

Network Attached Storage

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NAS / SAN Integration Overview

Customers typically base their decisions on SAN or NAS implementations by selecting file or block formats and by determining the hardware and software components they need. But with NAS integration in a heterogeneous SAN environment using the StorageWorks NAS devices, the decision to use either NAS or SAN systems becomes irrelevant.

With NAS/SAN integration, the customer benefits are significant and include the following:

Table 44: NAS/SAN Integration Features and Benefits

Feature	Impact	Benefit
The decision to use NAS or SAN systems is irrelevant because customer should use both.	Fully integrated, converged storage architectures.	Ease of choice. Eliminates technical trade-offs. Easy to implement and grow.
Supports multiple operating systems.	Allows centralized data and increases flexible storage capacity and efficiency. Data can be shared across multiple operating systems regardless of the device or operating system.	Provides strategic power in the marketplace and consolidates data. Saves money by providing better disk utilization.
Storage networks integrate with existing hardware	Less interruption to production systems and easier to manage.	Reduces Total Cost of Ownership (TCO).
Enterprise-wide file sharing reduces file duplication.	The right information to the right person at the right time in the right format.	Data sharing, which reduces storage capacity requirements.
Reliable and efficient access to data and application information 24x7.	Improves both local and wide- area data retrieval.	Improved data availability across the enterprise.
Seamless integration of storage devices and architecture.	New applications integrate reliably to ensure new data does not overload your system.	Faster time to market. Lower maintenance costs.
Data storage in centrally managed locations rather than across multiple application servers.	Facilitates administration, backup, and security.	Centralized deployment of specialized resources and skill sets.
Storage resources shared among a much larger number of processing systems and users.	Improved efficiency and simplified management.	Better asset allocation.
Data is highly accessible.	Business continues without interruption.	Provides strategic power in the marketplace.

StorageWorks NAS Features

StorageWorks NAS 4000s / 9000s Features

The StorageWorks Network Attached Storage (NAS) 4000s and 9000s fuses NAS and SAN, offering customers the greatest scalability and flexibility, providing cost effective management for their storage resources. This latest innovation from HP provides enhanced performance along with simplified, centralized storage and system management, ultimately saving customers resources, time, and money, lowering their Total Cost of Ownership (TCO). The StorageWorks NAS delivers the fusion of NAS and SAN in a common, networked storage pool that provides customers with the flexibility to choose file (NAS) or block (SAN)-level access to best suit the needs of their applications.

- Windows Storage Server 2003 Support
- Multi-protocol File Serving (Windows, UNIX/Linux, NetWare, AppleTalk)
- Users, groups share creation/management
- Quotas
- Manageability
- Backup support
- Anti-virus support
- Storage virtualization
- Snapshot capabilities
- High Availability
- Cluster support
- Redundant hardware components
- Data replication Support
- Integrated Lights Out (iLO) connectivity
- Featuring HP SAN connectivity
- 10/100 Ethernet (TCP Offload Engine - TOE, Optional)
- Gigabit Ethernet (TCP Offload Engine - TOE, Optional)
- Fibre Channel storage connectivity using the XP*, VA*, EVA, MA/RA/ESA/EMA, and MSA storage arrays
- Services; warranty uplifts
- Installation and configuration service
- CarePAQ Priority Services supplying 24x7 support with a maximum response ranging down to 2 hours for hardware and 30 minutes for software

Support for these Arrays will be include in December 2003.

StorageWorks NAS 4000s/9000s Hardware

The StorageWorks NAS is qualified in a heterogeneous open SAN as both a stand-alone or clustered server and follows the same Windows 2003 SAN hardware rules found in this guide.

