco MDS 9216i	SAN-OS is 3.2.(1a), SAN-OS is 3.3.(1c), SAN-OS is 3.3.(2)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
18	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4050C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4052C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18	2.1.3.26, 2.1.3.28	LAN Only <sup>9</sup>	Cisco MDS 9222i	NX-OS 4.2.(7b), NX-OS 5.0(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
19	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4050C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4052C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18	2.1.3.26, 2.1.3.28	LAN Only <sup>9</sup>	Cisco MDS 9506	NX-OS 4.2.(7b), NX-OS 5.1.(1a), NX-OS 5.2.1, SAN-OS 3.3.(5a)	Y	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
20	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4050C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4052C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18	2.1.3.26, 2.1.3.28	LAN Only <sup>9</sup>	McDATA (Nishan) IPS 3300 <sup>24, 25, 29</sup> , McDATA (Nishan) IPS 4300 <sup>24, 25, 29</sup>	EOSi 4.5	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12
21	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4050C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18, QLA4052C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18	2.1.3.26, 2.1.3.28	LAN Only <sup>9, 23</sup>	EMC Connectrix MP 1620 <sup>27</sup> , EMC Connectrix MP 2640 <sup>9, 24, 25, 26</sup> , McDATA Eclipse 2640 <sup>24, 25, 26, 28</sup>	EOSi 5.1	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See11, 12

22	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	QLogic: QLA4050-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18 QLA4050C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18 QLA4052C-E-SP3, 6, 7, 13, 14, 15, 16, 17, 18	2.1.3.26, 2.1.3.28	LAN Only <sup>9, 23</sup>	McDATA Eclipse 1620 <sup>24, 25, 27, 29, 30</sup>	EOSi 4.7.0	N	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>11, 12</sup>
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- EMC recommends that on hosts with multiple NICs that the Software Initiator Source\_IP default selection not be used, and a NIC be explicitly selected for maximum path availability. Refer to the EMC Host Connectivity Guide for more detailed information.
- Microsoft iSCSI Initiator software.
- PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
- NIC teaming with Microsoft iSCSI Initiator is not supported.
- The following NICs are not supported: 3COM-3C996B
- Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
- SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
- Any Microsoft supported server/NIC for the listed operating system revision is supported.
- Routed networks (layer 3) require iSCSI digest to be enabled.
- EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
- Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
- Microsoft Dynamic Disks are not supported.
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
- Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
- Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
- QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- requires PB-48K-16IP blade.
- The 10G FC10-6(Xenon) blade is supported for ISL connectivity from Xenon to Xenon only.
- The 16-port 8Gbit blade (FC8-16) and the 32-port 8Gbit blade (FC8-32) are supported in the Brocade 48000 or EMC Connectrix ED-48000B chassis running supported FOS v6.0.0C and up.
- The blade for distance extension is PB-48K-18i
- Copper GE SFPs are supported in GE ports only if they are approved by Mcdata
- There can only be one Eclipse or IPS switch in each SAN island.
- Multivendor switches (any combination of Brocade, McDATA and Cisco switches) within a single SAN island are not supported.
- max number of zones in the fabric (SAN Island) where the Eclipse/IPS switch connected to is 1024
- Use of Copper Fast Ethernet RJ45 ports on MP1620 is not supported. The iFCP and iSCSI solutions must use the GigE SFP ports (Optics SFP and Copper SFP supplied by Brocade)
- max number of initiator logged into the iSCSI target port is 12
- max number of zones in the fabric (SAN Island) where the Eclipse/IPS switch connected to is 512
- Equivalent to EMC Connectrix MP-1620M

## Internet Protocol Addressing Support Configuration Notes

No.	Item Type	Item Name	IP Addressing
1	Storage Array	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	IPv4
2	Storage Array	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	IPv6

## Native iSCSI Configuration Notes

### Asianux AX [32-Bit]

#### Asianux

Asianux						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Asianux AX [32-Bit] 4.07.8	Generic Vendor NIC 10/100 <sup>2</sup> , Generic Vendor NIC GbE <sup>2, 4, 5, 30</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>13, 14, 15, 16</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>9, 12</sup>	See <sup>6</sup>
2	Asianux AX [32-Bit] 4.07.8	Generic Vendor NIC 10GbE <sup>2, 3, 4, 5</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>9, 10, 11, 12</sup>	See <sup>6</sup>
3	Asianux AX [32-Bit] 4.07.8	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>5, 24, 25, 26, 27, 28</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>5, 24, 25, 26, 27, 28</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>9</sup>	See <sup>6, 29</sup>
4	Asianux AX [32-Bit] 4.07.8	QLogic QLA4010-E-SP <sup>15, 17, 18, 21, 22</sup> , QLogic QLA4010C-E-SP <sup>15, 17, 18, 21, 22</sup> , QLogic QLA4050-E-SP <sup>15, 16, 17, 18, 19, 20</sup> , QLogic QLA4050C-E-SP <sup>15, 16, 17, 18, 19, 20</sup> , QLogic QLA4052C-E-SP <sup>15, 16, 17, 18, 19, 20</sup> , QLogic QLE4060C-E-SP <sup>14, 15, 16, 17, 19, 23</sup> , QLogic QLE4062C-E-SP <sup>14, 15, 16, 17, 19, 23</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>12</sup>	See <sup>6</sup>

- Routed networks (layer 3) require iSCSI digest to be enabled.
- Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
- Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
- Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- NIC teaming with the Linux software initiator is not supported.
- Please refer to the Host Bus Adapter note for the supported NICs.
- Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
- Supported kernels: 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6. Confirm kernel support with server vendor.
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Red Hat RHEL 5.5
- Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.

10.

- Intel iSCSI boot is supported with the following Intel adapters:
- Ethernet X520 10GbE Dual Port KX4
  - Ethernet X520-2 10GbE
- Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
- Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
  - Broadcom iSCSI boot is supported with following adapters:
    - Broadcom 57710 based cards
    - Broadcom 57711 based cards
    - Broadcom 5708
    - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
  - Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  - BIOS 1.13 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  - Driver Version 5.01.00.01.05.04-k9 Driver is integrated into the kernel.
  - Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  - Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
  - QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
  - Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  - BIOS 1.08 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  - BIOS 1.11 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  - Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  - QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
  - Broadcom iSCSI offload (without iBoot) is supported with following adapters:
    - Broadcom 57710 based cards
    - Broadcom 57711 based cards
 Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
  - The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeei10.php)
  - BIOS 5.0.11
  - Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
  - Firmware Version 2.1.1a
  - Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
  - Broadcom iSCSI boot is supported on Linux with following adapters:
    - Broadcom 5710 based cards
    - Broadcom 5711 based cards
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.

### Asianux AX [32-Bit] 4.0

#### Asianux

Asianux						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Asianux AX [32-Bit] 4.0 SP11, 2	Generic Vendor NIC 10/1007, Generic Vendor NIC GbE 4, 5, 7, 33, Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) 13, 14, 15, 16	LAN Only <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y8, 11	See <sup>6</sup>
2	Asianux AX [32-Bit] 4.0 SP11, 2	Generic Vendor NIC 10GbE 3, 4, 5, 7	LAN Only <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y8, 9, 10, 11	See <sup>6</sup>
3	Asianux AX [32-Bit] 4.0 SP11, 2	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) 5, 27, 28, 30, 31, 32, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) 5, 27, 28, 30, 31, 32	LAN Only <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y8	See <sup>6, 29</sup>
4	Asianux AX [32-Bit] 4.0 SP11, 2	QLogic QLA4010-E-SP14, 22, 23, 24, 25, QLogic QLA4010C-E-SP14, 22, 23, 24, 25, QLogic QLA4050-E-SP14, 15, 20, 21, 22, 23, QLogic QLA4050C-E-SP14, 15, 20, 21, 22, 23, QLogic QLA4052C-E-SP14, 15, 20, 21, 22, 23, QLogic QLE4060C-E-SP13, 14, 15, 21, 22, 26, QLogic QLE4062C-E-SP13, 14, 15, 21, 22, 26	LAN Only <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y11	See <sup>6</sup>
5	Asianux AX [32-Bit] 4.0 SP11, 2	QLogic QLE8240-SR-E-SP17, 18, 19, QLogic QLE8242-SR-E-SP17, 18, 19, QLogic QLE8250-CU-E-SP17, 18, 19, QLogic QLE8252-CU-E-SP17, 18, 19	LAN Only <sup>12</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	

- Supported kernels: 2.6.32-131.12.1.el6. Confirm kernel support with server vendor.
- Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
- Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
- Broadcom iSCSI offload (without iBoot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- NIC teaming with the Linux software initiator is not supported.
- Please refer to the Host Bus Adapter note for the supported NICs.
- Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- Intel iSCSI boot is supported with the following Intel adapters:
  - Ethernet X520 10GbE Dual Port KX4
  - Ethernet X520-2 10GbE
 Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
- Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
- Broadcom iSCSI boot is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- Routed networks (layer 3) require iSCSI digest to be enabled.
- BIOS 1.13 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Driver Version 5.02.00-k5 Driver is integrated into the kernel.
- Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- BIOS 3.03 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Driver Version 5.02.11.00.05.06-c3 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- BIOS 1.08 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- BIOS 1.11 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.

27. Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
 Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
28. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
29. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
30. BIOS 5.0.11
31. Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
32. Firmware Version 2.1.1a
33. Broadcom iSCSI boot is supported on Linux with following adapters:
  - Broadcom 5710 based cards
  - Broadcom 5711 based cards
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.

**Asianux AX [x86\_64]**

**Asianux**

Asianux						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Asianux AX [x86_64] 4.0T1, 12	Generic Vendor NIC 10/1005, Generic Vendor NIC GbE2, 3, 5, 30, Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) 13, 14, 15, 16	LAN Only 10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y6, 9	See4
2	Asianux AX [x86_64] 4.0T1, 12	Generic Vendor NIC 10GbE1, 2, 3, 5	LAN Only 10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y6, 7, 8, 9	See4
3	Asianux AX [x86_64] 4.0T1, 12	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) 3, 24, 25, 26, 27, 28, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) 3, 24, 25, 26, 27, 28	LAN Only 10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y6	See4, 29
4	Asianux AX [x86_64] 4.0T1, 12	QLogic QLA4010-E-SP15, 17, 18, 21, 22, QLogic QLA4010C-E-SP15, 17, 18, 21, 22, QLogic QLA4050-E-SP13, 15, 17, 18, 19, 20, QLogic QLA4050C-E-SP13, 15, 17, 18, 19, 20, QLogic QLA4052C-E-SP13, 15, 17, 18, 19, 20, QLogic QLE4060C-E-SP13, 14, 15, 17, 20, 23, QLogic QLE4062C-E-SP13, 14, 15, 17, 20, 23	LAN Only 10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y9	See4

1. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
2. Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
3. NIC teaming with the Linux software initiator is not supported.
4. Please refer to the Host Bus Adapter note for the supported NICs.
5. Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
6. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
7. Intel iSCSI boot is supported with the following Intel adapters:
  - Ethernet X520 10GbE Dual Port KX4
  - Ethernet X520-2 10GbE
 Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
8. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
9. Broadcom iSCSI boot is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
10. Routed networks (layer 3) require iSCSI digest to be enabled.
11. Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
12. Supported kernels: 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6. Confirm kernel support with server vendor.
13. Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
14. BIOS 1.13 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
15. Driver Version 5.01.00.01.05.04-k9 Driver is integrated into the kernel.
16. Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
17. Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
18. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
19. BIOS 1.08 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
20. Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
21. BIOS 1.11 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
22. Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
23. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
24. BIOS 5.0.11
25. Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
26. Firmware Version 2.1.1a
27. Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
 Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
28. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
29. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
30. Broadcom iSCSI boot is supported on Linux with following adapters:
  - Broadcom 5710 based cards
  - Broadcom 5711 based cards
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.

**Asianux AX [x86\_64] 4.0**

**Asianux**

Asianux						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Asianux AX [x86_64] 4.0 SP1, 2	Generic Vendor NIC 10/100 <sup>20</sup> , Generic Vendor NIC GbE <sup>14, 20, 21, 22</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>4, 5, 6, 26</sup>	LAN Only <sup>11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y10, 15	See <sup>9</sup>
2	Asianux AX [x86_64] 4.0 SP1, 2	Generic Vendor NIC 10GbE <sup>14, 20, 21, 25</sup>	LAN Only <sup>11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y10, 15, 23, 24	See <sup>9</sup>
3	Asianux AX [x86_64] 4.0 SP1, 2	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>12, 13, 14, 16, 17, 18</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>12, 13, 14, 16, 17, 18</sup>	LAN Only <sup>11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y15	See <sup>9, 19</sup>
4	Asianux AX [x86_64] 4.0 SP1, 2	QLogic QLA4010-E-SP <sup>5, 7, 31, 32, 33</sup> , QLogic QLA4010C-E-SP <sup>5, 7, 31, 32, 33</sup> , QLogic QLA4050-E-SP <sup>3, 5, 6, 7, 30, 31</sup> , QLogic QLA4050C-E-SP <sup>3, 5, 6, 7, 30, 31</sup> , QLogic QLA4052C-E-SP <sup>3, 5, 6, 7, 30, 31</sup> , QLogic QLE4060C-E-SP <sup>3, 4, 5, 6, 7, 8</sup> , QLogic QLE4062C-E-SP <sup>3, 4, 5, 6, 7, 8</sup>	LAN Only <sup>11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y10	See <sup>9</sup>
5	Asianux AX [x86_64] 4.0 SP1, 2	QLogic QLE8240-SR-E-SP <sup>27, 28, 29</sup> , QLogic QLE8242-SR-E-SP <sup>27, 28, 29</sup> , QLogic QLE8250-CU-E-SP <sup>27, 28, 29</sup> , QLogic QLE8252-CU-E-SP <sup>27, 28, 29</sup>	LAN Only <sup>11</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	

- Supported kernels: 2.6.32-131.12.1.el6. Confirm kernel support with server vendor.
- Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
- Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- BIOS 1.13 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Driver Version 5.02.00-k5 Driver is integrated into the kernel.
- Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
- Please refer to the Host Bus Adapter note for the supported NICs.
- Broadcom iSCSI boot is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- Routed networks (layer 3) require iSCSI digest to be enabled.
- Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
 Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
- The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeii10.php)
- NIC teaming with the Linux software initiator is not supported.
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- BIOS 5.0.11
- Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
- Firmware Version 2.1.1a
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
- Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- Broadcom iSCSI boot is supported on Linux with following adapters:
  - Broadcom 5710 based cards
  - Broadcom 5711 based cards
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- Intel iSCSI boot is supported with the following Intel adapters:
  - Ethernet X520 10GbE Dual Port KX4
  - Ethernet X520-2 10GbE
 Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
- Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
- Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
- Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- BIOS 3.03 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Driver Version 5.02.11.00.05.06-c3 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- BIOS 1.08 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- BIOS 1.11 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>

**Hewlett Packard HP-UX**  
Hewlett Packard

Hewlett Packard					
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot
1	Hewlett Packard HP-UX 11i: v1.0 (HP-UX 11.11) <sup>4</sup> , 5, 6, v2 (HP-UX 11.23)	Generic Vendor NIC 10/100 <sup>3</sup> , Generic Vendor NIC GbE <sup>3</sup>	LAN Only	EMC Unified Storage VNXe3300 (iSCSI) <sup>1, 2</sup>	N
2	Hewlett Packard HP-UX 11i: v2 (HP-UX 11.23), v3 (HP-UX 11.31)	Generic Vendor NIC 10GbE <sup>7</sup>	LAN Only	EMC Unified Storage VNXe3300 (iSCSI) <sup>1, 2</sup>	N

- VxVM and/or DMP not supported at this time
- Failover only supported with PVlinks and LVM
- Driver Version N/A
- Refer to the "iSCSI Server Setup Guide for HP-UX" for configuration details.
- HP-UX 11i 64 bit only
- Requires HP's iSCSI Software initiator version 11.11.03e
- Driver Version native

**IBM AIX**  
IBM

IBM						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	IBM AIX: 5.37, 6.11	Generic Vendor NIC 10/100 <sup>2</sup> , Generic Vendor NIC GbE <sup>2</sup>	LAN Only	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>3, 4, 5, 6</sup>

1. Requires minimum AIX 6100-02-01-0847 for support
2. Driver Version Native AIX Driver
3. EMC PowerPath is not supported.
4. Veritas Storage Foundation for AIX is not supported
5. TOE (TCP Offload Engine) adapters are currently not supported
6. Native MPIO is not supported
7. Requires minimum AIX 5300-09-01-0847 for support

## Microsoft Windows 2003 [x64]

### Microsoft

Microsoft						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2	Hewlett Packard Qlogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>23, 24, 25</sup>	LAN Only <sup>9</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y1, 2, 3, 4, 5, 6, 7, 8	See <sup>17, 18, 19</sup>
2	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	Generic Vendor NIC 10GbE <sup>11, 12, 22, 34, 35, 36</sup> , Generic Vendor NIC GbE <sup>10, 11, 12, 13, 14, 15</sup> , IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>7, 26, 27, 28, 29, 30, 31</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>7, 26, 27, 28, 29, 30, 31, 32, 33</sup>	LAN Only <sup>9</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y1, 2, 3, 4, 5, 6, 7, 8	See <sup>16, 17, 18, 19, 20</sup>
3	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	Generic Vendor NIC GbE <sup>10, 11, 12, 13, 14, 21, 22</sup>	LAN Only <sup>9</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y1, 2, 3, 4, 5, 6, 7, 8	See <sup>16, 17, 18, 19</sup>

1. iSCSI Boot from SAN is supported on certain IBM Servers BladeCenter models. Contact IBM support to obtain a list of supported blades and Microsoft Initiator version
2. Servers booting from external storage with QLA4010 iSCSI boards require Microsoft iSCSI Initiator 2.0 or 2.02 service to be installed. Note that HBA IQN must be altered prior to Windows installation. Refer to EMC Host Connectivity Guide for information on changing IQN and setting up boot for servers requiring MS iSCSI Initiator service.
3. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1108A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI supported with W2008 and W2008 R2. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
4. Intel iSCSI boot is supported on Dell servers with the following adapters: PRO/1000 PF, PRO/1000 PT, PRO/1000 PT dual port, PRO/ 1000 VT quad port, Ethernet X520 10GbE Dual Port KX4 and Ethernet Server Adapter X520-2 10GbE Please visit <http://support.dell.com> for the most currently supported servers and firmware/driver revisions.
5. Intel iSCSI boot is supported on Fujitsu Technology Solutions servers with the following Intel Adapters: 82575, 82576 iSCSI supported with W2008 and W2008 R2. Please visit <http://www.ts.fujitsu.com> for the most currently supported servers and firmware/driver revisions.
6. iSCSI Boot from SAN is supported on Fujitsu Siemens Computers Primergy RX3000 S3 servers. Contact Fujitsu Siemens Computers support to obtain a list of supported Microsoft Initiator version and Broadcom boot BIOS versions. iSCSI Boot is supported in Microsoft Clustering Service.
7. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
8. Broadcom iSCSI Boot is supported with the following adapters: Broadcom 5708, 5709, 5722, 57710 and 57711 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://support.dell.com> for the currently supported servers, firmware/driver versions and special install instructions.
9. Routed networks (layer 3) require iSCSI digest to be enabled.
10. The following NICs are not supported: 3COM-3C996B
11. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
12. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
13. iSCSI offload is currently supported on Dell PowerEdge Servers with the Broadcom NetXtreme II Network adapters (based on the Broadcom 5708 and 5709 ASIC) To download the latest firmware/driver, please visit <http://support.dell.com>
14. Any Microsoft supported server/NIC for the listed operating system revision is supported.
15. Driver Version Microsoft iSCSI Initiator 2.06 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
16. EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
17. Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
18. Microsoft Dynamic Disks are not supported.
19. Powerpath iSCSI 1.1 is supported with Windows 2003 operating systems.
20. Powerpath iSCSI 1.1 is not supported with Windows 2000 operating systems.
21. Driver Version Microsoft iSCSI Initiator 2.07 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
22. Driver Version Microsoft iSCSI Initiator 2.08 Microsoft iSCSI Initiator software. Dynamic disks are only supported on Windows 2008 when using the Microsoft iSCSI Initiator. They are not supported on Windows 2003 PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
23. BIOS 5.0.14
24. Driver Version 2.1.4.19 Requires Microsoft STORPort hotfix Q957910. Please see <http://support.microsoft.com/kb/957910>. NOTE: Hotfix Q957910 requires a minimum of Service Pack 2 (SP2) to be installed before the hotfix can be installed. To obtain this hotfix, fill out the hotfix request form at <http://support.microsoft.com/hotfix/KBHotfix.aspx?kbnm=957910&kbln=en-us>
25. Firmware Version 3.00.01.49
26. Firmware Version 2.1.1a
27. BIOS 5.0.11
28. Driver Version 5.0.2C On BroadCom's 5.0.4.1 CD

29. Virtual machines running on VMWare ESX are supported booting from the array.
30. VMWare ESX Server itself is supported booting from external array.
31. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
32. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
33. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
34. EMC Celerra supported for Cisco UCS attach.
35. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
36. Driver Version 8.10.3.0 Minimum supported driver version for Cisco UCS mezzanine adapter.

**Microsoft Windows 2003 [x86]**

**Microsoft**

Microsoft						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC 10GbE <b>17, 18, 34, 43, 44, 45</b> . Generic Vendor NIC GbE <b>16, 17, 18, 19, 20, 21</b> . IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <b>7, 35, 36, 37, 38, 39, 40</b> . IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <b>7, 35, 36, 37, 38, 39, 40, 41, 42</b>	LAN Only <sup>9</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y1, 2, 3, 4, 5, 6, 7, 8	See <b>13, 14, 15, 22, 23</b>
2	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Generic Vendor NIC GbE <b>16, 17, 18, 19, 20, 33, 34</b>	LAN Only <sup>9</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y1, 2, 3, 4, 5, 6, 7, 8	See <b>13, 14, 15, 22</b>
3	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487) <b>17, 18, 24, 25, 26, 27, 28, 29, 30, 31, 32</b>	LAN Only <sup>9</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y1, 2, 3, 4, 5, 6, 7, 8	See <b>13, 14, 15</b>
4	Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Hewlett Packard Qlogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <b>10, 11, 12</b>	LAN Only <sup>9</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y1, 2, 3, 4, 5, 6, 7, 8	See <b>13, 14, 15</b>

1. iSCSI Boot from SAN is supported on certain IBM Servers BladeCenter models. Contact IBM support to obtain a list of supported blades and Microsoft Initiator version
2. Servers booting from external storage with QLA4010 iSCSI boards require Microsoft iSCSI Initiator 2.0 or 2.02 service to be installed. Note that HBA IQN must be altered prior to Windows installation. Refer to EMC Host Connectivity Guide for information on changing IQN and setting up boot for servers requiring MS iSCSI Initiator service.
3. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater). X5561A-ZSFP + SR Transceiver; required for X1108A-Z iSCSI supported with W2008 and W2008 R2. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
4. Intel iSCSI boot is supported on Dell servers with the following adapters: PRO/1000 PF, PRO/1000 PT, PRO/1000 PT dual port, PRO/ 1000 VT quad port, Ethernet X520 10GbE Dual Port KX4 and Ethernet Server Adapter X520-2 10GbE Please visit <http://support.dell.com> for the most currently supported servers and firmware/driver revisions.
5. Intel iSCSI boot is supported on Fujitsu Technology Solutions servers with the following Intel Adapters: 82575, 82576 iSCSI supported with W2008 and W2008 R2. Please visit <http://www.ts.fujitsu.com> for the most currently supported servers and firmware/driver revisions.
6. iSCSI Boot from SAN is supported on Fujitsu Siemens Computers Primergy RX300 S3 servers. Contact Fujitsu Siemens Computers support to obtain a list of supported Microsoft Initiator version and Broadcom boot BIOS versions. iSCSI Boot is supported in Microsoft Clustering Service.
7. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Windows 2003, Windows 2008 and Windows 2008 R2 Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
8. Broadcom iSCSI Boot is supported with the following adapters: Broadcom 5708, 5709, 5722, 57710 and 57711 iSCSI boot is supported with Windows 2003, Windows 2008 and Windows 2008 R2 Please visit <http://support.dell.com> for the currently supported servers, firmware/driver versions and special install instructions.
9. Routed networks (layer 3) require iSCSI digest to be enabled.
10. BIOS 1.14
11. Driver Version 2.1.4.19 Requires Microsoft STORPort hotfix Q957910. Please see <http://support.microsoft.com/kb/957910>. NOTE: Hotfix Q957910 requires a minimum of Service Pack 2 (SP2) to be installed before the hotfix can be installed. To obtain this hotfix, fill out the hotfix request form at <http://support.microsoft.com/hotfix/KBHotfix.aspx?kbnm=957910&kbln=en-us>
12. Firmware Version 3.00.01.49
13. Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
14. Microsoft Dynamic Disks are not supported.
15. Powerpath iSCSI 1.1 is supported with Windows 2003 operating systems.
16. The following NICs are not supported: 3COM-3C996B
17. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
18. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
19. iSCSI offload is currently supported on Dell PowerEdge Servers with the Broadcom NetXtreme II Network adapters (based on the Broadcom 5708 and 5709 ASIC) To download the latest firmware/driver, please visit <http://support.dell.com>
20. Any Microsoft supported server/NIC for the listed operating system revision is supported.
21. Driver Version Microsoft iSCSI Initiator 2.06 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
22. EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
23. Powerpath iSCSI 1.1 is not supported with Windows 2000 operating systems.
24. Firmware Version 2.00.00.45
25. BIOS 1.09a
26. Driver Version 2.1.3.26
27. Driver Version 2.1.3.22
28. Driver Version 2.1.3.28
29. This iSCSI Exp Card DOES NOT support on the IBM blade server types HS21(7995,8853)
30. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
31. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)

32. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
33. Driver Version Microsoft iSCSI Initiator 2.07 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
34. Driver Version Microsoft iSCSI Initiator 2.08 Microsoft iSCSI Initiator software. Dynamic disks are only supported on Windows 2008 when using the Microsoft iSCSI Initiator. They are not supported on Windows 2003 PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
35. Firmware Version 2.1.1a
36. BIOS 5.0.11
37. Driver Version 5.0.2C On BroadCom's 5.0.4.1 CD
38. Virtual machines running on VMWare ESX are supported booting from the array.
39. VMWare ESX Server itself is supported booting from external array.
40. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeii10.php)
41. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
42. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeii10.php)
43. Driver Version 8.10.3.0 Minimum supported driver version for Cisco UCS mezzanine adapter.
44. EMC Celerra supported for Cisco UCS attach.
45. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.

