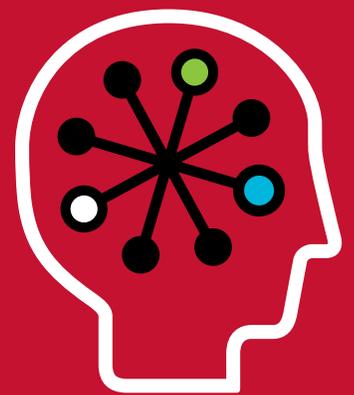# HP StorageWorks Network Attached Storage

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 time, and that is 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 adds to the challenge significantly, and drives the need for improved file serving solutions.

Rapid file storage growth, driven by rich media like audio, video, graphics, backup files, and email 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, centralized growth, and data protection.

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

HP StorageWorks NAS solutions change and adapt with your fast-changing organizational storage needs using virtualization, performance-enhanced 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 respond to data growth more effectively.

Regardless of the size of your organization, HP StorageWorks NAS solutions enable 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 X500 Data Vault

HP StorageWorks X500 Data Vault series provides a simple and cost-effective solution for a small business to store, secure, and share data for under $1000. Based on Microsoft Windows Home Server, it provides a user-friendly interface with easy installation and management. The HP X500 provides you with automated backup for up to 10 PC clients and Mac's on the network while providing additional background features like folder duplication and data deduplication. The HP X500 offers both local and remote file sharing via a custom URL which is accessible from any Web browser. The HP X500 comes with two or three empty bays (depending on the model) for internal storage expansion and also offers external USB and eSATA ports for additional external expansion. Store it, secure it, and share it.

HP StorageWorks X1000 Network Storage Systems

HP StorageWorks X1000 Network Storage Systems are the fast and easy way to add Windows-powered shared storage to your small or medium IT environment. They're versatile unified storage, so you get more for your money since it can be a file server, an iSCSI target for application/virtual environment storage, or both. You'll spend less time and effort on maintenance and management once you consolidate to a centralized shared storage system, and industry-standards will protect your investment by providing compatibility with your network and applications. The operating system is pre-installed and comes with HP StorageWorks X1000 Automated Storage Manager, so you'll be up and running in minutes.

HP StorageWorks X3000 Network Storage Systems

HP StorageWorks X3000 Network Storage Systems boost the value of your array or SAN by adding Windows-powered IP-based gateway services to it. You'll spend less time and effort on maintenance and deliver a better return-on-investment for your array/SAN when you consolidate to a single, unified storage pool that can serve files to your clients and blocks to your servers via multiple protocols (FC/iSCSI or SAS/iSCSI). Industry-standards protect your investment by providing compatibility with your network and applications, and a Microsoft Cluster Server (MSCS) license is included to provide high availability and reduce downtime.

HP StorageWorks X5000 Storage Systems

HP StorageWorks X5000 Storage Systems add scalable file services and a file server gateway for mid-range and enterprise customer's SAN and iSCSI storage systems. Based on a truly symmetrical cluster file system, HP X5000 Storage Systems add scale-out CIFS/NFS/HTTP file services to any new or existing SAN or iSCSI storage. Now file serving performance or storage capacity can be added independently online without service disruption.

HP X5000 Storage Systems provide unified storage management. It can create an integrated block and file-level storage solution out of any SAN, consolidating individual pools of storage into a single, shared resource of storage that simplifies storage allocation, yields high utilization, and reduces IT costs as compared to traditionally architected storage solutions.

HP StorageWorks 4400 Scalable NAS File Services

Medium-sized customers who need to seamlessly increase application throughput far in excess of traditional NAS products and easily grow storage capacity online without service disruption will find that the HP StorageWorks 4400 Scalable NAS File Services is a fully factory configured storage solution. It includes an HP StorageWorks 4400 Enterprise Virtual Array with dual array controllers and up to 12 TB of storage (standard), two file serving nodes, management and replication software, and support for Windows or Linux. With two file serving nodes and dual array controllers, the HP 4400 Scalable NAS File Services does not have a single point of failure. It offers great total cost of ownership (TCO) with a low initial purchase price and "shared data" architecture yielding lower management expenses from a shared pool of file serving nodes and storage.

