



HP StorageWorks Network  
Attached Storage  
Family guide



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## File storage growth—the challenge

Global digital information doubles every 18 months—so if you currently manage 100 TB of data, it'll be 200 TB in 18 months and that's just the average. File storage growth drives most of that increase. Managing storage growth is a difficult task on the whole, but the distributed nature of unstructured file-based data significantly adds to the challenge and is driving the need for optimized file serving solutions.

Rapid file storage growth, driven by rich media like audio, video, graphics, backup files and e-mail, is impacting businesses more now than ever before. You not only require immediate access to exploding volumes of data, but government regulations and corporate governance are dictating what must be kept, for how long, and the speed with which it must be accessed. Therefore, it is critical that you invest in a cost-effective, modular, file-serving solution that can support your business now and well into the future. Consolidating file data with a dedicated Network Attached Storage (NAS) solution can help you address your changing file serving needs and reduce your cost of ownership by enabling simplified management, better resource utilization, and centralized growth and data protection.

## HP StorageWorks NAS solutions—change-ready to deal with your storage complexities

HP StorageWorks Network Attached Storage solutions change and adapt with your fast-changing organizational storage needs using virtualization, performance optimized file systems, and operating environments, as well as HP ProLiant and BladeSystem hardware. Together, these industry standard building blocks allow you to implement faster, scale farther, and more effectively respond to data growth.

Regardless the size of your organization, HP StorageWorks NAS solutions enables you to control explosive file growth while reducing costs and simplifying data management. HP StorageWorks NAS solutions cover a wide range of customer needs and IT environments. The portfolio includes the following product families:

### **HP StorageWorks All-in-One Storage Systems:**

All-in-One Storage Systems are the easiest and most efficient way to add storage capacity for the clients and servers at your small IT site. Designed to be deployed and managed by IT generalists with no storage expertise, HP All-in-One Storage delivers everything you need to lower the cost and complexity of quickly growing data storage environments.

**HP ProLiant Storage Servers:** If you are looking for rapid integration, flexibility, and simplified

management, HP through its technological innovation delivers the standards you want. ProLiant Storage Server solutions are built on industry-leading business platforms—HP ProLiant servers and either Microsoft® Windows® Storage Server 2003 R2 or Windows Unified Data Storage Server 2003.

### **HP StorageWorks 4400 Scalable NAS File Services:**

Take advantage of the “shared data” architecture that yields lower management expenses from a shared pool of file serving nodes and storage with the 4400 Scalable NAS File Services.

### **HP StorageWorks Enterprise File Services (EFS)**

**Clustered Gateway:** EFS Clustered Gateway enables you to create an integrated block and file-level storage solution out of any SAN, consolidating individual silos of storage into a single, shared pool that simplifies storage allocation, yields high utilization and reduce IT costs.

### **HP StorageWorks 9100 Extreme Data Storage System (ExDS9100):**

Designed to be extremely scalable, affordable, and easy to manage, the ExDS9100 delivers excellent performance and availability for service providers and enterprise customers alike. It serves and stores hundreds of terabytes or petabytes of file-based data for your expanding applications.

### **HP StorageWorks Scalable NAS File Serving Software:**

Scalable NAS File Serving Software creates a scalable, high-performance file serving infrastructure that leverages the compute power of multiple file servers working together. With its open “shared data” architecture, customers can reduce the number of file servers under management and see faster performance for Web, media streaming, and thin client services applications.

## Why HP?

At HP StorageWorks, we deliver technologies and services that help you bridge the gap between data explosion and storage infrastructure. Being the leader in entry level NAS systems and the fact that, more data is stored on HP disks than any other vendor helps us understand that infrastructure matters because it's the foundation for data—and data is the lifeblood of your business. With StorageWorks, you can be confident in your infrastructure and your ability to deliver results because the full power of HP and its partners will be with you every step of the way—helping you unlock the untapped potential of your entire infrastructure. Then, as your business needs change, over 150,000 HP channel partners can help your HP storage change, too, using technologies that implement faster, and scale and network more effectively. We can also help you save both time and money that can reduce your energy needs and lower your management costs.