## Microsoft Windows 2008 R2 SP1 [IA64]

### Microsoft

Microsoft						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	Generic Vendor NIC 10GbE12, 13, 40, 41, 42, 43, Generic Vendor NIC GbE11, 12, 13, 14, 15, 36, Generic Vendor NIC GbE11, 12, 13, 14, 15, 39, 40	LAN Only10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y2, 3, 4, 5, 6, 7, 8, 9	See16, 17, 18, 19
2	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	Generic Vendor NIC 10GbE12, 13, 40, 41, 42, 44, Generic Vendor NIC GbE1, 11, 12, 13, 14, 15, IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168)8, 21, 22, 23, 24, 25, 26, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164)8, 21, 22, 23, 24, 25, 26, 37, 38	LAN Only10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y2, 3, 4, 5, 6, 7, 8, 9	See16, 17, 18, 19, 20
3	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)45, 46, 47, IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)12, 13, 27, 28, 29, 30, 31, 32, 33, 34, 35	LAN Only10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y2, 3, 4, 5, 6, 7, 8, 9	See17, 18, 19

1. Driver Version Microsoft iSCSI Initiator 2.06 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
2. iSCSI Boot from SAN is supported on certain IBM Servers BladeCenter models. Contact IBM support to obtain a list of supported blades and Microsoft Initiator version
3. Servers booting from external storage with QLA4010 iSCSI boards require Microsoft iSCSI Initiator 2.0 or 2.02 service to be installed. Note that HBA IQN must be altered prior to Windows installation. Refer to EMC Host Connectivity guide for information on changing IQN and setting up boot for servers requiring MS iSCSI Initiator service.
4. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: . X1108A-Z (10 GbE dual-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI supported with W2008 and W2008 R2. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
5. Intel iSCSI boot is supported on Dell servers with the following adapters: PRO/1000 PF, PRO/1000 PT, PRO/1000 PT dual port, PRO/ 1000 VT quad port, Ethernet X520 10GbE Dual Port KX4 and Ethernet Server Adapter X520-2 10GbE Please visit <http://support.dell.com> for the most currently supported servers and firmware/driver revisions.
6. Intel iSCSI boot is supported on Fujitsu Technology Solutions servers with the following Intel Adapters: 82575, 82576 iSCSI supported with W2008 and W2008 R2. Please visit <http://www.ts.fujitsu.com> for the most currently supported servers and firmware/driver revisions.
7. iSCSI Boot from SAN is supported on Fujitsu Siemens Computers Primergy RX300 S3 servers. Contact Fujitsu Siemens Computers support to obtain a list of supported Microsoft Initiator version and Broadcom boot BIOS versions. iSCSI Boot is supported in Microsoft Clustering Service.
8. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
9. Broadcom iSCSI Boot is supported with the following adapters: Broadcom 5708, 5709, 5722, 57710 and 57711 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://support.dell.com> for the currently supported servers, firmware/driver versions and special install instructions.
10. Routed networks (layer 3) require iSCSI digest to be enabled.
11. The following NICs are not supported: 3COM-3C996B
12. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
13. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
14. iSCSI offload is currently supported on Dell PowerEdge Servers with the Broadcom NetXtreme II Network adapters (based on the Broadcom 5708 and 5709 ASIC) To download the latest firmware/driver, please visit <http://support.dell.com>
15. Any Microsoft supported server/NIC for the listed operating system revision is supported.
16. EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
17. Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
18. Microsoft Dynamic Disks are not supported.
19. Powerpath iSCSI 1.1 is supported with Windows 2003 operating systems.
20. Powerpath iSCSI 1.1 is not supported with Windows 2000 operating systems.
21. Virtual machines running on VMWare ESX are supported booting from the array.
22. VMWare ESX Server itself is supported booting from external array.
23. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeii10.php)
24. BIOS 5.0.11
25. Driver Version 5.0.2C On BroadCom's 5.0.4.1 CD
26. Firmware Version 2.1.1a
27. This iSCSI Exp Card DOES NOT support on the IBM blade server types HS21(7995,8853)
28. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
29. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
30. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
31. Driver Version 2.1.3.28
32. BIOS 1.09a
33. Driver Version 2.1.3.26
34. Driver Version 2.1.3.22
35. Firmware Version 2.00.00.45
36. Driver Version Microsoft iSCSI Initiator Native to Windows 2008 Server installation. NIC teaming with Microsoft iSCSI Initiator is not supported.
37. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
38. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeii10.php)
39. Driver Version Microsoft iSCSI Initiator 2.07 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
40. Driver Version Microsoft iSCSI Initiator 2.08 Microsoft iSCSI Initiator software. Dynamic disks are only supported on Windows 2008 when using the Microsoft iSCSI Initiator. They are not supported on Windows 2003 PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
41. EMC Celerra supported for Cisco UCS attach.
42. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
43. Driver Version 1.0.48.1 Minimum supported driver version for Cisco UCS mezzanine adapter.
44. Driver Version 8.10.3.0 Minimum supported driver version for Cisco UCS mezzanine adapter.
45. Firmware Version 3.00.01.49
46. BIOS 1.14
47. Driver Version 2.1.4.19 Requires Microsoft STORPort hotfix Q957910. Please see <http://support.microsoft.com/kb/957910>. NOTE: Hotfix Q957910 requires a minimum of Service Pack 2 (SP2) to be installed before the hotfix can be installed. To obtain this hotfix, fill out the hotfix request form at <http://support.microsoft.com/hotfix/KBHotfix.aspx?kbnm=957910&kbln=en-us>

## Microsoft Windows 2008 R2 SP1 [x64]

## Microsoft

Microsoft						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Generic Vendor NIC 10GbE26, 27, 28, 29, 30, 31, Generic Vendor NIC GbE27, 29, 35, 36, 37, 38, IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168)10, 17, 18, 19, 20, 21, 22, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164)10, 17, 18, 19, 20, 21, 22, 24, 25, QLogic QLE8240-SR-E-SP1, 2, QLogic QLE8242-SR-E-SP1, 2, QLogic QLE8250-CU-E-SP1, 2, QLogic QLE8252-CU-E-SP1, 2	LAN Only <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>3</sup>	Y4, 5, 6, 7, 8, 9, 10, 11	See13, 14, 15, 16, 23
2	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Generic Vendor NIC 10GbE26, 27, 28, 29, 30, 50, Generic Vendor NIC GbE27, 29, 30, 36, 37, 38, 48, Generic Vendor NIC GbE27, 29, 36, 37, 38, 49, QLogic QLE8240-SR-E-SP1, 2, QLogic QLE8242-SR-E-SP1, 2, QLogic QLE8250-CU-E-SP1, 2, QLogic QLE8252-CU-E-SP1, 2	LAN Only <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>3</sup>	Y4, 5, 6, 7, 8, 9, 10, 11	See13, 14, 15, 16
3	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)32, 33, 34, IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)27, 29, 39, 40, 41, 42, 43, 44, 45, 46, 47, QLogic QLE8240-SR-E-SP1, 2, QLogic QLE8242-SR-E-SP1, 2, QLogic QLE8250-CU-E-SP1, 2, QLogic QLE8252-CU-E-SP1, 2	LAN Only <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>3</sup>	Y4, 5, 6, 7, 8, 9, 10, 11	See14, 15, 16

1. BIOS 3.06
2. Driver Version 2.1.5.25
3. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNX array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
4. iSCSI Boot from SAN is supported on certain IBM Servers BladeCenter models. Contact IBM support to obtain a list of supported blades and Microsoft Initiator version
5. Servers booting from external storage with QLA4010 iSCSI boards require Microsoft iSCSI Initiator 2.0 or 2.02 service to be installed. Note that HBA IQN must be altered prior to Windows installation. Refer to EMC Host Connectivity Guide for information on changing IQN and setting up boot for servers requiring MS iSCSI Initiator service.
6. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Opln/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Opln/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater). X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI supported with W2008 and W2008 R2. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
7. Intel iSCSI boot is supported on Dell servers with the following adapters: PRO/1000 PF, PRO/1000 PT, PRO/1000 PT dual port, PRO/ 1000 VT quad port, Ethernet X520 10GbE Dual Port KX4 and Ethernet Server Adapter X520-2 10GbE Please visit <http://support.dell.com> for the most currently supported servers and firmware/driver revisions.
8. Intel iSCSI boot is supported on Fujitsu Technology Solutions servers with the following Intel Adapters: 82575, 82576 iSCSI supported with W2008 and W2008 R2. Please visit <http://www.ts.fujitsu.com> for the most currently supported servers and firmware/driver revisions.
9. iSCSI Boot from SAN is supported on Fujitsu Siemens Computers Primergy RX300 S3 servers. Contact Fujitsu Siemens Computers support to obtain a list of supported Microsoft Initiator version and Broadcom boot BIOS versions. iSCSI Boot is supported in Microsoft Clustering Service.
10. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Windows 2003, Windows 2008 and Windows 2008 R2 Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
11. Broadcom iSCSI Boot is supported with the following adapters: Broadcom 5708, 5709, 5722, 57710 and 57711 iSCSI boot is supported with Windows 2003, Windows 2008 and Windows 2008 R2 Please visit <http://support.dell.com> for the currently supported servers, firmware/driver versions and special install instructions.
12. Routed networks (layer 3) require iSCSI digest to be enabled.
13. EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
14. Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
15. Microsoft Dynamic Disks are not supported.
16. Powerpath iSCSI 1.1 is supported with Windows 2003 operating systems.
17. Virtual machines running on VMWare ESX are supported booting from the array.
18. VMWare ESX Server itself is supported booting from external array.
19. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeii10.php)
20. BIOS 5.0.1.1
21. Driver Version 5.0.2C On BroadCom's 5.0.4.1 CD
22. Firmware Version 2.1.1a
23. Powerpath iSCSI 1.1 is not supported with Windows 2000 operating systems.
24. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
25. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeii10.php)
26. EMC Celerra supported for Cisco UCS attach.
27. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
28. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
29. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
30. Driver Version Microsoft iSCSI Initiator 2.08 Microsoft iSCSI Initiator software. Dynamic disks are only supported on Windows 2008 when using the Microsoft iSCSI Initiator. They are not supported on Windows 2003 PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
31. Driver Version 8.10.3.0 Minimum supported driver version for Cisco UCS mezzanine adapter.
32. BIOS 1.14
33. Driver Version 2.1.4.19 Requires Microsoft STORPort hotfix Q957910. Please see <http://support.microsoft.com/kb/957910>. NOTE: Hotfix Q957910 requires a minimum of Service Pack 2 (SP2) to be installed before the hotfix can be installed. To obtain this hotfix, fill out the hotfix request form at <http://support.microsoft.com/hotfix/KBHotfix.aspx?kbnum=957910&kbln=en-us>
34. Firmware Version 3.00.01.49
35. Driver Version Microsoft iSCSI Initiator 2.06 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
36. The following NICs are not supported: 3COM-3C996B
37. iSCSI offload is currently supported on Dell PowerEdge Servers with the Broadcom NetXtreme II Network adapters (based on the Broadcom 5708 and 5709 ASIC) To download the latest firmware/driver, please visit <http://support.dell.com>
38. Any Microsoft supported server/NIC for the listed operating system revision is supported.
39. BIOS 1.09a
40. Driver Version 2.1.3.26
41. Driver Version 2.1.3.22
42. Driver Version 2.1.3.28
43. Firmware Version 2.00.00.45
44. This iSCSI Exp Card DOES NOT support on the IBM blade server types HS21(7995,8853)
45. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
46. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
47. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
48. Driver Version Microsoft iSCSI Initiator 2.07 Microsoft iSCSI Initiator software. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported.
49. Driver Version Microsoft iSCSI Initiator Native to Windows 2008 Server installation. NIC teaming with Microsoft iSCSI Initiator is not supported.
50. Driver Version 1.0.48.1 Minimum supported driver version for Cisco UCS mezzanine adapter.

## Microsoft Windows 2008 R2 [x64]

## Microsoft

Microsoft						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Microsoft Windows 2008 R2 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Generic Vendor NIC 10GbE1, 11, 12, 13, 14, 15, Generic Vendor NIC GbE12, 14, 21, 22, 23, 24, IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168)8, 30, 31, 32, 33, 34, 35, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164)8, 30, 31, 32, 33, 34, 35, 36, 37, QLogic QLE8240-SR-E-SP28, 29, QLogic QLE8242-SR-E-SP28, 29, QLogic QLE8250-CU-E-SP28, 29, QLogic QLE8252-CU-E-SP28, 29	LAN Only <sup>10</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>20</sup>	Y2, 3, 4, 5, 6, 7, 8, 9	See16, 17, 18, 19
2	Microsoft Windows 2008 R2 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Hewlett Packard Qlogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>25, 26, 27</sup> , QLogic QLE8240-SR-E-SP28, 29, QLogic QLE8242-SR-E-SP28, 29, QLogic QLE8250-CU-E-SP28, 29, QLogic QLE8252-CU-E-SP28, 29	LAN Only <sup>10</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>20</sup>	Y2, 3, 4, 5, 6, 7, 8, 9	See17, 18, 19

1. Driver Version 1.0.48.1 Minimum supported driver version for Cisco UCS mezzanine adapter.
2. iSCSI Boot from SAN is supported on certain IBM Servers BladeCenter models. Contact IBM support to obtain a list of supported blades and Microsoft Initiator version
3. Servers booting from external storage with QLA4010 iSCSI boards require Microsoft iSCSI Initiator 2.0 or 2.02 service to be installed. Note that HBA IQN must be altered prior to Windows installation. Refer to EMC Host Connectivity Guide for information on changing IQN and setting up boot for servers requiring MS iSCSI Initiator service.
4. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI supported with W2008 and W2008 R2. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
5. Intel iSCSI boot is supported on Dell servers with the following adapters: PRO/1000 PF, PRO/1000 PT, PRO/1000 PT dual port, PRO/ 1000 VT quad port, Ethernet X520 10GbE Dual Port KX4 and Ethernet Server Adapter X520-2 10GbE Please visit <http://support.dell.com> for the most currently supported servers and firmware/driver revisions.
6. Intel iSCSI boot is supported on Fujitsu Technology Solutions servers with the following Intel Adapters: 82575, 82576 iSCSI supported with W2008 and W2008 R2. Please visit <http://www.ts.fujitsu.com> for the most currently supported servers and firmware/driver revisions.
7. iSCSI Boot from SAN is supported on Fujitsu Siemens Computers Primergy RX300 S3 servers. Contact Fujitsu Siemens Computers support to obtain a list of supported Microsoft Initiator version and Broadcom boot BIOS versions. iSCSI Boot is supported in Microsoft Clustering Service.
8. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Windows 2003, Windows 2008 and Windows 2008 R2 Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
9. Broadcom iSCSI Boot is supported with the following adapters: Broadcom 5708, 5709, 5722, 57710 and 57711 iSCSI boot is supported with Windows 2003, Windows 2008 and Windows 2008 R2 Please visit <http://support.dell.com> for the currently supported servers, firmware/driver versions and special install instructions.
10. Routed networks (layer 3) require iSCSI digest to be enabled.
11. EMC Celerra supported for Cisco UCS attach.
12. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
13. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
14. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
15. Driver Version Microsoft iSCSI Initiator 2.08 Microsoft iSCSI Initiator software. Dynamic disks are only supported on Windows 2008 (when using the Microsoft iSCSI Initiator. They are not supported on Windows 2003 PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
16. EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
17. Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
18. Microsoft Dynamic Disks are not supported.
19. Powerpath iSCSI 1.1 is supported with Windows 2003 operating systems.
20. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
21. Driver Version Microsoft iSCSI Initiator Native to Windows 2008 Server installation. NIC teaming with Microsoft iSCSI Initiator is not supported.
22. The following NICs are not supported: 3COM-3C996B
23. iSCSI offload is currently supported on Dell PowerEdge Servers with the Broadcom NetXtreme II Network adapters (based on the Broadcom 5708 and 5709 ASIC) To download the latest firmware/driver, please visit <http://support.dell.com>
24. Any Microsoft supported server/NIC for the listed operating system revision is supported.
25. BIOS 1.14
26. Driver Version 2.1.4.19
27. Firmware Version 3.00.01.49
28. BIOS 3.06
29. Driver Version 2.1.5.25
30. BIOS 5.0.11
31. Driver Version 5.0.2C On BroadCom's 5.0.4.1 CD
32. Firmware Version 2.1.1a
33. Virtual machines running on VMWare ESX are supported booting from the array.
34. VMWare ESX Server itself is supported booting from external array.
35. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremei10.php)
36. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
37. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremei10.php)

Microsoft Windows 2008 [x64]

Microsoft

Microsoft						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Microsoft Windows 2008 [x64] Enterprise: Edition SP21, Edition1; Microsoft Windows 2008 [x64] Standard: Edition SP21, Edition1; Microsoft Windows 2008 [x64] Storage: Server, Server SP2	Hewlett Packard Qlogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>27, 28, 29</sup>	LAN Only <sup>17</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>24</sup>	Y9, 10, 11, 12, 13, 14, 15, 16	See3, 4, 5
2	Microsoft Windows 2008 [x64]: DataCenter SP21, DataCenter1, Enterprise Edition SP21, Enterprise Edition1, Standard Edition SP21, Standard Edition1, Storage Server, Storage Server SP2	Generic Vendor NIC 10GbE <sup>31, 32, 36, 37, 38, 39</sup> , Generic Vendor NIC GbE <sup>30, 31, 32, 33, 34, 35</sup> , IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>15, 18, 19, 20, 21, 22, 23</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>15, 18, 19, 20, 21, 22, 23, 25, 26</sup>	LAN Only <sup>17</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>24</sup>	Y9, 10, 11, 12, 13, 14, 15, 16	See2, 3, 4, 5
3	Microsoft Windows 2008 [x64]: DataCenter SP21, DataCenter1, Enterprise Edition SP21, Enterprise Edition1, Standard Edition SP21, Standard Edition1, Storage Server, Storage Server SP2, Web Server	QLogic QLE8240-SR-E-SP7, 8, QLogic QLE8242-SR-E-SP7, 8, QLogic QLE8250-CU-E-SP7, 8, QLogic QLE8252-CU-E-SP7, 8	LAN Only <sup>17</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>24</sup>	Y9, 10, 11, 12, 13, 14, 15, 16	See2, 3, 4, 5

4	Microsoft Windows 2008 [x64]: DataCenter SP21, DataCenter1, Enterprise Edition SP21, Enterprise Edition1, Standard Edition SP21, Standard Edition1, Storage Server, Storage Server SP2, Web Server	QLogic QLE8240-SR-E-SP7, 8, QLogic QLE8242-SR-E-SP7, 8, QLogic QLE8250-CU-E-SP7, 8, QLogic QLE8252-CU-E-SP7, 8	LAN Only <sup>17</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>24</sup>	Y9, 10, 11, 12, 13, 14, 15, 16	See2, 3, 4, 5, 6
5	Microsoft Windows 2008 [x64]: DataCenter SP21, DataCenter1, Enterprise Edition SP21, Enterprise Edition1, Standard Edition SP21, Standard Edition1, Storage Server, Storage Server SP2, Web Server	QLogic QLE8240-SR-E-SP7, 8, QLogic QLE8242-SR-E-SP7, 8, QLogic QLE8250-CU-E-SP7, 8, QLogic QLE8252-CU-E-SP7, 8	LAN Only <sup>17</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>24</sup>	Y9, 10, 11, 12, 13, 14, 15, 16	See3, 4, 5

- Windows Server Core installation option is supported by EMC. Contact your server vendor to determine their support statement for Server Core.
- EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
- Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
- Microsoft Dynamic Disks are not supported.
- Powerpath iSCSI 1.1 is supported with Windows 2003 operating systems.
- Powerpath iSCSI 1.1 is not supported with Windows 2000 operating systems.
- BIOS 3.06
- Driver Version 2.1.5.25
- iSCSI Boot from SAN is supported on certain IBM Servers BladeCenter models. Contact IBM support to obtain a list of supported blades and Microsoft Initiator version
- Servers booting from external storage with QLA4010 iSCSI boards require Microsoft iSCSI Initiator 2.0 or 2.02 service to be installed. Note that HBA IQN must be altered prior to Windows installation. Refer to EMC Host Connectivity Guide for information on changing IQN and setting up boot for servers requiring MS iSCSI Initiator service.
- Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI supported with W2008 and W2008 R2. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
- Intel iSCSI boot is supported on Dell servers with the following adapters: PRO/1000 PF, PRO/1000 PT, PRO/1000 PT dual port, PRO/ 1000 VT quad port, Ethernet X520 10GbE Dual Port KX4 and Ethernet Server Adapter X520-2 10GbE Please visit <http://support.dell.com> for the most currently supported servers and firmware/driver revisions.
- Intel iSCSI boot is supported on Fujitsu Technology Solutions servers with the following Intel Adapters: 82575, 82576 iSCSI supported with W2008 and W2008 R2. Please visit <http://www.ts.fujitsu.com> for the most currently supported servers and firmware/driver revisions.
- iSCSI Boot from SAN is supported on Fujitsu Siemens Computers Primergy RX300 S3 servers. Contact Fujitsu Siemens Computers support to obtain a list of supported Microsoft Initiator version and Broadcom boot BIOS versions. iSCSI Boot is supported in Microsoft Clustering Service.
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- Broadcom iSCSI Boot is supported with the following adapters: Broadcom 5708, 5709, 5722, 57710 and 57711 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://support.dell.com> for the currently supported servers, firmware/driver versions and special install instructions.
- Routed networks (layer 3) require iSCSI digest to be enabled.
- BIOS 5.0.11
- Driver Version 5.0.2C On Broadcom's 5.0.4.1 CD
- Firmware Version 2.1.1a
- Virtual machines running on VMWare ESX are supported booting from the array.
- VMWare ESX Server itself is supported booting from external array.
- The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
- On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
- BIOS 1.14
- Driver Version 2.1.4.19
- Firmware Version 3.00.01.49
- The following NICs are not supported: 3COM-3C996B
- Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
- SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
- iSCSI offload is currently supported on Dell PowerEdge Servers with the Broadcom NetXtreme II Network adapters (based on the Broadcom 5708 and 5709 ASIC) To download the latest firmware/driver, please visit <http://support.dell.com>
- Any Microsoft supported server/NIC for the listed operating system revision is supported.
- Driver Version Microsoft iSCSI Initiator Native to Windows 2008 Server installation. NIC teaming with Microsoft iSCSI Initiator is not supported.
- EMC Celerra supported for Cisco UCS attach.
- Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
- Driver Version Microsoft iSCSI Initiator 2.08 Microsoft iSCSI Initiator software. Dynamic disks are only supported on Windows 2008 when using the Microsoft iSCSI Initiator. They are not supported on Windows 2003 PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
- Driver Version 1.0.48.1 Minimum supported driver version for Cisco UCS mezzanine adapter.

Microsoft Windows 2008 [x86]

Microsoft

Microsoft						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Microsoft Windows 2008 [x86] Enterprise: Edition SP2 <sup>15</sup> , Edition <sup>15</sup> ;  Microsoft Windows 2008 [x86] Standard: Edition SP2 <sup>15</sup> , Edition <sup>15</sup>	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>1, 2, 16</sup>	LAN Only <sup>14</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>17</sup>	Y6, 7, 8, 9, 10, 11, 12, 13	See3, 4, 5
2	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>15</sup> , DataCenter <sup>15</sup> , Enterprise Edition SP2 <sup>15</sup> , Enterprise Edition <sup>15</sup> , Standard Edition SP2 <sup>15</sup> , Standard Edition <sup>15</sup>	Generic Vendor NIC 10GbE <sup>23, 24, 36, 37, 38, 39</sup> , Generic Vendor NIC GbE <sup>21, 22, 23, 24, 25, 26</sup> , IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>12, 28, 29, 30, 31, 32, 33</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>12, 28, 29, 30, 31, 32, 33, 34, 35</sup>	LAN Only <sup>14</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>17</sup>	Y6, 7, 8, 9, 10, 11, 12, 13	See3, 4, 5, 20
3	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>15</sup> , DataCenter <sup>15</sup> , Enterprise Edition SP2 <sup>15</sup> , Enterprise Edition <sup>15</sup> , Standard Edition SP2 <sup>15</sup> , Standard Edition <sup>15</sup> , Web Server	QLogic QLE8240-SR-E-SP18, 19, QLogic QLE8242-SR-E-SP18, 19, QLogic QLE8250-CU-E-SP18, 19, QLogic QLE8252-CU-E-SP18, 19	LAN Only <sup>14</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>17</sup>	Y6, 7, 8, 9, 10, 11, 12, 13	See3, 4, 5
4	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>15</sup> , DataCenter <sup>15</sup> , Enterprise Edition SP2 <sup>15</sup> , Enterprise Edition <sup>15</sup> , Standard Edition SP2 <sup>15</sup> , Standard Edition <sup>15</sup> , Web Server	QLogic QLE8240-SR-E-SP18, 19, QLogic QLE8242-SR-E-SP18, 19, QLogic QLE8250-CU-E-SP18, 19, QLogic QLE8252-CU-E-SP18, 19	LAN Only <sup>14</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>17</sup>	Y6, 7, 8, 9, 10, 11, 12, 13	See3, 4, 5, 20

5	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>15</sup> , DataCenter <sup>15</sup> , Enterprise Edition SP2 <sup>15</sup> , Enterprise Edition <sup>15</sup> , Standard Edition SP2 <sup>15</sup> , Standard Edition <sup>15</sup> , Web Server	QLogic QLE8240-SR-E-SP18, 19, QLogic QLE8242-SR-E-SP18, 19, QLogic QLE8250-CU-E-SP18, 19, QLogic QLE8252-CU-E-SP18, 19	LAN Only <sup>14</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>17</sup>	Y6, 7, 8, 9, 10, 11, 12, 13	See <sup>3, 4, 5, 20, 27</sup>
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1. Driver Version 2.1.4.19
2. Firmware Version 3.00.01.49
3. Powerpath 4.3.1 or higher is supported. All paths may be on a single subnet, or multiple subnets may be used.
4. Microsoft Dynamic Disks are not supported.
5. Powerpath iSCSI 1.1 is supported with Windows 2003 operating systems.
6. iSCSI Boot from SAN is supported on certain IBM Servers BladeCenter models. Contact IBM support to obtain a list of supported blades and Microsoft Initiator version
7. Servers booting from external storage with QLA4010 iSCSI boards require Microsoft iSCSI Initiator 2.0 or 2.02 service to be installed. Note that HBA IQN must be altered prior to Windows installation. Refer to EMC Host Connectivity Guide for information on changing IQN and setting up boot for servers requiring MS iSCSI Initiator service.
8. Intel iSCSI boot is supported on Oracle servers with the following Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI supported with W2008 and W2008 R2. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
9. Intel iSCSI boot is supported on Dell servers with the following adapters: PRO/1000 PF, PRO/1000 PT, PRO/1000 PT dual port, PRO/ 1000 VT quad port, Ethernet X520 10GbE Dual Port KX4 and Ethernet Server Adapter X520-2 10GbE Please visit <http://support.dell.com> for the most currently supported servers and firmware/driver revisions.
10. Intel iSCSI boot is supported on Fujitsu Technology Solutions servers with the following Intel Adapters: 82575, 82576 iSCSI supported with W2008 and W2008 R2. Please visit <http://www.ts.fujitsu.com> for the most currently supported servers and firmware/driver revisions.
11. iSCSI Boot from SAN is supported on Fujitsu Siemens Computers Primergy RX300 S3 servers. Contact Fujitsu Siemens Computers support to obtain a list of supported Microsoft Initiator version and Broadcom boot BIOS versions. iSCSI Boot is supported in Microsoft Clustering Service.
12. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
13. Broadcom iSCSI Boot is supported with the following adapters: Broadcom 5708, 5709, 5722, 57710 and 57711 iSCSI boot is supported with Windows 2003 , Windows 2008 and Windows 2008 R2 Please visit <http://support.dell.com> for the currently supported servers, firmware/driver versions and special install instructions.
14. Routed networks (layer 3) require iSCSI digest to be enabled.
15. Windows Server Core installation option is supported by EMC. Contact your server vendor to determine their support statement for Server Core.
16. BIOS 1.14
17. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
18. BIOS 3.06
19. Driver Version 2.1.5.25
20. EMC provides documentation for iSCSI configurations that contains helpful information for using iSCSI with EMC storage. Visit EMC Powerlink and download part number 300-000-603 for the Windows Host Connectivity Guide.
21. Driver Version Microsoft iSCSI Initiator Native to Windows 2008 Server installation. NIC teaming with Microsoft iSCSI Initiator is not supported.
22. The following NICs are not supported: 3COM-3C996B
23. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
24. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
25. iSCSI offload is currently supported on Dell PowerEdge Servers with the Broadcom NetXtreme II Network adapters (based on the Broadcom 5708 and 5709 ASIC) To download the latest firmware/driver, please visit <http://support.dell.com>
26. Any Microsoft supported server/NIC for the listed operating system revision is supported.
27. Powerpath iSCSI 1.1 is not supported with Windows 2000 operating systems.
28. Virtual machines running on VMWare ESX are supported booting from the array.
29. VMWare ESX Server itself is supported booting from external array.
30. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
31. BIOS 5.0.11
32. Driver Version 5.0.2C On BroadCom's 5.0.4.1 CD
33. Firmware Version 2.1.1a
34. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
35. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremeeii10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeeii10.php)
36. EMC Celerra supported for Cisco UCS attach.
37. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
38. Driver Version Microsoft iSCSI Initiator 2.08 Microsoft iSCSI Initiator software. Dynamic disks are only supported on Windows 2008 when using the Microsoft iSCSI Initiator. They are not supported on Windows 2003 PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS) NIC teaming with Microsoft iSCSI Initiator is not supported. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
39. Driver Version 1.0.48.1 Minimum supported driver version for Cisco UCS mezzanine adapter.

**Oracle Linux UEK [x86\_64]**

**Oracle**

Oracle						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Oracle Linux UEK [x86_64] 5, 7, 8, 9	Emulex OCE10102-IM-E1, 39, 40, Emulex OCE10102-IX-E1, 39, 40, Emulex OCE11102-IM-E1, 2, 3, 4, Emulex OCE11102-IX-E1, 2, 3, 4	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>6, 7</sup>
2	Oracle Linux UEK [x86_64] 5, 7, 8, 9	Emulex OCE11102-IM-E1, 2, 3, 4, Emulex OCE11102-IX-E1, 2, 3, 4	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	
3	Oracle Linux UEK [x86_64] 5, 7, 8, 9	Emulex OCE11102-IM-E1, 2, 3, 4, Emulex OCE11102-IX-E1, 2, 3, 4	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>10</sup>
4	Oracle Linux UEK [x86_64] 6, 09, 26	Generic Vendor NIC 10/100 <sup>18</sup> Generic Vendor NIC GbE <sup>14, 18, 19, 20</sup> , Hewlett Packard Qlogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>22, 23, 25, 35</sup>	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>27, 32</sup>	See <sup>6</sup>
5	Oracle Linux UEK [x86_64] 6, 09, 26	Generic Vendor NIC 10GbE <sup>14, 18, 19, 21</sup>	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>27, 32, 33, 34</sup>	See <sup>6</sup>

6	Oracle Linux UEK [x86_64] 6.09, 26	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168)12, 13, 14, 15, 16, 17, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164)12, 13, 14, 15, 16, 17	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y27	See <sup>6, 7</sup>
7	Oracle Linux UEK [x86_64] 6.09, 26	QLogic QLA4010-E-SP28, 29, 35, 36, 37, QLogic QLA4010C-E-SP28, 29, 35, 36, 37, QLogic QLA4050-E-SP22, 28, 29, 30, 31, 35, QLogic QLA4050C-E-SP22, 28, 29, 30, 31, 35, QLogic QLA4052C-E-SP22, 28, 29, 30, 31, 35, QLogic QLE4060C-E-SP22, 23, 28, 31, 35, 38, QLogic QLE4062C-E-SP22, 23, 28, 31, 35, 38	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y32	See <sup>6</sup>
8	Oracle Linux UEK [x86_64] 5.78, 9, 6.19, 11	Generic Vendor NIC 10/100 <sup>18</sup> , Generic Vendor NIC 10GbE <sup>14, 18, 19, 21</sup> , Generic Vendor NIC GbE <sup>14, 18, 19, 20</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>22, 23, 24, 25</sup> , QLogic QLA4010-E-SP24, 28, 29, 36, 37, QLogic QLA4010C-E-SP24, 28, 29, 36, 37, QLogic QLA4050-E-SP22, 24, 28, 29, 30, 31, QLogic QLA4050C-E-SP22, 24, 28, 29, 30, 31, QLogic QLA4052C-E-SP22, 24, 28, 29, 30, 31, QLogic QLE4060C-E-SP22, 23, 24, 28, 31, 38, QLogic QLE4062C-E-SP22, 23, 24, 28, 31, 38	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>6</sup>
9	Oracle Linux UEK [x86_64] 5.78, 9, 6.19, 11	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168)12, 13, 14, 15, 16, 17, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164)12, 13, 14, 15, 16, 17	LAN Only <sup>5</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>6, 7</sup>

1. Driver Version 2.103.298.0 Driver is integrated into the kernel. Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
2. Firmware Version 3.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
3. BIOS 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
4. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
5. Routed networks (layer 3) require iSCSI digest to be enabled.
6. Please refer to the Host Bus Adapter note for the supported NICs.
7. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
8. **Supported kernels: 2.6.32-200.13.1.el5uek, 2.6.32-200.16.1.el5uek, 2.6.32-200.19.1.el5uek, 2.6.32-200.20.1.el5uek. Confirm kernel support with server vendor.**
9. The LVM included as part of this update is supported and can be used in conjunction with PowerPath empower pseudo device file names as well as native sd device file names.
10. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.
11. **Supported kernels: 2.6.32-100.34.1.el6uek. Confirm kernel support with server vendor.**
12. Broadcom iSCSI offload (without iboot) is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
13. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at:[http://www.broadcom.com/support/ethernet\\_nic/netxtremeei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeei10.php)
14. NIC teaming with the Linux software initiator is not supported.
15. BIOS 5.0.1.1
16. Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
17. Firmware Version 2.1.1a
18. Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
19. Broadcom iSCSI offload (without iboot) is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
- Broadcom 5708  
- Broadcom 5709  
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
20. Broadcom iSCSI boot is supported on Linux with following adapters:  
- Broadcom 5710 based cards  
- Broadcom 5711 based cards  
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
21. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
22. Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
23. BIOS 1.13 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
24. Driver Version 5.02.12.00.32.01-c0 Driver is integrated into the kernel. Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
25. Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
26. **Supported kernels: 2.6.32-100.28.1.el6, 2.6.32-100.28.9.el6, 2.6.32-100.28.11.el6, 2.6.32-100.28.15.el6, 2.6.32-100.28.17.el6, 2.6.32-100.35.1.el6uek. Confirm kernel support with server vendor.**
27. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
28. Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at:<http://www.qlogic.com>
29. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
30. BIOS 1.08 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
31. Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
32. Broadcom iSCSI boot is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
- Broadcom 5708  
- Broadcom 5709  
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
33. Intel iSCSI boot is supported with the following Intel adapters:  
- Ethernet X520 10GbE Dual Port KX4  
- Ethernet X520-2 10GbE  
Please visit <http://support.dell.com> for the most currently supported servers and firmware/BIOS versions.
34. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: . X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
35. Driver Version 5.02.12.00.32.01-c0 Driver is integrated into the kernel.
36. Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
37. BIOS 1.11 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
38. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
39. Firmware Version 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
40. BIOS 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>

