

# HP StorageWorks EVA software compatibility reference

This series of tables describes the compatible hardware, operating systems, and software for all HP StorageWorks Enterprise Virtual Array (EVA) software:

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

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## EVA software solution compatibility

This table shows the compatibility of the EVA software solution components. A bullet (\*) indicates compatibility and a blank cell indicates no compatibility. An EVA software solution is comprised of controller software, management software, replication software, and replication license. See the "HP Command View EVA interoperability" table on page 2 for detailed management software support.

Previously (prior to 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 the "Supported local replication features by controller software version" table on page 15 and the "Supported remote replication features by controller software version" table on page 16 for more information.

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

1. Use this table 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 the "EVA host connectivity" table on page 11 for instructions to locate these documents.

	EVA3000/5000			EVA4x00/6x00/8x00			HP Command View EVA <sup>3</sup>		HP Replication Solutions Manager	
	VCS 3.028	VCS 3.1xx	VCS 4.0xx	XCS 5.1xx	XCS 6.0xx	XCS 6.1xx	6.0.x	7.0	2.1	3.0
HP Business Copy EVA 2.3.1	•								•	•
HP Business Copy EVA 3.0	•									
HP Business Copy EVA 3.1	•		•							
HP Business Copy EVA 3.2	•		•	•						
HP Continuous Access EVA 2.1	•			•						
HP Continuous Access EVA 2.2 <sup>1</sup>	•		•							
HP Continuous Access EVA 2.3 <sup>1</sup>	•		•	•						
HP Replication Solutions Manager 2.0 <sup>2</sup>	•		•	•						
HP Replication Solutions Manager 2.1 <sup>2</sup>	•	•	•	•	•	•	•			
HP Replication Solutions Manager 3.0 <sup>2</sup>	•	•	•		•	•	•	•		
Storage Management Appliance software 2.1	•	•	•	•	•	•	•	•	•	•

<sup>1</sup>Not supported with Brocade firmware 5.0.3.

<sup>2</sup>Supported on non-English versions of Windows.

<sup>3</sup>HP Command View EVA supports multi NIC environments. See your vendor documentation for configuration instructions.

## 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"> <li>- HP Command View EVA 4.1.x includes HP Command View EVAPerf 1.0.x, SMI-S EVA 4.1, and SSSU 4.1</li> <li>- HP Command View EVA 5.0.x includes HP Command View EVAPerf 1.2, SMI-S EVA 5.0.1, and SSSU 5.0.</li> <li>- HP Command View EVA 6.0 includes HP Command View EVAPerf 6.0, SMI-S EVA 6.0, and SSSU 6.0.</li> <li>- HP Command View EVA 7.0 includes HP Command View EVAPerf 7.0, SMI-S EVA 7.0, and SSSU 7.0.</li> </ul>						
	HP Command View EVA 4.1.x <sup>1</sup>	HP Command View EVA 5.0.x SMI-S EVA 5.0.1	HP Command View EVA 6.0	HP Command View EVA 6.0.1	HP Command View EVA 6.0.2	HP Command View EVA 7.0
<b>EVA controller software</b>						
VCS 3.028	•	•	•	•	•	•
VCS 3.1xx		•	•	•	•	•
VCS 4.0xx	•	•	•	•	•	•
XCS 5.1xx		•	•	•	•	
XCS 6.0xx			•	•	•	•
XCS 6.1xx					•	•
<b>SAN applications</b>						
HP Command View EVA Tape Library 1.8b	• <sup>2</sup>	• <sup>2</sup>	•	•	•	•
HP Cluster Extension EVA for Windows 1.01.01	• <sup>3</sup>	• <sup>4</sup>	•	•	•	
HP Cluster Extension EVA for Linux 1.02.00		• <sup>4</sup>	•	•	•	
HP Fast Recovery Solution 2.02.02	•	•				
HP Instant Support Enterprise Edition A3.095	•	•	•	•	•	•
HP Metrocluster A.01.00	• <sup>5</sup>	•			•	
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					•	•
<p><sup>1</sup>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.</p> <p><sup>2</sup>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.</p> <p><sup>3</sup>The recommended product versions are HP Command View EVA 4.1.2 and SMI-S EVA 4.1.1.</p> <p><sup>4</sup>The recommended product versions are HP Command View EVA 5.0.3 and SMI-S EVA 5.0.1.</p> <p><sup>5</sup>The HP Command View EVA SMI-S Provider is supported in the following software combinations:</p> <ul style="list-style-type: none"> <li>- HP Command View EVA 4.0 and SMI-S EVA 4.0.1 (SMI-S 1.02+)</li> <li>- HP Command View EVA 4.1+ and SMI-S EVA 4.1 or 4.1.2+ (SMI-S 1.03)</li> <li>- HP Command View EVA 4.1+ and SMI-S EVA 4.1.1 (SMI-S 1.04)</li> </ul> <p>All combinations support provisioning but do not support pool provisioning.</p>						

