

HP StorageWorks Enterprise Virtual Array compatibility reference

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Introduction

This document contains tables that describe the compatible hardware, operating systems, and software for the following HP StorageWorks Enterprise Virtual Array (EVA) products:

- HP StorageWorks Business Copy EVA
- HP StorageWorks Command View EVA
- HP StorageWorks Continuous Access EVA
- HP StorageWorks Replication Solutions Manager

How to use this document

- bullet (•) = compatibility or support
- blank = no compatibility or support
- gray = intersection with the same product
- black = application does not run in the cited environment
- NA = combination does not apply
- Y = Yes
- N = No

To determine support or compatibility, in a selected table, start from a row in the first column and find its intersection with the appropriate column. The cell content such as a bullet or NA provides the support or compatibility information. For example, to determine which local replication features are supported on the controller software version you are running, use Table 6.2, Supported local replication features by controller software version. Locate a feature, such as, 'Create snapshots in preallocated containers', in the first column ("Feature") and traverse to the intersection of that row with the column that contains the controller software version you are running, such as XCS 6.0xx. Because the cell at the intersection of these two searches contains a bullet (•), the EVA software version you are using supports this feature. If, however, you are running VCS 4.0xx, the feature is not supported. Footnotes in a continued table may appear on an earlier page.

1.0 EVA software solution compatibility

This table shows the compatibility of the EVA software solution components. An EVA software solution is comprised of controller software, management software, replication software, and replication license. See Table 2.0, HP Command View EVA interoperability, for detailed management software support. This table also shows controller software compatibility for HP EVAInfo and HP SmartStart EVA Storage.

Before July 2006, the software solutions were identified by replication license (HP Business Copy EVA or HP Continuous Access EVA) version. When HP Replication Solutions Manager 2.1 was released in July 2006, HP stopped producing separate software kits for HP Business Copy EVA and HP Continuous Access EVA. As a result, HP Business Copy EVA and HP Continuous Access EVA are no longer identified by a version. There is now a single HP Replication Solutions Manager kit. For details about the kit contents, see the *HP StorageWorks Replication Solutions Manager kit contents*. The replication features that are supported with your HP Business Copy EVA or HP Continuous Access EVA license depend on the controller software version that is installed on the arrays. See Table 6.2, Supported local replication features by controller software version, and Table 6.3, Supported remote replication features by controller software version, for more information.

Note: The HP Business Copy EVA version listed in this table indicates the last time HP Business Copy EVA was released as a software product.

To determine operating system and connectivity component (such as HBAs and multipathing) support for your EVA software solution:

1. Use this table (Table 1.0) to identify the VCS or XCS version that is supported with the software solution.
2. See the Enterprise Virtual Array release notes specific to the VCS or XCS version for general operating system support information.
3. See the tables beginning with Table 8.0, EVA host connectivity, for detailed operating system support information for EVA4x00/6x00/8x00 and EVA4400. For EVA3000/5000, Table 8.0 includes instructions on how to locate the connectivity release notes for the specific controller software version and operating system.

	EVA3000/5000		EVA4x00/6x00/8x00		EVA4400		HP Command View EVA ²		HP Replication Solutions Manager	
	VCS 3.1xx	VCS 4.1xx	XCS 6.1xx	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000	7.0.x	8.0.x	3.1	4.0.x
HP Replication Solutions Manager 2.1 ¹	•		•							
HP Replication Solutions Manager 3.0 ¹	•	•	•				•			
HP Replication Solutions Manager 3.1 ¹	•	•	•				•			
HP Replication Solutions Manager 4.0.x ¹	•	•	•	•	•	•	•	•		
Storage Management Appliance software 2.1	•	•	•	•	•	•	•	•	•	•
HP EVAInfo 8.0 ³	• ⁴	•	•	•	•	•				
HP SmartStart EVA Storage 1.0 ⁵					•	•				

¹Supported on non-English versions of Windows.

²HP Command View EVA supports multi NIC environments. See your vendor documentation for configuration instructions.

³HP EVAInfo is supported on HP-UX PA-RISC 11.11/11iv1 (64b), HP-UX 11.23 PI/11iv2 (64b PA-RISC), HP-UX 11.23 /11iv2 (64b Intel), HP-UX 11.31/11iv3 (64b PA-RISC) and HP-UX 11.31/11iv3 (64b Intel).

⁴HP EVAInfo does not support all features on VCS 3.1xx controller software. See the EVAInfo release notes for more information.

⁵HP SmartStart EVA Storage is supported on Microsoft Windows Server 2003 Standard and Enterprise Editions (x86 32-bit, x64 64-bit, Itanium). To configure an application server, HP SmartStart EVA Storage is supported on Microsoft Windows Server 2008 Standard and Enterprise Editions (x86 32-bit, x64 64-bit, Itanium).

2.0 HP Command View EVA interoperability support

This table lists the EVA controller software and layered applications that are supported with HP Command View EVA.							
<ul style="list-style-type: none"> – HP Command View EVA 6.0 includes HP Command View EVAPerf 6.0, SMI-S EVA 6.0, and SSSU 6.0. – HP Command View EVA 7.0 includes HP Command View EVAPerf 7.0, SMI-S EVA 7.0, and SSSU 7.0. – HP Command View EVA 8.0 includes HP Command View EVAPerf 8.0, SMI-S EVA 8.0, and SSSU 8.0. 							
	HP Command View EVA						
	6.0	6.0.1	6.0.2	7.0	7.0.1	8.0	8.0.1
EVA controller software							
VCS 3.1xx	•	•	•	•	•	•	•
VCS 4.1xx					•	•	•
XCS 5.1xx	•	•	•				
XCS 6.1xx			•	•	•	•	•
XCS 6.2xx							•
XCS 09000000/09001000						•	•
XCS 09003000							•
SAN applications							
HP Application Recovery Manager			•	•			
HP Configuration Collector 1.2.4	•	•	•	•	•	•	•
HP Command View for Tape Libraries 1.8b ¹	•	•	•	•	•	•	
HP Command View for Tape Libraries 2.0 ¹				•			
HP Command View for Tape Libraries 2.2 ¹					•	•	
HP Command View XP 2.2B ²	•	•	•	•	•	•	
HP Command View XP AE 5.1 ²	•	•	•				
HP Command View XP AE 5.6 ²				•	•		
HP Command View XP AE 5.8 ²						•	
HP Command View XP AE 5.9 ²							•
HP Cluster Extension EVA for Windows 1.01.01	•	•	•	•			
HP Cluster Extension EVA for Linux 1.02.00	•	•	•				
HP Fast Recovery Solution 2.02.02							
HP Instant Support Enterprise Edition A3.095	•	•	•	•	•	•	
HP Metrocluster A.02.00			•				
HP Navigator 3.0 through 4.1	•	•	•	•	•	• ³	• ³
HP Navigator 4.3 and 4.4	•	•	•	•	•	•	•
HP Open Service Event Manager 1.4.4	•	•	•	•	•	•	
HP Remote Support Configuration Collector	•	•	•	•	•	•	•
HP Remote Support Pack A.05.10 ⁴							•
HP Replication Solutions Manager 2.1	•	•	•				
HP Replication Solutions Manager 3.0			•	•	•		
HP Replication Solutions Manager 3.1			•	•	•		
HP Replication Solutions Manager 4.0.x					•	•	•
<p>¹HP Command View EVA and HP Command View for Tape Libraries may coexist on the same server. However, only one SMI-S CIMOM and provider can be installed. Subsequent SMI-S installations are likely to fail.</p> <p>²HP Command View EVA and HP Command View XP and/or HP Command View XP AE may coexist on the same server.</p> <p>³This combination of applications is not supported on an EVA4400.</p> <p>⁴Supported on the same server as HP Systems Insight Manager 5.2 as long as the server is running HP Command View EVA 8.0.1.</p>							

2.0 HP Command View EVA interoperability support (cont'd)

	HP Command View EVA						
	6.0	6.0.1	6.0.2	7.0	7.0.1	8.0	8.0.1
SAN applications (cont'd)							
HP SmartStart 7.6	.	.	.	.	.	.	.
HP Storage Area Manager 3.2	. ⁵	. ⁵	. ⁵	. ⁵	. ⁵	. ⁵	
HP Storage Data Protector 5.5, 6.0			. ⁶	. ⁶	. ⁶		
HP Storage Essentials 5.1 SP1 for Windows kit		. ⁷	. ⁷				
HP Storage Essentials Enterprise Edition 5.1 Linux kit (Bld. 5.1.1)		. ⁷	. ⁷				
HP Storage Essentials Enterprise Edition 5.1 SP2 (Windows/Linux)		. ⁷	. ⁷				
HP Storage Essentials Enterprise Edition 5.1 SP3 (Windows/Linux)		. ⁷	. ⁷	. ⁷			
HP Storage Essentials Enterprise Edition 5.1 SP4 (Windows/Linux)		. ⁸	. ⁸	. ⁸	. ⁸	. ^{3, 8}	
HP Storage Essentials Standard Edition 5.1 SP4 (Windows)		. ⁷	. ⁷	. ⁷	. ⁷	. ^{3, 7}	
HP Storage Essentials Standard Edition 5.1 SP5 (Windows)			. ⁷	. ⁷	. ⁷	. ⁷	. ⁷
HP Storage Essentials Standard Edition 6.0 SP1 (Windows)			. ⁷	. ⁷	. ⁷	. ⁷	. ⁷
HP Storage Essentials Standard Edition 6.0.1 (Windows)			. ⁷	. ⁷	. ⁷	. ⁷	. ⁷
HP Systems Insight Manager 5.0		.	.	.	.	.
HP Systems Insight Manager 5.1 or 5.1 SP1		.	.	.	.	.
HP Systems Insight Manager 5.2							. ⁹
HP VDS/VSS Hardware Provider 4.00.00/4.00.01							
HP VDS/VSS Hardware Provider 4.02.00	.	.	.	.	.	.	.
HP WEBES 4.5.1 ¹⁰	.	.	.				
HP WEBES 5.0 ¹⁰			.		.		
HP WEBES 5.1 ¹⁰			.		.	.	.
HP WEBES 5.2					.	.	.
iSCSI connectivity							
mpx100 firmware 2.0.8.8	.	.	.				
mpx100 firmware 2.0.9.0			.	.	.	.	.
mpx100b firmware 2.4.2 ¹¹						.	.
<p>⁵Supported via HP Storage Area Manager's DPI interface to HP Command View EVA. The SMI-S EVA interface is not supported.</p> <p>⁶This compatibility reference applies only to HP Storage Data Protector customers who use either the Zero Downtime Backup and Instant Recovery for EVA integration or Microsoft Volume Shadow Copy Services for EVA-based backups. It does not restrict HP Command View EVA and HP Storage Data Protector deployments where these components are not used.</p> <p>⁷Supported via a provider included with HP Storage Essentials. HP SMI-S EVA is not supported. Provisioning via the HP Storage Essentials user interface is not supported.</p> <p>⁸Supported via a provider included with HP Storage Essentials. HP SMI-S EVA is not supported but will coexist. Provisioning via the HP Storage Essentials user interface (GUI/CLI) is supported.</p> <p>⁹These versions of HP Systems Insight Manager and HP Command View EVA may coexist on the same server.</p> <p>¹⁰HP recommends installing the latest version of WEBES.</p> <p>¹¹Supported on the EVA4400 only.</p>							

3.0 Controller software version support

3.1 Upgrade support for controller software versions

This table shows upgrade support for the controller software versions. A bullet (•) indicates you can perform an upgrade from the version in the FROM column to the version in the TO column. A blank cell indicates an upgrade is not supported and NA indicates an upgrade is not applicable because either there is no change or only a downgrade is allowed.

NOTE: Controller software 6.110 supersedes and replaces 6.100. XCS 6.110 can be installed on any EVA4000/6000/8000 or EVA4100/6100/8100 storage solution. Customers currently running 6.100 on an EVA4000/6000/8000 do not need to upgrade to XCS 6.110 as the only functional difference between 6.100 and 6.110 is added support for the EVA4100/6100/8100. XCS 6.110 is the minimum required version for the EVA4100/6100/8100.

FROM controller software version	TO controller software version						
	VCS 3.1xx	VCS 4.1xx	XCS 5.1xx	XCS 6.1xx	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000
VCS 3.1xx	• ¹	• ¹	• ²	• ²	• ²	NA	NA
VCS 4.1xx	NA	• ¹	• ²	• ²	• ²	NA	NA
XCS 5.1xx	NA	NA	• ³	• ³	• ³	NA	NA
XCS 6.1xx	NA	NA	NA	• ³	• ³	NA	NA
XCS 6.2xx	NA	NA	NA	NA	• ³	NA	NA
XCS 09000000/09001000	NA	NA	NA	NA	NA	• ³	• ³
XCS 09003000	NA	NA	NA	NA	NA	NA	• ³

¹An offline upgrade is required.
²A data-in-place upgrade is required.
³Online upgrade is supported.

3.2 Downgrade support for controller software versions

This table shows downgrade support for the controller software versions. A bullet (•) indicates you can downgrade from the version in the FROM column to the version in the TO column. A blank cell indicates a downgrade is not supported and NA indicates a downgrade is not applicable because either there is no change or only an upgrade is allowed.

NOTE: If you are running XCS 6.110 on an EVA4100/6100/8100, you cannot downgrade to XCS 6.100 or earlier versions.

FROM controller software version	TO controller software version						
	VCS 3.1xx	VCS 4.1xx	XCS 5.1xx	XCS 6.1xx	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000
VCS 3.1xx	• ¹	NA	NA	NA	NA	NA	NA
VCS 4.1xx	• ²	• ²	NA	NA	NA	NA	NA
XCS 5.1xx				NA	NA	NA	NA
XCS 6.1xx			• ²	• ²	NA	NA	NA
XCS 6.2xx			NA	• ²	• ³	NA	NA
XCS 09000000/09001000	NA	NA	NA	NA	NA	• ³	NA
XCS 09003000	NA	NA	NA	NA	NA	• ⁴	• ³

¹An offline downgrade is required.

²An array initialization is required, which results in data loss or a restore.

³Online downgrade is supported.

⁴Only supported if the EVA4400 controller is an HSV300. A downgrade is not supported if the EVA4400 controller is an HSV300-S.

3.3 Controller software version support in remote replication environments

This table shows support between controller software versions in remote replication environments, meaning the controller software versions that are running on the source and destination arrays. A bullet (•) indicates support when the source and destination arrays are running the controller software versions listed. A blank cell indicates replication between the controller software versions is not supported.

