

EMC Support Matrix
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Table of Contents

Copyright EMC Corporation 2006.....	1
EMC's Policies and Requirements for EMC Support Matrix.....	2
Selections.....	4
Base Connectivity.....	5
Cluster Software.....	6
Server BIOS.....	7
Path Management Software.....	8

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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 supercedes and replaces all previous versions. The information is to serve only as a guide for those configurations/products which EMC has qualified. This document identifies and lists various vendor host systems and integral components that have been tested and qualified by EMC for use with EMC products. Vendor components include, but are not limited to, host operating systems, HBAs (host bus adapters) and associated drivers, firmware and BIOS; Fibre Channel switches, hubs and bridges. This document also lists various vendors, cluster software, tape hardware, storage system boot procedures, heterogeneous information storage, and configurations that EMC has tested and/or qualified for use with EMC products.

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, such as EMC's Host Connectivity Guides, EMC Networked Storage Topology Guide, EMC CLARiiON Open Systems Configuration Guide, relevant vendor documentation, or contact your EMC Sales or EMC Customer Service representative.

For Symmetrix 4.x support, please look at the Symmetrix 8000 Series section and check the footnotes for model/microcode compatibility. EMC employees can obtain older revisions of ESM containing more Symmetrix 4.x information from the Symmetrix Service Readiness group.

For a complete listing of any known issues with the current support matrix content, please review the ESM Errata on eLab Navigator. To report any issues with the content contained within the support matrix, follow the steps documented on the Contacts link on eLab Navigator. For eLab Navigator access through Powerlink: http://powerlink.emc.com/community/tools/index.jhtml?community_id=2uilderab+Navigator. For access through Avatar: <http://avatar.eng.emc.com/Avatar.asp>.

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 test 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.

Selections

Your Selections:

Cluster Software	Microsoft MSCS
Host Bus Adapter	HPQ FCA2214 (QLA2340)
Host System	HPQ Proliant DL580(G2), HPQ Proliant DL580(G3)
Operating System	Microsoft Windows 2003 [x86]
Storage Array	EMC CLARiiON CX600/CX400

Relevant Documentation or Links

Document Library	Up-to-date technical documents about EMC's products and services, including microcode release notes, product manuals, software release notes and more. See the "Quicklinks" section of the Powerlink home page.
E-Lab Issue Tracker	Up-to-date information on EMC product issues that could have an impact on your operations. See the "Tools" section of the Powerlink home page.
Windows Host Connectivity Guide	Complete, authoritative information on how to configure Windows environments.

Base Connectivity

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.

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.

EMC has qualified the following hosts. No other hosts are supported at this time. Symmetrix and CLARiiON models and minimum Enginuity and Flare revisions are listed in the footnotes on most tables.

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.

Do not use a LUN in the CLARiiON DAE2-ATA as a host OS boot device.

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.)

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

No.	Host System	Operating System	Host Bus	Host Bus Adapter	Driver	Topology	Storage Array	External Boot
1	HPQ Proliant: DL580(G2) ² , DL580(G3) ²	Microsoft Windows 2003 [x86] Enterprise Edition: R2 ⁹ , SP1 ¹⁰ ; Microsoft Windows 2003 [x86] Standard Edition: R2 ⁹ , SP1 ¹⁰	PCI, PCI-X	HPQ FCA2214 (QLA2340) ¹	9.1.2.11 ^{6,7} , 9.1.2.15 ⁴ , 9.1.2.16 ⁴	FC-AL, FC-SW	EMC CLARiiON CX600/CX400	Y ⁸
2	HPQ Proliant: DL580(G2) ² , DL580(G3) ²	Microsoft Windows 2003 [x86]: Enterprise Edition ³ , Standard Edition ³	PCI, PCI-X	HPQ FCA2214 (QLA2340) ¹	9.1.2.11 ^{6,7} , 9.1.2.15 ⁴ , 5, 9.1.2.16 ^{4,5}	FC-AL, FC-SW	EMC CLARiiON CX600/CX400	Y ⁸

1. EMC recommends upgrading to the most recent, EMC-Approved, HBA driver.
2. HPQ (Compaq) Proliant server models that are not listed in the ESM but are only differentiated from supported models by an "R" designator, are rack-mountable servers and are supported.
3. Maximum supported LUN size is 2TB for Windows 2003 without Service Pack 1 (SP1.)
4. STORPort Miniport Driver
5. Requires Microsoft STORPort hotfix Q908980. Please see [http://support.microsoft.com/default.aspx?scid=kb;\[LN\];908980](http://support.microsoft.com/default.aspx?scid=kb;[LN];908980)
6. END OF LIFE NOTICE: SCSI miniport and SCSI full port drivers are frozen and EOL at this time for Windows 2003 operating systems. EMC recommends migrating to the currently supported STORPort driver for your HBA. EMC will continue to support existing customers who have Windows 2003 SCSI drivers installed, but any fixes or HCL support will require an upgrade to STORPort. Refer to SalesAdvantage articles for the benefits of using STORPort drivers and information on migrating from SCSI to STOR under Windows 2003. SCSI drivers listed in the April 2006 ESM will be the last supported SCSI drivers for Windows 2003.
7. SCSI Miniport (SCSI Port) Driver. EMC recommends using STORPort drivers where available.
8. Powerpath is supported in boot from SAN configurations for Windows 2003 systems running STORPort drivers (QLogic & Emulex). Windows 2003 servers using STORPort drivers require a Microsoft STORPort hotfix installed to boot with Powerpath. Please see your driver's requirements for the STORPort hotfix (QFE) version.
9. VDS (Virtual Disk Service) is currently supported for Windows 2003 R2 operating systems. EMC Solutions Enabler 6.2 (minimum version) is required to support VDS for Windows 2003 R2.
10. Supports LUNs greater than 2TB in size. Minimum Service Pack 1 (SP1) required.

