

SANworks by Compaq

Release Notes for HSV Element Manager

Part Number: AA-RT6YB-TE

Second Edition (October 2002)

Product Version: 2.0a

This document contains the most recent product information about the *SANworks*[™] HSV Element Manager by Compaq and additional software provided via Management Appliance Software Update V1.0C Service Pack 5 CD-ROM.

For the latest version of these Release Notes and other storage system documentation, visit the Compaq storage website at:

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

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Printed in the U.S.A.

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Release Package Contents

HSV Element Manager materials are included as part of the SANworks by Compaq Virtual Controller Software (VCS) V2.0a kit. The SANworks by Compaq VCS 2.0a Kit contains the following VCS items:

- *SANworks by Compaq Release Notes for Enterprise Virtual Array*
- *SANworks by Compaq System Software for Enterprise Virtual Array Installation Card*
- *StorageWorks by Compaq Enterprise Virtual Array Read Me First*
- Licensing Materials
- CD-ROM

It also contains the following shrink wrapped kits:

- Management Appliance V1.0C Service Pack 5 with the following contents:
 - *SANworks by Compaq Release Notes for HSV Element Manager*
 - *SANworks by Compaq HSV Element Manager Installation Card*
 - Management Appliance Software Update V1.0C Service Pack 5 CD-ROM
- Management Appliance Update January 2002 with the following contents:
 - Management Appliance Update CD-ROM (also contains HSV Element Manager V1.01)

- *SANworks by Compaq Release Notes Management Appliance Update January 2002*
- *SANworks by Compaq Management Appliance Update Installation Card*
- Additional documentation

NOTE: The Management Appliance Update January 2002 kit contains an earlier copy of *Compaq SANworks Element Manager for Enterprise Only User Guide*. Do not use this guide. Use the *SANworks by Compaq HSV Element Manager for Enterprise Virtual Array Reference Guide* which is available under the topic Technical Documentation at this web location:

<http://www.compaq.com/products/sanworks/managementappliance/index.html>

The reference guide contains the most current and accurate information.

Intended Audience

This document is intended to assist customers who purchased the SANworks HSV Element Manager by Compaq in association with an installation or upgrade to *StorageWorks™* Enterprise Virtual Array by Compaq Version 2.0a.

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

System Support and Information

This section contains information about prerequisites for running the HSV Element Manager software and documentation available for use with the HSV Element Manager and related products.

HSV Element Manager Minimum Software Requirements

Upgrading to HSV Element Manager V2.0a requires that you have the software listed in the following table. The minimum version of the software required and tips on how to check your current version are included here.

Table 1: Minimum Software Requirements

Software	Minimum Version Required	How to Check Current Version
SANworks Virtual Controller Software by Compaq (VCS)	V1.021 if upgrading, V2.00 for new Enterprise Virtual Array Storage Systems.	In the HSV Element Manager: <ol style="list-style-type: none"> 1. Select the Initialized Storage Cell. 2. Select the Hardware Folder. 3. Select Rack1. 4. Select Controller Enclosure. 5. Select either controller. 6. Verify the Software Version field displays ENT-V1021.
HSV Element Manager	V1.01 (included with the VCS V2.0a kit in the Management Appliance Update January 2002 package)	In the HSV Element Manager, launch the About page from Help. Choose Version and Build Information .
Open SAN Manager (OSM)	V1.0C (included with the VCS V2.0a kit in the Management Appliance Update January 2002 package)	Check the first page of the OSM, or launch the About page from Help.

Enterprise Virtual Array Documentation

StorageWorks by Compaq Enterprise Virtual Array Catalog of Associated Documentation is a complete list of all Enterprise Virtual Array and related documentation. It is available under the Technical Documentation topic at this web location:

<http://www.compaq.com/products/storageworks/enterprise/index.html>

Support Release Information

Additional documentation is available via the Compaq website at:

<http://www.compaq.com/products/storageworks/enterprise/index.html>

For future product support release information visit:

<http://www.compaq.com/support/files/storage/index.html>

This website provides downloadables for storage products.

To download future Management Appliance updates, visit:

<http://www.compaq.com/products/sanworks/managementappliance>

You can access the latest update by selecting Software & Drivers.

Browser Support

The recommended browser versions for use with HSV Element Manager are Internet Explorer 5.5 or Netscape 4.79 (Netscape 4.77 for Tru64 Unix). Using browser versions other than the recommended versions could result in some pages not displaying correctly (blank or distorted pages) or some buttons not working.

