HP StorageWorks EVA software 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.

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 Enterprise Virtual Array connectivity release notes for the VCS or XCS version and specific operating system for detailed connectivity support information.

See Table 4.3, EVA host connectivity, for instructions on how to locate these documents.

	EVA3000/5000				**EVA4x00/6x00/8x00**			**HP Command View EVA**[2]		**HP Replication Solutions Manager**	
	VCS 3.028	**VCS 3.1xx**	**VCS 4.0xx**	**VCS 4.1xx**	**XCS 5.1xx**	**XCS 6.0xx**	**XCS 6.1xx**	**6.0.x**	**7.0.x**	**3.0**	**3.1**
HP Business Copy EVA 2.3.1	•									•	
HP Replication Solutions Manager 2.0[1]	•		•		•						
HP Replication Solutions Manager 2.1[1]	•	•	•		•	•	•	•			
HP Replication Solutions Manager 3.0[1]	•	•	•	•		•	•	•	•		
HP Replication Solutions Manager 3.1[1]		•	•	•		•	•	•	•		
Storage Management Appliance software 2.1	•	•	•	•	•	•	•	•	•	•	•

[1]Supported on non-English versions of Windows.

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

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.
– HP Command View EVA 4.1.x includes HP Command View EVAPerf 1.0.x, SMI-S EVA 4.1, and SSSU 4.1
– HP Command View EVA 5.0.x includes HP Command View EVAPerf 1.2, SMI-S EVA 5.0.1, and SSSU 5.0.
– 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						
	4.1.x[1]	**5.0.x SMI-S EVA 5.0.1**	**6.0**	**6.0.1**	**6.0.2**	**7.0**	**7.0.1**
EVA controller software							
VCS 3.028	•	•	•	•	•	•	•
VCS 3.1xx		•	•	•	•	•	•
VCS 4.0xx	•	•	•	•	•	•	•
VCS 4.1xx							•
XCS 5.1xx		•	•	•	•		
XCS 6.0xx			•	•	•	•	•
XCS 6.1xx					•	•	•
SAN applications							
HP Command View EVA Tape Library 1.8b	•[2]	•[2]	•	•	•	•	•
HP Cluster Extension EVA for Windows 1.01.01	•[3]	•[4]	•	•	•	•	
HP Cluster Extension EVA for Linux 1.02.00		•[4]	•	•	•		
HP Fast Recovery Solution 2.02.02	•	•					
HP Instant Support Enterprise Edition A3.095	•	•	•	•	•	•	•
HP Metrocluster A.01.00	•[5]	•			•		
HP Navigator 2.x and earlier	•	•					
HP Navigator 3.0 and later	•	•	•	•	•	•	•
HP Open Service Event Manager 1.4.1	•	•	•	•	•	•	•
HP Replication Solutions Manager 1.2	•						
HP Replication Solutions Manager 2.0	•	•					
HP Replication Solutions Manager 2.1		•	•	•	•		
HP Replication Solutions Manager 3.0					•	•	•
HP Replication Solutions Manager 3.1					•	•	•
HP SmartStart 7.6			•	•	•	•	•
HP Storage Area Manager 3.2	•[6]	•	•[8]	•[8]	•[8]	•[8]	•[8]
HP Storage Data Protector 5.5, 6.0	•[7]	•[7]			•[7]	•[7]	•[7]

[1]HP Command View EVA 4.1.x will be supported through December 2007. When calling for support, customers may be asked to upgrade to later versions to take advantage of specific quality improvements.

[2]HP Command View EVA and HP Command View EVA 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.

[3]The recommended product versions are HP Command View EVA 4.1.2 and SMI-S EVA 4.1.1.

[4]The recommended product versions are HP Command View EVA 5.0.3 and SMI-S EVA 5.0.1.

[5]See the HP Metrocluster support matrix for supported HP Command View EVA/SMI-S EVA versions.