## Oracle Linux [32-Bit]

Oracle

Oracle						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Oracle Linux [32-Bit] 5.6.9, 10, 11	Emulex OCE10102-IM-E25, 26, 27, Emulex OCE10102-IX-E25, 26, 27	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y6, 7, 24	See <sup>5, 23</sup>
2	Oracle Linux [32-Bit] 5.6.9, 10, 11	Generic Vendor NIC 10/100 <sup>34</sup> , Generic Vendor NIC GbE <sup>33, 34, 35, 36</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>1, 2, 3, 4</sup>	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y6, 7	See <sup>5</sup>
3	Oracle Linux [32-Bit] 5.6.9, 10, 11	Generic Vendor NIC 10GbE <sup>33, 34, 35, 38</sup>	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y6, 7, 24, 39	See <sup>5</sup>
4	Oracle Linux [32-Bit] 5.6.9, 10, 11	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>28, 29, 30, 31, 32, 33</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>28, 29, 30, 31, 32, 33</sup>	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y6	See <sup>5, 23</sup>
5	Oracle Linux [32-Bit] 5.6.9, 10, 11	QLogic QLA4010-E-SP2, 12, 13, 20, 21, QLogic QLA4010C-E-SP2, 12, 13, 20, 21, QLogic QLA4050-E-SP2, 3, 12, 13, 14, 15, QLogic QLA4050C-E-SP2, 3, 12, 13, 14, 15, QLogic QLA4052C-E-SP2, 3, 12, 13, 14, 15, QLogic QLE4060C-E-SP1, 2, 3, 12, 15, 22, QLogic QLE4062C-E-SP1, 2, 3, 12, 15, 22	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y7	See <sup>5</sup>
6	Oracle Linux [32-Bit] 5.7.16	Emulex OCE10102-IM-E25, 27, 37, Emulex OCE10102-IM-E25, 27, 40, Emulex OCE10102-IX-E25, 27, 37, Emulex OCE10102-IX-E25, 27, 40, Emulex OCE11102-IM-E37, 41, 42, 43, Emulex OCE11102-IX-E37, 41, 42, 43, Generic Vendor NIC 10/100 <sup>34</sup> , Generic Vendor NIC 10GbE <sup>33, 34, 35, 38</sup> , Generic Vendor NIC GbE <sup>33, 34, 35, 36</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>1, 3, 4, 19</sup> , IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>28, 29, 30, 31, 32, 33</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>28, 29, 30, 31, 32, 33</sup> , QLogic QLA4010-E-SP12, 13, 19, 20, 21, QLogic QLA4010C-E-SP12, 13, 19, 20, 21, QLogic QLA4050-E-SP3, 12, 13, 14, 15, 19, QLogic QLA4050C-E-SP3, 12, 13, 14, 15, 19, QLogic QLA4052C-E-SP3, 12, 13, 14, 15, 19, QLogic QLE4060C-E-SP1, 3, 12, 15, 19, 22, QLogic QLE4062C-E-SP1, 3, 12, 15, 19, 22	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>5</sup>
7	Oracle Linux [32-Bit] 5.7.16	Emulex OCE11102-IM-E37, 41, 42, 43, Emulex OCE11102-IX-E37, 41, 42, 43	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI)	N	
8	Oracle Linux [32-Bit] 5.7.16	Emulex OCE11102-IM-E37, 41, 42, 43, Emulex OCE11102-IX-E37, 41, 42, 43	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>44</sup>
9	Oracle Linux [32-Bit] 5.7.16	Emulex OCE11102-IM-E37, 41, 42, 43, Emulex OCE11102-IX-E37, 41, 42, 43, QLogic QLE8240-SR-E-SP2, 17, 18, 19, QLogic QLE8240-SR-E-SP17, 18, 19, QLogic QLE8242-SR-E-SP2, 17, 18, 19, QLogic QLE8242-SR-E-SP17, 18, 19, QLogic QLE8250-CU-E-SP2, 17, 18, 19, QLogic QLE8250-CU-E-SP17, 18, 19, QLogic QLE8252-CU-E-SP2, 17, 18, 19, QLogic QLE8252-CU-E-SP17, 18, 19	LAN Only <sup>8</sup>	EMC Unified Storage: VNXe3300 (iSCSI)	N	

- BIOS 1.13 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Driver Version 5.02.04.02.05.06-d0 Driver is integrated into the kernel.
- Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Please refer to the Host Bus Adapter note for the supported NICs.
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- Broadcom iSCSI boot is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
- Broadcom 5708  
- Broadcom 5709  
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- Routed networks (layer 3) require iSCSI digest to be enabled.
- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- The LVM included as part of this update is supported and can be used in conjunction with PowerPath empower pseudo device file names as well as native sd device file names.
- Supported kernels: 2.6.18-238.0.1.el5, 2.6.18-238.1.0.1.el5, 2.6.18-238.5.1.0.1.el5, 2.6.18-238.9.1.0.1.el5, 2.6.18-238.12.1.0.1.el5. Confirm kernel support with server vendor.
- Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- BIOS 1.08 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Supported kernels: 2.6.18-274.0.0.1.el5. Confirm kernel support with server vendor.
- Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- BIOS 3.03 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- Driver Version 5.02.04.01.05.07-d0 Driver is integrated into the kernel.
- Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- BIOS 1.11 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- Intel iSCSI boot is supported with the following Intel adapters:  
- Ethernet X520 10GbE Dual Port KX4  
- Ethernet X520-2 10GbE  
Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
- Firmware Version 2.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
- Driver Version 2.0.549.0 Driver is integrated into the kernel.
- BIOS 2.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
- Firmware Version 2.1.1a
- BIOS 5.0.11
- Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
- Broadcom iSCSI offload (without iboot) is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
- The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremei10.php)
- NIC teaming with the Linux software initiator is not supported.
-

- Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
35. Broadcom iSCSI offload (without iboot) is supported with following adapters:
    - Broadcom 57710 based cards
    - Broadcom 57711 based cards
    - Broadcom 5708
    - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
  36. Broadcom iSCSI boot is supported on Linux with following adapters:
    - Broadcom 5710 based cards
    - Broadcom 5711 based cards
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
  37. Driver Version 4.0.100 Driver is integrated into the kernel.
  38. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
  39. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater). X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
  40. Driver Version 4.0.100 Driver is integrated into the kernel.
  41. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  42. Firmware Version 3.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  43. BIOS 4.0.360.3 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  44. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.

Oracle Linux [x86\_64]

Oracle

Oracle						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Oracle Linux [x86_64] 5.6.1, 2, 3	Emulex OCE10102-IM-E24, 25, 26, Emulex OCE10102-IX-E24, 25, 26	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y4, 5, 23	See11, 27
2	Oracle Linux [x86_64] 5.6.1, 2, 3	Generic Vendor NIC 10/100 <sup>35</sup> , Generic Vendor NIC GbE <sup>30, 35, 36, 37</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B217, 8, 9, 10	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y4, 5	See11
3	Oracle Linux [x86_64] 5.6.1, 2, 3	Generic Vendor NIC 10GbE <sup>30, 35, 36, 38</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y4, 5, 23, 39	See11
4	Oracle Linux [x86_64] 5.6.1, 2, 3	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>28, 29, 30, 31, 32, 33</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>28, 29, 30, 31, 32, 33</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y4	See11, 27
5	Oracle Linux [x86_64] 5.6.1, 2, 3	QLogic QLA4010-E-SP <sup>9, 12, 13, 20, 21</sup> , QLogic QLA4010C-E-SP <sup>9, 12, 13, 20, 21</sup> , QLogic QLA4050-E-SP <sup>9, 10, 12, 13, 14, 15</sup> , QLogic QLA4050C-E-SP <sup>9, 10, 12, 13, 14, 15</sup> , QLogic QLA4052C-E-SP <sup>9, 10, 12, 13, 14, 15</sup> , QLogic QLE4060C-E-SP <sup>8, 9, 10, 12, 14, 22</sup> , QLogic QLE4062C-E-SP <sup>8, 9, 10, 12, 14, 22</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y5	See11
6	Oracle Linux [x86_64] 5.7.16	Emulex OCE10102-IM-E25, 26, 34, Emulex OCE10102-IM-E25, 26, 40, Emulex OCE10102-IX-E25, 26, 34, Emulex OCE10102-IX-E25, 26, 40, Emulex OCE11102-IM-E34, 41, 42, 43, Emulex OCE11102-IX-E34, 41, 42, 43, Generic Vendor NIC 10/100 <sup>35</sup> , Generic Vendor NIC 10GbE <sup>30, 35, 36, 38</sup> , Generic Vendor NIC GbE <sup>30, 35, 36, 37</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B217, 8, 10, 18, 19), IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>28, 29, 30, 31, 32, 33</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>28, 29, 30, 31, 32, 33</sup> , QLogic QLA4010-E-SP <sup>12, 13, 18, 20, 21</sup> , QLogic QLA4010C-E-SP <sup>12, 13, 18, 20, 21</sup> , QLogic QLA4050-E-SP <sup>10, 12, 13, 14, 15, 18</sup> , QLogic QLA4050C-E-SP <sup>10, 12, 13, 14, 15, 18</sup> , QLogic QLA4052C-E-SP <sup>10, 12, 13, 14, 15, 18</sup> , QLogic QLE4060C-E-SP <sup>8, 10, 12, 14, 18, 22</sup> , QLogic QLE4062C-E-SP <sup>8, 10, 12, 14, 18, 22</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See11
7	Oracle Linux [x86_64] 5.7.16	Emulex OCE11102-IM-E34, 41, 42, 43, Emulex OCE11102-IX-E34, 41, 42, 43	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI)	N	
8	Oracle Linux [x86_64] 5.7.16	Emulex OCE11102-IM-E34, 41, 42, 43, Emulex OCE11102-IX-E34, 41, 42, 43	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See44
9	Oracle Linux [x86_64] 5.7.16	Emulex OCE11102-IM-E34, 41, 42, 43, Emulex OCE11102-IX-E34, 41, 42, 43, QLogic QLE8240-SR-E-SP <sup>17, 18, 19</sup> , QLogic QLE8240-SR-E-SP <sup>9, 17, 18, 19</sup> , QLogic QLE8242-SR-E-SP <sup>17, 18, 19</sup> , QLogic QLE8242-SR-E-SP <sup>9, 17, 18, 19</sup> , QLogic QLE8250-CU-E-SP <sup>17, 18, 19</sup> , QLogic QLE8250-CU-E-SP <sup>9, 17, 18, 19</sup> , QLogic QLE8252-CU-E-SP <sup>17, 18, 19</sup> , QLogic QLE8252-CU-E-SP <sup>9, 17, 18, 19</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3300 (iSCSI)	N	

1. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
2. The LVM included as part of this update is supported and can be used in conjunction with PowerPath emcpower pseudo device file names as well as native sd device file names.
3. Supported kernels: 2.6.18-238.0.1.el5, 2.6.18-238.1.1.0.1.el5, 2.6.18-238.5.1.0.1.el5, 2.6.18-238.9.1.0.1.el5, 2.6.18-238.12.1.0.1.el5. Confirm kernel support with server vendor.
4. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
5. Broadcom iSCSI boot is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
6. Routed networks (layer 3) require iSCSI digest to be enabled.
7. Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
8. BIOS 1.13 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
9. Driver Version 5.02.04.02.05.06-c0 Driver is integrated into the kernel.
10. Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
11. Please refer to the Host Bus Adapter note for the supported NICs.
12. Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
13. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.

14. Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
15. BIOS 1.08 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
16. Supported kernels: 2.6.18-274.0.0.1.el5. Confirm kernel support with server vendor.
17. BIOS 3.03 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
18. Driver Version 5.02.04.01.05.07-d0 Driver is integrated into the kernel.
19. Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
20. BIOS 1.11 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
21. Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
22. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
23. Intel iSCSI boot is supported with the following Intel adapters:
  - Ethernet X520 10GbE Dual Port KX4
  - Ethernet X520-2 10GbE
 Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
24. Driver Version 2.0.549.0 Driver is integrated into the kernel.
25. BIOS 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
26. Firmware Version 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
27. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
28. Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
 Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
29. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at:[http://www.broadcom.com/support/ethernet\\_nic/netxtremeei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeei10.php)
30. NIC teaming with the Linux software initiator is not supported.
31. Firmware Version 2.1.1a
32. BIOS 5.0.11
33. Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
34. Driver Version 4.0.100r Driver is integrated into the kernel.
35. Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
36. Broadcom iSCSI offload (without iboot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
37. Broadcom iSCSI boot is supported on Linux with following adapters:
  - Broadcom 5710 based cards
  - Broadcom 5711 based cards
 Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
38. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
39. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater). X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
40. Driver Version 4.0.100 Driver is integrated into the kernel.
41. Firmware Version 3.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
42. BIOS 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
43. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
44. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.

**Oracle Solaris**  
**Oracle**

Oracle						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Oracle Solaris 10 SPARC11, 12, 13	Generic Vendor NIC X1106A-Z (Sun 10 GbE) <sup>15</sup> , Generic Vendor NIC X1107A-Z (Sun Dual 10 GbE) <sup>15</sup> , Generic Vendor X1108A-Z (Sun 10GbE EM) <sup>15</sup> , QLogic QLE8140-SR-E-SP (CNA) <sup>14, 15, 16</sup> , QLogic QLE8142-SR-E-SP (CNA) <sup>14, 15, 16</sup> , QLogic QLE8150-CU-E-SP (CNA) <sup>14, 15, 16</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>17</sup>
2	Oracle Solaris 10 SPARC11, 12, 13, 20	Generic Vendor NIC GbE <sup>15</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>17</sup>
3	Oracle Solaris 10 SPARC11, 13, 25	Emulex OCE10102-FM-E (CNA) <sup>15, 28</sup> , Emulex OCE10102-FX-E (CNA) <sup>15, 28</sup> , Oracle SG-(X)EMFCOE2-Q-SR (QEM8152) <sup>15, 27</sup> , Oracle SG-(X)EMFCOE2-Q-TA <sup>2, 15, 27</sup> , Oracle SG-XPCIEFCOE2-Q-SR (QLE8142 CNA) <sup>15, 27</sup> , Oracle SG-XPCIEFCOE2-Q-TA (QLE8152 CNA) <sup>2, 15, 27</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>17</sup>
4	Oracle Solaris 10 x865, 6, 7	Emulex OCE10102-FM-E (CNA) <sup>8, 9</sup> , Emulex OCE10102-FX-E (CNA) <sup>8, 9</sup> , Oracle SG-(X)EMFCOE2-Q-SR (QEM8152) <sup>8, 8</sup> , Oracle SG-(X)EMFCOE2-Q-TA <sup>2, 3, 8</sup> , Oracle SG-XPCIEFCOE2-Q-SR (QLE8142 CNA) <sup>8, 8</sup> , Oracle SG-XPCIEFCOE2-Q-TA (QLE8152 CNA) <sup>2, 3, 8</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>1</sup>
5	Oracle Solaris 10 x866, 7, 10	Generic Vendor NIC X1106A-Z (Sun 10 GbE) <sup>8</sup> , Generic Vendor NIC X1107A-Z (Sun Dual 10 GbE) <sup>8</sup> , Generic Vendor X1108A-Z (Sun 10GbE EM) <sup>8</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>1</sup>
6	Oracle Solaris 10 x866, 7, 10, 18	Generic Vendor NIC GbE <sup>8</sup> , QLogic QLE8140-SR-E-SP (CNA) <sup>8, 14, 19</sup> , QLogic QLE8142-SR-E-SP (CNA) <sup>8, 14, 19</sup> , QLogic QLE8150-CU-E-SP (CNA) <sup>8, 14, 19</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>1</sup>
7	Oracle Solaris 10: SPARC11, 12, 13, SPARC11, 12, 13, 20, SPARC11, 13, 25	QLogic QLE8240-SR-E-SP <sup>15, 21, 22, 23</sup> , QLogic QLE8242-SR-E-SP <sup>15, 21, 22, 23</sup> , QLogic QLE8250-CU-E-SP <sup>15, 21, 22, 23</sup> , QLogic QLE8252-CU-E-SP <sup>15, 21, 22, 23</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>17</sup>
8	Oracle Solaris 10: x865, 6, 7, x866, 7, 10, x866, 7, 10, 18	QLogic QLE8240-SR-E-SP <sup>8, 21, 23, 26</sup> , QLogic QLE8242-SR-E-SP <sup>8, 21, 23, 26</sup> , QLogic QLE8250-CU-E-SP <sup>8, 21, 23, 26</sup> , QLogic QLE8252-CU-E-SP <sup>8, 21, 23, 26</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	See <sup>1</sup>
9	Oracle Solaris 11: SPARC, x86	Emulex OCE10102-FM-E (CNA) <sup>24</sup> , Emulex OCE10102-FX-E (CNA) <sup>24</sup> , Generic Vendor NIC GbE <sup>24</sup> , Generic Vendor NIC X1106A-Z (Sun 10 GbE) <sup>24</sup> , Generic Vendor NIC X1107A-Z (Sun Dual 10 GbE) <sup>24</sup> , Generic Vendor X1108A-Z (Sun 10GbE EM) <sup>24</sup> , Oracle SG-(X)EMFCOE2-Q-SR (QEM8152) <sup>24</sup> , Oracle SG-(X)EMFCOE2-Q-TA <sup>2, 24</sup> , Oracle SG-XPCIEFCOE2-Q-SR (QLE8142 CNA) <sup>24</sup> , Oracle SG-XPCIEFCOE2-Q-TA (QLE8152 CNA) <sup>2, 24</sup>	LAN Only <sup>4</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	

1. Solaris 10\_x86 native iSCSI with MPxIO requires minimum patch 125185-05.
2. Copper connection only. Supported with Passive and Active Twinax cables.
3. Require the Ethernet driver patch 144870-02 or later.
4. Routed networks (layer 3) require iSCSI digest to be enabled.
5. Supports Solaris 10\_x86 Update 8 (10/09); Solaris 10\_x86 Update 9 (9/10).
6. EMC supports ZFS in Solaris 10\_x86 11/06 (update 3) or later. The Snapshot and Clone features of ZFS are supported only through Sun Microsystems.
7. EMC recommends as a best practice that customers upgrade to the most recent Solaris 10\_x86 patch bundle released on the Oracle website <http://www.sunsolve.sun.com>
8. Driver Version Native OS Driver Support Solaris 10\_x86 native iSCSI driver patch 146233-08, 146233-11, and 146233-12.
9. Require the Ethernet driver patch 145099-01 or later.
10. Supports S10\_x86 Update 8 (10/09).
11. EMC recommends as a best practice that customers upgrade to the most recent Solaris 10 SPARC patch bundle released on the Oracle website <http://www.sunsolve.sun.com>

- 12. Supports S10 Update 8 (10/09).
- 13. For LDOM support, please refer to the "Virtualization Server Support" table available via EMC PowerLink: [https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization\\_Server\\_Support.pdf](https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization_Server_Support.pdf)
- 14. BIOS 2.16
- 15. Driver Version Native OS Driver Support Solaris 10 Sparc native iSCSI driver patch 146232-09, 146232-12, and 146232-13.
- 16. Require the Ethernet driver patch 144486-04 or later.
- 17. Solaris SPARC native iSCSI with MPxIO requires minimum patch 125184-05.
- 18. Supports S10\_x86 Update 2 (06/06), S10\_x86 Update 3 (11/06), S10\_x86 Update 4 (08/07), S10\_x86 Update 5 (05/08), S10\_x86 Update 6 (10/08) and S10\_x86 Update 7 (05/09).
- 19. Require the Ethernet driver patch 144487-04 or later.
- 20. Supports S10 Update 2 (06/06), S10 Update 3 (11/06), S10 Update 4 (08/07), S10 Update 5 (05/08), S10 Update 6 (10/08) and S10 Update 7 (05/09).
- 21. BIOS 3.03
- 22. Require the ethernet driver qlge patch 145648-03 or later.
- 23. Firmware Version 04.08.14
- 24. Driver Version native OS driver
- 25. Supports Solaris 10 Update 8 (10/09), Solaris 10 Update 9 (9/10).
- 26. Require the ethernet driver qlge patch 145649-03 or later.
- 27. Require the Ethernet driver patch 144869-02 or later.
- 28. Require the Ethernet driver patch 145098-01 or later.

**Red Hat RHEL [32-Bit]**

**Red Hat**

Red Hat						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Red Hat RHEL [32-Bit] 5.16, 17, 18	Emulex OCE10102-IM-E49, 51, 52, Emulex OCE10102-IX-E49, 51, 52	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15, 25	See20, 42
2	Red Hat RHEL [32-Bit] 5.6, 45	Emulex OCE10102-IM-E49, 51, 53, Emulex OCE10102-IX-E49, 51, 53	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15, 25	See20, 42
3	Red Hat RHEL [32-Bit] 5.6, 45	Emulex OCE11102-IM-E53, 55, 56, 57, Emulex OCE11102-IX-E53, 55, 56, 57	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y	
4	Red Hat RHEL [32-Bit] 5.6, 45	Emulex OCE11102-IM-E53, 55, 56, 57, Emulex OCE11102-IX-E53, 55, 56, 57	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y	See58
5	Red Hat RHEL [32-Bit] 5.6, 45	Emulex OCE11102-IM-E53, 55, 56, 57, Emulex OCE11102-IX-E53, 55, 56, 57	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14	See20, 42
6	Red Hat RHEL [32-Bit] 5.6, 45	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)29, 30, 31, 46	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15	See20
7	Red Hat RHEL [32-Bit] 5.6, 45	QLogic QLA4010-E-SP35, 36, 43, 44, 46, QLogic QLA4010C-E-SP35, 36, 43, 44, 46, QLogic QLA4050-E-SP29, 33, 34, 35, 36, 46, QLogic QLA4050C-E-SP29, 33, 34, 35, 36, 46, QLogic QLA4052C-E-SP29, 33, 34, 35, 36, 46, QLogic QLE4060C-E-SP29, 31, 33, 35, 46, 47, QLogic QLE4062C-E-SP29, 31, 33, 35, 46, 47	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y15	See20
8	Red Hat RHEL [32-Bit] 5.6, 45	QLogic QLE8240-SR-E-SP2, 4, 46, QLogic QLE8242-SR-E-SP2, 4, 46, QLogic QLE8250-CU-E-SP2, 4, 46, QLogic QLE8252-CU-E-SP2, 4, 46	LAN Only1	EMC Unified Storage VNxe3300 (iSCSI)	N	
9	Red Hat RHEL [32-Bit] 5.7, 6	Emulex OCE10102-IM-E49, 50, 51, Emulex OCE10102-IX-E49, 50, 51	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15, 25	See20, 42
10	Red Hat RHEL [32-Bit] 5.7, 6	Emulex OCE11102-IM-E54, 55, 56, 57, Emulex OCE11102-IX-E54, 55, 56, 57	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y	
11	Red Hat RHEL [32-Bit] 5.7, 6	Emulex OCE11102-IM-E54, 55, 56, 57, Emulex OCE11102-IX-E54, 55, 56, 57	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y	See58
12	Red Hat RHEL [32-Bit] 5.7, 6	Emulex OCE11102-IM-E54, 55, 56, 57, Emulex OCE11102-IX-E54, 55, 56, 57	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14	See20, 42
13	Red Hat RHEL [32-Bit] 5.7, 6	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)3, 29, 30, 31	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15	See20
14	Red Hat RHEL [32-Bit] 5.7, 6	QLogic QLA4010-E-SP3, 35, 36, 43, 44, QLogic QLA4010C-E-SP3, 35, 36, 43, 44, QLogic QLA4050-E-SP3, 29, 33, 34, 35, 36, QLogic QLA4050C-E-SP3, 29, 33, 34, 35, 36, QLogic QLA4052C-E-SP3, 29, 33, 34, 35, 36, QLogic QLE4060C-E-SP3, 29, 31, 33, 35, 47, QLogic QLE4062C-E-SP3, 29, 31, 33, 35, 47	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y15	See20
15	Red Hat RHEL [32-Bit] 5.7, 6	QLogic QLE8240-SR-E-SP2, 3, 4, QLogic QLE8242-SR-E-SP2, 3, 4, QLogic QLE8250-CU-E-SP2, 3, 4, QLogic QLE8252-CU-E-SP2, 3, 4	LAN Only1	EMC Unified Storage VNxe3300 (iSCSI)	N	
16	Red Hat RHEL [32-Bit] 6.1, 7, 8, 9, 24	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)29, 30, 31, 48	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15	See20
17	Red Hat RHEL [32-Bit] 6.1, 7, 8, 9, 24	QLogic QLA4010-E-SP35, 36, 43, 44, 48, QLogic QLA4010C-E-SP35, 36, 43, 44, 48, QLogic QLA4050-E-SP29, 33, 34, 35, 36, 48, QLogic QLA4050C-E-SP29, 33, 34, 35, 36, 48, QLogic QLA4052C-E-SP29, 33, 34, 35, 36, 48, QLogic QLE4060C-E-SP29, 31, 33, 35, 47, 48, QLogic QLE4062C-E-SP29, 31, 33, 35, 47, 48	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y15	See20

18	Red Hat RHEL [32-Bit] 6.27, 8, 9, 10, 11	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)12, 29, 30, 31	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15	See20
19	Red Hat RHEL [32-Bit] 6.27, 8, 9, 10, 11	QLogic QLA4010-E-SP12, 35, 36, 43, 44 QLogic QLA4010C-E-SP12, 35, 36, 43, 44 QLogic QLA4050-E-SP12, 29, 33, 34, 35, 36 QLogic QLA4050C-E-SP12, 29, 33, 34, 35, 36 QLogic QLA4052C-E-SP12, 29, 33, 34, 35, 36 QLogic QLE4060C-E-SP12, 29, 31, 33, 35, 47 QLogic QLE4062C-E-SP12, 29, 31, 33, 35, 47	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y15	See20
20	Red Hat RHEL [32-Bit] 6.27, 8, 9, 10, 11	QLogic QLE8240-SR-E-SP2, 4, 12 QLogic QLE8250-CU-E-SP2, 4, 12 QLogic QLE8252-CU-E-SP2, 4, 12	LAN Only1	EMC Unified Storage VNxe3300 (iSCSI)	N	
21	Red Hat RHEL [32-Bit]: 5.516, 17, 18, 5.66, 45, 5.75, 6, 6.07, 8, 9, 32, 6.17, 8, 9, 24, 6.27, 8, 9, 10, 11	Generic Vendor NIC 10/100/19, Generic Vendor NIC GbE19, 21, 22, 23	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15	See20
22	Red Hat RHEL [32-Bit]: 5.516, 17, 18, 5.66, 45, 5.75, 6, 6.07, 8, 9, 32, 6.17, 8, 9, 24, 6.27, 8, 9, 10, 11	Generic Vendor NIC 10GbE19, 21, 22, 27	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15, 25, 26	See20
23	Red Hat RHEL [32-Bit]: 5.516, 17, 18, 5.66, 45, 5.75, 6, 6.07, 8, 9, 32, 6.17, 8, 9, 24, 6.27, 8, 9, 10, 11	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168)22, 37, 38, 39, 40, 41, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164)22, 37, 38, 39, 40, 41	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14	See20, 42
24	Red Hat RHEL [32-Bit]: 5.516, 17, 18, 6.07, 8, 9, 32	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)28, 29, 30, 31	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y14, 15	See20
25	Red Hat RHEL [32-Bit]: 5.516, 17, 18, 6.07, 8, 9, 32	QLogic QLA4010-E-SP28, 35, 36, 43, 44 QLogic QLA4010C-E-SP28, 35, 36, 43, 44 QLogic QLA4050-E-SP28, 29, 33, 34, 35, 36 QLogic QLA4050C-E-SP28, 29, 33, 34, 35, 36 QLogic QLA4052C-E-SP28, 29, 33, 34, 35, 36 QLogic QLE4060C-E-SP28, 29, 31, 33, 35, 47 QLogic QLE4062C-E-SP28, 29, 31, 33, 35, 47	LAN Only1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Y15	See20
26	Red Hat RHEL [32-Bit]: 6.07, 8, 9, 32, 6.17, 8, 9, 24	QLogic QLE8240-SR-E-SP2, 4, 13 QLogic QLE8250-CU-E-SP2, 4, 13 QLogic QLE8252-CU-E-SP2, 4, 13	LAN Only1	EMC Unified Storage VNxe3300 (iSCSI)	N	
27	Red Hat RHEL [32-Bit]: 6.07, 8, 9, 32, 6.17, 8, 9, 24, 6.27, 8, 9, 10, 11	QLogic QLE8242-SR-E-SP2, 4, 13	LAN Only1	EMC Unified Storage VNxe3300 (iSCSI)	N	

- Routed networks (layer 3) require iSCSI digest to be enabled.
- BIOS 3.03 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Driver Version 5.02.04.01.05.07-d0 Driver is integrated into the kernel.
- Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Supported kernels: 2.6.18-274.el5, 2.6.18-274.3.1.el5, 2.6.18-274.7.1.el5, 2.6.18-274.12.1.el5. Confirm kernel support with server vendor.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, gfs, and gfs2 unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- The LVM included as part of this update is supported and can be used in conjunction with PowerPath empower pseudo device file names as well as native sd device file names.
- Supported kernels: 2.6.32-220.el6. Confirm kernel support with server vendor.
- RHEL KVM is supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- Driver Version 5.02.00.00.06.02-k10 Driver is integrated into the kernel. Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Driver Version 5.02.11.00.05.06-c3 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- Broadcom iSCSI boot is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
- Broadcom 5708  
- Broadcom 5709  
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- EMC supports the following filesystems: ext2, ext3, gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- EMC supports the following filesystems: ext2, ext3, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- Supported kernels: 2.6.18-194.el5, 2.6.18-194.3.1.el5, 2.6.18-194.8.1.el5, 2.6.18-194.11.1.el5, 2.6.18-194.11.3.el5, 2.6.18-194.11.4.el5, 2.6.18-194.17.1.el5, 2.6.18-194.17.4.el5, 2.6.18-194.26.1.el5, 2.6.18-194.32.1.el5 Confirm kernel support with server vendor.
- Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
- Please refer to the Host Bus Adapter note for the supported NICs.
- Broadcom iSCSI offload (without iboot) is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
- Broadcom 5708  
- Broadcom 5709  
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- NIC teaming with the Linux software initiator is not supported.
- Broadcom iSCSI boot is supported on Linux with following adapters:  
- Broadcom 5710 based cards  
- Broadcom 5711 based cards  
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- Supported kernels: 2.6.32-131.0.15.el6, 2.6.32-131.2.1.el6, 2.6.32-131.6.1.el6, 2.6.32-131.12.1.el6, 2.6.32-131.17.1.el6, 2.6.32-131.21.1.el6. Confirm kernel support with server vendor.
- Intel iSCSI boot is supported with the following Intel adapters:  
- Ethernet X520 10GbE Dual Port KX4  
- Ethernet X520-2 10GbE  
Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
- Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater). X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
- Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
- Driver Version 5.01.00.01.05.04-k9 Driver is integrated into the kernel.
- Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- BIOS 1.13 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Supported kernels: 2.6.32-71.el6, 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6, 2.6.32-71.24.1.el6, 2.6.32-71.31.1.el6, 2.6.32-71.34.1.el6. Confirm kernel support with server vendor.
- Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- BIOS 1.08 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
- Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- Broadcom iSCSI offload (without iboot) is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
- The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtreme10.php](http://www.broadcom.com/support/ethernet_nic/netxtreme10.php)
- BIOS 5.0.11
- Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.

