

## Compaq Open SAN Supported Solution Guidelines

Version 1.6  
May 30, 2001

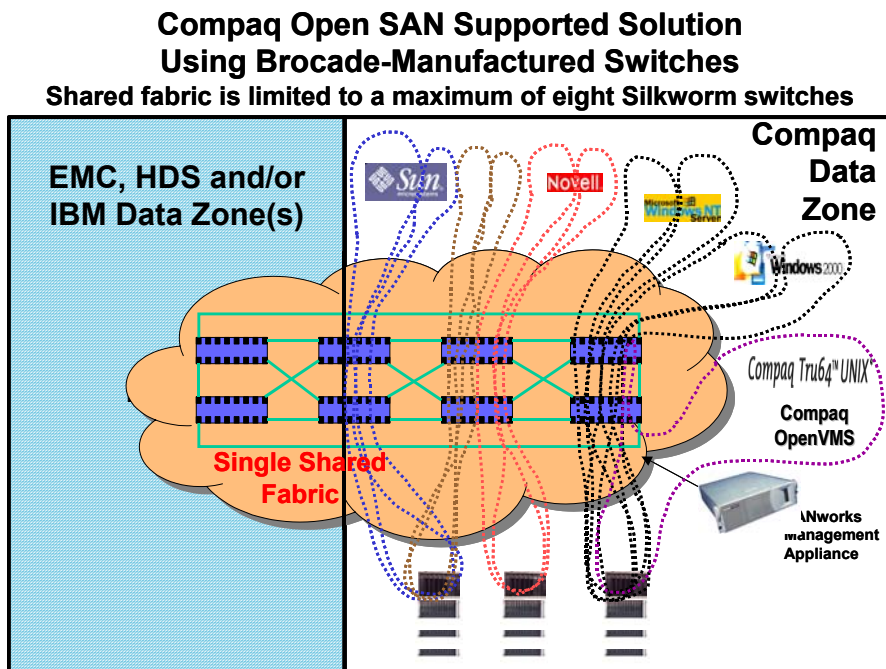
### Introduction

On June 4, 2001, Compaq Computer Corporation announced two Open SAN Supported Solutions that allow a Compaq data zone to co-exist in a shared Open SAN fabric with data zones supplied by EMC, Hitachi Data Systems, and/or IBM. This document specifies the configuration details required for Compaq Open SAN data zone support. *Customers must follow these guidelines when implementing Open SANs with Compaq data zones in order for Compaq to guarantee support. If these guidelines are not followed, Compaq may not support the resulting configurations.* In general, Compaq's strategy is to support interoperable configurations that are qualified under the sponsorship of the SNIA Supported Solutions Forum. These guidelines reflect that sponsorship.

An Open SAN Supported Solution is a standards-based solution that provides mutually supported interoperability of networked storage products supplied by multiple vendors. A Compaq data zone is a zone within an Open SAN that encompasses Compaq *StorageWorks*™ and Compaq *SANworks*™ products plus the heterogeneous server platforms accessing the *StorageWorks* products.

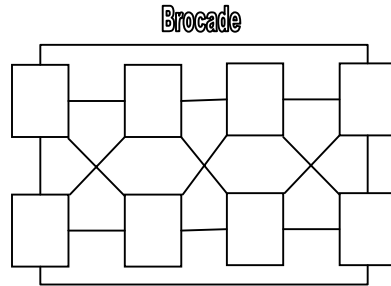
*Customers must contact EMC, Hitachi Data Systems, and/or IBM for support guidelines of data zones supplied by these vendors.*

