

### Product Overview

Enterprises who want to consolidate file servers and storage while increasing general throughput, web, media-streaming and thin-client performance.

The HP StorageWorks Scalable NAS File Serving Software offers customers the ability to create a scalable, high-performance file serving infrastructure that leverages the compute power of multiple file servers working together. With its open "shared data" architecture, Scalable NAS File Serving Software customers can reduce the number of file servers under management and see faster performance for web, media streaming and thin client services applications. File serving application throughput and storage capacity can be increased online without service disruption. Advanced high availability features include support for up to 16 file servers, automatic failover and rapid data recovery. The support of heterogeneous SAN Arrays and industry standard servers and operating systems reduces infrastructure costs and lowers total cost of ownership. Key Features:

- Scalable, High-performance File Serving across Multiple File Servers
- Improved Availability
- Reduced Infrastructure Costs

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### What's New

- Support for Red Hat 5.0 and SLES 10 Linux Operating Systems
- NFS Performance Enhancements
- Native File-based Replication
- Oracle Direct NFS Support
- On-Line Membership Partition Repair and Dynamic Volume Management/Reconstruction
- Native Snapshot Support for HP StorageWorks XP and MSA2000 Storage Arrays

### Product Benefits

<b>Allows reduction in number of file servers</b>	Drastically reduce the cost of operations and provide more efficient management of file server resources.
<b>Run native applications on file servers</b>	Support more users with faster performance for web, media streaming and thin-client services file serving applications.
<b>Transparently increase file serving throughput</b>	Purchase the right amount of file serving throughput and performance you need today with the ability to easily add performance and throughput in the future without a "forklift" upgrade.
<b>Consolidation</b>	Consolidating data into a cluster reduces administration costs - manage a single cluster not individual servers or multiple NAS devices.
<b>Easy online storage growth</b>	Quickly adapt your storage capacity to changing business requirements without fear of disruption to current operations.
<b>Support for up to 16 file servers per cluster</b>	Provides zero-downtime architecture for file serving infrastructures that drastically reduces both planned and unplanned downtime.
<b>Server monitoring with automatic failover</b>	Assured availability for file serving clients.
<b>Rapid data recovery with advanced replication</b>	Reduces the time to bring file serving applications back online in the event of a total systems lose.
<b>Manage a shared pool of file servers and storage</b>	Enables a standardized shared services model for better SLA achievement and easier cost allocations, all at a lower cost structure.
<b>Storage virtualization across heterogeneous arrays</b>	Increases the ROI on your existing SAN investment with storage aggregation across multiple arrays allowing full use of storage infrastructure.
<b>Support for industry standard servers and OS</b>	Leverage the economies of scale offered from HP ProLiant DL servers, the world's best selling server with enterprise class uptime and management features. Both Linux and Windows are supported.

### Product Highlights

#### Scalability

- Scale from 2 to 16 nodes with a linear increase in file serving performance and throughput.
- Purchase the file serving capacity and throughput requirements that you need today and have the flexibility to add nodes to your existing cluster to meet future business needs.
- Support for 128 TB per file system for Linux and 32 TB per file system for Windows.

#### High Availability

- Fully symmetrical file system architecture means that all nodes see the same file system with the benefit of no hot spots or bottlenecks.
- Hardware node failures are detected and failed over to all remaining nodes in as little as 5 seconds.

#### Data Integrity

- The Linux version provides scalable NFS file serving and transparent failover for NFS clients with no need to remount in the event of one or more node failures. This feature is unique in the industry. The Linux version also supports CIFS file serving in a non scalable mode via Samba.
- The Windows version provides scalable CIFS file serving and transparent failover for CIFS clients with no need to reconnect in the event of one or more node failures. The Windows version also supports NFS file serving in a non scalable mode via Hummingbird NFS Maestro™.
- Complete session state, data and cache coherency is maintained among all nodes in the cluster.
- Both the Windows and Linux versions support scalable SAN-Direct I/O.