	Controller software version (destination array)						
	VCS 3.1xx	VCS 4.1xx	XCS 5.1xx	XCS 6.1xx ²	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000
Controller software version (source array)							
VCS 3.1xx	• ³	• ^{1,3}	• ³	• ⁴	• ³		• ⁷
VCS 4.1xx	• ^{1,3}	• ³	• ³	• ⁴	• ³		• ⁷
XCS 5.1xx	• ³	• ³	• ³	• ^{1,4}			
XCS 6.1xx	• ⁴	• ⁴	• ^{1,4}	• ⁵	• ^{1,5}		• ^{5,6}
XCS 6.2xx	• ³	• ³		• ^{1,5}	• ⁵		• ⁵
XCS 09000000/09001000						• ⁴	• ^{1,4}
XCS 09003000				• ^{5,6}	• ⁵	• ^{1,4}	• ⁵

¹Supported during the 60 day upgrade window only, meaning the source and destination arrays can be running these different controller software versions while you are upgrading the arrays and the upgrades must be completed within 60 days. The upgrade window begins with the upgrade of the first array. It concludes when all arrays in a direct or indirect replication relationship with the first array have been upgraded. You can only upgrade one controller software family (either VCS or XCS) at a time and only allow two versions within that family. During the upgrade window, do not make changes to DR groups (adding/delete DR groups or adding/deleting members of DR groups).

²Before upgrading your storage system to XCS 6.xxx firmware, all source and destination DR groups must be in Synchronous mode. Check each DR group to verify this setting, before proceeding with the firmware upgrade process. Enhanced asynchronous replication is only available when both arrays are running XCS 6.000 or later. Asynchronous replication in XCS 6.000 or later (not including 6.200) is not compatible with asynchronous replication in earlier versions of controller software (XCS 5.1xx or earlier, VCS).

³Synchronous and standard asynchronous replication is supported between these controller software versions.

⁴Asynchronous replication is not supported between these controller software versions. Only synchronous replication is supported.

⁵Synchronous and enhanced asynchronous replication is supported between these controller software versions.

⁶Supported as long as the controller software on the HSV200-x/HSV210-x controller is upgraded to XCS 6.2xx within 60 days.

⁷The following restrictions apply:

- a) Replication from EVA3000/5000 to EVA4400
- b) Synchronous write mode only
- c) Supported on VCS 3.1xx and 4.1xx
- d) Fibre Channel connectivity supported (no long distance support)
- e) The 60 day upgrade window applies, no permanent relationships allowed

4.0 HP StorageWorks EVA software deployment options

<p>You can install HP StorageWorks EVA management and replication software on a management server. The management servers are:</p> <p>General-purpose server: A server other than the HP OpenView Storage Management Appliance that runs customer applications, such as file and print services</p> <p>HP OpenView Storage Management Appliance (SMA): A centralized, dedicated monitoring and management hardware-software solution for the storage area network (SAN)</p> <p>Dedicated management server: A Windows host that is intended solely for HP storage software, such as HP OpenView Storage Node Manager, HP OpenView Storage Area Manager add-on software modules, or HP StorageWorks EVA software</p> <p>HP ProLiant Storage Server: A server similar to the general-purpose server; it can be used for managing EVAs in the SAN as well as traditional NAS-based applications.</p>	
<p>Required hardware</p>	
<p>General-purpose server Dedicated management server</p>	<p>x86 and x64 architectures are supported Processor: 1.26 GHz (minimum) Memory: 2 GB (minimum) Disk space requirements:</p> <ul style="list-style-type: none"> – 200 MB for HP Command View EVA installation – 2 GB for HP Command View EVA log files (During heavy management command activity, the required space for logs may increase sharply in a 72-hour period.) – 10 MB for each managed array – 350 MB for HP Replication Solutions Manager installation – Additional 300–400 MB for HP Replication Solutions Manager installation to accommodate log and database growth – 10/100 Mbps for RSM server to RSM host agent connectivity <p>NOTE: HP Command View EVA and HP Replication Solutions Manager are supported on any server (including blade servers) as long as the server meets the minimum configuration requirements for a general purpose server as noted above.</p>
<p>Storage Management Appliance</p>	<p>G1, G2, G3</p>
<p>HP ProLiant Storage Server</p>	<p>HP ProLiant DL380 G5 x64 SAN Storage Server HP ProLiant DL380 G5 Base Storage Server HP ProLiant DL585 Storage Server HP ProLiant DL585 G2 x64 Storage Server HP ProLiant DL585 Dual Core Storage Server</p> <p>Notes: 1) In most configurations, the DL380 G5 x64 SAN Storage Server is preferred; 2) the DL380 G5 SAN Storage Server is obsolete as of 20-Aug-2007.</p>

4.1 Supported software for management server types

This table lists the software that is supported on each management server. Although multiple software products are compatible with a management server, these software products may not be compatible with each other.				
	General-purpose server	Dedicated management server	Storage Management Appliance	ProLiant Storage Server ⁸
HP Command View EVA ^{1, 2}	•	•	•	•
HP Command View EVA Cluster Failover on a Windows server				
HP Command View EVA and HP Command View XP and/or HP Command View XP AE coexistence on same Windows server	•	•		•
HP StorageWorks Command View for Tape Libraries and HP Command View EVA software coexistence	•	•		•
HP Replication Solutions Manager ^{3, 4}	•	•	•	•
HP StorageWorks Secure Path (required for multipath configurations)	•	NA	NA	•
HP StorageWorks Secure Path Manager ⁵	•	•	•	•
HP Storage Essentials ⁶		•		
HSG Element Manager 1.0f	NA	NA	•	NA
ISEE Remote Support (HP platforms only)	•	•	•	•
Microsoft Operations Manager support (MOM) ⁷	•	•	•	•
Number of HP StorageWorks Enterprise Virtual Arrays supported ²	16	16	16	16
Number of SAN islands supported (managing multiple SANs)	6	6	2	6
Operating system connectivity 3.0e and later OR Storport Driver	•	NA	NA	•
Operating systems ⁴	Microsoft Windows Server 2003 Standard and Enterprise Editions SP1/SP2/R2 (x86 32-bit or x64 64-bit)	Microsoft Windows Server 2003 Standard and Enterprise Editions SP1/SP2/R2 (x86 32-bit or x64 64-bit)	HP Storage Management Appliance software 2.1 (based on Microsoft Windows 2000)	Microsoft Windows Storage Server 2003 (DL380 base) or Microsoft Windows Unified Data storage Server 2003 (DL380 x64, DL585 G2 x64)
WEBES (HP Services obligation required)	•	•	•	•

¹Software must be installed on the C:\ drive.

²HP recommends a maximum of four EVAs per HP Command View EVA instance. This recommendation applies to all management server types.

³When running this software on any SMA (G1, G2, or G3), the maximum number of EVAs supported is four.

⁴Do not install HP StorageWorks Command View SDM 1.09 and HP Replication Solutions Manager 1.1 or 1.2 on the same management server. Do not install HP Command View XP and HP Replication Solutions Manager on the same management server.

⁵SmartStart 7.2 requires HP Secure Path Manager 4.0C SP2.

⁶A dedicated management server is required for HP Storage Essentials. Do not install HP Command View EVA and HP Storage Essentials on the same server.

⁷Supported with HP StorageWorks Management Pack for MOM 2005.

⁸Microsoft Windows 2000 is no longer supported on the ProLiant Storage Server. When calling for support, customers may be asked to upgrade to later versions to take advantage of specific quality improvements.

4.2 Supported EVA software operating environments

This table lists the supported servers, operating systems and application integration for EVA software. A bullet (*) indicates support on all EVA models, an EVA model indicates support with that EVA model only, and a blank cell indicates no support. The environments are:

HP Business Copy EVA Basic I/O—The ability for HP Business Copy EVA (independent of HP Replication Solutions Manager) to work with this operating system. There may or may not be support through HP RSM on that operating system, as indicated in this table.

HP Continuous Access EVA Basic I/O—The ability for HP Continuous Access EVA (independent of HP Replication Solutions Manager) to work with this operating system. There may or may not be support through HP RSM on that operating system, as indicated in this table.

HP RSM host agent—The HP RSM host agent is installed on servers running this operating system. The CLUI client is also supported on this operating system if the HP RSM host agent is supported on it.

HP Storage Volume Growth — The ability for HP Storage Volume Growth to work with this operating system.

HP RSM Server—The ability for HP Replication Solutions Manager to be installed on this operating system. You can use RSM Server to manage LUNs that are presented to any EVA-supported operating system.

HP CV EVA and EVAPerf—The ability for HP Command View EVA and HP Command View EVAPerf to work with this operating system. **Currently, HP Command View EVA and**

HP Command View EVAPerf can only be installed on a server running a supported version of Windows 2000 or Windows 2003.

HP SSSU—The ability for HP StorageWorks Storage Scripting Utility to be installed on and work with this operating system.

Server, OS, or application type	Environment											
	HP Business Copy EVA I/O	HP Continuous Access EVA I/O	HP RSM host agent ^{1,2}		HP Storage Volume Growth 1.1	HP RSM server		HP DButil ⁵	HP CV EVA 7.0.x & EVAPerf 7.0.x	HP CV EVA 8.0.x & EVAPerf 8.0.x	HP SSSU	
			3.1 ³	4.0.x ⁴		3.1	4.0.x				7.0	8.0.x ⁶
Server												
Dedicated management server					*	*	*	*	*	*	*	*
General-purpose server			*	*	*	*	*	*	*	*	*	*
General-purpose server IP only connectivity ⁷									*			*
ProLiant Storage Server			*	*	* ⁸	*	*	*	*	*	*	*
Storage Management Appliance						*	*		*	*	*	*
Storage Management Appliance with HP OpenView Storage Area Manager									*	*	*	*
Apple Mac OS X												
HP HP-UX PA-RISC 11.11/11iv1 (64b)	All HP Business Copy EVA functions are supported on all EVA-supported operating systems.	All HP Continuous Access EVA functions are supported on all EVA-supported operating systems.										
HP HP-UX 11.23 PI/11iv2 (64b PA-RISC)			3.0	4.0						*	8.0	
HP HP-UX 11.23 PI/11iv2 (64b Intel)			3.0	4.0						*	8.0	
HP HP-UX 11.31/11iv3 (64b PA-RISC)			3.0	4.0						*	8.0	
HP HP-UX 11.31/11iv3 (64b Intel)			3.0	4.0						*	8.0	
HP OpenVMS 7.3-2 on Alpha servers											*	
HP OpenVMS 8.2 on Alpha servers											*	
HP OpenVMS 8.2-1 on Integrity servers											*	
HP OpenVMS 8.3 on Alpha servers					3.0	4.0					*	8.0
HP OpenVMS 8.3 on Integrity servers					3.0	4.0					*	8.0
HP Tru64 5.1b-4					3.0 ¹⁰	4.0 ¹⁰					*	8.0
IBM AIX 5.2					3.0	*					*	
IBM AIX 5.3					3.0	*					*	8.0
IBM AIX 6.1 ⁹						*					*	8.0

¹See Table 4.3, "RSM host agent support" for host volume mounting restrictions.

²See Table 4.4, "RSM sever and host agent compatibility" for supported combinations of RSM server and RSM host agent versions.

³The HP RSM 3.1 host agent is only applicable to supported versions of Microsoft Windows. For all other supported operating systems, the HP RSM 3.0 host agent applies.

⁴The HP RSM 4.0.1 host agent is only applicable to supported versions of Microsoft Windows, IBM AIX, and VMware. For all other supported operating systems, the HP RSM 4.0 host agent applies.

⁵To download HP DButil, go to <http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html> and select **Software & drivers**.

⁶HP SSSU 8.0.1 is only applicable to supported versions of Microsoft Windows. For all other supported operating systems, HP SSSU 8.0 applies and is supported with HP Command View EVA 8.0 and 8.0.1.

⁷This is an iSCSI only implementation. For more information, see the HP StorageWorks Command View EVA iSCSI deployment white paper, which is available at:

http://h18006.www1.hp.com/storage/softwhitepapers.html?jumpid=req_R1002_USEN.

⁸For the ProLiant Storage Server, HP SVG is supported on Windows Storage Server 2003 only.

⁹The HP RSM 4.0.1 host agent requires SP3 or later.

¹⁰The HP RSM host agent requires that CXX 7.1 runtime libraries be installed on the host server running this operating system.

Download the CXXLIB710 kit from the following URL: <ftp://ftp.compaq.com/pub/products/C-CXX/tru64/cxx/CXXREDIST710.tar>. This kit includes the CXX shared libraries.

4.2 Supported EVA software operating environments (cont'd)

Server, OS, or application type	Environment												
	HP Business Copy EVA I/O	HP Continuous Access EVA I/O	HP RSM host agent ^{1,2}		HP Storage Volume Growth 1.1	HP RSM server		HP DButil ⁵	HP CV EVA 7.0.x & EVAPerf 7.0.x	HP CV EVA 8.0.x & EVAPerf 8.0.x	HP SSSU		
			3.1 ³	4.0.x ⁴		3.1	4.0.x				7.0	8.0.x ⁶	
Operating system													
Microsoft Windows 2000 Server SP2/SP3/SP4	All HP Business Copy EVA functions are supported on all EVA-supported operating systems.	All HP Continuous Access EVA functions are supported on all EVA-supported operating systems.			•								
Microsoft Windows 2000 Advanced Server SP4 (x86)					•								
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x86 32-bit) ¹¹			• ¹³	• ¹³	•	•	•	•	•	•	•	•	•
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x64 64-bit) ^{11,12}			• ¹³	• ¹³	•	•	•	•	•	•	•	•	•
Microsoft Windows Server 2003 Standard Edition SP1/SP2 (Itanium) ¹¹			• ¹³	• ¹³									
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x86 32-bit) ¹¹			• ¹³	• ¹³	•	•	•	•	•	•	•	•	•
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x64 64-bit) ^{11,12}			• ¹³	• ¹³	•	•	•	•	•	•	•	•	•
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2 (Itanium) ¹¹			• ¹³	• ¹³	•	•	•	•	•	•	•	•	•
Microsoft Windows Server 2003 Datacenter Edition SP1/SP2 (Itanium) ¹¹			• ¹³	• ¹³								•	•
Microsoft Windows Server 2008 (x86 32-bit) (beta 3.0 version)			•									•	•
Microsoft Windows Server 2008 (Itanium) (beta 3.0 version)			•									•	•
Microsoft Windows Server 2008 Standard Edition and Enterprise Edition (x64 64-bit) (beta 3.0 version) ¹²			•									•	•
Microsoft Windows Server 2008 (x86 32-bit)				•									•
Microsoft Windows Server 2008 (Itanium)				•									•
Microsoft Windows Server 2008 Standard Edition and Enterprise Edition (x64 64-bit) ¹²		•									•		
Microsoft Windows XP	EVA4000	EVA4000				• ¹⁴	• ¹⁴						
Novell Netware 6.5 SP5	All HP Business Copy EVA functions are supported on all EVA-supported operating systems.	All HP Continuous Access EVA functions are supported on all EVA-supported operating systems.									•	8.0	
Novell Netware 6.5 SP6											•	8.0	
Red Hat Enterprise Linux AS & ES 3.0 (x86 32-bit) Update 8, 9			3.0									•	
Red Hat Enterprise Linux AS & ES 3.0 (x64 64-bit) Update 8, 9													
Red Hat Enterprise Linux AS & ES 3.0 (Itanium) Update 8, 9												•	
Red Hat Enterprise Linux AS & ES 4.0 (x86 32-bit) Update 5, 6			3.0	4.0 ¹⁵								•	8.0
Red Hat Enterprise Linux AS & ES 4.0 (x64 64-bit) Update 5, 6			3.0	4.0 ¹⁵								•	8.0
Red Hat Enterprise Linux AS & ES 4.0 (Itanium) Update 5, 6		4.0 ¹⁵								•	8.0		

¹¹The minimum supported version for HP RSM host agent 3.1 or later is SP2 or R2. SP1 is no longer supported.