### Compaq Open SAN Supported Solution Using Brocade-Manufactured Switches



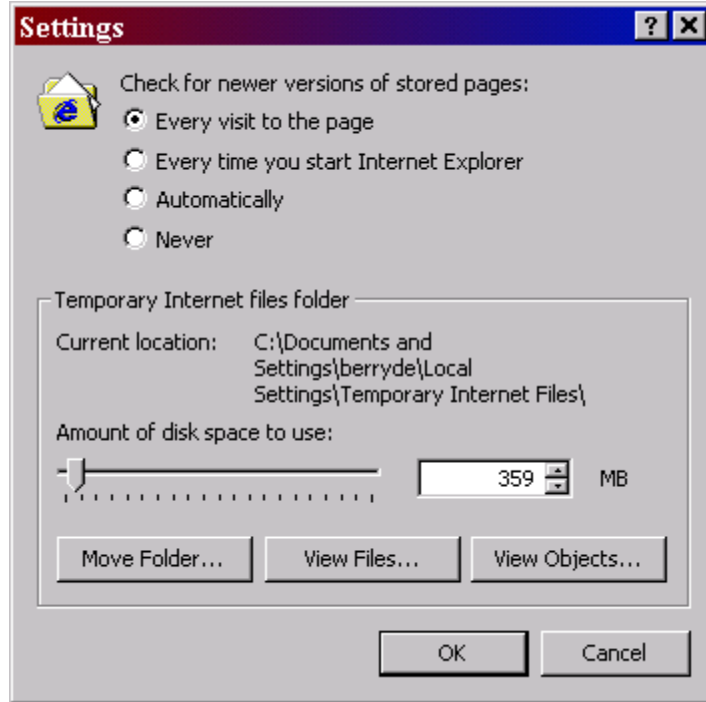
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- The Brocade based Open SAN fabric must consist *exclusively* of Silkworm switches manufactured by Brocade (this includes Compaq- and other-branded switches) —
  - No more than eight switches maximum (128 ports total with 16-port switches)
  - All 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 or S) are supported in the Compaq data zone
  - See HSG80 8.5 supporting documentation for HSG80-specific requirements  
[http://www.compaq.com/products/quickspecs/10547\\_div/10547\\_div.pdf](http://www.compaq.com/products/quickspecs/10547_div/10547_div.pdf)
- If you use the browser based Graphical User Interface (GUI) on the Brocade switches, you must have the following configurations for the GUI to operate properly:
  - The server running the browser must have a minimum of 512Mb of physical memory.
  - Java JRE version 1.2.2 must be installed and in use.
  - No proxy server should be configured.
  - Only Internet Explorer v5.5 must be used with the following Temporary Internet File settings:

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**Otherwise, only telnet access is supported to the switch.**

- If zoning changes are made through the browser, you **MUST** save the changes via the CLI interface, not via the browser.
  - Important: Be sure you understand the use of the Config. Enable Box in the Zoning Administration Window. Please refer to the Brocade v2.2 Web Tools Users Guide for more details.
- *Non-clustered* heterogeneous host server platforms supported in the Brocade fabric Compaq data zone are as follows —

Storage	OS	HBA	HBA Driver	Software
Compaq <i>StorageWorks</i> HSG80 Controllers running ACS Version 8.5 F or S	Tru64, V5.1	KGPSA (LP8000) FW Rev 3.02a4	V1.25a	
	Windows 2000	KGPSA (LP8000) FW Rev 3.81a4	4.52a7	<i>SANworks</i> Secure Path V3.1-2
	Windows NT SP6	KGPSA (LP8000) FW Rev 3.81a4	4.52a7	<i>SANworks</i> Secure Path V3.1-2
	OpenVMS V7.2- 1	KGPSA (LP8000) FW Rev 3.02a1 or newer	VMS721_FIBRE_SCSI- V0400 VMS721_PCSI-V0100 VMS721_UPDATE- V0100 VMS721_SYS-V0900	
	AIX V4.3	Cambex FQ100 FW V2.01x	1.5.11	<i>SANworks</i> Secure Path V2.0

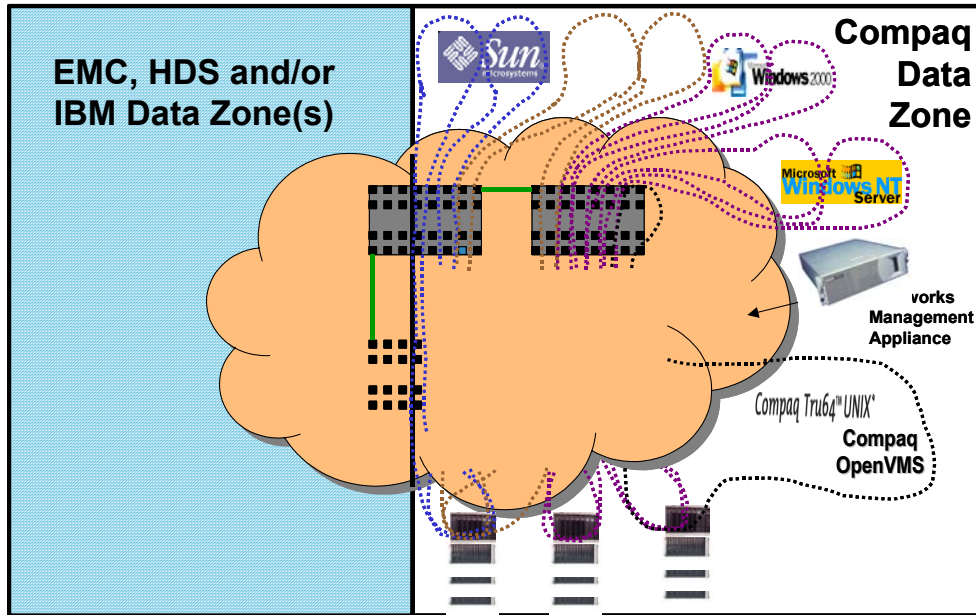
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	Solaris V2.7	FC64-1063 FW	2.5.9	<i>SANworks</i> Secure Path V2.1-c
	V5.1	Persian FW V2.44	CFQFC.HAM	<i>SANworks</i> Secure Path V3.0-a