[Return To Top](#)

Cluster Software

EMC has qualified the following cluster software. Please refer to the Base Connectivity table(s) for information concerning server models, HBAs, drivers, firmware, operating system requirements and other special notes.

No.	Operating System	Cluster Software	Max # Nodes	Infrastructure Software	Server LVM	Storage Array	Comments
1	Microsoft Windows 2003 [x86]: DataCenter, DataCenter R2, DataCenter SP1, Enterprise Edition, Enterprise Edition R2, Enterprise Edition SP1, Storage Server, Storage Server Enterprise Edition, Storage Server Enterprise Edition R2, Storage Server Enterprise Edition SP1, Storage Server R2, Storage Server SP1	Microsoft MSCS ^{1,2}	HA: 8	EMC PowerPath: 4.3, 4.3.1, 4.4.0, 4.4.1, 4.5.0, 4.6.0	Veritas VxVM: 4.0, 4.1, 4.2 (Storage Foundation), 4.3 (Storage Foundation)	EMC CLARiiON CX600/CX400	See ³

1. Valid MSCS quorum resource configurations include both 'shared disk quorum' and 'majority node set' schemes.
2. Cluster software is not supported on Stratus ftServers.
3. EMC provides troubleshooting and other technical notes for MSCS cluster solutions. Visit EMC Powerlink and download part number 300-003-012 for the MSCS Troubleshooting/Technical Notes documentation.

[Return To Top](#)

Server BIOS

No.	Host System	Minimum Host Bios
1	HPQ Proliant DL580(G2)	P27 (7/30/02)

[Return To Top](#)

Path Management Software

This table describes the support statements for path management software such as EMC PowerPath and native offerings built into the Operating System. Veritas DMP support statements are found on the Veritas Volume Management table.

No.	Storage Array	Operating System	Host Bus Adapter	Infrastructure Software	Storage Operating Environment	Comments
1	EMC CLARiiON CX600/CX400	Microsoft Windows 2003 [x86] Enterprise: Edition, Edition R2, Edition SP1; Microsoft Windows 2003 [x86] Standard: Edition, Edition R2	HPQ FCA2214 (QLA2340)	EMC PowerPath 4.4.0 ²	EMC FLARE 02.16, EMC FLARE 02.17, EMC FLARE 02.19	
2	EMC CLARiiON CX600/CX400	Microsoft Windows 2003 [x86]: Enterprise Edition, Standard Edition	HPQ FCA2214 (QLA2340)	EMC PowerPath: 4.3.1 ⁵ , 4.3 ^{4,5} , 4.4.1 ⁶ , 4.5.0, 4.6.0 ³	EMC FLARE 02.16	
3	EMC CLARiiON CX600/CX400	Microsoft Windows 2003 [x86]: Enterprise Edition, Standard Edition	HPQ FCA2214 (QLA2340)	EMC PowerPath: 4.3.1 ⁵ , 4.4.1 ⁶ , 4.5.0, 4.6.0 ³	EMC FLARE 02.17, EMC FLARE 02.19	
4	EMC CLARiiON CX600/CX400	Microsoft Windows 2003 [x86] Enterprise Edition: R2, SP1; Microsoft Windows 2003 [x86] Standard Edition: R2, SP1	HPQ FCA2214 (QLA2340)	EMC PowerPath: 4.4.0 ² , 4.4.1, 4.5.0, 4.6.0 ³	EMC FLARE 02.16, EMC FLARE 02.17, EMC FLARE 02.19	See ¹

1. PowerPath 4.4.0 is the minimum supported version for Windows 2003 servers with Service Pack 1 (SP1) installed.
2. Includes support for PowerPath Fabric Failover for Symmetrix.
3. PowerPath 4.6 supports STORPort drivers only for Windows 2003.
4. FC4500 and FC5300 are not supported on Microsoft Windows 2003. CLARiiON and Symmetrix can co-exist in the SAN with the same server.
5. This version of PowerPath does not support LUNs > 2TB in size.
6. LUNs > 2TB in size are supported with this version of PowerPath for CLARiiON arrays.

[Return To Top](#)

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