StorageWorks by Compaq

Enterprise Virtual Array License Instructions

Part Number: AA-RS2AA-TE

First Edition (July 2002)

Product Version: 2.0

This License Instructions summarizes the licenses available with *StorageWorks*™ Enterprise Virtual Array by Compaq Version 2.0. This document outlines instructions for acquiring and implementing licenses. See the license terms and conditions for specific license support, warranty, and conditions.

For the latest version of these License Instructions and other Storage System documentation, visit the Compaq storage website at: http://www.compaq.com/products/storageworks

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Contents

This document covers the following major topics:

- Intended Audience, page 3
- Prerequisites, page 3
- Enterprise Virtual Array World Wide Name and Licenses, page 3
- Enterprise Virtual Array License Types, page 4
- License Upgrades, page 5
- Obtaining a New License Key, page 5
- Entering a License Key, page 6
- Troubleshooting Measures, page 6
- Licensing Support Information, page 9

Intended Audience

This document is intended to assist customers who purchased the *SANworks*™ by Compaq Enterprise Virtual Array software kits.

- *SANworks* Virtual Controller Software (VCS) by Compaq, V2.0 for Dual HSV Controllers
- *SANworks* Snapshot for Virtual Controller Software by Compaq, V2.0 for Dual HSV Controllers (by capacity point)

Prerequisites

The following are required prior to submitting your request for a basic VCS or Snapshot for VCS license:

- *StorageWorks by Compaq Enterprise Virtual Array World Wide Name Label* (shipped with the Enterprise Virtual Array)
- *SANworks by Compaq VCS License Key Retrieval Instruction Sheet* (shipped with Enterprise Virtual Array VCS kit)

Enterprise Virtual Array World Wide Name and Licenses

The World Wide Name (WWN) is a unique Fibre Channel identifier consisting of a 16-character hexadecimal number. Each controller pair is assigned a Node WWN which is required when requesting a license key for your Enterprise Virtual Array storage system. Compaq assigns the WWN to a specific storage system prior to shipment to the customer. Once a WWN is assigned, it cannot be used on any other controller pair or device on the network. This is the only WWN applicable to any controller installed in a specific physical location, even a replacement controller.

The WWN for your storage system is on peel-off labels attached to the Enterprise Virtual Array World Wide Name Label document contained in the Enterprise Virtual Array kit. Have it ready to enter into the designated field when you request your license key. The WWN number must be entered exactly as it appears on the label. In addition to using the WWN when requesting a license key, it is also entered into the controller Operator Control Panel (OCP) using instructions contained in the S*torageWorks by Compaq Enterprise Virtual Array User Guide.*

The WWN peel-off labels on the WWN Label document should also be attached to your storage system as instructed. The directions, including a graphic which describes where to place the WWN labels, are found in the WWN Label document. The same WWN number and Checksum number is on each of the three WWN peel-off labels. Two of the labels may have already been attached to the storage system. If not, follow the instructions for attaching the two labels. The remaining label is for reference.

Enterprise Virtual Array License Types

There are two types of licenses available for the Enterprise Virtual Array:

- Basic VCS - SANworks Virtual Controller Software by Compaq (for Dual HSV Controllers)
- Snapshot for VCS (by capacity point) - SANworks Snapshot for Virtual Controller Software by Compaq (for Dual HSV Controllers)

Basic VCS License

One basic VCS license is required for each controller pair.

The license authorizes you to use VCS to create and operate an Enterprise Storage System. The Fibre Channel identity of the storage system is the World Wide Name generated by manufacturing and attached to the hardware. A single VCS kit provides the basic license that covers both controllers in the storage system.

Snapshot License

Snapshot functionality is also available and requires a separate license for an HSV controller pair. The snapshot license is ordered separately from the required basic VCS license.

The snapshot license enables you to use the value-added snapshot functionality. A snapshot is a fast virtual copy of a virtual disk at an instant in time. You must have the basic VCS functionality before enabling this feature.

Snapshot for VCS provides three types of point-in-time copy functionality:

- Virtually Capacity-Free Snapshot (Vsnap)—Snapshots of data that do not require preallocation of disk capacity equal to the snapped volume. Disk capacity is used on an as-needed basis.
- Standard Snapshot (Snapshot)—Snapshots of data that require preallocation of disk capacity equal to the snapped volume.
- Virtually Instantaneous Snapclone—Provides instantaneous data duplication through the use of the snapshot technology. You have immediate access to the duplicated data while the background operation of creating the clone is accomplished over time.

Snapshot for VCS is licensed by capacity, in terabytes, based on the total disk storage capacity connected to the controller pair.

The snapshot license follows the same licensing scheme as described for the basic license.