IMPORTANT: Do not use Netscape 4.78.

Table 2 describes browser support by operating system.

Table 2: HSV Element Manager Browser Support by Operating System

Operating System	Operating System Version	Browser	Browser Version
Sun Solaris	v6 (v2.6), v7, and v8	Netscape Communicator	V4.79
Windows NT	4.0	Netscape Communicator	V4.79
Windows NT	4.0	Internet Explorer	V5.5

Table 2: HSV Element Manager Browser Support by Operating System (Continued)

Operating System	Operating System Version	Browser	Browser Version
Windows 2000	5.0	Netscape Communicator	V4.79
Windows 2000	5.0	Internet Explorer	V5.5
Data Center 32-bit Advanced Server	5.0	Internet Explorer	V5.5
Tru64 Unix	5.1 and 5.1a	Netscape Communicator	V4.77
OpenVMS	7.2-2, 7.3, and 7.3-1*	Not supported. Need to use an alternative supported platform for browsing	n/a
HP-UX	11.0 and 11.i (v1.0)	Netscape Communicator	V4.79
IBM-AIX	4.3.3 and 5.1	Netscape Communicator	V4.79

* Will be supported in August 2002.

Disable Password Checking

Prior to upgrading to HSV Element Manager Version 2.0a, you must disable password checking on the HSV Version 1.0 controllers. Disable passwords on both the Operator Control Panel (OCP), and in the HSV Element Manager **Options/Passwords** page. The *SANworks by Compaq Upgrade Instructions for Enterprise Virtual Array* contain detailed information about removing the passwords from the HSV controllers.

Configuration Restriction for HSG and HSV Controllers in a Heterogeneous SAN Environment

Compaq recommends that one Management Appliance manage a maximum of 25 HSG and 16 HSV subsystems. Future recommended configurations will be announced.

Operating Constraints

This section contains operating constraints specific to the SANworks HSV Element Manager Version 2.0a by Compaq.

Operating constraints specific to the SANworks Management Appliance by Compaq or the operating system can be found in the release notes for those products.

HSV Element Manager V2.0a Cannot be Uninstalled

After you begin installing HSV Element Manager V2.0a, it cannot be uninstalled.

HSV Element Manager Version 2.0a and SSSU V4.0 Can Only Manage Enterprise Virtual Array Version 2.0x

After upgrading HSV Element Manager to Version 2.0a on a Management Appliance, all HSV 110 subsystems **must** be upgraded to Version 2.0x firmware.

Minimum Disk Group Requirements

Compaq requires that a disk group contain no fewer than eight disks. If you remove disks and the result is a disk group with fewer than eight disks, reduced functionality could result. If you discover a disk group with fewer than eight disks, restore the disks necessary so that the disk group has eight disks. Contact your Compaq Authorized Service Provider for assistance, if necessary.

Browser Settings

This topic contains information and details to help ensure your browser settings and usage are correct.

Required Browser Refresh After Agent Upgrade

To ensure that you have the latest client code executing in your browser, be sure to refresh your browser after any management agent code upgrade.

To refresh your browser in Internet Explorer, press and hold **Control** and click **Refresh**.

To refresh your browser in Netscape, press and hold **Shift** and click **Reload**.

System Color Setting

When accessing HSV Element Manager with Internet Explorer or Netscape, set the system colors to True Colors or 16,000,000 colors.

Page Caching

For the best performance of HSV Element Manager, enable page caching. Page caching is only allowed in an HSV-only environment. Page caching is not allowed in heterogeneous (for example, HSG and HSV) environments.

Follow the steps in this section that are appropriate for your browser to check or enable page caching.

Enabling Page Caching in Internet Explorer 5.x and 6x

1. Open Internet Explorer and choose **Tools|Internet Options**.
2. In the middle of the page, click **Temporary Internet Files|Settings**.
3. In the Settings page, choose **Automatically** in the **Check for newer versions of stored pages** option.
4. Ensure that a Temporary Internet Files Folder is selected, and that it is at least 10 MB in size.
5. Click **OK** until you return to the main browser window.

Enabling Page Caching in Netscape 4.x

1. Open Netscape and select **Edit|Preferences|Advanced|Cache**.
2. At the bottom of the dialog box, set the **Document in cache is compared to document on network** option to **Once Per Session**.
3. Ensure that a **Disk Cache Folder** is selected.
4. Ensure that the **Disk Cache** setting is **10 MB**.
5. Ensure that the **Memory Cache** setting is at least **1000 KB**.
6. Click **OK** until you return to the main browser window.