#### Replication

- The Linux version provides disaster tolerant replication at the file system level. This replication feature performs real-time asynchronous replication between Scalable NAS File Serving Software systems. This provides customers with a high level of data protection in order to meet disaster tolerant business continuity implementation goals.

#### Industry standards

- HP Scalable NAS File Serving Software supports industry standard servers, such as HP ProLiant rackmount and BladeSystem servers.
- Red Hat v5 and SUSE Linux v10 Enterprise edition are the supported Linux OS versions.
- Windows Storage Server 2003 R2 x64 is the supported Windows OS version.

#### Flexibility

- Fully compatible with HP StorageWorks full portfolio of SAN storage products including MSA, EVA and XP storage arrays.
- Support for 3rd party arrays to leverage existing SAN infrastructures.
- Utilize existing data center tools and solutions for backup, management and anti-virus protection that support the OS you have selected.

#### Manageability

- With a fully symmetrical file system you can manage the cluster from any node or remotely from a Windows or Linux workstation.
- Perform rolling upgrades of individual nodes by removing nodes from the cluster, upgrading, and then re-inserting them into the cluster. This can be done without any disruption to clients or concern about data integrity with the failover over capabilities that are part of the architecture.

#### Lower Cost

- Purchase the file serving needs for today confident that you can add additional file serving throughput and performance as your needs grow. There is no need for a "forklift upgrade" in the future.
- By building the solution with industry standard components flexibility can be maintained in the infrastructure - no need to buy proprietary hardware and software.
- Integration in the data center is straight forward as there is no need for specialized training to

## *Product Highlights*

learn about custom hardware and proprietary software.

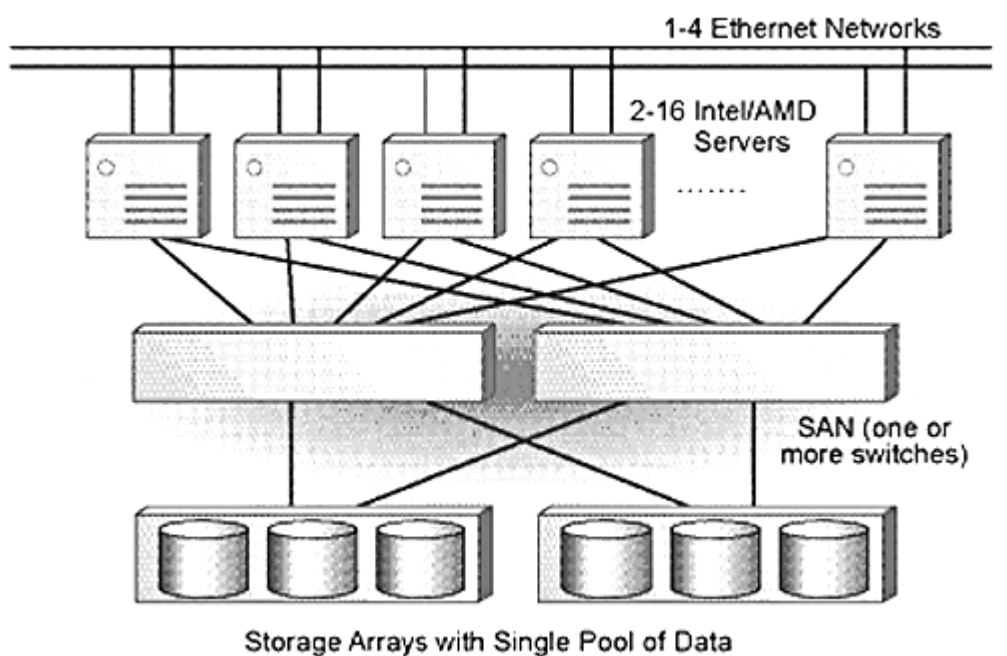
### Product Technical Details

HP Scalable NAS File Serving Software allows a collection of servers and SAN storage to be managed as a single entity for hosting file serving applications. It is made up of several components that work seamlessly together:

- Matrix Server, which provides shared data clustering, base file serving protocols and allows a set of servers to be managed as a unit.
- Cluster Volume Manager, which allows storage from multiple arrays to be used and managed as a unit.
- File Serving Solution Pack, which adapts the core shared data clustering capabilities of the previous two components to provide scalable CIFS or NFS file serving protocol.

