

StorageWorks by Compaq

Release Notes SAN Director 64

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StorageWorks SAN Director 64

Release Notes

Second Edition (February 2002)

Part Number: AA-RQZRB-TE

These Release Notes contain late breaking and supplemental information for the Compaq StorageWorks SAN Director 64.

Be sure to read these Release Notes before installing a SAN Director 64. This information is periodically updated and available on the World Wide Web at:

<http://www.compaq.com/products/storageworks/director64>

Contents

These Release Notes cover the following topics:

- Firmware Version 01.04.00, Build 2
- CD Directory Structure
- Supported Configurations
- Cable Requirements
- Known Issues.

Firmware Version 01.04.00, Build 2

Firmware Version 01.04.00, Build 2 is the initial firmware released with the StorageWorks SAN Director 64. The features of this firmware version are as detailed in the accompanying manuals.

The StorageWorks SAN Director 64 ships preloaded with the latest version of the firmware. A copy of the latest version of the firmware, 01.04.00, Build 2 (as of this date) is also contained on the *Compaq StorageWorks SAN Director 64 Documentation Kit CD* (Part Number AG-RQZTB-BE). The firmware is also available on the Compaq website at:

<http://www.compaq.com/products/storageworks/director64>

CD-ROM Directory Structure

The *Compaq StorageWorks SAN Director 64 Documentation Kit CD* contains the following items:

- README.TXT, CPQ Release Notes; late breaking document changes
- Manuals.pdf, contains StorageWorks SAN Director 64 Documentation; links to all documents below, and Search function.
 - *StorageWorks SAN Director 64 Installation Guide*, Part Number AA-RQZQB-TE
 - *StorageWorks SAN Director 64 Service Manual*, Part Number AA-RPL8B-TE
 - *StorageWorks SAN Director 64 Product Manager User Guide*, Part Number AA-RPL9B-TE
 - *StorageWorks SAN Director 64 Planning Guide*, Part Number AA-RPLAB-TE
 - *SANworks Director Connectivity Manager User Guide*, Part Number AA-RPL7B-TE
 - *Storageworks Fibre Port Module (FPM) Kit Installation Instructions*, Part Number AA-RQZNA-TE
 - *Storageworks M-Series Rack Mount Kit Installation Instructions*, Part Number AA-RQZPA-TE
 - *Storageworks SDCM Server Hardware Kit Installation Instructions*, Part Number AA-RR26A-TE
 - *StorageWorks SAN Director 64 CLI Guide*, Part Number AA-RQ7AA-TE
 - *StorageWorks SAN Director 64 SNMP Guide*, Part Number AA-RQ7BA-TE
- SD-64 Firmware, includes Compaq StorageWorks SAN Director 64 firmware and updates.
 - SD-64v01.04.00-2.bin (StorageWorks SAN Director 64 firmware version 01.04.00-2)
 - firmwareupdate.txt (instructions for updating firmware)
- Acrobat Reader 5.0 (RP505ENU.EXE) with Search, use to view documents contained on the *Compaq StorageWorks SAN Director 64 Documentation Kit CD*.

Supported Configurations

Operation of multiple directors in a fabric topology is subject to the following topology limits. Consider the impact of these limits when planning the fabric.

- **Fabric Elements**—Each fabric element is defined by a unique domain ID that ranges between 1 and 31; therefore, the theoretical limit of interconnected directors in a single fabric is 31. The supported limit of interconnected directors in a single fabric is 4. Because this number is subject to change, contact your Compaq representative for the current number of interconnected directors supported in a single fabric.
- **Inhomogeneous fabric**—To determine if interoperability is supported for a product, or if restrictions apply, refer to the product publications, or contact your Compaq representative.
- **Number of Interswitch Links (ISLs)**—Theoretically, the ISL limit per director is 64. The maximum supported number of ISLs per director is 32 (half of the director ports). For redundancy, at least two ISLs should connect any two director-class fabric elements. Because this number is subject to change, contact your Compaq representative for the current number of ISLs supported per director.
- **Hop Count**—The fibre channel theoretical limit of ISL connections traversed (hop count) in a single path through a fabric is 7. The maximum supported hop count in a single path through a fabric is 3. Because this number is subject to change, contact your Compaq representative for the current hop count supported by a single fabric path.

NOTE: The hop count is equal to the number of ISL connections traversed in a single path, not the total number of ISL connections between devices.

Cable Requirements

IMPORTANT: Please note that optical cables for the the SAN Director 64 must be ordered separately.

For cables measuring 500 meters or less, use multi-mode Fibre Channel cables. For cables longer than 500 meters, use single-mode Fibre Channel cables.

Multi-mode optical cables are connected to short-wave optical transceiver modules in a director. Single-mode optical cables are connected to long-wave optical transceiver modules in a director. Multi-mode cables should use 50/125 optical fibers, and single-mode cables typically use 9/125 optical fibers for distances up to 10 km.

Verify that connectors interfacing with the SAN Director 64 use LC Duplex connectors with a PC finish. In addition, the connector at the opposite end of the cable must use either LC or SC type, depending on the requirements of the connected device.

