

HP StorageWorks Enterprise Virtual Array 3000/5000 to 4100/6100/8100 upgrade assessment

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About this document

The EVA4100/6100/8100 uses active/active controller failover behavior instead of the active/passive controller failover behavior in VCS 3.xxx. The change to active/active will impact most host configurations. The impact of this change may involve replacing HBAs and drivers, installing new multi-pathing software, and re-establishing the correct paths to the storage system LUNs.

Use this document to assess:

- The impact of upgrading your EVA3000/5000 to an EVA4100/6100/8100.
- Your current host configuration to determine the changes required to support active/active (if applicable).
- What storage system components may have to be replaced during the upgrade.

NOTE:

- You must be running VCS 3.028 or later, or VCS 4.007 or later to upgrade to an EVA4100/6100/8100.
 - You must perform this assessment on any host connected to the storage system you are considering upgrading. Any host connected to an EVA4100/6100/8100 must be configured to support active/active I/O.
 - This upgrade procedure is used when upgrading to EVA4100/6100/8100 controllers. All upgraded controllers must have XCS 6.110 or later installed.
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Intended audience

This document is intended for customers who are considering upgrading an HP StorageWorks EVA3000/5000 to an EVA4100/6100/8100.

Review supported host configuration information

Before beginning the assessment, review the supported host configuration information for the applicable operating systems. This information is contained in a series of connectivity release notes—one for each supported operating system.

Download the connectivity release notes for each operating system you are using from the following website:

<http://www.hp.com/support/manuals>

Select **Disk Storage Systems** under Storage, and then select **HP StorageWorks 4100/6100/8100 Enterprise Virtual Arrays** under EVA Disk Arrays.

Upgrade assessment checklist

Use [Table 1](#) as a guide for assessing your system. Answer the questions to determine how the upgrade will affect your host configurations, SAN infrastructure, storage system configuration, and data center physical requirements.



NOTE:

The controller pair for the EVA4100/6100/8100 is 1U (1.75") taller than the controller pair for the EVA3000/5000. Additional space must be created to make room for the new controllers. If space is not available in the current configuration, other components may have to be moved.

Table 1 Overall assessment checklist

Component	Issue	Response/Comments
Racks	How many racks can be re-used?	
	Will the current racks accommodate the height difference in the HSV2x0-B controllers?	
	How many additional racks are required?	
	Are any third party racks being used?	
Drive enclosures	How many drive enclosures can be reused?	
	How many new drive enclosures are required?	
	How many I/O modules need to be replaced? Both I/O modules in each disk enclosure must be replaced. Older versions of I/O modules are not supported.	
	How many EMUs need to be replaced? It may be possible to reuse existing EMUs. See "Identifying EMUs requiring replacement" on page 9 to determine which EMUs can be reused.	
Loop switches	How many loop switches can be reused? See "Identifying backend loop switches requiring replacement" on page 10 for information on identifying FC switches that can be reused.	
	How many additional loop switches are required?	
HBA's and HBA drivers	See Table 2 .	

Component	Issue	Response/Comments
Clustering software	Are the EVAs currently clustered?	
	What clustering software is used?	
	Is this software supported by the EVA4100/6100/8100?	
	Will this software need to be upgraded?	
SAN switches and firmware	Are any hubs currently being used?	
	What SAN switches are currently used?	
	Are these switches supported by the EVA4100/6100/8100?	
	What SAN firmware (and version) is currently used?	
	Is this firmware supported by the EVA4100/6100/8100?	
	How many additional SAN switches are required?	
Servers	How many servers are currently used?	
	How many HBAs in each server?	
	How many ports on the HBAs in each server?	
Disks	What disks are currently supported?	
	Are these disks supported by the EVA4100/6100/8100?	
	How many additional disks are required?	
Operating systems	What operating systems (and versions) are currently used?	
	Are these operating systems supported by the EVA4100/6100/8100?	
	Will these operating systems need to be upgraded?	
Management software	See Management software .	
Floor space	How much additional floor space is needed?	
	Will the data center need to be reconfigured?	
	Will the data center need to be enlarged?	
HVAC	Will the current HVAC system be sufficient for the new equipment?	
	What additional HVAC equipment is required?	

Component	Issue	Response/Comments
Electrical power	Will the data center's current power capabilities be sufficient	
Physical upgrade	Who will do the upgrade?	
	How long will the upgrade take?	
	Who will create the paths to the virtual disks/LUNs/volumes?	
	Who will do the backup?	
	After the upgrade, what testing needs to be done?	
	Who will do this testing?	

