

Overview

Introduction

There are Compaq's first two sets of configurations submitted by Compaq to the OpenSAN Supported Solutions Forum. These configurations allow Compaq Storage products to co-exist with three other named storage systems in a shared Fiber Channel fabric. Cooperative Support Agreements have been executed between the participating vendors to allow each to support the configurations. The Open SAN Supported Solutions permit StorageWorks and SANworks product use within a common shared fabric, along with IBM, Hitachi Data Systems (HDS) and EMC storage systems. These two Open SAN Supported Solutions will eventually be followed by more Open SAN Supported Solutions involving more storage and storage networking vendors and additional functionality.

It is important for Compaq employees and customers to understand that the Open SAN Supported Solutions that Compaq will support, based on SNIA-sponsored qualification work, will likely have different capabilities and specifications than StorageWorks SAN solutions Compaq sells (Compaq SANs). It is probable and desirable that Compaq SANs will always feature more advanced functionality than Open SAN Supported Solutions Compaq will support.

Customer Benefits

- Maximizes the value of SANs through improved storage resource sharing, consolidation, accessibility, management and protection
- Maximizes multi-vendor investment protection
- Minimizes costs by consolidating SAN islands
- Maximizes storage infrastructure flexibility

Platform, Software and Application Support

Brocade Fabric Open SAN Solution

- Windows® NT®
- Windows 2000
- Sun Solaris v7
- Tru64 UNIX® v5.1
- OpenVMS 7.2-1
- AIX 4.3.3
- Novell NetWare v5.1

McDATA Fabric Open SAN Solution

- Windows NT
- Windows 2000
- Sun Solaris v7
- Tru64 UNIX v5.1
- OpenVMS 7.2-1
- AIX 4.3.3

Hardware Support - The Compaq Hardware Supported by the Solutions Includes:



- HSG80 The HSG80 array controller is an intelligent mass storage controller that interfaces between host computer systems using a Fibre Channel bus and Ultra Wide Single Ended SCSI buses.
http://storage.inet.cpqcorp.net/Document_Storage/QuickSpecs/Compaq_StorageWorks_Modular_Array_8000~Enterprise_Modular_Array_12000.pdf
- <http://www.compaq.com/products/storageworks/raidstoragesystems.html#ma-ema>
- SANWorks Management Appliance (link to QuickSpec) external links
http://storage.inet.cpqcorp.net/Document_Storage/QuickSpecs/Compaq_SANWorks_Management_Appliance.pdf
http://www.compaq.com/products/quickspecs/10547_div/10547_div.pdf

Solutions/Other Support

- http://www.compaq.com/products/quickspecs/10281_div/10281_div.PDF

Service and Support, HP Care Pack and Warranty Information

Compaq's SANWorks Software and StorageWorks Hardware will be supported within the supported solutions in accordance with standard HP Care Pack and warranty policy.

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- Software Product Services**
- Stand-alone telephone support
 - Rights to new license version
 - Media and documentation updates

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- Hardware Product Services**
- Installation services
 - On-site maintenance (includes warranty support)
 - Response time upgrades during the warranty period
 - Post-warranty coverage
 - RAID setup and performance consulting via statement of work

For additional hardware installation and maintenance information please refer to the URLs listed below:

<http://h18005.www1.hp.com/services/carepaq/us/install/>

<http://h18005.www1.hp.com/services/carepaq/us/hardware/>

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- Warranty Upgrade Options**
- Response - Upgrade on-site response from next business day to same day 4-hours
 - Coverage - Extend hours of coverage from 5 days x 9 hours to 7 days x 24 hours
 - Duration - Select duration of coverage for a period of 1, 3, or 5 years

HP Care Pack Information Use existing HP Care Pack part numbers for relevant products in this configuration

- HP Care Pack is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- HP Care Pack is not available for less than the product's warranty duration.
- HP Care Pack is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the Warranty Start Date (delivery date to end user customer). Proof of purchase may be required.
- HP Care Pack services are prepaid.