[6]SMI-S support is only available with SMI-S provider versions 4.1.3 and 4.1.6.

[7]This 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.

[8]Supported via HP Storage Area Manager's DPI interface to HP Command View EVA. The SMI-S EVA interface is not supported.

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

	HP Command View EVA						
	4.1.x[1]	**5.0.x SMI-S EVA 5.0.1**	**6.0**	**6.0.1**	**6.0.2**	**7.0**	**7.0.1**
SAN applications (cont'd)							
HP Storage Essentials Enterprise Edition 5.0.1, 5.0.1 SP1A, and 5.0.1 SP2	•[9]						
HP Storage Essentials Enterprise Edition 5.1 Windows kit (Bld. 5.1.0)	•[9]						
HP Storage Essentials 5.1 SP1 for Windows kit	•[9]	•[10,11]		•[10]	•[10]		
HP Storage Essentials Enterprise Edition 5.1 Linux kit (Bld. 5.1.1)	•[5]			•[10]	•[10]		
HP Storage Essentials Enterprise Edition 5.1 SP2 (Windows/Linux)	•[9]	•[10,11]		•[10]	•[10]		
HP Storage Essentials Enterprise Edition 5.1 SP3 (Windows/Linux)	•[9]	•[10,11]		•[10]	•[10]	•[10]	
HP Storage Essentials Enterprise Edition 5.1 SP4 (Windows/Linux)	•[13]	•[11,12]		•[12]	•[12]	•[12]	•[12]
HP Storage Essentials Standard Edition 5.1 SP4 (Windows)	•[14]	•[10,11]		•[10]	•[10]	•[10]	•[10]
HP Systems Insight Manager 5.0	•	•		•	•	•	•
HP Systems Insight Manager 5.1 or 5.1 SP1	•	•		•	•	•	•
HP VDS/VSS Hardware Provider 4.00.00/4.00.01	•	•					
HP VDS/VSS Hardware Provider 4.01.04			•	•	•	•	•
HP WEBES 4.4.4	•	•					
HP WEBES 4.5.1	•	•	•	•	•		
HP WEBES 5.0	•	•	•	•	•	•	•
iSCSI connectivity							
mpx100 firmware 2.0.8.8		•	•	•	•		
mpx100 firmware 2.0.9.0					•	•	•

[9]The HP Command View EVA SMI-S Provider is supported in the following software combinations:
- HP Command View EVA 4.0 and SMI-S EVA 4.0.1 (SMI-S 1.02+)
- HP Command View EVA 4.1+ and SMI-S EVA 4.1 or 4.1.2+ (SMI-S 1.03)
- HP Command View EVA 4.1+ and SMI-S EVA 4.1.1 (SMI-S 1.04)

All combinations support provisioning but do not support pool provisioning.

[10]Supported via a provider included with HP Storage Essentials. SMI-S EVA is not supported. Provisioning via the HP Storage Essentials user interface is not supported.

[11]Supports HP Command View EVA 5.0.3.

[12]Supported 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.

[13]The HP Command View EVA SMI-S Provider is supported in the software combinations of HP Command View EVA 4.1.8+ and HP SMI-S EVA 4.1.8+. This combination supports provisioning but does not support pool provisioining.

[14]The HP Command View EVA SMI-S Provider is supported in the software combinations of HP Command View EVA 4.1.8+ and HP SMI-S EVA 4.1.8+. This combination does not support provisioning.

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 online 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.

	TO controller software version						
	VCS 3.028	**VCS 3.1xx**	**VCS 4.0xx**	**VCS 4.1xx**	**XCS 5.1xx**	**XCS 6.0xx**	**XCS 6.1xx**
FROM controller software version							
VCS 3.028		•	•[1]	•[1]	•[2]	•[2]	•[2]
VCS 3.1xx	NA	•	•[1]	•[1]	•[2]	•[2]	•[2]
VCS 4.0xx	NA	NA	•[1]	•[1]	•[2]	•[2]	•[2]
VCS 4.1xx	NA	NA	NA	•[1]	•[2]	•[2]	•[2]
XCS 5.1xx	NA	NA	NA	NA	•	•	•
XCS 6.1xx	NA	NA	NA	NA	NA	NA	•

[1]An offline upgrade is required.