¹²On x64 operating systems, Windows Performance Monitor must be launched in 32-bit mode. See the *HP StorageWorks Command View EVA 8.0.1 release notes* for details.

¹³The host agent on this operating system depends on SNIA libraries that are delivered with HP's SAN Infrastructure offerings. If you have not already done so, go to the software downloads page of the HP Business Support Center web site (<http://www.hp.com/support/downloads>). In the Storage section, click **Storage Networking** and then select your product.

¹⁴HP RSM server on Windows XP is supported for simulation mode only.

¹⁵HP RSM host agent 4.0 is only supported on the Update 6 version of this operating system.

4.2 Supported EVA software operating environments (cont'd)

Server, OS, or application type	Environment													
	HP Business Copy EVA I/O	HP Continuous Access EVA I/O	HP RSM host agent ^{1,2}		HP Storage Volume Growth 1.1	HP RSM server		HP DButil ⁵	HP CV EVA 7.0.x & EVAPerf 7.0.x	HP CV EVA 8.0.x & EVAPerf 8.0.x	HP SSSU			
			3.1 ³	4.0.x		3.1	4.0				7.0	8.0.x ⁶		
Operating system														
Red Hat Linux AS & ES 5.0 (x86 32-bit) Update 1	All HP Business Copy EVA functions are supported on all EVA-supported operating systems.	All HP Continuous Access EVA functions are supported on all EVA-supported operating systems.		4.0								8.0		
Red Hat Linux AS & ES 5.0 (x64 64-bit) Update 1				4.0									8.0	
Red Hat Linux AS & ES 5.0 (Itanium) Update 1				4.0										8.0
Sun Solaris 8 (SPARC)														
Sun Solaris 9 (SPARC)					3.0 ^{13,15}	4.0 ^{13,16}								• 8.0
Sun Solaris 10 (SPARC)					3.0 ¹³	4.0 ¹³								• 8.0
SuSE Linux 8 (x86 32-bit) SP4														•
SuSE Linux 8 (x64 64-bit) SP4														•
SuSE Linux 8 (Itanium) SP4														
SuSE Linux Enterprise Server 9.0 (x86, x86_64 32-bit) SP3					3.0	4.0								• 8.0
SuSE Linux Enterprise Server 9.0 (x64 64-bit) SP3					3.0	4.0								8.0
SuSE Linux Enterprise Server 9.0 (Itanium) SP3						4.0								• 8.0
SuSE Linux Enterprise Server 10.0 (x86, x86_64 32-bit) SP1						4.0								• 8.0
SuSE Linux Enterprise Server 10.0 (x64 64-bit) SP1						4.0								8.0
SuSE Linux Enterprise Server 10.0 (Itanium) SP1						4.0								8.0
VMware ESX Server 2.5														
VMware ESX Server 2.5.2														• 8.0
VMware ESX Server 2.5.3														
VMware ESX Server 2.5.4														• 8.0
VMware ESX Server 3.0.0														
VMware ESX Server 3.0.1														
Vmware ESX Server 3.5				• ¹⁷								8.0		
Application														
Oracle 9i, 10G R2			• ¹⁸	• ¹⁸	•									
SQL Server 2000 Enterprise SP3 or later								•						
SQL Server 2000 Developer SP3 or later								•						
SQL Server 2005 Enterprise SP1/SP2								•						
SQL Server 2005 Standard SP2								•						
<p>¹⁶The host agent on this operating system does not support VERITAS DMP when accessing an EVA4000, EVA4100, EVA6x00, or EVA8x00.</p> <p>¹⁷Supported with Windows 2003 Enterprise Edition (x86 and x64) as a guest OS. No HBA information will be reported by the host agent in the Windows guest OS. The Windows guest OS can be used as the source for replication jobs only and not as the target or mount host. Replicas can be presented to and mounted on physical hosts running a compatible Windows operating system. All operations are supported only on Raw Device Mapped LUNs configured with physical compatibility mode. DC-Management and replication operations are currently not supported on VMFS volumes using HP Replication Solutions Manager.</p> <p>¹⁸Oracle application integration is supported on Windows hosts only and works in Real Application Clusters (RAC) environments. There is no ASM support for Oracle.</p>														

4.3 RSM host agent support

<p>This table describes RSM host agent support for:</p> <ul style="list-style-type: none"> — Volume Manager — Mounting host volume copies on the same host — Multipath solutions — Cluster software 							
Host operating system	Supported Volume Manager ¹	Mounting a host volume copy on the same host as the source ²	Compatible multipath solution ³			Supported cluster software	
			EVA3000/5000		EVA4x00/6x00/8x00		EVA4400
			Active/Passive (VCS 3.xxx)	Active/Active (VCS 4.xxx)			
HP HP-UX	Native Logical Volume ⁴	Y	Secure Path 3.0F SP3	Secure Path 3.0F SP3	11.23: Secure Path 3.0F, PVLlinks ⁵ (no VERITAS DMP) 11.31: Native multipathing	11.23: Autopath/ Secure Path 3.0F SP3 11.31: Native multipathing	Serviceguard ⁶
HP OpenVMS	NA	Y	Native multipathing software			Native cluster software	
HP Tru64 5.1b-4	Native Logical Volume ⁷	Y	Native multipathing software			Not supported	TruCluster
IBM AIX	Native Logical Volume	N	Secure Path 2.0D SP2 or SP3 ⁸	MPIO 1.0.0.2 (AntemetA basic HP Business Copy EVA support only, no host agent support)	MPIO 1.0.1.0 (MPIO beta version)	HACMP 5.3	
Microsoft Windows 2003	Replication and DC-Management of Windows dynamic disks and VERITAS Volume Manager are not supported	Y, except copies of Windows Cluster Quorum disks in the same cluster	HP MPIO Basic Failover DSM for EVA Disk Arrays 1.2	MPIO Basic Failover 2.00.01	HP MPIO full featured DSM for EVA 3.00.00	Microsoft Cluster Server	
Microsoft Windows 2008			Not supported				
<p>¹If a volume group spans more than one storage system, HP Replication Solutions Manager only supports replication of volume groups spanning storage systems with the same controller software version.</p> <p>²Mounting a host volume copy on the same host as the source is supported with HP Business Copy EVA and HP Replication Solutions Manager.</p> <p>³These solutions apply to HP Continuous Access EVA in general.</p> <p>⁴Replication manager host volume job commands are supported only on HP-UX disks with Logical Volume Manager.</p> <p>⁵If you use Pvlinks and require multiple paths to a host volume, you must create the additional paths after the host volume is created. See <i>HP StorageWorks Replication Solutions Manager online help and user guide</i> or <i>HP StorageWorks Replication Solutions Manager administrator guide</i> for more information.</p> <p>⁶DC-Management is not supported on cluster-aware disks and volume groups.</p> <p>⁷Replication of Advfs volumes on disks is supported, but replication of LSM volumes is not supported.</p> <p>⁸Secure Path 2.0D SP3 is the minimum required version for AIX 5.3.</p>							

4.3 RSM host agent support (cont'd)

Host operating system	Supported Volume Manager ¹	Mounting a host volume copy on the same host as the source ²	Compatible multipath solution ³				Supported cluster software
			EVA3000/5000		EVA4x00/6x00/8x00	EVA4400	
			Active/Passive (VCS 3.xxx)	Active/Active (VCS 4.xxx)			
Red Hat Linux AS & ES 4.0 Update 6	Sistina 1.08-13	N	HP Device Mapper Multipath kit 4.x QLogic failover driver 8.01.07.25 (no Secure Path) Emulex Multipulse driver 2.2.20				Serviceguard 11.16
Red Hat Linux AS & ES 5.0 (5.1 for x64)	Sistina 2.01.14		Serviceguard 11.18				
Sun Solaris (SPARC) ⁹	Veritas Volume Manager 4.1	Y, except copies of Solaris disk groups	Secure Path 3.0D SP1 ^{10,11}	Not supported	MPxIO ¹² and Veritas DMP ¹³	MPxIO 4.4.13	NA
SuSE Linux SLES 9.0 SP3	Sistina 2.01.14	N	HP Device Mapper Multipath kit 4.x QLogic failover driver 8.01.07.25 (no Secure Path) Emulex Multipulse driver 2.2.20				Serviceguard 11.16
SuSE Linux SLES 10.0 SP1	Sistina 2.01.14		Serviceguard 11.18				

⁹The HP RSM host agent on the Solaris 9 operating system does not support VERITAS Volume Manager when accessing an EVA4000, EVA4100, EVA6x00, or EVA8x00.

¹⁰To display host properties correctly, HP RSM requires the QLA2310F/FCA2257P, QLA2342, QLA2340, or LP10000DC host bus adapter when running the Secure Path multipath solution.

¹¹The HP RSM host agent on the Solaris operating system only supports SecurePath with controller software 3.028 or earlier only.

¹²To display host properties correctly, HP RSM requires the QLA2342 (SUN) host bus adapter when running the MPxIO multipath solution.

¹³To display host properties correctly, HP RSM requires the ASL libraries on the host for QLA2310F/FCA2257P, QLA2342, or QLA2340 host bus adapter when running the VERITAS multipath solution.

4.4 RSM server and host agent compatibility

This table shows which versions of RSM host agent are supported on each operating system. Then, it shows which versions of RSM server are compatible with those versions of RSM host agent. It also shows which features of Dynamic Capacity Management are supported on each operating system. See Table 4.5, Dynamic Capacity Management compatibility, for compatibility with other EVA applications.					
Operating system	RSM host agent	RSM server 3.1	RSM server 4.0.x	Dynamic Capacity Management	
				Extend	Shrink
HP HP-UX 11.23 PA-RISC (64b PA-RISC)	3.0	•			
	4.0		•	• ⁴	• ⁴
HP HP-UX 11.23 PA-RISC (64b Intel)	3.0	•			
	4.0		•	• ⁴	• ⁴
HP HP-UX 11.31/11iv3 (64b PA-RISC)	3.0	•			
	4.0		•	• ⁵	• ⁵
HP HP-UX 11.31/11iv3 (64b Intel)	3.0	•			
	4.0		•	• ⁵	• ⁵
HP OpenVMS 8.3 on Alpha servers	3.0	•			
	4.0		•		
HP OpenVMS 8.3 on Integrity servers	3.0	•			
	4.0		•		
HP Tru64 5.1b-4	3.0	•			
	4.0		•		
IBM AIX 5.2, 5.3	3.0	•			
	4.0.x		•		
IBM AIX 6.1	4.0.x		•		
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x86 32-bit) ^{1,2}	3.1	•		•	
	4.0.x		•	•	
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x64 64-bit) ^{1,2}	3.1	•		•	
	4.0.x		•	•	
Microsoft Windows Server 2003 Standard Edition SP1/SP2 (Itanium) ^{1,2}	3.1	•		•	
	4.0.x		•	•	
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x86 32-bit) ^{1,2,3}	3.1	•		•	
	4.0.x		•	•	
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x64 64-bit) ^{1,2,3}	3.1	•		•	
	4.0.x		•	•	
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2 (Itanium) ^{1,2}	3.1	•		•	
	4.0.x		•	•	
Microsoft Windows Server 2003 Datacenter Edition SP1/SP2 (Itanium) ^{1,2}	3.1	•		•	
	4.0.x		•	•	

¹Dynamic Capacity Management is not supported on cluster-aware disks.

²The minimum supported version for HP RSM host agent 3.1 or later is SP2 or R2. SP1 is no longer supported.

³Also supported as a guest OS with VMware ESX 3.5.

⁴On HP-UX 11.23, only manual (not policy-based) extend and shrink is supported. For more information, see "DC-Management support" in the *HP StorageWorks Replication Solutions Manager user guide*.

⁵On HP-UX 11.31, extend is supported on all host volume types except VxVM and HFS filesystem. Shrink is supported only on non-LVM and Veritas JFS online host volumes. For more information, see "DC-Management support" in the *HP StorageWorks Replication Solutions Manager user guide*.

4.4 RSM server and host agent compatibility (cont'd)

Operating system	RSM host agent	RSM server 3.1	RSM server 4.0.x	Dynamic Capacity Management	
				Extend	Shrink
Microsoft Windows Server 2008 (x86 32-bit) (beta 3.0 version) ²	3.1	•		•	•
Microsoft Windows Server 2008 (Itanium) (beta 3.0 version)	3.1	•		•	•
Microsoft Windows Server 2008 Standard Edition and Enterprise Edition (x64 64-bit) (beta 3.0 version)	3.1	•		•	•
Microsoft Windows Server 2008 (x86 32-bit) ⁶	4.0.x		•	•	•
Microsoft Windows Server 2008 (Itanium) ⁶	4.0.x		•	•	•
Microsoft Windows Server 2008 Standard Edition (x64 64-bit) ⁶	4.0.x		•	•	•
Microsoft Windows Server 2008 Enterprise Edition (x64 64-bit) ⁶	4.0.x		•	•	•
Red Hat Enterprise Linux AS & ES 3.0 (x86 32-bit) Update 8, 9	3.0	•			
Red Hat Enterprise Linux AS & ES 4.0 (x86 32-bit) Update 5, 6	3.0	•			
	4.0		•		
Red Hat Enterprise Linux AS & ES 4.0 (x64 64-bit) Update 5, 6	3.0	•			
	4.0		•		
Red Hat Enterprise Linux AS & ES 4.0 (Itanium) Update 5, 6	4.0		•		
Red Hat Enterprise Linux AS & ES 5.0 (x86 32-bit) Update 1	4.0		•		
Red Hat Enterprise Linux AS & ES 5.0 (x64 64-bit) Update 1	4.0		•		
Red Hat Enterprise Linux AS & ES 5.0 (Itanium) Update 1	4.0		•		
	4.0				
Sun Solaris 9 (SPARC)	3.0	•			
	4.0		•		
Sun Solaris 10 (SPARC)	3.0	•			
	4.0		•		
SuSE Linux Enterprise Server 9.0 (x86, x86_64 32-bit) SP3	3.0	•			
	4.0		•		
SuSE Linux Enterprise Server 9.0 (x64 64-bit) SP3	3.0	•			
	4.0		•		
SuSE Linux Enterprise Server 9.0 (Itanium) SP3	4.0		•		
SuSE Linux Enterprise Server 10.0 (x86, x86_64 32-bit) SP1	4.0		•		
SuSE Linux Enterprise Server 10.0 (x64 64-bit) SP1	4.0		•		
SuSE Linux Enterprise Server 10.0 (Itanium) SP1	4.0		•		

⁶The RC1 version of Windows 2008 is supported with HP RSM 4.0; the RTM (released) version of Windows 2008 is supported with HP RSM 4.0.1.

4.5 Dynamic Capacity Management compatibility

This table shows how Dynamic Capacity Management is compatible with HP Command View EVA, HP Replication Solutions Manager, and controller software versions.