Known Issues

This section describes the known issues related to the StorageWorks SAN Director 64.

Firmware Download Times Out

During high Ethernet traffic periods, it is possible for firmware downloads from the SDCM Server to the SAN Director 64 to time out. The SDCM Server application displays the following error message:

Firmware download timed out.

If this occurs, attempt downloading the firmware again.

Workarounds

Use one of the following methods to prevent timeouts during firmware downloads:

- Complete firmware updates during periods of low Ethernet traffic.
- Alternatively, reduce the Ethernet traffic by temporarily placing the SDCM Server and director(s) on a private LAN segment (e.g. interconnection of only the SDCM Server and director(s) through an Ethernet hub). Or, use a direct connection from the SDCM Server to a director with an Ethernet crossover cable.

Downgrading Director Firmware May Require Reboot of Attached Server

When downgrading director firmware to an earlier version, devices that are plugged into the director ports are required to log out. Usually, these devices successfully log in after the firmware has been downgraded, but occasionally this does not take place. If a device fails to log in after director firmware is downgraded, a reboot of the attached device is required.

Workaround

None.

Zone Set Activation

Under certain conditions, when adding a server with two Host Bus Adapters (HBA) to the active zone, it may be necessary to activate the zone set twice before all connections are properly established between the server and the storage.

This condition can occur with a dual redundant HSG80 controller, operating in Multibus mode, running the following:

- Array Controller Software (ACS) v8.6
- *SANworks*™ Secure Path by Compaq software

When functioning correctly, configuring a server with two HBAs in Multibus mode, and activating the zone set to add this server, each HBA should establish four connections, for a total of eight connections to the server.

Workarounds

Activate the zone set a second time (twice) when adding the server to the active zone set to ensure all connections are established with the HSG80 for each HBA. A future ACS release for HSG80 will correct this problem.

Additional information

This problem is not observed when configuring a server with two HBAs, in Transparent mode of operation. The server with two HBAs can be added to the active zone set with a single activation of the zone set. Two new connections will be established with the HSG80 for each HBA, for a total of four new connections.

HSG80 Transparent Mode Not Supported with IBM AIX

Use of an HSG80 with IBM AIX is restricted to operating the HSG80 in Multibus mode with the SAN Director 64. Transparent mode is not supported at this time.

Workaround

None.

HSG80 Transparent Mode Not Recommended with Controller in SCSI-3 Mode with HP-UX Operating Systems

Due to an issue with non-existent duplicate LUNs being displayed with the HP-UX operating systems, the HSG80 controller is restricted to SCSI-2 mode of operation when set to Transparent failover mode.

SCSI-3 mode of operation in Multibus failover mode is fully supported with the use of Secure Path software, Version 3.0.

Workaround

None.

ISL Disconnect Causes NOS Error with the OpenVMS Operating Systems

When an ISL connection is physically removed between directors or switches, the Fibre Channel Adapter model FCA-2354 transmits a Not Operational Sequence (NOS) error. This is observed as an entry in the SDC server Link incident log for the port in which the FCA-2354 is attached. The director's Hardware View also displays a yellow triangle icon over the port that detected this incident. The fabric operation or data movement is not disrupted by these incidents, which can be cleared using the following procedure.

Procedure

Use these steps to clear the incident alerts.

1. At the SDCM Hardware View, click the port module to open the port card view.
2. Right click on the port with the yellow triangle icon, and select **Clear Link Incident Alert(s)**.

Open VMS Support for Enterprise Virtual Array Requires TIMA Patch

If a connection to an Enterprise Virtual Array Storage system HSV110 Controller is interrupted, Logical Unit Numbers (LUNs) may not failover correctly and remain in "Mount Verification" condition. To correct this, install one of the following software patches, provided by Compaq:

- TIMA Fibre SCSI Kit, Part Number VMS722_FIBRE_SCSI-V0200
- TIMA Fibre SCSI Kit, Part Number VMS73_FIBRE_SCSI-V0300

Workarounds

If you encounter this condition (and the TIMA patch has not been previously installed) use these steps to block and unblock the ports that connect the Open Virtual Memory System (VMS) Fibre Channel adapters to the director, as follows:

1. Access the SAN Director 64 via the SDCM Server.
2. Select **Configure > Ports.** from the Hardware View for the appropriate director.
3. Check the box to unblock the affected port.
4. Click **Activate.**

5. Repeat steps 1 through 4 to uncheck the box to block the affected port and restore operation.

Loss of Port Connection

A connection to the SAN Director 64 may become non-operational. The occurrence of this problem is extremely rare and has been observed when removing and reseating fibre cables, or moving cables to other ports. When this occurs, the port card LED does not light, signifying that the server or storage attached to the port will not come online. A future firmware release will resolve this problem.

Workaround

The port will become available and function properly after logically blocking, then unblocking the port as follows:

1. Access the SAN Director 64 via the SDCM Server.
2. From the Hardware View for the director impacted, select **Configure > Ports**.
3. Check the box to block the affected port.
4. Click **Activate**.
5. Repeat steps 1 through 4 to uncheck the box to block the affected port and restore operation.