SANworks™ by Compaq

Release Notes - OpenVMS Kit V2.0 for Enterprise Virtual Array

Part Number: AA-RR04B-TE

Second Edition (July 2002)

Product Version: 2.0

This document contains the most recent product information about the *SANworks™ by Compaq* OpenVMS Kit V2.0 used for integrating host servers with the *StorageWorks™ by Compaq™* Enterprise Virtual Array (VCS Version 2.0).

For the latest version of these Release Notes and other Enterprise Virtual Array documentation, visit the Compaq website at:

http://www.compaq.com/products/storageworks

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Intended Audience

This document is intended to assist customers who purchased the StorageWorks by Compaq Enterprise Virtual Array and the associated SANworks by Compaq Operating System kits. Other associated software packages are:

- SANworks by Compaq Virtual Controller Software Package V2.0 for Dual HSV Controllers by Compaq
- SANworks by Compaq Snapshot for Virtual Controller Software V2.0 for Dual HSV Controllers by Compaq

This document is also intended for use by Compaq Customer Service personnel responsible for installing and maintaining designated devices associated with this storage system.

Conventions

The following conventions are used throughout this document:

- Unless otherwise specified, all references to VCS V2.0 refer to the software package (kit) and documentation version level. These software packages and documentation support VCS V2.0.
- Unless otherwise specified, all documentation that supports VCS V1.0, VCS V1.01, and VCS V1.02, also supports VCS 2.0.
- The *SANworks System Software for Enterprise Virtual Array by Compaq* is the storage system software that contains Virtual Controller Software (VCS), Environmental Monitoring Unit (EMU) firmware, programmable component images, diagnostics, and message files. This storage system software is usually represented by a four-digit number, for example V2.000. The VCS version number is the first three digits of the storage system software version, for example, V2.00
- Unless otherwise specified, all references to a controller or controller pair should be interpreted as the HSV110 Controller or HSV110 Controller pair.
- Unless otherwise specified, all references to the Enterprise Storage System or storage system should be interpreted as the Enterprise Virtual Array.
- Unless otherwise specified, all references to rack should be interpreted as the 9000-Series Enterprise Storage System Rack.
- Unless otherwise specified, all licensing references to host ID should be interpreted as the storage system World Wide Name (WWN).
- Unless otherwise specified, all references to the management appliance should be interpreted as the Compaq SANworks Management Appliance.
- Unless otherwise specified, all references to a single instance of a management agent, or the element manager, should be interpreted as the Compaq SANworks HSV Element Manager.
- The term Fabric means Fibre Channel Switched (FC-SW) connectivity.

Enterprise Virtual Array Storage System

This document contains the most recent product information about the Enterprise Virtual Array. An Enterprise Virtual Array storage system consists of the following:

- One pair of HSV110 Controllers.
- An array of physical disk drives that the controller pair controls. The disk drives are located in drive enclosures that house the support systems for the disk drives.
- Associated physical, electrical, and environmental systems.
- The HSV Element Manager, which is the graphical interface to the storage system. The element manager software resides on the Management Appliance and is accessed through a browser.
- Management Appliance, switches and cabling.
- At least one host attached through the fabric.

Enterprise Virtual Array System Software

SANworks Virtual Controller Software (VCS) V2.0 by Compaq provides storage software capability for the HSV110 Array Controller and is provided in the VCS V2.0 software kit.

Enterprise Virtual Array Documentation

The Enterprise Virtual Array Catalog of Associated Documentation is included on the Technical Documentation page. You can display a comprehensive list of Enterprise Virtual Array documentation, as well as associated product documentation that may be required to operate your storage system. To access the Technical Documentation page, go to:

http://www.compaq.com/products/storageworks/enterprise/documentation.html

Kit Description

The purpose of this section is to describe the SANworks by Compaq OpenVMS Kit V2.0 for Enterprise Virtual Array contents.

The SANworks by Compaq OpenVMS Kit V2.0 for Enterprise Virtual Array contains the following items:

- Release Notes for OpenVMS Kit V2.0 for Enterprise Virtual Array

- SANworks™ by Compaq OpenVMS Kit V2.0 for Enterprise Virtual Array Installation and Configuration Guide
- StorageWorks Worldwide Warranty
- StorageWorks Telephone Book
- Licensing Materials
- CD-ROM—includes drivers (if applicable), Storage System Scripting Utility (SSSU), and documentation

Support Release Information

For future product support release information visit http://www.compaq.com/support/files/storage/index.html. This website provides downloadables for storage products.

Supported Configurations

Refer to the Enterprise Virtual Array Quick Specs for supported configurations.

Supported Operating Systems

The Enterprise Virtual Array storage system is compatible with the following operating systems:

- Tru64 UNIX
- Windows NT
- Windows 2000
- OpenVMS
- Sun Solaris
- HP-UX
- IBM AIX

Table 1–1 lists the operating system's specifications, which are compatible with the Enterprise Virtual Array.

NOTE: Table 1-1 contains current minimum level operating system specifications at the time of Enterprise Virtual Array V2.0 release. Some component versions may change due to revision. For the latest version information, go to: http://www.compaq.com.