HP StorageWorks X9000 Network Storage Systems

HP StorageWorks X9000 Network Storage Systems scale-out beyond traditional network attached storage in both capacity and performance. Designed to be extremely scalable, flexible, and cost-efficient, HP X9000 Network Storage Systems deliver excellent performance and a modular storage infrastructure to accommodate unprecedented storage growth and performance. Central management allows the administrator to manage not just terabytes but multi-petabyte environments at the highest density possible from HP. The pay-as-you-grow architecture and an all-inclusive feature set eliminate storage over-provisioning or expensive add-ons. X9000 is the platform for customers designing the next-generation data center.

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 is the foundation for data. With StorageWorks, you can be confident in your infrastructure and your ability to deliver results because the full power of HP and its partners can 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 X500 Data Vault

Delivers consolidated data storage, file sharing, and data protection that is specifically designed for the small business that has no or limited IT staff.

HP StorageWorks X500 Data Vault

Number of Drives	2 Included, depending on model
Drive Type	1 TB 3G 7.2K LFF SATA 1.5 TB 3G 7.2K LFF SATA Supported, depending on model
Processor	(1) Intel® Pentium® E5200 (2.5 GHz) Maximum
Processor Cache	2 MB
Memory	2 GB PC2–6400 unbuffered DDR2 ECC 800 MHz Maximum
Capacity	1 TB Starting 6 TB Maximum 13.5 TB Maximum, with external storage options
Storage Expansion Options	Internal: Standard, off the shelf, 3.5-inch SATA Drives External: USB External Hard Disk Drive or eSATA Hard Disk Drive.
Network Controller	Gigabit Ethernet controller
Expansion Slots	2–3 empty internal SATA hard drive bays (model dependant) 4 external USB 2.0 ports 1 eSATA port
Supported Operating Systems	Microsoft Windows® Vista (32 and 64-bit) XP Home (SP2) or XP Professional (SP2) Media Center Edition 2004 (SP2) or later Mac® OS X Linux Automatic backup, file sharing and remote access capabilities vary based on PC OS
Management	HP Control Center Microsoft Windows Home Server Console
Number of Users	1–10 PC Clients and unlimited Mac's
Form Factor	Tower
Warranty	1-year parts, 0-year onsite support, next business day response
QuickSpec URL	**http://h18000.www1.hp.com/products/quickspecs/13406_div/13406_div.pdf**

HP related offerings

Optional Add-Ins	
	A variety of software add-ins provides the ability to add additional features to the HP X500 Data Vault. Add-ins includes features like: anti-virus protection, Amazon S3 online storage, disk management utilities, multimedia management, and others.

HP StorageWorks X1000 Network Storage Systems

Delivers Windows-powered unified network storage that is easy to install, easy to manage, and easy to expand to your small, medium, or workgroup IT environment.