Application	Dynamic Capacity Management	
	Extend	Shrink
HP Command View EVA 7.0.x	•	•
HP Command View EVA 8.0.x	•	•
HP Replication Solutions Manager 3.1	•	•
HP Replication Solutions Manager 4.0.x	•	•
VCS 3.1xx	•	
VCS 4.1xx	•	
XCS 6.1xx	•	•
XCS 6.2xx	•	•
XCS 09000000/09001000	•	•
XCS 09003000	•	•

5.0 Browser and JRE support

This table lists the supported browsers and JRE versions you can use to access HP EVA software and Storage Management Appliance user interfaces from the corresponding operating system. A supported JRE is required on the server from which you browse to HP Replication Solutions Manager and from which you run the remote CLUI client.

Operating system	Required browser	Supported JRE
HP HP-UX PA-RISC	Firefox 1.5	1.5.0_05 and later
HP HP-UX Integrity	Firefox 1.5	1.5.0_05 and later
HP OpenVMS Alpha	Secure Web Browser 1.7-13	1.5.0-2 and later
HP OpenVMS Integrity	Secure Web Browser 1.7-13	1.5.0-1 and later
Linux (x86)	Firefox 2.0	1.5.0_06 and later
Linux (x64)	Firefox 2.0	1.5.0_06 and later
Microsoft Windows	Internet Explorer 6.0 SP1 and later ¹	1.5.0_06 and later
Sun Solaris SPARC (64-bit)	Mozilla 1.7.3	1.5.0_06 and later

¹Internet Explorer 7.0 is only supported with HP Command View EVA 7.0 or later. SP1 or later of Internet Explorer 6.0 is supported with HP Command View EVA 6.0.x and HP Replication Solutions Manager 2.x and 3.x.

6.0 Features supported by controller software version

6.1 Supported array features by controller software version

Array features depend on the controller software version.							
Feature	EVA controller software version						
	VCS 3.1xx	VCS 4.0xx	VCS 4.1xx	XCS 6.1xx	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000
Maximum number of arrays per HP Command View EVA instance ¹	16	16	16	16	16	16	16
Maximum number of virtual disks per array (includes snapshots, snapclones, and mirrorclones)	512	1024	1024	1024	1024	512	512
Maximum number of disk groups per array	16 ²	16 ²	16 ²	16	16	12	12
Maximum number of hosts per array	256	256	256	256	256	256	256
Host-based volume group limits	To ensure maximum EVA performance when processing HP Replication Solutions Manager jobs, host-based volume groups should contain a maximum of 32 virtual disks and 127 logical volumes. Larger configurations are supported, but the loss of performance will be directly related to the size of the configuration.						
¹ HP recommends a maximum of four EVAs per HP Command View EVA instance. This recommendation applies to all management server types. ² The maximum number of disk groups is also limited by the maximum number of disks. Each disk group requires a minimum of 8 disks.							

6.2 Supported local replication features by controller software version

Local replication features depend on the controller software version.						
Feature	EVA controller software version					
	VCS 3.1xx	VCS 4.1xx	XCS 6.1xx	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000
Direct connect	Not supported in HP Replication Solutions Manager environments, except with certain restrictions for Windows hosts. Specifically, you cannot mount snapshots or snapclones on a Windows host that is running the HP Replication Solutions Manager host agent and is directly attached to an EVA running XCS controller software.					
Boot from SAN	If the operating system supports Boot from SAN, replication of a point-in-time copy of the boot volume (snapshot, snapclone, or mirrorclone) is supported.					
Containers						
Maximum size of a container		2 TB (less 1 GB)				
Mirrorclones						
Create mirrorclones			•	•	•	•
Resynchronize data from source virtual disk to mirrorclone			•	•	•	•
Restore data from mirrorclone to source virtual disk			•	•	•	•
Create containers (for snapclones)		•	•	•	•	•
Create snapclones in preallocated containers		•	•	•	•	•
Instant restore of virtual disks			•	•	•	•
Set disk group (for snapclones)	•	•	•	•	•	•
Set Vraid in copy	•	•	•	•	•	•
Snapshots						
Controller software enforced cross Vraid guidelines		•	•	•	•	•
Create snapshots in preallocated containers			•	•	•	•
Restore data from snapshot to source virtual disk			•	•	•	•
Set Vraid in copy	•	•	•	•	•	•
Maximum number of snapshots per source virtual disk ¹	7	7	16	16	16	16
¹ 16 TB maximum across the parent and all active snapshots of that parent.						

6.3 Supported remote replication features by controller software version

Remote replication features depend on the controller software version.

The following general rules apply to remote replication between an array with XCS controller software and an array with VCS controller software:

- If a feature, such as the maximum number of members of a DR group, is supported differently in the source and destination arrays, the more restrictive value applies to the source-destination DR group pair.
- If a feature is not available in both controller software versions, the feature cannot be used in a source-destination DR group pair.

IMPORTANT: Testing of FC-IP support with HP Continuous Access EVA is ongoing. For the latest information, see *Part 4, SAN extension and bridging of HP StorageWorks SAN design reference guide*.

Feature	EVA controller software version					
	VCS 3.1xx	VCS 4.1xx	XCS 6.1xx	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000
Maximum number of single-member DR groups per array ¹	128	128	256	256	1	128
Maximum number of virtual disk members of all DR groups per array ¹	128	128	256	256	16	256
Maximum number of virtual disk members per DR group (16 TB ² maximum for all members of a single DR group)	8	32	32	32	16	32
Maximum number of snapshots per DR group (16 TB maximum of virtual disk members and snapshots)	8	8	16	16	16	16
Create a DR group or add/remove DR group members in enhanced asynchronous mode				•		•
Failsafe on Link-down/Power-up support						•
Replication relationships	2:1	2:1	2:1	3:1	1	3:1
Cabling scheme	Cross-cabling optional					
Controller software maximum default DR group log file size	2x the combined size of DR group members (cannot be changed)	Smaller of: – 2,047.99 GB maximum virtual disk size – Remaining space in disk group in which the DR group log resides – The sum of the sizes of the members within the DR group ³			5 GB (Synchronous only)	100 GB (Synchronous and Asynchronous)

¹For best performance when using HP Replication Solutions Manager, do not exceed 512 single-member DR groups and 512 source-destination pairs across all arrays. Other limits may apply.

²For EVA4000/4100/6x00/8x00 running XCS 6.100 or later, the maximum capacity is 32 TB. For EVA4400 running XCS 09000000 or 09001000, the maximum capacity is 4 TB. For EVA4400 running XCS 09003000, the maximum capacity is 16 TB.

6.3 Supported remote replication features by controller software version (cont'd)

Feature	EVA controller software version					
	VCS 3.1xx	VCS 4.1xx	XCS 6.1xx	XCS 6.2xx	XCS 09000000/ 09001000	XCS 09003000
Controller software maximum default DR group log file size	2x the combined size of DR group members (cannot be changed)	Smaller of: – 2,047.99 GB maximum virtual disk size – Remaining space in disk group in which the DR group log resides – The sum of the sizes of the members within the DR group ³			5 GB (Synchronous only)	100 GB (Synchronous and Asynchronous)
User selectable maximum DR group log file size ⁴	Maximum log file size within these parameters: – 2,047.99 GB maximum virtual disk size – Greater than 136 MB ^{5, 6} – Less than or equal to the available capacity in the source log disk group. The capacity selected must also be available in the destination log disk group.					
Bandwidth	HP Continuous Access EVA supports a minimum bandwidth of 4 Mb/s. See the <i>HP StorageWorks Continuous Access EVA implementation guide</i> for more information about selecting the appropriate replication link. Note: HP Replication Solutions Manager exhibits long management delays when managing remote arrays that are connected via low bandwidth links with over 36 ms of one-way latency.					
Boot from SAN	If the operating system supports Boot from SAN, replication of the boot disk is supported.					
Clustering solutions with HP Continuous Access EVA	HP Continuous Access EVA supports all clustering solutions that are supported on the EVA. To determine the supported clustering solution for an operating system, see the applicable operating system table within Table 7.0, EVA host connectivity.					
Direct connect	Supported in HP Continuous Access EVA environments in which any port is directly connected to a supported server or mpx100.					
Host HBAs per array	The maximum depends on an array's platform/operating system rules. See <i>Part 3, Host and storage systems rules</i> of <i>HP StorageWorks SAN design reference guide</i> and the <i>Quickspecs</i> for HP Continuous Access EVA and the applicable array model.					
Source and destination pair size	1 GB to 2 TB (in 1 GB increments)					
Switches per fabric ⁷	See <i>Part 2, Fabric infrastructure rules</i> of <i>HP StorageWorks SAN design reference guide</i> .					
³ The controller software default maximum log size for XCS 6.2xx or later running on the EVA 4000/4100/6x00/8x00 is 100 GB for enhanced asynchronous. ⁴ You can only change the size of the log file when the DR group write mode is set to synchronous. The transition from asynchronous logging to synchronous logging must complete before changing the log file size, which is available in XCS 6.1xx or later. ⁵ If the size specified is not greater than or equal to the asynchronous minimum log size and you attempt to change to asynchronous mode, the command will fail. For the EVA 4000/4100/6x00/8x00 running XCS 6.1xx or later, the minimum log size is 1,624 MB for enhanced asynchronous mode. ⁶ For the EVA4400 running XCS 09000000 or later, the capacity must be greater than 5 GB. ⁷ For EVA4400 running XCS 09003000, a maximum of 5 switches per fabric (10 per SAN) with a maximum of 3 hops per fabric is supported.						

7.0 EVA host connectivity

The following sections describe the specifications of the operating systems supported with the Enterprise Virtual Array. The content in these sections apply to the EVA4000/4100/6x00/8x00 and EVA4400 models, unless otherwise noted.

For the supported operating systems of hosts accessing EVA3000/5000, see the OS-specific connectivity installation guides and connectivity release notes. You can find these documents from the Manuals page of the HP Business Support Center web site:

<http://www.hp.com/support/manuals>. Under Storage, select **Disk Storage Systems** and then select the EVA model under EVA Disk Arrays.

For supported switch information, see the *HP StorageWorks SAN design reference guide*. From the Manuals page, select **Storage Networking** under Storage and then select **HP StorageWorks SAN** under HP StorageWorks SAN Solutions.

Exceptions

The Cisco MDS 9020 switch is only supported with HP Continuous Access EVA when the EVA is running XCS 6.000 or later.

7.1 Apple Mac OS X

The information in this table applies to Mac OS X versions 10.4.7, 10.4.8, 10.4.9, 10.4.10, 10.4.11, 10.5, and 10.5.1. Boot support is not available on these Mac OS X versions.

Fibre Channel adapter	Adapter firmware
Celerity FC-41XS, 4 Gb single channel	Mac driver 3.10MP ATTO configuration tool 3.13v2
Celerity FC-42XS, 4 Gb dual channel	
Celerity FC-41EL, 4 Gb single channel	
Celerity FC-41ES, 4 Gb single channel	
Celerity FC-42ES, 4 Gb dual channel	
Celerity FC-44ES, 4 Gb quad channel	
Supported servers	Power Mac G5, XServe, MacPro

7.2 Citrix XenServer HP Enterprise Edition¹

7.2.1 Operating system specifications for Citrix Xen Enterprise 4.10-7846		
Kernel	2.6.18-53.1.13.el5.xs4.1.0.254.273xen	
Supported guest operating systems	Red Hat Enterprise Linux 5.1 SuSE Linux Enterprise Server 10 SP1 Microsoft Windows 2003 x64	
Multipathing support	ServiceGuard for Linux and Native Device Mapper MPIO	
Fibre Channel adapter	Adapter driver	Adapter BIOS
Qlogic 4G PCI-X 2.0		
FC1142	Linux inbox driver	1.26
FC1242	Linux inbox driver	1.26
FC1143	Linux inbox driver	1.26
FC1243	Linux inbox driver	1.26
QMH2462	Linux inbox driver	1.26

¹Supported on the EVA4x00/6x00/8x00 running XCS 6.110 or later and on the EVA4400 running XCS 09000000 or later.

7.3 HP-UX

Fibre Channel adapter	11.11 (11iv1.0)	11.23 (11iv2.0)	11.31 (11iv3.0)
A6826A, 2 Gb	•	•	•
A9782A, 2 Gb	•	•	•
A9784A, 2 Gb	•	•	•
AB378A, 4 Gb	•	•	•
AB378B, 2 port, 4 Gb	•		•
AB379A, 4 Gb	•	•	•
AB379B, 2 port, 4 Gb	•		•
AB465A, 2 Gb	•	•	•
AD193A, 1 port 4 Gb/1 port GigE	•	•	•
AD194A, 2 port 4 Gb/2 port GigE	•	•	•
AD299A, 4 Gb		•	•
AD300A, 4 Gb		•	•
AD355A, 4 Gb		•	•
403619-B21, Mezzanine 4 Gb (w/Virtual Connect)		•	•
403619-B21, Mezzanine 4 Gb		•	•
Cluster support			
HP ServiceGuard A11.16 or later	•	•	
VERITAS Foundation Suite; Foundation Suite/HA 3.5	•		
HP Serviceguard 11.17.01			•
Multipathing support			
Pvlinks	•	•	•
Single-path support	HP-UX servers require a single Fibre Channel adapter to support single-path mode. Do not use single-path mode in mission-critical or high-availability environments.		

7.3 HP-UX (cont'd)

Required patches		
HP-UX version	Minimum patch revision (may be superseded)	
11.11 (11iv1.0)	PHKL_27321 KRS update	
	PHKL_32670 SCSI Upper Layer Module Service	
	For EVA4400: GOLDQPK11i, HWEnable11i	
11.23 (11iv2.0)	PHKL_33361 cumulative kernel SCSI patch	
	PHKL_31500 cumulative LVM patch	
	PHKL_35450 cumulative LVM patch	
	For EVA4400: Required patch level is included in the core OS install	
11.31 (11iv3.0)	For EVA4400: Required patch level is included in the core OS install	
Supported servers		
HP-UX version	Server	Model
11.11 (11iv1.0) 11.23 (11iv2.0)	PA-RISC	rp24xx, rp34xx, rp44xx, rp54xx, rp7400, rp7410, rp7420, rp84xx, L1000/2000, Kx60, Kx70, Kx80, Integrity Superdome IA, Superdome
	Itanium	rx16xx, rx26xx, rx46xx, rx56xx, rx76xx, rx86xx zx2000, zx6000, Integrity Superdome IA
11.31 (11iv3.0)	HP9000 (PA-based)	HP9000 Superdomes, rp8420, rp8400, rp7420, rp7410, rp7405, rp4440, rp3440, rp3410
	HP Integrity (IPF based)	All Integrity Superdome IAs, rx8640, rx8620, rx7640, rx7620, rx6600, rx5670, rx4640, rx3600, rx2620, rx2600, rx1620, rx1600, cx2600, BL60p

7.4 HP OpenVMS

Fibre Channel adapter	Adapter firmware/EFI	7.3-2	8.2 (Alpha)	8.2-1 (IA64)	8.3 (Alpha)	8.3 (IA64)	8.3-1H1 (IA64)
168794-B21, 1 Gb ¹	393a0	•	•		•		
FCA2354, 2 Gb	3.93a0	•	•		•		
FCA2384, 2 Gb	1.91x6	•	•		•		
FCA2684, 2 Gb	1.91x6	•	•		•		
FCA2684DC, 2 Gb	1.91x6	•	•		•		
A6826A, 2 Gb	EFI 1.50			•		•	•
A9782A, 2 Gb	EFI 1.50			•		•	•
A9784A, 2 Gb	EFI 1.50			•		•	•
AB465A, 2 Gb	EFI 1.50			•		•	•
AB378A, 4 Gb	EFI 1.09					•	•
AB378B, 4 Gb	EFI 1.09					•	•
AB379A, 4 Gb	EFI 1.09					•	•
AB379B, 4 Gb	EFI 1.09					•	•
AD300A, 4 Gb	EFI 1.09					•	•
AD193A, 4 Gb	EFI 1.09					•	•
AD194A, 4 Gb	EFI 1.09					•	•
403619-B21, 4 Gb	EFI 1.09					•	•
AD299A, 4 Gb	2.70x5/3.21a3						•
AD355A, 4 Gb	2.70x5/3.21a3						•

¹Applicable to the EVA4000/4100/6x00/8x00 only.