Enabling Page Caching in Netscape 6.x

1. Open Netscape and choose **Edit|Preferences|Advanced|Cache**.

2. At the bottom of the dialogue box, set the **Compare the page in cache to the page on the network** option to **Automatically**.
3. Ensure that the **Disk Cache** setting is at least 10 MB.
4. Ensure that the **Memory Cache** setting is at least 1000 KB.
5. Click **OK** until you're back at your main browser window.

Netscape and HSV Element Manager Caching

In some unusual circumstances, Netscape caches HSV Element Manager's user interface pages, even though the **Document in cache is compared to document on network** preferences is set to **Everytime**. When this incorrect caching occurs, object icons and properties on the screen do not change when they should and some user operations appear not to properly complete.

To avoid the caching problem:

1. Click both **Clear...cache** buttons in the **Edit|Preferences|Advanced|Cache** menu.
2. Set both the memory and disk cache sizes to 0.

This action forces caching for every server request.

Do Not Use Back Button

Do not use the browser **Back** button to return to a **Wait** page or you will reinitiate the operation you are trying to finish.

Browser Behavior

Be aware of the following considerations when using browsers:

- If you are using Netscape 4.77 for Tru64 UNIX, and you move the slider bar between the **Content** pane and **Navigation** pane, the **Navigation** pane remains blank until you do a reload. To solve this problem, perform the reload from the main browser, or right-click and select **Reload** in each pane.

If you resize the Netscape browser window or **Navigation** pane, either the **Navigation** pane or the whole window might become blank. If this happens, click **Reload** to reinitialize the window.

- The right-click menu in some browser configurations is disabled. If you are in a configuration where right clicking brings up a menu, do not use the **Internet Explorer Open Link in New Window, Save Target As, Set as Desktop Item**, or

Add to Favorites options or their Netscape equivalents. These links will lead you back into the GUI without the proper context and cause incorrect information to be shown.

Unsupported Characters

In HSV Element Manager Version 2.0a the following characters are not supported as object names or in Comments fields:

ampersand (&)	colon (:)
plus (+)	asterisk (*)
percent (%)	question mark (?)
comma (,)	quotation mark (“
back slash (\)	angle brackets (< >)
forward slash (/)	vertical bar ()
2 consecutive spaces	

The browser client will allow you to enter any of these characters, but the HSV Element Manager will display an error message if you do. If you enter any of these disallowed characters in comments, the browser client will display a dialog box that alerts you to an illegal entry. You will not see an Element Manager error.

NOTE: If you are an HSV Element Manager Version 1.0 user, note that it is possible that dangling objects (VD Family, Host, or Diskgroup) containing an ampersand, percent sign, comma, or plus sign remaining from Version 1.0. Compaq recommends that you change the name of these objects to a name that conforms with the HSV Element Manager Version 2.0a character set. Failure to rename these object will produce an error when you try to modify a property of that object other than its name.

Creating Large Virtual Disks

When you create a very large virtual disk (over 100 GB), Compaq recommends that you *do not* choose the **Present to Host** option on the **Create a Virtual Disk Family** page. Instead, wait until after the virtual disk is created, then go to the **Virtual Disk Active Properties** page and choose **Present**.

Number of Storage Systems Managed from HSV Element Manager

The maximum number of Enterprise Storage Systems (dual controller pairs) that can be managed from an HSV Element Manager is 16. Each Enterprise Storage System must be visible to only one HSV Element Manager at a time. This applies to all four ports of the dual controller pair. Each of the four ports, if visible to an HSV Element Manager, must be visible to the same HSV Element Manager.

Snapshot Allocation Policy

All snapshots (to a maximum of 7) within a virtual disk family need to have the same allocation policy. For example, if a snapshot is created using allocation on demand, all snapshots within that virtual disk family must also be allocated on demand. The same requirement applies if the first snapshot is created using Allocate completely allocation policy, that is, all subsequent snapshots within that family must be fully allocated.

NOTE: With SSSU, you will not receive a warning if you try to create a snapshot with a different allocation policy than the first snapshot created within that family. You will have a return status of success.

Avoiding Problem Situations

This section advises how to avoid problem situations specific to the HSV Element Manager.