[2]Either a data-in-place upgrade or an array initialization is required. An array initialization results in data loss or restore.

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.

	TO controller software version						
	VCS 3.028	**VCS 3.1xx**	**VCS 4.0xx**	**VCS 4.1xx**	**XCS 5.1xx**	**XCS 6.0xx**	**XCS 6.1xx**
FROM controller software version							
VCS 3.028		NA	NA	NA	NA	NA	NA
VCS 3.1xx	•	•	NA	NA	NA	NA	NA
VCS 4.0xx	•[1]	•[1]	•[1]	•[1]	NA	NA	NA
VCS 4.1xx	•[1]	•[1]	•[1]	•[1]	NA	NA	NA
XCS 5.1xx						NA	NA
XCS 6.0xx					•[1]	•[1]	NA
XCS 6.1xx					•[1]	•[2]	•[2]

[1]An array initialization is required, which results in data loss or restore.

[2]Either an offline downgrade or an array initialization is required. An array initialization results in data loss or restore.

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.

	Controller software version (destination array)						
	VCS 3.028	**VCS 3.1xx**	**VCS 4.0xx**	**VCS 4.1xx**	**XCS 5.1xx**	**XCS 6.0xx**[2]	**XCS 6.1xx**[2]
Controller software version (source array)							
VCS 3.028	•	•[1]	•[1]	•[1]	•	•[3]	•[3]
VCS 3.1xx	•[1]	•	•[1]	•[1]	•	•[3]	•[3]
VCS 4.0xx	•[1]	•[1]	•	•	•	•[3]	•[3]
VCS 4.1xx	•[1]	•[1]	•	•	•	•[3]	•[3]
XCS 5.1xx	•	•	•	•	•	•[1, 3]	•[1, 3]
XCS 6.0xx	•[3]	•[3]	•[3]	•[3]	•[1, 3]	•	•[1]

[1]Supported 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).

[2]Before 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 is not compatible with asynchronous replication in earlier versions of controller software (XCS 5.1xx or earlier, VCS).

[3]Asynchronous replication is not allowed between these controller software versions. Only synchronous replication is allowed.

4.0 HP StorageWorks EVA software deployment options

You can install HP StorageWorks EVA management and replication software on a management server. The management servers are: **General-purpose server:** A server other than the HP OpenView Storage Management Appliance that runs customer applications, such as file and print services **HP OpenView Storage Management Appliance (SMA):** A centralized, dedicated monitoring and management hardware-software solution for the storage area network (SAN) **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 **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.	
Required hardware	
General-purpose server Dedicated management server	x86 and x64 architectures are supported Processor: 1.26 GHz (minimum) Memory: 2 GB (minimum) Disk space requirements: — 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 **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.
Storage Management Appliance	G1, G2, G3
HP ProLiant Storage Server	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 **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.

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 6.0 and Command View XP 2.2B and/or Command View XP AE 5.0 coexistence on same Windows server	•	•		•
HP StorageWorks Command View for Tape Libraries 1.8 and later and HP Command View EVA 6.0 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
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)[9]
WEBES (HP Services obligation required)	•	•	•	•

[1]Software must be installed on the C:\ drive. Do not install HP Command View EVA and either HP Storage Essentials or HP Systems Insight Manager on the same server.

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

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

[4]Do 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.

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

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

[7]Supported with HP StorageWorks Management Pack for MOM 2005.

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

[9]HP Replication Solutions Manager is not supported on the x64 ProLiant Storage Server models.

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 installed.

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.