Table 1–1: Operating System Specifications

Operating System	OS Version	Clustering	FCA (HBA)	Adapter Firmware	Adapter Driver	Secure Path
Open VMS	7.2-2 DEC-AXP VMS-VMS 722_FIBRE_SCSI-V 0200	VMS Cluster	LP8000	3.82a1	NR	NR
			LP9002 (FCA2354)	3.82a1	NR	
	7.3 DEC-AXP VMS-VMS 73_FIBRE_SCSI-V0 300, 7.3-1 ****	VMS Cluster	LP8000	3.82a1	NR	NR
			LP9002 (FCA2354)	3.82a1	NR	

NR - Not required
****will be supported in August 2002

Table 1–2: Supported Browsers

OS	OS Version	Browser	Version
OpenVMS	7.2-2, 7.3, and 7.3-1	Not Supported - customer needs to use an alternative supported platform for browsing	N/A

Multiple Path Support

OpenVMS require no additional software for high availability multiple path capability; using multiple paths is integrated into recent releases of these operating systems.

Single Path Support Configurations

OpenVMS server with a single FCA supports single path mode.

IMPORTANT: Single path mode should not be used in mission critical environments. See the white paper for further details.

See Connecting Single HBA Servers to the Enterprise Virtual Array without Secure Path white paper for more information at:
http://thenew.hp.com/country/us/eng/prodserv/storage.html

NOTE: OpenVMS has “built in” multiple path-like features which are not removable, but using a single path is supported.

Supported Servers

The following section list the servers supported by the Enterprise Virtual Array.

Supported Alpha Servers

Table 1–3 lists the Enterprise Virtual Array compatible Alpha servers.

Table 1–3: Supported Alpha Servers

Product	Maximum Number of FCAs/Alpha System			
	Tru 64 UNIX Switch		OpenVMS Switch	
	Single	Cluster	Single	Cluster
AS800	2	2	2	2
AS1200	4	4	4	4
AS4100	4	4	4	4
AS4000	4	4	4	4
AS8200	64	32	26	26
AS8400	64	32	26	26
DS10	2	2	2	2
DS20	4	4	4	4
DS20 E	4	4	4	4
ES40	4	4	4	4
ES45	4	4	4	4
GS60	64	32	26	26
GS80	64	32	26	26
GS160	64	32	26	26
GS320	64	32	26	26
GS140	64	32	26	26

Operating Constraints

Any operating constraints specific to the Enterprise Virtual Array hardware and HSV Element Manager can be found in their respective release notes.

Failover/Failback

There are specific failback preference setting for the HSV controllers that are operating system specific (see the Enterprise Virtual Array hardware release notes for details).

Avoiding Problem Situations

Avoiding problem situations specific to the Compaq SANworks Management Appliance can be found in the Management Appliance Update January 2002 Release Notes.

Avoiding problem situations specific to the Compaq SANworks HSV Element Manager can be found in the HSV Element Manager Release Notes.

In addition, avoiding problem situations pertaining Enterprise Virtual Array hardware can be found in the hardware release notes.

Secure Path Version

The Enterprise Virtual Array with VCS 2.0 should not be operated with a down version of Secure Path. Ensure that you have the current version for your operating system (see Table 1–1).

Codeload Usage

When a maximum configured system is running at maximum load, codeload functionality cannot be used effectively due to Secure Path timing constraints. The system may time out before codeload is completed. Because of this behavior, VCS upgrade should be done during off peak usage.

Enterprise Storage System Notes

Cable Requirements

When an Enterprise Virtual Array is installed, an SC–to–LC (1-Gb to 2-Gb) cable is required for host connectivity. Table 1–4 provides a listing of available cables.

Table 1–4: LC-SC cables

Length	Description	Compaq Part Number
2.0 m ± 40 mm	CA ASSY, LC-SC, Optical 2M	187891-002
5.0 m ± 80 mm	CA ASSY, LC-SC, Optical 5M	187891-005
15.0 m ± 150 mm	CA ASSY, LC-SC, Optical 15M	187891-015
30.0 m ± 300 mm	CA-ASSY, LC-SC, Optical 30M	187891-030
50.0 m ± 500 mm	CA-ASSY, LC-SC, Optical 50M	187891-050

Table 1–5: LC-LC cables

Length	Description	Compaq Part Number
2.0 m ± 40 mm	2-meter LC-LC Multi-Mode Fibre Cable	221692-B21
5.0 m ± 80 mm	5-meter LC-LC Multi-Mode Fibre Cable	221692-B22
15.0 m ± 150 mm	15-meter LC-LC Multi-Mode Fibre Cable	221692-B23
30.0 m ± 300 mm	30-meter LC-LC Multi-Mode Fibre Cable	221692-B26
50.0 m ± 500 mm	50-meter LC-LC Multi-Mode Fibre Cable	221692-B27

Licensing Support Information

If you have trouble obtaining a License Key or need other licensing support information, refer to the *StorageWorks by Compaq Enterprise Virtual Array License Instructions* which are shipped with the VCS V2.0 software kit.

For assistance with incorrect Authorization ID, contact your authorized Compaq Authorized Service Provider.

For assistance with lost Authorization ID and Authorization ID not shipped, contact your Compaq order channel.

Storage System Scripting Utility for Enterprise Virtual Array

Refer to the HSV Element Manager release notes prior to using the Storage System Scripting Utility (SSSU), as SSSU communicates directly with the element manager.

Documentation Anomalies

This section describes errors found in the documents that came with your operating system kit.

In the README.TXT and README.HTM files under the Installation section step 3, please replace:

```
$ RUN SSSU_SFX_V400-18
```

with

```
$ RUN SSSU_PCSI_SFX
```