Information pertaining to avoiding problem situations specific to the SANworks Management Appliance by Compaq and operating systems can be found in the release notes for those products.

Multiple HSV Element Manager Agents

Only one HSV Element Manager agent can manage and monitor Enterprise Virtual Array (EVA) controller pair(s) in a configuration. Serious problems may occur if a second Management Appliance with a second HSV Element Manager agent is introduced. Problems include potential element manager management data loss regarding the monitored subsystems.

HSV Element Manager Version 2.0a attempts to prevent more than one HSV Element Manager agent from managing an EVA controller pair by displaying a warning message. If a second HSV Element Manager agent is introduced, the following warning message displays on the UI:

The HSV Element Manager agent on appliance <appliance name 1> at IP address <appliance 1 ip address> is managing this storage system. Only one agent may manage a storage system at a time. You must remove one agent from your configuration.

If your intent is to manage with <appliance name 2> at IP address <appliance 2 IP address>, remove <appliance name 1> from the configuration. Wait 15 minutes and restart <appliance name 2>.

If your intent is to continue management with <appliance name 1>, remove <appliance name 2> from the configuration.

NOTE: Two Management Appliances managing the same storage cell is not a supported configuration. Users must avoid this situation.

Avoiding Slowdowns and Timeouts Caused by Multiple HSV Element Manager Users

Slow response times and timeouts are expected to occur when more than one browser, more than one SSSU session, or a browser and an SSSU session are run at the same time on the same HSV Element Manager. If timeouts occur, retry the commands that time out.

To avoid problems, Compaq recommends the following:

- Only one user at a time on the HSV Element Manager.
- Only one SSSU session at a time on the HSV Element Manager.
- Do not use the HSV Element Manager GUI if SSSU is being used to run controller failovers.

HSV Element Manager Restart

The HSV Element Manager can be restarted via the Appliance Manager. In certain situations, you may need to stop and restart the NSAservice service in order to reestablish communication between the HSV Element Manager and the HSV controller.

Sorting in the Navigation Pane

When objects in the current view are renamed, the view is not resorted so the object maintains its current parent/sibling relationship. When subsequent objects are created, the placement is affected by the changed object's name. The result is incorrect alphabetical sorting in the **Navigation** pane. Restart the service to correct the problem.

Hardware Folder Compression

In certain situations, the navigation tree is rendered at the same time that the hardware view is being built. When this occurs, the **Hardware** folder does not display a + when it is compressed.

Double Arrow Issue in the Navigation Pane

In some instances when performing controller failovers, the unmappable controller holds the page and scroll buttons. This results in an issue with the double arrow in the **Navigation** pane. To resolve the issue, simply close or compress the unmappable folder and the buttons should resume normal function. If the unmappable folder is empty and cannot be compressed, click **Home** to resolve the issue.

Tree Objects Displayed Default Changes Do Not Persist

If a change is made to the user option Tree objects displayed default, the setting will not persist when the Management Appliance is rebooted or restarted. You must reenter the default change.

Setting Up Management Appliance Redundancy

Compaq recommends that Management Appliance redundancy be handled by following these passive Management Appliance redundancy procedures:

1. Attach a Management Appliance to the fabric and zone it in.
2. Install HSV Element Manager and verify that you can see the correct storage systems.
3. Power down the Management Appliance, remove it, and replace it with a new one.
4. Repeat steps 1 and 2 for the new Management Appliance.
5. In the unlikely event of a Management Appliance failure, disconnect the Management Appliance and reconnect the first Management Appliance.

Setting Enterprise Controller Time

Compaq recommends that the Enterprise controller time be set to the same time as the Management Appliance at storage system initialization. Setting the controller and Management Appliance time to the same time, results in timestamp synchronization across all event types, which enhances troubleshooting capability. Any other setting of the controller time will reduce the capability to correlate system events in case of a failure. See the HSV Element Manager online Help for the time setting procedure.

HSV Element Manager and Unused GBIC

When a Version 1.0 Enterprise Virtual Array is updated to a Version 2.0 Enterprise Virtual Array by installing Vixel switches, the FC cabling is reconfigured to use only one of the two SFP ports in each I/O module (A and B) in each drive enclosure. For Version 2.0, a plug is installed in the unused SFP connector. In this upgraded configuration with one unused SFP port in the I/O module, it is normal for the HSV Element Manager to mark the unused port as FAILED in the I/O module page.

