

# HP StorageWorks EVA replication software consolidated release notes (XCS 5.1x)

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HP StorageWorks EVA replication software consolidated release notes

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# About this guide

This document contains information specific to the following releases of HP StorageWorks EVA replication software:

- HP StorageWorks Business Copy EVA 3.2
- HP StorageWorks Continuous Access EVA 2.3
- HP StorageWorks Replication Solutions Manager 2.0

These products are supported with HP StorageWorks EVA controller software versions VCS 3.028, VCS 4.0, XCS 5.03x, and XCS 5.1x. For additional information about HP EVA VCS, see the HP StorageWorks 3000/5000 Enterprise Virtual Array release notes for the specific version. For additional information about HP EVA XCS, see the HP StorageWorks 4000/6000/8000 Enterprise Virtual Array release notes for the specific version.

The information included here is not documented elsewhere. HP recommends that you read this information thoroughly.

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## IMPORTANT:

For supported storage arrays, management server hardware and software, and replication environments, including restrictions, see *HP StorageWorks EVA software compatibility reference*.

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For the location of the documents referenced in these notes, see "[Product documentation](#)" on page 25.

## Update recommendation

Recommended

## Intended audience

This document is intended for customers and HP-authorized service providers who license and use the snapclone, snapshot, and remote replication (DR group) features of HP StorageWorks Enterprise Virtual Arrays.

## HP technical support

Telephone numbers for worldwide technical support are listed on the HP support web site: <http://www.hp.com/support/>.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Error messages
- Operating system type and revision level
- Detailed questions

For continuous quality improvement, calls may be recorded or monitored.

## Subscription service

HP strongly recommends that customers register online using the Subscriber's choice web site: <http://www.hp.com/go/e-updates>.

Subscribing to this service provides you with e-mail updates on the latest product enhancements, newest driver versions, and firmware documentation updates as well as instant access to numerous other product resources.

After subscribing, locate your products by selecting **Business support** and then **Storage** under Product Category.

## HP web sites

For additional information, see the following HP web sites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- [http://www.hp.com/service\\_locator](http://www.hp.com/service_locator)
- <http://www.docs.hp.com>

## Providing feedback

We welcome your feedback.

- For HP Command View EVA, please mail your comments and suggestions to [CVfeedback@hp.com](mailto:CVfeedback@hp.com).
- For HP Business Copy EVA, HP Continuous Access EVA, and HP Replication Solutions Manager, please mail your comments and suggestions to [EVAReplication@hp.com](mailto:EVAReplication@hp.com).



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# 1 Enhancements

The following enhancements are new with all the software releases described in this document:

- **EVA3000/5000 arrays.** Support for HP EVA controller software 3.028 and 4.0x is continued.
- **EVA4000/6000/8000.** Support for HP EVA controller software 5.10x is added. Support for version 5.03x is continued.
- **Storage manager.** Support for HP Command View EVA 5.0 is added. Support for version 4.1.x is continued.



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# 2 HP StorageWorks Business Copy EVA 3.2

HP StorageWorks Business Copy EVA 3.2 is a specific set of local replication features enabled in EVA controller software 5.1x. This chapter describes local replication enhancements and supported features by controller software version.

## Local replication software enhancements

- A maximum of 16 snapshots per source virtual disk is allowed.
- Support for three-phase fully allocated snapshots is added.

## Supported local replication features by controller software version

Local replication features depend on the controller software version. [Table 1](#) shows supported replication features for specific EVA controller software versions.

**Table 1 Supported local replication features**

Feature	EVA controller software version				
	VCS 3.028	VCS 4.0x	XCS 5.02x	XCS 5.03x	XCS 5.1x
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 directly attached to an EVA running XCS controller software.				
<b>Snapclones</b>					
Create containers (for snapclones)		X	X	X	X
Create snapclones in preallocated containers		X	X	X	X
Instant restore of virtual disks		X	X	X	X
Set disk group (for snapclones)		X	X	X	X
Set Vraid in copy	X	X	X	X	X
<b>Snapshots</b>					
Controller software enforced cross Vraid guidelines		X	X	X	X
Create snapshots in preallocated containers					X
Set Vraid in copy	X	X	X	X	X
Maximum number of snapshots per source virtual disk	7	7	7	7	16*
* 16 TB maximum across the parent and all active snapshots of that parent					

## Local replication workarounds

See *HP StorageWorks EVA replication software release notes (T3687-96041)* published in December 2005 for local replication workarounds affecting controller software version 4.0x.