HBAs and drivers

Gather information for each HBA currently used for accessing the storage system and enter it in the following table. Compare this against the supported HBA information in the appropriate connectivity release notes to determine if it will be necessary to replace the HBA and/or driver.

Table 2 HBA and driver information

HBA information	Supported on XCS 6.110 or later?		Replacement
	Yes	No	
Model: Firmware: Driver:			Model: Firmware: Driver:
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Management software

It will be necessary to upgrade the EVA3000/5000 management software applications to the required versions. Check the current software versions and enter them in [Table 3](#). If the current version does not match the required version,, it will be necessary to update the software.

When upgrading the storage systems, all supporting management software applications must be at compatible versions. See the *HP StorageWorks EVA software compatibility reference* for software compatibility information. This document is available from the following web site:

<http://www.hp.com/support/manuals>

Click **Storage software** under Storage, and then select **HP StorageWorks Command View EVA Software** under Storage Device Management Software.



NOTE:

- EVA4100/6100/8100 controllers have a minimum of XCS 6.110 installed.

Table 3 Management software version worksheet

Software	Current version	Required version	Locating version information ¹
HP Command View EVA (required)		7.0 or later	<ol style="list-style-type: none"> 1. Open HP Command View EVA. 2. Click Help in the Session pane. The HP Command View EVA Online Help window opens. <p>The version displays on the right side of the window.</p>
HP Replication Solutions Manager (if installed)		3.0 or later	<ol style="list-style-type: none"> 1. Open or browse to HP StorageWorks Replication Solutions Manager. 2. Select Help in the menu bar. 3. Select About. The version of HP Replication Solutions Manager server is displayed.
WEBES		5.0 or later	<ol style="list-style-type: none"> 1. Double-click the System Event Analyzer icon on the desktop. 2. Log in to the System Event Analyzer. <p>The WEBES version is displayed in the System Event Analyzer welcome window.</p>
JRE		1.5.0_04 and later ²	<ol style="list-style-type: none"> 1. Open Windows control panel. 2. Double-click the Java icon. 3. On the General tab, click About. <p>The version of Java is displayed.</p>
Web browser (required)		Internet Explorer 6.0 SP1 or later ²	From your browser, select Help > About Internet Explorer .
Storage Management Appliance (required if the SMA is used for management)		2.1	<ol style="list-style-type: none"> 1. From the SMA, click Help in the tool bar. 2. Check the default page for the software version.

¹You can also use Windows Add or Remove Programs to view the software version

²For Windows servers. For clients running other operating systems, see the Browser and JRE support table in the *HP StorageWorks EVA software compatibility reference*.

Identifying EMUs requiring replacement

You can use HP Command View EVA to identify which disk enclosure EMUs will require replacement during the upgrade. All EMUs meeting the minimum required version can be reused in the upgraded EVA4100/6100/8100.

Perform the following steps, using [Table 5](#) on page 10 to record the EMUs that must be replaced. In addition to the EMUs, it will also be necessary to replace both I/O modules in each disk enclosure. Older I/O modules are not supported in the EVA4100/6100/8100.

1. Open HP Command View EVA.
2. In the Navigation pane, select the EVA3000/5000 storage system being upgraded.
3. Select the **Hardware > Rack** to display the disk enclosure icons.
4. Select one of the disk enclosure icons.

The Disk Enclosure Properties window opens. The General tab displays by default.

5. Check the EMU Hardware type field and the Hardware version field. An EMU with the values listed in [Table 4](#) must be replaced. Other EMU versions can be used in the upgraded storage system.

