

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 covered elsewhere in the documentation. Individuals responsible for configuring, installing, and using this software should use this document.

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

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1. NOTES AND WARNINGS

- 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. Please note that the Windows NT 4.0 compatible Secure Path executables are identical to the previous version 3.0 release.
- 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.
- SPM version 3.1 can interact with both Secure Path Agent versions 3.1 (Windows 2000) and 3.0 (Windows NT 4.0). However, mixing of hosts running Windows NT 4.0 and Windows 2000 operating systems in a single profile is **NOT ALLOWED**. SPM version 3.0 should be used to manage only Windows NT 4.0 systems. The user **MUST** create separate profiles for hosts with Windows NT 4.0 and hosts with Windows 2000 operating systems.
- 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 problem is resolved by reboot(s) of the system.

2. SECURE PATH GUIDELINES

- The controller CLI commands *debug crash reboot* and *shutdown<this/other>* are not supported on operational RA8000/ESA12000 storage systems.
- The boot device cannot be connected to a KGPSA host bus adapter (HBA) in a Secure Path installation.

- Path Verification 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 storage set 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 servers sharing the affected storage system be rebooted at the same time.
- 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.
- Microsoft Cluster configurations require four controller port connections with each HBA connected to both controllers. Therefore, Configuration #6 of the "RA8000/ESA12000 FC-AL High Availability Configurations" Application Note is not supported.

For more details, refer to the appropriate Application Notes included with the install kit (also available from the www.compaq.com web site).

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).
- Install the lp6nds driver from the Secure Path CD using the OEM setup.inf applet.
- Run the Fibre Channel set-up utility found on the Secure Path CD.
- Install the Secure Path Server software.
- Install the Secure Path Client software.
- Shutdown the server and connect the HBA cables.
- Reboot the server.

3.2 Upgrading Windows NT 4.0 to Windows 2000

- Uninstall the existing Secure Path software.
- Disconnect storage from host(s).
- Perform the operating system upgrade.
- Run the Fibre Channel set-up utility found on the Secure Path CD.
- Install the Secure Path Server software.
- Install the Secure Path Client software.
- Shutdown the server and connect the HBA cables.
- Reboot the server.

3.3 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).
NOTE: In an MSCS environment it is required that all four controller ports be connected to all servers in the cluster.
- Run the Fibre Channel set-up utility found on the Secure Path CD.
- 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
- Windows 2000 Advanced (for Fibre Channel configurations only)

Microsoft Cluster Server (MSCS) may be optionally installed.

5.2 Supported Storage System Types

- Fibre Channel RA8000/ESA12000 RAID Arrays with SANworks HSG80 controller and ACS version 8.5
- SCSI RA7000/ESA10000 RAID Arrays with SANworks HSZ70 controller and HSOF version 7.3 (Windows NT 4.0 only)

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 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

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

- KGPSA device driver for Windows 2000 - LP6NDS35.SYS, version 5-4.41a4
- KGPSA device driver for Windows NT 4.0 - LP6NDS35.SYS, version 4-4.41a4
- KGPSA Firmware SF2.20

During installation, all parameters required by Secure Path for the LP6NDS35.SYS 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 NT 4.0 only. The following revision level is required:

- Adaptec device driver AIC78xx.sys, version 1.25c

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 driver OEM setup for Windows 2000 and Windows NT 4.0
- License
- Warranty Card
- Warranty Addendum