	X1400 Network Storage Systems	X1600 Network Storage Systems	X1800 Network Storage Systems	X1800sb Network Storage Blade
Models Available	Base Model 2 TB SATA Model 4 TB SATA Model	Base Model 292 GB SAS Model 5.4 TB SAS Model 6 TB SATA Model 12 TB SATA Model	Base Model 292 GB SAS Model 2.4 TB SAS Model 3.6 TB SAS Model 6 TB SATA Model	Base Model
Operating System	Microsoft® Windows Storage Server 2008 Standard x64 Edition	Microsoft® Windows Storage Server 2008 Standard x64 Edition	Microsoft® Windows Storage Server 2008 Standard x64 Edition	Microsoft® Windows Storage Server 2008 Standard x64 Edition
Drive Type	SATA and SAS LFF drives supported. Base Model has no drives included and requires that you select drive type and capacity to be integrated in the factory.	SATA and SAS LFF drives supported. Base Model has no drives included, and requires that you select drive type, capacity, and quantity to be integrated in the factory.	SATA and SAS SFF drives supported. Base Model has no drives included and requires that you select drive type, capacity, and quantity to be integrated in the factory.	146 GB 3G 10K SFF Dual-port SAS (2) drives included for O/S mirror
Processor	(1) Intel® Xeon® Processor E5504 2.00 GHz Standard	(1) Intel® Xeon® Processor E5520 2.26 GHz Standard	(1) Intel® Xeon® Processor E5530 2.4 GHz Standard	(1) Intel® Xeon® Processor L5506 2.13 GHz Maximum
Maximum Capacity	4 TB Raw Internal SATA 12 TB Raw External SATA 1.8 TB Raw Internal SAS 2 TB Raw Internal SATA Maximum configurations	12 TB Raw Internal SATA 36 TB Raw External SATA 5.4 TB Raw Internal SAS 6 TB Raw Internal SATA Maximum configurations	2.4 TB Raw Internal SAS 96 TB Raw External SATA 2 TB Raw Internal SATA 6 TB Raw External SATA 3.6 TB Raw External SAS 1.8 TB Raw Internal SAS 1.5 TB Raw Internal SAS Maximum configurations	146 GB Raw Internal SAS 0 GB Useable Combine with the SB40c Storage Blade for 1.8 TB internal storage, or use as a gateway to virtually unlimited external storage.
Storage Expansion Options	MSA60, MSA70	MSA60, MSA70	MSA60, MSA70	SB40c or use as a gateway to attach to EVA, MSA, XP, and P4000 arrays/SANs
Storage Controllers	(1) Smart Array P212/256 MB Controller with BBWC Included	(1) Smart Array P212/256 MB Controller with BBWC Included	(1) Smart Array P410i/256 MB Controller with BBWC (1) Smart Array P411/512 MB Controller with BBWC Included	Smart Array P410i Controller (RAID 0/1) Included
Number of Users	25–1300 Maximum Depends on number of drives and RAID configuration	25–3400 Maximum Depends on numbers of drives and RAID configuration	25–3300 Maximum Depends on number of drives and RAID configuration	200–1000 Range
Form Factor	1U	2U	2U	HP BladeSystem c-Class half-height blades
Warranty	3-year parts, 3-year labor, 3-year onsite support (next business day response) plus 1-year standard day/hours software support	3-year parts, 3-year labor, 3-year onsite support (next business day response) plus 1-year standard day/hours software support	3-year parts, 3-year labor, 3-year onsite support (next business day response) plus 1-year standard day/hours software support	3-year parts, 3-year labor and 3-year onsite limited global warranty
QuickSpec URLs	**http://h18000.www1.hp.com/products/quickspecs/13341_div/13341_div.pdf**			**http://h18000.www1.hp.com/products/quickspecs/13342_div/13342_div.pdf**

Refer to the next page for Related Offerings

HP StorageWorks X1000 Network Storage Systems (contd.)

Deliver Windows-powered unified network storage that is easy to install, easy to manage, and easy to expand to your small, medium, or workgroup IT environment.

HP Related offerings	
Software	
HP X1000 Automated Storage Manager Software	HP StorageWorks X1000 Automated Storage Manager SW (HP ASM) radically simplifies the creation, migration, growth, and protection of data stores by hiding complexity and presenting shared storage from an application point-of-view. Included with HP StorageWorks X1000 Network Storage Systems, the software is designed for IT generalists with no storage expertise and includes tools to easily migrate and manage data using automated best practice logic. Setup wizards that require only a few mouse clicks to expertly set up and protect data storage. For more information visit: **http://www.hp.com/go/asm**
Microsoft® iSCSI Software Target	Now included as part of the Windows Storage Server 2008 operating system, this software adds block storage capability to all X1000 and X3000 Series Network Storage Systems and creates a single platform that delivers file, print, and application storage services, all over existing Ethernet networks. It is a powerful iSCSI software solution that provides affordable application storage provisioning, protection, and availability for small and medium office environments. For more information visit: **http://h18006.www1.hp.com/products/storageworks/ms_iscsi/index.html**
Optional software	HP Data Protector Express Software, HP Storage Mirroring Software, HP File Archiving Software, and HP Storage Essentials NAS Manager software.
Recommended services	
3-Year Support Plus 24 Service	For a higher return on your storage technology, this 3-year combined reactive support option delivers integrated onsite hardware/software support services available 24x7.
HP Installation and Startup Service for X1000/X3000 Storage Systems	For smooth startup and readily available access to and management of your critical data and applications.
Related services	
3-Year HP Proactive 24	For improved stability, availability, and operational effectiveness, this 3-year integrated hardware and software support service combines industry leading technical assistance with proactive account services.
HP Enhanced Implementation Service for SANs	Provides complete design and implementation services for Fibre Channel, FCOE, FCIP, SAS, and iSCSI SAN connectivity components. 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**

Visit the HP Enterprise Library for X1000 Network Storage Systems family data sheet **http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-6267ENW.pdf**

HP StorageWorks X3000 Network Storage Systems

Adds cluster-able and easy-to-manage file, iSCSI, and management services to mid-range and enterprise array/SAN environments to create unified network storage solutions.