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# 3 HP StorageWorks Continuous Access EVA 2.3

HP StorageWorks Continuous Access EVA 2.3 is a specific set of remote replication features enabled in EVA controller software 5.1x. This chapter describes the remote replication enhancements, supported features by controller software version, fixed issues, and workarounds.

## Remote replication software enhancements

- **VMware support.** Remote replication support for VMware 2.5.2 on all EVA array models is added.
- **Increased replication performance.** The buffer protocol has increased from 62 @ 8K bytes each to 124 @ 8K bytes each. Both the source and destination arrays must be running controller software VCS 4.0x or XCS 5.1x to take advantage of this increase.

## Protecting data against a site failure

When the destination array is unavailable and both controllers on the source array are restarted, host presentation of source virtual disks is blocked. Host presentation of source virtual disks remains blocked until the destination array becomes available (and can communicate with the source array) or you suspend the DR group.

The purpose of blocking host presentation is to protect data during a site failure, where the potential exists for both sides of the remote replication connection to be presented to hosts simultaneously, and to protect stretched cluster members from being able to detect or access two copies of the same data. It also protects boot-from-SAN servers from two hosts booting against the same boot image. While this behavior may not be desired in all installations, it is necessary to protect data integrity.

You can check if host presentation is blocked in both HP Replication Solutions Manager and HP Command View EVA.

In HP Replication Solutions Manager:

- On the General tab of the Virtual Disk Properties window, `BLOCKED` appears in the Operational State box.
- On the General tab of the selected DR group window, `BLOCKED` appears in the Operational State box.

In HP Command View EVA:

- On the Vdisk Active Members Properties page, `None (DR members protected)` appears in the Host Access box.
- On the DR Group Properties page `Blocked` appears in the Group host access box.

To remove the host presentation block, suspend or repair the connection to the destination array.

# Supported remote replication features by controller software version

Remote replication features depend on the controller software version. [Table 2](#) shows supported replication features for specific EVA controller software versions.

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 the *HP StorageWorks SAN design reference guide*.

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**Table 2 Supported remote replication features**

Feature	EVA controller software version				
	VCS 3.028	VCS 4.00x	XCS 5.02x	XCS 5.03x	XCS 5.1x
Replication protocol (number of 8 KB buffers)	62	124	62	62	124
Maximum number of single-member DR groups per array*	128	128	128	128	256
Maximum number of source-destination pairs per array*	128	128	128	128	256
Maximum number of source-destination pairs per DR group (16 TB maximum)	8	32	8	32	32
Maximum number of snapshots or snapclones per DR group (16 TB maximum per array)	8	8	8	8	16
Cabling scheme	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)	1x the combined size of DR group members (can be changed during DR group creation)			
	Absolute maximum is whichever of the following comes first: <ul style="list-style-type: none"> <li>• Limit of free space in the disk group (containing the log) <b>OR</b></li> <li>• 1,966,079 MB</li> </ul>				
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)				
Direct connect	Not supported in HP Continuous Access EVA environments in which any ports are directly connected to a server or to the HP StorageWorks EVA iSCSI connectivity option (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 the <i>HP StorageWorks SAN design reference guide</i> .				
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</i> of the <i>HP StorageWorks SAN design reference guide</i> .				
Switches per fabric	See <i>Part 2, Fabric infrastructure rules</i> of the <i>HP StorageWorks SAN design reference guide</i> .				
*When using HP Replication Solutions Manager, the maximum is 8 single-member DR groups and 32 source-destination pairs per array. Other limits may apply.					

## Supported links and bandwidths

Table 3 show the link technologies and bandwidths that HP Continuous Access EVA supports for intersite links.