# HP StorageWorks All-in-One Storage Systems

Designed to be deployed and managed by IT generalists with no storage expertise, HP All-in-One Storage delivers everything you need to lower the cost and complexity of quickly growing data storage environments.



**HP StorageWorks 400t All-in-One Storage System (AiO400t)**



**HP StorageWorks 400r All-in-One Storage System (AiO400r)**



**HP StorageWorks 1200r All-in-One Storage System (AiO1200r)**



**HP StorageWorks SB600c All-in-One Storage System (AiO SB600c)**

	HP StorageWorks 400t All-in-One Storage System (AiO400t)	HP StorageWorks 400r All-in-One Storage System (AiO400r)	HP StorageWorks 1200r All-in-One Storage System (AiO1200r)	HP StorageWorks SB600c All-in-One Storage System (AiO SB600c)
<b>Description</b>	An affordable, single-processor tower entry into unified storage for small and remote offices	Space-saving rack-mount unified storage solution for small workgroups, small businesses or remote offices	High-density, high-performance, and scalable unified storage at an affordable price for remote office and departmental environments	High-performance internal shared storage for HP BladeSystem environments
<b>Processor type and description</b>	Dual-Core Intel® Pentium®	Quad-Core Intel® Xeon® (up to 2 supported)	Quad-Core AMD Opteron™ (up to 2 supported)	One Quad-Core Intel® Xeon® (up to 2 supported)
<b>Memory standard/max</b>	2 GB/4 GB	2 GB/4 GB	2 GB or 4 GB/4 GB	2 GB/4 GB
<b>Storage included</b>	4 non-Hot-Plug drives: 1 TB SATA (4 X 250 GB) 584 GB SAS (4 X 146 GB)	4 Hot-Plug drives: 1 TB SATA (4 X 250 GB) 2 TB SATA (4 X 500 GB) 1.2 TB SAS (4 X 300 GB)	Up to 12 Hot Plug drives: 3 TB SATA (12 X 250 GB) 6 TB SATA (8 X 750 GB) 9 TB SATA (12 X 750 GB) 12 TB SATA (12 X 1 TB) 2.4 TB SAS (8 X 300 GB) 3.6 TB SAS (12 X 300 GB) 5.4 TB SAS (12 X 450 GB)	292 GB 2 x 146 GB 10K SFF SAS have the OS pre-installed on the server  Choose up to 6 SFF drives: 146 GB 10K SAS SFF 250 GB 5.4k SATA SFF
<b>Storage controller</b>	Smart Array E200/128 MB Controller with BBWC	Smart Array E200/128 MB Controller with BBWC	Smart Array P800/512 MB Controller (RAID 0/1/5/6) with BBWC and 2 external SAS expansion ports	Smart Array P400/256 MB Controller with BBWC
<b>Network adapter</b>	Embedded NC105i PCIe Gigabit Ethernet Server Adapter plus additional NC360T dual-port Gigabit Ethernet Server Adapter	Embedded NC320i PCIe Dual Port Gigabit Server Adapter	Embedded NC326i PCIe Dual Port Gigabit Server Adapter	Two (2) embedded NC373i Multifunction Gigabit Server Adapters
<b>Integrated application data storage (iSCSI SAN)</b>	iSCSI support for Windows 2000, Windows Server 2003, Windows Server 2008 (including Hyper-V), VMware ESX Server 3 and 3.5, Novell SUSE Linux Enterprise Server 10, Red Hat Enterprise Linux 5, and Qlogic 40xx series iSCSI hardware HBAs			
<b>Integrated file serving (NAS)</b>	Heterogeneous file serving with support for SMB/CIFS, NFS, AppleTalk, Novell, HTTP, FTP			
<b>Integrated data protection</b>	File and array snapshots (64/volume for files and 512/volume for iSCSI). Full copy of HP Data Protector Express software for backup and recovery to disk or tape. Supports replication through HP StorageWorks Storage Mirroring.			
<b>Operating system</b>	Microsoft Windows Storage Server 2003 R2 (Standard Edition)			
<b>Hardware warranty</b>	1 year parts exchange, 1 year labor, and 1 year onsite, next business day response	1 year parts exchange, 1 year labor, and 1 year onsite, next business day response	1 year parts exchange, 1 year labor, and 1 year onsite, next business day response	3-year parts, 3-year labor and 3-year onsite limited global warranty
<b>QuickSpec URLs</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/12913_div/12913_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12913_div/12913_div.HTML</a>	<a href="http://h18000.www1.hp.com/products/quickspecs/12913_div/12913_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12913_div/12913_div.HTML</a>	<a href="http://h18000.www1.hp.com/products/quickspecs/12866_div/12866_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12866_div/12866_div.HTML</a>	<a href="http://h18000.www1.hp.com/products/quickspecs/12789_div/12789_div.pdf">http://h18000.www1.hp.com/products/quickspecs/12789_div/12789_div.pdf</a>
<b>Related offerings</b>				
<b>Software</b>	HP Storage Mirroring Software integrates with the All-in-One Storage Manager to streamline replication of file shares and application stores. Options for HP Data Protector Express Software, such as the D2Any2Any option, can add functionality to the copy of the software included with All-in-One Storage Systems.			
<b>Recommended services</b>				
<b>3-Year HP Support Plus 24 Service</b>	Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.			
<b>HP Installation Service</b>	Provides for the basic installation of your All-in-One Storage System, including installation of hardware and software.			