#### Matrix Server

Matrix Server runs on Windows Server 2003 R2 x64, Windows Storage Server 2003 R2 x64 and Windows Unified Data Storage Server 2003 R2 x64, Red Hat Linux x64 and SUSE Linux x64. It allows up to 16 servers to form a shared data cluster, with a single storage pool and a single management point for file serving applications. A basic block diagram of a typical deployment is shown below.



A typical Scalable NAS File Serving Software environment consists of Intel- or AMD-based HP ProLiant industry-standard servers or BladeSystem servers, a storage area network (connected via fibre channel or iSCSI), one or more HP storage arrays attached to the SAN, and one or more standard Ethernet networks linking the servers. Matrix Server itself includes these capabilities:

- A cluster file system that allows multiple servers to access the same storage simultaneously
- A high-availability and application control engine that monitors hardware and software health and can restart and move applications within the cluster
- A single management console that allows the status of all hardware and software resources in the cluster to be viewed at a glance and controlled from one location.
- Support for industry-standard servers and storage. Use 64-bit AMD Opteron or Intel E64T servers, of any configuration. Utilize industry-standard storage connected via fiber channel (FC) or iSCSI.
- Support for FTP, HTTP, HTTPS, DNS, IMAP4, POP3, NNTP, SMTP file serving protocols.

#### Cluster Volume Manager (CVM)

The Cluster Volume Manager allows disk space from multiple storage arrays to be used and managed as a single pool.

### *Product Technical Details*

- With the CVM, an administrator can create a single volume from free space on multiple arrays (or in multiple LUNs on a single array). In this way a file system can make use of whatever storage is available.
- The CVM also allows a volume to be striped across multiple arrays. This can improve I/O rates by aggregating the performance of the arrays, which is especially useful for sequential workloads frequently associated with data warehouses<sup>2</sup>.
- Through concatenation or striping, CVM permits the construction of huge file systems that exceed the typical 2TB limit on the size of individual LUNs.
- In some environments, it is customary to configure every storage array with a set of LUNs of a fixed size of about 30 gigabytes. The CVM allows a server administrator to construct file systems of whatever sizes are desired using these fixed LUNs.
- Finally, if a file system is becoming too full, the CVM can be used to expand the file system, without taking the cluster down, using free space from any array accessible to the cluster.

### **File Serving (FS) Solution Pack**

The FS Solution Packs for Windows and Linux provide scalability and high availability for the Common Internet File System (CIFS) and Network File System (NFS). CIFS is a variation of the Server Message Block (SMB) protocol. It runs over TCP/IP and is commonly used on Windows systems to share files remotely. NFS is a file serving protocol commonly used on Unix and Linux systems to share files remotely. The FS Solution Pack for Windows file shares can be deployed in two ways: with Virtual CIFS Servers that provide failover support, or with Cluster File Shares that enable connection load balancing. In both methods, the data to be shared is stored on the HP PSFS filesystem (not an NTFS filesystem). Note that the PSFS file system was built with the Microsoft IFS (installable file system) toolkit, so it appears to be an NTFS filesystem.

### Optional Software Components

#### Optional Software

#### HP OpenView Storage Data Protector

HP OpenView Storage Data Protector software is for enterprise data protection and disaster recovery, ensuring recovery from any disruption. Data Protector integrates a variety of techniques to eliminate backup and recovery windows. The capabilities to eliminate planned downtime range from online backup and backup of open files to zero-downtime, zero-impact backup. The software provides industry-leading instant recovery as well as several disaster recovery alternatives to eliminate unplanned downtime, allowing recovery of entire data centers in minutes.