- 41. Firmware Version 2.1.1a
- 42. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- 43. BIOS 1.11 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- 44. Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
- 45. Supported kernels: 2.6.18-238.el5, 2.6.18-238.1.1.el5, 2.6.18-238.5.1.el5, 2.6.18-238.9.1.el5, 2.6.18-238.12.1.el5, 2.6.18-238.19.1.el5, 2.6.18-238.21.1.el5, 2.6.18-238.28.1.el5, 2.6.18-238.31.1.el5. Confirm kernel support with server vendor.
- 46. Driver Version 5.02.04.02.05.06-d0 Driver is integrated into the kernel.
- 47. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
- 48. Driver Version 5.02.00-k5 Driver is integrated into the kernel.
- 49. BIOS 2.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
- 50. Driver Version 4.0.100r Driver is integrated into the kernel.
- 51. Firmware Version 2.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
- 52. Driver Version 2.0.527.0 Driver is integrated into the kernel.
- 53. Driver Version 2.0.549.0 Driver is integrated into the kernel.
- 54. Driver Version 4.0.100r Driver is integrated into the kernel.
- 55. Firmware Version 3.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
- 56. BIOS 4.0.360.3 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
- 57. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
- 58. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.

**Red Hat RHEL [x86\_64]**

**Red Hat**

Red Hat						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	Red Hat RHEL [x86_64] 5.525, 26	Emulex OCE10102-IM-E49, 50, 51, Emulex OCE10102-IX-E49, 50, 51	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13, 27, 34</sup>	See <sup>7, 45</sup>
2	Red Hat RHEL [x86_64] 5.525, 26	Generic Vendor NIC 10GbE <sup>28, 29, 30, 31, 33</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13, 27, 34, 35</sup>	See <sup>7</sup>
3	Red Hat RHEL [x86_64] 5.525, 26	Generic Vendor NIC GbE <sup>28, 29, 30, 31, 32</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13, 27</sup>	See <sup>7</sup>
4	Red Hat RHEL [x86_64] 5.62, 46	Emulex OCE10102-IM-E50, 51, 52, Emulex OCE10102-IX-E50, 51, 52	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13, 27, 34</sup>	See <sup>7, 45</sup>
5	Red Hat RHEL [x86_64] 5.62, 46	Emulex OCE11102-IM-E52, 54, 55, 56, Emulex OCE11102-IX-E52, 54, 55, 56	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	
6	Red Hat RHEL [x86_64] 5.62, 46	Emulex OCE11102-IM-E52, 54, 55, 56, Emulex OCE11102-IX-E52, 54, 55, 56	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	See <sup>57</sup>
7	Red Hat RHEL [x86_64] 5.62, 46	Emulex OCE11102-IM-E52, 54, 55, 56, Emulex OCE11102-IX-E52, 54, 55, 56	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>27</sup>	See <sup>7, 45</sup>
8	Red Hat RHEL [x86_64] 5.62, 46	Hewlett Packard Qlogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>9, 23, 38, 47</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13, 27</sup>	See <sup>7</sup>
9	Red Hat RHEL [x86_64] 5.62, 46	QLogic QLA4010-E-SP <sup>11, 12, 20, 21, 47</sup> , QLogic QLA4010C-E-SP <sup>11, 12, 20, 21, 47</sup> , QLogic QLA4050-E-SP <sup>8, 9, 10, 11, 12, 47</sup> , QLogic QLA4050C-E-SP <sup>8, 9, 10, 11, 12, 47</sup> , QLogic QLA4052C-E-SP <sup>8, 9, 10, 11, 12, 47</sup> , QLogic QLE4060C-E-SP <sup>9, 10, 11, 23, 24, 47</sup> , QLogic QLE4062C-E-SP <sup>9, 10, 11, 23, 24, 47</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13</sup>	See <sup>7</sup>
10	Red Hat RHEL [x86_64] 5.62, 46	QLogic QLE8240-SR-E-SP <sup>4, 5, 47</sup> , QLogic QLE8242-SR-E-SP <sup>4, 5, 47</sup> , QLogic QLE8250-CU-E-SP <sup>4, 5, 47</sup> , QLogic QLE8252-CU-E-SP <sup>4, 5, 47</sup>	LAN Only <sup>3</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	
11	Red Hat RHEL [x86_64] 5.71, 2	Emulex OCE10102-IM-E50, 51, 53, Emulex OCE10102-IX-E50, 51, 53	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13, 27, 34</sup>	See <sup>7, 45</sup>
12	Red Hat RHEL [x86_64] 5.71, 2	Emulex OCE11102-IM-E53, 54, 55, 56, Emulex OCE11102-IX-E53, 54, 55, 56	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	
13	Red Hat RHEL [x86_64] 5.71, 2	Emulex OCE11102-IM-E53, 54, 55, 56, Emulex OCE11102-IX-E53, 54, 55, 56	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	See <sup>57</sup>
14	Red Hat RHEL [x86_64] 5.71, 2	Emulex OCE11102-IM-E53, 54, 55, 56, Emulex OCE11102-IX-E53, 54, 55, 56	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>27</sup>	See <sup>7, 45</sup>
15	Red Hat RHEL [x86_64] 5.71, 2	Hewlett Packard Qlogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>6, 9, 23, 38</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13, 27</sup>	See <sup>7</sup>
16	Red Hat RHEL [x86_64] 5.71, 2	QLogic QLA4010-E-SP <sup>6, 11, 12, 20, 21</sup> , QLogic QLA4010C-E-SP <sup>6, 11, 12, 20, 21</sup> , QLogic QLA4050-E-SP <sup>6, 8, 9, 10, 11, 12</sup> , QLogic QLA4050C-E-SP <sup>6, 8, 9, 10, 11, 12</sup> , QLogic QLA4052C-E-SP <sup>6, 8, 9, 10, 11, 12</sup> , QLogic QLE4060C-E-SP <sup>6, 9, 10, 11, 23, 24</sup> , QLogic QLE4062C-E-SP <sup>6, 9, 10, 11, 23, 24</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>13</sup>	See <sup>7</sup>

17	Red Hat RHEL [x86_64] 5.7.1, 2	QLogic QLE8240-SR-E-SP4, 5, 6, QLogic QLE8242-SR-E-SP4, 5, 6, QLogic QLE8250-CU-E-SP4, 5, 6, QLogic QLE8252-CU-E-SP4, 5, 6	LAN Only <sup>3</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	
18	Red Hat RHEL [x86_64] 6.114, 15, 16, 36	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>9, 23, 38, 48</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13, 27	See7
19	Red Hat RHEL [x86_64] 6.114, 15, 16, 36	QLogic QLA4010-E-SP11, 12, 20, 21, 48, QLogic QLA4010C-E-SP11, 12, 20, 21, 48, QLogic QLA4050-E-SP8, 9, 10, 11, 12, 48, QLogic QLA4050C-E-SP8, 9, 10, 11, 12, 48, QLogic QLA4052C-E-SP8, 9, 10, 11, 12, 48, QLogic QLE4060C-E-SP9, 10, 11, 23, 24, 48, QLogic QLE4062C-E-SP9, 10, 11, 23, 24, 48	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13	See7
20	Red Hat RHEL [x86_64] 6.214, 15, 16, 17, 18	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>9, 19, 23, 38</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13, 27	See7
21	Red Hat RHEL [x86_64] 6.214, 15, 16, 17, 18	QLogic QLA4010-E-SP11, 12, 19, 20, 21, QLogic QLA4010C-E-SP11, 12, 19, 20, 21, QLogic QLA4050-E-SP8, 9, 10, 11, 12, 19, QLogic QLA4050C-E-SP8, 9, 10, 11, 12, 19, QLogic QLA4052C-E-SP8, 9, 10, 11, 12, 19, QLogic QLE4060C-E-SP9, 10, 11, 19, 23, 24, QLogic QLE4062C-E-SP9, 10, 11, 19, 23, 24	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13	See7
22	Red Hat RHEL [x86_64] 6.214, 15, 16, 17, 18	QLogic QLE8240-SR-E-SP4, 5, 19, QLogic QLE8250-CU-E-SP4, 5, 19, QLogic QLE8252-CU-E-SP4, 5, 19	LAN Only <sup>3</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	
23	Red Hat RHEL [x86_64]: 5.525, 26, 5.62, 46, 5.71, 2, 6.014, 15, 16, 39, 6.114, 15, 16, 36, 6.214, 15, 16, 17, 18	Generic Vendor NIC 10/100 <sup>28</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13, 27	See7
24	Red Hat RHEL [x86_64]: 5.525, 26, 5.62, 46, 5.71, 2, 6.014, 15, 16, 39, 6.114, 15, 16, 36, 6.214, 15, 16, 17, 18	IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>31, 40, 41, 42, 43, 44</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>31, 40, 41, 42, 43, 44</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y27	See7, 45
25	Red Hat RHEL [x86_64]: 5.525, 26, 6.014, 15, 16, 39	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>9, 23, 37, 38</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13, 27	See7
26	Red Hat RHEL [x86_64]: 5.525, 26, 6.014, 15, 16, 39	QLogic QLA4010-E-SP11, 12, 20, 21, 37, QLogic QLA4010C-E-SP11, 12, 20, 21, 37, QLogic QLA4050-E-SP8, 9, 10, 11, 12, 37, QLogic QLA4050C-E-SP8, 9, 10, 11, 12, 37, QLogic QLA4052C-E-SP8, 9, 10, 11, 12, 37, QLogic QLE4060C-E-SP9, 10, 11, 23, 24, 37, QLogic QLE4062C-E-SP9, 10, 11, 23, 24, 37	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13	See7
27	Red Hat RHEL [x86_64]: 5.62, 46, 5.71, 2, 6.014, 15, 16, 39, 6.114, 15, 16, 36, 6.214, 15, 16, 17, 18	Generic Vendor NIC 10GbE <sup>28, 30, 31, 33</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13, 27, 34, 35	See7
28	Red Hat RHEL [x86_64]: 5.62, 46, 5.71, 2, 6.014, 15, 16, 39, 6.114, 15, 16, 36, 6.214, 15, 16, 17, 18	Generic Vendor NIC GbE <sup>28, 30, 31, 32</sup>	LAN Only <sup>3</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y13, 27	See7
29	Red Hat RHEL [x86_64]: 6.014, 15, 16, 39, 6.114, 15, 16, 36	QLogic QLE8240-SR-E-SP4, 5, 22, QLogic QLE8250-CU-E-SP4, 5, 22, QLogic QLE8252-CU-E-SP4, 5, 22	LAN Only <sup>3</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	
30	Red Hat RHEL [x86_64]: 6.014, 15, 16, 39, 6.114, 15, 16, 36, 6.214, 15, 16, 17, 18	QLogic QLE8242-SR-E-SP4, 5, 22	LAN Only <sup>3</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	

- Supported kernels: 2.6.18-274.el5, 2.6.18-274.3.1.el5, 2.6.18-274.7.1.el5, 2.6.18-274.12.1.el5. Confirm kernel support with server vendor.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- Routed networks (layer 3) require iSCSI digest to be enabled.
- Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- BIOS 3.03 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- Driver Version 5.02.04.01.05.07-d0 Driver is integrated into the kernel.
- Please refer to the Host Bus Adapter note for the supported NICs.
- BIOS 1.08 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- Broadcom iSCSI boot is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, gfs, and gfs2 unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- The LVM included as part of this update is supported and can be used in conjunction with PowerPath empower pseudo device file names as well as native sd device file names.
- Supported kernels: 2.6.32-220.el6. Confirm kernel support with server vendor.
- RHEL KVM is supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- Driver Version 5.02.00.00.06.02-k10 Driver is integrated into the kernel. Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- BIOS 1.11 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- Driver Version 5.02.11.00.05.06-c3 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- BIOS 1.13 Available in the EMC-approved section of the QLogic website: <http://www.qlogic.com>
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.
- EMC supports the following filesystems: ext2, ext3, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- Supported kernels: 2.6.18-194.el5, 2.6.18-194.3.1.el5, 2.6.18-194.8.1.el5, 2.6.18-194.11.1.el5, 2.6.18-194.11.3.el5, 2.6.18-194.11.4.el5, 2.6.18-194.17.1.el5, 2.6.18-194.17.4.el5, 2.6.18-194.26.1.el5, 2.6.18-194.32.1.el5 Confirm kernel support with server vendor.
- Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168 iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
- Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
- The Emerson ATCA-7365 server blade and the Centellus 4440 ATCA Shelf/ATCA-F120 are supported with either 1GB or 10GB iSCSI. Please contact Emerson for specific configurations.
- Broadcom iSCSI offload (without iBoot) is supported with following adapters:
  - Broadcom 57710 based cards
  - Broadcom 57711 based cards
  - Broadcom 5708
  - Broadcom 5709
Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
- NIC teaming with the Linux software initiator is not supported.
- Broadcom iSCSI boot is supported on Linux with following adapters:
  - Broadcom 5710 based cards
  - Broadcom 5711 based cards

- Please visit <http://support.dell.com> for the currently supported servers; as well as, BIOS/firmware versions.
33. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
  34. Intel iSCSI boot is supported with the following Intel adapters:
    - Ethernet X520 10GbE Dual Port KX4
    - Ethernet X520-2 10GbE
  - Please visit <http://support.dell.com> for most currently supported servers and firmware/BIOS versions.
  35. Intel iSCSI boot is supported on Oracle servers with the following Intel Adapters: X1106A-Z (10 GbE 1-port SR Oplin/ Belle Fontaine), X1107A-Z (10 GbE 2-port SR Oplin/ Green Fontaine), X1108A-Z (10 GbE dual-port EM Longwater), X5561A-ZSFP + SR Transceiver; required for X1108A-Z) iSCSI. Please visit <http://www.intel.com> for the most currently supported firmware/driver revisions.
  36. Supported kernels: 2.6.32-131.0.15.el6, 2.6.32-131.2.1.el6, 2.6.32-131.6.1.el6, 2.6.32-131.12.1.el6, 2.6.32-131.17.1.el6, 2.6.32-131.21.1.el6. Confirm kernel support with server vendor.
  37. Driver Version 5.01.00.01.05.04-k9 Driver is integrated into the kernel.
  38. Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
  39. Supported kernels: 2.6.32-71.el6, 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6, 2.6.32-71.24.1.el6, 2.6.32-71.31.1.el6, 2.6.32-71.34.1.el6. Confirm kernel support with server vendor.
  40. BIOS 5.0.11
  41. Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
  42. Firmware Version 2.1.1a
  43. Broadcom iSCSI offload (without iboot) is supported with following adapters:
    - Broadcom 57710 based cards
    - Broadcom 57711 based cards
  - Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
  44. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at: [http://www.broadcom.com/support/ethernet\\_nic/netxtremei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremei10.php)
  45. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168
  - Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
  46. Supported kernels: 2.6.18-238.el5, 2.6.18-238.1.1.el5, 2.6.18-238.5.1.el5, 2.6.18-238.9.1.el5, 2.6.18-238.12.1.el5, 2.6.18-238.19.1.el5, 2.6.18-238.21.1.el5, 2.6.18-238.28.1.el5, 2.6.18-238.31.1.el5. Confirm kernel support with server vendor.
  47. Driver Version 5.02.04.02.05.06-d0 Driver is integrated into the kernel.
  48. Driver Version 5.02.00-k5 Driver is integrated into the kernel.
  49. Driver Version 2.0.527.0 Driver is integrated into the kernel.
  50. BIOS 2.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  51. Firmware Version 2.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  52. Driver Version 2.0.549.0 Driver is integrated into the kernel.
  53. Driver Version 4.0.100r Driver is integrated into the kernel.
  54. Firmware Version 3.103.397.34 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  55. BIOS 4.0.360.3 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  56. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
  57. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.

SuSE SLES [32-Bit]

SuSE

SuSE						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	SuSE SLES [32-Bit] 10 SP412, 13, 14, 15	QLogic QLE8240-SR-E-SP16, 17, 18, QLogic QLE8242-SR-E-SP16, 17, 18, QLogic QLE8250-CU-E-SP16, 17, 18, QLogic QLE8252-CU-E-SP16, 17, 18	LAN Only <sup>6</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	
2	SuSE SLES [32-Bit] 11 SP17, 8, 9, 10, 11	Emulex OCE10102-IM-E35, 36, 37, Emulex OCE10102-IX-E35, 36, 37, Generic Vendor NIC 10GbE <sup>26, 39, 40, 41</sup> , Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>4, 5, 42, 43</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>38</sup>	
3	SuSE SLES [32-Bit] 11 SP17, 8, 9, 10, 11	Emulex OCE11102-IM-E44, 45, 46, 47, Emulex OCE11102-IX-E44, 45, 46, 47	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	See <sup>24</sup>
4	SuSE SLES [32-Bit] 11 SP17, 8, 9, 10, 11	Emulex OCE11102-IM-E44, 45, 46, 47, Emulex OCE11102-IX-E44, 45, 46, 47, IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168) <sup>26, 28, 29, 32, 33, 34</sup> , IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164) <sup>26, 28, 29, 32, 33, 34</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>27</sup>	See <sup>30, 31</sup>
5	SuSE SLES [32-Bit] 11 SP17, 8, 9, 10, 11	Emulex OCE11102-IM-E44, 45, 46, 47, Emulex OCE11102-IX-E44, 45, 46, 47, QLogic QLA4050-E-SP1, 2, 3, 4, 5, QLogic QLA4050-E-SP1, 2, 3, 4, 5, 48, QLogic QLA4050C-E-SP1, 2, 3, 4, 5, QLogic QLA4050C-E-SP1, 2, 3, 4, 5, 48, QLogic QLA4052C-E-SP1, 2, 3, 4, 5, QLogic QLA4052C-E-SP1, 2, 3, 4, 5, 48, QLogic QLE4060C-E-SP1, 4, 5, 43, 48, 49, QLogic QLE4062C-E-SP1, 4, 5, 43, 48, 49	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	
6	SuSE SLES [32-Bit] 11 SP17, 8, 9, 10, 11	Generic Vendor NIC 10/100 <sup>25, 26</sup> , Generic Vendor NIC 10GbE <sup>26, 39, 40, 41</sup> , Generic Vendor NIC GbE <sup>25, 26</sup>	LAN Only <sup>6</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See <sup>24</sup>
7	SuSE SLES [32-Bit] 11 SP17, 8, 9, 10, 11	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>4, 5, 42, 43</sup> , IBM QLogic iSCSI Exp Card for BladeCenter (26K6487) <sup>1, 4, 21, 22</sup> , QLogic QLA4010-E-SP1, 2, 4, 19, 20, QLogic QLA4010C-E-SP1, 2, 4, 19, 20, QLogic QLE4060C-E-SP1, 4, 5, 43, 48, 49, QLogic QLE4062C-E-SP1, 4, 5, 43, 48, 49	LAN Only <sup>6</sup>	EMC Unified Storage VNXe3100 (iSCSI)	N	
8	SuSE SLES [32-Bit] 11 SP17, 8, 9, 10, 11	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21) <sup>4, 5, 42, 43</sup> , IBM QLogic iSCSI Exp Card for BladeCenter (26K6487) <sup>1, 4, 21, 22</sup> , QLogic QLA4010-E-SP1, 2, 4, 19, 20, QLogic QLA4010C-E-SP1, 2, 4, 19, 20, QLogic QLE4060C-E-SP1, 4, 5, 43, 48, 49, QLogic QLE4062C-E-SP1, 4, 5, 43, 48, 49, QLogic QLE8240-SR-E-SP16, 18, 23, QLogic QLE8242-SR-E-SP16, 18, 23, QLogic QLE8250-CU-E-SP16, 18, 23, QLogic QLE8252-CU-E-SP16, 18, 23	LAN Only <sup>6</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	

1. Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website at <http://www.qlogic.com>
2. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
3. BIOS 1.08 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
4. Driver Version 5.01.00.00.1.1.01-k14 Driver is integrated into the kernel.
5. Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
6. Routed networks (layer 3) require iSCSI digest to be enabled.
7. Supported kernels: 2.6.32.12-0.7, 2.6.32.13-0.4.1, 2.6.32.13-0.5.1, 2.6.32.19-0.2.1, 2.6.32.19-0.3.1, 2.6.32.23-0.3.1, 2.6.32.24-0.2, 2.6.32.27-0.2.2, 2.6.32.29-0.3.1, 2.6.32.36-0.5.2, 2.6.32.43-0.4.1, 2.6.32.45-0.3.2, 2.6.32.46-0.3.1, 2.6.32.49-0.3.1. Confirm kernel support with server vendor.
8. SLES Xen kernel supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
9. EMC supports the following filesystems: ext2, ext3, reiserfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
10. The LVM included as part of this update is supported and can be used in conjunction with PowerPath empower pseudo device file names as well as native sd device file names.
11. SG1's XFS filesystem is also supported for this configuration. Files that are part of the released distribution of the operating system (e.g. /, /etc, /usr, /opt, etc) must not reside on an XFS filesystem. XFS is supported on non-operating system data only.
12. Supported kernels: 2.6.16.60-0.85.1, 2.6.16.60-0.87.1, 2.6.16.60-0.89.1, 2.6.16.60-0.91.1. Confirm kernel support with server vendor.
13. Novell OES 2 SP2 is supported with this update.
14. Novell OES 2 SP3 is supported with this update.
15. Novell OES is only supported with Fibre channel connectivity.

16. BIOS 3.03 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
17. Driver Version 5.02.11.00.10.4-d2 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
18. Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
19. BIOS 1.11 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
20. Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
21. BIOS 1.09a Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
22. Firmware Version 2.00.00.45 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
23. Driver Version 5.02.11.00.05.06-c3 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
24. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.
25. Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
26. NIC teaming with the Linux software initiator is not supported.
27. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.IBM.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
28. Broadcom iSCSI offload (without iboot) is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
Please visit <http://www.IBM.com> for the currently supported servers; as well as, BIOS/firmware versions.
29. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at:[http://www.broadcom.com/support/ethernet\\_nic/netxtremei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremei10.php)
30. Please refer to the Host Bus Adapter note for the supported NICs.
31. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.IBM.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
32. BIOS 5.0.11
33. Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
34. Firmware Version 2.1.1a
35. Driver Version 2.0.527.0 Driver is integrated into the kernel.
36. BIOS 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
37. Firmware Version 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
38. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with SUSE SLES 11 SP1  
Please visit <http://www.IBM.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
39. EMC Celerra supported for Cisco UCS attach.
40. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
41. Driver Version 1.3.30-k2 In-kernel driver version supported with Cisco UCS mezzanine adapter. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.
42. Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
43. BIOS 1.13 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
44. Driver Version 2.103.397.0 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
45. Firmware Version 3.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
46. BIOS 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
47. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
48. Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
49. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.

SuSE SLES [x86\_64]

SuSE

SuSE						
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot	Comments
1	SuSE SLES [x86_64] 10 SP4,5, 6, 7, 8, 9	QLogic QLE8240-SR-E-SP2, 3, 4, QLogic QLE8242-SR-E-SP2, 3, 4, QLogic QLE8250-CU-E-SP2, 3, 4, QLogic QLE8252-CU-E-SP2, 3, 4	LAN Only <sup>1</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	
2	SuSE SLES [x86_64] 11 SP1,7, 15, 16, 17, 18	Emulex OCE10102-IM-E34, 35, 36, Emulex OCE10102-IX-E34, 35, 36, Generic Vendor NIC 10GbE21, 37, 38, 39, Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)11, 40, 41, 42	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y33	
3	SuSE SLES [x86_64] 11 SP1,7, 15, 16, 17, 18	Emulex OCE11102-IM-E43, 44, 45, 46, Emulex OCE11102-IX-E43, 44, 45, 46	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	See22
4	SuSE SLES [x86_64] 11 SP1,7, 15, 16, 17, 18	Emulex OCE11102-IM-E43, 44, 45, 46, Emulex OCE11102-IX-E43, 44, 45, 46, IBM IBM Broadcom 10GbE 2-Port Ethernet Expansion Card for IBM BladeCenter (46M6168)21, 28, 29, 30, 31, 32, IBM IBM Broadcom 10GbE 4-Port Ethernet Expansion Card for IBM BladeCenter (46M6164)21, 28, 29, 30, 31, 32	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y27	See25, 26
5	SuSE SLES [x86_64] 11 SP1,7, 15, 16, 17, 18	Emulex OCE11102-IM-E43, 44, 45, 46, Emulex OCE11102-IX-E43, 44, 45, 46, QLogic QLA4050-E-SP11, 13, 14, 40, 47, 48, QLogic QLA4050-E-SP11, 13, 14, 40, 48, QLogic QLA4050C-E-SP11, 13, 14, 40, 47, 48, QLogic QLA4050C-E-SP11, 13, 14, 40, 48, QLogic QLA4052C-E-SP11, 13, 14, 40, 47, 48, QLogic QLA4052C-E-SP11, 13, 14, 40, 48, QLogic QLE4060C-E-SP11, 13, 40, 41, 47, 49, QLogic QLE4062C-E-SP11, 13, 40, 41, 47, 49	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y	
6	SuSE SLES [x86_64] 11 SP1,7, 15, 16, 17, 18	Generic Vendor NIC 10/10021, 23, Generic Vendor NIC 10GbE21, 37, 38, 39, Generic Vendor NIC GbE21, 23	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N	See22
7	SuSE SLES [x86_64] 11 SP1,7, 15, 16, 17, 18	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)11, 40, 41, 42, IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)11, 13, 19, 20, QLogic QLA4010-E-SP10, 11, 12, 13, 14, QLogic QLA4010C-E-SP10, 11, 12, 13, 14, QLogic QLE4060C-E-SP11, 13, 40, 41, 47, 49, QLogic QLE4062C-E-SP11, 13, 40, 41, 47, 49	LAN Only <sup>1</sup>	EMC Unified Storage VNXe3100 (iSCSI)	N	
8	SuSE SLES [x86_64] 11 SP1,7, 15, 16, 17, 18	Hewlett Packard QLogic QMH4062 1GbE iSCSI HBA for HP c-Class BladeSystem (488074-B21)11, 40, 41, 42, IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)11, 13, 19, 20, QLogic QLA4010-E-SP10, 11, 12, 13, 14, QLogic QLA4010C-E-SP10, 11, 12, 13, 14, QLogic QLE4060C-E-SP11, 13, 40, 41, 47, 49, QLogic QLE4062C-E-SP11, 13, 40, 41, 47, 49, QLogic QLE8240-SR-E-SP2, 4, 24, QLogic QLE8242-SR-E-SP2, 4, 24, QLogic QLE8250-CU-E-SP2, 4, 24, QLogic QLE8252-CU-E-SP2, 4, 24	LAN Only <sup>1</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N	

1. Routed networks (layer 3) require iSCSI digest to be enabled.
2. BIOS 3.03 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
3. Driver Version 5.02.11.00.10.4-d2 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
4. Firmware Version 4.09.34 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
5. Supported kernels: 2.6.16.60-0.85.1, 2.6.16.60-0.87.1, 2.6.16.60-0.89.1, 2.6.16.60-0.91.1. Confirm kernel support with server vendor.
6. Novell OES 2 SP2 is supported with this update.
7. SLES Xen kernel supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
8. Novell OES 2 SP3 is supported with this update.

9. Novell OES is only supported with Fibre channel connectivity.
10. BIOS 1.11 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
11. Driver Version 5.01.00.00.11.01-k14 Driver is integrated into the kernel.
12. Firmware Version 3.00.00.16 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
13. Requires SANsurfer for installation and configuration and is available for download from the EMC-approved section of the QLogic website <http://www.qlogic.com>
14. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
15. Supported kernels: 2.6.32.12-0.7, 2.6.32.13-0.4.1, 2.6.32.13-0.5.1, 2.6.32.19-0.2.1, 2.6.32.19-0.3.1, 2.6.32.23-0.3.1, 2.6.32.24-0.2, 2.6.32.27-0.2.2, 2.6.32.29-0.3.1, 2.6.32.36-0.5.2, 2.6.32.43-0.4.1, 2.6.32.45-0.3.2, 2.6.32.46-0.3.1, 2.6.32.49-0.3.1. Confirm kernel support with server vendor.
16. EMC supports the following filesystems: ext2, ext3, reiserfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.
17. The LVM included as part of this update is supported and can be used in conjunction with PowerPath empower pseudo device file names as well as native sd device file names.
18. SGI's XFS filesystem is also supported for this configuration. Files that are part of the released distribution of the operating system (e.g. /, /etc, /usr, /opt, etc) must not reside on an XFS filesystem. XFS is supported on non-operating system data only.
19. BIOS 1.09a Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
20. Firmware Version 2.00.00.45 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
21. NIC teaming with the Linux software initiator is not supported.
22. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.
23. Driver Version iSCSI Software Initiator 2.x The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
24. Driver Version 5.02.11.00.05.06-c3 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
25. Please refer to the Host Bus Adapter note for the supported NICs.
26. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
27. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with Red Hat RHEL 5.5  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
28. Firmware Version 2.1.1a
29. BIOS 5.0.11
30. Driver Version iSCSI Software Initiator The iSCSI utilities are needed to configure the software initiator and are a separate package from the driver. Please refer to the Linux distributor for the supported version with their distribution. Only the software initiator driver native to this Linux distributor's release is supported.
31. Broadcom iSCSI offload (without iboot) is supported with following adapters:  
- Broadcom 57710 based cards  
- Broadcom 57711 based cards  
Please visit <http://www.ibm.com> for the currently supported servers; as well as, BIOS/firmware versions.
32. The latest drivers (Broadcom 57710 chip) can be found at the Broadcom Support Site at:[http://www.broadcom.com/support/ethernet\\_nic/netxtremeei10.php](http://www.broadcom.com/support/ethernet_nic/netxtremeei10.php)
33. Broadcom iSCSI Boot is supported with the following IBM adapters: 46M6164/46M6168  
iSCSI boot is supported with SUSE SLES 11 SP1  
Please visit <http://www.ibm.com/support> for the currently supported blade servers, firmware/driver versions and special install instructions.
34. Driver Version 2.0.527.0 Driver is integrated into the kernel.
35. BIOS 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
36. Firmware Version 2.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
37. EMC Celerra supported for Cisco UCS attach.
38. Intel(R) 82558 and 82559 10GbE NICs must be configured with split header disabled. Refer to Intel Document #468569 - TA-193: Potential Receive Hang with Header Splitting.
39. Driver Version 1.3.30-k2 In-kernel driver version supported with Cisco UCS mezzanine adapter. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.
40. Firmware Version 3.01.00.49 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
41. BIOS 1.13 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
42. Firmware Version 3.01.00.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
43. Driver Version 2.103.397.0 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
44. Firmware Version 3.103.397.34 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
45. BIOS 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
46. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
47. Firmware Version 3.00.01.53 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
48. BIOS 1.08 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
49. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLE2460 HBAs with the same operating system version listed here.