**Table 3 Intersite link values**

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)

## Remote replication workarounds

See *HP StorageWorks EVA replication software release notes* (T3687-96041) published in December 2005 for remote replication workarounds affecting controller software version 4.0x.



# 4 HP StorageWorks Replication Solutions Manager 2.0

HP Replication Solutions Manager (the replication manager) is value-add software that simplifies and automates the use of HP Business Copy EVA and HP Continuous Access EVA. This chapter describes replication manager upgrade information, enhancements, fixed issues, and workarounds.

## Upgrading to version 2.0

The following table lists the downloads that are required when upgrading the replication manager.

From	To	Remarks
1.1	2.0	Requires a download of all applicable downloads: server software, host agents, CLUI client patch, JREserver and DButil.
1.2	2.0	Requires a download of the server software and host agent software. There are no changes to JREserver or DButil.

## Using the database migration tool

If you are upgrading to HP Replication Solutions Manager 2.0 and have a large number of jobs in the job run history, the upgrade may take several hours to complete because of the database upgrade.

To reduce the upgrade time, do one of the following:

- Export the replication manager 1.x database.
- Use the database migration tool to remove extraneous information from the database.

To export and import the database:

1. Using the procedure in *HP StorageWorks Replication Solutions Manager online help and user guide*, export the replication manager 1.x database.
2. Remove HP Replication Solutions Manager 1.x.
3. Install HP Replication Solutions Manager 2.0.
4. Using the procedure in *HP StorageWorks Replication Solutions Manager online help and user guide*, import the replication manager database.



### NOTE:

Job run history and events are not imported.

To use the database migration tool:

1. You can allow jobs to continue running while using the database migration tool. However HP recommends that you close all clients accessing the management server on which the replication manager is installed, including browser windows, Telnet clients to the CLUI and the replication manager.
2. Run the database migration tool (`dbmtool.bat`).
3. Install HP Replication Solutions Manager 2.0.

You can download the database migration tool from either the HP Business Copy EVA web site or the HP Continuous Access EVA web site.

To obtain the tool from the HP Business Copy EVA web site:

1. Go to: <http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html>
2. Select **Software & drivers**.  
The download drivers and software page appears.
3. Select the database migration tool.

To obtain the tool from the HP Continuous Access EVA web site:

1. Go to: <http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html>
2. Select **Software & Drivers**.  
The download drivers and software page appears.
3. Select the applicable Windows operating system.
4. Select the database migration tool.

## Replication manager enhancements

- **Oracle application integration.** You can discover Oracle resources on enabled hosts and replicate Oracle databases and tablespaces.
- **Host agent support.** Support for the HP OpenVMS host agent is added.
- **Operating system support.** Support for Sun Solaris 10, Microsoft Windows 2003 x64, SuSE Linux SLES 9 32-bit, SuSE Linux SLES 9 x64, RedHat Linux 4.0 32-bit, RedHat Linux 4.0 x64, and HP-UX 11.23 PA-RISC is added.
- **Multipathing support.** Support for VERITAS DMP on Solaris hosts is added.
- **Local replication.** Support for three-phase fully allocated snapshots and 16 snapshots per source virtual disk is added.
- **Simulation mode.** Use the replication manager's built-in simulation mode for evaluations, testing, and training.
- **CLUI enhancements.** Create virtual disks using the CLUI.
- **User preferences.** Configure the GUI to remember list and tree view preferences.
- **Job templates.** All job templates now include an option for e-mail notification. New job templates have been added.
- **Jobs configuration.** Configure an e-mail server to use with jobs. Set the job run history limit.
- **Security.** Replication manager logon security for server software and host agents is now authenticated using the host operating system.
- **Performance improvements.** The efficiency and speed of job templates has been improved.
- **Capacity-based licensing notification.** The replication manager now reports and enforces HP replication license policies.
- **Storage manager access.** Select an array or virtual disk and view the resource in the HP Command View EVA user interface.
- **Host volumes.** Add host volumes to DR groups.
- **Retention periods.** Specify a retention period for replication manager job instances.
- **System access.** Start the replication manager from HP Systems Insight Manager and System Management Homepage.
- **Database management.** Import a replication manager database over a local area network.
- **Backups.** Schedule automatic backups of the replication manager configuration.