Data Protector is enabling organizations to reduce costs by automating routine tasks to maximize the effectiveness of the data protection staff. For the price of an entry-level product, it provides the enterprise functionality customers need. Data Protector scales from single server to distributed enterprise, covering an extensive range of heterogeneous applications, operating environments and storage configurations with a single solution.

HP StorageWorks PolyServe Database Utility for SQL Server supports using Data Protector as the backup software solution. For more information on HP OpenView Data Storage Protector:

<http://h18006.www1.hp.com/products/storage/software/dataprotector/index.html>

### *Service and Support, HP Care Pack, and Warranty Information*

**HP Care Pack Services** HP Care Pack Services offer upgraded service levels to extend and expand your standard product warranty with easy to buy, easy to use support packages that help you make the most of your hardware and software investments. They let you choose the support levels that meet your business requirements, from basic to mission-critical. They help you contain total cost of ownership.

HP Care Pack warranty extensions can be purchased along with HP products to cost-effectively upgrade or extend your warranty. For many products, post-warranty HP Care Pack Services are available when your original warranty has expired.

Why purchase an HP Care Pack service?

Your standard warranty protects against product defects. HP Care Pack Services help you guard against unplanned downtime, which can reduce your productivity and profitability. These convenient service packages:

- Protect your investment in HP products
- Provide consistent, predictable levels of support across your entire department or business
- Ease budget planning with fixed-cost support that includes parts and labor
- Give you direct access to proven technical and problem-solving expertise
- Offer a choice of response-time and repair-time commitments
- Deliver prompt, measurable results
- Are available whenever and wherever you do business

HP Care Pack availability may vary by country and product.

Supporting your Adaptive Enterprise journey

HP Services helps you make the Adaptive Enterprise real for your organization. The breadth, depth, and quality of HP hardware and software support services can help you improve the performance of your IT support processes and resolve the complex software and hardware problems that tax user productivity. HP Care Pack services help you increase IT environment stability, efficiency, and agility from the desktop to the data center, and improve the productivity of your employees.

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**Warranty and Services Included with the Product** HP warrants only that the Software media will be free of physical defects for a period of ninety (90) days from delivery.

For more information about HP's Global Limited Warranty and Technical Support, visit:  
[ftp://ftp.compaq.com/pub/products/storage/works/warranty/EN\\_321708-008.pdf](ftp://ftp.compaq.com/pub/products/storage/works/warranty/EN_321708-008.pdf)

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### Service and Support, HP Care Pack, and Warranty Information

#### Recommended Services Installation and Start Up Service

- Cost-effectively obtain specialized expertise for a complex, one-time task
- Enjoy top performance right from the start
- Shorten your time-to-ROI

#### Three years of HP Software Support 24 x 7

- Improve the productivity of system managers and operators
- Improve system performance and reduce downtime due to software defects
- Expedite problem resolution through expert-level technical resources
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP and selected third-party software at a predictable cost
- Take advantage of subscription savings on software updates
- Keep your license compliancy up-to-date

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## HP Care Pack Services

### 4-Hour 24x7 Same Day Responsive service coverage available whenever you need it

#### Hardware Support

Increase equipment availability and productivity with round-the-clock onsite and remote support for your HP hardware, as well as selected multi-vendor equipment. This flexible HP Care Pack Service covers desktops, workstations, servers, storage systems, and network equipment.

Choose 4-Hour 24x7 Same Day Hardware Support when you need to:

- Extend your hardware warranty coverage with prompt, anytime service for key systems and devices
- Obtain easy-to-buy, easy-to-use onsite services
- Improve hardware performance and uptime
- Increase the return on your HP and multi-vendor hardware investments
- Enjoy consistent service coverage across geographically dispersed sites

#### Service highlights

- **Remote problem diagnosis and support** - HP Services uses electronic remote support tools to isolate your problem and facilitate resolution.
- **4-hour onsite response 24x7x365** - For issues that cannot be resolved remotely, an authorized HP Services representative arrives at your site within 4 hours after your call has been logged. Service is available around-the-clock every day, including all holidays. HP Services returns your covered hardware to operational condition, repairing or replacing components or entire units as necessary. Your coverage includes all required parts and materials.
- **Escalation management** - Established escalation procedures enlist specialized expertise from HP and selected third-parties.