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

	HP Command View EVA 4.1.x <sup>1</sup>	HP Command View EVA 5.0.x SMI-S EVA 5.0.1	HP Command View EVA 6.0	HP Command View EVA 6.0.1	HP Command View EVA 6.0.2	HP Command View EVA 7.0
<b>SAN applications (cont'd)</b>						
HP Storage Area Manager 3.2	. <sup>6</sup>	.	. <sup>8</sup>	. <sup>8</sup>	. <sup>8</sup>	. <sup>8</sup>
HP Storage Data Protector 5.5, 6.0	. <sup>7</sup>	. <sup>7</sup>			. <sup>7</sup>	. <sup>7</sup>
HP Storage Essentials Enterprise Edition 5.0.1, 5.0.1 SP1A, and 5.0.1 SP2	. <sup>5</sup>					
HP Storage Essentials Enterprise Edition 5.1 Windows kit (Bld. 5.1.0)	. <sup>5</sup>					
HP Storage Essentials 5.1 SP1 for Windows kit	. <sup>5</sup>	. <sup>9,10</sup>		. <sup>9</sup>	. <sup>9</sup>	
HP Storage Essentials Enterprise Edition 5.1 Linux kit (Bld. 5.1.1)	. <sup>5</sup>			. <sup>9</sup>	. <sup>9</sup>	
HP Storage Essentials Enterprise Edition 5.1 SP2 (Windows/Linux)	. <sup>5</sup>	. <sup>9,10</sup>		. <sup>9</sup>	. <sup>9</sup>	
HP Storage Essentials Enterprise Edition 5.1 SP3 (Windows/Linux)	. <sup>5</sup>	. <sup>9,10</sup>		. <sup>9</sup>	. <sup>9</sup>	. <sup>9</sup>
HP Storage Essentials Standard Edition 5.1 (Windows)	. <sup>5</sup>	. <sup>9,10</sup>		. <sup>9</sup>	. <sup>9</sup>	. <sup>9</sup>
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 4.01.03			.	.	.	.
HP WEBES 4.4.4	.	.				
HP WEBES 4.5.1	.	.	.	.	.	
HP WEBES 5.0	.	.	.	.	.	.
<b>iSCSI connectivity</b>						
mpx100 firmware 2.0.1.1, 2.0.1.4, 2.0.5.1		.				
mpx100 firmware 2.0.5.x			.	.	.	.
<p><sup>5</sup>The HP Command View EVA SMI-S Provider is supported in the following software combinations:</p> <ul style="list-style-type: none"> <li>- HP Command View EVA 4.0 and SMI-S EVA 4.0.1 (SMI-S 1.02+)</li> <li>- HP Command View EVA 4.1+ and SMI-S EVA 4.1 or 4.1.2+ (SMI-S 1.03)</li> <li>- HP Command View EVA 4.1+ and SMI-S EVA 4.1.1 (SMI-S 1.04)</li> </ul> <p>All combinations support provisioning but do not support pool provisioning.</p> <p><sup>6</sup>SMI-S support is only available with SMI-S provider versions 4.1.3 and 4.1.6.</p> <p><sup>7</sup>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.</p> <p><sup>8</sup>Supported via HP Storage Area Manager's DPI interface to HP Command View EVA. The SMI-S EVA interface is not supported.</p> <p><sup>9</sup>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.</p> <p><sup>10</sup>Supports HP Command View EVA 5.0.3.</p>						