# Replication manager fixed issues

## Installing replication manager on non-English versions of Windows

Previously, after installing the replication manager on a non-English version of Windows, you could not use Internet Explorer to browse to the replication manager from a client or access documentation from the user interface. This has been fixed.

## Replication manager workarounds

### Installation and configuration

#### Storage array discovery fails after a management change

After changing the management server, replication manager automatic and manual discovery of storage resources fail. After an attempted discovery, the operational state of storage resources appears as *unknown*.

Resolution:

1. In HP Command View EVA, select a storage array.
2. If the following error message appears, go to the next step.

```
Operation failed!  
Target Object Does Not Exist
```

3. In the HP Command View EVA Navigation pane, select **EVA Storage Network**.

The HSV Storage Properties window appears.

4. In the HSV Storage Properties window, click **Discover**.

A discovery of storage resources in HP Command View EVA is performed. Wait for the discovery to complete before performing the next step (this may take several minutes).

5. On the replication manager toolbar, click the refresh icon (button) then click **OK**.

A global refresh of storage resource in the replication manager is performed (this may take several minutes).

6. When the global refresh is complete, refresh the Content pane to display the newly discovered resources.

#### Reinstalling the replication manager creates a database error

If you reinstall the replication manager on a management server where it is currently installed, the following error messages appear:

```
Failed to create a new database
```

```
SOLID SRV Fatal Error 30150: Server not started.
```

Resolution: Click **OK** when each message appears. The reinstallation continues, which removes the contents of the existing database. The reinstallation creates the default, empty database that is created during a first-time installation.

#### Adding or deleting a management server

Adding or deleting a management server from the current management server is not supported. The New and Delete buttons on the Configuration — EVA Management Servers window are inactive.

## All event logs are not appearing in the event pane

Symptom: The number of event logs that appear in the event pane is inconsistent with the number of event logs that appear in the `C:\Program Files\Hewlett-Packard\RSM\JBoss\server\default\log` directory.

Resolution: Close the GUI and restart it. The correct number of event logs should appear in the event pane.

## Regenerate security keys after CLUI client upgrade

Symptom: When you upgrade the CLUI client to this release, the security keys from the previous version are no longer valid.

Resolution: Generate new security keys after upgrading the CLUI client.

## Replication manager jobs

### Ignored arguments in DR group job commands

The following arguments are ignored in the `CreateDrGroup`, `SetDrGroupAutoSuspend`, and `CreateDrGroupFromHostVolume` job commands if the controller software (VCS 3.x) does not support these features:

- `autosuspend`
- `destination RAID level`
- `log disk group placement`
- `maximum log size`

In the `PresentStorageVolume` job command, the `NOREAD` option within the presentation argument is invalid.

### Maximum of three concurrent DR group creation jobs

Symptom: When creating multiple DR groups, some jobs fail during the `CreateDrGroup` step. The `Storage system lock error` event is listed in the event pane.

Resolution: Do not create more than three DR groups concurrently.

### Maximum number of jobs allowed

The maximum number of simultaneous jobs is eight. Four of those jobs can be running on one host agent. If replication manager jobs are failing and the `get error lock failed` message appears, reduce the number of simultaneous jobs that you are running.

### Incorrect user name or password for job scheduler

Symptom: Scheduled jobs are not running. The `Internal error occurred starting job <jobname>` event is listed in the event pane.

Resolution: The user name or password is incorrect for the scheduled job. Enter the correct credentials.

## Using multiple SetNotificationPolicy job commands may fail

Symptom: When setting e-mail notification for a job that contains more than one `SetNotificationPolicy` job command, it is possible you will only receive notification for the last command set. For example, if the job contains the following commands, you would only receive e-mail notification for a job failure:

```
SetNotificationPolicy ( "john.smith@mycompany.com", "john.smith@mycompany.com", JOB_STARTED_OR_STOPPED)
```

```
SetNotificationPolicy ( "john.smith@mycompany.com", "john.smith@mycompany.com", JOB_FAILED )
```

Resolution: If you experience this problem when using multiple `SetNotificationPolicy` job commands, only use one `SetNotificationPolicy` job command at a time.