	Environment									
Server, OS, or application type	**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 CV EVA 7.0.x & EVAPerf 7.0.x**	**HP SSSU**	
			3.0[3]	**3.1**		**3.0**	**3.1**		**6.0.x**	**7.0**
Server										
Dedicated management server					•	•	•	•	•	•
General-purpose server			•	•	•	•	•	•	•	•
ProLiant Storage Server			•	•	•	•	•	•	•	•
Storage Management Appliance						•	•	•	•	•
Storage Management Appliance with HP OpenView Storage Area Manager								•	•	•
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 EVA functions are supported on all EVA-supported operating systems.							•	
HP HP-UX 11.23 PI/11iv2 (64b PA-RISC)			•	•					•	•
HP HP-UX 11.23 PI/11iv2 (64b Intel)			•	•					•	•
HP HP-UX 11.31/11iv3 (64b PA-RISC)			•	•					•[10]	•
HP HP-UX 11.31/11iv3 (64b Intel)			•	•					•[10]	•
HP OpenVMS 7.3-2									•	
HP OpenVMS 8.2 on Alpha servers									•	•
HP OpenVMS 8.2-1 on Integrity servers									•	•
HP OpenVMS 8.3 on Alpha servers			•							•
HP OpenVMS 8.3 on Integrity servers			•	•						•
HP Tru64 5.1b-4			•[4]	•	•				•	•
IBM AIX 5.2, 5.3			•	•					•	•

[1]See Table 4.4, "RSM host agent support" for host volume mounting restrictions.

[2]See Table 4.5, "RSM sever and host agent compatibility" for supported combinations of RSM server and RSM host agent versions.

[3]The HP RSM 3.0.1 host agent is only applicable to supported versions of HP-UX, Tru64, and Linux.

[4]The 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 CV EVA 7.0.x & EVAPerf 7.0.x	HP SSSU	
			3.0[3]	3.1		3.0	3.1		6.0.x	7.0
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 EVA functions are supported on all EVA-supported operating systems.			•				•	
Microsoft Windows 2000 Advanced Server SP4 (x86 32-bit)					•				•	
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x86 32-bit)			•[5]	•[5,6]	•	•	•[6]	•	•	•
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x86 32-bit)			•[5]	•[5,6]	•	•	•[6]	•	•	•
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2 (Itanium)			•[5]	•[5,6]	•					•
Microsoft Windows Server 2003 Datacenter Edition SP1/SP2 (Itanium)			•[5]	•[5,6]	•					
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x64 64-bit)			•[5]	•[5,6]				•		•
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x64 64-bit)			•[5]	•[5,6]				•		•
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)				•			•			
Microsoft Windows XP	EVA4000	EVA4000				•[8]	•[8]			
Novell Netware 6.5 SP5	All HP Business Copy EVA functions are supported on all EVA-supported operating systems.	All HP Continuous EVA functions are supported on all EVA-supported operating systems.							•[9]	•
Novell Netware 6.5 SP6										•
Red Hat Linux AS & ES 3.0 (32-bit) Update 8			•	•					•	•
Red Hat Linux AS & ES 3.0 (AMD64/EM64T) Update 8										
Red Hat Linux AS & ES 3.0 (64-bit Itanium) Update 8									•	•
Red Hat Linux AS & ES 4.0 (32-bit) Update 3									•	
Red Hat Linux AS & ES 4.0 (32-bit) Update 4[10]			•	•					•[9]	•
Red Hat Linux AS & ES 4.0 (AMD64/EM64T) Update 4[10]			•	•					•	•
Red Hat Linux AS & ES 4.0 (64-bit Itanium) Update 3									•	
Red Hat Linux AS & ES 4.0 (64-bit Itanium) Update 4[10]				•					•[9]	•
Sun Solaris 8 (SPARC)			•						•	
Sun Solaris 9 (SPARC)			•[5,7]	•					•	•
Sun Solaris 10 (SPARC)			•[5]						•	•

[5]The 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.