## VMware ESX

### VMware

VMware					
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot
1	VMware ESX 4.1 (vSphere 4) 2, 3, 4, 5, 6, 7, 8, 9	Emulex OCe10102-FM-E (CNA) 10, 11, 12, Emulex OCe10102-IM-E24, 25, Emulex OCe10102-IX-E24, 25	LAN Only <sup>1</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N, Y16, 17
2	VMware ESX 4.1 (vSphere 4) 2, 3, 4, 5, 6, 7, 8, 9	Emulex OCe10102-IM-E24, 25, Emulex OCe10102-IX-E24, 25	LAN Only <sup>1</sup>	EMC Unified Storage VNXe3100 (iSCSI)	N, Y16, 17
3	VMware ESX: 4.0 (vSphere 4) 2, 3, 4, 4.1 (vSphere 4) 2, 3, 4, 5, 6, 7, 8, 9	Generic Vendor NIC 10GbE <sup>13</sup> , Generic Vendor NIC GbE <sup>14, 15</sup> , Generic Vendor NIC GbE <sup>26</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
4	VMware ESX: 4.0 (vSphere 4) 2, 3, 4, 4.1 (vSphere 4) 2, 3, 4, 5, 6, 7, 8, 9	QLogic QLA4050C-E-SP18, 19, 20, 21, QLogic QLA4050C-E-SP18, 19, 22, 23, QLogic QLA4052C-E-SP18, 19, 20, 21, QLogic QLA4052C-E-SP18, 19, 22, 23, QLogic QLE4060C-E-SP18, QLogic QLE4060C-E-SP18, 22, 23, QLogic QLE4062C-E-SP18, QLogic QLE4062C-E-SP18, 22, 23	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y16, 17

1. Routed networks (layer 3) require iSCSI digest to be enabled.
2. For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
3. EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
4. For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
5. Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://www.vmware.com/support/policies/oracle-support.html>
6. Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS.  
The following SCSI Controllers are supported with VMware and MSCS:  
Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel.  
You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.
7. All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
8. Supported with vMotion.
9. Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.
10. BIOS 2.702.200.17 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
11. Driver Version 2.1.102.525.9 iSCSI Driver Available at [http://downloads.vmware.com/d/info/datacenter\\_downloads/vmware\\_vsphere\\_4/4/drivers\\_tools](http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_4/4/drivers_tools)
12. Firmware Version 2.703.269..2806 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>
13. Driver Version 2.0-865 This driver is included in the VMware ESX kernel. Driver upgrades not supported.
14. Please refer to Primus case emc214707 at <http://csexplorer.isus.emc.com/eservice/viewcs/ui/eserver.asp> for a required fix.
15. Driver Version In-box driver This driver is included in the VMware ESX kernel. Driver upgrades not supported.
16. Virtual machines running on VMware ESX are supported booting from the array.
17. VMware ESX Server itself is supported booting from external array.
18. Driver Version 3.30 This driver is included in the VMware ESX kernel. Driver upgrades not supported.
19. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
20. BIOS 1.09 Available at <http://www.qlogic.com>
21. Firmware Version 2.00.00.45 Available in the EMC-approved section of the QLogic website.<http://www.qlogic.com>
22. BIOS 1.14
23. Firmware Version 3.00.01.40
24. Driver Version 2.102.525.9 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com> Available at [http://downloads.vmware.com/d/info/datacenter\\_downloads/vmware\\_vsphere\\_4/4/drivers\\_tools](http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_4/4/drivers_tools)
25. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website.<http://www.emulex.com>

26. Driver Version iSCSI initiator 3.6.3 This driver is included in the VMware ESX kernel. Driver upgrades not supported.

**VMware ESXi**

**VMware**

VMware					
No.	Operating System	Host Bus Adapter	Network Configuration	Storage Array	External Boot
1	VMware ESXi 4.1 (vSphere 4) <sup>5, 6, 7, 8, 9, 10, 11, 12</sup>	Emulex OCE10102-FM-E (CNA) <sup>16, 17, 18</sup> , Emulex OCE10102-IM-E <sup>26, 27</sup> , Emulex OCE10102-IX-E <sup>26, 27</sup>	LAN Only <sup>1</sup>	EMC Unified Storage VNXe3300 (iSCSI)	N, Y <sup>2, 3</sup>
2	VMware ESXi 4.1 (vSphere 4) <sup>5, 6, 7, 8, 9, 10, 11, 12</sup>	Emulex OCE10102-IM-E <sup>26, 27</sup> , Emulex OCE10102-IX-E <sup>26, 27</sup>	LAN Only <sup>1</sup>	EMC Unified Storage VNXe3100 (iSCSI)	N, Y <sup>2, 3</sup>
3	VMware ESXi 5.0 (vSphere 5) <sup>5, 6, 7, 10, 22</sup>	Generic Vendor NIC 10GbE <sup>21</sup> , Generic Vendor NIC GbE <sup>21</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
4	VMware ESXi: 4.0 (vSphere 4) <sup>5, 6, 7, 4.1 (vSphere 4)<sup>5, 6, 7, 8, 9, 10, 11, 12</sup></sup>	Generic Vendor NIC 10GbE <sup>24</sup> , Generic Vendor NIC GbE <sup>25</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N
5	VMware ESXi: 4.0 (vSphere 4) <sup>5, 6, 7, 4.1 (vSphere 4)<sup>5, 6, 7, 8, 9, 10, 11, 12</sup></sup>	QLogic QLA4050C-E-SP <sup>4, 13, 14, 15</sup> , QLogic QLA4050C-E-SP <sup>4, 14, 19, 20</sup> , QLogic QLA4052C-E-SP <sup>4, 13, 14, 15</sup> , QLogic QLA4052C-E-SP <sup>4, 14, 19, 20</sup> , QLogic QLE4060C-E-SP <sup>14</sup> , QLogic QLE4060C-E-SP <sup>14, 19, 20</sup> , QLogic QLE4062C-E-SP <sup>14</sup> , QLogic QLE4062C-E-SP <sup>14, 19, 20</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Y <sup>2, 3</sup>
6	VMware ESXi: 4.0 (vSphere 4) <sup>5, 6, 7, 4.1 (vSphere 4)<sup>5, 6, 7, 8, 9, 10, 11, 12</sup>, 5.0 (vSphere 5)<sup>5, 6, 7, 10, 22</sup></sup>	Generic Vendor NIC GbE <sup>21, 23</sup>	LAN Only <sup>1</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	N

1. Routed networks (layer 3) require iSCSI digest to be enabled.
2. Virtual machines running on VMware ESX are supported booting from the array.
3. VMware ESX Server itself is supported booting from external array.
4. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
5. For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
6. EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
7. For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
8. Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://vmware.com/support/policies/oracle-support.html>
9. Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS. The following SCSI Controllers are supported with VMware and MSCS: Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel. You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.
10. All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
11. Supported with vMotion.
12. Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.
13. BIOS 1.09 Available at <http://www.qlogic.com>
14. Driver Version 3.30 This driver is included in the VMware ESX kernel. Driver upgrades not supported.
15. Firmware Version 2.00.00.45 Available in the EMC-approved section of the QLogic website. <http://www.qlogic.com>
16. BIOS 2.702.200.17 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
17. Driver Version 2.1.102.525.9 iSCSI Driver Available at [http://downloads.vmware.com/d/info/datacenter\\_downloads/vmware\\_vsphere\\_4/4#drivers\\_tools](http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_4/4#drivers_tools)
18. Firmware Version 2.703.269..2806 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>
19. BIOS 1.14
20. Firmware Version 3.00.01.40
21. Driver Version In-box Driver This driver is included in the VMware ESX kernel. Driver upgrades not supported.
22. Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS.
23. Please refer to Primus case emc214707 at <http://csexplorer.isus.emc.com/eservice/iviewcs/ui/eserver.asp> for a required fix.
24. Driver Version 2.0-865 This driver is included in the VMware ESX kernel. Driver upgrades not supported.
25. Driver Version iSCSI initiator 3.6.3 This driver is included in the VMware ESX kernel. Driver upgrades not supported.
26. Driver Version 2.102.525.9 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com> Available at [http://downloads.vmware.com/d/info/datacenter\\_downloads/vmware\\_vsphere\\_4/4#drivers\\_tools](http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_4/4#drivers_tools)
27. Firmware Version 4.0.360.3 Available in the EMC-approved section of the Emulex website. <http://www.emulex.com>

**Path Management Software**

**Configuration Notes**

This table describes the support statements for path management software such as EMC PowerPath and native offerings built into the Operating System in EMC Symmetrix and CLARiiON environments. Veritas DMP support statements are found on the Veritas Volume Management table. For HBA and driver support, see the Base Connectivity table. For PowerPath support with non-EMC storage, see the Path Management Software - Third Party Arrays table. When referencing PowerPath information from the ELN posted PDFs, PowerPath and PowerPath/VE information may be listed in separate documents that are available in the same download section.

**Asianux AX [32-Bit]**

**Asianux**

Asianux				
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Asianux AX [32-Bit] 4.0 <sup>3, 4, 5</sup>	Asianux DM-MPIO1, 2; EMC PowerPath 5.6	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

1. This product is also known as Linux Native Multipathing.
2. The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.
3. Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
4. Native multipathing is not supported on boot-from-SAN configurations.
5. Supported kernels: 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6. Confirm kernel support with server vendor.

**Asianux AX [32-Bit] 4.0**

**Asianux**

Asianux				
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Asianux AX [32-Bit] 4.0 SP11, 2, 3	Asianux DM-MPIO4, 5; EMC PowerPath 5.6	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

1. Supported kernels: 2.6.32-131.12.1.el6. Confirm kernel support with server vendor.
2. Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
3. Native multipathing is not supported on boot-from-SAN configurations.
4. This product is also known as Linux Native Multipathing.
5. The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.

### Asianux AX [x86\_64]

#### Asianux

Asianux				
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Asianux AX [x86_64] 4.01, 2, 3	Asianux DM-MPIO4, 5; EMC PowerPath 5.6	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

1. Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
2. Native multipathing is not supported on boot-from-SAN configurations.
3. Supported kernels: 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6. Confirm kernel support with server vendor.
4. This product is also known as Linux Native Multipathing.
5. The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.

### Asianux AX [x86\_64] 4.0

#### Asianux

Asianux				
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Asianux AX [x86_64] 4.0 SP11, 2, 3	Asianux DM-MPIO4, 5; EMC PowerPath 5.6	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

1. Supported kernels: 2.6.32-131.12.1.el6. Confirm kernel support with server vendor.
2. Asianux includes separate releases from Redflag DC Server, Miracle Linux and HanCom Linux Server. Each individual distribution is released asynchronous of the other. Please review the individual distributors release to ensure the availability of that desired release.
3. Native multipathing is not supported on boot-from-SAN configurations.
4. This product is also known as Linux Native Multipathing.
5. The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.

### Microsoft Windows 2003 [x64]

#### Microsoft

Microsoft					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Microsoft Windows 2003 [x64] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	EMC PowerPath 5.51, 2, 3	RKM appliance version 2.7 SP1 (Software verion 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Microsoft Windows 2003 [x64] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Storage Server Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Storage Server Standard Edition: R2 SP2, SP2	EMC PowerPath: 5.3 SP11, 5.5 SP1		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1

1. Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
2. For encryption support please refer to the PowerPath and PowerPath/VE Family for Windows Release Notes.
3. Requires mandatory patch 5.5 P01 if using PowerPath Encryption with RSA or PowerPath Migration Enabler features.

### Microsoft Windows 2003 [x86]

Microsoft

Microsoft					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	EMC PowerPath 5.51, 2, 3	RKM appliance version 2.7 SP1 (Software verion 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	EMC PowerPath: 5.3 SP11, 5.5 SP1		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1

1. Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
2. For encryption support please refer to the PowerPath and PowerPath/VE Family for Windows Release Notes.
3. Requires mandatory patch 5.5 P01 if using PowerPath Encryption with RSA or PowerPath Migration Enabler features.

Microsoft Windows 2008 R2 SP1 [x64]

Microsoft

Microsoft					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath 5.52, 3, 4	RKM appliance version 2.7 SP1 (Software verion 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath: 5.3 SP12, 5.5 SP1		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

1. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
2. Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
3. For encryption support please refer to the PowerPath and PowerPath/VE Family for Windows Release Notes.
4. Requires mandatory patch 5.5 P01 if using PowerPath Encryption with RSA or PowerPath Migration Enabler features.

Microsoft Windows 2008 R2 [x64]

Microsoft

Microsoft					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	Microsoft Windows 2008 R2 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath 5.52, 3, 4	RKM appliance version 2.7 SP1 (Software verion 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	Microsoft Windows 2008 R2 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath: 5.3 SP12, 5.5 SP1		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

1. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
2. Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
3. For encryption support please refer to the PowerPath and PowerPath/VE Family for Windows Release Notes.
4. Requires mandatory patch 5.5 P01 if using PowerPath Encryption with RSA or PowerPath Migration Enabler features.

Microsoft Windows 2008 [x64]

Microsoft

Microsoft					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2, Storage Server, Storage Server SP2, Web Server	EMC PowerPath 5.52, 3, 4	RKM appliance version 2.7 SP1 (Software verion 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1

2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2, Storage Server, Storage Server SP2, Web Server	EMC PowerPath: 5.3 SP12, 5.5 SP1		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1
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1. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
2. Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
3. For encryption support please refer to the PowerPath and PowerPath/VE Family for Windows Release Notes.
4. Requires mandatory patch 5.5 P01 if using PowerPath Encryption with RSA or PowerPath Migration Enabler features.

## Microsoft Windows 2008 [x86]

### Microsoft

Microsoft					
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>2</sup>	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2, Web Server	EMC PowerPath 5.51, 3, 4	RKM appliance version 2.7 SP1 (Software version 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>2</sup>	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2, Web Server	EMC PowerPath: 5.3 SP11, 5.5 SP1		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1

1. Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
2. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
3. For encryption support please refer to the PowerPath and PowerPath/VE Family for Windows Release Notes.
4. Requires mandatory patch 5.5 P01 if using PowerPath Encryption with RSA or PowerPath Migration Enabler features.

## Oracle Linux UEK [x86\_64]

### Oracle

Oracle					
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux UEK [x86_64]: 5.6 <sup>4</sup> , 6.0 <sup>5</sup> , 6.1 <sup>7</sup>	EMC PowerPath 5.6 P01	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1	
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux UEK [x86_64] 5.7 <sup>6</sup>	EMC PowerPath 5.6 P02	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1	
3	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux UEK [x86_64]: 5.6 <sup>4</sup> , 5.7 <sup>6</sup> , 6.0 <sup>5</sup> , 6.1 <sup>7</sup>	Oracle DM-MPIO <sup>1, 2, 3</sup>	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1	

1. This product is also known as Linux Native Multipathing.
2. IO running to a failed path when using PNR devices will queue until the fault is fixed. No error will be reported to the application. If a new IO thread is started to the same device DM-MPIO will send it down an alternate path. This behavior is not seen when using ALUA.
3. The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.
4. Supported kernels: 2.6.32-100.28.1.el5, 2.6.32-100.28.9.el5, 2.6.32-100.28.11.el5, 2.6.32-100.28.15.el5; 2.6.32-100.28.17.el5, 2.6.32-100.35.1.el5uek. Confirm kernel support with server vendor.
5. **Supported kernels: 2.6.32-100.28.1.el6, 2.6.32-100.28.9.el6, 2.6.32-100.28.11.el6, 2.6.32-100.28.15.el6, 2.6.32-100.28.17.el6, 2.6.32-100.35.1.el6uek. Confirm kernel support with server vendor.**
6. **Supported kernels: 2.6.32-200.13.1.el5uek, 2.6.32-200.16.1.el5uek, 2.6.32-200.19.1.el5uek, 2.6.32-200.20.1.el5uek. Confirm kernel support with server vendor.**
7. **Supported kernels: 2.6.32-100.34.1.el6uek. Confirm kernel support with server vendor.**

## Oracle Linux [32-Bit]

### Oracle

Oracle					
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux [32-Bit] 5.6 <sup>1, 4</sup>	EMC PowerPath 5.5		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux [32-Bit] 5.6 <sup>1, 4</sup>	EMC PowerPath 5.5	RKM appliance version 2.7 SP1 (software version 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
3	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux [32-Bit]: 5.6 <sup>1, 4</sup> , 5.7 <sup>1, 2, 3</sup>	EMC PowerPath 5.6; Oracle DM-MPIO <sup>5, 6</sup> ; Red Hat DM-MPIO <sup>5, 6</sup>		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

1. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
2. OEL Xen kernel supported.
3. Supported kernels: 2.6.18-274.0.0.0.1.el5. Confirm kernel support with server vendor.
4. Supported kernels: 2.6.18-238.0.1.el5, 2.6.18-238.1.1.0.1.el5, 2.6.18-238.5.1.0.1.el5, 2.6.18-238.9.1.0.1.el5, 2.6.18-238.12.1.0.1.el5. Confirm kernel support with server vendor.
5. This product is also known as Linux Native Multipathing.
6. The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.

## Oracle Linux [x86\_64]

### Oracle

Oracle					
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment

1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux [x86_64] 5.61, 2	EMC PowerPath 5.5		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux [x86_64] 5.61, 2	EMC PowerPath 5.5	RKM appliance version 2.7 SP1 (software version 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
3	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Oracle Linux [x86_64]: 5.61, 2, 5.71, 3, 4	EMC PowerPath 5.6; Oracle DM-MPIO5, 6; Red Hat DM-MPIO5, 6		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- Supported kernels: 2.6.18-238.0.1.el5, 2.6.18-238.1.1.0.1.el5, 2.6.18-238.5.1.0.1.el5, 2.6.18-238.9.1.0.1.el5, 2.6.18-238.12.1.0.1.el5. Confirm kernel support with server vendor.
- OEL Xen kernel supported.
- Supported kernels: 2.6.18-274.0.0.0.1.el5. Confirm kernel support with server vendor.
- This product is also known as Linux Native Multipathing.
- The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.

## Oracle Solaris

### Oracle

Oracle					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage VNXe3300 (iSCSI)	Oracle Solaris 10: SPARC2, x863;  Oracle Solaris 11: SPARC, x86	Oracle MPxIO1		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1

- Also known as Sun StorEdge Traffic Manager
- For LDOM support, please refer to the "Virtualization Server Support" table available via EMC PowerLink: [https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization\\_Server\\_Support.pdf](https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization_Server_Support.pdf)
- EMC supports ZFS in Solaris 10\_x86 11/06 (update 3) or later. The Snapshot and Clone features of ZFS are supported only through Sun Microsystems.

## Red Hat RHEL [32-Bit]

### Red Hat

Red Hat					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Red Hat RHEL [32-Bit] 5.61, 3, 4, 5, 6	EMC PowerPath 5.5	RKM appliance version 2.7 SP1 (software version 2.7 SP1)	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1
2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Red Hat RHEL [32-Bit]: 5.51, 3, 5, 10, 5.61, 3, 4, 5, 6	EMC PowerPath 5.5		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
3	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Red Hat RHEL [32-Bit]: 5.51, 3, 5, 10, 5.61, 3, 4, 5, 6, 5.71, 3, 5, 7, 6.01, 2, 3, 6.11, 3, 14, 6.21, 3, 11, 12, 13	EMC PowerPath 5.6; Red Hat DM-MPIO8, 9		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.1

- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- Supported kernels: 2.6.32-71.el6, 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6, 2.6.32-71.24.1.el6, 2.6.32-71.31.1.el6, 2.6.32-71.34.1.el6. Confirm kernel support with server vendor.
- RHEL KVM is supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- Supported kernels: 2.6.18-238.el5, 2.6.18-238.1.1.el5, 2.6.18-238.5.1.el5, 2.6.18-238.9.1.el5, 2.6.18-238.12.1.el5, 2.6.18-238.19.1.el5, 2.6.18-238.21.1.el5, 2.6.18-238.28.1.el5, 2.6.18-238.31.1.el5. Confirm kernel support with server vendor.
- RHEL Xen kernel supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.
- Supported kernels: 2.6.18-274.el5, 2.6.18-274.3.1.el5, 2.6.18-274.7.1.el5, 2.6.18-274.12.1.el5. Confirm kernel support with server vendor.
- This product is also known as Linux Native Multipathing.
- The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.
- Supported kernels: 2.6.18-194.el5, 2.6.18-194.3.1.el5, 2.6.18-194.8.1.el5, 2.6.18-194.11.1.el5, 2.6.18-194.11.3.el5, 2.6.18-194.11.4.el5, 2.6.18-194.17.1.el5, 2.6.18-194.17.4.el5, 2.6.18-194.26.1.el5, 2.6.18-194.32.1.el5. Confirm kernel support with server vendor.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, gfs, and gfs2 unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.
- The LVM included as part of this update is supported and can be used in conjunction with PowerPath emcpower pseudo device file names as well as native sd device file names.
- Supported kernels: 2.6.32-220.el6. Confirm kernel support with server vendor.
- Supported kernels: 2.6.32-131.0.15.el6, 2.6.32-131.2.1.el6, 2.6.32-131.6.1.el6, 2.6.32-131.12.1.el6, 2.6.32-131.17.1.el6, 2.6.32-131.21.1.el6. Confirm kernel support with server vendor.

## Red Hat RHEL [IA64]

### Red Hat

Red Hat					
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	Red Hat RHEL [IA64] 5.61, 2, 3, 4, 5	EMC PowerPath 5.5		EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

2	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Red Hat RHEL [IA64] 5.61, 2, 3, 4, 5	EMC PowerPath 5.5	RKM appliance version 2.7 SP1 (software version 2.7 SP1)	EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.0, EMC VNxe iSCSI OE 2.1.1
3	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Red Hat RHEL [IA64] 5.71, 8	Red Hat DM-MPIO6, 7		EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.0, EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.1

- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- Supported kernels: 2.6.18-238.el5, 2.6.18-238.1.1.el5, 2.6.18-238.5.1.el5, 2.6.18-238.9.1.el5, 2.6.18-238.12.1.el5, 2.6.18-238.19.1.el5, 2.6.18-238.21.1.el5, 2.6.18-238.28.1.el5, 2.6.18-238.31.1.el5. Confirm kernel support with server vendor.
- RHEL Xen kernel supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- RHEL KVM is supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- This product is also known as Linux Native Multipathing.
- The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.
- Supported kernels: 2.6.18-274.el5, 2.6.18-274.3.1.el5, 2.6.18-274.7.1.el5, 2.6.18-274.12.1.el5. Confirm kernel support with server vendor.

## Red Hat RHEL [x86\_64]

### Red Hat

Red Hat					
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Supported RSA Key Manager	Storage Operating Environment
1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Red Hat RHEL [x86_64] 5.61, 3, 7, 9, 10	EMC PowerPath 5.5		EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.0, EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.1
2	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Red Hat RHEL [x86_64]: 5.51, 3, 7, 8, 5.61, 3, 7, 9, 10	EMC PowerPath 5.5	RKM appliance version 2.7 SP1 (software version 2.7 SP1)	EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.0, EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.1
3	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	Red Hat RHEL [x86_64]: 5.51, 3, 7, 8, 5.61, 3, 7, 9, 10, 5.71, 3, 6, 7, 6.01, 2, 3, 6.11, 3, 14, 6.21, 3, 11, 12, 13	EMC PowerPath 5.6; Red Hat DM-MPIO4, 5		EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.0, EMC VNxe iSCSI OE 2.1.1

- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- Supported kernels: 2.6.32-71.el6, 2.6.32-71.7.1.el6, 2.6.32-71.14.1.el6, 2.6.32-71.18.1.el6, 2.6.32-71.18.2.el6, 2.6.32-71.24.1.el6, 2.6.32-71.31.1.el6, 2.6.32-71.34.1.el6. Confirm kernel support with server vendor.
- RHEL KVM is supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- This product is also known as Linux Native Multipathing.
- The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.
- Supported kernels: 2.6.18-274.el5, 2.6.18-274.3.1.el5, 2.6.18-274.7.1.el5, 2.6.18-274.12.1.el5, 2.6.18-274.19.1.el5, 2.6.18-274.21.1.el5, 2.6.18-274.28.1.el5, 2.6.18-274.31.1.el5. Confirm kernel support with server vendor.
- RHEL Xen kernel supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- Supported kernels: 2.6.18-194.el5, 2.6.18-194.3.1.el5, 2.6.18-194.8.1.el5, 2.6.18-194.11.1.el5, 2.6.18-194.11.3.el5, 2.6.18-194.11.4.el5, 2.6.18-194.17.1.el5, 2.6.18-194.17.4.el5, 2.6.18-194.26.1.el5, 2.6.18-194.32.1.el5. Confirm kernel support with server vendor.
- Supported kernels: 2.6.18-238.el5, 2.6.18-238.1.1.el5, 2.6.18-238.5.1.el5, 2.6.18-238.9.1.el5, 2.6.18-238.12.1.el5, 2.6.18-238.19.1.el5, 2.6.18-238.21.1.el5, 2.6.18-238.28.1.el5, 2.6.18-238.31.1.el5. Confirm kernel support with server vendor.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- EMC supports the following filesystems: ext2, ext3, ext4, xfs, gfs, and gfs2 unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPO.
- The LVM included as part of this update is supported and can be used in conjunction with PowerPath emcpower pseudo device file names as well as native sd device file names.
- Supported kernels: 2.6.32-220.el6. Confirm kernel support with server vendor.
- Supported kernels: 2.6.32-131.0.15.el6, 2.6.32-131.2.1.el6, 2.6.32-131.6.1.el6, 2.6.32-131.12.1.el6, 2.6.32-131.17.1.el6, 2.6.32-131.21.1.el6. Confirm kernel support with server vendor.

## SuSE SLES [32-Bit]

### SuSE

SuSE				
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	SuSE SLES [32-Bit] 11 SP14, 5, 6, 7	EMC PowerPath 5.5; SuSE DM-MPIO1, 2, 3	EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.0, EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.1

- This product is also known as Linux Native Multipathing.
- The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.
- SLES 11 kernel 2.6.27.21-0.1.2 or higher is required for environments running DM-MPIO with CLARiION.
- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- Supported kernels: 2.6.32.12-0.7, 2.6.32.13-0.4.1, 2.6.32.13-0.5.1, 2.6.32.19-0.2.1, 2.6.32.19-0.3.1, 2.6.32.23-0.3.1, 2.6.32.24-0.2, 2.6.32.27-0.2.2, 2.6.32.29-0.3.1, 2.6.32.36-0.5.2, 2.6.32.43-0.4.1, 2.6.32.45-0.3.2, 2.6.32.46-0.3.1, 2.6.32.49-0.3.1. Confirm kernel support with server vendor.
- SLES Xen kernel supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- The LVM included as part of this update is supported and can be used in conjunction with PowerPath emcpower pseudo device file names as well as native sd device file names.

## SuSE SLES [x86\_64]

### SuSE

SuSE				
No.	Storage Array	Operating System	Multipath Software (Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage: VNxe3100 (iSCSI), VNxe3300 (iSCSI)	SuSE SLES [x86_64] 11 SP11, 2, 3, 4	EMC PowerPath 5.5; SuSE DM-MPIO5, 6, 7	EMC VNxe iSCSI OE 2.0.0, EMC VNxe iSCSI OE 2.1.0, EMC VNxe iSCSI OE 2.1.1

- Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- Supported kernels: 2.6.32.12-0.7, 2.6.32.13-0.4.1, 2.6.32.13-0.5.1, 2.6.32.19-0.2.1, 2.6.32.19-0.3.1, 2.6.32.23-0.3.1, 2.6.32.24-0.2, 2.6.32.27-0.2.2, 2.6.32.29-0.3.1, 2.6.32.36-0.5.2, 2.6.32.43-0.4.1, 2.6.32.45-0.3.2, 2.6.32.46-0.3.1, 2.6.32.49-0.3.1. Confirm kernel support with server vendor.
- SLES Xen kernel supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- The LVM included as part of this update is supported and can be used in conjunction with PowerPath emcpower pseudo device file names as well as native sd device file names.
- This product is also known as Linux Native Multipathing.
- The device mapper and multipath tools package included in the distribution is required for support. Please refer to the "Native Multipath Failover" chapter of the "EMC Host Connectivity Guide for Linux" available via PowerLink for required packages and configuration instructions.
- SLES 11 kernel 2.6.27.21-0.1.2 or higher is required for environments running DM-MPIO with CLARiION.

**VMware ESX**  
VMware

VMware				
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESX 4.1 (vSphere 4) <b>2, 3, 4, 5, 6, 7, 8, 9</b>	EMC PowerPath/VE 5.4 SP2 <sup>1</sup>	
2	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESX 4.1 (vSphere 4) <b>2, 3, 4, 5, 6, 7, 8, 9</b>	EMC PowerPath/VE 5.4 SP2 <sup>1</sup>	EMC VNXe iSCSI OE 2.0.0
3	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESX 4.1 (vSphere 4) <b>2, 3, 4, 5, 6, 7, 8, 9</b>	EMC PowerPath/VE 5.4 SP2 <sup>1</sup>	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
4	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESX 4.0 (vSphere 4) <b>2, 3, 4</b>	EMC PowerPath/VE: 5.4, 5.4 SP1	
5	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESX 4.0 (vSphere 4) <b>2, 3, 4</b>	EMC PowerPath/VE: 5.4, 5.4 SP1	EMC VNXe iSCSI OE 2.0.0
6	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESX 4.0 (vSphere 4) <b>2, 3, 4</b>	EMC PowerPath/VE: 5.4, 5.4 SP1	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
7	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESX: 4.0 (vSphere 4) <b>2, 3, 4, 4.1 (vSphere 4)2, 3, 4, 5, 6, 7, 8, 9</b>	VMware NMP <sup>10</sup>	
8	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESX: 4.0 (vSphere 4) <b>2, 3, 4, 4.1 (vSphere 4)2, 3, 4, 5, 6, 7, 8, 9</b>	VMware NMP <sup>10</sup>	EMC VNXe iSCSI OE 2.0.0
9	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESX: 4.0 (vSphere 4) <b>2, 3, 4, 4.1 (vSphere 4)2, 3, 4, 5, 6, 7, 8, 9</b>	VMware NMP <sup>10</sup>	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

- For array installations with VAAI, a mandatory installation of 5.4 SP2 Patch01 required. This patch is available on <http://PowerLink.emc.com>. For further details, please review the PowerPath/VE for VMware vSphere Release Notes 5.4 and Service Pack Releases document.
- For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
- EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
- For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
- Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://vmware.com/support/policies/oracle-support.html>
- Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS. The following SCSI Controllers are supported with VMware and MSCS: Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel. You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.
- All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
- Supported with vMotion.
- Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.
- VMware NMP or Native Multipathing is included in the VMware ESX distribution.