## Error in Job Monitor window

Symptom: When attempting to start a job, an error message appears that the job details are currently unavailable for display.

Resolution: There is a conflict between applications using a management server port. Use a system tool such as `netstat` to determine which applications are using the management server ports. See the list of default management server ports in *HP StorageWorks Replication Solutions Manager administrator guide*. Contact the administrator of the management server on which HP Replication Solutions Manager is installed to determine how to resolve the port conflict.

## An aborted job appears to hang

When a job is aborted, the replication manager waits for all outstanding operations within that job to complete. It is possible that an operation to the remote system, such as `EnableHost`, cannot be cancelled and the aborted job will appear to hang.

Resolution: The job will abort completely when the remote operation completes or if you restart the replication manager service.

## Rebooting a Linux host while a job is running

HP recommends that you do not reboot a Linux host while a job is running. Doing so may cause subsequent actions to operate on the incorrect host volume or disk device.

## Other replication manager issues

### Host volume limits

HP Replication Solutions Manager does not impose strict limits on the size (meaning the number of virtual disks and logical volumes) of a volume group that can be replicated. If the operating system and the multipathing software support the configuration, you can use the replication manager to replicate a volume group.

However, there are performance implications for the replication manager and the EVA when replicating large volume group configurations. Jobs that involve replicating and mounting volume group objects will take longer to complete as the number of physical disks and logical volumes in the volume group increases.

The number of physical disks in the volume group can impact EVA performance. Replicating a volume group results in copies of each physical disk in the volume group being created. Therefore, replicating a large volume group configuration will result in a large number of snapshots or snapclones, which could significantly impact array performance. See *HP StorageWorks Business Copy EVA administrator guide* for recommendations about minimizing the performance impact of multiple, simultaneous snapshots or snapclones.

Volume groups should contain a maximum of 16 virtual disks and 127 logical volumes to ensure maximum replication manager job and EVA performance. Larger configuration are supported, but the loss of performance will be directly related to the size of the configuration.

## Unsupported host volume commands

Although the following commands appear in the CLUI, they are not supported in this release:

```
sho[w] vd[isk] <vdisk name> [host_volumes|hvs]
sho[w] vd[isk] [f[ull]] [host_volumes|hvs]

sho[w] host_vol[ume]|hostvol|hv <host_volume name> [vd[isks]]
sho[w] host_vol[ume]|hostvol|hv [f[ull]] [vd[isks]]
```

## High CPU utilization with host volume mapper

Symptom: When running the HP Replication Solutions Manager host volume mapper tool on the SMA or a general-purpose server, you may experience high CPU utilization for several minutes.

Resolution: Cancel the script and run the tool when the management server is not busy with another task.

## Users are allowed to modify licenses

Symptom: A user (other than an administrator) can modify licenses. Only administrators should have this privilege.

Resolution: Install the supported JRE on the server running HP Replication Solutions Manager.

## PDF File Download window is hidden

When running the replication manager in application mode (from the management server desktop) and you select a PDF from the Help menu, the File Download window opens behind the replication manager GUI window and may not be visible. Each additional download attempt opens another hidden window.

Resolution: If you have selected a PDF document and do not see it, try minimizing the replication manager GUI window to locate the File Download window.

## Maximum number of events displayed

When using the Standard view in the Events pane, the maximum number of events that are displayed are the 400 most recent events.

## HP-UX host agent

### Installing host agent on an HP-UX 11.11 operating system

The Owner ID and Group ID do not display properly when mounting the replication manager host agent CD on a host that is running HP-UX 11.11.

Resolution: Complete the following steps:

1. Install the PHCO\_25841, PHKL\_26269, and PHKL\_32035 patches.
2. Enter the following command to mount the replication manager host agent CD:

```
mount -f cdfs -orr /dev/dsk/cxydz /mountpoint
```

## Commands hang on HP-UX hosts

Symptom: When a device is in the failed state (due to a controller being down) and the HP-UX host is obtaining the device information, the host agent hangs during commands such as `bdf`, `diskinfo`, and `insf`. This may occur on an HP-UX 11.11 or 11.23 host.

