



Product Description

StorageWorks Secure Path, Version 2.0, for Windows NT

A High-Availability MultiPath Solution

This document provides a brief functional description of the StorageWorks Secure Path, Version 2.0, for Windows NT, a High Availability MultiPath Solution; it includes significant features, minimum system requirements for implementing the Solution, and an introduction to the Solution software modules.

Description

The StorageWorks Secure Path for Windows NT provides a fault-tolerant solution for continuous availability of RAID storage subsystems on WNT 4.0 Intel and Alpha platforms. It allows a dual-controller StorageWorks SCSI RAID Array 7000 / ESA 10000 or a Fibre Channel RAID Array 8000 / ESA 12000 to be cabled on two independent busses, using two separate host bus adapters in a single server. When combined with the inherent fault-tolerant features of the RAID Array, this configuration effectively eliminates single points of failure (i.e., disk drives, controllers, interconnect cables, and SCSI host adapters) in the storage subsystem. Should a failure on one path's host bus adapter, cable, or controller occur, the failure is detected and I/O is automatically re-routed to the functioning, alternate path. This process is called failover, and requires no resource downtime and ensures the high availability of data. Failed-over storage units may be failed-back, through use of a configuration management utility, once failed components have been replaced.

Features

The major features of the StorageWorks Secure Path V2.0 for Windows NT are:

- Automatic failover capability on occurrence of adapter, cabling, or controller failure.
- System Manager controlled failback using Secure Path Manager configuration utility to maintain system integrity.
- Exploits dual bus potential of the HSZ70 or the HSB80 controller for improved bandwidth and throughput performance.
- Convenient "drag-and-drop" configuration management and static load balancing capability.
- Easy-to-use color-coded configuration status display.
- Custom event log entries facilitate problem diagnosis and repair.
- User-friendly, industry standard software installation and setup.
- Single-host and Microsoft Cluster Server (MSCS) support.
- UltraSCSI and Fibre Channel support.
- Multiple storage subsystem support.
- Client/Server remote management capability.

Secure Path Software Modules

StorageWorks Secure Path for Windows NT is comprised of the following basic software modules:

- **HszDisk.sys** - is the Windows NT class driver which works with HS*-family RAID Array controllers to enhance on-line storage availability and fault-tolerance. HszDisk maintains optimum subsystem performance during controller and storageset error recovery operations.
- **RaiDisk.sys** - is the Windows NT filter driver that provides support for multiple-bus mode operation with StorageWorks RAID Arrays. RaiDisk performs automatic failover of storagesets to the alternate path in the event of a primary path failure.
- **Secure Path Manager** - is the application utility used to manage multipath StorageWorks RAID Array configurations.
- **Secure Path Agent** is the server service that communicates with the RaiDisk filter driver on the server side and with the Secure Path Manager on the client side via TCP sockets. The Secure path Agent makes use of Windows NT application and event log and will post error and informational messages as required.
- **Secure Path Setup** - is the StorageWorks Secure Path for Windows NT setup program used to install and configure all required server/client software components on Intel and Alpha platforms.

Minimum System Requirements

The following are the minimum system requirements for StorageWorks Secure Path V2.0 for Windows NT:

Architecture	Intel or Alpha server with 64 MB of memory
Operating System	Windows NT 4.0 Server, Service Pack 3
Disk Space	All Drivers and Files < 1.5 MB
File System	Single Host NTFS or FAT partitions Microsoft Cluster Server NTFS partitions only
Monitor	VGA
Input Devices	Keyboard and mouse
Host Bus Adapters	UltraSCSI - Adaptec 2944UW Intel – version 1.25C Alpha – version 2.11S30 or higher Fibre Channel - StorageWorks KGPSA
Serial Port	(for CLI direct serial connection)
Controller Compatibility	Dual-controller RAID Array 7000 using HSOF version 7.1 or later Dual-controller RAID Array 8000 using ACS version 8.3 or later

RAID Array Multibus Mode

Secure Path Software makes use of the HSZ70 or HSG80 RAID Array multiple-bus mode of operation. In this mode, each controller in a dual-redundant storage subsystem is configured on its own independent SCSI bus and available storagesets (units) are “preferred” to one or the other of the two controllers. Storagesets are “preferred” by using the **PREFERRED_PATH** unit attribute to assign the unit to either “THIS” or the “OTHER” controller. The **PREFERRED_PATH** attribute determines which controller path is used to access units at system boot time. The user has the option, through use of the Secure Path Manager, to modify this configuration during runtime.

Secure path Manager

The Secure Path Manager is the graphical user interface for the multiple-path environment. Secure Path Manager continuously monitors the multiple-path storage subsystem and automatically updates the displayed configuration information. Secure Path Manager indicates which path is currently servicing each configured storageset. Online, offline, and pending state information for available storagesets and paths is depicted using color codes. To facilitate static load balancing, Secure Path Manager also provides the capability to swap storagesets between paths through simple drag-and-drop operations.

Secure Path Setup

Secure Path Setup is simple to use, industry standard setup utility which installs all required Secure Path software components on Intel and Alpha based host systems. Secure Path Setup provides Server and Client setup options, allowing selective installation of available components.