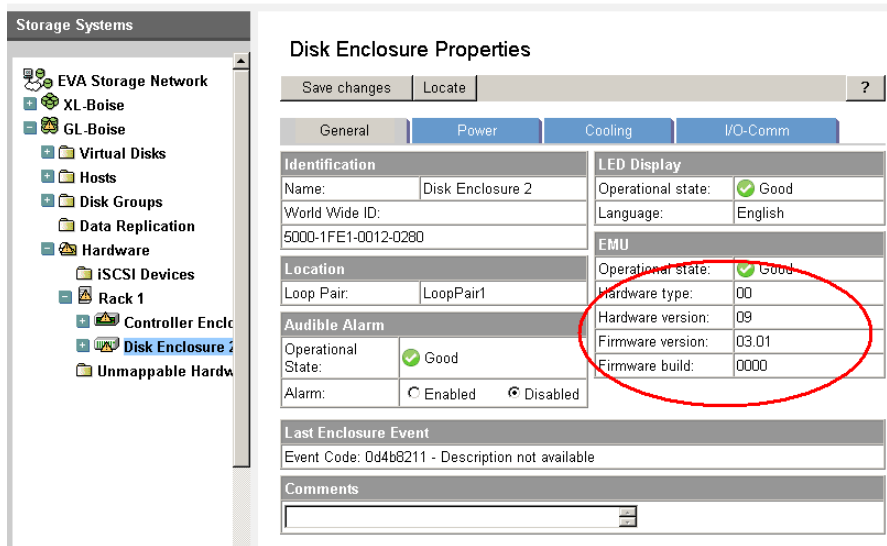


Figure 1 Checking EMU version

Table 4 EMU versions requiring replacement

Hardware type	Hardware version	Action
00	07	Replace EMU
00	08	Replace EMU
00	09	Replace EMU

Table 5 Disk enclosure components requiring replacement

Disk enclosure	Components requiring replacement		
	EMU	I/O module A	I/O module B
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓
		✓	✓

Identifying backend loop switches requiring replacement

When upgrading to an EVA6100 or EVA8100, it may be possible to reuse the backend FC loop switches. The required model of the FC loop switch is 30-10022-01. The switch model can be determined by checking the rear panel layout of the switch. The rear panel layout of the 30-10022-01 switch is shown in [Figure 2](#). Earlier FC loop switch models have a different rear panel layout and must be replaced.

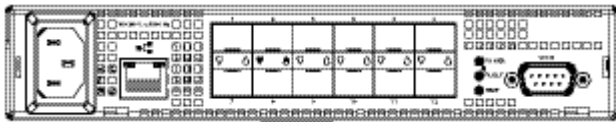


Figure 2 30-10022-01 FC loop switch rear panel layout

Multipathing software

To support active/active, it may be necessary to install new multipathing failover software. In most cases, this will involve moving from Secure Path to native multipathing or a third-party application.

Enter the current multipathing software in the following table. Then refer to the connectivity release to determine what multipathing software is supported by XCS 6.110 or later.

Table 6 Multipathing software

Host/OS version	Current multipathing software	Supported multipathing software

Upgrade task responsibilities

The following table provides an overview of the major tasks involved in upgrading the storage system and identifies who typically performs each task. Many of the tasks can be performed prior to the arrival of HP services to perform the upgrade. Completing these tasks in advance will reduce the amount of time required to upgrade the storage system.

Table 7 Upgrade task responsibilities

Task	Responsibility
<p>1. Complete the upgrade assessment checklist. This ensures that you have recorded the changes that must be made to your environment.</p>	Customer performs prior to the upgrade. ¹
<p>2. Purchase and install any new HBAs and drivers that may be required. Contact your HP sales representative for assistance in ordering new HBAs.</p>	Customer performs prior to the upgrade. ¹
<p>3. Install new multipath and/or driver software required. This software will be used to connect to the storage system following the VCS upgrade. Many operating systems support the coexistence of active/passive (VCS 3.xxx) and active/active (XCS 6.110 or later) storage systems on the same host. It may be necessary to use separate HBAs and fabric rezoning to implement coexistence on the host. See Table 8.</p>	Customer performs prior to the upgrade. ¹
<p>4. Back up all data on the storage system.</p>	Customer performs prior to the upgrade.

Task	Responsibility
Although the upgrade does not require the restoration of data following the upgrade, it is still recommended that a complete backup be performed.	
5. Upgrade the storage system to an EVA4100/6100/8100.	HP service representative
6. Recreate all I/O paths to the storage system virtual disks.	Customer performs following the upgrade. ¹

¹This service can be performed by HP for an additional fee. Contact HP services for more information.

Table 8 Support for coexistence of active/active (AA) and active/passive (AP) failover

Operating system	Coexistence of AA and AP supported on the same host?	Coexistence supported on the same HBA?
HP-UX	Yes	Yes
Windows	Yes	Yes
Linux	Yes ¹	No
OpenVMS	Yes	Yes
Tru64 Unix	Yes	Yes
IBM AIX	Yes	No
Sun Solaris	Yes	No
NefWare	Yes	Yes
VMware	No	No

¹Version 1.1 of the LMP utilities used during the migration from active/passive to active/active does not remove Secure Path from the host, including all LUN information. Consequently, the host can provide failover for any active/passive storage systems that are being managed using Secure Path.

Secure Path and the QLogic driver can reside on the same host, allowing failover management of both active/active and active/passive storage systems.

The QLogic driver supports both active/active and active/passive storage systems on the same Linux host, so coexistence is supported when only the QLogic driver is used.