[6]Only the SP2 version of Microsoft Windows operating systems is supported with HP RSM 3.1.

[7]The host agent on this operating system does not support VERITAS DMP when accessing an EVA4x00, EVA6x00, or EVA8x00.

[8]HP RSM server on Windows XP is supported for simulation mode only.

[9]This operating system is only supported with HP SSSU 6.0.2. It is not supported with HP SSSU 6.0.

[10]The status of the HP RSM host agent on versions of Red Hat Linux 4.0 becomes unknown when a presented virtual disk is 1TB or greater. This occurs with the HP RSM 3.0 host agent and may be noticed with other operating systems.

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 CV EVA 7.0.x & EVAPerf 7.0.x	HP SSSU	
			3.0[3]	3.1		3.0	3.1		6.0.x	7.0
Operating system										
SuSE Linux 8 (32-bit) SP4	All HP Business Copy EVA functions are supported on all EVA-supported operating systems.	All HP Continuous EVA functions are supported on all EVA-supported operating systems.							•	•
SuSE Linux 8 (64-bit) SP4									•	•
SuSE Linux SLES 9.0 (32-bit Intel and AMD) SP3			•	•					•	•
SuSE Linux SLES 9.0 (AMD64/EM64T) SP3			•	•						
SuSE Linux SLES 9.0 (64-bit Itanium) SP3			•	•					•	•
SuSE Linux SLES 10.0 (32-bit Intel and 32-bit AMD)										•
VMware ESX Server 2.5										
VMware ESX Server 2.5.2									•	•
VMware ESX Server 2.5.3										
VMware ESX Server 2.5.4										•
VMware ESX Server 3.0.0[11]										
VMware ESX Server 3.0.1[11]										
Application										
Oracle 9i, 10G R2			•[12]	•[12]						
SQL Server 2000 Enterprise SP3 or later										
SQL Server 2000 Developer SP3 or later										
SQL Server 2005 Enterprise										

[11]VFMS-3 LUNs require configuration changes to the VMware kernel to be supported with HP Continuous Access EVA. See *HP StorageWorks EVA replication software consolidated release notes (XCS 6.1xx)* for more information.

[12]Oracle application integration is supported on Windows hosts only and works in Real Application Clusters (RAC) environments. There is no ASM support for Oracle.

4.3 EVA host connectivity

For the supported operating systems of hosts accessing EVA storage, 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. In the Storage section, select **Disk Storage Systems** and then select the EVA model in the EVA Disk Arrays section.

For supported switch information, see the *HP StorageWorks SAN design reference guide* . In the Storage section of the Manuals page, select **Storage Networking** and then select **HP StorageWorks SAN** in the HP StorageWorks SAN Solutions section.

Exceptions

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

4.4 RSM host agent support

This table describes RSM host agent support for:
— Volume Manager
— Mounting host volume copies on the same host
— Multipath solutions
— Cluster software