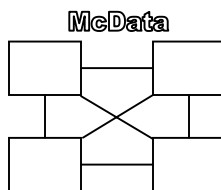
- Note: Host-based clustering has not been tested and therefore clustering software is not supported
- Heterogeneous host servers are supported using host-centric zoning —
  - Only World Wide ID (WWID) zoning is supported
  - Each OS type must exist in its own zone
  - A single HSG80 pair can exist in multiple host-centric zones (accomplished through WWID zoning)
  - All LUNs must be selectively presented to the host servers
- 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
- For correct operation of *SANworks* Secure Path, only two paths must be presented. For any operating systems using Secure Path in this configuration, each HBA must, therefore, reside in a separate zone.
- 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 —
  - *SANworks* Management Appliance (version 1.0a)
  - *SANworks* Network View (Build 10)
  - HSG Element Manager (V1.0-020801a)
    - 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
  - *StorageWorks* Enterprise Backup Solution
    - Note: only the *StorageWorks* Modular Data Router is supported.

*Compaq Open SAN Supported Solution Using McDATA-Manufactured Directors*

**Compaq Open SAN Supported Solution  
Using McDATA-Manufactured Directors**  
Shared fabric is limited to a maximum of four ED-5000 Directors



- The McDATA based Open SAN fabric must consist *exclusively* 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 or S) are supported in the Compaq data zone
  - See HSG80 8.5 supporting documentation for HSG80-specific requirements
- *Non-clustered* heterogeneous host server platforms supported in the McDATA Fabric Compaq data zone are supported as indicated in the following table (*note that NetWare is not supported*) in this configuration —

## Compaq

Storage	OS	HBA	HBA Driver	Software
Compaq <i>StorageWorks</i> HSG80 Controllers running ACS Version 8.5 F or S	Tru64, V5.1	KGPSA (LP8000) FW Rev 3.03x2 or newer	V1.25a	
	Windows 2000 SP1	KGPSA (LP8000) FW Rev 3.81a4	4.52a2 or newer	<i>SANworks</i> Secure Path V3.1-2
	Windows NT SP6	KGPSA (LP8000) FW Rev 3.81a4	4.41a5	<i>SANworks</i> Secure Path V3.1-2
	OpenVMS V7.2- 1	KGPSA (LP8000) FW Rev 3.03x2 or newer	VMS721_FIBRE_SCSI- V0400 VMS721_PCSI-V0100 VMS721_UPDATE- V0100 VMS721_SYS-V0900	
	AIX V4.3.3	Cambex PCI 100F FW Rev V2.09.19	1.5.10-1	<i>SANworks</i> Secure Path V2.0
	Solaris V2.7	FC64-1063 FW Rev 3.0.3	2.5.9	<i>SANworks</i> Secure Path V2.1-c

- Note: Host-based clustering has not been tested and therefore clustering software is not supported at this time.
- Heterogeneous host servers are supported using host-centric zoning —
  - Only WWID zoning is supported at this time
  - 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 servers
- 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-, or Sun-centric zone, which must be set for SCSI-2
- For correct operation of *SANworks* Secure Path, only two paths must be presented. For any operating systems using *SANworks* Secure Path in this configuration, each HBA must, therefore, reside in a separate zone.
- 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 —
  - *SANWorks* Management Appliance (version 1.0a)
  - *SANworks* Network View (Build 10) – see note below
  - HSG Element Manager (V1.0-020801a) – see *NOTE* below

**Note:** These two components have been identified to work with the McDATA Directors but are not yet fully integrated. Today, support only includes discovery and management of HSG80 controllers. The ED-5000 will not be recognized by the Appliance for the purpose of monitoring or management of those switches.

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- 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

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Compaq Open SAN Supported Solution Guidelines  
White Paper prepared by Enterprise Storage Group

First Edition (May 2001)