## 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 N/A 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 3.028	VCS 3.1xx	VCS 4.0xx	XCS 5.1xx	XCS 6.0xx	XCS 6.1xx
VCS 3.028	N/A	•	. <sup>1</sup>	. <sup>2</sup>	. <sup>2</sup>	. <sup>2</sup>
VCS 3.1xx	N/A	•	. <sup>1</sup>	. <sup>2</sup>	. <sup>2</sup>	. <sup>2</sup>
VCS 4.0xx	N/A	N/A	. <sup>1</sup>	. <sup>2</sup>	. <sup>2</sup>	. <sup>2</sup>
XCS 5.1xx	N/A	N/A	N/A	•	•	•
XCS 6.0xx	N/A	N/A	N/A	N/A	N/A	•
XCS 6.1xx	N/A	N/A	N/A	N/A	N/A	•

<sup>1</sup>An offline upgrade is required.

<sup>2</sup>Either a data in place upgrade or an array initialization is required. An array initialization results in data loss or restore.

## 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 N/A 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 3.028	VCS 3.1xx	VCS 4.0xx	XCS 5.1xx	XCS 6.0xx	XCS 6.1xx
VCS 3.028	N/A	N/A	N/A	N/A	N/A	N/A
VCS 3.1xx	•	•	N/A	N/A	N/A	N/A
VCS 4.0xx	. <sup>1</sup>	. <sup>1</sup>	. <sup>1</sup>	N/A	N/A	N/A
XCS 5.1xx					N/A	N/A
XCS 6.0xx				. <sup>1</sup>	. <sup>1</sup>	N/A
XCS 6.1xx				. <sup>1</sup>	. <sup>2</sup>	. <sup>2</sup>

<sup>1</sup>An array initialization is required, which results in data loss or restore.

<sup>2</sup>Either an offline downgrade or an array initialization is required. An array initialization results in data loss or restore.

## 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 and a blank cell indicates that the remote replication environment is not supported 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	XCS 5.1xx	XCS 6.0xx <sup>2</sup>	XCS 6.1xx <sup>2</sup>
Controller software version (source array)						
VCS 3.028	•	• <sup>1</sup>	• <sup>1</sup>	•	• <sup>3</sup>	• <sup>3</sup>
VCS 3.1xx	• <sup>1</sup>	•	• <sup>1</sup>	•	• <sup>3</sup>	• <sup>3</sup>
VCS 4.0xx	• <sup>1</sup>	• <sup>1</sup>	•	•	• <sup>3</sup>	• <sup>3</sup>
XCS 5.1xx	•	•	•	•	• <sup>1,3</sup>	• <sup>1,3</sup>
XCS 6.0xx	• <sup>3</sup>	• <sup>3</sup>	• <sup>3</sup>	• <sup>1,3</sup>	•	• <sup>1</sup>
XCS 6.1xx	• <sup>3</sup>	• <sup>3</sup>	• <sup>3</sup>	• <sup>1,3</sup>	• <sup>1</sup>	•

<sup>1</sup>Supported during the seven 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 seven days (168 hours). 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).

<sup>2</sup>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).

<sup>3</sup>Asynchronous replication is not allowed between these controller software versions. Only synchronous replication is allowed.

## 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	Processor: 1.26 GHz (minimum) Memory: 2 GB (minimum) Disk space requirements: <ul style="list-style-type: none"> <li>– 200 MB for HP Command View EVA installation</li> <li>– 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.)</li> <li>– 10 MB for each managed array</li> <li>– 350 MB for HP Replication Solutions Manager installation</li> <li>– Additional 300–400 MB for HP Replication Solutions Manager installation to accommodate log and database growth</li> <li>– 10/100 Mbps for RSM server to RSM host agent connectivity</li> </ul> <p><b>NOTE:</b> 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>
Storage Management Appliance	G1, G2, G3
HP ProLiant Storage Server	HP ProLiant DL380 G5 Storage Server (base model) HP ProLiant DL380 G5 Storage Server (SAN model) HP ProLiant DL585 Storage Server HP ProLiant DL585 Dual Core Storage Server <p><b>Note:</b> In most configurations, the HP ProLiant DL380 SAN model is preferred.</p>