Host operating system	Supported Volume Manager[2]	Mounting a host volume copy on the same host as the source[3]	Compatible multipath solution[5]		Supported cluster software
			EVA3000/5000	EVA4x00/6x00/8x00	
HP HP-UX	Native Logical Volume[4]	Y	Secure Path 3.0F SP2, PVlinks[6,7] (no VERITAS DMP)	Secure Path 3.0F SP2, PVlinks[6,7] (no VERITAS DMP)	Serviceguard
HP OpenVMS	No support for replication of volume groups	Y	Native multipathing is part of base OS	Native multipathing is part of base OS	Native clustering is part of base OS
HP Tru64 5.1b	Replication of LSM volumes are not supported	Y	Native multipathing in OS	Native multipathing in OS	TruCluster software
IBM AIX	Native Logical Volume	Y (EVA3000/5000 with VCS 3.xxx only)	Secure Path 2.0D SP2 or later[8] MPIO 1.0.03 or later	MPIO 1.0.0.3 or later (Antemeta basic HP Business Copy EVA support only, no host agent support)	HACMP 5.3
Microsoft Windows	Replication of Windows dynamic disks and VERITAS Volume Manager are not supported	Y, except copies of Windows Cluster Quorum disks in the same cluster	Secure Path 4.0c and EVA MPIO	EVA MPIO	Microsoft Cluster Server
Red Hat Linux AS & ES 3.0 Update 7, 8	Logical Volume Manager 1.08-13	N	QLogic failover driver 8.01.06.01-12-fo (no Secure Path) Emulex Multipulse driver 2.2.20		
Red Hat Linux AS & ES 4.0 Update 3, 4	Logical Volume Manager 2.01.14		QLogic failover driver 8.01.06.01-12-fo (no Secure Path) Emulex Multipulse driver 2.2.20 Device Mapper multipath 0.4.5		Serviceguard 11.16.01
SuSE Linux SLES 9.0 SP3	Logical Volume Manager 2.01.14	N	QLogic failover driver 8.01.06.01-12-fo (no Secure Path) Emulex Multipulse driver 2.2.20 Device Mapper multipath 0.4.5		

[1]The HP RSM host agent on the Solaris 9 operating system does not support VERITAS Volume Manager when accessing an EVA4x00, EVA6x00, or EVA8x00.

[2]If 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.

[3]Mounting a host volume copy on the same host as the source is supported with HP Business Copy EVA and HP Replication Solutions Manager.

[4]Replication manager host volume job commands are supported only on HP-UX disks with Logical Volume Manager.

[5]These solutions apply to HP Continuous Access EVA in general.

[6]If you use Pvlinks and require multiple paths to a host volume, you must create the additional paths after the host volume is created. See *HP StorageWorks Replication Solutions Manager online help and user guide* or *HP StorageWorks Replication Solutions Manager administrator guide* for more information.

[7]For HP-UX 11.31, native multipathing is part of the operating system.

[8]Secure Path 2.0D SP3 is the minimum required version for AIX 5.3.

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

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

[11]To display host properties correctly, the HP RSM server software requires the QLA2342 (SUN) host bus adapter when running the MPxIO multipath solution.

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

4.5 RSM server and host agent compatibility

This table shows the versions of RSM server, RSM host agent, and Dynamic Capacity Management that are supported on each operating system. It also shows which versions of RSM server and RSM host agent are compatible. See Table 4.6, Dynamic Capacity Management compatibility, for compatibility with other EVA applications.

Operating system	RSM host agent	RSM server 3.0	RSM server 3.1	Dynamic Capacity Management[1]	
				Extend	Shrink
HP HP-UX PA-RISC 11.11/11iv1 (64b)					
HP HP-UX 11.23 PI/11iv2 (64b PA-RISC)	3.0	•	•		
HP HP-UX 11.23 PI/11iv2 (64b Intel)	3.0	•	•		
HP HP-UX 11.31/11iv3 (64b PA-RISC)	3.0	•	•		
HP HP-UX 11.31/11iv3 (64b Intel)	3.0	•	•		
HP OpenVMS 7.3-2					
HP OpenVMS 8.2 on Alpha servers					
HP OpenVMS 8.2-1 on Integrity servers					
HP OpenVMS 8.3 on Integrity servers	3.0	•	•		
HP Tru64 5.1b-4	3.0	•	•		
IBM AIX 5.2, 5.3	3.0	•	•		
Microsoft Windows 2000 Server SP2/SP3/SP4					
Microsoft Windows 2000 Advanced Server SP4 (x86 32-bit)					
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x86 32-bit)[2]	3.0	•			
	3.1		•	•	
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (x64 64-bit)[2]	3.0	•			
	3.1		•	•	
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x86 32-bit)[2]	3.0	•			
	3.1		•	•	
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2/R2 (x64 64-bit)[2]	3.0	•			
	3.1		•	•	
Microsoft Windows Server 2003 Enterprise Edition SP1/SP2 (Itanium)[2]	3.0	•			
	3.1		•	•	
Microsoft Windows Server 2003 Datacenter Edition SP1/SP2 (Itanium)[2]	3.0	•			
	3.1		•	•	
Microsoft Windows Server 2008 (32-bit) (beta 3.0 version)[2]	3.1		•	•	•
Microsoft Windows Server 2008 (Itanium) (beta 3.0 version)[2]	3.1		•	•	•
Microsoft Windows Server 2008 Standard Edition and Enterprise Edition (x64 64-bit) (beta 3.0 version)[2]	3.1		•	•	•