Visit HP Enterprise Library for HP StorageWorks All-in-One Storage Systems family data sheet <http://h71028.www7.hp.com/ERC/downloads/4AA0-6894ENW.pdf>

For more information, visit: [www.hp.com/go/AiOStorage](http://www.hp.com/go/AiOStorage)

# HP ProLiant Storage Servers

Add file serving capacity to your network quickly or create an effective disk-based backup or replication target.



**HP ProLiant ML110 G5 Storage Server**

**HP ProLiant DL160 G5 Storage Server**

	HP ProLiant ML110 G5 Storage Server	HP ProLiant DL160 G5 Storage Server
<b>Description</b>	An affordable, single-processor tower solution for small and remote offices	Space-saving rack-mount solution for small workgroups, small businesses or remote offices
<b>Form factor</b>	Micro ATX tower	1U rack
<b>Operating system</b>	Microsoft Windows Storage Server 2003 Release 2, Standard x64 Edition (1 TB SATA, 2 TB SATA, and 584 GB SAS models) Microsoft Windows Storage Server 2003 Release 2, Workgroup x64 Edition (320 GB SATA model)	Microsoft Windows Storage Server 2003 Release 2, Standard x64 Edition
<b>Processors supported</b>	Dual-Core Intel® Pentium® (1 TB SATA, 2 TB SATA, and 584 GB SAS models) Single-Core Intel® Celeron® (320 GB SATA model)	Quad-Core Intel® Xeon®
<b>Maximum number of processors</b>	1	2 (1 standard)
<b>Memory (standard/max)</b>	512 MB or 1 GB/8 GB	1 GB or 2 GB/32 GB
<b>Storage controller</b>	SW RAID only (320 GB SATA model) Smart Array E200/128 MB Controller with BBWC (1 TB SATA, 2 TB SATA, and 584 GB SAS models)	Smart Array E200/128 MB Controller with BBWC
<b>Models and Drives supported</b>	2 x 160 GB SATA LFF (320 GB SATA model) 4 x 250 GB SATA LFF (1 TB SATA model) 4 x 500 GB SATA LFF (2 TB SATA model) 4 x 146 GB SAS LFF (584 GB SAS model)	4 x 160 GB SATA LFF (640 GB SATA model) 4 x 250 GB SATA LFF (1 TB SATA model) 4 x 500 GB SATA LFF (2 TB SATA model) 4 x 750 GB SATA LFF (3 TB SATA model) 4 x 300 GB SAS LFF (1.2 TB SAS model)
<b>External expansion</b>	None	MSA50, 60, and 70 enclosures with the addition of a Smart Array E500 controller
<b>Number of users</b>	5 – 50	25 – 200
<b>Warranty (parts/labor/onsite)</b>	1-year, 1-year, 1-year	1-year, 1-year, 1-year
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/12911_div/12911_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12911_div/12911_div.HTML</a>	<a href="http://h18000.www1.hp.com/products/quickspecs/12908_div/12908_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12908_div/12908_div.HTML</a>