Fibre Channel SCSI ECO kit

VMS732_FIBRE_SCSI_V1400		•					
VMS82A_FIBRE_SCSI_V0600			•				
VMS821I_FIBRE_SCSI-V0700				•			
VMS83A_FIBRE_SCSI_V0300					•		
VMS83I_FIBRE_SCSI_V0700						•	
VMS831H1_UPDATE-V0100							•
VMS831H1_FIBRE_SCSI_V0200							•

For the current Fibre Channel SCSI patch kit for HP OpenVMS, see the HP IT Resource Center website:

<http://www.itrc.hp.com>

Single-path support

HP OpenVMS servers require a single Fibre Channel adapter to support single-path mode. Do not use single-path mode in high-availability environments.

7.4 HP OpenVMS (cont'd)

7.4.1 Supported AlphaServers

This following table lists the EVA-compatible AlphaServers and the FCAs supported on each server.

AlphaServer	168794-B21	FCA2354	FCA2384	FCA2684	FCA2684DC
DS10	•	•	•		
DS15		•	•	•	•
DS20E	•	•	•	•	
DS25	•	•	•	•	•
ES40	•	•	•	•	
ES45	•	•	•	•	•
ES47		•	•	•	•
ES80		•	•	•	•
GS60	•				
GS60E	• ¹				
GS80	•	•	•	•	
GS140	• ¹				
GS160	•	•	•	•	
GS320	•	•	•	•	
GS1280		•	•	•	•

¹Supported with version 7.3-2 only.

Note: For the AlphaServer console to recognize all eight boot paths to the EVA8000 storage system, you must upgrade the console firmware to release 7.0 or later.

7.4 HP OpenVMS (cont'd)

7.4.2 Supported Integrity servers

This following table lists the EVA-compatible Integrity servers and the FCAs supported on each server.

Integrity server	A6826A	A9782A/ A7984A	AB378A/ AB379A	AB378B/ AB379B	AB465A	AD300A	AD193A/ AD194A	AD299A/ AD355A	403619-B21
rx1600	•	•			•				
rx1620	•	•		•	•		•	•	
rx2600	•	•	•		•				
rx2620	•	•		•	•		•	•	
rx2660				•		•	•	•	
rx3600	•	•	•	•	•	•	•	•	
rx4640	•	•		•	•		•	•	
rx6600	•	•	•	•	•	•	•	•	
rx7620	•	•	•	•	•		•	•	
rx7640	•		•	•			•	•	
rx8620	•	•	•	•	•		•	•	
rx8640	•		•	•			•	•	
Superdome/ sx1000	•	•	•	•	•		•	•	
Superdome/ sx2000	•	• ¹	•	•	• ¹		•	•	
BL860c									•

¹Superdome/sx2000 is not supported with A9782A, A9784A, or AB465A when running HP OpenVMS 8.3 IA64.

7.5 HP Tru64 UNIX

HP Tru64 UNIX is not supported with the EVA4400.

Fibre Channel adapter	Adapter firmware	5.1b-3	5.1b-4
168794-B21, 1 Gb	3.93a0	•	•
FCA2354, 2 Gb	3.93a0	•	•
FCA2384, 2 Gb	1.91x6	•	•
FCA2684, 2 Gb	1.91x6	•	•
FCA2684DC, 2 Gb	1.91x6	•	•

For the current Fibre Channel SCSI patch kit for HP Tru64 UNIX, see the HP IT Resource Center website:

<http://www.itrc.hp.com>

Supported servers

This following tables indicate the EVA-compatible AlphaServers and the FCAs supported on each server.

AlphaServer	168794-B21	FCA2354	FCA2384	FCA2684	FCA2684DC
DS10	•	•	•		
DS15		•	•	•	•
DS20E	•	•	•	•	
DS25	•	•	•	•	•
ES40	•	•	•	•	
ES45	•	•	•	•	•
ES47		•	•	•	•
ES80		•	•	•	•
GS80	•	•	•	•	
GS160	•	•	•	•	
GS320	•	•	•	•	
GS1280		•	•	•	•

Note: For the AlphaServer console to recognize all eight boot paths to the EVA8000 storage system, you must upgrade the console firmware to release 7.0 or later.

7.6 IBM AIX

Fibre Channel adapter	5.2¹	5.3³	6.1⁵
IBM FC1905	• ²	• ⁴	•
IBM FC1910	• ²	• ⁴	•
IBM FC1957	•	•	•
IBM FC1977	•	•	•
IBM FC5716	•	•	•
IBM FC5758	• ²	• ⁴	•
IBM FC5759	• ²	• ⁴	•
IBM FC6228	•	•	
IBM FC6239	•	•	

¹For EVA4000/4100/6x00/8x00, requires 5.2 ML04 or later. For EVA400, requires 5.2 TL08 SP2 or later.

²Requires 5.2 TL08 and APARs IY79869, IY80779, IY83649, and IY83172.

³For EVA4000/4100/6x00/8x00, requires 5.3 ML1 or later. For EVA4400, requires 5.3 TL5 or later.

⁴Requires 5.3 TL4 and APARs IY9862, IY80775, IY83730, and IY83163.

⁵Requires 6.1 TL_00 SP_01 or later.

Cluster support			
HACMP 5.1 or later	•	•	No HACMP support

Multipathing support¹			
MPIO	EVA4400: MPIO 1.0.2.0 EVA4000/4100/6x00/8x00: MPIO 1.0.1.0 for XCS 6.0xx or MPIO 1.0.0.3 for XCS 5.xxx		EVA4400: MPIO 1.0.2.0 EVA4000/4100/6x00/8x00: MPIO 1.0.1.0
AntemetA ²	EVA4000/4100/6x00/8x00 requires AntemetA 2.1.3.3	EVA4000/4100/6x00/8x00 requires AntemetA 2.2.3.3	No AntemetA support

¹MPIO and AntemetA cannot exist on the same server.

²AntemetA is not supported with the EVA4400.

Supported servers	Any announced IBM pSeries (P6xx), System p server (P5xx), or RS6000 server, which supports one or more of the Fibre Channel adapters listed above.	Any announced System p server (P5xx), which supports one or more of the Fibre Channel adapters listed above.
Supported Bull Escala servers	PL250R-L, PL250R/T, PL250R-VL, PL250R/T+, PL450R/T, PL850R, PL850R/T-L, PL1650R, PL3250R, PL240R/T, PL420R/T, PL820R, PL1600R, PL3200R, PL6450R ¹	

¹PL6450R is supported on AIX 5.3 with the EVA4400 only.

7.7 Linux

Boot from SAN support	Red Hat 3.0 Update 8, 9 Red Hat 4.0 Update 5, 6 Red Hat 5.0 Update 1, 2	SuSE 9.0 SP3, SP4 SuSE 10.0 SP1
Multipathing support	For detailed multipathing support, see the <i>HP StorageWorks Using the QLogic HBA for single-path or multi-path failover mode on Linux systems application notes</i> .	

7.7.1 Operating system specifications for Red Hat Enterprise Linux AS & ES 3.0 x86 and x64 Update 8, 9¹

Kernel (minimum)	2.4.21-47.EL (3.0 U8) 2.4.21-50.EL (3.0 U9)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
FCA2214	7.07.05.08	1.45
FCA2214DC	7.07.05.08	1.45
HP: Q-Mezzanine	7.07.05.08	1.45
HP: FC adapter	7.07.05.08	1.45
HP: Q-Balcony	7.07.05.08	1.45
HP: Q-HPBALCF105	7.07.05.08	1.48
FC1143	7.07.05.08	1.26, Multiboot 1.64
FC1243	7.07.05.08	1.26, Multiboot 1.64
FC1142SR	7.07.05.08	1.26, Multiboot 1.64
FC1242SR	7.07.05.08	1.26, Multiboot 1.64
FC2142	7.3.6	1.71a0
FC2242	7.3.6	1.71a0
FC2143	7.3.6	1.71a0
FC2243	7.3.6	1.71a0
Emulex FC mezzanine	7.3.6	1.71a0
Emulex FC mezzanine for C-Series blades	7.3.6	6.00a1
QMH2462	7.07.05.08	1.26, Multiboot 1.64

7.7.2 Operating system specifications for Red Hat Enterprise Linux AS & ES 3.0 Itanium Update 8, 9¹

Kernel (minimum)	2.4.21-47.EL (3.0 U8) 2.4.21-50.EL (3.0 U9)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
A6826A	7.07.05.08	1.49
A7538A	7.07.05.08	1.49

¹Red Hat Linux 3.0 is not supported with the EVA4400.

7.7 Linux (cont'd)

7.7.3 Operating system specifications for Red Hat Enterprise Linux AS & ES 4.0 x86 and x64 Update 5, 6

Kernel (minimum)	2.6.9-55.EL (4.0 U5) 2.6.9-67.EL (4.0 U6)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
FCA2214	8.02.11	1.45
FCA2214DC	8.02.11	1.45
HP: Q-Mezzanine	8.01.07.25	1.45
HP: FC adapter	8.01.07.25	1.45
HP: Q-Balcony	8.01.07.25	1.45
HP: Q-HPBALCF105	8.01.07.25	1.48
QMH2462	8.01.07.25	1.26, Multiboot 1.64
FC1143	8.02.11	2.02, Multiboot 1.73af
FC1243	8.02.11	2.02, Multiboot 1.73af
FC1142SR	8.02.11	2.02, Multiboot 1.73af
FC1242SR	8.02.11	2.02, Multiboot 1.73af
AK344A	8.02.11	2.02, Multiboot 2.03af
AJ764A	8.02.11	2.02, Multiboot 2.03af
Emulex FC mezzanine (for HP BL30pG1, BL25p, BL35p, BL45p)	8.0.16.40	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP BL20pG3)	8.0.16.40	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP c-class blades)	8.0.16.40	3.00a4, Multiboot 6.00a5
FC2142SR	8.0.16.40	2.01a2, Multiboot 5.03a0
FC2242SR	8.0.16.40	2.01a2, Multiboot 5.03a0
FC2143	8.0.16.40	2.01a2, Multiboot 5.03a0
FC2243	8.0.16.40	2.01a2, Multiboot 5.03a0
AJ762A ¹	8.0.16.40	2.01a2, Multiboot 5.03a0
AJ763A ¹	8.0.16.40	2.01a2, Multiboot 5.03a0

¹Applicable to the EVA4000/4100/6x00/8x00 only.

7.7 Linux (cont'd)

7.7.4 Operating system specifications for Red Hat Enterprise Linux AS & ES 4.0 Itanium Update 5, 6

Kernel (minimum)	2.6.9-55.EL (4.0 U5) 2.6.9-67.EL (4.0 U6)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
A6826A	8.02.11	1.50
A7538A	8.02.11	1.50
FC1143	8.02.11	2.00, Multiboot 1.73af
FC1243	8.02.11	2.00, Multiboot 1.73af
FC1142SR	8.02.11	2.00, Multiboot 1.73af
FC1242SR	8.02.11	2.00, Multiboot 1.73af
QMH2462	8.01.07.25	1.09, Multiboot 1.64
FC2142SR	8.0.16.40	4.00a1, Multiboot 5.03a0
FC2242SR	8.0.16.40	4.00a1, Multiboot 5.03a0
FC2143	8.0.16.40	4.00a1, Multiboot 5.03a0
FC2243	8.0.16.40	4.00a1, Multiboot 5.03a0

7.7 Linux (cont'd)

7.7.5 Operating system specifications for Red Hat Enterprise Linux AS & ES 5.0 x86 and x64 Update 1, 2

Kernel (minimum)	2.6.18-53.el5 (5.0 U1) 2.6.18-92.el5 (5.0 U2)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
FCA2214	8.02.11	1.45
FCA2214DC	8.02.11	1.45
HP: Q-Mezzanine	8.01.07.25	1.45
HP: FC adapter	8.01.07.25	1.45
HP: Q-Balcony	8.01.07.25	1.45
HP: Q-HPBALCF105	8.01.07.25	1.48
QMH2462	8.01.07.25	1.26, Multiboot 1.64
FC1143	8.02.11	2.02, Multiboot 1.73af
FC1243	8.02.11	2.02, Multiboot 1.73af
FC1142SR	8.02.11	2.02, Multiboot 1.73af
FC1242SR	8.02.11	2.02, Multiboot 1.73af
AK344A	8.02.11	2.02, Multiboot 2.03af
AJ764A	8.02.11	2.02, Multiboot 2.03af
Emulex FC mezzanine (for HP BL30pG1, BL25p, BL35p, BL45p)	8.2.0.22_p1	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP BL20pG3)	8.2.0.22_p1	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP c-class blades)	8.2.0.22_p1	3.00a4, Multiboot 6.00a5
FC2142SR	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
FC2242SR	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
FC2143	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
FC2243	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
AJ762A ¹	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
AJ763A ¹	8.2.0.22_p1	2.01a2, Multiboot 5.03a0

¹Applicable to the EVA4000/4100/6x00/8x00 only.