**VMware ESXi**  
VMware

VMware				
No.	Storage Array	Operating System	Multipath Software(Infrastructure Software)	Storage Operating Environment
1	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESXi 4.1 (vSphere 4) <b>2, 3, 4, 5, 6, 7, 8, 9</b>	EMC PowerPath/VE 5.4 SP2 <sup>1</sup>	
2	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESXi 4.1 (vSphere 4) <b>2, 3, 4, 5, 6, 7, 8, 9</b>	EMC PowerPath/VE 5.4 SP2 <sup>1</sup>	EMC VNXe iSCSI OE 2.0.0
3	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESXi 4.1 (vSphere 4) <b>2, 3, 4, 5, 6, 7, 8, 9</b>	EMC PowerPath/VE 5.4 SP2 <sup>1</sup>	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
4	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESXi 4.0 (vSphere 4) <b>2, 3, 4</b>	EMC PowerPath/VE: 5.4, 5.4 SP1	
5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESXi 4.0 (vSphere 4) <b>2, 3, 4</b>	EMC PowerPath/VE: 5.4, 5.4 SP1	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
6	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESXi 4.0 (vSphere 4) <b>2, 3, 4</b>	EMC PowerPath/VE: 5.4, 5.4 SP1; VMware NMP <sup>10</sup>	EMC VNXe iSCSI OE 2.0.0
7	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESXi 4.1 (vSphere 4) <b>2, 3, 4, 5, 6, 7, 8, 9</b>	VMware NMP <sup>10</sup>	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1
8	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESXi 5.0 (vSphere 5) <b>2, 3, 4, 7, 11</b>	VMware NMP <sup>10</sup>	
9	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESXi 5.0 (vSphere 5) <b>2, 3, 4, 7, 11</b>	VMware NMP <sup>10</sup>	EMC VNXe iSCSI OE 2.0.0
10	EMC Unified Storage VNXe3100 (iSCSI)	VMware ESXi: 4.0 (vSphere 4) <b>2, 3, 4, 4.1 (vSphere 4)2, 3, 4, 5, 6, 7, 8, 9</b>	VMware NMP <sup>10</sup>	
11	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	VMware ESXi: 4.0 (vSphere 4) <b>2, 3, 4, 5.0 (vSphere 5)2, 3, 4, 7, 11</b>	VMware NMP <sup>10</sup>	EMC VNXe iSCSI OE 2.0.0, EMC VNXe iSCSI OE 2.1.0, EMC VNXe iSCSI OE 2.1.1

- For array installations with VAAI, a mandatory installation of 5.4 SP2 Patch01 required. This patch is available on <http://PowerLink.emc.com>. For further details, please review the PowerPath/VE for VMware vSphere Release Notes 5.4 and Service Pack Releases document.
- For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
- EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
- For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
- Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://vmware.com/support/policies/oracle-support.html>
- Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS. The following SCSI Controllers are supported with VMware and MSCS: Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel. You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.
- All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
- Supported with vMotion.
- Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.
- VMware NMP or Native Multipathing is included in the VMware ESX distribution.

11. Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS.

## Providers

### Configuration Notes

#### Red Hat RHEL [32-Bit]

Red Hat

Red Hat					
No.	Information Management Software	Operating System	Software Enabler	Storage Array	Storage Operating Environment
1	EMC SMI-S Provider 4.2	Red Hat RHEL [32-Bit] 5.5	EMC Solutions Enabler 7.2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	EMC VNXe iSCSI OE 2.0.0

#### Red Hat RHEL [x86\_64]

Red Hat

Red Hat					
No.	Information Management Software	Operating System	Software Enabler	Storage Array	Storage Operating Environment
1	EMC SMI-S Provider 4.2	Red Hat RHEL [x86_64]: 5.5, 6.0	EMC Solutions Enabler 7.2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	EMC VNXe iSCSI OE 2.0.0

#### SuSE SLES [x86\_64]

SuSE

SuSE					
No.	Information Management Software	Operating System	Software Enabler	Storage Array	Storage Operating Environment
1	EMC SMI-S Provider 4.2	SuSE SLES [x86_64] 11 SP1	EMC Solutions Enabler 7.2	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	EMC VNXe iSCSI OE 2.0.0

## Replication Manager Block Storage

### Configuration Notes

For Replication Manager (RM) with VNX and VNXe Storage:

- RM supports VNX and VNXe iSCSI (Windows only).
- RM supports Microsoft iSCSI initiator 2.06, 2.07 and 2.08.

For Replication Manager (RM) with CLARiiON Storage:

- RM supports CLARiiON iSCSI (Windows only).
- RM supports Microsoft iSCSI initiator 2.06, 2.07 and 2.08.

For Replication Manager (RM) with Symmetrix Storage:

- Windows 2003: SPC2 bit is required on production and mount hosts. (Refer to EMC knowledge base solutions emc177815, emc117300 and emc134969 for more details). A microcode hotfix may be needed in some cases, refer to emc113107.
- Windows 2008, the following director bits should be set on the FA:  
Common Serial Number (C)  
Enable Auto Negotiation (EAN)  
Enable Pointtopoint (PP)  
Host SCSI Compliance 2007 (OS2007)  
SCSI3 SPC2 Compliance (SPC2)  
Unique World Wide Name (UWN)  
SCSI3 compliance (SC3)
- RM can coexist with SRDF/CE. For details on how to use RM with SRDF/CE, refer to the "EMC Replication Manager and SRDF/CE" whitepaper on Powerlink
- RM supports creation of crash consistent pointintime remote clones when the SAP customer is using SRDF/A. Details are contained in EMC Internal
- Technical Note "Create Remote SAP TimeFinder/Clones in an SRDF/A Environment with Replication Manager Technical Note (P/N 300008993 Rev A01

No.	Information Management Software	Storage Array	Storage Operating Environment
1	EMC Replication Manager: 5.3.2, 5.3.3, 5.4, 5.4.1	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	EMC VNXe iSCSI OE: 2.0.0, 2.1.0

## Veritas Volume Manager

### Configuration Notes

This table describes the support statements for Veritas Volume Manager.

#### Microsoft Windows 2003 [x64]

Microsoft

Microsoft						
No.	Server LVM	DMP	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1: RP26, 17, SP113, 14, 15, SP2; Veritas VxVM 5.16	N	Microsoft Windows 2003 [x64] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1</sup>
2	Veritas VxVM 5.1: SP113, 14, 15, SP2	N	Microsoft Windows 2003 [x64] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2	EMC PowerPath: 5.3 SP1, 5.32, 3, 4, 5, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1</sup>
3	Veritas VxVM 5.1: SP113, 14, SP216	N	Microsoft Windows 2003 [x64] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2	Veritas DMP15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1</sup>
4	Veritas VxVM: 5.07, 8, 9, 10, 11, 12, 5.1 RP26, 17, 5.16	N	Microsoft Windows 2003 [x64] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2	EMC PowerPath 5.32, 3, 4	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1</sup>

- Hot relocation should be disabled for MSCS cluster configurations.
- Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
- PowerPath with Encryption does not support dynamic disks. Please refer to the PowerPath Encryption with RSA Release Notes notes for other features and exceptions
- MPIO-based PowerPath version supports STORPort drivers only for Windows 2003.
- PowerPath does not support Thin Reclamation.
- Statistic Monitoring not supported on a greater than 2 terabyte lun
- STORPort drivers are required with Veritas Storage Foundation 5.0 with EMC Symmetrix arrays if DSM-based DMP multipathing is installed. STORPort driver requires Microsoft STORPort hotfix Q957910. Please see <http://support.microsoft.com/kb/957910>. NOTE: Hotfix Q957910 requires a minimum of Service Pack 2 (SP2) to be installed before the hotfix can be installed.  
To obtain this hotfix, fill out the hotfix request form at <http://support.microsoft.com/hotfix/KBHotfix.aspx?kbnm=957910&kbln=en-us>
- RP1a for Storage Foundation 5.0 supported.
- ASL-based DMP multipathing from Veritas Storage Foundation 4.2 or 4.3 is not supported with STORPort drivers. ASL-based DMP is only supported with SCSIPort drivers. If STORPort drivers are being used, then only DSM-based DMP or EMC PowerPath can be used for multipath support on Symmetrix arrays.
- Systems that are not running Veritas Volume manager software (VxVM, Foundation Suite, or Storage Foundation) should not move BCV devices to systems that are running Veritas Volume manager software due to format compatibility issues.
- Failover mode 1 required for Veritas multipath solutions (DMP) and CLARiiON storage arrays.
- Storage Foundation 5.0
- "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
- FCoE is supported. Requires minimum VxVM 5.1 SP1.
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- Thin Reclamation using VxVM 5.1 SP2 on VMAX thin devices requires Enginuity 5875 or higher and VxVM hotfix 5.1.20007.87
- See EMC's Veritas Support Matrix for Veritas Volume Manager support on Microsoft Windows platform

Microsoft Windows 2003 [x86]

Microsoft

Microsoft						
No.	Server LVM	DMP	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1: RP29, 21, SP117, 18, 19, SP2; Veritas VxVM 5.19	Y3, 4, 5	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
2	Veritas VxVM 5.1: SP117, 18, 19, SP2	Y3, 4, 5	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	EMC PowerPath: 5.3 SP1, 5.36, 7, 8, 10, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
3	Veritas VxVM 5.1: SP117, 18, SP220	Y3, 4, 5	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	Veritas DMP19	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
4	Veritas VxVM: 5.011, 12, 13, 14, 15, 16, 5.1 RP29, 21, 5.19	Y3, 4, 5	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2; Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	EMC PowerPath 5.36, 7, 8	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>

- Hot relocation should be disabled for MSCS cluster configurations.
- PowerPath 4.5.0 is the minimum supported version for Windows 2003 servers with Service Pack 1 (SP1) installed.
- ASL based DMP functionality is not supported with STORPort drivers. ASL based DMP supports SCSIPort (and Emulex SCSU Full Port) drivers only.
- If using DMP features in a MSCS cluster configuration, DMP should be set to Active/Passive mode.
- SAN boot is supported with DMP only if external boot is shown as supported in the base connectivity table for the required Server/HBA/OS combination.
- Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
- PowerPath with Encryption does not support dynamic disks. Please refer to the PowerPath Encryption with RSA Release Notes notes for other features and exceptions
- MPIO-based PowerPath version supports STORPort drivers only for Windows 2003.
- Statistic Monitoring not supported on a greater than 2 terabyte lun
- PowerPath does not support Thin Reclamation.
- STORPort drivers are required with Veritas Storage Foundation 5.0 with EMC Symmetrix arrays if DSM-based DMP multipathing is installed. STORPort driver requires Microsoft STORPort hotfix Q957910. Please see <http://support.microsoft.com/kb/957910>. NOTE: Hotfix Q957910 requires a minimum of Service Pack 2 (SP2) to be installed before the hotfix can be installed.  
To obtain this hotfix, fill out the hotfix request form at <http://support.microsoft.com/hotfix/KBHotfix.aspx?kbnm=957910&kbln=en-us>
- RP1a for Storage Foundation 5.0 supported.
- ASL-based DMP multipathing from Veritas Storage Foundation 4.2 or 4.3 is not supported with STORPort drivers. ASL-based DMP is only supported with SCSIPort drivers. If STORPort drivers are being used, then only DSM-based DMP or EMC PowerPath can be used for multipath support on Symmetrix arrays.
- Systems that are not running Veritas Volume manager software (VxVM, Foundation Suite, or Storage Foundation) should not move BCV devices to systems that are running Veritas Volume manager software due to format compatibility issues.
- Failover mode 1 required for Veritas multipath solutions (DMP) and CLARiiON storage arrays.
- Storage Foundation 5.0
- "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
- FCoE is supported. Requires minimum VxVM 5.1 SP1.
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- Thin Reclamation using VxVM 5.1 SP2 on VMAX thin devices requires Enginuity 5875 or higher and VxVM hotfix 5.1.20007.87
- See EMC's Veritas Support Matrix for Veritas Volume Manager support on Microsoft Windows platform

## Microsoft Windows 2008 R2 SP1 [IA64]

## Microsoft

Microsoft							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1: RP24, 15, SP15, 6, 7, SP2; Veritas VxVM 5.14	N		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16
2	Veritas VxVM 5.1: RP24, 15, SP15, 6, 7, SP2; Veritas VxVM 5.14	N	Y	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
3	Veritas VxVM 5.1: RP24, 15, SP15, 6, 7, SP2; Veritas VxVM 5.14	Y8	Y9	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
4	Veritas VxVM 5.1: RP24, 15, SP15, 6, 7, SP2; Veritas VxVM 5.14	Y10, 11, 12		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16, 17
5	Veritas VxVM 5.1: SP15, 6, 7, SP2	N		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath: 5.3 SP1, 5.313, 14, 19, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16
6	Veritas VxVM 5.1: SP15, 6, 7, SP2	N	Y	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
7	Veritas VxVM 5.1: SP15, 6, 7, SP2	Y	Y9	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath 5.313, 14, 19	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
8	Veritas VxVM 5.1: SP15, 6, 7, SP2	Y8	Y9	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
9	Veritas VxVM 5.1: SP15, 6, 7, SP2	Y10, 11, 12		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath: 5.3 SP1, 5.313, 14, 19, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16, 17
10	Veritas VxVM 5.1: SP16, 7, SP218	N		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	Veritas DMP5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16
11	Veritas VxVM 5.1: SP16, 7, SP218	N	Y	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	Veritas DMP5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
12	Veritas VxVM 5.1: SP16, 7, SP218	Y8	Y9	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	Veritas DMP5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
13	Veritas VxVM 5.1: SP16, 7, SP218	Y10, 11, 12		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	Veritas DMP5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16, 17
14	Veritas VxVM: 5.1 RP24, 15, 5.14	N		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath 5.313, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16
15	Veritas VxVM: 5.1 RP24, 15, 5.14	Y	Y9	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath 5.313, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
16	Veritas VxVM: 5.1 RP24, 15, 5.14	Y10, 11, 12		Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	EMC PowerPath 5.313, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See16, 17

- VxVM 5.0 requires minimum September 06 patch bundle.
- External VxVM boot is not supported
- VxVM requires the SPC-2 FA director bit enabled, when utilizing Symmetrix LUN addresses greater than 8000. VxVM 4.0 MP3 and above support the SPC-2 FA director bit.
- Statistic Monitoring not supported on a greater than 2 terabyte lun
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
- FCoE is supported. Requires minimum VxVM 5.1 SP1.
- C Bit required for VERITAS VxVM DMP functionality.
- Supports MP1. MP1 requires RP5
- ASL based DMP functionality is not supported with STORPort drivers. ASL based DMP supports SCSIPort (and Emulex SCSU Full Port) drivers only.
- If using DMP features in a MSCS cluster configuration, DMP should be set to Active/Passive mode.
- SAN boot is supported with DMP only if external boot is shown as supported in the base connectivity table for the required Server/HBA/OS combination.
- Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
- PowerPath with Encryption does not support dynamic disks. Please refer to the PowerPath Encryption with RSA Release Notes notes for other features and exceptions
- See EMC's Veritas Support Matrix for Veritas Volume Manager support on Microsoft Windows platform
- Hot relocation should be disabled for MSCS cluster configurations.
- PowerPath 4.5.0 is the minimum supported version for Windows 2003 servers with Service Pack 1 (SP1) installed.
- Thin Reclamation using VxVM 5.1 SP2 on VMAX thin devices requires Engenuity 5875 or higher and VxVM hotfix 5.1.20007.87
- PowerPath does not support Thin Reclamation.

## Microsoft Windows 2008 R2 SP1 [x64]

## Microsoft

Microsoft							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1: RP22, 3, SP113, 15, 16, SP2; Veritas VxVM: 5.13, 6.0	N		Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1
2	Veritas VxVM 5.1: RP22, 3, SP113, 15, 16, SP2; Veritas VxVM: 5.13, 6.0	N	Y	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See8, 9, 10
3	Veritas VxVM 5.1: RP22, 3, SP113, 15, 16, SP2; Veritas VxVM: 5.13, 6.0	Y11	Y12	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See8, 9, 10

4	Veritas VxVM 5.1: RP22, 3, SP113, 15, 16, SP2; Veritas VxVM: 5.13, 6.0	Y4, 5, 6		Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 7
5	Veritas VxVM 5.1: SP113, 15, 16, SP2; Veritas VxVM 6.0	N		Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1
6	Veritas VxVM 5.1: SP113, 15, 16, SP2; Veritas VxVM 6.0	N	Y	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See8, 9, 10
7	Veritas VxVM 5.1: SP113, 15, 16, SP2; Veritas VxVM 6.0	Y11	Y12	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See8, 9, 10
8	Veritas VxVM 5.1: SP113, 15, 16, SP2; Veritas VxVM 6.0	Y4, 5, 6		Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 7
9	Veritas VxVM 5.1: SP115, 16, SP214; Veritas VxVM 6.0	N		Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Veritas DMP13	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1
10	Veritas VxVM 5.1: SP115, 16, SP214; Veritas VxVM 6.0	N	Y	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Veritas DMP13	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See8, 9, 10
11	Veritas VxVM 5.1: SP115, 16, SP214; Veritas VxVM 6.0	Y11	Y12	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Veritas DMP13	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See8, 9, 10
12	Veritas VxVM 5.1: SP115, 16, SP214; Veritas VxVM 6.0	Y4, 5, 6		Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	Veritas DMP13	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 7

- Hot relocation should be disabled for MSCS cluster configurations.
- See EMC's Veritas Support Matrix for Veritas Volume Manager support on Microsoft Windows platform
- Statistic Monitoring not supported on a greater than 2 terabyte lun
- ASL based DMP functionality is not supported with STORPort drivers. ASL based DMP supports SCSIPort (and Emulex SCSU Full Port) drivers only.
- If using DMP features in a MSCS cluster configuration, DMP should be set to Active/Passive mode.
- SAN boot is supported with DMP only if external boot is shown as supported in the base connectivity table for the required Server/HBA/OS combination.
- PowerPath 4.5.0 is the minimum supported version for Windows 2003 servers with Service Pack 1 (SP1) installed.
- VxVM 5.0 requires minimum September 06 patch bundle.
- External VxVM boot is not supported
- VxVM requires the SPC-2 FA director bit enabled, when utilizing Symmetrix LUN addresses greater than 8000. VxVM 4.0 MP3 and above support the SPC-2 FA director bit.
- C Bit required for VERITAS VxVM DMP functionality.
- Supports MP1. MP1 requires RP5
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- Thin Reclamation using VxVM 5.1 SP2 on VMAX thin devices requires Engenuity 5875 or higher and VxVM hotfix 5.1.20007.87
- Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310.
- FCoE is supported. Requires minimum VxVM 5.1 SP1.

## Microsoft Windows 2008 R2 [x64]

### Microsoft

Microsoft							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1: RP220, 21, SP110, 13, 14, SP2; Veritas VxVM: 5.120, 6.0	N		Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See15
2	Veritas VxVM 5.1: RP220, 21, SP110, 13, 14, SP2; Veritas VxVM: 5.120, 6.0	N	Y	Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
3	Veritas VxVM 5.1: RP220, 21, SP110, 13, 14, SP2; Veritas VxVM: 5.120, 6.0	Y17, 18, 19		Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See15, 16
4	Veritas VxVM 5.1: RP220, 21, SP110, 13, 14, SP2; Veritas VxVM: 5.120, 6.0	Y4	Y5	Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
5	Veritas VxVM 5.1: SP113, 14, SP211; Veritas VxVM 6.0	N		Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	Veritas DMP10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See15
6	Veritas VxVM 5.1: SP113, 14, SP211; Veritas VxVM 6.0	N	Y	Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	Veritas DMP10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2, 3
7	Veritas VxVM 5.1: SP113, 14, SP211; Veritas VxVM 6.0	Y17, 18, 19		Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	Veritas DMP10	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See15, 16

8	Veritas VxVM 5.1: SP113, 14, SP211; Veritas VxVM 6.0	Y4	Y5	Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	Veritas DMP <sup>10</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
9	Veritas VxVM 5.1: SP110, 13, 14, SP2; Veritas VxVM 6.0	N		Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15</sup>
10	Veritas VxVM 5.1: SP110, 13, 14, SP2; Veritas VxVM 6.0	N	Y	Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
11	Veritas VxVM 5.1: SP110, 13, 14, SP2; Veritas VxVM 6.0	Y <sup>17, 18, 19</sup>		Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>15, 16</sup>
12	Veritas VxVM 5.1: SP110, 13, 14, SP2; Veritas VxVM 6.0	Y4	Y5	Microsoft Windows 2008 R2 [x64]: DataCenter <sup>6, 7, 9, 12</sup> , Enterprise Edition <sup>6, 7, 8, 9</sup> , Standard Edition <sup>6, 7, 8, 9</sup>	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>

- VxVM 5.0 requires minimum September 06 patch bundle.
- External VxVM boot is not supported
- VxVM requires the SPC-2 FA director bit enabled, when utilizing Symmetrix LUN addresses greater than 8000. VxVM 4.0 MP3 and above support the SPC-2 FA director bit.
- C Bit required for VERITAS VxVM DMP functionality.
- Supports MP1. MP1 requires RP5
- Microsoft Hyper-V for Windows 2008 and 2008 R2 Server is supported. EMC supports only the GA-version of Hyper-V, located at <http://www.microsoft.com/windowsserver2008/en/us/hyperv-main.aspx>.
- Supported guest Operating systems are Windows 2003 server SP2 x86/x64, Windows 2008 server x86/x64 SP1/SP2, and Windows 2008 R2.
- Windows Server Core installation option is supported.
- When Windows Hyper-V is enabled and supporting child (guest) operating systems, minimum PowerPath/VE 5.3 is supported on the parent server.
- Windows Server Core installation option is supported by EMC. Contact your server vendor to determine their support statement for Server Core.
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- Thin Reclamation using VxVM 5.1 SP2 on VMAX thin devices requires Enginuity 5875 or higher and VxVM hotfix 5.1.20007.87
- Windows Server Core installation option supported.
- "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
- FCoE is supported. Requires minimum VxVM 5.1 SP1.
- Hot relocation should be disabled for MSCS cluster configurations.
- PowerPath 4.5.0 is the minimum supported version for Windows 2003 servers with Service Pack 1 (SP1) installed.
- ASL based DMP functionality is not supported with STORPort drivers. ASL based DMP supports SCSIPort (and Emulex SCSU Full Port) drivers only.
- If using DMP features in a MSCS cluster configuration, DMP should be set to Active/Passive mode.
- SAN boot is supported with DMP only if external boot is shown as supported in the base connectivity table for the required Server/HBA/OS combination.
- Statistic Monitoring not supported on a greater than 2 terabyte lun
- See EMC's Veritas Support Matrix for Veritas Volume Manager support on Microsoft Windows platform

## Microsoft Windows 2008 [x64]

### Microsoft

Microsoft							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1: RP211, 19, SP113, 17, 18, SP2; Veritas VxVM: 5.111, 6.0	N		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6</sup>
2	Veritas VxVM 5.1: RP211, 19, SP113, 17, 18, SP2; Veritas VxVM: 5.111, 6.0	N	Y	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
3	Veritas VxVM 5.1: RP211, 19, SP113, 17, 18, SP2; Veritas VxVM: 5.111, 6.0	Y4	Y5	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
4	Veritas VxVM 5.1: RP211, 19, SP113, 17, 18, SP2; Veritas VxVM: 5.111, 6.0	Y <sup>8, 9, 10</sup>		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7</sup>
5	Veritas VxVM 5.1: SP113, 17, 18, SP2; Veritas VxVM 6.0	N		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.314, 15, 16, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6</sup>
6	Veritas VxVM 5.1: SP113, 17, 18, SP2; Veritas VxVM 6.0	N	Y	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
7	Veritas VxVM 5.1: SP113, 17, 18, SP2; Veritas VxVM 6.0	Y	Y5	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15, 16	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
8	Veritas VxVM 5.1: SP113, 17, 18, SP2; Veritas VxVM 6.0	Y4	Y5	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
9	Veritas VxVM 5.1: SP113, 17, 18, SP2; Veritas VxVM 6.0	Y <sup>8, 9, 10</sup>		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.314, 15, 16, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7</sup>

10	Veritas VxVM 5.1: SP117, 18, SP212; Veritas VxVM 6.0	N		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>13</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6</sup>
11	Veritas VxVM 5.1: SP117, 18, SP212; Veritas VxVM 6.0	N	Y	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>13</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
12	Veritas VxVM 5.1: SP117, 18, SP212; Veritas VxVM 6.0	Y <sup>4</sup>	Y <sup>5</sup>	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>13</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2, 3</sup>
13	Veritas VxVM 5.1: SP117, 18, SP212; Veritas VxVM 6.0	Y <sup>8, 9, 10</sup>		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>13</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7</sup>
14	Veritas VxVM: 5.1 RP211, 19, 5.111	N		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6</sup>
15	Veritas VxVM: 5.1 RP211, 19, 5.111	Y	Y <sup>5</sup>	Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
16	Veritas VxVM: 5.1 RP211, 19, 5.111	Y <sup>8, 9, 10</sup>		Microsoft Windows 2008 [x64]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7</sup>

- VxVM 5.0 requires minimum September 06 patch bundle.
- External VxVM boot is not supported
- VxVM requires the SPC-2 FA director bit enabled, when utilizing Symmetrix LUN addresses greater than 8000. VxVM 4.0 MP3 and above support the SPC-2 FA director bit.
- C Bit required for VERITAS VxVM DMP functionality.
- Supports MP1. MP1 requires RP5
- Hot relocation should be disabled for MSCS cluster configurations.
- PowerPath 4.5.0 is the minimum supported version for Windows 2003 servers with Service Pack 1 (SP1) installed.
- ASL based DMP functionality is not supported with STORPort drivers. ASL based DMP supports SCSIPort (and Emulex SCSU Full Port) drivers only.
- If using DMP features in a MSCS cluster configuration, DMP should be set to Active/Passive mode.
- SAN boot is supported with DMP only if external boot is shown as supported in the base connectivity table for the required Server/HBA/OS combination.
- Statistic Monitoring not supported on a greater than 2 terabyte lun
- Thin Reclamation using VxVM 5.1 SP2 on VMAX thin devices requires Enginuity 5875 or higher and VxVM hotfix 5.1.20007.87
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
- PowerPath with Encryption does not support dynamic disks. Please refer to the PowerPath Encryption with RSA Release Notes notes for other features and exceptions
- PowerPath does not support Thin Reclamation.
- "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
- FCoE is supported. Requires minimum VxVM 5.1 SP1.
- See EMC's Veritas Support Matrix for Veritas Volume Manager support on Microsoft Windows platform

**Microsoft Windows 2008 [x86]**

**Microsoft**

Microsoft							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1: RP211, 19, SP112, 17, 18, SP2; Veritas VxVM 5.111	N		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4</sup>
2	Veritas VxVM 5.1: RP211, 19, SP112, 17, 18, SP2; Veritas VxVM 5.111	N	Y	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7, 8</sup>
3	Veritas VxVM 5.1: RP211, 19, SP112, 17, 18, SP2; Veritas VxVM 5.111	Y <sup>1, 2, 3</sup>		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4, 5</sup>
4	Veritas VxVM 5.1: RP211, 19, SP112, 17, 18, SP2; Veritas VxVM 5.111	Y <sup>9</sup>	Y <sup>10</sup>	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7, 8</sup>
5	Veritas VxVM 5.1: SP112, 17, 18, SP2	N		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.314, 15, 16, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4</sup>
6	Veritas VxVM 5.1: SP112, 17, 18, SP2	N	Y	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7, 8</sup>
7	Veritas VxVM 5.1: SP112, 17, 18, SP2	Y	Y <sup>10</sup>	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15, 16	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
8	Veritas VxVM 5.1: SP112, 17, 18, SP2	Y <sup>1, 2, 3</sup>		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.314, 15, 16, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4, 5</sup>
9	Veritas VxVM 5.1: SP112, 17, 18, SP2	Y <sup>9</sup>	Y <sup>10</sup>	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath: 5.3 SP1, 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7, 8</sup>
10	Veritas VxVM 5.1: SP117, 18, SP213	N		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4</sup>
11	Veritas VxVM 5.1: SP117, 18, SP213	N	Y	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7, 8</sup>

12	Veritas VxVM 5.1: SP17, 18, SP213	Y1, 2, 3		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4, 5</sup>
13	Veritas VxVM 5.1: SP17, 18, SP213	Y9	Y10	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	Veritas DMP <sup>12</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>6, 7, 8</sup>
14	Veritas VxVM: 5.1 RP211, 19, 5.111	N		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4</sup>
15	Veritas VxVM: 5.1 RP211, 19, 5.111	Y	Y10	Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
16	Veritas VxVM: 5.1 RP211, 19, 5.111	Y1, 2, 3		Microsoft Windows 2008 [x86]: DataCenter, DataCenter SP2, Enterprise Edition, Enterprise Edition SP2, Standard Edition, Standard Edition SP2	EMC PowerPath 5.314, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>4, 5</sup>

- ASL based DMP functionality is not supported with STORPort drivers. ASL based DMP supports SCSI Port (and Emulex SCSI Full Port) drivers only.
- If using DMP features in a MSCS cluster configuration, DMP should be set to Active/Passive mode.
- SAN boot is supported with DMP only if external boot is shown as supported in the base connectivity table for the required Server/HBA/OS combination.
- Hot relocation should be disabled for MSCS cluster configurations.
- PowerPath 4.5.0 is the minimum supported version for Windows 2003 servers with Service Pack 1 (SP1) installed.
- VxVM 5.0 requires minimum September 06 patch bundle.
- External VxVM boot is not supported
- VxVM requires the SPC-2 FA director bit enabled, when utilizing Symmetrix LUN addresses greater than 8000. VxVM 4.0 MP3 and above support the SPC-2 FA director bit.
- C Bit required for VERITAS VxVM DMP functionality.
- Supports MP1. MP1 requires RP5
- Statistic Monitoring not supported on a greater than 2 terabyte lun
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- Thin Reclamation using VxVM 5.1 SP2 on VMAX thin devices requires Enginuity 5875 or higher and VxVM hotfix 5.1.20007.87
- Support of VSS Provider requires minimum Solution Enabler 7.0.0.0
- PowerPath with Encryption does not support dynamic disks. Please refer to the PowerPath Encryption with RSA Release Notes notes for other features and exceptions
- PowerPath does not support Thin Reclamation.
- "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
- FCoE is supported. Requires minimum VxVM 5.1 SP1.
- See EMC's Veritas Support Matrix for Veritas Volume Manager support on Microsoft Windows platform

## Oracle Linux [x86\_64]

### Oracle

Oracle							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 6.0		Y	Oracle Linux [x86_64] 5.7 <sup>3</sup>		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
2	Veritas VxVM 6.0		Y	Oracle Linux [x86_64] 5.7 <sup>3</sup>	Veritas DMP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
3	Veritas VxVM 6.0	N	Y	Oracle Linux [x86_64] 5.7 <sup>3</sup>	EMC PowerPath 5.6	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>

- FCoE is supported. Requires minimum VxVM 5.1
- VxVM "Thin Reclamation" functionality is not supported with PowerPath.
- Supported kernels: 2.6.18-274.0.0.1.el5. Confirm kernel support with server vendor.