## Related offerings

### Software

- iSCSI features including “Host an Exchange Storage Group” and “Host a SQL Server Database” wizards within HP All-in-One Storage Manager are enabled with optional installation of Microsoft iSCSI Software Target (T4433A)
- Data protection features including support for backup of file shares or application stores to disk, tape, or other removable media using application-aware snapshots within HP All-in-One Storage Manager are enabled with optional installation of HP Data Protector Express Software (BB117BA)
- Streamlined data replication for file shares or application stores within HP All-in-One Storage Manager are enabled with optional installation of HP Storage Mirroring Software (T5442A); Installable 60-day demo version included

### Recommended services

#### 3-Year HP Support Plus 24 Service

Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.

Visit the HP Enterprise Library for HP ProLiant Storage Servers Family data sheet <http://h71028.www7.hp.com/ERC/downloads/5982-8760EN.pdf>

For more information, visit: [www.hp.com/go/storageservers](http://www.hp.com/go/storageservers)

# HP ProLiant Storage Servers (continued)

Store more data and manage it more easily with these enhanced and intelligent Windows-powered network storage solutions.



**HP ProLiant DL185 G5 Storage Server**



**HP ProLiant DL380 G5 Storage Server**

<b>Description</b>	High-density and scalability at an affordable price for remote office and departmental environments	Scalable high-performance appliances with internal or external storage for workgroup and enterprise environments
<b>Form factor</b>	2U rack	2U rack
<b>Operating system</b>	Microsoft Windows Storage Server 2003 Release 2, Standard x64 Edition	Microsoft Windows Storage Server 2003 Release 2, Standard x64 Edition
<b>Processors supported</b>	Quad-Core AMD Opteron™	Quad-Core Intel® Xeon®
<b>Maximum number of processors</b>	2 (1 standard)	2 (1 standard)
<b>Memory (standard/max)</b>	2 GB or 4 GB/32 GB	4 GB/32 GB
<b>Storage controller</b>	Smart Array P800/512 MB Controller with BBWC and external expansion	Smart Array P800/512 MB Controller with BBWC and external expansion
<b>Models and Drives supported</b>	2 x 250 GB SATA LFF (Base SATA model) 8 x 500 GB SATA LFF (4 TB SATA model) 8 x 750 GB SATA LFF (6 TB SATA model) 12 x 750 GB SATA LFF (9 TB SATA model) 12 x 1 TB SATA LFF (12 TB SATA model) 2 x 146 GB SAS LFF (Base SAS model) 8 x 300 GB SAS LFF (2.4 TB SAS model) 12 x 450 GB SAS LFF (5.4 TB SAS model)	2 x 72 GB SAS SFF (for mirrored OS storage, all models except 1.16 TB SAS model) Ready for expansion (Base model) 8 x 146 GB SAS SFF (1.16 TB SAS model) 6 x 750 GB SATA LFF in an MSA60 (4.5 TB SATA model) 6 x 1 GB SATA LFF in an MSA60 (6 TB SATA model) 6 x 300 GB SAS LFF in an MSA60 (1.8 TB SAS model) 6 x 450 GB SAS LFF in an MSA60 (2.7 TB SAS model)
<b>External expansion</b>	MSA50, 60, and 70 enclosures with the integrated Smart Array P800 controller	MSA50, 60, and 70 enclosures with the integrated Smart Array P800 controller
<b>Number of users</b>	200 – 600	400 – 1000
<b>Warranty (parts/labor/onsite)</b>	1-year, 1-year, 1-year	3-year, 3-year, 3-year
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13035_div/13035_div.HTML">http://h18000.www1.hp.com/products/quickspecs/13035_div/13035_div.HTML</a>	<a href="http://h18000.www1.hp.com/products/quickspecs/12559_div/12559_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12559_div/12559_div.HTML</a>
<b>Related offerings</b>		
<b>Software</b>	<ul style="list-style-type: none"> <li>iSCSI features including “Host an Exchange Storage Group” and “Host a SQL Server Database” wizards within HP All-in-One Storage Manager are enabled with optional installation of Microsoft iSCSI Software Target (T4433A)</li> <li>Data protection features including support for backup of file shares or application stores to disk, tape, or other removable media using application-aware snapshots within HP All-in-One Storage Manager are enabled with optional installation of HP Data Protector Express Software (BB117BA)</li> <li>Streamlined data replication for file shares or application stores within HP All-in-One Storage Manager are enabled with optional installation of HP Storage Mirroring Software (T5442A); Installable 60-day demo version included</li> </ul>	
<b>Recommended services</b>		
<b>3-Year HP Support Plus 24 Service</b>	Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.	
<b>HP Installation Service</b>	Provides for the basic installation of your ProLiant Storage Servers, including installation of hardware and software.	