7.7 Linux (cont'd)

7.7.6 Operating system specifications for Red Hat Enterprise Linux AS & ES 5.0 Itanium Update 1, 2

Kernel (minimum)	2.6.18-53.el5 (5.0 U1) 2.6.18-92.el5 (5.0 U2)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
A6826A	8.02.11	1.50
A7538A	8.02.11	1.50
FC1143	8.02.11	2.00, Multiboot 1.73af
FC1243	8.02.11	2.00, Multiboot 1.73af
FC1142SR	8.02.11	2.00, Multiboot 1.73af
FC1242SR	8.02.11	2.00, Multiboot 1.73af
QMH2462	8.01.07.25	1.09, Multiboot 1.64
FC2142SR	8.2.0.22_p1	4.00a1, Multiboot 5.03a0
FC2242SR	8.2.0.22_p1	4.00a1, Multiboot 5.03a0
FC2143	8.2.0.22_p1	4.00a1, Multiboot 5.03a0
FC2243	8.2.0.22_p1	4.00a1, Multiboot 5.03a0

7.7 Linux (cont'd)

7.7.7 Operating system specifications for SuSE Linux Enterprise Server 9.0 x86 and x64 SP3, SP4

Kernel (minimum)	2.6.5-7.244 (9.0 SP3) for EVA4000/4100/6x00/8x00 2.6.5-7.286 (9.0 SP3) for EVA4400 2.6.5-7.308 (9.0 SP4)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
FCA2214	8.02.11	1.45
FCA2214DC	8.02.11	1.45
HP: Q-Mezzanine	8.01.07.25	1.45
HP: FC adapter	8.01.07.25	1.45
HP: Q-Balcony	8.01.07.25	1.45
HP: Q-HPBALCF105	8.01.07.25	1.48
QMH2462	8.01.07.25	1.26, Multiboot 1.64
FC1143	8.02.11	2.02, Multiboot 1.73af
FC1243	8.02.11	2.02, Multiboot 1.73af
FC1142SR	8.02.11	2.02, Multiboot 1.73af
FC1242SR	8.02.11	2.02, Multiboot 1.73af
AK344A	8.02.11	2.02, Multiboot 2.03af
AJ764A	8.02.11	2.02, Multiboot 2.03af
Emulex FC mezzanine (for HP BL30pG1, BL25p, BL35p, BL45p)	8.0.16.40	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP BL20pG3)	8.0.16.40	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP c-class blades)	8.0.16.40	3.00a4, Multiboot 6.00a5
FC2142SR	8.0.16.40	2.01a2, Multiboot 5.03a0
FC2242SR	8.0.16.40	2.01a2, Multiboot 5.03a0
FC2143	8.0.16.40	2.01a2, Multiboot 5.03a0
FC2243	8.0.16.40	2.01a2, Multiboot 5.03a0
AJ762A ¹	8.02.11	2.02, Multiboot 2.03af
AJ763A ¹	8.02.11	2.02, Multiboot 2.03af

¹Applicable to the EVA4000/4100/6x00/8x00 only.

7.7 Linux (cont'd)

7.7.8 Operating system specifications for SuSE Linux Enterprise Server 9.0 Itanium SP3, SP4

Kernel (minimum)	2.6.5-7.244 (9.0 SP3) for EVA4x00/6x00/8x00 2.6.5-7.286 (9.0 SP3) for EVA4400 2.6.5-7.308 (9.0 SP4)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
A6826A	8.02.11	1.50
A7538A	8.02.11	1.50
FC1143	8.02.11	2.00, Multiboot 1.73af
FC1243	8.02.11	2.00, Multiboot 1.73af
FC1142SR	8.02.11	2.00, Multiboot 1.73af
FC1242SR	8.02.11	2.00, Multiboot 1.73af
QMH2462	8.01.07.25	1.09, Multiboot 1.64
FC2142SR	8.0.16.40	4.00a1, Multiboot 5.03a0
FC2242SR	8.0.16.40	4.00a1, Multiboot 5.03a0
FC2143	8.0.16.40	4.00a1, Multiboot 5.03a0
FC2243	8.0.16.40	4.00a1, Multiboot 5.03a0

7.7 Linux (cont'd)

7.7.9 Operating system specifications for SuSE Linux Enterprise Server 10.0 x86 and x64 SP1, SP2

Kernel (minimum)	2.6.16.46-0.12 (10.0 SP1) 2.6.16.60-0.21 (10.0 SP2)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
FCA2214	8.02.11	1.45
FCA2214DC	8.02.11	1.45
HP: Q-Mezzanine	8.01.07.25	1.45
HP: FC adapter	8.01.07.25	1.45
HP: Q-Balcony	8.01.07.25	1.45
HP: Q-HPBALCF105	8.01.07.25	1.48
QMH2462	8.01.07.25	1.26, Multiboot 1.64
FC1143	8.02.11	2.02, Multiboot 1.73af
FC1243	8.02.11	2.02, Multiboot 1.73af
FC1142SR	8.02.11	2.02, Multiboot 1.73af
FC1242SR	8.02.11	2.02, Multiboot 1.73af
AK344A	8.02.11	2.02, Multiboot 2.03af
AJ764A	8.02.11	2.02, Multiboot 2.03af
Emulex FC mezzanine (for HP BL30pG1, BL25p, BL35p, BL45p)	8.2.0.22_p1	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP BL20pG3)	8.2.0.22_p1	1.71a0, Multiboot 5.02a1
Emulex FC mezzanine (for HP c-class blades)	8.2.0.22_p1	3.00a4, Multiboot 6.00a5
FC2142SR	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
FC2242SR	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
FC2143	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
FC2243	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
AJ762A ¹	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
AJ763A ¹	8.2.0.22_p1	2.01a2, Multiboot 5.03a0
¹ Applicable to the EVA4000/4100/6x00/8x00 only.		

7.7 Linux (cont'd)

7.7.10 Operating system specifications for SuSE Linux Enterprise Server 10.0 Itanium SP1, SP2

Kernel (minimum)	2.6.16.46-0.12 (10.0 SP1) 2.6.16.60-0.21 (10.0 SP2)	
Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS/EFI
A6826A	8.02.11	1.50
A7538A	8.02.11	1.50
FC1143	8.02.11	2.00, Multiboot 1.73af
FC1243	8.02.11	2.00, Multiboot 1.73af
FC1142SR	8.02.11	2.00, Multiboot 1.73af
FC1242SR	8.02.11	2.00, Multiboot 1.73af
QMH2462	8.01.07.25	1.09, Multiboot 1.64
FC2142SR	8.2.0.22_p1	4.00a1, Multiboot 5.03a0
FC2242SR	8.2.0.22_p1	4.00a1, Multiboot 5.03a0
FC2143	8.2.0.22_p1	4.00a1, Multiboot 5.03a0
FC2243	8.2.0.22_p1	4.00a1, Multiboot 5.03a0

7.8 Microsoft Windows

7.8.1 Operating system specifications for Windows 2000 (5.0 SP4)¹

Fibre Channel adapter	Adapter driver (minimum/recommended)	Adapter firmware (minimum/recommended)	Boot BIOS (minimum/recommended)
FC1142 ²	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.16/1.26
FC1242 ²	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.16/1.26
FC1143 ³	9.1.0.13/9.1.3.11	4.00.90	1.16/1.26
FC1243 ³	9.1.0.13/9.1.3.11	4.00.90	1.16/1.26
FC2142SR ²	5-5.20a10/5-5.30a2	2.50a6/2.70a5	1.70a3/1.71a0
FC2242SR ²	5-5.20a10/5-5.30a2	2.50a6/2.70a5	1.70a3/1.71a0
FC2143	5-5.20a10/5-5.30a2	2.10a10/2.70a5	1.70a3/1.71a0
FC2243	5-5.20a10/5-5.30a2	2.10a7/2.10a10	1.70a3/1.71a0
FCA2101 ⁴	5-5.20a10/5-5.30a2	3.92a2/3.93a0	1.7a1/1.70.a3
FCA2214	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.45
FCA2214DC	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.45
FCA2354 ⁴	5-5.20a10/5-5.30a2	3.92a2/3.93a0	1.70a1/1.70.a3
FCA2355 ⁴	5-5.20a10/5-5.30a2	3.92a2/3.93a0	1.70a1/1.70.a3
FCA2404	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
FCA2404DC	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
FCA2408	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
BL20p G2 (FC Mezzanine)	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL20p G3 (FC Adapter)	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL20p G4 (Mezzanine)	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL45p G2 (FC Adapter)	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL25p, BL45p (HPBALCF 105)	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.48
BL30p, BL35p (FC Balcony)	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.45
BL20p G3 (E-FC Adapter)	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
BL25p, BL45p (E-FC Balcony)	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
BL45p G2 (E-FC Balcony)	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
BL30p, BL35p (E-FC Balcony)	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
A7387A	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
A7388A	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
A7560A	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
DS-KGPSA-CB ⁴	5-5.20a9/5-5.20a10	3.92a2/3.93a0	1.70a1/1.70a3
LPe1105 ²	5-5.20a10/5-5.30a2	2.50a8/2.70a5	3.00a2/3.00a4
QLA2200F	8.1.5.12	NA (loaded by driver)	1.81
QLA2300F	8.1.5.12	NA (loaded by driver)	1.81
QLA2310F	8.1.5.12	NA (loaded by driver)	1.81
QMH2462 ²	9.1.0.13/9.1.3.11	4.00.90	1.16/1.26

¹Windows 2000 is not supported with the EVA4400.

²Supported only on PCI Express-capable servers.

³The PCI-X 2.0 Generic versions of the QLogic 4 Gb cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (FC1143 and FC1243) are supported.

⁴Servers with Opteron or EM64T processors are not supported with this adapter.

7.8 Microsoft Windows (cont'd)

7.8.2 Operating system specifications for Windows 2003 x86 (5.2 SP1/SP2/R2)

Fibre Channel adapter	Adapter driver (minimum/recommended)		Adapter firmware (minimum/recommended)	BIOS (minimum/recommended)
	Storport ²	SCSI Miniport		
FC1142 ¹	9.1.3.18/9.1.7.17	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.26/2.02
FC1242 ¹	9.1.3.18/9.1.7.17	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.26/2.02
FC1143 ³	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	4.00.90	1.16/1.26
FC1243 ³	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	4.00.90	1.16/1.26
FC2142SR ¹	5-2.00a12/5-2.01a4	5-5.20a10/5-5.30a2	2.70a5/2.72a2	1.71a0/2.01a2
FC2242SR ¹	5-2.00a12/5-2.01a4	5-5.20a10/5-5.30a2	2.70a5/2.72a2	1.71a0/2.01a2
FC2143	5-2.00a12/5-2.01a4	5-5.20a10/5-5.30a2	2.70a5/2.72a2	1.71a0/2.01a2
FC2243	5-2.00a12/5-2.01a4	5-5.20a10/5-5.30a2	2.70a5/2.72a2	1.71a0/2.01a2
FCA2101 ⁴	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	3.92a2/3.93a0	1.70a1/1.70.a3
FCA2214	9.13.18/9.1.7.17	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.45
FCA2214DC	9.13.18/9.1.7.17	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.45
FCA2354 ⁴	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	3.92a2/3.93a0	1.70a1/1.70.a3
FCA2355 ⁴	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	3.92a2/3.93a0	1.70a1/1.70.a3
FCA2404	5-2.00a12/5-2.01a4	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.71a0/2.01a2
FCA2404DC	5-2.00a12/5-2.01a4	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.71a0/2.01a2
FCA2408	5-2.00a12/5-2.01a4	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.71a0/2.01a2
BL20p G2 (FC Mezzanine)	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL20p G3 (FC Adapter)	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL20p G4 (Mezzanine FCA)	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL45p G2 (FC Adapter)	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.34/1.45
BL25p, BL45p (HPBALCF 105)	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.48
BL30p, BL35p (FC Balcony)	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	NA (loaded by driver)	1.45/1.48
BL20p G3 (E-FC Adapter)	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
BL25p, BL45p (E-FC Balcony)	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
BL45p G2 (E-FC Balcony)	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
BL30p, BL35p (E-FC Balcony)	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	1.91a2/1.91a5	1.70a3/1.71a0
A7387A	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
A7388A	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
A7560A	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	1.91a1/1.91a5	1.70.a3/1.71a0
DS-KGPSA-CB ⁵	5-1.11a0/5-1.11x1	5-5.20a9/5-5.20a10	3.92a2/3.93a0	1.70a1/1.70a3
lPe1105 ¹	5-1.20a7/5-2.00a12	5-5.20a10/5-5.30a2	2.70a5/2.72a2	3.00a2/3.00a4
QMH2462 ¹	9.1.3.16/9.1.3.18	9.1.0.13/9.1.3.11	4.00.90	1.16/1.26
AK344A	9.1.7.17 (Storport)		NA (loaded by driver)	2.02
AJ764A	9.1.7.17 (Storport)		NA (loaded by driver)	2.02
81E	5-2.01a4		1.00a9	2.01a2
82E	5-2.01a4		1.00a9	2.01a2

¹Supported only on PCI Express-capable servers.

²The Storport driver requires hotfix KB932755 or later. Contact Microsoft for more information.

³The PCI-X 2.0 Generic versions of the QLogic 4 Gb cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (FC1143 and FC1243) are supported.

⁴Servers with Opteron or EM64T processors are not supported with this adapter.

⁵This FCA is not supported with the EVA4400.

7.8 Microsoft Windows (cont'd)

7.8.3 Operating system specifications for Windows 2003 x64 (5.2 SP1/SP2/R2)

Fibre Channel adapter	Adapter driver ² (minimum/recommended)	Adapter firmware (minimum/recommended)	Boot BIOS (minimum/recommended)
FC1142 ¹	9.1.3.18/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1242 ¹	9.1.3.18/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1143 ³	9.1.3.18/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1243 ³	9.1.3.18/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC2142SR ¹	7-2.00a12/7-2.01a4	2.70a5/2.72a2	1.71a0/2.01a2
FC2242SR ¹	7-2.00a12/7-2.01a4	2.70a5/2.72a2	1.71a0/2.01a2
FC2143	7-2.00a12/7-2.01a4	2.70a5/2.72a2	1.71a0/2.01a2
FC2243	7-2.00a12/7-2.01a4	2.70a5/2.72a2	1.71a0/2.01a2
FCA2101	7-1.20a7/7-2.00a12	3.92a2/3.93a0	1.70a1/1.70a3
FCA2214	9.1.3.18/9.1.7.17	NA (loaded by driver)	1.45
FCA2214DC	9.1.3.18/9.1.7.17	NA (loaded by driver)	1.45
FCA2354	7-1.20a7/7-2.00a12	3.92a2/3.93a0	1.70a1/1.70a3
FCA2355	7-1.20a7/7-2.00a12	3.92a2/3.93a0	1.70a1/1.70a3
FCA2404	7-2.00a12/7-2.01a4	1.91a1/1.91a5	1.71a0/2.01a2
FCA2404DC	7-2.00a12/7-2.01a4	1.91a1/1.91a5	1.71a0/2.01a2
FCA2408	7-2.00a12/7-2.01a4	1.91a1/1.91a5	1.71a0/2.01a2
BL20p G2 (FC Mezzanine)	9.1.3.16/9.1.3.18	NA (loaded by driver)	1.34/1.45
BL20p G3 (FC Adapter)	9.1.3.16/9.1.3.18	NA (loaded by driver)	1.34/1.45
BL20p G4 (Mezzanine)	9.1.3.16/9.1.3.18	NA (loaded by driver)	1.34/1.45
BL45p G2 (FC Adapter)	9.1.3.16/9.1.3.18	NA (loaded by driver)	1.34/1.45
BL25p, BL45p (HPBALCF 105)	9.1.3.16/9.1.3.18	NA (loaded by driver)	1.48
BL30p, BL35p (FC Balcony)	9.1.3.16/9.1.3.18	NA (loaded by driver)	1.45/.148
BL20p G3 (E-FC Adapter)	7-1.20a7/7-2.00a12	1.91a2/1.91a5	1.70a3/1.71a1
BL25p, BL45p (E-FC Balcony)	7-1.20a7/7-2.00a12	1.91a2/1.91a5	1.70a3/1.71a1
BL45p G2 (E-FC Balcony)	7-1.20a7/7-2.00a12	1.91a2/1.91a5	1.70a3/1.71a1
BL30p, BL35p (E-FC Balcony)	7-1.20a7/7-2.00a12	1.91a2/1.91a5	1.70a3/1.71a1
A7387A	7-1.20a7/7-2.00a12	1.91a1/1.91a5	1.70.a3/1.71a0
A7388A	7-1.20a7/7-2.00a12	1.91a1/1.91a5	1.70.a3/1.71a0
A7560A	7-1.20a7/7-2.00a12	1.91a1/1.91a5	1.70.a3/1.71a0
DS-KGPSA-CB	7-1.11a0/7-1.11x1	3.92a2/3.93a0	1.70a1/1.70a3
LPe1105	7-1.20a7/7-2.00a12	2.70a5/2.72a2	3.00a2/3.00a4
QMH2462	9.1.3.16/9.1.3.18	NA (loaded by driver)	1.16/1.26
AK344A	9.1.7.17	NA (loaded by driver)	2.02
AJ764A	9.1.7.17	NA (loaded by driver)	2.02
81E	2.01a4	1.00a9	2.01a2
82E	2.01a4	1.00a9	2.01a2

¹Supported only on PCI Express-capable servers.

