Compaq SANworks

Product Description

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

This document provides a brief functional description of SANworks Secure Path Version 2.1a for Sun Solaris, a high availability solution that supports StorageWorks Fibre Channel and Ultra SCSI 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 V2.1a 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 HSG80 Fibre Channel, HSG60 Fibre Channel or HSZ80 Ultra SCSI 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 or SCSI hubs and host bus adapters) comprising a path in the storage topology. Should a failure of any component in 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. Failover* 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 Secure Path management tool, *spmt*.

Features

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

It supports:

- Four StorageWorks FC RAID systems per pair of host bus adapters of the same architecture, Sbus or PCI
- Two paths from a Sun Server to a StorageWorks FC RAID or Ultra SCSI RAID storage system
- Two StorageWorks Ultra SCSI RAID systems per pair of host bus adapters of the same architecture, Sbus or PCI
- 8 Pairs of Adapters per server (FC RAID only)
- 2 Pairs of Adapters per server (Ultra SCSI only)
- Veritas Cluster Server (FC RAID systems only)
- Sun Clusters (FC RAID systems only)
- Solaris Dynamic Reconfiguration (DR) on Solaris 7,8
- Fibre Channel Arbitrated Loop (FC-AL)
- Fibre Channel Fabric Switch (FC-SW)
- Ultra SCSI

It provides:

- Automatic failover to an 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/HSG60/HSZ80 controllers
- 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 V2.1A for Sun Solaris:

Supported Architectures	Sun Solaris 4u, 4d,
Operating System	Sun Solaris 2.6, 7 and Solaris 8 (**32-bit and 64-bit kernel mode**)
File System	No restrictions
Array Controller Software	HSG80: ACS V8.5F, 8.5G, 8.5P, 8.5S HSG60: ACS V8.5L HSZ80: ACS V8.3Z
Ultra SCSI Host Adapters	Sun X1065A, X6541A
FC Host Bus Adapters	DS-SWSA4-SC, 64-bit Sbus, SWSA4-PC 32-bit PCI
Fibre Channel Connectivity	Fibre Channel Arbitrated Loop (FC-AL) Fibre Channel Switch Fabric (FC-SW)
Storage Systems	**StorageWorks Fibre Channel** RA8000 ESA12000 MA8000 EMA12000 **StorageWorks Ultra SCSI** RA8000, ESA12000
Controller Compatibility	HSG80 FC controller HSG60 FC controller HSZ80 Ultra SCSI controller

Secure Path Management Tool

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

- Display – shows the current path, its state and configuration.
- CLI (Command Line Interface)– 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.

- Notify – provides the ability to enable or disable e-mail notifications; provides the ability to add, remove users to be notified of a state change in the Secure Path system.

Secure Path Daemon

The Secure Path daemon, (*spinit*), starts and stops the two Secure Path daemons. One daemon manages the event notification from Secure Path - using the user defined notification list of users. The second daemon manages the failover events for Secure Path.

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 all RAID target/luns are visible and accessible from the server.