	HP StorageWorks X3400 Network Storage Systems	HP StorageWorks X3800 Network Storage Systems	HP StorageWorks X3800sb Network Storage Gateway Blade
Drive type	146 GB 3G 15K LFF Dual-port SAS Included for O/S mirror, 2 per node	146 GB 6G 10K SFF Dual-port SAS Included for O/S mirror, 2 per node	146 GB 3G 10K SFF Dual-port SAS Included Mirrored OS image pre-installed
Operating System	Microsoft® Windows Storage Server 2008 Enterprise x64 Edition pre-installed	Microsoft® Windows Storage Server 2008 Enterprise x64 Edition pre-installed	Microsoft® Windows Storage Server 2008, Enterprise x64 Edition pre-installed
Processor	(1) Intel® Xeon® Processor E5405 2.00 GHz Standard per node	(2) Intel® Xeon® Processor E5530 2.40 GHz Standard per node	(2) Intel® Xeon® Processor L5520 2.26 GHz Maximum
Capacity	146 GB Raw Internal SAS 0 GB Useable 292 GB Raw Internal SAS 12 TB Maximum Supported depending on drive type. Designed to utilize external array/SAN storage.	46 GB Raw Internal SAS 0 GB Useable 292 GB Raw Internal SAS 12 TB Maximum Supported depending on number of nodes. Designed to utilize external array/SAN storage.	146 GB Raw Internal SAS 0 GB Useable Internal drive capacity for OS mirror only. X3800sb is designed to utilize external array/SAN storage.
Storage Expansion Options	Attach to MSA, P4000, or EVA arrays/SANs	Attach to EVA, MSA, XP, or P4000 arrays/SANs	Attach to EVA, MSA, XP, and P4000 arrays/SANs
Storage Controllers	(1) Smart Array P212/256 MB Controller with BBWC Included	(1) Smart Array P410i/256 MB Controller with BBWC Included	Smart Array P410i Controller (RAID 0/1)
Number of Users	25–1300 Maximum Depends on number of drives and RAID configuration	25–3300 Maximum Depends on number of drives and RAID configuration	200–1000
Form Factor	1U, 3U, 4U Depending on number of nodes	2U, 6U Depending on number of nodes	Half-height BladeSystem c-Class
Warranty	3 year parts, 3 year labor, 3 year onsite support (next business day response) plus 1 year standard day/hours software support	3 year parts, 3 year labor, 3 year onsite support (next business day response) plus 1 year standard day/hours software support	3 years parts, 3 years labor, 3 years onsite support with next business day response, 1 year software support
QuickSpec URLs	http://h18000.www1.hp.com/products/quickspecs/13333_div/13333_div.pdf		http://h18000.www1.hp.com/products/quickspecs/13334_div/13334_div.pdf

Refer to the next page for Related Offerings

HP StorageWorks X3000 Network Storage Systems (contd.)

Adds cluster-able and easy-to-manage file, iSCSI, and management services to mid-range and enterprise array/SAN environments to create unified network storage solutions.

HP Related offerings	
Software	
Microsoft® iSCSI Software Target:	Now included as part of the Windows Storage Server 2008 operating system, this software adds block storage capability to all X1000 and X3000 Series Network Storage Systems and creates a single platform that delivers file, print, and application storage services, all over existing Ethernet networks. It is a powerful iSCSI software solution that provides affordable application storage provisioning, protection, and availability for small and medium office environments. For more information visit: **http://h18006.www1.hp.com/products/storageworks/ms_iscsi/index.html**
Optional software	HP StorageWorks Storage Mirroring Software, HP StorageWorks Command View EVA Software, HP Data Protector software, HP File Archiving Software, and HP Storage Essentials NAS Manager Software.
Recommended services	
3-Year HP Support Plus 24	For a higher return on your storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services—customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.
HP Installation and Startup Service for X1000/X3000 Network Storage Systems	For smooth startup, HP Installation and Startup Service for X1000 and X3000 Network Storage Systems—provides deployment of your storage system while helping you establish readily available access to and management of your critical data and applications. Leverage the full strength of HP Technology Services—customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.
Related services	
3-Year HP Proactive 24:	For improved stability, availability, and operational effectiveness, HP Proactive 24 Service (P24) provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year comprehensive hardware and software support solution combines industry leading technical assistance with proactive account services to cover the entire IT infrastructure. In today's new era of business technology, technology must produce thousands of business outcomes. Today's HP Technology Services portfolio helps customers manage their technology in action—because when technology works, business works.
HP Entry Storage Data Migration Service for Windows	Provides an economical approach to migrate data triggered by a need to refresh or consolidate storage or to create different storage tiers. This service provides HP managed data migration for customers who purchase HP StorageWorks Storage Mirroring Data Migration software.
	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**

Visit the HP Enterprise Library for HP StorageWorks X3000 Network Storage Systems Family data sheet **http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-6273ENW.pdf**

HP StorageWorks 4400 Scalable NAS File Services

Delivers scalable file serving performance for medium-sized customers that cannot afford any downtime while lowering the total cost of ownership for servers and storage.