Resolution: Reboot the HP-UX host.

## Sun Solaris host agent

There is a conflict between the `cfgadm` utility and the SNIA libraries that are distributed with HP Secure Path 3.0d SP1 on Solaris 10, which prevents the Solaris 10 host from working properly.

Resolution: Install the 119974 path on the Solaris 10 host before installing the SNIA libraries.

## HP OpenVMS host agent

### SNIA libraries

The following SNIA libraries are required on the HP OpenVMS host to ensure that the host agent software works properly:

- `HBA_VMS.EXE`
- `LIBHBAAPI.EXE`

These SNIA libraries are included on the host agent software CD. Compare the versions of the libraries on the CD against those listed in `SYS$LIBRARY`. If the versions on the CD are newer, copy the SNIA libraries from the CD to `SYS$LIBRARY` and then restart the host agent.

### Host agent log file is locked

The HP OpenVMS host agent process locks the log file so it cannot be edited.

Resolution: To remove the lock, do either of the following:

- Enter the following command to stop the host agent process:

```
@sys$startup:rsmha$shutdown
```

This command stops the host agent in a coordinated, safe way. You can then access the log file.

- Enter the following command to back up the log file to another file:

```
"$ backup/ignore=interlock rms$path:[rsmha.logs]RSMHA_RG1V08-060208-1.LOG newfilename.log"
```

A copy of the log file contents is placed in the file name you specify. You can now edit the contents of the log file.

### Specifying mount points for an HP OpenVMS host agent

When executing the `MountHostVolume` job on a HP OpenVMS host, the Mount Point specification may cause an error. If you leave the Mount Point box blank, the HP OpenVMS host agent reads the disk label and attempts to mount the volume with the existing label. If you specify a name, the HP OpenVMS host agent changes the disk label to the specified name and attempts to mount the volume. In either case, if the job fails, an error is returned to the server.

## Windows host agent

### Windows host agent cannot authenticate an Oracle 9i database

After installing an Oracle 9i database on a Windows host, the Oracle database is seen in the GUI but it cannot be authenticated.

Resolution: Complete the following steps:

1. On the Windows host, open the Services window.
2. Right-click the HP RSM Host Agent service and select **Properties**.
3. Select the **Log On** tab.
4. Select **This account**.
5. Enter the administrator account credentials (user name and password).
6. Select **OK**.
7. Restart the HP RSM Host Agent service.

## Replicating Windows GPT host volumes

- You can create snapshots and snapclones of host volumes that are formatted with Windows GPT (GUID partition table), but you cannot use the replication manager to mount the snapshots and snapclones of GPT host volumes on a host. Use operating system tools to mount them as you would other virtual disks.

Resolution: You must mount GPT host volumes manually.

- The replication manager GUI incorrectly displays the capacity of GPT host volumes as zero (0).

Resolution: The zero size does not indicate a problem and you can ignore it.

## Replicating Windows host volumes on dynamic disks

You can create snapshots and snapclones of host volumes on Windows dynamic disks, but you cannot use the replication manager to mount these snapshots and snapclones on a host.

Resolution: You must manually mount replicas of Windows dynamic disks.

## Mounting host volumes on Windows hosts running VSS software

The replication manager dynamic mount functions `CreateHostVolume` and `MountHostVolume` are incompatible with some Volume Shadowcopy Service (VSS) software.

Resolution: Do not use these functions on Windows hosts that are running VSS-compliant software such as HP Data Protector and FRS. For VSS-compatible solutions with Microsoft Exchange databases, see the HP StorageWorks Fast Recovery Solution on the HP Storage web site.

## Mounting replicas of clustered resources

On Windows 2003 hosts, you cannot mount a replica of a clustered resource to a standby member of the cluster.

## General host agent

### Increased memory consumption on UNIX hosts

PAM library operations within the UNIX host agent process consume memory each time the authentication operation is invoked.