## Supported software for management server types

	General-purpose server	Dedicated management server	Storage Management Appliance	ProLiant Storage Server
HP Business Copy EVA 2.3 and later <sup>1</sup>	•	•	•	•
HP Command View EVA 4.0 and later <sup>2,7</sup>	•	•	•	•
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 StorageWorks Command View for Tape Libraries 1.5.05 and later and HP Command View EVA 5.0 software coexistence	•	•		•
HP Replication Solutions Manager 1.0 and later <sup>1,3</sup>	•	•	•	•
HP StorageWorks Secure Path (required for multipath configurations)	•	N/A	N/A	•
HP StorageWorks Secure Path Manager <sup>4</sup>	•	•	•	•
HP Storage Essentials (Enterprise Edition) <sup>5</sup>		•		
HP OpenView Storage Area Manager	•		•	
HSG Element Manager 1.0f	N/A	N/A	•	N/A
ISEE Remote Support (HP platforms only)	•	•	•	•
Microsoft Operations Manager support (MOM) <sup>6</sup>	•	•	•	•
Number of HP StorageWorks Enterprise Virtual Arrays supported <sup>7</sup>	16	16	16	16
Operating system connectivity 3.0e and later OR Storport Driver	•	N/A	N/A	•
Operating systems <sup>3</sup>	Microsoft Windows Server 2003 Standard and Enterprise Editions SP1 or Rel 2 (32-bit) Microsoft Windows 2000 Server or Advanced Server SP3, SP4 (32-bit)	Microsoft Windows Server 2003 Standard and Enterprise Editions SP1 or Rel 2 (32-bit) Microsoft Windows 2000 Server or Advanced Server SP3, SP4 (32-bit)	HP Storage Management Appliance software 2.1 (based on Microsoft Windows 2000)	Microsoft Windows Storage Server 2003
WEBES 4.x and 5.x (HP Services obligation required)	•	•	•	•

<sup>1</sup>When running this software on any SMA (G1, G2, or G3), the maximum number of EVAs supported is four.

<sup>2</sup>Software must be installed on the C:\ drive. Do not install HP Command View EVA and either Storage Essentials or Systems Insight Manager on the same server.

<sup>3</sup>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.

<sup>4</sup>SmartStart 7.2 requires HP Secure Path Manager 4.0C SP2.

<sup>5</sup>A dedicated management server is required for HP Storage Essentials. Do not install HP Command View EVA and Storage Essentials on the same server.

<sup>6</sup>Supported with HP StorageWorks Management Pack for MOM 2005.

<sup>7</sup>HP recommends a maximum of four EVAs per HP Command View EVA instance. This recommendation applies to all management server types.

## 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 StorageWorks DButil**—The command line utility that facilitates application-consistent replication of Microsoft SQL Server 2000 and Microsoft SQL Server 2005 databases.

**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 <sup>1</sup>		HP Storage Volume Growth 1.1	HP RSM server 3.0	HP DBUtil	HP CV EVA 7.0 & EVAPerf 7.0	HP SSSU	
			2.1	3.0					6.0.x	7.0
<b>Server</b>										
Dedicated management server					•	•		•	•	•
General-purpose server			• <sup>2</sup>	•	•	•	•	•	•	•
ProLiant Storage Server			• <sup>2</sup>	•	•	•	•	•	•	•
Storage Management Appliance					•		•	•	•	
Storage Management Appliance with HP OpenView Storage Area Manager							•	•	•	
<b>Operating system</b>										
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 (PA-RISC)			•	•					•	•
HP HP-UX 11.23 PI/11iv2 (Intel)			•	•					•	•
HP HP-UX 11.31/11iv3 (PA-RISC) <sup>6</sup>			•	•					• <sup>10</sup>	•
HP HP-UX 11.31/11iv3 (Intel) <sup>6</sup>			•	•					• <sup>10</sup>	•
HP OpenVMS 7.3-2			•						•	
HP OpenVMS 8.2 on Alpha servers			•						•	•
HP OpenVMS 8.2-1 on Integrity servers			• <sup>2,3,4</sup>						•	•
HP OpenVMS 8.3 on Alpha servers				•						•
HP OpenVMS 8.3 on Integrity servers				•						•
HP Tru64 5.1b-4			• <sup>2,5</sup>	• <sup>5</sup>	•					•
IBM AIX 5.2, 5.3			•	•				•	•	

<sup>1</sup>See the "RSM host agent support" table for host volume mounting restrictions.