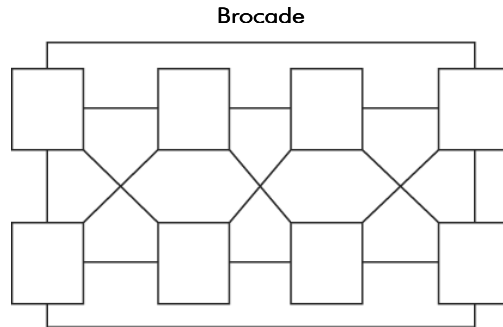
For additional HP Care Pack (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below:

<http://h18005.www1.hp.com/services/carepaq/index.html>

Specifications and Restrictions

Compaq Open SAN Supported Solution Using Brocade-Manufactured Switches

- The Open SAN fabric must consist exclusively of Silkworm switches manufactured by Brocade (this includes Compaq- and other-branded switches)
- No more than eight switches maximum (128 ports total with 16-port switches)
- All switches must run Brocade firmware version 2.2.1a
- Only short wave GBICs may be used for inter-switch links (E-ports)
- The interconnected switch topology must be as follows (each switch has four inter-switch links)



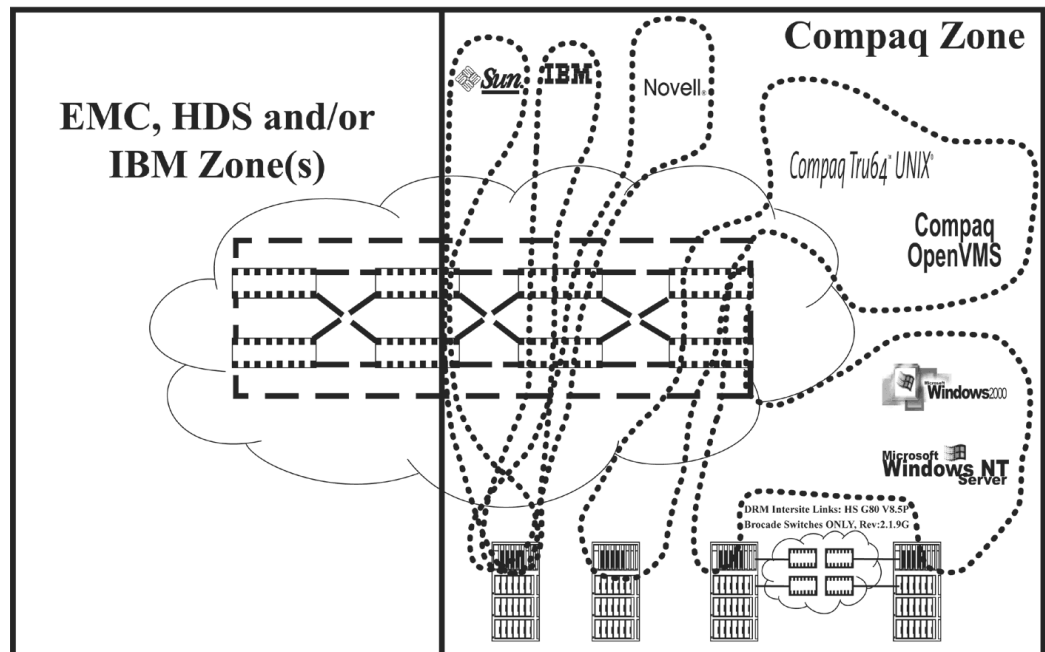
- Only StorageWorks HSG80 controllers running firmware level 8.5 (F, P or S) are supported in the Compaq data zone
 - See HSG80 8.5 supporting documentation for HSG80-specific requirements
 - http://storage.inet.cpqcorp.net/Document_Storage/QuickSpecs/Compaq_StorageWorks_Modular_Array_8000Enterprise_Modular_Array_12000.pdf
 - http://www.compaq.com/products/quickspecs/10547_div/10547_div.pdf
- Heterogeneous host server platforms supported in the Compaq data zone are as follows ^{3/4}
 - Windows NT 4.0 SP5/SP6A
 - HBA: LP8000/3.81a1
 - DRIVER: 4.52a7 (minimum)
 - SANWorks Secure Path for Windows v3.1a
 - Windows 2000 AS SP1
 - HBA: LP8000/3.81a1
 - DRIVER: 4.52a7 (minimum)
 - SANWorks Secure Path for Windows v3.1a
 - Solaris v7
 - HBA: JN11063/13.3.7
 - DRIVER: 2.5.9
 - SANWorks Secure Path 2.1a
 - Tru64 UNIX v5.1
 - HBA: LP8000/3.03.a1
 - DRIVER: 1.25a
 - OpenVMS v7.2-1
 - HBA: LP8000/3.02a1
 - DRIVER: Included in 7.2-1 OS
 - AIX v4.3.3
 - HBA: Cambex FQ1000
 - DRIVER: 1.5.11
 - SANWorks Secure Path 2.0 for AIX
 - NetWare v5.1
 - HBA: Persion/2.44
 - DRIVER: CFQFC.HAM
 - SANWorks Secure Path v3.0 for NetWare
- Heterogeneous host servers are supported using host-centric zoning ^{3/4}
 - Only WWID (Worldwide ID) zoning is supported
 - Each OS type must exist in its own zone
 - A single HSG80 pair can exist in multiple host-centric zones (accomplished through WWID zoning)
 - All Logical Unit Numbers (LUN) must be selectively presented to the host server