Resolution: To decrease memory consumption, disable host-based authentication on the UNIX host. Also, check the UNIX vendor's web site periodically for PAM library patches or updates.



# 5 Product documentation

**Table 4 Additional product documentation**

<b>General replication documents</b>	<b>Edition</b>	<b>Part number</b>	<b>Availability</b>
<i>HP StorageWorks EVA replication license key installation instructions</i>	Third, April 2005	T3687-96024	Replication license (LTU) envelope
<i>HP StorageWorks EVA software compatibility reference</i>	Sixth, February 2006	T3687-96039	HP web site
<i>HP StorageWorks JREserver installation instructions</i>	Third, February 2006	T3687-96057	HP web site and kit (JREserver CD), also accessible from the user interface help menu
<b>HP Business Copy EVA</b>			
HP web site: <a href="http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html">http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html</a>			
<i>HP StorageWorks Business Copy EVA kit contents</i>	Second, February 2006	T3687-96046	Kit (printed and documentation CD)
<i>HP StorageWorks Business Copy EVA administrator guide</i>	Second, February 2006	T3687-96053	HP web site and kit (documentation CD)
<i>HP StorageWorks DButil user guide</i>	First, May 2005	T3680-96009	HP web site
<b>HP Continuous Access EVA</b>			
HP web site: <a href="http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html">http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html</a>			
<i>HP StorageWorks Continuous Access EVA kit contents</i>	Second, February 2006	T3687-96047	Kit (printed and documentation CD)
<i>HP StorageWorks Continuous Access EVA administrator guide</i>	Fifth, February 2006	T3687-96068	HP web site and kit (documentation CD)
<i>HP StorageWorks Continuous Access EVA Performance Estimator user guide</i>	Third, February 2006	T3687-96055	HP web site and kit (documentation CD)
<i>HP StorageWorks Continuous Access EVA planning guide</i>	Third, February 2006	T3687-96054	HP web site and kit (documentation CD)
<i>HP StorageWorks SAN design reference guide</i>	Twenty-fifth, December 2005	AA-RW86B-TE	HP web site
<b>HP Replication Solutions Manager</b>			
<i>HP StorageWorks Replication Solutions Manager administrator guide</i>	First, February 2006	T3687-96050	HP web site and kit (documentation CD), also accessible from the user interface help menu
<i>HP StorageWorks Replication Solutions Manager command line user interface (CLUI) reference</i>	Fourth, February 2006	T3687-96051	HP web site and kit (documentation CD), also accessible from the user interface help menu

General replication documents	Edition	Part number	Availability
<i>HP StorageWorks Replication Solutions Manager installation guide</i>	First, February 2006	T3687-96049	HP web site and kit (documentation CD)
<i>HP StorageWorks Replication Solutions Manager online help and user guide</i>	Fourth, February 2006	T3687-96048	Embedded software
<i>HP StorageWorks Replication Solutions Manager simulation guide</i>	First, February 2006	T3687-96052	HP web site and kit (documentation CD), also accessible from the user interface help menu

**Table 5 HP storage web sites**

Item	HP web site
EVA3000	<a href="http://h18006.www1.hp.com/products/storageworks/eva3000/index.html">http://h18006.www1.hp.com/products/storageworks/eva3000/index.html</a>
EVA4000	<a href="http://www.hp.com/go/eva4000">http://www.hp.com/go/eva4000</a>
EVA5000	<a href="http://h18006.www1.hp.com/products/storageworks/enterprise/index.html">http://h18006.www1.hp.com/products/storageworks/enterprise/index.html</a>
EVA6000	<a href="http://www.hp.com/go/eva6000">http://www.hp.com/go/eva6000</a>
EVA8000	<a href="http://www.hp.com/go/eva8000">http://www.hp.com/go/eva8000</a>
HP Command View EVA	<a href="http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html">http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html</a>
HP SAN design	Documentation of SAN subjects such as fabric design, switches, and SAN extensions <a href="http://hp.com/sandesignguide">http://hp.com/sandesignguide</a>