

EVA iSCSI Connectivity Option Stream

any top-to-bottom path is a supported configuration

all rows may not be required for every configuration

HP STORAGEWORKS EVA iSCSI CONNECTIVITY/MPX100 STREAM

Management Software

mpx Manager 2.0.30 Build 128 (minimum) (Apple Mac/Linux/Microsoft Windows)
 HP Command View EVA 9.1 (recommended), 8.0.2 (minimum) with Server Based Management
 HP Command View EVA 9.1 (recommended), 8.1 (minimum) with Array Based Management
 HP Command View 9.1 (recommended), 9.0.1 (minimum) for EVA6400/8400 with Server Based Management or Array Based Management

Note: Supports Command View EVA "iSCSI only" connectivity (Fibre Channel switch not required). Refer to the HP StorageWorks Command View EVA iSCSI deployment whitepaper at: <http://h71028.www7.hp.com/ERC/downloads/4AA2-0607ENA.pdf>

Configuration Requirements

IP Network (Management Port and GE1, GE2 iSCSI Ports)

Network Protocols: TCP/IP IPv6, IPv4, Ethernet 1000Mb/s

mpx100	Firmware 2.4.4.0 (Oct '09) (recommended), 2.4.2.0 (Jun'08) (minimum)					
Host Operating System	HP OpenVMS 8.3-1H1 (IA64)	Apple Mac OS X 10.5.3, 10.5.2, 10.4.11, 10.4.10, (Power PC and Intel Power Mac G5, Xserve, MacPro)	Microsoft Windows 2008 Enterprise/Standard Editions, 2008 Server Core, Windows 2003 SP2, SP1, 2003 r2 (x86 32-bit/64-bit, IA- 64) Enterprise, Standard Edition, Windows XP Professional SP2, SP1	Red Hat Linux 5 update 3, update 2, update 1 (kernel 2.6.18-8.el5 initial_release), Red Hat Linux 4 update 7, update 6 (kernel 2.6.9-34) SUSE Linux 10 SP2, SP1 (kernel 2.6.16.21-0.8 initial_release), SUSE Linux 9 SP4, SP3 (2.6.5 kernel-7.244) (x86 32-bit/64-bit, IA-64)	Sun Solaris 10 update 5, update 4 (SPARC and x86)	VMware ESX 3.5 (See note 1) Guest O/S: Win2k3 SP2, SP1, Red Hat 5.2, 5.1, 5.0, 4, update 7, update 6, update 5, SUSE 10, SP2, SP1, 10, 9 SP4, SP3
iSCSI Boot Support	Not Supported		Windows Server 2003 SP2 HP NICs NC3xx	Red Hat Enterprise Linux 5 update 3, 4 update 7, update 6 SUSE Linux Enterprise Server 10 SP2, SP1, 9 SP4, SP3 HP NICs NC3xx	Not Supported	VMware ESX 3.5 (See note 2) QLogic QLE4060C, QLE4062C, QMH4062C iSCSI HBA
			Windows Server 2008, 2003 SP2 QLogic QLA4052C, QLE4062C, QMH4062C iSCSI HBA	Red Hat Linux 5 update 3, update 2, update 1 Red Hat Linux 4 update 7, update 6 SUSE Linux 10 SP2, SP1, 9 SP4, SP3 QLogic QLA4052C, QLE4062C, QMH4062C iSCSI HBA		
Operating System Cluster Support	OpenVMS Clusters	Not Supported				
iSCSI Initiator/Driver	Native	ATTO Technology, Inc. MAC iSCSI driver 3.10 Available at: http://www.attotech.com	Microsoft Windows iSCSI driver 2.08, 2.07 Windows Server 2008 Use the bundled iSCSI Initiator	Red Hat Linux 5 and 4, use the bundled iSCSI driver SUSE Linux, use the bundled iSCSI driver	Sun Solaris 10 native iSCSI driver	VMware 3.5 native iSCSI software initiator