HP StorageWorks 4400 Scalable NAS File Services

Number of Drives	96 Maximum
Drive Type	146 GB 15K Fibre Channel 300 GB 15K Fibre Channel 450 GB 15K Fibre Channel 300 GB 10K Fibre Channel 400 GB 10K Fibre Channel 450 GB 10K Fibre Channel 600 GB 10K Fibre Channel 1 TB FATA 72 GB Solid State Drive Supported, depending on model and expansion
File System Size	128 TB Linux 32 TB Windows
File Systems per Cluster	512 Linux 256 Windows
Cluster Size (maximum)	16 Nodes
Rack Server Support	2 File Server Controllers Standard
Host Interface	Fibre Channel
Protocol Support	NFS, CIFS, HTTP, FTP, HTTPS, iSCSI
BladeSystem Supported	HP ProLiant BladeSystems
Availability	Fully Symmetrical Active/Active
RAID Support	0, 1, 5, 6, 0+1
HP Fibre Channel (SAN) Storage Compatibility	MSA, EVA, XP
HP iSCSI Storage Compatibility	MSA, EVA
Warranty	3-year parts, 3-year labor, 3-year onsite support, next business day response
QuickSpec URL	**http://h18000.www1.hp.com/products/quickspecs/13115_div/13115_div.pdf**

For more information, visit: **www.hp.com/go/scalablenas**

HP StorageWorks 4400 Scalable NAS File Services (contd.)

Delivers scalable file serving performance for medium-sized customers that cannot afford any downtime while lowering the total cost of ownership for servers and storage.

HP Related offerings	
Software	
HP StorageWorks Command View EVA Software	Command View EVA Software provides a comprehensive software suite designed to simplify, enhance, and maximize the high performance EVA family of storage array products. And provides a powerfully simple storage management experience when compared to managing traditional array storage management products. **http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html**
HP StorageWorks Business Copy EVA Software	Unique, powerfully simple integrated management and point in time solution in an easy-to-use, efficient, and cost-effective business continuance application offering quick implementation and accelerated payback. For more information please visit: **http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html**
HP Systems Insight Manager	Enclosed as an accessory with all HP StorageWorks arrays is HP Systems Insight Manager (SIM). HP SIM is the foundation for HP unified server-storage strategy—it is packaged as value-add software for EVA and is included with the price of the EVA. The software is also a customer installable management application. HP SIM runs on HP Windows, Linux, and HP-UX and provides discovery and identification, fault management, security administration, asset reporting, and centralized configuration management across heterogeneous servers, storage, and infrastructure. HP SIM is easily extensible, integrating other HP management products and value-add plug-ins such as the ProLiant Essentials, Integrity Essentials, Server Essentials, and Storage Essentials. HP SIM may also be configured to launch array specific applications for configuration, reporting, and replication. For more information, please refer to the following URL: **http://h18013.www1.hp.com/products/servers/management/hpsim/index.html**
Optional software	HP StorageWorks Continuous Access EVA Software, HP Storage Essentials Software Suite, and HP Standard Edition SRM Software.
Recommended services	
3-Year Support Plus 24 Service	For a higher return on your storage technology, this 3-year combined reactive support option delivers integrated onsite hardware/software support services available 24x7.
HP StorageWorks EVA4400 Disk Array Installation and Startup Service	For an efficient start, this service deploys your disk array, Command View, and remote support tools.
Related services	
3-Year HP Proactive Select Service	To improve IT performance and manageability through the use of cost-effective flexible proactive services.
HP Data Migration Service	To help you move data between technologies, this service transfers your information across a data center or around the globe. For more information, contact your HP sales representative or HP-authorized Channel Partner or, visit **www.hp.com/hps/storage**

HP StorageWorks X5000 Storage Systems

Delivers scalable file services for enterprise/mid-range customers when installing additional or adding to existing SAN and iSCSI storage, while also increasing availability and return on investment.

