



HP StorageWorks 2000 Modular Smart Array

Family data sheet

Is your growing organization constrained by tight budgets and limited IT expertise? Alternatively, does a large organization like yours find it hard to manage smaller departments as well as those that are located remotely? HP StorageWorks 2000 Modular Smart Array family of SAN devices, with its very latest functionality and technology at affordable prices, offers flexible solutions to meet your diverse business needs. Hence, upon identifying your unique business demands you can choose from three host interfaces that HP offers—SAS MSA2000sa, the Fibre Channel MSA2000fc, and the iSCSI MSA2000i. All models support optional controller-based snapshot/clone functionality to give you a highly secure solution for your IT requirements.

MSA2000 family key features and benefits

Leverage the benefits of the MSA2000 family to your advantage to you improve your IT infrastructure:

- **Flexible drive types and sizes:** The MSA2000 arrays offer a choice of drives—high-performance enterprise-class SAS drives, and low-cost, high-capacity archival-class SATA—to help you select the best option for your requirements. Each model comes standard with 12 drive bays able to accommodate 3.5-inch dual-ported SAS drives and SATA drives simultaneously.
- **Cost efficient:** The MSA2000 family offers single and dual controller models. Choose a single controller model for low initial investment, or a dual controller model for greater data protection. Our SATA drives give you excellent performance and cost benefits for your archival storage.
- **Enhanced performance:** With MSA2000 you can count on up to four times the bandwidth of previous MSA generations.
- **Easy to service:** The MSA2000 family supports customer replaceable hot plug components such as drives, controllers, fans and power supplies.
- **Support up to 256 LUNs with sizes up to 16 TB:** The MSA2000, with 256 LUNs, has more than sufficient LUNs for storage configuration flexibility.
- **High availability for business continuity:** The MSA2000 reduces risk of IT failure with active/active controllers, dual-ported drives, and redundant hardware components.

- **Room to grow:** MSA2000 family can support up to 3 drive enclosures and 48 drives.
- **Increased level of data protection:** All the MSA2000 models offer increased data protection with the controller-based snapshot and cloning functionality offered by the optional HP StorageWorks 2000 Modular Smart Array Snapshot Software that it supports. Controller-based snaps require no host resources being used, and produce space-efficient, copy-on-write snapshots and clones.
- **Space-efficient design:** The MSA2000 array unit comes with a standard UPS so there is no requirement for a special UPS saving up on costs as well as additional space. The MSA2000 array itself only occupies 2U of rack space and includes 12-drive bays thereby utilizing less space. Also, each additional drive enclosure occupies only 2U of rack space.

HP StorageWorks MSA2000sa

Bring the latest in efficient consolidated storage array technology to the entry-level segment with 3 Gb SAS direct attach, external array storage solutions matched with the latest SAS and SATA drives.

The HP StorageWorks 2000sa Modular Smart Array (MSA2000sa) is a direct attach, external shared storage solution that helps your organization transition easily from direct attached to centralized storage. Growing companies with tight budgets and limited IT expertise, or larger companies with perhaps hundreds of smaller departments, and remote locations can benefit from this consolidated storage array technology.

The MSA2000sa comes standard with 12 drive bays able to accommodate 3.5-inch enterprise-class dual-ported SAS drives, and archival-class SATA drives simultaneously. Additional capacity can be added easily by attaching up to three MSA2000 12-bay drive enclosures. Maximum raw capacity ranges from 3.6 TB SAS or 12 TB SATA in the base cabinet to over 14.4 TB SAS or 48 TB SATA with the addition of the three drive enclosures. The MSA2000 family of arrays is cost efficient in that there are no additional hidden charges, licenses, or fees as you add enclosures, hosts, and users.

HP StorageWorks MSA2000i

Offers the latest in low-cost, consolidated storage array technology to entry-level customers with an iSCSI solution matched with the latest SAS and SATA drives.

With HP StorageWorks 2000i Modular Smart Array, departmental and small to medium businesses can scale up the storage capability up to 14.4 TB SAS or 48 TB SATA to meet their increasing storage demands.

Hence, your organization can benefit from efficient consolidation and storage sharing. Further, it supports up to 16 hosts for iSCSI attach, and up to 256 LUNs. All models support the optional HP StorageWorks 2000 Modular Smart Array Snapshot Software that offers controller-based snapshot and cloning functionality for increased data protection. MSA2000i offers flexibility with two models—a single controller version for lowest price with future expansion, and a dual controller model for the more demanding entry-level situations that require higher availability. Each model comes standard with 12 drive bays able to accommodate 3.5-inch enterprise-class, dual-ported SAS drives, and archival-class SATA drives simultaneously.

HP StorageWorks MSA2000fc

Provides affordable, high-performance, consolidated storage array technology to entry-level customers with 4 Gb Fibre Channel solutions matched with the latest SAS and SATA drives.

