

Compaq SANworks

Release Notes

SANworks Secure Path Version 3.1 for Microsoft Windows

This document summarizes features and characteristics of SANworks Secure Path Version 3.1 for Microsoft Windows, a High-Availability software solution for Intel Platforms for use with StorageWorks RA7000/8000 and ESA10000/12000 RAID Storage Systems.

These *Release Notes* provide information for SANworks Secure Path Version 3.1 not available elsewhere in the product documentation, and takes precedent over all other sources. Individuals responsible for configuring, installing, and using this software should use this document.

Please visit our web site <http://www.compaq.com/storageworks> to obtain the latest information and upgrades.

NOTE: Read this entire document before installing or upgrading the software.

These Release Notes include the following sections:

1. NOTES AND WARNINGS	2
2. SECURE PATH GUIDELINES.....	3
3. SECURE PATH INSTALLATION	4
3.1 Windows 2000 Secure Path New Install	4
3.2 Upgrading Windows NT 4.0 to Windows 2000	4
3.3 Windows NT 4.0 Secure Path New Install.....	5
3.4 Upgrading from Transparent Mode to Multiple-bus Mode.....	5
4. SECURE PATH OPERATIONAL FEATURES.....	5
4.1 Secure Path Manager Refresh.....	5
4.2 Secure Path Manager Controller Designations	6
4.3 Controller Hot-Swap	6
5. CONFIGURATION INFORMATION	6
5.1 Operating System Compatibility	6
5.2 Supported Storage System Types	6
5.3 Secure Path Supported Configurations	7
5.4 Fibre Channel Configurations.....	7
5.5 Parallel SCSI Configurations.....	8
5.5.1 Parallel SCSI Adapter Setup.....	8
5.5.2 Parallel SCSI Constraints	8
6. SECURE PATH INSTALL KIT CONTENTS.....	9

1. NOTES AND WARNINGS

- In a Microsoft Cluster configuration, use selective storage presentation to present LUNs through only one port per controller (two ports per LUN maximum). All four controller ports may be used as long as any single LUN is accessible through two ports. For example, LUN A is presented through port 1 of both controllers while LUN B is presented through port 2 of both controllers.
- If you are using Microsoft Cluster Server Software please go to site <http://search.support.microsoft.com/kb/c.asp> and do a search for the “specific article ID number” on the following Technical Bulletins:
 - **Q247065** - Microsoft Cluster Server with Service Pack 6A
 - **Q258750** – Recommended Private “Heartbeat” Configuration on a Cluster Server
- For Windows 2000, if paths become broken or are missing **DO NOT** perform the “re-scan disks” operation from the Computer Management/Disk Management applet. Devices may become inaccessible to the operating system if this is done. In the event the user inadvertently performs this operation, rebooting the system will restore lost devices.
- Secure Path Manager (SPM) is unable to start with hosts that use hyphenated Host Names (for example. *my-host*). Any hyphen indicates a cluster profile member to SPM. The workaround is to add the name of the host without the hyphen to the Host file. Add this name to the *client.ini* file with the Agent Configuration program, and use this name to log in with SPM. The Host file needs to be modified with the un-hyphenated name on all client systems because DNS will not be able to resolve the name correctly.
- In a Windows 2000 installation, addition of new LUN(s) may cause the hardware wizard to display an error in initializing the LUN(s) and “yellow warning” signs may show up in the device manager. This is resolved by reboot(s) of the system.
- To insure that no-single-point-of-failure is maintained throughout your Secure Path Storage System, only redundant RAID types should be configured. Those include RAID 0 + 1, 1, and 3/5. Please visit our web site <http://www.compaq.com/storageworks> to obtain the latest upgrade.
- The Secure Path Agent Configuration utility will occasionally append a period to the end of the client’s name as shown in the Client box. This will prevent client connections to the agent. If this occurs, first select the client name with the period from the Client box and choose Delete Client. Then re-enter the name without the period in the Selected Client box and choose Add Client.

- Secure Path version 3.1 contains separate executables for Windows 2000 and Windows NT 4.0 installations. The InstallShield Wizard automatically detects and installs the proper executables based upon your operating system.