### *Service and Support, HP Care Pack, and Warranty Information*

#### **Software Product Updates Enhance user productivity with the latest software versions.**

HP Software Product Updates support brings you new versions of HP and selected HP-supported third-party software products, patches, and technical manuals. This convenient HP Care Pack service also includes licensing to use and copy the new versions.

Updates for third-party and selected HP software products are automatically forwarded to you. You'll be notified when new versions of other HP software products become available, allowing you to choose whether you wish to receive updates. Subscription-based purchasing gives you substantial savings vs. the cost of individual software updates.

Choose Software Product Updates when you need to:

- Update HP and selected third-party software at a predictable cost
- Take advantage of subscription savings on software updates
- Have your system managers automatically notified of new software releases
- Keep your license compliancy up-to-date

#### **Service highlights**

- **Updates** - Complete HP and selected third-party software product and documentation updates are made available to your system manager. For certain products, you may have a choice of delivery media type. Software technical manuals may be available on media instead of paper.
- **Licensing** - You receive a license to use and copy software product updates for all systems covered by your original software license.
- **Electronic software information** - Access HP's electronic support facility for software patches, a symptom-solution database, product descriptions, specifications, technical literature, and more.

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#### **24x7 Software Technical Support All day, every day problem resolution - plus cost-saving software updates**

HP 24x7 Software Technical Support provides comprehensive round-the-clock services and cost-saving updates to help you enhance the performance and availability of software from HP and other leading vendors.

This convenient HP Care Pack service gives your IT team direct access to HP IT Response Centers. Experienced Response Center engineers provide trustworthy advice on issues such as software features and use, problem diagnosis and resolution, and software defect identification. Any member of your IT staff can electronically access essential product and support information.

In addition, 24x7 Software Technical Support brings you software updates at substantial subscription savings. This includes new versions of HP and selected third-party software products, patches, and documentation, as well as licensing to use and copy these versions.

Choose 24x7 Software Technical Support when you need to:

- Improve the productivity of system managers and operators
- Improve system performance and reduce downtime due to software defects
- Expedite problem resolution through expert-level technical resources available whenever you need them
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP and selected third-party software at a predictable cost
- Take advantage of subscription savings on software updates
- Keep your license compliancy up-to-date

### Service and Support, HP Care Pack, and Warranty Information

#### Service highlights

- **24x7x365 access to technical resources** - Connect with HP Response Center engineers via telephone, electronic communication, or FAX for assistance in resolving software implementation or operations problems. Service is available around the clock every day, including all holidays.
- **Problem analysis and resolution** - HP Services provides corrective support to resolve identifiable and reproducible software product problems, and to help you identify problems that are difficult to reproduce. You can also receive assistance in trouble-shooting problems and setting configuration parameters.
- **Software features and operational support** - HP provides information on the latest product features and known problems and solutions, plus operational advice and assistance.
- **Escalation management** - Established escalation procedures enlist specialized expertise from HP and selected third-parties.
- **Installation advisory** - Advisory support is available for help with installation and updating of standalone applications or products installed in a network environment.
- **Software updates and licensing** - Complete HP and selected third-party software product and documentation updates are available to your system manager. You receive a license to use and copy software product updates for all systems covered by the original software license.
- **Electronic software information** - Access HP's electronic support facility for software patches, a symptom-solution database, product descriptions, specifications, technical literature, and more.

#### Available HP Care Pack Services

Extend your product warranty with a wide choice of cost-saving support packages.

HP Care Pack Services are sold by HP and HP authorized enterprise and commercial resellers. Services for customers purchasing via direct and enterprise resellers are quoted using HP order configuration tools. Additional information about HP Care Pack Service features and benefits is available at: <http://www.hp.com/hps/carepack/services/>.