Additional information about SANworks VCS can be found online at http://www.compaq.com/products/storageworks/enterprise/index.html.

License Upgrades

The VCS Version 1.02 basic license and Snapshot Version 1.0 for VCS license must be upgraded from the prior version to Version 2.0. If the Snapshot for VCS license is not upgraded in conjunction with VCS 2.0, the Snapshot functionality will not be enabled.

Licenses are required to be upgraded for both major and minor releases but not patch releases.

The following licensing guidelines apply to basic VCS license and Snapshot for VCS license requirements:

- An upgrade license key is required to upgrade from VCS V1.0x to V2.0.
- Two upgrade license keys are required to upgrade from VCS V1.x with snapshot capability to V2 with snapshot capability:
  - — One for VCS V2.0
  - — One for snapshot on VCS V2.0 (by capacity point)

If you do not obtain a license for VCS V2.0 snapshot capability, you can still use the snaps and clones made with V1.0, but you cannot create new ones.

Obtaining a New License Key

A license key is required to activate the VCS that runs on both controllers in a storage system.

Follow the instructions on the *SANworks by Compaq VCS License Key Retrieval Instruction Sheet* to obtain a license key.

The following documents are required when obtaining a license key:

- *StorageWorks by Compaq Enterprise Virtual Array World Wide Name Label* (ships with the hardware and contains the World Wide Name (WWN)).
- *SANworks by Compaq VCS License Key Retrieval Instruction Sheet* (ships with the Virtual Controller Software kit and contains the VCS license Authorization ID).
- If you purchased the snapshot license, you will also need the *SANworks by Compaq Snapshot License Key Retrieval Instruction Sheet* (ships with the Snapshot for Virtual Controller Software kit and includes the Authorization ID).

Follow these steps to obtain a basic VCS or Snapshot license key from the License Key Retrieval Website.

NOTE: If you purchased the snapshot feature, you can request both the VCS and Snapshot for VCS license key at the same time.

If you do not have Web access, the *VCS License Key Retrieval Instruction Sheet* describes how to obtain a license key using email, FAX, or telephone (see Table 1–2, Compaq Support Locations).

1. Get the **WWN** from the *StorageWorks by Compaq Enterprise Virtual Array World Wide Name Label*.
2. Get the **Authorization ID** from the *SANworks by Compaq VCS License Key Retrieval Instruction Sheet* in the VCS Kit.
3. Browse to the **License Key Retrieval Website** at http://www.compaq.com/softwarekeys and log on.
4. Enter the requested company information.

5. Enter the **Authorization ID** (from the *SANworks by Compaq VCS License Key Retrieval Instruction Sheet)* and the **WWN** (from the World Wide Name Label) in the Authorization ID and WWN fields.

   IMPORTANT: You must enter the WWN exactly as it is on the label. The WWN field is case-sensitive and the hyphens must be entered. Once the WWN is entered into the licensing database, the license key is irrevocably linked to that WWN. Do not enter the checksum that appears on the label. Doing so will invalidate the license key.

6. Select your operating system.
7. Click **Submit**. The License Key Retrieval Website generates the license key.

   NOTE: You will receive your license key via email in 1 to 48 hours.

The license key enables you to use the VCS and the value-added snapshot functionality. After the storage configuration is initialized, the license is associated with the WWN and will persist even if you replace the controllers.

IMPORTANT: Both the license and the WWN are required to create an initialized storage system in the HSV Element Manager.

NOTE: If you have more than one license or more than one storage system, you can obtain up to 10 license keys at the same time. Since each license key is linked to the WWN of one storage system, it is important to maintain records showing the association of license keys with WWNs.

Entering A License Key

When you receive the license key from the License Key Retrieval Website, enter it in the HSV Element Manager according to instructions in the HSV Element Manager Interactive Online Help. The license key is made up of alphanumeric characters and may have as many as 4 lines of text. It is very important that the license key is entered exactly as written.

NOTE: ASCII text is required when entering the license key. Ensure that your email editor is set to an ASCII text editor.

This completes the procedures for basic VCS licenses and Snapshot for VCS licenses. If you encounter problems with initializing your storage system, refer to the troubleshooting section which follows.

Troubleshooting Measures

This section addresses possible problem situations that you might encounter and actions to take to correct the problems. Problem information in Table 1–1 applies to both basic VCS and Snapshot for VCS licenses.

Table 1–1: Troubleshooting Measures

Problem	Action
Requesting a License Key	
Message received indicating that the Authorization ID entered at the License Key Retrieval Website was not valid.	Re-enter the Authorization ID.
The Authorization ID was re-entered correctly and you still receive a message indicating it is not valid.	Ensure that you have not already used the Authorization ID with a different WWN. If problems persist, contact the Compaq Support location listed in Table 1–2.