Visit the HP Enterprise Library for HP ProLiant Storage Servers Family data sheet <http://h71028.www7.hp.com/ERC/downloads/5982-8760EN.pdf>

For more information, visit: [www.hp.com/go/storageservers](http://www.hp.com/go/storageservers)

# HP ProLiant Storage Server gateways

Centralize block and file storage, and create inexpensive IP-based access to your Fibre Channel SAN for clients and application servers.



**HP ProLiant High Availability Storage Server**



**HP ProLiant DL380 G5 SAN Gateway Storage Server**



**HP ProLiant SB460c SAN Gateway Storage Server**

	HP ProLiant High Availability Storage Server	HP ProLiant DL380 G5 SAN Gateway Storage Server	HP ProLiant SB460c SAN Gateway Storage Server
<b>Description</b>	Midsized businesses, environments that need to quickly add or consolidate file storage, and add the reliability of high availability	Add file, iSCSI, and/or management services to your MSA/EVA array or Fibre Channel SAN	Add file, iSCSI, and/or management services to your MSA/EVA array or Fibre Channel SAN
<b>Form factor</b>	6U (4U - 2x Server, 2U - Storage)	2U rack	Half-height c-Class BladeSystem blade
<b>Operating system</b>	Microsoft Windows Unified Data Storage Server 2003 Enterprise x64 Edition, SAN Gateway model	Microsoft Windows Unified Data Storage Server 2003, Enterprise x64 Edition	Microsoft Windows Unified Data Storage Server 2003, Enterprise x64 Edition
<b>Processors supported</b>	Quad-Core Intel® Xeon® E5430 2.66 GHz	Quad-Core Intel® Xeon®	Quad-Core Intel® Xeon®
<b>Maximum number of processors</b>	2 per server	2 (both standard)	2 (both standard)
<b>Memory (standard/max)</b>	8 GB/32 GB	8 GB/64 GB	8 GB/64 GB
<b>Storage controller</b>	Smart Array P400/512 MB with BBWC	Smart Array P400/512 MB Controller with BBWC (for internal OS drives) Fibre Channel HBA selection is left as your choice based on existing infrastructure and/or desired array support	Integrated HP Smart Array E200i RAID controller with 128 MB cache with battery-backed write-cache (for internal OS drives) Fibre Channel HBA selection is left as your choice based on existing infrastructure and/or desired array support
<b>Models and Drives supported</b>	Integrated configuration with 2 x DL380 G5 SAN Gateway Storage Servers plus 1 x MSA2012sa with dual controllers, and all cabling	2 x 72 GB SAS SFF (for mirrored OS storage only)	2 x 72 GB SAS SFF (for mirrored OS storage only)
<b>External expansion</b>	MSA2000 Drive Enclosure	MSA2000fc, MSA2000sa, and MSA2000i series, EVA4400, EVA6100, EVA8100, and XP2000 Disk array, XP24000 Disk Array (256 TB max per volume)	MSA2000fc, MSA2000sa, and MSA2000i series, EVA4400, EVA6100, EVA8100, and XP2000 Disk array, XP24000 Disk Array (256 TB max per volume)
<b>Number of users</b>	200 – 10000	2000 +	2000 +
<b>Warranty (parts/labor/onsite)</b>	3-year, 3-year, 3-year	3-year, 3-year, 3-year	3-year, 3-year, 3-year
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13171_div/13171_div.html">http://h18000.www1.hp.com/products/quickspecs/13171_div/13171_div.html</a>	<a href="http://h18000.www1.hp.com/products/quickspecs/12559_div/12559_div.HTML">http://h18000.www1.hp.com/products/quickspecs/12559_div/12559_div.HTML</a>	<a href="http://h18000.www1.hp.com/products/quickspecs/13114_div/13114_div.html">http://h18000.www1.hp.com/products/quickspecs/13114_div/13114_div.html</a>
<b>Related offerings</b>			
<b>Software</b>	HP Storage Mirroring Software, HP Data Protector, HP Data Protector Express software.		
<b>Recommended services</b>			
<b>3-Year HP Support Plus 24 Service</b>	Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.		
<b>3-Year HP Proactive 24 Service</b>	N/A	An integrated hardware and software support solution designed to help you get more from your IT investment. It combines industry leading technical assistance with proactive account services to cover the entire infrastructure and to improve the stability, availability, and operational effectiveness of the IT environment.	
<b>HP Installation Service</b>	Provides for the basic installation of your ProLiant Storage Servers, including installation of hardware and software.	N/A	