[1]All Dynamic Capacity Management software operations are only support on the SP2 version of the Microsoft Windows operating systems.

[2]Dynamic Capacity Management is not supported on cluster-aware disks.

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

Operating system	RSM host agent	RSM server 3.0	RSM server 3.1	Dynamic Capacity Management[1]	
				Extend	Shrink
Novell Netware 6.5 SP5					
Novell Netware 6.5 SP6					
Red Hat Linux AS & ES 3.0 (32-bit) Update 8	3.0	•	•		
Red Hat Linux AS & ES 3.0 (AMD64/EM64T) Update 8					
Red Hat Linux AS & ES 4.0 (32-bit) Update 4	3.0	•	•		
Red Hat Linux AS & ES 4.0 (AMD64/EM64T) Update 4	3.0	•	•		
Red Hat Linux AS & ES 4.0 (64-bit Itanium) Update 4	3.0	•	•		
Sun Solaris 8 (SPARC)					
Sun Solaris 9 (SPARC)	3.0	•	•		
SuSE Linux 8 (32-bit) SP4					
SuSE Linux 8 (64-bit) SP4					
SuSE Linux SLES 9.0 (32-bit Intel and AMD) SP3	3.0	•	•		
SuSE Linux SLES 9.0 (AMD64/EM64T) SP3	3.0	•	•		
SuSE Linux SLES 9.0 (64-bit Itanium) SP3	3.0	•	•		
SuSE Linux SLES 10.0 (32-bit Intel and 32-bit AMD)					
SuSE Linux SLES 10.0 (64-bit Itanium)					
VMware ESX Server 2.5					
VMware ESX Server 2.5.2					
VMware ESX Server 2.5.3					
VMware ESX Server 2.5.4					
VMware ESX Server 3.0.0					
VMware ESX Server 3.0.1					

4.6 Dynamic Capacity Management compatibility

This table show 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 6.0.x		
HP Command View EVA 7.0.x	•	•
HP Replication Solutions Manager 3.0		
HP Replication Solutions Manager 3.1	•	•
VCS 3.1xx	•	
VCS 4.0xx	•	
VCS 4.1xx	•	
XCS 6.0xx	•	
XCS 6.1xx	•	•

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 (32-bit)	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

[1]Internet 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 3.028	VCS 3.1xx	VCS 4.0xx	VCS 4.1xx	XCS 5.1xx	XCS 6.0xx	XCS 6.1xx
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	512	1024	1024	1024	1024	1024
Maximum number of disk groups per array	16[2]	16[2]	16[2]	16[2]	16	16	16
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 7 if the array contains HSV100 controllers. The maximum increases to 16 if the array contains HSV110 controllers with a corresponding increase in disk shelves and drives.