## Oracle Solaris

### Oracle

Oracle							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.12, 13, 14	Y	Y <sup>15, 16</sup>	Oracle Solaris 10 SPARC <sup>6, 7</sup>	EMC PowerPath 5.3 P029; Veritas DMP	EMC Unified Storage VNXe3300 (iSCSI)	See <sup>8</sup>
2	Veritas VxVM 5.1_x642, 17, 18	Y	Y <sup>19, 20</sup>	Oracle Solaris 10 x86 <sup>4, 5</sup>	EMC PowerPath 5.3 P029; Veritas DMP	EMC Unified Storage VNXe3300 (iSCSI)	See <sup>21</sup>
3	Veritas VxVM 6.0 <sup>2, 10, 11, 12</sup>	Y	Y	Oracle Solaris 10 SPARC <sup>6, 7</sup>	EMC PowerPath 5.3 P029; Veritas DMP	EMC Unified Storage VNXe3300 (iSCSI)	See <sup>8</sup>
4	Veritas VxVM 6.0_x642, 3	Y	Y <sup>1</sup>	Oracle Solaris 10 x86 <sup>4, 5</sup>	EMC PowerPath 5.3 P029; Veritas DMP	EMC Unified Storage VNXe3300 (iSCSI)	

- Support VxFS 6.0\_x64
- Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- DMP is supported with CLARiON failover mode set to 1 and 4 where applicable.
- EMC supports ZFS in Solaris 10\_x86 11/06 (update 3) or later. The Snapshot and Clone features of ZFS are supported only through Sun Microsystems.
- Requires Solaris x86 10 Update 2 (06/06) or later.
- The Snapshot and Clone features of ZFS are supported only through Oracle Corporation.
- For LDOM support, please refer to the "Virtualization Server Support" table available via EMC PowerLink: [https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization\\_Server\\_Support.pdf](https://elabnavigator.emc.com/emcpubs/elab/esm/pdf/Virtualization_Server_Support.pdf)
- FCoE is supported. Requires minimum VxVM 5.1
- PowerPath is supported with CLARiON failover mode set to 1 and 4
- DMP is supported with CLARiON failover mode set to 1 and 4 (ALUA mode).
- The SPC2 flag must be enabled for support of > 8k devices.
- Requires minimum DMX microcode revision 5671.59.64 or 5670.98.89 for DMX/DMX-2, and 5771.87.95 for DMX-3.
- VxVM 5.1 supports SP1 and SP1RP1.
- VxVM 5.1 supports RP1 and RP2.
- VxFS 5.1 supports SP1.

- 16. VxFS 5.1 supports RP1 and RP2.
- 17. VxVM 5.1\_x64 supports RP1 and RP2.
- 18. VxVM 5.1\_x64 supports SP1 and SP1RP1.
- 19. VxFS 5.1\_x64 supports SP1.
- 20. VxFS 5.1\_x64 supports RP1 and RP2.
- 21. FCoE is supported. Requires minimum VxVM 5.1\_x64

**Red Hat RHEL [x86\_64]**

**Red Hat**

Red Hat							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.0 MP4	Y <sup>10</sup>	Y	Red Hat RHEL [x86_64] 5.5 <sup>11</sup>	EMC PowerPath 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	
2	Veritas VxVM 5.1 SP1 <sup>5, 6, 7, 8, 9, 10</sup>	Y <sup>10</sup>	Y	Red Hat RHEL [x86_64] 5.5 <sup>11</sup>	EMC PowerPath 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
3	Veritas VxVM 5.1 SP1 <sup>5, 6, 7, 8, 9, 10</sup>	Y <sup>10</sup>	Y	Red Hat RHEL [x86_64] 5.6 <sup>3, 4</sup>		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
4	Veritas VxVM 5.1 SP1 <sup>5, 6, 7, 8, 9, 10</sup>	Y <sup>10</sup>	Y	Red Hat RHEL [x86_64]: 5.5 <sup>11</sup> , 5.6 <sup>3, 4</sup>	EMC PowerPath 5.6	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
5	Veritas VxVM 6.0		Y	Red Hat RHEL [x86_64]: 5.6 <sup>3, 4</sup> , 5.7 <sup>18</sup> , 6.1 <sup>12</sup> , 6.2 <sup>13</sup> , 14, 15, 16, 17		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
6	Veritas VxVM 6.0		Y	Red Hat RHEL [x86_64]: 5.6 <sup>3, 4</sup> , 5.7 <sup>18</sup> , 6.1 <sup>12</sup> , 6.2 <sup>13</sup> , 14, 15, 16, 17	EMC PowerPath 5.6; Veritas DMP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
7	Veritas VxVM 6.0	Y	Y	Red Hat RHEL [x86_64]: 6.1 <sup>12</sup> , 6.2 <sup>13</sup> , 14, 15, 16, 17		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
8	Veritas VxVM 6.0	Y	Y	Red Hat RHEL [x86_64]: 6.1 <sup>12</sup> , 6.2 <sup>13</sup> , 14, 15, 16, 17	Veritas DMP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>

- 1. FCoE is supported. Requires minimum VxVM 5.1
- 2. VxVM "Thin Reclamation" functionality is not supported with PowerPath.
- 3. Supported kernels: 2.6.18-238.el5, 2.6.18-238.1.1.el5, 2.6.18-238.5.1.el5, 2.6.18-238.9.1.el5, 2.6.18-238.12.1.el5, 2.6.18-238.19.1.el5, 2.6.18-238.21.1.el5, 2.6.18-238.28.1.el5, 2.6.18-238.31.1.el5. Confirm kernel support with server vendor.
- 4. EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.
- 5. Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
- 6. "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
- 7. The SPC2 flag must be enabled for support of > 8k devices.
- 8. EMC supports stand-alone DMP failover functionality, for the purposes of controlling non-VxVM volume managers. Support requires Storage Foundation 5.1 SP1 or later. Please check the appropriate Host Connectivity Guide for more information regarding native LVM.
- 9. Requires minimum DMX microcode revision 5671.59.64 or 5670.98.89 for DMX/DMX-2, and 5771.87.95 for DMX-3.
- 10. DMP is supported with CLARiiON failover mode set to 1 and 4 where applicable.
- 11. Supported kernels: 2.6.18-194.el5, 2.6.18-194.3.1.el5, 2.6.18-194.8.1.el5, 2.6.18-194.11.1.el5, 2.6.18-194.11.3.el5, 2.6.18-194.11.4.el5, 2.6.18-194.17.1.el5, 2.6.18-194.17.4.el5, 2.6.18-194.26.1.el5, 2.6.18-194.32.1.el5. Confirm kernel support with server vendor.
- 12. Supported kernels: 2.6.32-131.0.15.el6, 2.6.32-131.2.1.el6, 2.6.32-131.6.1.el6, 2.6.32-131.12.1.el6, 2.6.32-131.17.1.el6, 2.6.32-131.21.1.el6. Confirm kernel support with server vendor.
- 13. EMC supports the following filesystems: ext2, ext3, ext4, xfs, gfs, and gfs2 unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.
- 14. Native multipathing is supported on boot-from-SAN configurations. Please refer to the operating system vendor's documentation for installation instructions. Also refer to the EMC Host Connectivity Guide for Linux found on <http://powerlink.emc.com> for any additional guidance.
- 15. The LVM included as part of this update is supported and can be used in conjunction with PowerPath emcpower pseudo device file names as well as native sd device file names.
- 16. Supported kernels: 2.6.32-220.el6. Confirm kernel support with server vendor.
- 17. RHEL KVM is supported. Refer to the Virtualization Hosting Server (Parent) Solutions table for supported configurations.
- 18. Supported kernels: 2.6.18-274.el5, 2.6.18-274.3.1.el5, 2.6.18-274.7.1.el5, 2.6.18-274.12.1.el5. Confirm kernel support with server vendor.

**SuSE SLES [x86\_64]**

**SuSE**

SuSE							
No.	Server LVM	DMP	VxFS	Operating System	Infrastructure Software	Storage Array	Comments
1	Veritas VxVM 5.1 SP1 <sup>8, 9, 10, 11, 12, 13</sup>	Y <sup>13</sup>	Y	SuSE SLES [x86_64] 11 SP1 <sup>7</sup>	EMC PowerPath 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
2	Veritas VxVM 6.0		Y	SuSE SLES [x86_64] 11 SP1 <sup>7</sup>	EMC PowerPath 5.5	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
3	Veritas VxVM 6.0		Y	SuSE SLES [x86_64]: 10 SP4 <sup>3, 4, 5, 6</sup> , 11 SP1 <sup>7</sup>		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
4	Veritas VxVM 6.0		Y	SuSE SLES [x86_64]: 10 SP4 <sup>3, 4, 5, 6</sup> , 11 SP1 <sup>7</sup>	Veritas DMP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>
5	Veritas VxVM 6.0	N	Y	SuSE SLES [x86_64] 10 SP4 <sup>3, 4, 5, 6</sup>	EMC PowerPath 5.5 P01	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See <sup>1, 2</sup>

6	Veritas VxVM 6.0	Y	Y	SuSE SLES [x86_64] 10 SP4 <sup>3</sup> , 4, 5, 6		EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2
7	Veritas VxVM 6.0	Y	Y	SuSE SLES [x86_64] 10 SP4 <sup>3</sup> , 4, 5, 6	Veritas DMP	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	See1, 2

1. FCoE is supported. Requires minimum VxVM 5.1
2. VxVM "Thin Reclamation" functionality is not supported with PowerPath.
3. Supported kernels: 2.6.16.60-0.85.1, 2.6.16.60-0.87.1, 2.6.16.60-0.89.1, 2.6.16.60-0.91.1. Confirm kernel support with server vendor.
4. Novell OES 2 SP2 is supported with this update.
5. Novell OES 2 SP3 is supported with this update.
6. Novell OES is only supported with Fibre channel connectivity.
7. Supported kernels: 2.6.32.12-0.7, 2.6.32.13-0.4.1, 2.6.32.13-0.5.1, 2.6.32.19-0.2.1, 2.6.32.19-0.3.1, 2.6.32.23-0.3.1, 2.6.32.24-0.2, 2.6.32.27-0.2.2, 2.6.32.29-0.3.1, 2.6.32.36-0.5.2, 2.6.32.43-0.4.1, 2.6.32.45-0.3.2, 2.6.32.46-0.3.1, 2.6.32.49-0.3.1. Confirm kernel support with server vendor.
8. Please refer to the Host Connectivity Guide of each respective operating system platform for additional information regarding VxVM functionality, such as "Thin Reclamation".
9. "Refer to Symantec Knowledge base <http://www.symantec.com/docs/TECH164343> for a required/recommended fix. Also documented in EMC Knowledge Base (Primus) #emc273310."
10. The SPC2 flag must be enabled for support of > 8k devices.
11. EMC supports stand-alone DMP failover functionality, for the purposes of controlling non-VxVM volume managers. Support requires Storage Foundation 5.1 SP1 or later. Please check the appropriate Host Connectivity Guide for more information regarding native LVM.
12. Requires minimum DMX microcode revision 5671.59.64 or 5670.98.89 for DMX/DMX-2, and 5771.87.95 for DMX-3.
13. DMP is supported with CLARiiON failover mode set to 1 and 4 where applicable.

## WAN Optimization Controllers

### Configuration Notes

Most devices in the IP cloud that follow IEEE standards may be used for LAN/MAN/WAN connectivity within EMC replication networks. WAN optimization controllers, however, must be explicitly listed as supported in the EMC Support Matrix table below if used in EMC replication networks. WAN optimization controllers are devices that employ protocol optimization techniques with the TCP/IP protocol to improve latency and performance over IP networks.

All EMC replication solutions over IP networks must also be validated using the Solution Qualifier (SQ) process and must undergo a Network Assessment.

EDL/CDL, Centera Replicator and Open Replicator are not currently supported by EMC for use with WAN optimization controllers. For these and any other applications not referenced by this EMC Support Matrix table, support is the responsibility of the customer and WAN optimization controller vendor.

All EMC replication solutions over IP networks must also be validated using the Solution Qualifier (SQ) process.

No.	WAN Optimization Controller	Supported Link Speed (Gbps)	Code Level	Topology	Network	Distance Protocol	Storage Array
1	Riverbed Steelhead: 0501-H, 0501-M, 0601, 1050, 2050, 250, 5050, 5050-H, 5050-L, 5050-M, 550, 6050	1	6.1.1a	Network: IP	IP	Replicator <sup>2</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
2	Riverbed Steelhead: 0501-H, 0501-M, 0601, 5050, 5050-H, 5050-L, 5050-M, 6050	1	6.1.3a <sup>1</sup>	Network: IP	IP	RecoverPoint; Replicator	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
3	Riverbed Steelhead: 1050, 2050; Riverbed Virtual Steelhead: V1050-H, V1050-L, V1050-M, V2050-H, V2050-L, V2050-M	1	6.1.3a	Network: IP	IP	RecoverPoint; Replicator	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
4	Riverbed Steelhead: 701, 7050	1; 10	6.1.1a	Network: IP	IP	Replicator <sup>2</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
5	Riverbed Steelhead: 701, 7050	1; 10	6.1.3a <sup>1</sup>	Network: IP	IP	RecoverPoint; Replicator	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
6	Riverbed Virtual Steelhead: V1050-H, V1050-L, V1050-M, V2050-H, V2050-L, V2050-M	1	6.1.1-vsh	Network: IP	IP	Replicator <sup>2</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
7	Silver Peak: NX-1700, NX-2600, NX-2610, NX-3500, NX-5700, NX-7700, NX-8700, NX-9700, VX-1000, VX-2000, VX-5000	1	3.3.1	Network: IP	IP	Replicator <sup>2</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
8	Silver Peak: NX-1700, NX-5700, NX-7700, VRX-8, VX-1000, VX-2000, VX-3000, VX-5000	1	4.1.0	Network: IP	IP	RecoverPoint; Replicator	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)
9	Silver Peak: NX-8700, NX-9700	1; 10	4.1.0	Network: IP	IP	RecoverPoint; Replicator	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)

1. With Riverbed firmware 6.1.3a and above, the SRDF Selective Optimization feature is supported for SRDF group level optimization for end-to-end GigE environments with VMAX which have Microcode level 5875 and above.
2. "Unified Storage VNX5300/5500/5700/7500" are supported for File Implementations.

## iSCSI Clusters

### Configuration Notes

This table describes the support statements for iSCSI Clusters.

### Microsoft Windows 2003 [x64]

#### Microsoft

Microsoft							
No.	Operating System	Cluster Software	Host Bus Adapter	Storage Array	Max # Nodes	NAS Platform	Comments

1	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS4, 5, 6, 7	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE4, 8, 19, GbE4, 18, 19	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8	EMC Celerra: NS-12017, NS-480 (2 or 4 Blade) <sup>17</sup> , NS-48017, NS-96017, NS-G217, NS-G817, NS350, NS500G17, NS50017, NS600G17, NS60017, NS700G17, NS70017, NS70417, NSX X-Blade 6017, 20, NX417; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>17</sup>	See1, 2, 3, 16
2	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS4, 5, 6, 7	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE4, 8, 19, GbE4, 8, 18, 19	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8		See1, 2, 3, 16
3	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS4, 5, 6, 7	QLogic: QLA4050-E-SP4, 8, 9, 10, 11, 12, 13, 14, 15, QLA4050C-E-SP4, 8, 9, 10, 11, 12, 13, 14, 15, QLA4052C-E-SP4, 8, 9, 10, 11, 12, 13, 14, 15, QLE4060C-E-SP4, 8, 9, 11, 12, 13, 14, 15, QLE4062C-E-SP4, 8, 9, 11, 12, 13, 14, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8		See1, 2, 3
4	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS4, 5, 6, 7	QLogic: QLA4050-E-SP4, 8, 9, 10, 11, 12, 13, 14, 15, QLA4050C-E-SP4, 8, 9, 10, 11, 12, 13, 14, 15, QLA4052C-E-SP4, 8, 9, 10, 11, 12, 13, 14, 15, QLE4060C-E-SP4, 8, 9, 11, 12, 13, 14, 15, QLE4062C-E-SP4, 8, 9, 11, 12, 13, 14, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8	EMC Celerra: NS-12017, NS-480 (2 or 4 Blade) <sup>17</sup> , NS-48017, NS-96017, NS-G217, NS-G817, NS350, NS500G17, NS50017, NS600G17, NS60017, NS700G17, NS70017, NS70417, NSX X-Blade 6017, 20, NX417; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>17</sup>	See1, 2, 3

1. Booting from external array is supported for iSCSI clusters with QLA4010 iSCSI HBAs. Refer to Native iSCSI table for supported BIOS versions.
2. Microsoft Dynamic Disks are not supported.
3. iSCSI based cluster configurations require Microsoft QFE 824354. Please contact Microsoft Product Support Services for this QFE.
4. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
5. Microsoft Cluster Server (MSCS) in iSCSI supports minimum R26 Flare release version xx.26.xxx.5.007.
6. Microsoft iSCSI Initiator required. Refer to Native iSCSI table for currently supported initiator version.
7. Booting from external storage for iSCSI clusters is not supported.
8. Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
9. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
10. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
11. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
12. Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
13. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
14. QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
15. QLogic iSCSI HBAs are supported in any server listed in the EMC Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
16. EMC provides troubleshooting and other technical notes for the MSCS cluster solutions. Visit EMC Powerlink and download part number 300-000-603 for the EMC Host Connectivity Guide for Windows.
17. require NAS 5.4.16 or higher
18. Any Microsoft supported server/NIC for the listed operating system revision is supported.
19. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
20. XB-60s shipped prior to 1 July 2006 can be used with DART 5.4.14 or later. Blades shipped after that date are only supported with DART 5.5.22 and later.

Microsoft Windows 2003 [x86]

Microsoft

Microsoft							
No.	Operating System	Cluster Software	Host Bus Adapter	Storage Array	Max # Nodes	NAS Platform	Comments
1	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS1, 2, 3, 4	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE1, 11, 19, GbE1, 11, 18, 19	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8		See5, 6, 7, 8
2	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS1, 2, 3, 4	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE1, 11, 19, GbE1, 18, 19	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8	EMC Celerra: NS-120 <sup>9</sup> , NS-480 (2 or 4 Blade) <sup>9</sup> , NS-480 <sup>9</sup> , NS-960 <sup>9</sup> , NS-G2 <sup>9</sup> , NS-G8 <sup>9</sup> , NS350, NS500G <sup>9</sup> , NS500 <sup>9</sup> , NS600G <sup>9</sup> , NS600 <sup>9</sup> , NS700G <sup>9</sup> , NS700 <sup>9</sup> , NS704 <sup>9</sup> , NSX X-Blade 60 <sup>9</sup> , 10, NX4 <sup>9</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>9</sup>	See5, 6, 7, 8
3	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS1, 2, 3, 4	QLogic: QLA4050-E-SP1, 11, 12, 13, 14, 15, 16, 17, 20, QLA4050C-E-SP1, 11, 12, 13, 14, 15, 16, 17, 20, QLA4052C-E-SP1, 11, 12, 13, 14, 15, 16, 17, 20, QLE4060C-E-SP1, 11, 12, 13, 14, 15, 16, 17, QLE4062C-E-SP1, 11, 12, 13, 14, 15, 16, 17	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8		See5, 6, 7
4	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS1, 2, 3, 4	QLogic: QLA4050-E-SP1, 11, 12, 13, 14, 15, 16, 17, 20, QLA4050C-E-SP1, 11, 12, 13, 14, 15, 16, 17, 20, QLA4052C-E-SP1, 11, 12, 13, 14, 15, 16, 17, 20, QLE4060C-E-SP1, 11, 12, 13, 14, 15, 16, 17, QLE4062C-E-SP1, 11, 12, 13, 14, 15, 16, 17	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8	EMC Celerra: NS-120 <sup>9</sup> , NS-480 (2 or 4 Blade) <sup>9</sup> , NS-480 <sup>9</sup> , NS-960 <sup>9</sup> , NS-G2 <sup>9</sup> , NS-G8 <sup>9</sup> , NS350, NS500G <sup>9</sup> , NS500 <sup>9</sup> , NS600G <sup>9</sup> , NS600 <sup>9</sup> , NS700G <sup>9</sup> , NS700 <sup>9</sup> , NS704 <sup>9</sup> , NSX X-Blade 60 <sup>9</sup> , 10, NX4 <sup>9</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>9</sup>	See5, 6, 7

5	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS2, 3, 4	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)12, 15	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8	EMC Celerra: NS-1209, NS-480 (2 or 4 Blade)9, NS-4809, NS-9609, NS-G29, NS-G89, NS350, NS500G9, NS5009, NS600G9, NS6009, NS700G9, NS7009, NS7049, NSX X-Blade 609, 10, NX49; EMC Unified Storage VNX5300/5500/5700/7500 (File)9	See5, 6, 7
6	Microsoft Windows 2003 [x86] DataCenter: R2 SP2, SP2;  Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2	Microsoft MSCS2, 3, 4	IBM QLogic iSCSI Exp Card for BladeCenter (26K6487)12, 15, 20	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)	HA: 8		See5, 6, 7

- PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
- Microsoft Cluster Server (MSCS) in iSCSI supports minimum R26 Flare release version xx.26.xxx.5.007.
- Microsoft iSCSI Initiator required. Refer to Native iSCSI table for currently supported initiator version.
- Bootling from external storage for iSCSI clusters is not supported.
- Bootling from external array is supported for iSCSI clusters with QLA4010 iSCSI HBAs. Refer to Native iSCSI table for supported BIOS versions.
- Microsoft Dynamic Disks are not supported.
- iSCSI based cluster configurations require Microsoft QFE 824354. Please contact Microsoft Product Support Services for this QFE.
- EMC provides troubleshooting and other technical notes for MSCS cluster solutions. Visit EMC Powerlink and download part number 300-000-603 for the EMC Host Connectivity Guide for Windows.
- require NAS 5.4.16 or higher
- XB-60s shipped prior to 1 July 2006 can be used with DART 5.4.14 or later. Blades shipped after that date are only supported with DART 5.5.22 and later.**
- Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
- Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
- SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
- Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
- QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- Any Microsoft supported server/NIC for the listed operating system revision is supported.
- MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.

Microsoft Windows 2008 R2 SP1 [x64]

Microsoft

Microsoft							
No.	Operating System	Cluster Software	Host Bus Adapter	Storage Array	Max # Nodes	NAS Platform	Comments
1	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition	Microsoft Failover Clustering4, 15, 16, 17	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE1, 4, 20, GbE1, 19, 20	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)14	HA: 16		See11, 12, 13, 21
2	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition	Microsoft Failover Clustering4, 15, 16, 17	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE1, 4, 20, GbE19, 20	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)14	HA: 16	EMC Celerra: NS-12010, NS-480 (2 or 4 Blade)10, NS-48010, NS-96010, NS-G210, NS-G810, NS350, NS500G10, NS50010, NS600G10, NS60010, NS700G10, NS70010, NS70410, NSX X-Blade 6010, 18, NX410; EMC Unified Storage VNX5300/5500/5700/7500 (File)10	See11, 12, 13, 21
3	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition	Microsoft Failover Clustering4, 15, 16, 17	Emulex: OCe10102-IM-E, OCe10102-IX-E;  QLogic: QLA4010-E-SP4, 7, 9, QLA4010C-E-SP4, 7, 9, QLA4050-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLA4050C-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLA4052C-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)14	HA: 16	EMC Celerra CNS10	See11, 12, 13
4	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition	Microsoft Failover Clustering4, 15, 16, 17	QLogic: QLA4010-E-SP1, 3, 4, 7, 9, QLA4010C-E-SP1, 3, 4, 7, 9, QLA4050-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLA4050C-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLA4052C-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLE4060C-E-SP1, 2, 4, 5, 6, 7, 8, 9, QLE4062C-E-SP1, 2, 4, 5, 6, 7, 8, 9	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)14	HA: 16		See11, 12, 13
5	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition	Microsoft Failover Clustering4, 15, 16, 17	QLogic: QLA4010-E-SP4, 7, 9, QLA4010C-E-SP4, 7, 9, QLA4050-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLA4050C-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLA4052C-E-SP1, 2, 3, 4, 5, 6, 7, 8, 9, QLE4060C-E-SP1, 2, 4, 5, 6, 7, 8, 9, QLE4062C-E-SP1, 2, 4, 5, 6, 7, 8, 9	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)14	HA: 16	EMC Celerra: NS-12010, NS-480 (2 or 4 Blade)10, NS-48010, NS-96010, NS-G210, NS-G810, NS350, NS500G10, NS50010, NS600G10, NS60010, NS700G10, NS70010, NS70410, NSX X-Blade 6010, 18, NX410; EMC Unified Storage VNX5300/5500/5700/7500 (File)10	See11, 12, 13

- Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
- Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
- PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
- SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
- Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
- QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- require NAS 5.4.16 or higher
- Bootling from external array is supported for iSCSI clusters with QLA4010 iSCSI HBAs. Refer to Native iSCSI table for supported BIOS versions.
- Microsoft Dynamic Disks are not supported.
- iSCSI based cluster configurations require Microsoft QFE 824354. Please contact Microsoft Product Support Services for this QFE.
- On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
- Microsoft Cluster Server (MSCS) in iSCSI supports minimum R26 Flare release version xx.26.xxx.5.007.
- Microsoft iSCSI Initiator required. Refer to Native iSCSI table for currently supported initiator version.
- Bootling from external storage for iSCSI clusters is not supported.
- XB-60s shipped prior to 1 July 2006 can be used with DART 5.4.14 or later. Blades shipped after that date are only supported with DART 5.5.22 and later.**

19. Any Microsoft supported server/NIC for the listed operating system revision is supported.  
 20. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.  
 21. EMC provides troubleshooting and other technical notes for MSCS cluster solutions. Visit EMC Powerlink and download part number 300-000-603 for the EMC Host Connectivity Guide for Windows.

## Microsoft Windows 2008 R2 [x64]

### Microsoft

Microsoft							
No.	Operating System	Cluster Software	Host Bus Adapter	Storage Array	Max # Nodes	NAS Platform	Comments
1	Microsoft Windows 2008 R2 [x64]: DataCenter7, 8, 10, 17, Enterprise Edition7, 8, 9, 10, Standard Edition7, 8, 9, 10	Microsoft Failover Clustering1, 2, 3, 4	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE1, 6, 19, GbE5, 6	EMC Unified Storage: VNXe3100 (iSCSI) VNXe3300 (iSCSI)16	HA: 16	EMC Celerra: NS-12011, NS-480 (2 or 4 Blade)11, NS-48011, NS-96011, NS-G211, NS-G811, NS350, NS500G11, NS50011, NS600G11, NS60011, NS700G11, NS70011, NS70411, NSX X-Blade 6011, 18, NX411; EMC Unified Storage VNX5300/5500/5700/7500 (File)11	See12, 13, 14, 15
2	Microsoft Windows 2008 R2 [x64]: DataCenter7, 8, 10, 17, Enterprise Edition7, 8, 9, 10, Standard Edition7, 8, 9, 10	Microsoft Failover Clustering1, 2, 3, 4	Emulex: OCe10102-IM-E, OCe10102-IX-E;  Generic Vendor NIC: 10GbE1, 6, 19, GbE5, 6, 19	EMC Unified Storage: VNXe3100 (iSCSI) VNXe3300 (iSCSI)16	HA: 16		See12, 13, 14, 15
3	Microsoft Windows 2008 R2 [x64]: DataCenter7, 8, 10, 17, Enterprise Edition7, 8, 9, 10, Standard Edition7, 8, 9, 10	Microsoft Failover Clustering1, 2, 3, 4	Emulex: OCe10102-IM-E, OCe10102-IX-E;  QLogic: QLA4010-E-SP1, 23, 25, QLA4010C-E-SP1, 23, 25, QLA4050-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLA4050C-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLA4052C-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26	EMC Unified Storage: VNXe3100 (iSCSI) VNXe3300 (iSCSI)16	HA: 16	<b>EMC Celerra CNS11</b>	See12, 13, 14
4	Microsoft Windows 2008 R2 [x64]: DataCenter7, 8, 10, 17, Enterprise Edition7, 8, 9, 10, Standard Edition7, 8, 9, 10	Microsoft Failover Clustering1, 2, 3, 4	QLogic: QLA4010-E-SP1, 19, 23, 25, 26, QLA4010C-E-SP1, 19, 23, 25, 26, QLA4050-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLA4050C-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLA4052C-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLE4060C-E-SP1, 19, 20, 21, 22, 23, 24, 25, QLE4062C-E-SP1, 19, 20, 21, 22, 23, 24, 25	EMC Unified Storage: VNXe3100 (iSCSI) VNXe3300 (iSCSI)16	HA: 16		See12, 13, 14
5	Microsoft Windows 2008 R2 [x64]: DataCenter7, 8, 10, 17, Enterprise Edition7, 8, 9, 10, Standard Edition7, 8, 9, 10	Microsoft Failover Clustering1, 2, 3, 4	QLogic: QLA4010-E-SP1, 23, 25, QLA4010C-E-SP1, 23, 25, QLA4050-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLA4050C-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLA4052C-E-SP1, 19, 20, 21, 22, 23, 24, 25, 26, QLE4060C-E-SP1, 19, 20, 21, 22, 23, 24, 25, QLE4062C-E-SP1, 19, 20, 21, 22, 23, 24, 25	EMC Unified Storage: VNXe3100 (iSCSI) VNXe3300 (iSCSI)16	HA: 16	EMC Celerra: NS-12011, NS-480 (2 or 4 Blade)11, NS-48011, NS-96011, NS-G211, NS-G811, NS350, NS500G11, NS50011, NS600G11, NS60011, NS700G11, NS70011, NS70411, NSX X-Blade 6011, 18, NX411; EMC Unified Storage VNX5300/5500/5700/7500 (File)11	See12, 13, 14

- PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
- Microsoft Cluster Server (MSCS) in iSCSI supports minimum R26 Flare release version xx.26.xxx.5.007.
- Microsoft iSCSI Initiator required. Refer to Native iSCSI table for currently supported initiator version.
- Bootting from external storage for iSCSI clusters is not supported.
- Any Microsoft supported server/NIC for the listed operating system revision is supported.
- MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
- Microsoft Hyper-V for Windows 2008 and 2008 R2 Server is supported. EMC supports only the GA-version of Hyper-V, located at <http://www.microsoft.com/windowsserver2008/en/us/hyperv-main.aspx>. Supported guest Operating systems are Windows 2003 server SP2 x86/x64, Windows 2008 server x86/x64 SP1/SP2, and Windows 2008 R2.
- Windows Server Core installation option is supported.
- When Windows Hyper-V is enabled and supporting child (guest) operating systems, minimum PowerPath/VE 5.3 is supported on the parent server.
- Windows Server Core installation option is supported by EMC. Contact your server vendor to determine their support statement for Server Core.
- require NAS 5.4.16 or higher
- Bootting from external array is supported for iSCSI clusters with QLA4010 iSCSI HBAs. Refer to Native iSCSI table for supported BIOS versions.
- Microsoft Dynamic Disks are not supported.
- iSCSI based cluster configurations require Microsoft QFE 824354. Please contact Microsoft Product Support Services for this QFE.
- EMC provides troubleshooting and other technical notes for MSCS cluster solutions. Visit EMC Powerlink and download part number 300-000-603 for the EMC Host Connectivity Guide for Windows.
- On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
- Windows Server Core installation option supported.
- XB-60s shipped prior to 1 July 2006 can be used with DART 5.4.14 or later. Blades shipped after that date are only supported with DART 5.5.22 and later.**
- Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
- Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
- SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
- Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
- QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
- QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.