²The Storport driver requires hotfix KB932755 or later. Contact Microsoft for more information.

³The PCI-X 2.0 Generic versions of the QLogic 4 Gb cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (FC1143 and FC1243) are supported.

7.8 Microsoft Windows (cont'd)

7.8.4 Operating system specifications for Windows 2003 Itanium (5.2 SP1/SP2)

Fibre Channel adapter	Adapter driver (minimum/recommended)		Adapter firmware (minimum/recommended)	EFI (minimum/recommended)
	Storport ²	SCSI Miniport		
QMH2462	9.1.3.16/9.1.3.18	NA	NA (loaded from driver)	1.09
A7298A ¹	6-1.11x1/ 6-1.20a7	6-5.20a9/6-5.30a2	1.91a1/1.91a5	3.10a6/ 3.11a5
A8002A ²	6-1.20a7/6-2.00a12	NA	2.50a6/2.72.a2	3.11a5/4.00a1
A8003A ²	6-1.20a7/6-2.00a12	NA	2.50a6/2.72.a2	3.11a5/4.00a1
AB232A	6-2.00a12/6-2.01a4	6-5.20a9/6-5.30a2 ⁷	1.91a1/1.91a5	3.11a5/4.00a1
AB466A	6-2.00a12/6-2.01a4	6-5.20a9/6-5.30a2 ⁷	1.91a1/1.91a5	3.11a5/4.00a1
AB467A	6-2.00a12/6-2.01a4	6-5.20a9/6-5.30a2 ⁷	1.91a1/1.91a5	3.11a5/4.00a1
AB379A/B ^{3,4}	9.1.3.18/9.1.7.17	NA	NA (loaded from driver)	1.09/2.02
AB429A ^{3,4}	9.1.3.18/9.1.7.17	NA	NA (loaded from driver)	1.09/2.02
AD167A ⁵	6.1.20a7/6-2.00a12	6-5.20a9 ^{7,8}	2.10a10/2.72a2	3.11a4/3.11a5
AD168A ⁵	6.1.20a7/6-2.00a12	6-5.20a9 ^{7,8}	2.10a10/2.72a2	3.11a4/3.11a5
AE311A ⁶	9.1.3.18/9.1.7.17	NA	NA (loaded from driver)	1.09/2.02
AD300A ⁶	9.1.3.16/9.1.3.18	NA	NA (loaded from driver)	1.09/2.02

¹Supported on the rx2600, rx2620, rx4640, and rx5670 servers only.

²The Storport driver requires hotfix KB932755 or later. Contact Microsoft for more information.

³The PCI-X 2.0 Generic versions of the QLogic 4 Gb cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (AB429A and AB379A/B) are supported.

⁴Supported on rx3600, rx6600, rx7640, rx8640, and HP Integrity Superdome servers only.

⁵Supported on rx3600, rx6600, rx7620, rx7640, rx8620, rx8640, and HP Integrity Superdome servers only.

⁶Supported on rx2660-e, rx3600-e, and rx6600-e servers only.

⁷The SCSI Miniport driver is not supported on the rx3600 and rx6600 servers.

⁸The SCSI Miniport driver is not supported with 4 Gb FCAs on the rx7640 and rx8640 servers.

7.8.5 Supported Fibre Channel adapters for Windows XP x32 (SP2)¹

Fibre Channel adapter	Adapter driver	Adapter firmware	Boot BIOS
FC2142SR	5-5.30a2 (SCSI Miniport)	2.50a6	1.70a0

¹Windows XP is not supported with the EVA4400.

7.8 Microsoft Windows (cont'd)

7.8.6 Operating system specifications for Windows 2008 x86 32-bit

Fibre Channel adapter	Adapter driver (minimum/maximum) ³	Adapter firmware	Boot BIOS (minimum/maximum) ³
FC1142 ¹	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1242 ¹	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1143 ²	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1243 ²	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC2142SR ¹	5-2.00a12/5-2.01a4	2.72a2	1.71a0/2.01a2
FC2242SR ¹	5-2.00a12/5-2.01a4	2.72a2	1.71a0/2.01a2
FC2143	5-2.00a12/5-2.01a4	2.72a2	1.71a0/2.01a2
FC2243	5-2.00a12/5-2.01a4	2.72a2	1.71a0/2.01a2
FCA2214	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.45
FCA2214DC	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.45
FCA2404	5-2.00a12	1.91a5	1.71a0
FCA2404DC	5-2.00a12	1.91a5	1.71a0
FCA2408	5-2.00a12	1.91a5	1.71a0
BL20p G2 (FC Mezzanine)	9.1.6.15	NA (loaded by driver)	1.45
BL20p G3 (FC Adapter)	9.1.6.15	NA (loaded by driver)	1.45
BL20p G4 (Mezzanine)	9.1.6.15	NA (loaded by driver)	1.45
BL45p G2 (FC Adapter)	9.1.6.15	NA (loaded by driver)	1.45
BL25p, BL45p (HPBALCF 105)	9.1.6.15	NA (loaded by driver)	1.48
BL30p, BL35p (FC Balcony)	9.1.6.15	NA (loaded by driver)	1.48
BL20p G3 (E-FC Adapter)	5-2.00a12	1.91a5	1.71a0
BL25p, BL45p (E-FC Balcony)	5-2.00a12	1.91a5	1.71a0
BL45p G2 (E-FC Balcony)	5-2.00a12	1.91a5	1.71a0
BL30p, BL35p (E-FC Balcony)	5-2.00a12	1.91a5	1.71a0
A7387A	5-2.00a12	1.91a5	1.71a0
A7388A	5-2.00a12	1.91a5	1.71a0
LPe1105 ¹	5-2.00a12	2.72a2	3.00a4
QMH2462 ¹	9.1.6.15	NA (loaded by driver)	1.26
AK344A	9.1.7.17	NA (loaded by driver)	2.02
AJ764A	9.1.7.17	NA (loaded by driver)	2.02
81E	7-2.01a4	1.00a9	2.01a2
82E	7-2.01a4	1.00a9	2.01a2

¹Supported only on PCI Express-capable servers

²The PCI-X 2.0 Generic versions of the QLogic 4 Gb cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (FC1143 and FC1243) are supported.

³On the EVA4000/4100/6x00/8x00, only the minimum version is supported. On the EVA4400, the minimum and maximum versions are supported. Where only one version is listed, it applies to all array models.

7.8 Microsoft Windows (cont'd)

7.8.7 Operating system specifications for Windows 2008 x64 64-bit

Fibre Channel adapter	Adapter driver (minimum/maximum) ³	Adapter firmware	Boot BIOS (minimum/maximum) ³
FC1142 ¹	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1242 ¹	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1143 ²	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC1243 ²	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.26/2.02
FC2142SR ¹	7-2.00a12/7-2.01a4	2.72a2	1.71a0/2.01a2
FC2242SR ¹	7-2.00a12/7-2.01a4	2.72a2	1.71a0/2.01a2
FC2143	7-2.00a12/7-2.01a4	2.72a2	1.71a0/2.01a2
FC2243	7-2.00a12/7-2.01a4	2.72a2	1.71a0/2.01a2
FCA2214	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.45
FCA2214DC	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.45
FCA2404	7-2.00a12/7-2.01a4	1.91a5	1.71a0/2.01a2
FCA2404DC	7-2.00a12/7-2.01a4	1.91a5	1.71a0/2.01a2
FCA2408	7-2.00a12/7-2.01a4	1.91a5	1.71a0/2.01a2
BL20p G2 (FC Mezzanine)	9.1.6.15	NA (loaded by driver)	1.45
BL20p G3 (FC Adapter)	9.1.6.15	NA (loaded by driver)	1.45
BL20p G4 (Mezzanine)	9.1.6.15	NA (loaded by driver)	1.45
BL45p G2 (FC Adapter)	9.1.6.15	NA (loaded by driver)	1.45
BL25p, BL45p (HPBALCF 105)	9.1.6.15	NA (loaded by driver)	1.48
BL30p, BL35p (FC Balcony)	9.1.6.15	NA (loaded by driver)	1.48
BL20p G3 (E-FC Adapter)	7-2.00a12	1.91a5	1.71a0
BL25p, BL45p (E-FC Balcony)	7-2.00a12	1.91a5	1.71a0
BL45p G2 (E-FC Balcony)	7-2.00a12	1.91a5	1.71a0
BL30p, BL35p (E-FC Balcony)	7-2.00a12	1.91a5	1.71a0
A7387A	7-2.00a12	1.91a5	1.71a0
A7388A	7-2.00a12	1.91a5	1.71a0
LPe1105 ¹	7-2.00a12	2.72a2	3.00a4
QMH2462 ¹	9.1.6.15	NA (loaded by driver)	1.26

¹Supported only on PCI Express-capable servers

²The PCI-X 2.0 Generic versions of the QLogic 4 Gb cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (FC1143 and FC1243) are supported.

³On the EVA4000/4100/6x00/8x00, only the minimum version is supported. On the EVA4400, the minimum and maximum versions are supported. Where only one version is listed, it applies to all array models.

7.8 Microsoft Windows (cont'd)

7.8.8 Operating system specifications for Windows 2008 Itanium

Fibre Channel adapter	Adapter driver (minimum/maximum)⁵	Adapter firmware	Boot BIOS (minimum/maximum)⁵
QMH2462	9.1.6.15	NA (loaded by driver)	1.09
A8002A (LPe1150) ¹	6-2.00a12/6-2.01a4	2.72a2	3.11a5/4.00a1
A8003A (LPe11002) ¹	6-2.00a12/6-2.01a4	2.72a2	3.11a5/4.00a1
AE311A (QLE2460) ¹	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.09/2.02
AD300A (QLE2462) ¹	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.09/2.02
AB379A/B (QLA2462) ^{2,3}	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.09/2.02
AB429A (QLA2460) ^{2,3}	9.1.6.15/9.1.7.17	NA (loaded by driver)	1.09/2.02
AD167A (LP1150) ⁴	6-2.00a12	2.72a2	3.11a5
AD168A (LP11002) ⁴	6-2.00a12	2.72a2	3.11a5
AB232A (LP9802)	6-1.20a7/6-2.01a4	1.91a5	3.11a5/4.00a1
AB466A (LP1050DC)	6-1.20a7/6-2.01a4	1.91a5	3.11a5/4.00a1
AB467A (LP1050)	6-1.20a7/6-2.01a4	1.91a5	3.11a5/4.00a1
LPe1105 (HP c-class mezz card)	6-2.01a4	2.72a2	4.00a1

¹Supported on rx2600-e, rx3600-e, and rx660-e servers.

²The PCI-X 2.0 Generic versions of the QLogic 4 Gb cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (AB379A/B and AB429A) are supported by HP.

³Supported on rx2660-e, rx3600, rx3600-e, rx6600, rx6600-e, rx7460, rx8460 and HP Integrity Superdome servers.

⁴Supported on rx2660-e, rx3600, rx3600-e, rx6600, rx6600-e, rx7620, rx7640, rx8620, rx8640, and HP Integrity Superdome servers.

⁵On the EVA4000/4100/6x00/8x00, only the minimum version is supported. On the EVA4400, the minimum and maximum versions are supported. Where only one version is listed, it applies to all array models.

7.9 Novell NetWare 6.5¹

Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS (minimum)
FCA2214	6.90i/6.90m	1.52/1.54
FCA2214DC	6.90i/6.90m	1.52/1.54
FC1142SR	6.90i/6.90m	2.02/1.29 ²
FC1242SR	6.90i/6.90m	2.02/1.29 ²
FC1143	6.90i/6.90m	2.02/1.29 ²
FC1243	6.90i/6.90m	2.02/1.29 ²
QMH2462	6.90i	1.26
BL20p (FC Mezzanine)	6.90i/6.90m	1.45
Cluster support		
NCS 1.8	Supported on NetWare 6.5 SP6 or SP7.	
Single-path support	Novell NetWare servers require a single Fibre Channel adapter to support single-path mode. Do not use single-path mode in high-availability environments.	
¹ NetWare 6.5 is currently supported on XCS 09000000 and 09001000 only for the EVA4400. Support for XCS 09003000 is not available yet. ² On the EVA4000/6000/8000 and EVA4100/6100/8100, the supported BIOS versions are 1.24/1.26.		

7.10 Sun Solaris

7.10.1 Operating system specifications for Sun Solaris 8 and 9

Fibre Channel adapter		SPARC		Multipathing		Driver version
Vendor	Model	Sun	FSC	MPxIO	DMP	
Sun	SG-XPCI1FC-QF2 SG-XPCI2FC-QF2 SG-XPCI1FC-QL2 SG-XPCI2FC-QF2-Z SG-XPCI1FC-QF4 SG-XPCI2FC-QF4	Y	N	Y	Y	SUNWqlc ²
	SG-XPCI1FC-EM2 SG-XPCI2FC-EM2 SG-XPCI1FC-EM4-Z SG-XPCI2FC-EM4-Z	Y ¹				SUNWemlxs and SUNWemlxu ²
Emulex	LP10000	Y	Y	N	Y	lpfc 6.02h
		Y ¹	Y	Y	Y	SUNWemlxs and SUNWemlxu ²
	LP10000DC	Y	Y	N	Y	lpfc 6.02h
		Y ¹	Y	Y	Y	SUNWemlxs and SUNWemlxu ²
	LP11000	Y	Y	N	Y	lpfc 6.02h
		Y ¹	Y	Y	Y	SUNWemlxs and SUNWemlxu ²
LP11002	Y	Y	N	Y	lpfc 6.02h	
	Y ¹	Y	Y	Y	SUNWemlxs and SUNWemlxu ²	
QLogic	QLA2310F	Y	Y ³	N	Y	4.20, 5.02, 5.03
		Y	Y ³	Y	Y	SUNWqlc ²
	QLA2340	Y	Y ³	N	Y	4.20, 5.02, 5.03
		Y	Y ³	Y	Y	SUNWqlc ²
	QLA2342	Y	Y ³	N	Y	4.20, 5.02, 5.03
		Y	Y ³	Y	Y	SUNWqlc ²
QLA2460	Y	N	Y	Y	SUNWqlc ²	
QLA2462	Y	N	Y	Y	SUNWqlc ²	
HP	FCA2257P	Y	Y ³	N	Y	4.20, 5.02, 5.03

¹Emulex base Sun branded HBAs (e.g., SG-XPCInFC-EM2) are not supported with Exx00 servers.