EVA iSCSI Connectivity Option Stream

any top-to-bottom path is a supported configuration

all rows may not be required for every configuration

HP STORAGEWORKS EVA iSCSI CONNECTIVITY/MPX100 STREAM

<u>Host Operating System</u>	HP OpenVMS	Apple Mac OS X	Microsoft Windows	Red Hat Linux SUSE Linux	Sun Solaris	VMware
	See page 1 for operating system version support					
<u>Host Network Interface (NIC)</u>	All standard GbE NICs/ASICs supported by HP for OpenVMS	All standard GbE NICs/ASICs supported by Apple	All standard GbE NICs/ASICs supported by HP for Windows 2008, 2003, and XP. For Windows 2008, 2003: HP NC3xx driver 4.4.21.0 TOE w/MS scalable networking pack, QLogic QLA4052C, QLE4062C, QMH4062C Storport driver 2.1.4.19 For Windows 2003 only: HP NC510x driver 3.4.336.5599, Alacritech SES2002XT, SES2102ET, SES2001XT, SES2104ET driver 9.2.0.2044 w/MS scalable networking pack 1000 TOE NIC driver 7.3.1.0, TOE support with native driver	All standard GbE NICs/ASICs supported by HP for Linux HP NC3xx, HP NC510x (Red Hat 4, SUSE 9 only), Note: TOE NIC features not supported QLogic QLA4052C, QLE4062C, QMH4062C Driver 5.01.01.04 (Red Hat 4, SUSE 10, 9)	All standard GbE NICs, ASICs supported by Sun/HP for Sun, HP NC3xx driver 3.5.1	All standard GbE NICs/ASICs supported by HP for VMware
<u>iSCSI Host Bus Adapter (HBA)</u>			QLogic QLA4052C, QLE4062C, QMH4062 Storport driver 2.1.4.19	QLogic QLA4052C, QLE4062C, QMH4062C		(See note 2) QLogic QLE4060C, QLE4062C, QMH4062
<u>Multi-path Software</u>	Native	Not Supported	MS iSCSI initiator MPIO (Windows 2008, 2003) MS DSM (See note 3) HP DSM 3.03.00 Note: XCS 6.x, VCS 4.x	Device Mapper Multipath Enablement Kit for HP Arrays 4.0.0 and higher (See note 4)	Native MPxIO	VMware native multi-path software MPxIO and NIC teaming
<u>Fibre Channel Storage Arrays</u>	EVA4400/EVA4400 with the embedded switch XCS 09522000 (recommended), 09004000 (minimum) mpx100 direct connect or fabric attach EVA4000/4100/6000/6100/8000/8100 XCS 6.220 (recommended), 6.1x0 (minimum) mpx100 direct connect or fabric attach EVA6400/8400 XCS 09501100 (minimum) mpx100 direct connect or fabric attach HP OpenVMS, Microsoft Windows, and Linux only: EVA3000/5000 VCS 4.100 (recommended), 4.007 (minimum) mpx100 fabric attach only					
Note: Refer to the EVA iSCSI connectivity product documentation and the SAN Design Reference Guide for supported configuration rules at: http://h18006.www1.hp.com/storage/saninfrastructure.html						

Notes:

- VMware ESX 3.5 - Requires mpx100 firmware 2.4.2.0 (minimum);
 - LSI Logic SCSI Emulation is supported on all listed Guest OS's, Bus Logic SCSI Emulation is supported only on SUSE;
 - ESX 3.5 Update 1 is required for Red Hat 5.1, Red Hat 4 update 6, and SUSE 9 SP4 Guest OS
 - ESX 3.5 Update 2 is required for Red Hat 5.2, Red Hat 4 Update 7, and SUSE 10 SP2 Guest OS
- For the latest VMware ESX 3.5 support of HP iSCSI products, refer to the HCL: Storage / SAN Compatibility Guide at: http://www.vmware.com/pdf/vi35_san_guide.pdf
- For Windows 2003 with raw disk device access, **when using MS initiator version 2.07**, MPIO load balance policy must be set to "Failover only". For file system disk device access **or when using Microsoft initiator version 2.08**, all MPIO load balance policies are supported.
- See the Device Mapper documentation for operating system kernel requirements.