2. SECURE PATH GUIDELINES

- The controller CLI command *restart<this/other>* is not supported on operational RA8000/ESA12000 storage systems.
- Booting from Secure Path devices is not supported.
- Load distribution is not supported and is automatically disabled in Microsoft Cluster Service (MSCS).
- The Windows NT Fault-Tolerant driver (for host-based RAID sets) may not be used in conjunction with Secure Path.
- There is no support for large LUNs (greater than eight LUNs per target ID).
- There is no support for Windows 2000 dynamic disks.
- All controller-based partitions built on a single storageset must be assigned to the same controller and the same host.
- Standalone and clustered hosts may not be assigned to the same SPM profile.
- SPM **CANNOT** be launched from StorageWorks Command Console (SWCC).

If you double-click the SPM window icon in the Secure Path folder of SWCC, the following message will appear:

AppletManager: Failed to create object. Make sure the object is entered in the system registry.

- Replacement of a controller requires that all cluster servers sharing the affected storage system be rebooted to re-synchronize the Secure Path databases
- SPM passwords for all hosts in a profile must be the same.
- Changing the Agent's list of authorized clients or passwords requires that the Agent be manually stopped and restarted.
- Modifications to device volume labels made with Windows NT Disk Administrator require that the Agent be manually stopped and restarted before they will become visible in SPM.
- A Secure Path Windows 2000 host cannot access a transparent mode RA8000/ESA12000.

3. SECURE PATH INSTALLATION

Refer to the Secure Path Installation and Reference guide found on the release media, for more detailed installation procedures. The following sequences provide supplemental procedures for the most common installation scenarios.

3.1 Windows 2000 Secure Path New Install

- Configure the RAID array for multiple-bus failover mode.
- Configure storage sets.
- Install hardware (but do not connect HBA cables).
- If using Fibre Channel controllers, run the Fibre Channel set-up utility found on the Secure Path CD. If using SCSI controllers just continue with installation.
- Install the Secure Path Server software.
- Install the Secure Path Client software.
- Shutdown the server and connect the HBA cables.
- Reboot the server.

3.2 Upgrading Windows NT 4.0 to Windows 2000

- Uninstall the existing Secure Path software.
- Disconnect storage from host(s).
- Perform the operating system upgrade.
- If using Fibre Channel controllers, run the Fibre Channel set-up utility found on the Secure Path CD. If using SCSI controllers just continue with installation.
- Install the Secure Path Server software.
- Install the Secure Path Client software.
- Shutdown the server and connect the HBA cables.
- Reboot the server.

3.3 Windows NT 4.0 Secure Path New Install

- Configure the RAID array for multiple-bus failover mode.
- Configure storage sets.
- Install hardware (but do not connect HBA cables).
- If using Fibre Channel controller, run the Fibre Channel set-up utility found on the Secure Path CD. If using SCSI controllers run the RA7000_WNT_WIN2K platform kit CD.
- Install the Secure Path Server software.
- Install the Secure Path Client software.
- Shutdown the server and connect the HBA cables.
- Reboot the server.

3.4 Upgrading from Transparent Mode to Multiple-bus Mode

- Uninstall the Fibre Channel software.
- Configure the RAID array for multiple-bus failover mode.
- Install additional hardware (but do not connect HBA cables).
- Run the Fibre Channel set-up utility found on the Secure Path CD, if needed.
- Install the Secure Path Server software.
- Install the Secure Path Client software.
- Shutdown the server and connect the HBA cables.
- Reboot the server.

4. SECURE PATH OPERATIONAL FEATURES

4.1 Secure Path Manager Refresh

SPM automatically refreshes the display every 90 seconds. If you wish to update the displayed information sooner use the F5 key.

4.2 Secure Path Manager Controller Designations

In the SPM display, the controller designations are based on manufacturing designated serial numbers assigned to physical controllers in your RAID Array cabinet. This does not necessarily correlate to the physical position (upper and lower) of the controllers within the cabinet. Always reference the controller serial numbers if you need to associate information in the SPM display with the controllers.