²Requires Sun StorEdge SAN Foundation Software (SFS) 4.4.12 or later.

³HBAs supported with FSC servers on project release only.

7.10 Sun Solaris (cont'd)

7.10.2 Operating system specifications for Sun Solaris 10

Fibre Channel adapter		SPARC		x86		Multipathing		Driver version	
Vendor	Model	Sun	FSC ¹	Sun	HP	MPxIO	DMP ²		
Sun	SG-XPCI1FC-QF2	Y	N	Y	Y	Y	Y	SUNWqlc with patch ⁶	
	SG-XPCI2FC-QF2								
	SG-XPCI1FC-QL2								
	SG-XPCI2FC-QF2-Z								
	SG-XPCI1FC-QF4								
	SG-XPCI2FC-QF4								
	SG-XPCIE1FC-QF4 ³								
	SG-XPCIE2FC-QF4 ³								
	SG-XPCIE2FC-QB4-Z ⁴								N
	SG-XPCI1FC-EM2								Y ⁵
SG-XPCI2FC-EM2									
SG-XPCI1FC-EM4-Z									
SG-XPCI2FC-EM4-Z									
SG-XPCIE1FC-EM4 ³									
SG-XPCIE2FC-EM4 ³									
SG-XPCIE2FC-EM4 ³									
Emulex	LP10000	Y	Y	Y	Y	N	Y	lpfc 6.02h (SPARC only)	
		Y	Y ³			Y	Y	SUNWemlxs and SUNWemlxu with patch ⁷	
	LP10000DC	Y	Y	Y	Y	N	Y	lpfc 6.02h (SPARC only)	
		Y	Y ³			Y	Y	SUNWemlxs and SUNWemlxu with patch ⁷	
	LP11000	Y	Y	Y	Y	N	Y	lpfc 6.02h (SPARC only)	
		Y	Y ³			Y	Y	SUNWemlxs and SUNWemlxu with patch ⁷	
	LP11002	Y	Y	Y	Y	N	Y	lpfc 6.02h (SPARC only)	
		Y	Y ³			Y	Y	SUNWemlxs and SUNWemlxu with patch ⁷	
	LPe11000	Y	N	N	N	Y	Y	SUNWemlxs and SUNWemlxu with patch ⁷	
	LPe11002							lpfc 6.21f	
	LPe1105	NA	NA	N	Y ⁸	Y	NA	SUNWemlxs and SUNWemlxu with patch ⁷	

¹FSC servers are not supported with Sun branded HBAs.

²DMP applies to SPARC servers only.

³PCIe HBAs are only supported with servers with PCIe support (e.g., T2000, T5220).

⁴Supported with the Sun Blades 8000 Modular (x8400 and x8420) systems only.

⁵Emulex base Sun branded HBAs (e.g., SG-XPCInFC-EM2) are not supported with Exx00 servers.

⁶For SPARC servers, patch 119130-26 or later is required. For x86 servers, patch 119131-33 or later is required.

⁷For SPARC servers, patch 120222-27 or later is required. For x86 servers, patch 120223-27 or later is required.

⁸Supported with HP c-Class Blades only.

7.10 Sun Solaris (cont'd)

7.10.2 Operating system specifications for Sun Solaris 10 (cont'd)

Fibre Channel adapter		SPARC		x86		Multipathing		Driver version
Vendor	Model	Sun	FSC ¹	Sun	HP	MPxIO	DMP2	
QLogic	QLA2310F	Y	Y ⁹	NA	NA	N	Y	4.20, 5.02, 5.03 (SPARC only)
		Y	Y ⁹	Y	Y	Y	Y	SUNWqlc with patch ⁶
	QLA2340	Y	Y ⁹	NA	NA	N	Y	4.20, 5.02, 5.03 (SPARC only)
		Y	Y ⁹	Y	Y	Y	Y	SUNWqlc with patch ⁶
	QLA2342	Y	Y ⁹	NA	NA	N	Y	4.20, 5.02, 5.03 (SPARC only)
		Y	Y ⁹	Y	Y	Y	Y	SUNWqlc with patch ⁶
	QLA2460	Y	N	Y	Y	Y	Y	SUNWqlc with patch ⁶
	QLA2462	Y	N	Y	Y	Y	Y	SUNWqlc with patch ⁶
	QLE2460	Y	N	NA	NA	Y	Y	SUNWqlc with patch ⁶
	QLE2462	Y	N	NA	NA	Y	Y	SUNWqlc with patch ⁶
QMH2462	NA	NA	N	Y ⁸	Y	NA	SUNWqlc with patch ⁶	
HP	FCA2257P	Y	Y ⁹	NA	NA	N	Y	4.20, 5.02, 5.03
	381881-B21	NA	NA	N	Y ¹⁰	Y	NA	SUNWqlc with patch ⁶
	354054-B21	NA	NA	N	Y ¹⁰	Y	NA	SUNWqlc with patch ⁶
	394588-B21	NA	NA	N	Y ^{10,11}	Y	NA	SUNWemlxs and SUNWemlxu with patch ⁷
	361426-B21	NA	NA	N	Y ¹²	Y	NA	SUNWqlc with patch ⁶
	394757-B21	NA	NA	N	Y ^{12,13}	Y	NA	SUNWemlxs and SUNWemlxu with patch 120223-11 only

⁹HBA's supported with FSC servers on project release only.

¹⁰Supported with BL25 and BL45 only.

¹¹Supported with BL35 only.

¹²Supported with HP p-Class Blades (BL20P G4 and BL25P G5).

¹³Supported with SUNWemlxs driver package from Sun 10 x86 U2 6/06 and patch 120223-11.

7.10 Sun Solaris (cont'd)

7.10.3 Supported Sun Solaris platforms and servers

Platform	Server model
Sun Fire (SPARC)	280R, V120, V125, V210, V215, V240, V245, V250, V440, V445, V480, V490, V880, V890, V1280, 4800, 4810, 6800, 12K, 15K, E2900, E4900, E6900, E20K, E25K, T1000, T2000
Sun Blade (Solaris 10 (x86) only)	T6300, T6320
Sun SPARC Enterprise	M4000, T1000, T2000, M5000, M8000, M9000, T5120, T5220
Sun Enterprise	E220R, E250, E420R, E450, E3000, E3500, E4000, E4500, E5000, E5500, E6000, E6500, E10000
HP Blade (Solaris 10 (x86) only) ^{1,2,3}	BL20p G4, BL25 G2, BL25p, BL35p, BL45p, BL45p G2, BL460c ⁵ , BL465c, BL480c ⁵ , BL680c, BL685c
HP ProLiant (Solaris 10 (x86) only) ^{1,2}	DL145, DL145 G2, DL360 G4, DL360 G5, DL380 G5, DL385, DL385 G2 ⁵ , DL385 G5, DL580 G3, DL580 G5, DL585, DL585 G2 ⁵ , ML370 G5
Sun Fire (Solaris 10 (x86) only)	V40z, x2100, x2200, x4100, x4200, x4450, x4500, x4600, x6220 ⁶ , x6250 ⁶ , x8400 ⁴ , x8420 ⁴ , x8440 ⁴
FSC ⁷ PRIMEPOWER (SPARC)	PW250, PW450, PW650, PW850, PW900, PW1500, PW2500

¹Preliminary patch IDR124145-02 is required to resolve a hang issue introduced in s10606.

²AMD memory scrubber codes introduced in kernel patch 118855-06 and later (included in s10606) can cause system lockups. It is recommended for AMD-based ProLiant servers with 4 GB or more of memory to disable this feature by adding the following entry to the /etc/system file and reboot: set cpu\.\AuthenticAMD\.\15:ao_scrub_rate_dram=0

³HP Blade servers are supported with the mezzanine cards available with the server only.

⁴Sun Blade 8000 Modular Systems require the 4 Gb FC PCIe Express Module.

⁵Issues with the bnx driver with versions earlier than 3.5.1 have been identified. You must explicitly add "ddi-no-autodetach=1;" to the bnx.conf file if you are using drivers with versions earlier than 3.5.1.

⁶Servers require the Sun Blade 6000 chassis.

⁷Fujitsu Siemens Computers

7.10.4 Cluster support

Version	Cluster software (minimum)
8 and 9 SPARC platform only	Sun Cluster 3.1 Veritas Cluster Server 3.5 (with XCS earlier than 6.000) Veritas Cluster Server 4.1 (with XCS 6.000 or later) PRIMECLUSTER 4.1A30
10 SPARC	Sun Cluster 3.1 Veritas Cluster Server 4.1 PRIMECLUSTER 4.2A00
10 x86 platform ¹	Sun Cluster 3.1

¹For information about which x86 models are supported, contact your HP-authorized representative.

7.10 Sun Solaris (cont'd)

7.10.5 Required patches

This table lists the minimum required patches for each Solaris version. The driver you use may require additional patches. See Tables 7.8.1 and 7.8.2 for driver-dependent patches. Patch information for Sun Solaris is available at the Sun website: <http://sunsolve.sun.com/>

Version	Architecture	Patches (minimum)
10	SPARC	118822-30 and 118833-24
	x86	118855-19
9	SPARC	112233-12, 112834-06, and 113277-50
8	SPARC	108528-29 and 110912-05

Multipathing support	Sun Solaris MPxIO/Multipathing or VERITAS VxVM/DMP multipathing Both applications require at least one FCA connected to both controllers. VERITAS VxVM/DMP can require installation of an array support library in order to recognize the arrays. For more information, see the <i>HP StorageWorks MPxIO for Sun Solaris application notes</i> .
Single-path support	Single-path mode is supported with Emulex lpfc and QLogic qla2300 drivers only. Do not use single-path mode in high-availability environments.

7.11 VMware

7.11.1 Operating system specifications for VMware ESX 2.5.x

Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS (minimum)
QLogic 2G		
FCA2214/FCA2210	7.04	1.45
FCA2214DC	7.04	1.45
BL20p G2 FC mezzanine	7.04	1.45
BL20p G3 FC adapter	7.04	1.45
BL30p, BL35p FC balcony	7.04	1.45
BL25p, BL45p HPBALCF 105	7.04	1.48
QLogic 4G PCI-X 2.0		
FC1143 ^{1,2}	7.07.04	1.26
FC1243 ^{1,2}	7.07.04	1.26
QLogic 4G PCIe		
FC1142 ^{1,2}	7.07.04	1.26
FC1242 ^{1,2}	7.07.04	1.26
QMH2462 ^{1,2}	7.07.04	1.26
Emulex 2G		
A7388A ³	2.01g_vmw1	1.71a0
A7387A ³	2.01g_vmw1	1.71a0
A7560A ³	2.01g_vmw1	1.71a0
LP10000 ³	2.01g_vmw1	1.70a3
LP10000DC ³	2.01g_vmw1	1.70a3
FCA2404 ³	2.01g_vmw1	1.71a0
FCA2404DC ³	2.01g_vmw1	1.71a0
FCA2354 ³	2.01g_vmw1	1.71a0

¹The -X 2.0 generic versions of the QLogic 4 GB cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (FC1143 and FC1243) are supported by HP.

²Support for 4 GB HBAs requires ESX 2.5.4 Upgrade Patch 4 or later.

³Emulex HBAs are supported with ESX 2.5.3 and 2.5.4 only.

7.11 VMware

7.11.1 Operating system specifications for VMware ESX 2.5.x (cont'd)¹

Fibre Channel adapter	Adapter driver (minimum)	Adapter BIOS (minimum)
Emulex 4G PCI-X 2.0		
FC2143 ^{2,3}	7.3.2_vmw3	1.71a0
FC2243 ^{2,3}	7.3.2_vmw3	1.71a0
Emulex 4G PCIe		
FC2142 ^{2,3}	7.3.2_vmw3	1.71a0
FC2242 ^{2,3}	7.3.2_vmw3	1.71a0
LPe1105-HP [Mezz card] ^{2,3}	7.3.2_vmw3	3.00a4

7.11.2 Operating system specifications for VMware Server and VMware workstations

Version	Description
VMware Server 2.0 VMware Workstation 6	VMware Server and VMware Workstation software products run as applications on Microsoft and Linux operating systems. These applications are storage independent and leverage HP standard operating system support offerings.

7.11 VMware (cont'd)

7.11.3 Operating system specifications for VMware ESX 3.x.x

Fibre Channel adapter	Adapter driver for 3.0.0 (minimum) ¹	Adapter driver for 3.0.1 (minimum)	Adapter driver for 3.0.2 (minimum)	Adapter driver for 3.5.0 (minimum)	Adapter BIOS (minimum)
QLogic 2G					
FCA2214/FCA2210	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.45
FCA2214DC	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.45
BL20p G2 (FC Mezzanine)	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.45
BL20p G3 (FC Adapter)	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.45
BL20p G4 (FC Mezzanine)	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.45
BL25p, BL45p (HPBALCF 105)	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.48
BL45p G2 (FC Adapter)	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.48
BL30p, BL35p (FC Balcony)	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.45
QLogic 2G PCI-X 2.0					
FC1143 ²	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.26
FC1243 ²	7.04.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.26
QLogic 4G PCIe					
FC1142	7.07.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.26
FC1242	7.07.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.26
QMH2462	7.07.00	7.07.04	7.07.04.2vmw	7.08-vm32	1.26
Emulex 2G					
A7388A	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
A7387A	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
LP10000	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.70a3
LP10000DC	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.70a3
FCA2404	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
FCA2404DC	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
BL20p G4 (E-FC Adapter)	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
BL20p G4 (E-FC Mezzanine)	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
BL25p, BL45p (E-FC Balcony)	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
BL45p G2 (E-FC Balcony)	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
BL30p, BL35p (E-FC Balcony)	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0

¹Version 3.0.0 is not supported with the EVA4400. It is only supported with EVA4000/4100, EVA6000/6100, and EVA8000/8100.

²The -X 2.0 generic versions of the QLogic 4 GB cards (QLA2460 and QLA2462) are not supported. Only the HP versions of these cards (FC1143 and FC1243) are supported by HP.

7.11 VMware (cont'd)

7.11.3 Operating system specifications for VMware ESX 3.x.x (cont'd)

Fibre Channel adapter	Adapter driver for 3.0.0 (minimum)¹	Adapter driver for 3.0.1 (minimum)	Adapter driver for 3.0.2 (minimum)	Adapter driver for 3.5.0 (minimum)	Adapter BIOS (minimum)
Emulex 4G PCI-X 2.0					
FC2143	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
FC2243	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.71a0
Emulex 4G PCIe					
FC2142SR	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.70a3
FC2242SR	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		1.70a3
LPe1105-HP	7.3.2_vmw1	7.3.2_vmw2	7.3.2_vmw4		3.00a4