<sup>2</sup>The HP RSM 2.1 host agent is applicable to HP OpenVMS 8.2-1 and HP Tru64 5.1b only.

<sup>3</sup>The HP RSM 2.1 host agent requires that the HP I64VMS VMS8211\_UPDATE V3.0, HP I64VMS VMS8211\_SYS V3.0, HP I64VMS VMS8211\_PCSI V1.0, HP I64VMS VMS8211\_FIBRE\_SCSI V2.0, and HP I64VMS VMS8211\_ICXXL V1.0 patches be installed on the host server running this operating system.

You can download these patches from the following web site: <http://www.itrc.hp.com>.

<sup>4</sup>Only QLogic host bus adapters are supported with this operating system.

<sup>5</sup>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.

<sup>6</sup>HP-UX 11.31 is not supported with HP Continuous Access EVA.

**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 <sup>1</sup>		HP Storage Volume Growth 1.1	HP RSM server 3.0	HP DBUtil	HP CV EVA 7.0 & EVAPerf 7.0	HP SSSU	
			2.1	3.0					6.0.x	7.0
<b>Operating system</b>										
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 (32-bit)			• <sup>7</sup>		•				•	
Microsoft Windows Server 2003 Standard Edition SP1/SP2/R2 (32-bit)			• <sup>7</sup>	• <sup>7</sup>	•	•	•	•	•	•
Microsoft Windows Server 2003 Enterprise Edition SP1/R2/SP2 (32-bit)			• <sup>7</sup>	• <sup>7</sup>	•	•	•	•	•	•
Microsoft Windows Server 2003 Enterprise Edition SP1/R2/SP2 (64-bit Itanium)			• <sup>7</sup>	• <sup>7</sup>	•			•		•
Microsoft Windows Server 2003 Datacenter Edition SP1/SP2/R2 (64-bit Itanium)			• <sup>7</sup>	• <sup>7</sup>	•					
Microsoft Windows Server 2003 Extended Systems Standard Edition SP1/SP2/R2 (64-bit, AMD64/EMT64)			• <sup>7</sup>	• <sup>7</sup>	•			•		•
Microsoft Windows Server 2003 Extended Systems Enterprise Edition SP1/SP2/R2 (64-bit, AMD64/EMT64)			• <sup>7</sup>	• <sup>7</sup>	•			•		•
Microsoft Windows Server 2008 Standard Edition and Enterprise Edition (AMD64/EMT64) (beta version)						•				
Microsoft Windows XP	EVA4000	EVA4000				• <sup>8</sup>				
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.						• <sup>10</sup>	•	
Novell Netware 6.5 SP6									•	
Red Hat Linux AS & ES 3.0 (32-bit) Update 8			•	•					•	•
Red Hat Linux AS & ES 3.0 (AMD64/EMT64) 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			•	•					• <sup>10</sup>	•
Red Hat Linux AS & ES 4.0 (AMD64/EMT64) Update 4			•	•					•	•
Red Hat Linux AS & ES 4.0 (64-bit Itanium) Update 3									•	
Red Hat Linux AS & ES 4.0 (64-bit Itanium) Update 4				•					• <sup>10</sup>	•
Sun Solaris 8 (SPARC)									•	
Sun Solaris 9 (SPARC)			• <sup>7,9</sup>	• <sup>7,9</sup>					•	•
Sun Solaris 10 (SPARC)			• <sup>7</sup>	• <sup>7</sup>					•	•
<sup>7</sup> 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 ( <a href="http://www.hp.com/support/downloads">http://www.hp.com/support/downloads</a> ). In the Storage section, click <b>Storage Networking</b> and then select your product. <sup>8</sup> HP RSM server on Windows XP is supported for simulation mode only. <sup>9</sup> The host agent on this operating system does not support VERITAS DMP when accessing an EVA4x00, EVA6x00, or EVA8x00. <sup>10</sup> This operating system is only supported with HP SSSU 6.0.2. It is not supported with HP SSSU 6.0.										