The HP StorageWorks 2000fc Modular Smart Array features a high-performance 4 Gb Fibre Channel connected array for efficient consolidation and functionality at affordable prices. It allows departmental and small to medium businesses customers to grow their storage as demands increase up to 14.4 TB SAS or 48 TB SATA, supporting up to 64 hosts for Fibre Channel. With up to 256 LUNs with each LUN up to 16 TB, the MSA2000fc gives enhanced configuration flexibility. The optional



HP StorageWorks 2000fc Modular Smart Array (MSA2000fc) 4 Gb Fibre Channel connected, 2U storage area network (SAN) solution designed for small to medium-size deployments or remote locations



HP StorageWorks 2000i Modular Smart Array (MSA2000i) iSCSI connected, 2U storage area network (SAN) solution designed for small to medium-size deployments or remote locations



HP StorageWorks 2000sa Modular Smart Array (MSA2000sa) Modular, reliable, affordable, and easy-to-manage shared storage array solution

Maximum storage	48 TB	48 TB	48 TB
Host interface	4 Gb Fibre Channel	1 Gb Ethernet iSCSI	3 Gb Serial Attached SCSI (SAS)
Number of hosts supported	64	16	4
Maximum number of drives	1 – 48	1 – 48	1 – 48
Hard drives supported	146 GB 3G 15K 3.5 inch Dual Port SAS 300 GB 3G 15K 3.5 inch Dual Port SAS 500 GB 3G 7.2K 3.5 inch SATA 750 GB 3G 7.2K 3.5 inch SATA 1 TB 3G 7.2K 3.5 inch SATA	146 GB 3G 15K 3.5 inch Dual Port SAS 300 GB 3G 15K 3.5 inch Dual Port SAS 500 GB 3G 7.2K 3.5 inch SATA 750 GB 3G 7.2K 3.5 inch SATA 1 TB 3G 7.2K 3.5 inch SATA	146 GB 3G 15K 3.5 inch Dual Port SAS 300 GB 3G 15K 3.5 inch Dual Port SAS 500 GB 3G 7.2K 3.5 inch SATA 750 GB 3G 7.2K 3.5 inch SATA 1 TB 3G 7.2K 3.5 inch SATA
Operating systems supported	Microsoft Windows 2008 IA32 Microsoft Windows 2008 x64 Microsoft Windows 2003 R2 Microsoft Windows 2003 X64 Red Hat Enterprise Linux 4, 5 SUSE Linux Enterprise Server 9, 10 VMware ESX 3.0.1, 3.0.2, 3.5	Microsoft Windows 2003 R2 Microsoft Windows 2003 x64 Red Hat Enterprise Linux 4, 5 SUSE Linux Enterprise Server 9, 10 VMware ESX 3.0.1, 3.0.2, 3.5	Microsoft Windows 2008 IA32 Microsoft Windows 2008 x64 Microsoft Windows 2003 R2 Microsoft Windows 2003 X64 Red Hat Enterprise Linux 5 SUSE Linux Enterprise Server 10 VMware ESX 3.5
Rack height	2U	2U	2U
Warranty	3 years parts	3 years parts	3 years parts
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/12991_div/12991_div.pdf	http://h18000.www1.hp.com/products/quickspecs/12992_div/12992_div.pdf	http://h18000.www1.hp.com/products/quickspecs/13045_div/13045_div.pdf

HP StorageWorks 2000 Modular Smart Array Snapshot Software offers increased data protection. The three MSA2000fc models include—a single controller model for low price with future expansion, a dual controller model for entry-level that requires higher availability, plus a high-performance model with dual enhanced controllers for the most demanding entry-level situations. For an affordable, high-availability solution the MSA2000fc allows mixing enterprise-class, dual-ported SAS drives, and archival-class SATA drives.

Software options

HP StorageWorks MSA2000 Snapshot Software:

HP MSA2000 Snapshot Software enables increased data protection by creating recovery points for your data, a snapshot takes a “picture” of what your data was at the time of the snapshot. The snapshots are maintained even as data continues to change. In the event of a failure, you can recover data to any previous snapshot. Snapshots complement your tape or disk backup strategy.

HP MSA2000 Snapshot Software functionality is controller based, meaning no host resources are used, and they are space-efficient and provide copy-on-write capability with no server performance impact.

For more details visit: <http://hp.com/go/msa2000>

HP StorageWorks MSA2000 Volume Copy Software:

HP MSA2000 Volume Copy software is similar to the Snapshot Software but with one important difference—the Volume Copy Software makes a physical copy of the data (instead of a “picture” of the data) to another set of disks within the same array. One of the additional benefits of snapshot and Volume Copy software is the ability to mount a snap or Volume Copy to another server for backup, application testing, or data mining.

HP MSA2000 Volume Copy Software is controller based, meaning no host resources are used. It provides a physical copy of data from one LUN to another with no server performance impact. For more details visit:

<http://hp.com/go/msa2000>

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 on-site training customized to your needs or online. www.hp.com/learn/storage

Financial Services

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

HP Services

When you buy an MSA2000 storage array, it is a good time to think about what level of service and support you may need. To help take the worry out of deploying and managing your environment, we have designed a portfolio of service options that are as flexible, scalable, and affordable as your storage.

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 MSA Family Disk Array Installation and Startup Service:** A service engagement that provides product deployment consistent with HP product specifications. This service includes service planning, service deployment, Installation verification tests (IVT), and customer oriented sessions.

Related services

- **HP SAN Solution Service:** A scalable service providing specialized expertise in storage area network planning and configuration. It makes sure that your SAN is configured for high-performance and availability and is integrated with your applications, management environment, and business process.
- **HP Data Migration Service:** Helps you move critical business information, while decreasing the risk of data loss, reducing threats to data integrity, and avoiding productivity-sapping performance interruptions.
- **HP Backup and Recovery Solution Service:** Helps you to design an architecture that meets your requirements, HP will deploy your backup software, validate your configuration, and integrate the software into your existing or new storage infrastructure.

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

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4AA1-8074ENW Rev. 1, July 2008