Visit the HP Enterprise Library for HP ProLiant Storage Servers Family data sheet <http://h71028.www7.hp.com/ERC/downloads/5982-8760EN.pdf>

For more information, visit: [www.hp.com/go/storageservers](http://www.hp.com/go/storageservers)

# HP StorageWorks 4400 Scalable NAS File Services

The HP StorageWorks 4400 Scalable NAS File Services offers scalable file serving performance for medium-sized customers that cannot afford any downtime for their business-critical applications.



HP StorageWorks 4400 Scalable NAS File Services

<b>Ideal For</b>	Enterprises with five or more file servers who want to consolidate file servers and storage while increasing general throughput performance.
<b>Usable capacity (min/max)</b>	4.8 TB/88 TB
<b>Raw capacity (min/max)</b>	4.8 TB/88 TB
<b>Controllers</b>	3 x DL380 G5
<b>Number of drives</b>	96
<b>Drive types</b>	FC and FATA
<b>Drive capacity</b>	146 GB, 300 GB, 400 GB, 1 TB
<b>Drive hot swap</b>	Yes
<b>Connectivity (protocols supported)</b>	Microsoft Networks (CIFS/SMB), Linux/UNIX (NFS v2/3 over TCP and UDP), Web (HTTP 1.1/HTTPS), File Transport Protocol (FTP)
<b>Scalability</b>	Yes, up to 16 File Server Controllers
<b>Snapshots</b>	Yes
<b>Mirroring</b>	Yes
<b>Remote replication</b>	Yes
<b>Thin provisioning</b>	No
<b>Interoperability</b>	Windows and Linux
<b>Manageability</b>	Manage Console, Replication, Snapshot, Telnet, E-mail Alerts, DNS, SNMP, Smart Storage Management, Cluster Failover Manager
<b>Software included</b>	HP StorageWorks Scalable NAS File Serving Software, HP StorageWorks Command View EVA Software, HP StorageWorks Business Copy EVA Software
<b>Warranty (parts/labor/onsite)</b>	2/2/2
<b>Warranty (abbreviated description)</b>	2 year parts, 2 year labor, 2 year on-site support, next business day response
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13115_div/13115_div.pdf">http://h18000.www1.hp.com/products/quickspecs/13115_div/13115_div.pdf</a>
<b>Related offerings</b>	
<b>Software</b>	HP StorageWorks Continuous Access EVA Software, HP Data Protector Software.
<b>Recommended services</b>	
<b>Support Plus/Support Plus 24</b>	Helps you increase the performance and availability of your infrastructure with comprehensive, consistent hardware and software services. Working with HP IT team, HP Services engineers deliver onsite hardware support and over-the-phone software support 13 hours per day, 5 days per week. Service coverage encompasses HP products and selected multivendor hardware and software.

# HP StorageWorks 9100 Extreme Data Storage System (ExDS9100)

The HP StorageWorks 9100 Extreme Data Storage System serves and stores hundreds of terabytes or petabytes of file-based data for your expanding applications. Designed to be extremely scalable, affordable, and easy to manage, HP ExDS9100 delivers excellent performance and availability for service providers and enterprise customers alike.