Specifications and Restrictions

- All host servers and HSG80 controllers must be configured to use multibus failover
- All HSG80 controllers must be set for SCSI-3, except for those in an IBM-, Novell- or SUN-centric zone, which must be set for SCSI-2
- Refer to the Compaq Heterogeneous Open SAN Guide for other StorageWorks connectivity requirements
 - <http://www.compaq.com/products/storageworks/techdoc/san/AA-RMPNA-TE.html>
- SANWorks products supported in the Compaq data zone are as follows ¾
 - SANWorks Management Appliance 1.0a running SANWorks Network View and SANWorks Resource Monitor**NOTE:** A single SANWorks Management Appliance can be used to manage the Compaq data zone, but it must be added through WWID zoning to each host-centric zone

Compaq Open SAN Supported Solution Brocade Open Fabric

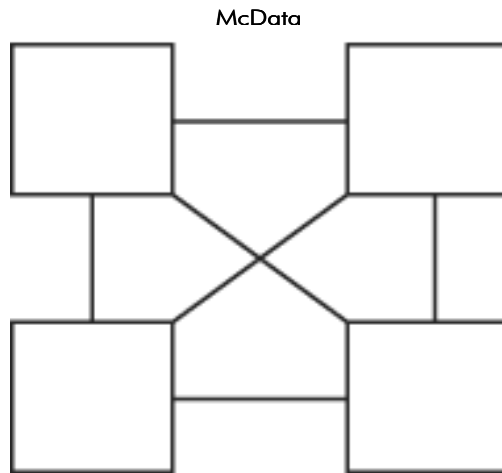
Example Configuration: Based on a maximum of 8 Brocade Silkwork switches



Specifications and Restrictions

Compaq Open SAN Supported Solution Using McDATA-Manufactured Directors

- The Open SAN fabric must consist exclusively of ED-5000 Directors manufactured by McDATA (this includes EMC Connectrix as long as the firmware specified below is used)
- No more than four Directors maximum (128 ports total)
- All Directors must run McDATA firmware version 3.00.01
- Only short wave links may be used for inter-switch links (E-ports)
- The interconnected Director topology must be as follows (each Director has eight inter-switch links)