**HP StorageWorks EVA iSCSI Connectivity/mpx100
Fibre Channel Switch Support for Fabric Attach**

Switch Model	Notes
HP Surestore FC 1Gb/2Gb Switch 16B HP Surestore FC 1Gb/2Gb Switch 8B HP Surestore FC 1Gb/2Gb Entry Switch 8B CPQ StorageWorks SAN Switch 2/8-EL, 2/16, 2/16-EL HP StorageWorks SAN Switch 2/8 EL, 2/8 Power Pack HP StorageWorks SAN Switch 2/16-EL, 2/16, and 2/16 Power Pack HP StorageWorks MSA SAN Switch 2/8 HP StorageWorks SAN Switch 2/32, 2/32 Power Pack HP StorageWorks SAN Switch 2/8V, 2/8V Power Pack HP StorageWorks GSA/TAA SAN Switch 2/8V and 2/8V Power Pack HP StorageWorks SAN Switch 2/16V, 2/16N FF and 2/16N Power Pack HP StorageWorks GSA/TAA SAN Switch 2/16V, 2/16N FF and 2/16N Power Pack HP StorageWorks SAN Director 2/128, 2/128 Power Pack HP StorageWorks Core Switch 2/64, 2/64 Power Pack	B-Series Product Line Switches 2 Gb/s
HP StorageWorks 4/8 Base SAN Switch, 4/8 SAN Switch HP StorageWorks 4/16 SAN Switch, 4/16 SAN Switch Power Pack HP StorageWorks SAN Switch 4/32 Base, 4/32 Base Full and 4/32 Power Pack HP StorageWorks SAN Switch 4/32B HP StorageWorks SAN Switch 4/64 and 4/64 Power Pack HP StorageWorks 4/256 SAN Director, 4/256 SAN Director Power Pack Brocade 4Gb SAN Switch for HP p-Class BladeSystem, Base Brocade 4Gb SAN Switch for HP p-Class BladeSystem, Full Fabric Brocade 4Gb SAN Switch for HP p-Class BladeSystem, Power Pack Brocade 4Gb SAN Switch for HP c-Class BladeSystem: Brocade 4/12 SAN Switch Brocade 4Gb SAN Switch for HP c-Class Brocade 4/24 SAN Switch Brocade 4Gb SAN Switch for HP c-Class Brocade 4/24 SAN Switch Power Pack	B-Series Product Line Switches 4 Gb/s
Brocade 8Gb SAN Switch for HP BladeSystem c-Class HP StorageWorks EVA4400 Embedded Switch Modules, 8 Gb Brocade (5410) HP StorageWorks 8/8 Base, SAN Switch HP StorageWorks 8/24 SAN Switch HP StorageWorks 8/40 SAN Switch, 8/40 Power Pack HP StorageWorks 8/80 SAN Switch, 8/80 Power Pack HP StorageWorks 8 Gb DC SAN Backbone Director	B-Series Product Line Switches 8Gb/s
See the B-Series Switch Stream for switch firmware and software details	
Note: Refer to the EVA iSCSI connectivity product documentation and the SAN Design Reference Guide for supported configuration rules at: http://h18006.www1.hp.com/storage/saninfrastructure.html	

**HP StorageWorks EVA iSCSI Connectivity/mpx100
Fibre Channel Switch Support for Fabric Attach**

Cisco MDS 9120 Fabric Switch Cisco MDS 9124 Fabric Switch Cisco MDS 9134 Fabric Switch Cisco MDS 9140 Fabric Switch Cisco MDS 9216 Multilayer Fabric Switch Cisco MDS 9216A Multilayer Fabric Switch Cisco MDS 9216i Multilayer Fabric Switch Cisco MDS 9506 Multilayer Director Switch Cisco MDS 9509 Multilayer Director Switch Cisco MDS 9513 Multilayer Director Switch Cisco MDS 48-port 8Gb FC Host-Optimized Module (AJ901A) Cisco MDS 48-port 8Gb FC Performance Module (AJ900A) Cisco MDS 24-port 8Gb FC Module (AJ899A)	C-Series Product Line Switches 2, 4, and 8 Gb/s
See the C-Series Switch Stream for switch firmware and software details	
HP StorageWorks Director 2/64, 2/140 HP StorageWorks Edge Switch 2/12, 2/16, 2/24, 2/32 HP Surestore Director FC-64 CPQ StorageWorks SAN Director 64 McDATA ES-3016, ES-3032 (HP reseller)	M-Series Product Line Switches 2 Gb/s
See the M-Series Switch Stream for switch firmware and software details	
Note: Refer to the EVA iSCSI connectivity product documentation and the SAN Design Reference Guide for supported configuration rules at: http://h18006.www1.hp.com/storage/saninfrastructure.html	

<p><u>Solution Software</u></p>	
<p>VERITAS Storage Foundation</p>	
<p align="center"><u>Package</u></p>	<p align="center"><u>Supported Product Package</u></p>
Storage Foundation for Windows 5.0 (32-bit, x64, IA64)	Storage Foundation (SFW), VERITAS MPIO DSM DDI 2
<p>Notes: "Persistent Reservations" is not supported with the EVA iSCSI Connectivity Option when used with Veritas Storage Foundation software. All hosts using Veritas Storage Foundation software that are connected to the EVA iSCSI Connectivity Option must disable SCSI-3 in the system registry.</p>	