4.3 Controller Hot-Swap

If it becomes necessary to hot-swap one of the RAID Array controllers in a storage system, schedule a reboot of each cluster server sharing that system as soon as possible to re-synchronize the Secure Path databases. If only one of the servers is rebooted, SPM management capability is compromised.

5. CONFIGURATION INFORMATION

5.1 Operating System Compatibility

Secure Path Version 3.1 is supported on Intel-based platforms running the following operating systems:

- Windows NT Enterprise Edition Version 4.0, Service Pack 5 or Service Pack 6A
- Windows 2000 Advanced Server

Microsoft Cluster Server (MSCS) may be optionally installed.

5.2 Supported Storage System Types

- Fibre Channel RA8000/ESA12000 RAID Arrays with StorageWorks HSG80 controller and ACS version 8.5
- SCSI RA7000/ESA10000 RAID Arrays with StorageWorks HSZ70 controller and HSOF version 7.7

5.3 Secure Path Supported Configurations

The following list defines operational configuration limits for Secure Path Version 3.1. The effective limit may be less due to Windows storage constraints, storage system type, or interconnect requirements. Refer to the appropriate Application Notes included with the install kit (also available from the <http://www.compaq.com> web site) for details.

- Maximum 8 storage systems shared by a set of hosts (per profile)
- Maximum 8 hosts per set of shared storage systems (per profile)
- Maximum 8 LUNs per target
- Maximum 8 paths per LUN
- Maximum 24 storagesets per subsystem for parallel SCSI configurations
- Maximum 16 storagesets per subsystem for Fibre Channel configurations

5.4 Fibre Channel Configurations

NOTE: Please check the <http://www.compaq.com/support/storage> Compaq web site for the latest HBA device drivers.

Fibre Channel configurations are supported with the StorageWorks KGPSA HBA for Windows NT 4.0 and Windows 2000. The following revision levels are required:

- KGPSA device driver for Windows 2000 – CPQKGPSA.SYS, version 5-4.41a5
- KGPSA device driver for Windows NT 4.0 – LP6NDS35.SYS, version 4-4.41a5
- KGPSA Firmware SF2.20

During installation, all parameters required by Secure Path for the HBA driver are set automatically. It is required that you follow cabling instructions included in the appropriate Application Notes to facilitate maintenance and path correlation to the SPM display.

5.5 Parallel SCSI Configurations

5.5.1 Parallel SCSI Adapter Setup

Parallel SCSI configurations are supported with the Adaptec AHA2944-UW HBA for Windows. The following revision levels are required:

- Adaptec device driver AIC78xx.sys, version 1.25c for Windows NT 4.0 SP6A
- Adaptec device driver version 5.0.2144.1 for Windows 2000

Use SCSI Select to implement the following BIOS settings for each HBA:

- Adapter SCSI ID assignments must be different for each host in a multiple host configuration
- Disable Reset at initialization
- Enable SCSI Parity Checking
- Host Adapter Termination=LOW OFF/HIGH OFF (for configurations using external termination)

5.5.2 Parallel SCSI Constraints

When configuring Secure Path with the Adaptec 2944UW it is required that HBAs and their connections to the storage controllers be configured symmetrically between the two hosts. Cross cabling is not supported. For example:

- HBA #1 of Host A must connect with HSZ70 controller #1
- HBA #1 of Host B must connect with HSZ70 controller #1
- HBA #2 of Host A must connect with HSZ70 controller #2
- HBA #2 of Host B must connect with HSZ70 controller #2

Maximum configurations supported for Parallel SCSI:

- 4 hosts (standalone or configured as 2 MSCS clusters) for each set of shared storage systems
- 3 storage systems for each set of shared hosts

6. SECURE PATH INSTALL KIT CONTENTS

- Secure Path v3.1 CD
- Secure Path v3.1 Installation and Reference Guide
- Secure Path v3.1 Product Description
- Secure Path v3.1 Release Notes (this document)
- Fibre channel software installation (switch and loop configurations)
- LP6NDS35 or CPQKGPSA driver OEM setup for Windows 2000 and Windows NT 4.0
- License
- Warranty Card
- Warranty Addendum