Refer to the *StorageWorks NAS 4000s/9000s QuickSpec* document for additional information, including the latest IP network controller hardware support:

StorageWorks NAS b3000v2 Features

The StorageWorks NAS b3000v2 is the entry-point into NAS/SAN fusion solutions with enterprise-level availability, scalability and performance in a turnkey package that includes:

- Multi-protocol File Serving (Windows, UNIX/Linux, NetWare, AppleTalk)
- Users, groups share creation/management
- Quotas
- Manageability
- Backup support
- Anti-virus support
- Storage virtualization
- Snapshot capabilities
- Availability
- Cluster support
- Redundant hardware components
- Data replication Support
- Integrated Lights Out (iLO)
- Fibre Channel storage connectivity with MSA1000, EVA3000, EVA5000, and VA storage
- 1Gb and/or 2Gb HP SAN connectivity
- 10/100 Ethernet (TCP Offload Engine - TOE, Optional)
- Gigabit Ethernet (TCP Offload Engine - TOE, Optional)
- Services; warranty uplifts
- Installation and configuration service

StorageWorks NAS b3000v2 Hardware

The StorageWorks NAS b3000v2 is qualified in a heterogeneous open SAN as both a stand-alone or clustered server and follows the same Windows 2000 SAN hardware rules found in this guide.

Note: Refer to the StorageWorks NAS B3000v2 QuickSpec document for additional information, including the latest IP network controller hardware support:

http://h18006.www1.hp.com/products/quickspecs/11339_div/11339_div.html

StorageWorks NAS e7000v2 Features

The StorageWorks Network Attached Storage (NAS) e7000v2 fuses NAS and SAN, offering customers the greatest scalability and flexibility, providing cost effective management for their storage resources. This latest innovation from HP provides enhanced performance along with simplified, centralized storage and system management, ultimately saving customers resources, time and money, lowering their Total Cost of Ownership (TCO). The StorageWorks NAS e7000v2 delivers the fusion of NAS and SAN in a common, networked storage pool that provides customers with the flexibility to choose file (NAS) or block (SAN)-level access to best suit the needs of their applications.

- Multi-protocol File Serving (Windows, UNIX/Linux, NetWare, AppleTalk)
- Users, groups share creation/management
- Quotas
- Manageability
- Backup support
- Anti-virus support
- Storage virtualization
- Snapshot capabilities
- High Availability
- Cluster support
- Redundant hardware components
- Data replication Support
- Integrated Lights Out (iLO) connectivity
- Featuring HP SAN connectivity
- 10/100 Ethernet (TCP Offload Engine - TOE, Optional)
- Gigabit Ethernet (TCP Offload Engine - TOE, Optional)
- Fibre Channel storage connectivity using the XP, VA, EVA, MA/RA/ESA/EMA, and MSA storage arrays
- Services; warranty uplifts
- Installation and configuration service
- CarePAQ Priority Services supplying 24x7 support with a maximum response ranging down to 2 hours for hardware and 30 minutes for software

StorageWorks NAS e7000v2 Hardware

The StorageWorks NAS e7000v2 is qualified in a heterogeneous open SAN as both a stand-alone or clustered server and follows the same Windows 2000 SAN hardware rules found in this guide.

Refer to the *StorageWorks NAS Executor E7000v2 QuickSpec* document for additional information, including the latest IP network controller hardware support:

http://h18006.www1.hp.com/products/quickspecs/11004_div/11004_div.html

StorageWorks NAS 8000 Features

HP StorageWorks NAS 8000 solutions provide easily managed network-attached storage (NAS) solutions in dedicated storage and SAN configurations for customers that require file-sharing flexibility. With an HP operating system optimized for file serving, NAS 8000 solutions attach directly to Ethernet networks, and deliver- low maintenance and high uptime. Cluster technology is available for environments requiring mission-critical access to data.

The NAS 8000 solutions support Windows, UNIX, and Linux. Network administration, user access, and storage configurations are all easily managed through the Command View NAS or command line interfaces. The NAS Data Path Manager software enables management and control of the data paths.

