

Compaq SANworks

Product Description

SANworks Secure Path Version 2.1 for Sun Solaris – A High-Availability Fibre Channel Solution for Sun Solaris Platforms

This document provides a brief functional description of SANworks Secure Path Version 2.1 for Sun Solaris, a high availability solution that supports StorageWorks Fibre Channel RAID storage systems attached to Sun Solaris servers. It includes significant features, minimum system requirements for implementing the solution, and a brief description of the software utilities used in Secure Path management.

Description

SANworks Secure Path V2.1 for Sun Solaris provides a dual path solution for continuous availability of RAID storage systems on Sun Solaris platforms. It allows a StorageWorks dual-controller RA8000/ESA12000 Fibre Channel (FC) storage system 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 storage system, this configuration effectively eliminates single points of failure (i.e., disk drives, controllers, interconnect cables, SAN switches, FC hubs and host bus adapters) comprising a path in the storage topology. Should a failure in any such component of a path occur, it is detected by Secure Path, which automatically reroutes the I/O to the functioning, alternate path. This process is called *failover*, and requires no resource downtime and ensures the high availability of data. Storage units that have been automatically rerouted to the standby path may be restored to their original path once the path is available. Rerouting is accomplished using the configuration management tool, *sfmt*.

Features

The major features of the SANworks Secure Path V2.1 for Sun Solaris are listed below.

It supports:

- Two StorageWorks FC RA8000 or ESA12000 systems (per pair of host bus adapters of the same (Sbus or PCI) architecture)
- Two paths from a Sun Server to a StorageWorks FC RA8000 or ESA12000 storage system
- Veritas Cluster Server
- Veritas FirstWatch
- Solaris Dynamic Reconfiguration (DR) on Solaris 7
- Fibre Channel Arbitrated Loop (FC-AL)
- Fibre Channel Fabric Switch (FC-SW)

It provides:

- Automatic failover to alternate path upon occurrence of the failure of a path component (i.e., host bus adapter, cabling, switch, hub, or controller)
- Controlled failback via a system management utility to ensure system integrity
- Automatic failback if failed path returns to standby and the alternate path fails
- Improved bandwidth and throughput performance by exploiting the dual bus potential of the HSG80 controller
- Static load balancing capability
- Command Line Interface (CLI) storage management
- Installation via the Sun standard *pkgadd* software installation utility

Minimum System Requirements

The following are the minimum system requirements for SANworks Secure Path v2.1 for Sun Solaris:

Supported Architectures	Sun Solaris 4u, 4d,
Operating System	Sun Solaris 2.6 and Solaris 7 (32-bit mode only)
File System	No restrictions
Applications	Veritas Cluster Server, Veritas FirstWatch, Veritas Volume Manager 2.6, 3.0
Array Controller Software	ACS version 8.5F
Host Bus Adapters	Jaycor 64-bit Sbus FC (in 32-bit mode), Jaycor 32-bit PCI FC,
Fibre Channel support	Fibre Channel Arbitrated Loop (FCAL); Switch Fabric (FC-SW)
Storage Systems	StorageWorks FC RA 8000, Enterprise Storage Array 12000
Controller Compatibility	HSG80 FC controller

Secure Path Management Tool

The Secure Path management tool, (*sfmt*), has the following options:

- Display – shows the current path, its state and configuration.
- Command Line Interface (CLI) – provides an interface to the RAID storage system.
- Toggle – allows the movement of a LUN from one path to another.
- Restart – restarts the specified controller.
- Shutdown – shuts down the specified controller.
- Restore – moves all LUNs from the specific controller.
- Remove – excludes the specified host bus adapter from the configuration.
- Reconfig – restores the specified host bus adapter back to the configuration.

Secure Path Daemon

The Secure Path Daemon, (*spinit*), allows the user to set the mail address to the location for all notification of path transition states; starts and stops the *spdaemon* for maintenance purposes.

Secure Path Configuration Tool

The Secure Path Configuration Tool, (*spconfig*), configures the system on initial installation of Secure Path. *spconfig* modifies the system files to ensure that the Secure Path drivers and utilities function properly.