Browsing from HP-UX/Netscape

In some instances, when browsing from HP-UX using Netscape, the appliance responds with the login page, but the page does not contain the two input boxes for Username and Password, and you cannot proceed. In this situation, you can browse directly to the HSV agent using the following URL:

<http://YourApplianceName:2301/ResEltCpqFusion>

Handling an Installation Failed Message

If, during installation, you receive an Installation Failed message, retry the installation. The service might not have completely closed before the upgrade started.

Version 2.0 Platform Kits for Version 2.0 Only

Do not attempt to use Version 2.0 operating system platform kits with HSV Element Manager Version 1.0.

Ungrouping a Disk from a Disk Group

When ungrouping disks from a disk group, you will see two confirmation dialog boxes. The first dialog box asks, *Are you sure you wish to continue?* If you choose **OK**, the second dialog box displays, indicating that you will be required to wait until the migration process has finished.

OK and **Cancel** buttons display in the second dialog box. If you choose **OK**, you must wait until the ungrouped process is complete before any further HSV Element Manager operations can continue. If you choose **Cancel**, the process will be asynchronous and will not require waiting until the migration process is complete. This allows you to continue and perform HSV Element Manager operations while the migration process is in progress.

Command in Progress Message

When a Command in Progress message displays, do not attempt to perform any other action until the command is completed. Commands normally complete within two minutes. Under some circumstances such as creating or deleting large virtual disks or ungrouping a disk, it can take longer. If the Command in Progress message remains after 15 minutes, communications with the HSV controller might have been interrupted. Restart the HSV Element Manager to clear the condition and retry the action.

Get Log File

The **Get Log File** option on the **Management Agent Events**, **Controller Events**, and **Controller Termination Events** pages (accessed from the **View Events** page) is for Compaq Authorized Service Providers' use only.

Disk Names Higher than Disk Count

Adding disks, removing disks, or changing the storage cell operational property from manual to automatic can cause disks to be named and renamed. HSV Element Manager ensures that disk names are distinct by incrementing the last three digits of the name. This naming method can result in having disks named with a number higher than the total disk count for a particular system. For example, if you have five disks named disk 001 through disk 005 and disk 003 and disk 004 are removed, the next time those disks are inserted, HSV Element Manager would name them 006 and 007.

SSSU and the Number of Supported Virtual Disks

HSV Element Manager Version 2.0a supports a maximum of 512 Virtual Disks. SSSU does not enforce this limit. Regardless, do not create more than 512 Virtual Disks.

SSSU Responds with Server Down Error While Still Able to Browse to HSV Element Manager

In rare instances, SSSU loses communication with HSV Element Manager and reports that it is down, stopped, or restarting even though it is possible to browse to HSV Element Manager. This error will also occur on any Management Appliance with no attached HSV 110 controllers.

SSSU Responds with Neither Success or Failure Message

In some instances when SSSU is run from a host with heavy I/O, the SSSU script may issue the following error:

```
Error: Neither SUCCESS or FAILURE were returned by this command.
```

If this error occurs, retry the script. If the error persists, contact your Compaq Authorized Service Representative for troubleshooting assistance.

Navigation Tree Collapses or Opens Spontaneously

If you want to leave the HSV Element Manager Version 2.0a user interface while using it but want the display to remain static, select a non-container object in the **Navigation** pane as your last action.

If instead, your last user tree action was to open or close a container object, the user tree might appear to spontaneously collapse or open the next time the system automatically refreshes.

HSV Element Manager Notes

This section contains additional information for your use with HSV Element Manager.

Setting Preferred Path When Creating Snapclones

The snapclone advanced wizard GUI pages give the user the option to set the Preferred Path as part of the snapclone creation process. During the creation process, the snapclone maintains a sharing relationship with the source Vdisk until it is completely populated with data. As a result of the sharing relationship, setting the Preferred Path in the creation wizard forces the Preferred Path setting for the source Vdisk to match the snapclone.

hp recommends that you choose "No preference" in the creation wizard if you want the source Vdisk and its snapclone to use different paths. It is also recommended that you set the Preferred Paths for the Vdisk and its snapclone to be different after the snapclone creation process is completely finished.

HSV Element Manager Startup

Under most conditions, startup of HSV Element Manager takes from one to 15 minutes. Several factors contribute to the length of the startup including the load on the storage system, the number of storage systems in the customer environment, and how the storage systems are configured, for example, the number of Virtual Disks in the system. Take all these factors into consideration when estimating the amount of time your HSV Element Manger will take to complete startup.