HP StorageWorks 9100 Extreme Data Storage System (ExDS9100)

<b>Ideal for</b>	Businesses that need to serve and store vastly growing amounts of file-based data.
<b>Maximum RAW capacity</b>	820 TB
<b>Maximum Useable capacity</b>	590 TB
<b>Maximum Number of capacity blocks</b>	10
<b>Maximum Number of Performance blocks</b>	16 Note: fully symmetric, shared storage
<b>Disk Drive Type supported</b>	1 TB 7.2 rpm 3.5 inch Hot Plug Dual Port SAS Midline Hard Drive
<b>Operating system</b>	Linux
<b>Maximum Data bandwidth</b>	3.2 GB/sec Note: Raw potential throughput
<b>High availability</b>	Self healing; fully symmetrical active/active; hot plug drives; redundant power supplies; redundant fans; dual controllers
<b>Supported RAID levels</b>	RAID 6 (8D +2P)
<b>File Serving support</b>	NFS, HTTP
<b>Form factor</b>	(2) 42U Racks Note: Maximum configuration
<b>Warranty (abbreviated description)</b>	3-years parts, 1-year labor, 1-year on-site support, next business day response
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13117_div/13117_div.html">http://h18000.www1.hp.com/products/quickspecs/13117_div/13117_div.html</a>
<b>Related offerings</b>	
<b>Recommended services</b>	
<b>3-Year HP Support Plus 24 Service</b>	Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.

HP Enterprise Library for HP StorageWorks 9100 Extreme Data Storage System Solution Brief <http://h71028.www7.hp.com/ERC/downloads/4AA1-9286ENW.pdf>

# HP StorageWorks Enterprise File Services Clustered Gateway

The HP StorageWorks Enterprise Files Services (EFS) Clustered Gateway provides unified storage management. It can create an integrated block and file-level storage solution out of any SAN, consolidating individual silos of storage into a single, shared pool of storage that simplifies storage allocation, yields high utilization and reduces IT costs as compared to traditionally architected storage solutions.



HP StorageWorks Enterprise File Services Clustered Gateway

<b>Ideal for</b>	A file server that delivers scalable file serving performance with assured availability for mid-range and enterprise customers on an industry standard platform.
<b>Usable capacity (min/max)</b>	1 TB/2 PB
<b>Raw capacity (min/max)</b>	1 TB/2 PB
<b>Controllers</b>	DL380 G5
<b>Number of drives</b>	1100
<b>Drive types</b>	FC, FATA, SAS, SATA
<b>Drive capacity</b>	146 GB, 300 GB, 400 GB, 1 TB
<b>Drive hot swap</b>	Yes
<b>Transfer rate</b>	Up to 6 GB/s
<b>Connectivity (protocols supported)</b>	Microsoft Networks (CIFS/SMB), Linux/UNIX (NFS v2/3 over TCP and UDP), Web (HTTP 1.1/HTTPS), File Transport Protocol (FTP)
<b>Scalability</b>	Yes, up to 16 File Server Controllers
<b>Snapshots</b>	Yes
<b>Mirroring</b>	Yes
<b>Remote replication</b>	Yes
<b>Thin provisioning</b>	Yes
<b>Interoperability</b>	Windows and Linux
<b>Manageability</b>	Manage Console, Replication, Snapshot, Telnet, E-mail Alerts, DNS, SNMP, Smart Storage Management, Cluster Failover Manager
<b>HP Fibre Channel (SAN) Storage compatibility</b>	MSA, EVA, XP
<b>HP iSCSI Storage compatibility</b>	MSA, EVA
<b>Warranty (abbreviated description)</b>	2 year parts, 2 year labor, 2 year onsite support, next business day response
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/12585_div/12585_div.pdf">http://h18000.www1.hp.com/products/quickspecs/12585_div/12585_div.pdf</a>

## Related offerings

### Software

HP Data Protector Software, HP StorageWorks Continuous Access EVA, HP StorageWorks Business Copy EVA, HP StorageWorks Continuous Access XP, HP StorageWorks Business Copy XP.

### Recommended services

#### 3-Year HP Support Plus 24 Service

Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.

# HP StorageWorks Scalable NAS File Serving Software

The HP StorageWorks Scalable NAS File Serving Software creates 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.