## Microsoft Windows 2008 [x64]

### Microsoft

Microsoft							
No.	Operating System	Cluster Software	Host Bus Adapter	Storage Array	Max # Nodes	NAS Platform	Comments
1	Microsoft Windows 2008 [x64] Standard: Edition, Edition SP2	Microsoft Failover Clustering6, 15, 16, 17	Emulex: OCe10102-IM-E, OCe10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI) VNXe3300 (iSCSI)1	HA: 16		See12, 13, 14

2	Microsoft Windows 2008 [x64] Standard: Edition, Edition SP2	Microsoft Failover Clustering <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	EMC Celerra: NS-120 <sup>3</sup> , NS-480 (2 or 4 Blade) <sup>3</sup> , NS-480 <sup>3</sup> , NS-960 <sup>3</sup> , NS-G2 <sup>3</sup> , NS-G8 <sup>3</sup> , NS350, NS500G <sup>3</sup> , NS500 <sup>3</sup> , NS600G <sup>3</sup> , NS600 <sup>3</sup> , NS700G <sup>3</sup> , NS700 <sup>3</sup> , NS704 <sup>3</sup> , NSX X-Blade 602, <sup>3</sup> NX4 <sup>3</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>3</sup>	See <sup>12, 13, 14</sup>
3	Microsoft Windows 2008 [x64] Standard: Edition, Edition SP2	Microsoft MSCS <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8		See <sup>12, 13, 14</sup>
4	Microsoft Windows 2008 [x64] Standard: Edition, Edition SP2	Microsoft MSCS <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8	EMC Celerra: NS-120 <sup>3</sup> , NS-480 (2 or 4 Blade) <sup>3</sup> , NS-480 <sup>3</sup> , NS-960 <sup>3</sup> , NS-G2 <sup>3</sup> , NS-G8 <sup>3</sup> , NS350, NS500G <sup>3</sup> , NS500 <sup>3</sup> , NS600G <sup>3</sup> , NS600 <sup>3</sup> , NS700G <sup>3</sup> , NS700 <sup>3</sup> , NS704 <sup>3</sup> , NSX X-Blade 602, <sup>3</sup> NX4 <sup>3</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>3</sup>	See <sup>12, 13, 14</sup>
5	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup>	Microsoft Failover Clustering <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E; Generic Vendor NIC: 10GbE <sup>4, 6, 21</sup> , GbE <sup>20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	EMC Celerra: NS-120 <sup>3</sup> , NS-480 (2 or 4 Blade) <sup>3</sup> , NS-480 <sup>3</sup> , NS-960 <sup>3</sup> , NS-G2 <sup>3</sup> , NS-G8 <sup>3</sup> , NS350, NS500G <sup>3</sup> , NS500 <sup>3</sup> , NS600G <sup>3</sup> , NS600 <sup>3</sup> , NS700G <sup>3</sup> , NS700 <sup>3</sup> , NS704 <sup>3</sup> , NSX X-Blade 602, <sup>3</sup> NX4 <sup>3</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>3</sup>	See <sup>12, 13, 14, 19</sup>
6	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup>	Microsoft Failover Clustering <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E; Generic Vendor NIC: 10GbE <sup>4, 6, 21</sup> , GbE <sup>4, 20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16		See <sup>12, 13, 14, 19</sup>
7	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup>	Microsoft MSCS <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E; Generic Vendor NIC: 10GbE <sup>4, 6, 21</sup> , GbE <sup>20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8	EMC Celerra: NS-120 <sup>3</sup> , NS-480 (2 or 4 Blade) <sup>3</sup> , NS-480 <sup>3</sup> , NS-960 <sup>3</sup> , NS-G2 <sup>3</sup> , NS-G8 <sup>3</sup> , NS350, NS500G <sup>3</sup> , NS500 <sup>3</sup> , NS600G <sup>3</sup> , NS600 <sup>3</sup> , NS700G <sup>3</sup> , NS700 <sup>3</sup> , NS704 <sup>3</sup> , NSX X-Blade 602, <sup>3</sup> NX4 <sup>3</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>3</sup>	See <sup>12, 13, 14, 19</sup>
8	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup>	Microsoft MSCS <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E; Generic Vendor NIC: 10GbE <sup>4, 6, 21</sup> , GbE <sup>4, 20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8		See <sup>12, 13, 14, 19</sup>
9	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup> , Standard Edition, Standard Edition SP2	Microsoft Failover Clustering <sup>6, 15, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E; QLogic: QLA4010-E-SP <sup>6, 9, 11</sup> , QLA4010C-E-SP <sup>6, 9, 11</sup> , QLA4050-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4050C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4052C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	<b>EMC Celerra CNS<sup>3</sup></b>	See <sup>12, 13, 14</sup>
10	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup> , Standard Edition, Standard Edition SP2	Microsoft Failover Clustering <sup>6, 15, 16, 17</sup>	QLogic: QLA4010-E-SP <sup>4, 6, 9, 11, 22</sup> , QLA4010C-E-SP <sup>4, 6, 9, 11, 22</sup> , QLA4050-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4050C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4052C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLE4060C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup> , QLE4062C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16		See <sup>12, 13, 14</sup>
11	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup> , Standard Edition, Standard Edition SP2	Microsoft Failover Clustering <sup>6, 15, 16, 17</sup>	QLogic: QLA4010-E-SP <sup>6, 9, 11</sup> , QLA4010C-E-SP <sup>6, 9, 11</sup> , QLA4050-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4050C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4052C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLE4060C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup> , QLE4062C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	EMC Celerra: NS-120 <sup>3</sup> , NS-480 (2 or 4 Blade) <sup>3</sup> , NS-480 <sup>3</sup> , NS-960 <sup>3</sup> , NS-G2 <sup>3</sup> , NS-G8 <sup>3</sup> , NS350, NS500G <sup>3</sup> , NS500 <sup>3</sup> , NS600G <sup>3</sup> , NS600 <sup>3</sup> , NS700G <sup>3</sup> , NS700 <sup>3</sup> , NS704 <sup>3</sup> , NSX X-Blade 602, <sup>3</sup> NX4 <sup>3</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>3</sup>	See <sup>12, 13, 14</sup>
12	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup> , Standard Edition, Standard Edition SP2	Microsoft MSCS <sup>6, 15, 16, 17</sup>	QLogic: QLA4010-E-SP <sup>4, 6, 9, 11, 22</sup> , QLA4010C-E-SP <sup>4, 6, 9, 11, 22</sup> , QLA4050-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4050C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4052C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLE4060C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup> , QLE4062C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8		See <sup>12, 13, 14</sup>
13	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup> , Standard Edition, Standard Edition SP2	Microsoft MSCS <sup>6, 15, 16, 17</sup>	QLogic: QLA4010-E-SP <sup>6, 9, 11</sup> , QLA4010C-E-SP <sup>6, 9, 11</sup> , QLA4050-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4050C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4052C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLE4060C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup> , QLE4062C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8	EMC Celerra: NS-120 <sup>3</sup> , NS-480 (2 or 4 Blade) <sup>3</sup> , NS-480 <sup>3</sup> , NS-960 <sup>3</sup> , NS-G2 <sup>3</sup> , NS-G8 <sup>3</sup> , NS350, NS500G <sup>3</sup> , NS500 <sup>3</sup> , NS600G <sup>3</sup> , NS600 <sup>3</sup> , NS700G <sup>3</sup> , NS700 <sup>3</sup> , NS704 <sup>3</sup> , NSX X-Blade 602, <sup>3</sup> NX4 <sup>3</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>3</sup>	See <sup>12, 13, 14</sup>
14	Microsoft Windows 2008 [x64]: DataCenter SP2 <sup>18</sup> , DataCenter <sup>18</sup> , Enterprise Edition SP2 <sup>18</sup> , Enterprise Edition <sup>18</sup> , Standard Edition, Standard Edition SP2	Microsoft MSCS <sup>6, 16, 17</sup>	Emulex: OCe10102-IM-E, OCe10102-IX-E; QLogic: QLA4010-E-SP <sup>6, 9, 11</sup> , QLA4010C-E-SP <sup>6, 9, 11</sup> , QLA4050-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4050C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup> , QLA4052C-E-SP <sup>4, 5, 6, 7, 8, 9, 10, 11, 22</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8	<b>EMC Celerra CNS<sup>3</sup></b>	See <sup>12, 13, 14</sup>

1. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
2. **XB-60s shipped prior to 1 July 2006 can be used with DART 5.4.14 or later. Blades shipped after that date are only supported with DART 5.5.22 and later.**
3. require NAS 5.4.16 or higher
4. Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
5. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.

6. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
7. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
8. Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
9. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
10. QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
11. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
12. Booting from external array is supported for iSCSI clusters with QLA4010 iSCSI HBAs. Refer to Native iSCSI table for supported BIOS versions.
13. Microsoft Dynamic Disks are not supported.
14. iSCSI based cluster configurations require Microsoft QFE 824354. Please contact Microsoft Product Support Services for this QFE.
15. Microsoft Cluster Server (MSCS) in iSCSI supports minimum R26 Flare release version xx.26.xxx.5.007.
16. Microsoft iSCSI Initiator required. Refer to Native iSCSI table for currently supported initiator version.
17. Booting from external storage for iSCSI clusters is not supported.
18. Windows Server Core installation option is supported by EMC. Contact your server vendor to determine their support statement for Server Core.
19. EMC provides troubleshooting and other technical notes for MSCS cluster solutions. Visit EMC Powerlink and download part number 300-000-603 for the EMC Host Connectivity Guide for Windows.
20. Any Microsoft supported server/NIC for the listed operating system revision is supported.
21. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
22. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.

Microsoft Windows 2008 [x86]

Microsoft

Microsoft							
No.	Operating System	Cluster Software	Host Bus Adapter	Storage Array	Max # Nodes	NAS Platform	Comments
1	Microsoft Windows 2008 [x86] Standard Edition, Edition SP2 <sup>6</sup>	Microsoft Failover Clustering <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16		See <sup>16, 17, 18</sup>
2	Microsoft Windows 2008 [x86] Standard Edition, Edition SP2 <sup>6</sup>	Microsoft Failover Clustering <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	EMC Celerra: NS-120 <sup>15</sup> , NS-480 (2 or 4 Blade) <sup>15</sup> , NS-480 <sup>15</sup> , NS-960 <sup>15</sup> , NS-G2 <sup>15</sup> , NS-G8 <sup>15</sup> , NS350, NS500G <sup>15</sup> , NS500 <sup>15</sup> , NS600G <sup>15</sup> , NS600 <sup>15</sup> , NS700G <sup>15</sup> , NS700 <sup>15</sup> , NS704 <sup>15</sup> , NSX X-Blade 60 <sup>15</sup> , 19, NX4 <sup>15</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>15</sup>	See <sup>16, 17, 18</sup>
3	Microsoft Windows 2008 [x86] Standard Edition, Edition SP2 <sup>6</sup>	Microsoft MSCS <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8		See <sup>16, 17, 18</sup>
4	Microsoft Windows 2008 [x86] Standard Edition, Edition SP2 <sup>6</sup>	Microsoft MSCS <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8	EMC Celerra: NS-120 <sup>15</sup> , NS-480 (2 or 4 Blade) <sup>15</sup> , NS-480 <sup>15</sup> , NS-960 <sup>15</sup> , NS-G2 <sup>15</sup> , NS-G8 <sup>15</sup> , NS350, NS500G <sup>15</sup> , NS500 <sup>15</sup> , NS600G <sup>15</sup> , NS600 <sup>15</sup> , NS700G <sup>15</sup> , NS700 <sup>15</sup> , NS704 <sup>15</sup> , NSX X-Blade 60 <sup>15</sup> , 19, NX4 <sup>15</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>15</sup>	See <sup>16, 17, 18</sup>
5	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>6</sup> , DataCenter <sup>6</sup> , Enterprise Edition SP2 <sup>6</sup> , Enterprise Edition <sup>6</sup>	Microsoft Failover Clustering <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E; Generic Vendor NIC: 10GbE <sup>2, 7, 21</sup> , GbE <sup>20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	EMC Celerra: NS-120 <sup>15</sup> , NS-480 (2 or 4 Blade) <sup>15</sup> , NS-480 <sup>15</sup> , NS-960 <sup>15</sup> , NS-G2 <sup>15</sup> , NS-G8 <sup>15</sup> , NS350, NS500G <sup>15</sup> , NS500 <sup>15</sup> , NS600G <sup>15</sup> , NS600 <sup>15</sup> , NS700G <sup>15</sup> , NS700 <sup>15</sup> , NS704 <sup>15</sup> , NSX X-Blade 60 <sup>15</sup> , 19, NX4 <sup>15</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>15</sup>	See <sup>16, 17, 18, 22</sup>
6	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>6</sup> , DataCenter <sup>6</sup> , Enterprise Edition SP2 <sup>6</sup> , Enterprise Edition <sup>6</sup>	Microsoft Failover Clustering <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E; Generic Vendor NIC: 10GbE <sup>2, 7, 21</sup> , GbE <sup>7, 20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16		See <sup>16, 17, 18, 22</sup>
7	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>6</sup> , DataCenter <sup>6</sup> , Enterprise Edition SP2 <sup>6</sup> , Enterprise Edition <sup>6</sup>	Microsoft MSCS <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E; Generic Vendor NIC: 10GbE <sup>2, 7, 21</sup> , GbE <sup>20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8	EMC Celerra: NS-120 <sup>15</sup> , NS-480 (2 or 4 Blade) <sup>15</sup> , NS-480 <sup>15</sup> , NS-960 <sup>15</sup> , NS-G2 <sup>15</sup> , NS-G8 <sup>15</sup> , NS350, NS500G <sup>15</sup> , NS500 <sup>15</sup> , NS600G <sup>15</sup> , NS600 <sup>15</sup> , NS700G <sup>15</sup> , NS700 <sup>15</sup> , NS704 <sup>15</sup> , NSX X-Blade 60 <sup>15</sup> , 19, NX4 <sup>15</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>15</sup>	See <sup>16, 17, 18, 22</sup>
8	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>6</sup> , DataCenter <sup>6</sup> , Enterprise Edition SP2 <sup>6</sup> , Enterprise Edition <sup>6</sup>	Microsoft MSCS <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E; Generic Vendor NIC: 10GbE <sup>2, 7, 21</sup> , GbE <sup>7, 20, 21</sup>	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 8		See <sup>16, 17, 18, 22</sup>
9	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>6</sup> , DataCenter <sup>6</sup> , Enterprise Edition SP2 <sup>6</sup> , Enterprise Edition <sup>6</sup> , Standard Edition, Standard Edition SP2 <sup>6</sup>	Microsoft Failover Clustering <sup>2, 3, 4, 5</sup>	Emulex: OCE10102-IM-E, OCE10102-IX-E; QLogic: QLA4010-E-SP2, 12, 14, QLA4010C-E-SP2, 12, 14, QLA4050-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	EMC Celerra CNS <sup>15</sup>	See <sup>16, 17, 18</sup>
10	Microsoft Windows 2008 [x86]: DataCenter SP2 <sup>6</sup> , DataCenter <sup>6</sup> , Enterprise Edition SP2 <sup>6</sup> , Enterprise Edition <sup>6</sup> , Standard Edition, Standard Edition SP2 <sup>6</sup>	Microsoft Failover Clustering <sup>2, 3, 4, 5</sup>	QLogic: QLA4010-E-SP2, 12, 14, QLA4010C-E-SP2, 12, 14, QLA4050-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLE4060C-E-SP2, 7, 8, 10, 11, 12, 13, 14, QLE4062C-E-SP2, 7, 8, 10, 11, 12, 13, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI) <sup>1</sup>	HA: 16	EMC Celerra: NS-120 <sup>15</sup> , NS-480 (2 or 4 Blade) <sup>15</sup> , NS-480 <sup>15</sup> , NS-960 <sup>15</sup> , NS-G2 <sup>15</sup> , NS-G8 <sup>15</sup> , NS350, NS500G <sup>15</sup> , NS500 <sup>15</sup> , NS600G <sup>15</sup> , NS600 <sup>15</sup> , NS700G <sup>15</sup> , NS700 <sup>15</sup> , NS704 <sup>15</sup> , NSX X-Blade 60 <sup>15</sup> , 19, NX4 <sup>15</sup> ; EMC Unified Storage VNX5300/5500/5700/7500 (File) <sup>15</sup>	See <sup>16, 17, 18</sup>

11	Microsoft Windows 2008 [x86]: DataCenter SP26, DataCenter6, Enterprise Edition SP26, Enterprise Edition6, Standard Edition, Standard Edition SP26	Microsoft Failover Clustering2, 3, 4, 5	QLogic: QLA4010-E-SP2, 7, 9, 12, 14, QLA4010C-E-SP2, 7, 9, 12, 14, QLA4050-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLE4060C-E-SP2, 7, 8, 10, 11, 12, 13, 14, QLE4062C-E-SP2, 7, 8, 10, 11, 12, 13, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)1	HA: 16		See16, 17, 18
12	Microsoft Windows 2008 [x86]: DataCenter SP26, DataCenter6, Enterprise Edition SP26, Enterprise Edition6, Standard Edition, Standard Edition SP26	Microsoft MSCS2, 3, 4, 5	QLogic: QLA4010-E-SP2, 12, 14, QLA4010C-E-SP2, 12, 14, QLA4050-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLE4060C-E-SP2, 7, 8, 10, 11, 12, 13, 14, QLE4062C-E-SP2, 7, 8, 10, 11, 12, 13, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)1	HA: 8	EMC Celerra: NS-12015, NS-480 (2 or 4 Blade)15, NS-48015, NS-96015, NS-G215, NS-G815, NS350, NS500G15, NS50015, NS600G15, NS60015, NS700G15, NS70015, NS70415, NSX X-Blade 6015, 19, NX415; EMC Unified Storage VNX5300/5500/5700/7500 (File)15	See16, 17, 18
13	Microsoft Windows 2008 [x86]: DataCenter SP26, DataCenter6, Enterprise Edition SP26, Enterprise Edition6, Standard Edition, Standard Edition SP26	Microsoft MSCS2, 3, 4, 5	QLogic: QLA4010-E-SP2, 7, 9, 12, 14, QLA4010C-E-SP2, 7, 9, 12, 14, QLA4050-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLE4060C-E-SP2, 7, 8, 10, 11, 12, 13, 14, QLE4062C-E-SP2, 7, 8, 10, 11, 12, 13, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)1	HA: 8		See16, 17, 18
14	Microsoft Windows 2008 [x86]: DataCenter SP26, DataCenter6, Enterprise Edition SP26, Enterprise Edition6, Standard Edition, Standard Edition SP26	Microsoft MSCS2, 4, 5	Emulex: OCe10102-IM-E, OCe10102-IX-E;  QLogic: QLA4010-E-SP2, 12, 14, QLA4010C-E-SP2, 12, 14, QLA4050-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4050C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14, QLA4052C-E-SP2, 7, 8, 9, 10, 11, 12, 13, 14	EMC Unified Storage: VNXe3100 (iSCSI), VNXe3300 (iSCSI)1	HA: 8	EMC Celerra CNS15	See16, 17, 18

1. On Windows 2008 and 2008 R2. In order to support more than a single session between the host and a VNXe array, you must use the "Node and Disk Majority" Quorum Configuration, you must set the Cluster "Basic resource health check interval to 1, and you must change the iSCSI registry setting for MaxConnectionRetries to 1."
2. PowerPath 5.0.0 is not supported with Microsoft iSCSI Initiator software and Microsoft Cluster Server (MSCS)
3. Microsoft Cluster Server (MSCS) in iSCSI supports minimum R26 Flare release version xx.26.xxx.5.007.
4. Microsoft iSCSI Initiator required. Refer to Native iSCSI table for currently supported initiator version.
5. Booting from external storage for iSCSI clusters is not supported.
6. Windows Server Core installation option is supported by EMC. Contact your server vendor to determine their support statement for Server Core.
7. Clustered hosts may access shared Symmetrix LUNs via iSCSI or Fibre Channel (iSCSI on one node, Fibre Channel on another.)
8. Microsoft Initiator software version 2.0 and later automatically forces IQN's to lower-case. This may require array-side host access reconfiguration.
9. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator.
10. SPC-2 flag must be enabled for iSCSI Symmetrix configurations.
11. Configuration utility for QLogic iSCSI HBAs is QLogic SANsurfer available at <http://www.qlogic.com>
12. QLogic iSCSI HBAs require the Microsoft iSCSI Software Initiator Service to be installed. The Service is required by Microsoft and is different from the full Microsoft iSCSI Software Initiator. Refer to the EMC Host Connectivity guide for additional information on Windows iSCSI components and the Microsoft iSCSI Software Initiator usage.
13. QLA4010 iSCSI boards booting from external storage require "Spanning Tree" features to be disabled on network switches used in the boot path.
14. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
15. require NAS 5.4.16 or higher
16. Booting from external array is supported for iSCSI clusters with QLA4010 iSCSI HBAs. Refer to Native iSCSI table for supported BIOS versions.
17. Microsoft Dynamic Disks are not supported.
18. iSCSI based cluster configurations require Microsoft QFE 824354. Please contact Microsoft Product Support Services for this QFE.
19. **XB-60s shipped prior to 1 July 2006 can be used with DART 5.4.14 or later. Blades shipped after that date are only supported with DART 5.5.22 and later.**
20. Any Microsoft supported server/NIC for the listed operating system revision is supported.
21. MS iSCSI Initiator 2.08 only supports PowerPath 5.2 or later.
22. EMC provides troubleshooting and other technical notes for MSCS cluster solutions. Visit EMC Powerlink and download part number 300-000-603 for the EMC Host Connectivity Guide for Windows.

## NAS-Platform

### Internet Protocol Addressing Support

#### Configuration Notes

NAS-Platform			
No.	Item Type	Item Name	IP Addressing
1	NAS Platform	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	IPv4
2	NAS Platform	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	IPv6

## NAS Connectivity

### Configuration Notes

This table describes the support statements for NAS Connectivity. The storage array field for Integrated NAS platforms is intentionally blank. Please consult the corresponding footnote for details about the storage array.

#### Asianux AX [32-Bit]

Asianux

Asianux			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Asianux AX [32-Bit]: 3.0, 3.0 SP1, 3.0 SP2, 3.0 SP3	VNXe OE 2.0.0

#### Asianux AX [IA64]

Asianux

Asianux			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Asianux AX [IA64]: 3.0, 3.0 SP1	VNXe OE 2.0.0

#### Asianux AX [x86\_64]

Asianux

Asianux			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Asianux AX [x86_64]: 3.0, 3.0 SP1, 3.0 SP2, 3.0 SP3	VNXe OE 2.0.0

#### Hewlett Packard HP-UX

Hewlett Packard

Hewlett Packard			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Hewlett Packard HP-UX 11i: v1.0 (HP-UX 11.11), v2 (HP-UX 11.23), v3 (HP-UX 11.31)	VNXe OE 2.0.0

#### IBM AIX

IBM

IBM			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	IBM AIX: 5.3, 6.1	VNXe OE 2.0.0

#### Microsoft Windows 2003 [IA64]

Microsoft

Microsoft			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Microsoft Windows 2003 [IA64]: Enterprise Edition SP2, Standard Edition SP2	VNXe OE 2.0.0

#### Microsoft Windows 2003 [x64]

Microsoft

Microsoft			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Microsoft Windows 2003 [x64] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x64] Standard Edition: R2 SP2, SP2	VNXe OE 2.0.0

### Microsoft Windows 2003 [x86]

Microsoft

Microsoft			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Microsoft Windows 2003 [x86] Enterprise Edition: R2 SP2, SP2; Microsoft Windows 2003 [x86] Standard Edition: R2 SP2, SP2	VNXe OE 2.0.0

### Microsoft Windows 2008 R2 SP1 [IA64]

Microsoft

Microsoft			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Microsoft Windows 2008 R2 SP1 [IA64] for Itanium-Based Systems	VNXe OE 2.0.0

### Microsoft Windows 2008 R2 SP1 [x64]

Microsoft

Microsoft			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Microsoft Windows 2008 R2 SP1 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	VNXe OE 2.0.0

### Microsoft Windows 2008 R2 [IA64]

Microsoft

Microsoft			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Microsoft Windows 2008 R2 [IA64] for Itanium-Based Systems	VNXe OE 2.0.0

### Microsoft Windows 2008 R2 [x64]

Microsoft

Microsoft			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Microsoft Windows 2008 R2 [x64]: DataCenter, Enterprise Edition, Standard Edition, Storage Server	VNXe OE 2.0.0

### Oracle Solaris

Oracle

Oracle			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Oracle Solaris 10: SPARC, x86 <sup>1</sup>	VNXe OE 2.0.0

1. EMC supports ZFS in Solaris 10\_x86 11/06 (update 3) or later. The Snapshot and Clone features of ZFS are supported only through Sun Microsystems.

### Red Hat RHEL [32-Bit]

Red Hat

Red Hat			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Red Hat RHEL [32-Bit]: 5.6 <sup>1</sup> , 6.0	VNXe OE 2.0.0

1. EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.

### Red Hat RHEL [IA64]

Red Hat

Red Hat			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Red Hat RHEL [IA64] 5.6 <sup>1</sup>	VNXe OE 2.0.0

1. EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.

### Red Hat RHEL [x86\_64]

#### Red Hat

Red Hat			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	Red Hat RHEL [x86_64]: 5.6 <sup>1</sup> , 6.0	VNXe OE 2.0.0

1. EMC supports the following filesystems: ext2, ext3, ext4, xfs, and gfs unless otherwise noted in the ESM. If there is a customer requirement for a different filesystem, please submit an RPQ.

### SuSE SLES [32-Bit]

#### SuSE

SuSE			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	SuSE SLES [32-Bit] 10 SP3 <sup>1</sup>	VNXe OE 2.0.0

1. Novell OES 2 SP3 is supported with this update.

### SuSE SLES [IA64]

#### SuSE

SuSE			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	SuSE SLES [IA64] 10 SP3	VNXe OE 2.0.0

### SuSE SLES [x86\_64]

#### SuSE

SuSE			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	SuSE SLES [x86_64] 10 SP3 <sup>1</sup>	VNXe OE 2.0.0

1. Novell OES 2 SP3 is supported with this update.

### VMware ESX

#### VMware

VMware			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	VMware ESX: 4.0 (vSphere 4) <sup>1, 2, 3, 4.1</sup> (vSphere 4) <sup>1, 2, 3, 4, 5, 6, 7, 8</sup>	VNXe OE 2.0.0

- For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
- EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
- For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
- Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://vmware.com/support/policies/oracle-support.html>
- Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS. The following SCSI Controllers are supported with VMWare and MSCS:  
Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel.  
You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.
- All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
- Supported with vMotion.
- Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.

### VMware ESXi

#### VMware

VMware			
No.	NAS Platform	Operating System	Minimum Host Bios
1	EMC Unified Storage: VNXe3100 (File), VNXe3300 (File)	VMware ESXi: 4.0 (vSphere 4) <sup>1, 2, 3, 4.1</sup> (vSphere 4) <sup>1, 2, 3, 4, 5, 6, 7, 8, 5.0</sup> (vSphere 5) <sup>1, 2, 3, 6, 9</sup>	VNXe OE 2.0.0

- For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
- EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
- For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
- Oracle RAC 11g R2 is supported on Red Hat RHEL 5 and Microsoft Windows Virtual Machines running on VMware vSphere 4.1 with EMC storage platforms. For details, refer to <http://vmware.com/support/policies/oracle-support.html>
- Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS. The following SCSI Controllers are supported with VMWare and MSCS:  
Windows 2000 Server LSI Logic Parallel, Windows Server 2003 LSI Logic Parallel, Windows Server 2008 LSI Logic Parallel.  
You must download the LSI Logic Parallel driver for Windows 2000 Server on the LSI Web site.

- 6. All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
- 7. Supported with vMotion.
- 8. Oracle Database 11g R1 is supported on VMware vSphere 4.0 Virtual Machines with Symmetrix, CLARiiON, and Celerra storage platforms. For details, refer to <http://www.vmware.com/solutions/partners/alliances/oracle.html>.
- 9. Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS.

## NAS Platform iSCSI Configuration Notes

This table describes the support statements for NAS Platform iSCSI.

### VMware ESXi VMware

VMware						
No.	NAS Platform	Operating System	Host Bus Adapter	Network Configuration	External Boot	Comments
1	EMC Unified Storage VNXe3300 (File)	VMware ESXi 5.0 (vSphere 5) 7, 8, 9, 10, 11	Generic Vendor NIC GbE6, 14, 16	LAN Only <sup>12</sup>	Y	See <sup>4, 5, 15</sup>
2	EMC Unified Storage VNXe3300 (File)	VMware ESXi 5.0 (vSphere 5) 7, 8, 9, 10, 11	QLogic: QLA4050C-E-SP3, 6, 13, QLA4052C-E-SP3, 6, 13, QLE4060C-E-SP3, 6, QLE4062C-E-SP3, 6	LAN Only <sup>12</sup>	Y <sup>1, 2</sup>	See <sup>4, 5</sup>

- 1. Virtual machines running on VMWare ESX are supported booting from the array.
- 2. VMWare ESX Server itself is supported booting from external array.
- 3. Driver Version In-box driver This driver is included in the VMWare ESX kernel. Driver upgrades not supported.
- 4. LAN support includes direct connect (layer 2), switched (layer 2), or routed (layer 3) networks. Network should be designed to minimize packet loss or any other interruptions.
- 5. Host CLI iSCSI LUN Snap and Replication is supported using the Linux guest OS initiator
- 6. Firmware Version 1.1
- 7. For information on VMware VAAI (VMware vStorage APIs for Array Integration) support with EMC storage, and details on array firmware versions that support VAAI please refer to the Storage/SAN section of the VMware Hardware Compatibility Guide at <http://www.vmware.com/resources/compatibility/search.php>.
- 8. EMC supports VMware's recommendations for number of nodes in native ESX cluster configurations.
- 9. For a list of supported guest operating systems, refer to <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software>. For additional information refer to the Guest Operating System Installation Guide at [http://www.vmware.com/pdf/GuestOS\\_guide.pdf](http://www.vmware.com/pdf/GuestOS_guide.pdf)
- 10. All released updates to ESX Server version are supported unless otherwise specified by a footnote. Please contact server vendor for the update level required for a specific server.
- 11. Supports 2-node Microsoft Cluster Services (MSCS) with Windows 2003 and Windows 2008 virtual machines in CIB (Cluster in Box) and CAB (Cluster across Boxes) configurations. VMware NMP (Native Multipathing) and PowerPath/VE are supported with MSCS.
- 12. Routed networks (layer 3) require iSCSI digest to be enabled.
- 13. QLogic iSCSI HBAs are supported in any server listed in the ESM Fibre Channel tables that list support for the QLA2340 HBAs with the same operating system version listed here.
- 14. Driver Version In-box iSCSI initiator This driver is included in the VMWare ESX kernel. Driver upgrades not supported.
- 15. The software initiator is part of the operating system and not an EMC software product. Please refer to the required release note "EMC Linux iSCSI Attach Release Notes", p/n 300-002-672, that can be found on EMC's Powerlink website in Support -> The Document Library -> Host Connectivity for the complete installation information.
- 16. The following NICs are not supported: 3COM-3C996B