## 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 <sup>1</sup>		HP Storage Volume Growth 1.1	HP RSM server 3.0	HP DBUtil	HP CV EVA 7.0 & EVAPerf 7.0	HP SSSU			
			2.1	3.0					6.0.x	7.0		
<b>Operating system</b>												
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			• <sup>2</sup>	•							•	•
SuSE Linux SLES 9.0 (AMD64/EMT64) SP3			•	•								
SuSE Linux SLES 9.0 (64-bit Itanium) SP3				•							•	•
SuSE Linux SLES 10.0 (32-bit Intel)												•
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 <sup>12</sup>												
VMware ESX Server 3.0.1 <sup>12</sup>												
<b>Application</b>												
Oracle 9i, 10G R2			• <sup>2,11</sup>									
SQL Server 2000 Enterprise SP3 or later							•					
SQL Server 2000 Developer SP3 or later							•					
SQL Server 2005 Enterprise							•					
<sup>11</sup> Oracle application integration is supported on Windows hosts only and works in Real Application Clusters (RAC) environments. There is no ASM support for Oracle. <sup>12</sup> VFMS-3 LUNs require configuration changes to the VMware kernel to be supported with HP Continuous Access EVA. See <i>HP StorageWorks EVA replication software consolidated release notes (XCS 6.1xx)</i> for more information.												

## 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 *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 Continuous Access EVA when the EVA is running XCS 6.000 or later.

When running XCS 6.1xx, M-series switches are not supported in HP Continuous Access EVA configurations.

## RSM host agent support

This table describes RSM host agent support for:					
<ul style="list-style-type: none"> <li>— Volume Manager</li> <li>— Mounting host volume copies on the same host</li> <li>— Multipath solutions</li> <li>— Cluster software</li> </ul>					
Host operating system	Supported Volume Manager <sup>2</sup>	Mounting a host volume copy on the same host as the source <sup>3</sup>	Compatible multi-path solution <sup>5</sup>		Supported cluster software
			EVA3000/5000	EVA4x00/6x00/8x00	
HP HP-UX	Native Logical Volume <sup>4</sup>	Y	Secure Path 3.0F SP2, PVlinks <sup>6,7</sup> (no VERITAS DMP)	Secure Path 3.0F SP2, PVlinks <sup>6,7</sup> (no VERITAS DMP)	Serviceguard
HP OpenVMS	No support for replication of volume groups	Y	Native multi-pathing is part of base OS	Native multi-pathing 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 multi-pathing in OS	Native multi-pathing in OS	TruCluster software
IBM AIX	Native Logical Volume	Y (EVA3000/5000 with VCS 3.xxx only)	Secure Path 2.0D SP2 or SP3 <sup>8</sup>	MPIO 1.0.0.2 (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 7.07.05-fo or later (no Secure Path) Emulex Multipulse driver 2.2.20 or later		Serviceguard 11.16.01
Red Hat Linux AS & ES 4.0 Update 3, 4	Logical Volume Manager 2.01.14		QLogic failover driver 8.01.06-fo or later (no Secure Path) Emulex Multipulse driver 2.2.20 or later Device Mapper multipath 0.4.5		
Sun Solaris (SPARC) <sup>1</sup>	VERITAS Volume Manager 4.1	Y, except copies of Solaris disk groups	Secure Path 3.0D SP1 <sup>9,10</sup>	MPxIO <sup>11</sup> and VERITAS DMP <sup>12</sup>	
SuSE Linux SLES 9.0 SP3	Logical Volume Manager 2.01.14	N	QLogic failover driver 8.01.06-fo or later (no Secure Path) Emulex Multipulse driver 2.2.20 or later Device Mapper multipath 0.4.5		

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

<sup>2</sup>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.

<sup>3</sup>Mounting a host volume copy on the same host as the source is supported with HP Business Copy EVA and HP Replication Solutions Manager.