- Multi-protocol File Serving (Windows, UNIX/Linux)
- Users, groups share creation/management
- Quotas
- Manageability
- Backup support
- Anti-virus support
- Snapshot capabilities
- High Availability
- Cluster support
- Redundant hardware components
- Integrated Lights Out (iLO) Connectivity
- 10/100 Ethernet
- Gigabit Ethernet
- Fibre Channel storage connectivity using the XP, VA, EVA 5000, EMA & MA arrays
- Services; warranty uplifts
- Installation and configuration service

StorageWorks NAS 8000 Hardware

The StorageWorks NAS 8000 is qualified in a heterogeneous open SAN as both a stand-alone or clustered server and follows the same Linux SAN hardware rules found in this guide.

Refer to the *StorageWorks NAS 8000 QuickSpec* document for additional information, including the latest IP network controller hardware support:

<http://www.hp.com/products1/storage/products/nas/8000/specifications.html>

Also refer to the *HP StorageWorks NAS 8000 SAN Storage Configuration Guide* technical whitepaper available at:

<http://welcome.hp.com/country/us/eng/prodserv/storage.html>

StorageWorks NAS SAN Configuration and Zoning Rules

NAS Product	Source for Rules
StorageWorks NAS 4000s StorageWorks NAS 9000s StorageWorks NAS b3000 v2 StorageWorks NAS e7000 v2	Windows 2003 SAN Configuration and Zoning information
StorageWorks NAS 8000	Linux SAN Configuration and Zoning information

StorageWorks NAS SAN Fabric Rules

The StorageWorks NAS 4000s, NAS 9000s, NAS b3000v2, NAS e7000v2, and the NAS 8000 are supported in SAN fabrics consisting exclusively of switch models listed for the B-Series product line or exclusively of switch models listed for the M-Series product line.

StorageWorks NAS SAN Storage Rules

For additional information on supported storage system firmware versions, contact your HP field representative.

StorageWorks NAS 4000s Storage Rules

The StorageWorks NAS 4000s supports MSA, EVA, MA/RA/ESA/EMA, VA, and XP arrays. Versions of firmware supported are consistent with those supported under Windows 2003. See the individual storage array documentation or contact your HP representative for firmware support levels.

Note: XP and VA support will officially be released in December 2003.

StorageWorks NAS 9000s Storage Rules

The StorageWorks NAS e7000v2 supports XP, VA, MSA, EVA, and MA/RA/ESA/EMA arrays. See the individual storage array documentation or contact your HP representative for firmware support levels.

Note: XP and VA support will officially be released in December 2003.

StorageWorks NAS b3000v2 Storage Rules

The StorageWorks NAS b3000v2 supports MSA, EVA3000, EVA5000, and VA arrays. See the individual storage array documentation or contact your HP representative for firmware support levels.

Note: Full support of latest array firmware requires the update of Secure Path to 4.0c and the A16 driver for the Emulex HBA.

StorageWorks NAS e7000v2 Storage Rules

The StorageWorks NAS e7000v2 supports XP, VA, MSA, EVA, and MA/RA/ESA/EMA arrays. See the individual storage array documentation or contact your HP representative for firmware support levels.

Note: Full support of latest array firmware requires the update of Secure path to 4.0c and the A16 driver for the Emulex HBA.

StorageWorks NAS 8000 Storage Rules

The StorageWorks NAS 8000 supports SAN storage using the RA8000, MA8000, ESA12000, EMA12000, Enterprise Virtual Array 5000, HP Virtual Array 7xxx series, and XP series disk arrays. Recommended firmware versions are as follows:

- XP FW is 21.05.06 (for Tru64 FW is 21.04.32)
- VA 7x00 FW is HP18
- VA 7x10 FW is A100
- EVA5000 v2 FW is v2.002
- EVA5000 v3 FW is v3.000
- MA/RA/ESA/EMA FW is V87F-0

The StorageWorks NAS 8000 supports SAN storage using the Enterprise Virtual Array 5000.

The StorageWorks NAS 8000 can access storage on a variety of devices within a SAN device, including the HP Virtual Array 71x0 and 74x0 series storage, and HP XP series disk arrays using SecureManager VA or SecureManager XP.