Key for HP Care Pack Service availability in the table below:

E = Service available for customers purchasing direct and via enterprise resellers

C = Service available for customers purchasing via commercial resellers

N/A = Service not applicable

HP Care Pack Services Deployment and Per Event Services	Service Available
HP Installation	N/A
HP Installation & Startup	E
HP Implementation	E

For more information about Deployment and Per Event Services for HP Storage, visit: <http://www.hp.com/hps/storage/>.

### Service and Support, HP Care Pack, and Warranty Information

HP Care Pack Services Availability Services	1 yr	3 yr	4 yr	5 yr
HP Next Day Hardware Support	N/A	N/A	N/A	N/A
HP 4 Hr, 9x5 HW Support	N/A	N/A	N/A	N/A
HP 4 Hr, 13x5 Hardware Support	N/A	N/A	N/A	N/A
HP 4 Hr, 24x7 Hardware Support	N/A	N/A	N/A	N/A
HP 6 HR Call-to-Repair HW Support	N/A	N/A	N/A	N/A
HP Software Support	E/C	E/C	E/C	E/C
HP Software Support 24x7	E/C	E/C	E/C	E/C
HP Support Plus	E/C	E/C	E/C	E/C
HP Support Plus 24	E/C	E/C	E/C	E/C
HP Proactive Essentials 9x5, 10 SW Incidents	N/A	N/A	N/A	N/A
HP Proactive Essentials 9x5, 25 SW Incidents	N/A	N/A	N/A	N/A
HP Proactive Essentials 9x5 Unlimited	N/A	N/A	N/A	N/A
HP Proactive Essentials 24x7, 25 SW Incidents	N/A	N/A	N/A	N/A
HP Proactive Essentials 24x7, 50 SW Incidents	N/A	N/A	N/A	N/A
HP Proactive Essentials 24x7 Unlimited	N/A	N/A	N/A	N/A
HP Proactive 24 Service	E	E	E	E
HP Critical Service	E	E	E	E

To find HP Care Pack Services available via HP authorized commercial resellers, visit:

[http://h30125.www3.hp.com/csn/salesmktg/elfpack/elf\\_nonlkup\\_crylang.asp?code=ELNL](http://h30125.www3.hp.com/csn/salesmktg/elfpack/elf_nonlkup_crylang.asp?code=ELNL)

#### eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

#### Support Portal

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: <http://www.hp.com/support>

#### Instant Support Enterprise Edition (ISEE)

HP Instant Support Enterprise Edition (ISEE) provides a single remote monitoring and support solution for your IT data center. ISEE uses continuous hardware event monitoring and automated notification to identify and prevent potential critical problems.

### Service and Support, HP Care Pack, and Warranty Information

ISEE is a feature of HP Hardware Support Onsite Service with Next-Day response or better, Proactive Essentials, Proactive 24, Critical Service and warranty support for the selected products.

For more information or to download ISEE, visit: <http://www.hp.com/go/instant-support>

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#### HP Education Services

For more information about HP Education Services for Storage and SAN, visit: <http://education.hp.com/curr-storsan.html>

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#### Awards

HP IT Resource Center (ITRC) and HP Business Support Center (BSC) were selected as two of the Association of Support Professional's (ASP) Top Ten award winners in its seventh annual Ten Best Web Support Sites competition for 2004, an award that showcases excellence in online service and support. <http://www.hp.com/hpinfo/newsroom/press/2004/040616a.html>

HP earned the No. 1 ranking in customer satisfaction among vendors of corporate information technology (IT) service and support, according to the newly released Technology Business Research Inc.'s Corporate IT Service and Support survey covering the first quarter of 2004. <http://www.hp.com/hpinfo/newsroom/press/2004/040624a.html>

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#### Additional Services Information

For more information about Deployment, Per Event, Consulting and Education services for HP Storage, visit: <http://www.hp.com/hps/storage/>