Table 1–1: Troubleshooting Measures (Continued)

Problem	Action
You receive the message "All license keys for the entered license Authorization ID have already been fulfilled" when you enter the VCS License Authorization ID at the License Key Retrieval Website.	Ensure that you have not already used the Authorization ID with a different WWN. Follow the instructions to have the website provide the previously issued keys and compare against your WWNs. If problems persist, contact the Compaq Support location listed in Table 1–2.
You lose a license key.	Enter the Authorization ID and World Wide Name at the License Key Retrieval Website. You will receive the following message: "All license keys for this entered license Authorization ID have been fulfilled." Use the back buttons and select from the list of fulfilled licenses to have the license key sent to you again.
Problems with Software License Key Format	
You cannot initialize your storage system after entering the software license key in the HSV Element Manager.	Check the following: 1. The software license key entered: a. Is it in alphanumeric format? b. Does it contain any unusual characters, especially the checksum? 2. If unusual characters are present: a. Change your default email editor to an ASCII text editor (license key requires an ASCII text editor to ensure proper format). b. Copy the revised license key from the license key email and paste it into the HSV Element Manager. The license key should now be in the correct format and the storage system should initialize.
Changing the email editor.	The method for changing the email editor varies by email program. For example, to change the email editor if you are using Microsoft Outlook: 1. Select **Tools** on the menu bar and then select **Options** on the dropdown menu. 2. Select the **Mail Format** tab and then select **Plain Text** in the **Send in this message format** field. 3. Click **Apply** and then click **OK.** The default email editor is now an ASCII text editor.

Table 1–1: Troubleshooting Measures (Continued)

Problem	Action
Problems with Software License Key Verification	
The storage system still will not initialize after verifying the software license key format.	Check the following: 1. Verify that the correct VCS license key was entered in the HSV Element Manager. Ensure that you did not enter an Authorization ID instead of a VCS license key. The Authorization ID only allows you to get your license key from the License Key Retrieval Website. 2. Ensure that you copied the entire license key from the email received from the License Key Retrieval Website. The following is an example of a VCS license key:

`INCREMENT HSV110-BASIC Compaq 2.0 permanent uncounted 8759639E0880 \`
`HOSTID=HSVWWN=5000-1FE1-0000-A2F0 NOTICE="Authorization \`
`=DI01CRT0XACO20101027, Qty 1, QM-HSV110 - Enterprise\`
`Controller Software - HSV110-BASIC" ck=93`	

	IMPORTANT: The email from the License Key Retrieval website contains the following statement: "This message in its entirety may be placed into your license file." **Do not** copy the entire text when entering the license key in the HSV Element Manager. Only copy the license key. If the message is entered in it's entirety, it will be rejected by the HSV Element Manager. 3. Ensure the WWN was entered correctly at the License Key Retrieval Website and note that the WWN is case-sensitive. **NOTE:** If the WWN was not entered correctly, the license key is not valid. It is a single-use Authorization ID. Contact the Support location listed on the VCS License Key Retrieval Instruction Sheet for a replacement. 4. If you received multiple license keys, ensure that you entered the license key that corresponds to the storage system WWN. 5. If you entered a Snapshot for VCS license key and have not entered a VCS license key, the system will not initialize. Snapshot for VCS does not contain the basic VCS license key. If further assistance is required with the license key, contact one of the Compaq Support locations listed in Table 1–2 or Compaq Global Services.

Table 1–1: Troubleshooting Measures (Continued)

Problem	Action
Snapshot License Key	
Snapshot for VCS functionality will not work.	Check the following: 1. Ensure that you have entered the Snapshot for VCS license key. 2. Ensure that you have entered both the VCS license key and the Snapshot for VCS license key. Check for redemption errors as discussed above for the basic VCS license.

Licensing Support Information

If you have trouble obtaining your license key for any reason (such as lost Authorization ID or incorrect Authorization ID), please get in touch with one of the contacts listed in Table 1–2.

Table 1–2: Compaq Support Locations

Your Location	Email	Phone Number	Fax Number ATTN: License Key Management Office
North & South America	amerikey@ compaq.com	+1 603-884-2385	+1 603-884-3940
Europe, Middle East, Africa	europak@ compaq.com	+353-91-754197/+353 -91-75448	+353-91-754500
Australia, New Zealand, Papua New Guinea, Fiji	au_ozkey@ compaq.com	+612 9022 1775	+612 9022 1777
All others	pakman@ compaq.com	+1 603-884-8998/+1 978-392-8796	+1 603-884-1297/+1 978-392-8796
General licensing questions can be directed to **swlicensing@compaq.com**			