## HP StorageWorks Scalable NAS File Serving Software

<b>Description</b>	The HP StorageWorks Scalable NAS File Serving Software enables enterprises to consolidate file servers and storage while increasing general throughput, Web-serving, media-streaming, and thin-client performance.
<b>Hardware support</b>	HP ProLiant and BladeSystem Servers, HP StorageWorks disk arrays and 3rd-party SAN arrays
<b>Strategic initiatives</b>	IT Consolidation/Business Continuity, Virtualization, Migration, SAP Migration
<b>Version</b>	Physical or Electronic License-to-Use
<b>Warranty (abbreviated description)</b>	2 year parts, 2 year labor, 2 year on-site support, next business day response
<b>QuickSpec URLs</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13173_div/13173_div.html">http://h18000.www1.hp.com/products/quickspecs/13173_div/13173_div.html</a>
<b>Related offerings</b>	
<b>Software</b>	HP Data Protector Software, HP PolyServe Software for Microsoft SQL Server.
<b>Recommended services</b>	
<b>3-Year HP Support Plus 24 Service</b>	Provides integrated hardware and software support services designed specifically for your technology. HP Services engineers deliver reactive onsite hardware support and over-the-phone software support around-the-clock.

## HP Services: Scalable, flexible, and reliable—like your storage

Your technology infrastructure has become your business infrastructure—where delivering successful business outcomes is the key goal. The HP integrated end-to-end Storage Solutions are specifically designed to help businesses address today's tough technology challenges associated with the explosion of rich digital content, mobility, security, and the need for efficient storage of data and access to real-time information when and where they need it. No other company in the industry matches the HP portfolio of service breadth and depth, resources, and commitment to optimize storage support in a heterogeneous infrastructure. HP Services can help you manage and evolve your storage environment so that you can facilitate future growth, decrease operational costs, and protect data while reducing risk.

To capitalize fully on your HP storage solution—you require a service partner who thoroughly understands your storage technology and system environment. With HP Services, you gain the advantage of established methodologies and the industry's broadest portfolio of integrated storage solutions for enhanced information management and optimization.

For more information about HP services and support, contact your HP sales representative or HP-authorized channel partner, or visit [www.hp.com/hps/storage](http://www.hp.com/hps/storage)

## Factory Express

HP Factory Express is designed to help you get a better return from your IT investment by providing customization, integration, and deployment services along with your storage and server purchases. It provides predictable, trusted, and tested IT solutions tailored to your business needs. We allow you to customize hardware to your exact specifications in the factory—helping to speed up deployment and free up internal resources.

## Customer Technical Training

Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving, and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centers worldwide to onsite training customized to your needs or online.

## Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, please contact your HP representative or visit [www.hp.com/go/hpfinancialservices](http://www.hp.com/go/hpfinancialservices)

## For more information

To learn more about HP StorageWorks Network Attached Storage Solutions, contact your local HP representative or your authorized HP reseller, or visit [www.hp.com/go/NAS](http://www.hp.com/go/NAS)

You can also visit our other related storage family guides:

- HP StorageWorks Arrays—  
[www.hp.com/go/array/familyguide](http://www.hp.com/go/array/familyguide)
- HP StorageWorks tape and disk-to-disk data protection—  
[www.hp.com/go/D2Dtapefamilyguide](http://www.hp.com/go/D2Dtapefamilyguide)

To learn more about HP StorageWorks portfolios, contact your local HP representative or your authorized HP reseller, or visit:

- [www.hp.com/go/arrays](http://www.hp.com/go/arrays)
- [www.hp.com/go/tape](http://www.hp.com/go/tape)
- [www.hp.com/go/storageblades](http://www.hp.com/go/storageblades)
- [www.hp.com/go/san](http://www.hp.com/go/san)
- [www.hp.com/go/storageworks/software](http://www.hp.com/go/storageworks/software)

To quickly find the HP storage products that fit your specific needs, visit [www.hp.com/go/product-selector](http://www.hp.com/go/product-selector)

## Technology for better business outcomes

To learn more, visit [www.hp.com/go/NAS](http://www.hp.com/go/NAS)

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