<sup>4</sup>Replication manager host volume job commands are supported only on HP-UX disks with Logical Volume Manager.

<sup>5</sup>These solutions apply to HP Continuous Access EVA in general.

<sup>6</sup>If you use Pvlincs 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.

<sup>7</sup>For HP-UX 11.31, native multipathing is part of the operating system.

<sup>8</sup>Secure Path 2.0D SP3 is the minimum required version for AIX 5.3.

<sup>9</sup>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.

<sup>10</sup>The HP RSM host agent on the Solaris operating system only supports SecurePath with controller software 3.1xx or earlier.

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

<sup>12</sup>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.

## 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.

<b>Operating system</b>	<b>Required browser</b>	<b>Supported JRE</b>
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	1.5.0_06 and later
Sun Solaris SPARC (64-bit)	Mozilla 1.7.3	1.5.0_06 and later

## 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	XCS 5.1xx	XCS 6.0xx	XCS 6.1xx
Maximum number of arrays per HP Command View EVA instance <sup>1</sup>	16	16	16	16	16	16
Maximum number of virtual disks per array (includes snapshots, snapclones, and mirrorclones)	512	512	1024	1024	1024	1024
Maximum number of disk groups per array	16 <sup>2</sup>	16 <sup>2</sup>	16 <sup>2</sup>	16	16	16
Maximum number of hosts per array	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.					
<sup>1</sup> HP recommends a maximum of four EVAs per HP Command View EVA instance. This recommendation applies to all management server types. <sup>2</sup> 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.						

## 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	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.					
<b>Containers</b>						
Maximum size of a container					2 TB (less 1 GB)	
<b>Mirrorclones</b>						
Create mirrorclones					•	•
Resynchronize data from source virtual disk to mirrorclone					•	•
Restore data from mirrorclone to source virtual disk					•	•
<b>Snapclones</b>						
Create containers (for snapclones)			•	•	•	•
Create snapclones in preallocated containers			•	•	•	•
Instant restore of virtual disks			•	•	•	•
Set disk group (for snapclones)		•	•	•	•	•
Set Vraid in copy	•	•	•	•	•	•
<b>Snapshots</b>						
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	16 <sup>1</sup>	16 <sup>1</sup>	16 <sup>1</sup>
<sup>1</sup> 16 TB maximum across the parent and all active snapshots of that parent.						

## 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 is supported differently in the source and destination arrays, such as the maximum members of a DR group, 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	XCS 5.1xx	XCS 6.0xx	XCS 6.1xx
Maximum number of single-member DR groups per array <sup>1</sup>	128	128	128	256	256 <sup>2</sup>	256
Maximum number of virtual disk members of all DR groups per array <sup>1</sup>	128	128	128	256	256 <sup>2</sup>	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
Maximum number of snapshots per DR group (16 TB maximum of virtual disk members and snapshots)	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) <b>OR</b> —1,966,079 MB					
Host failover on clusters running MetroCluster EVA and Cluster Extensions EVA	Supported					
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 ( <a href="http://www.hp.com/support/manuals">http://www.hp.com/support/manuals</a> ). In the Storage section, click <b>Disk Storage Systems</b> 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 virtual 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 ( <a href="http://www.hp.com/support/manuals">http://www.hp.com/support/manuals</a> ). In the Storage section, click <b>Disk Storage Systems</b> and then select your product.					
Host HBAs per array	The maximum depends on an array's platform/operating system rules. See <i>Part 3, Host and storage systems rules of HP StorageWorks SAN design reference guide</i> and the <i>Quickspecs</i> 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 <i>Part 4, SAN extension and bridging of HP StorageWorks SAN design reference guide</i> .					
Switches per fabric	See <i>Part 2, Fabric infrastructure rules of HP StorageWorks SAN design reference guide</i> .					

<sup>1</sup>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.

<sup>2</sup>When using enhanced asynchronous replication, the maximum is 96.

Other limits may apply.

## 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
E3 IP	34.304
10 Mb/s IP	10
E1 IP	2.048 (minimum supported bandwidth)
T1 IP	1.54 (not supported)