

# **SANworks™ by Compaq**

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## **Release Notes - IBM AIX Kit V2.0 for Enterprise Virtual Array**

Part Number: AA-RSX0A-TE

**First Edition (July 2002)**

**Product Version: 2.0**

This document contains the most recent product information about the *SANworks™ by Compaq* IBM AIX 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 IBM AIX Kit V2.0 for Enterprise Virtual Array contents.

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

- Release Notes for IBM AIX Kit V2.0 for Enterprise Virtual Array
- SANworks™ by Compaq IBM AIX Kit V2.0 for Enterprise Virtual Array Installation and Configuration Guide
- StorageWorks Worldwide Warranty
- StorageWorks Telephone Book
- Licensing Materials
- CD-ROM—includes additional software, 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.

## Adobe Acrobat Reader

IBM AIX 5.1.0 does not support Acrobat Reader. You will need to read the PDF files included on the CD-ROM on a system that has Acrobat Reader installed.

## 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 |
|------------------|------------|----------------|------------------|------------------|----------------|-------------|
| IBM-AIX          | 4.3.3, 5.1 | HACMP/ES 4.4.1 | Cambex PCI-1000f | 2.01.19          | 1.5.19.1       | 2.0b        |

**Table 1–2: Supported Browsers**

| OS      | OS Version    | Browser               | Version |
|---------|---------------|-----------------------|---------|
| IBM-AIX | 4.3.3 and 5.1 | Netscape Communicator | V4.79   |

## Multiple Path Support

IBM AIX requires the installation of Compaq SANworks Secure Path on each IBM AIX host to achieve high availability multiple path capability. Secure Path is licensed on a per-host basis. Reference Table 1–1 for the specific Secure Path versions.

## Single Path Support Configurations

Single Path configurations are not supported on IBM AIX.

## Supported Servers

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

### Supported IBM Servers

Table 1–3 lists the Enterprise Virtual Array compatible IBM AIX server models.

**Table 1–3: Supported IBM AIX Servers**

|        |        |             |
|--------|--------|-------------|
| • P270 | • P610 | • P620      |
| • F50  | • F80  | • P660<br>• |

**Table 1–3: Supported IBM AIX Servers (Continued)**

|       |       |                          |
|-------|-------|--------------------------|
| • H70 | • H80 | • P680                   |
| • S70 | • S7A | • P690 with restrictions |
| • M80 | • S80 | • P640                   |

## 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). All virtual disks for use by an IBM AIX host should be set to “No Preference” on the **Virtual Disk Properties** page in the HSV Element Manager.

## 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.

## Host Considerations

This section contains information on issues and important reminders regarding the host servers.

### PCI Hot Swapping of Cambex FCAs Not Supported

Hot swapping is defined as replacing one FCA with an identical FCA in the same PCI slot while the system is up. This function is not supported on p-series systems that support hot swapping, as it will hang the server. To replace an FCA, you must first shutdown the server.

### PCI Hot Addition of Cambex FCAs Not Supported

Hot Adding is defined as adding a PCI FCA to an empty PCI slot while the system is up and running. This function is not supported on the p-series systems as the hot addition of the Cambex FCA fails. The server will have to be shutdown in order to add an FCA.

### Cambex FCA Driver Does Not Support Extended Error Handling (EEH) on P690

EEH is a mechanism built into the p-series servers that allows the server to isolate a faulty FCA and shut it down. The IBM/Cambex solution does not support IBM EEH-Extended Error Handling. This means that an errant Cambex PCI card cannot electrically be taken offline by the p690 CPU. The availability of the p690 solution with IBM/Cambex is equal to other IBM server models.

## Installing Software via SMIT

The filesets that are contained on the kit CD-ROM can be installed via SMIT. The advantage to doing this is that the filesets are installed very quickly. The disadvantage is that no configuration is performed. Compaq recommends that you use the INSTALL script on the CD. If you would like to install the filesets using SMIT, perform the following steps:

**NOTE:** Installing the software via SMIT does not install the Secure Path 2.0B driver. You will have to manually install the Secure Path driver from the Secure Path CD-ROM.

1. Insert the CD into your CD-ROM drive.
2. Invoke SMIT using the command `smit install_latest`.
3. Select the CD-ROM device that has the kit CD-ROM in it from the dialog box.
4. Click **OK** in the next dialog box.

You can install only specific software if you use the **List** button next to the **SOFTWARE to install** field.

## 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.

## Installation and Configuration Guide Anomalies

Page 3-4, step 3, mistakenly says that valid values for LUNs are 1–15 when it should state 1–31 because Secure Path supports 32 LUNs per target including the CCL.