- Only StorageWorks HSG80 controllers running firmware level 8.5 (F, P or S) are supported in the Compaq data zone
 - See HSG80 8.5 supporting documentation for HSG80-specific requirements
 - http://storage.inet.cpqcorp.net/Document_Storage/QuickSpecs/Compaq_StorageWorks_Modular_Array_8000Enterprise_Modular_Array_12000.pdf
 - http://www.compaq.com/products/quickspecs/10547_div/10547_div.pdf
- Non-clustered heterogeneous host server platforms supported in the Compaq data zone are as follows (NOTE that NetWare is not supported)
 - Windows NT 4.0 SP5/SP6A
 - HBA: LP8000/3.81a1
 - DRIVER: 4.52a7 (minimum)
 - SANWorks Secure Path for Windows v3.1a
 - Windows 2000 AS SP1
 - HBA: LP8000/3.81a1
 - DRIVER: 4.52a7 (minimum)
 - SANWorks Secure Path for Windows v3.1a
 - Solaris v7
 - HBA: JN11063/13.3.7
 - DRIVER: 2.5.9
 - SANWorks Secure Path 2.1a
 - Tru64 UNIX v5.1
 - HBA: LP8000/3.03.a1
 - DRIVER: 1.25a
 - OpenVMS v7.2-1
 - HBA: LP8000/3.02a1
 - DRIVER: Included in 7.2-1 OS
 - AIX v4.3.3
 - HBA: Cambex FQ1000
 - DRIVER: 1.5.11
 - SANWorks Secure Path 2.0 for AIX
- Heterogeneous host servers are supported using host-centric zoning ³/₄
 - Only WWID zoning is supported
 - Each OS type must exist in its own zone
 - A single HSG80 pair can exist in multiple host-centric zones (accomplished through WWID zoning)
 - All LUNs must be selectively presented to the host server

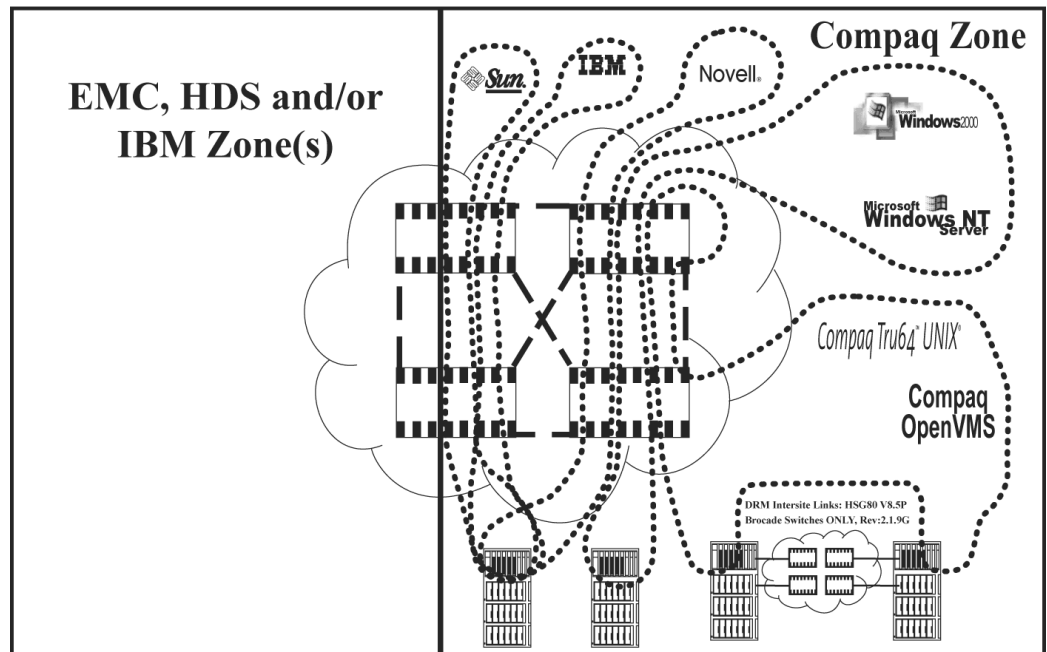
Specifications and Restrictions

- All host servers and HSG80 controllers must be configured to use multibus failover
- All HSG80 controllers must be set for SCSI-3, except for those in an IBM-, Novell- or SUN-centric zone, which must be set for SCSI-2
- Refer to the Compaq Heterogeneous Open SAN Guide for other StorageWorks connectivity requirements
 - <http://www.compaq.com/products/storageworks/techdoc/san/AA-RMPNA-TE.html>
- SANWorks products supported in the Compaq data zone are as follows ¾
 - SANWorks Management Appliance 1.0a running SANWorks Network View and SANWorks Resource Monitor

NOTE: A single SANWorks Management Appliance can be used to manage the Compaq data zone, but it must be added through WWID zoning to each host-centric zone.

Compaq Open SAN Supported Solution McData Open Fabric

Example Configuration: Based on a maximum of 4 McData ED5000 Directors



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