Scrolling Function

In rare situations, the page or scrolling function of the **Navigation** pane may stick. If you encounter this behavior, click **Home** on the **Session** pane to clear the condition.

Failback Preference Setting for HSV Controllers

Table 3 describes the failback preference modes supported with HSV controllers and the HSV Element Manager.

Table 3: Failback Preference Settings

Setting	Point in Time	Behavior
No Preference	At initial presentation	The units are alternately brought online to Controller A or to Controller B.
	On dual boot or controller resynch	If there is cache data for a LUN on a particular controller, the unit will be brought online there. Otherwise, the units are alternately brought online to Controller A or to Controller B.
	On controller failover	All LUNs are brought online to the surviving controller.
	On controller failback	All LUNs remain on the surviving controller; there is no failback except if a host moves it using SCSI commands.
Path A - Failover Only	At initial presentation	The units are brought online to Controller A.
	On dual boot or controller resynch	If there is cache data for a LUN on a particular controller, the unit will be brought online there. Otherwise, the units are brought online to Controller A.
	On controller failover	All LUNs are brought online to the surviving controller.
	On controller failback	All LUNs remain on the surviving controller; there is no failback except if a host moves it using SCSI commands.

Table 3: Failback Preference Settings (Continued)

Setting	Point in Time	Behavior
Path B - Failover Only	At initial presentation	The units are brought online to Controller B.
	On dual boot or controller resynch	If there is cache data for a LUN on a particular controller, the unit will be brought online there. Otherwise, the units are brought online to Controller B.
	On controller failover	All LUNs are brought online to the surviving controller.
	On controller failback	All LUNs remain on the surviving controller; there is no failback except if a host moves it using SCSI commands.
Path A - Failover/Failback	At initial presentation	The units are brought online to Controller A.
	On dual boot or controller resynch	If there is cache data for a LUN on a particular controller, the unit will be brought online there. Otherwise, the units are brought online to Controller A.
	On controller failover	All LUNs are brought online to the surviving controller.
	On controller failback	All LUNs remain on the surviving controller. After controller restoration, the units that are online to Controller B and set to Path A are brought online to Controller A. This is a one time occurrence. If the host then moves the LUN using SCSI commands, it will remain where moved.

Table 3: Failback Preference Settings (Continued)

Setting	Point in Time	Behavior
Path B - Failover/Failback	At initial presentation	The units are brought online to Controller B.
	On dual boot or controller resynch	If there is cache data for a LUN on a particular controller, the unit will be brought online there. Otherwise, the units are brought online to Controller B.
	On controller failover	All LUNs are brought online to the surviving controller.
	On controller failback	All LUNs remain on the surviving controller. After controller restoration, the units that are online to Controller A and set to Path B are brought online to Controller B. This is a one time occurrence. If the host then moves the LUN using SCSI commands, it will remain where moved.

Table 4 describes the Failback default behavior and settings allowed for each operating system. The table indicates when Secure Path is used in conjunction with the operating system.

Table 4: Failback Settings by Operating System

Operating System	Default Behavior	Settings Allowed
Windows Secure Path	Autoback done by the host	No Preference, Path A/B - Failover Only
Sun UNIX Secure Path	Autoback done by the host	No Preference, Path A/B - Failover Only
HP Secure Path	Autoback done by the host	No Preference, Path A/B - Failover Only
IBM AIX Secure Path	Autoback done by the host	No Preference, Path A/B - Failover Only
Tru64 UNIX	Host follows the unit	All settings allowed. Recommended setting: Path A/B - Failover/Failback.
VMS (7.3 and below)	Attempts to move the unit to the first path discovered	No Preference, Path A/B - Failover Only

Table 4: Failback Settings by Operating System (Continued)

Operating System	Default Behavior	Settings Allowed
VMS (7.3-1 and greater)	Host follows the unit	All settings allowed. Recommended setting: Path A/B - Failover/Failback

SANworks Password Manager V1.0

SANworks Password Manager V1.0 is a component of *Management Appliance Software Update V1.0C Service Pack 5*. Although Password Manager is included in Service Pack 5, it is not required for HSV Element Manager 2.0a installation.

For information on Password Manager, refer to Management Appliance V1.0C Service Pack 5 Readme at:
<http://www.compaq.com/products/sanworks/managementappliance/index.html>