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 3.028	VCS 3.1xx	VCS 4.0xx	VCS 4.1xx	XCS 5.1xx	XCS 6.0xx	XCS 6.1xx
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 Replication Solutions Manager host agent and is directly attached to an EVA running XCS controller software.						
Containers							
Maximum size of a container			2 TB (less 1 GB)				
Mirrorclones							
Create mirrorclones						•	•
Resynchronize data from source virtual disk to mirrorlcone						•	•
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	7	7	7	7	16[1]	16[1]	16[1]

[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 3.028	**VCS 3.1xx**	**VCS 4.0xx**	**VCS 4.1xx**	**XCS 5.1xx**	**XCS 6.0xx**	**XCS 6.1xx**
Maximum number of single-member DR groups per array[1]	128	128	128	128	256	256[2]	256
Maximum number of virtual disk members of all DR groups per array[1]	128	128	128	128	256	256[2]	256
Maximum number of virtual disk members per DR group (16 TB maximum of virtual disk members and snapshots)	8	8	32	32	32	32	32
Maximum number of snapshots per DR group (16 TB maximum of virtual disk members and snapshots)	8	8	8	8	16	16	16
Cabling scheme	Cross-cabling required	Cross-cabling required	Even-numbered ports on both controllers to one fabric, odd-numbered ports on both controllers to the other fabric				
Maximum DR group log disk size	2x the combined size of DR group members (cannot be changed)	2x the combined size of DR group members (cannot be changed)	1x the combined size of DR group members (can be changed during DR group creation)				
	Absolute maximum is whichever of the following comes first: —Limit of free space in the disk group (containing the log) **OR** —1,966,079 MB						
Source and destination pair size	1 GB to 2 TB (in 1 GB increments)						
Boot from SAN	If the operating system supports Boot from SAN, replication of the boot disk is supported if the boot disk is in a standalone DR group.						
Clustering solutions with HP Continuous Access EVA	HP Continuous Access EVA supports all clustering solutions that are supported on the EVA. For a list of supported EVA clustering solutions, see the connectivity release notes for your array model and operating system. You can find these documents on the Manuals page of the HP Business Support Center website (http://www.hp.com/support/manuals). In the Storage section, click **Disk Storage Systems** and then select your product.						
Direct connect	Supported in HP Continuous Access EVA environments in which any port is directly connected to a supported server or mpx100.						
Dynamic load balancing with HP Continuous Access EVA	HP Continuous Access EVA supports the use of dynamic load balancing capabilities provided by multipathing software with virutal disks that are members of DR groups. However, other limits on the use of dynamic load balancing may still apply. For a list of supported multipathing solutions, see the connectivity release notes for your array model and operating system. You can find these documents on the Manuals page of the HP Business Support Center website (http://www.hp.com/support/manuals). In the Storage section, click **Disk Storage Systems** and then select your product.						
Host HBAs per array	The maximum depends on an array's platform/operating system rules. See *Part 3, Host and storage systems rules* of *HP StorageWorks SAN design reference guide* and the *Quickspecs* for HP Continuous Access EVA and the applicable array model.						
SAN extensions	For topics such as switch types, Wavelength Division Multiplexing (WDM) and Fibre Channel over Synchronous Optical Network (FC-SONET), see *Part 4, SAN extension and bridging* of *HP StorageWorks SAN design reference guide*.						
Switches per fabric	See *Part 2, Fabric infrastructure rules* of *HP StorageWorks SAN design reference guide*.						

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

[2]When using enhanced asynchronous replication, the maximum is 96.

Other limits may apply.

7.0 Supported links and bandwidths

This table shows the link technologies and bandwidths that HP Continuous Access EVA supports for intersite links. HP Continuous Access EVA supports bandwidths from 2 Mb/s to 4 GB.

Note: HP Replication Solutions Manager exhibits long management delays when managing remote arrays that are connected via low-bandwidth links with over 36ms of one-way latency.

Technology	**Bandwidth (Mb/s)**
4 Gb/s Fibre Channel	4000
2 Gb/s Fibre Channel	2000
1 Gb/s Fibre Channel	1000
1 GbE (Gigabit Ethernet) IP	1000
OC3 IP	155.5
E4 IP	139.3
100 Mb/s IP	100
T3 IP	44
10 Mb/s IP	10
E1 IP	2.048 (minimum supported bandwidth)
T1 IP	1.54 (not supported)