For more information about HP Care Pack Services for Storage, visit: [http://www.hp.com/hps/carepack/storage/cp\\_networked.html](http://www.hp.com/hps/carepack/storage/cp_networked.html)

For more information about HP Storage Software, services and updates, visit: <http://h18006.www1.hp.com/storage/software.html>

If you have specific questions, contact your local HP representative. Contact information for a representative in your area can be found at "Contact HP" <http://www.hp.com>

### Ordering Information

The HP Scalable NAS File Serving Software is licensed on a per CPU socket basis. Support must be ordered separately. For example if you have two HP ProLiant DL585 servers with 4 dual-core CPUs (a total of 8 CPU sockets) you would need to order the following part numbers. **NOTE: Each server should have a minimum of 4 GB of memory; 16 GB of memory is recommended.**

HP StorageWorks Scalable NAS File Serving Software Utility Pack 8 CPU E-LTU 1x T5394ABE

Plus one Installation and Startup service and one three-year support pack.

If you require a physical LTU then you need to order:

HP StorageWorks Scalable NAS File Serving Software Pack 1 CPU LTU 8x T5394AA

HP PolyServe Software Media CD 1x T5392AA

### HP Scalable NAS File Serving Software

**NOTE: Support must be ordered separately. HP Installation and Startup service is required with the purchase of first cluster.**

HP StorageWorks Scalable NAS File Serving Software Pack 1 CPU LTU T5394AA  
 The Scalable NAS File Serving Software is comprised of the applicable number of CPUs of each of the following Software modules: (i) Matrix Server; (ii) Cluster Volume Manager; and (iii) File Serving Solution Pack. This product includes a physical License-to-Use (LTU).

HP StorageWorks Scalable NAS File Serving Software Utility Pack 1 CPU E-LTU T5394AAE  
 The Scalable NAS File Serving Software is comprised of the applicable number of CPUs of each of the following Software modules: (i) Matrix Server; (ii) Cluster Volume Manager; and (iii) File Serving Solution Pack. This product includes an electronic License-to-Use (E-LTU).

HP StorageWorks Scalable NAS File Serving Software Utility Pack 8 CPU E-LTU T5394ABE  
 The Scalable NAS File Serving Software is comprised of the applicable number of CPUs of each of the following Software modules: (i) Matrix Server; (ii) Cluster Volume Manager; and (iii) File Serving Solution Pack. This product includes an electronic License-to-Use (E-LTU).

HP Scalable NAS File Serving Software Media CD T5392AA  
 Hard-copy product CDs

HP Scalable NAS File Serving Software Installation and Startup HA114A157Q  
 Provides onsite installation and startup services for HP Scalable NAS software products.

### Technical Specifications

Below are the technical specifications of the Scalable NAS File Serving Software.

Version	v3.6.1	v3.7.0
Supported Operating System	Windows Server 2003 R2 x64, Windows Storage Server 2003 R2 x64	Red Hat Linux 5, SUSE Linux 10
Maximum number of nodes supported per cluster	16	16
Maximum File System Size supported	Up to 32 TB	Up to 128 TB
Maximum number File Systems supported per cluster	Up to 256	Up to 512
Maximum LUNs per cluster	Up to 256	Up to 512
Total size of mounted file systems per cluster	2 PB	2 PB
Replication Type	Array-based	Array-based, File-based
File Serving Protocols	NFS, CIFS, FTP, HTTP, HTTPS, DNS, IMAP4, POP3, NNTP, SMTP	NFS, CIFS, FTP, HTTP, HTTPS, DNS, IMAP4, POP3, NNTP, SMTP
HP Storage Arrays supported	HP StorageWorks Modular Smart Arrays, HP StorageWorks Enterprise Virtual Arrays, HP StorageWorks XP Disk Arrays	HP StorageWorks Modular Smart Arrays, HP StorageWorks Enterprise Virtual Arrays, HP StorageWorks XP Disk Arrays
Third-Party Arrays supported	Yes	Yes

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The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.