HP StorageWorks X5000 Storage Systems

Number of Drives	2 per node included, for O/S mirror only
Drive Type	146 GB 3G 15K LFF Dual-port SAS Included
File System Size	128 TB Linux 16 TB Windows
File Systems per Cluster	512 Linux 256 for Windows
Cluster Size (maximum)	16 Nodes
Rack Server Support	HP ProLiant DL Servers
Host Interface	8 Gb Fibre Channel (2) Ports and 1 Gb Ethernet (4) Ports
Protocol Support	NFS, CIFS, HTTP, FTP
Cache	8 MB L3 cache per processor
Availability	Fully Symmetrical Active/Active
RAID Support	Supports the RAID types of the array
Management	Scalable NAS File Serving Software, Integrated Lights Out 2 (iLO 2)
HP Fibre Channel (SAN) Storage Compatibility	MSA, EVA, XP
HP iSCSI Storage Compatibility	MSA, EVA, LeftHand
Warranty	3-year parts, 3-year labor, 3-year onsite support, next business day response
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/13405_div/13405_div.pdf

Refer to the next page for Related Offerings

For more information, visit: **www.hp.com/go/x5000**

HP StorageWorks X5000 Storage Systems (contd.)

Delivers scalable file services for enterprise/mid-range customers when installing additional or adding to existing SAN and iSCSI storage, while also increasing availability and return on investment.

HP Related offerings	
Software	
Optional software	HP Data Protector software
Recommended services	
3-year Support Plus 24 Service	For a higher return on your storage technology, this 3-year combined reactive support option delivers integrated onsite hardware/software support services available 24x7.
Related services	
3-year HP Proactive Select Service	To improve IT performance and manageability through the use of cost-effective flexible proactive services.
HP Data Migration Service	To help you move data between technologies, this service transfers your information across a data center or around the globe. 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**

HP StorageWorks X9000 Network Storage Systems

Control costs associated with explosive data growth and improve performance of file-based applications with scale-out network storage that efficiently manages information in a single namespace

HP StorageWorks X9000 Network Storage Systems

Drive Type	146 GB 3G 15K SFF Dual-port SAS 1 TB 3G 7.2K LFF Dual-port MDL SAS MSA2 300 GB 3G 15K LFF Dual-port SAS MSA2 450 GB 3G 15K LFF Dual-port SAS MSA2 1 TB 3G 7.2K LFF SATA Supported, depending on model
Capacity	21 TB Starting 656 TB Maximum Depending on model
Number of Storage Blocks	8 Maximum, depending on model
Number of Performance Blocks	16 Maximum, depending on model
Transfer Rate	3.2 GB/s Raw potential throughput, depending on model
File Serving Support	CIFS, NFS
Supported Operating Systems	Linux
Availability	Self healing, fully symmetrical active/active, hot plug drives, redundant power supplies, redundant fans, dual controllers
RAID Support	RAID 1, 5, 6
Warranty	3 year parts, 3 year labor, 3 year onsite support, next business day response
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/13467_div/13467_div.pdf

HP Related offerings

Recommended services	
3-Year HP Support Plus 24	For a higher return on your storage technology, this 3-year combined reactive support option delivers integrated onsite hardware/software support available 24x7.
HP Enterprise NAS Implementation Service	For smooth startup and better business outcomes, this service provides implementation of HP Enterprise NAS in your storage environment.
Related services	
HP Enterprise NAS Upgrade Service	Provides onsite upgrades for customers not wishing to perform upgrades themselves. 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**

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 breadth and depth of the HP portfolio of service, its resources, and commitment to improve 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**

Service and support

HP 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. **www.hp.com/go/factoryexpress**

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. **www.hp.com/learn/storage**

HP 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**

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**

You can also visit our other related storage family guides:

- HP StorageWorks Arrays:
  www.hp.com/go/array/familyguide
- HP StorageWorks Tape and disk-to-disk Data Protection: **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/storageworks**
- **www.hp.com/go/NAS**
- **www.hp.com/go/arrays**
- **www.hp.com/go/tape**
- **www.hp.com/go/storageblades**
- **www.hp.com/go/san**
- **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**

Get connected
www.hp.com/go/getconnected

Current HP drivers, support & security alerts
delivered directly to your desktop

Technology for better business outcomes

To learn more, visit www.hp.com/go/NAS