



HP StorageWorks P2000 G3 and MSA2000 G2 Arrays

Family Data sheet

How can the flexibility of the HP StorageWorks P2000 G3 MSA Array Systems help remedy growing storage needs and small budgets? By offering high-performance 8 Gb FC, Combo FC/iSCSI, or 6 Gb SAS connected arrays designed for efficient storage consolidation at affordable prices. The FC/iSCSI Combo controller gives the flexibility to share the array resources over two protocols, supporting the needs of dissimilar departments and budgets.

All P2000 G3 MSA arrays ship standard with 64 Snapshots and Volume Copy enabled for increased data protection. The FC or Combo FC/iSCSI controllers allow replication with optional Remote Snap Software. The arrays allow departments and small to medium businesses to grow capacity as needed, up to 149 drives. Mixing of LFF and SFF enterprise-class SAS and archival-class SATA drives is supported. Configure with a single controller for low initial cost, or dual controllers for higher availability and performance for the most demanding entry-level situations.

Delivers an affordable, flexible, high-performance SAN array solution offering 8 Gb Fibre Channel, Combo FC/iSCSI, or 6 Gb SAS connectivity, all with 64 snaps standard, and optional Remote Snap for FC and FC/iSCSI models.

HP StorageWorks P2000 Remote Snap Software

Provides mid-range installations with local or remote, array-based, asynchronous Snapshot replication between HP StorageWorks P2000 G3 FC MSA Arrays.

HP StorageWorks P2000 Remote Snap Software offers controller-based, asynchronous replication technology that provides local or remote replication between two HP StorageWorks P2000 G3 FC MSA Arrays. HP Remote Snap functionality is based on existing Snapshot technology offered by HP 2000 SAN Array products. Snapshots are used to track the data to be replicated, as well as to determine the differences in data updated on the master volume, reducing the amount of data needing to be transferred.

Supporting both Ethernet and Fibre Channel interconnects provides flexible options to your application environments. Protect your investment with Snapshot-based replication enabling local and remote recovery based on need. Leveraging the integrated 64 Snapshots and the Volume Copy standard on the P2000 G3 FC MSA Array, the Remote Snap Software cost-effectively creates the local or remote copies.



Key features and benefits for P2000 G3 MSA Array Systems

Easily managed, highly affordable, and highly efficient storage consolidation

The HP StorageWorks P2000 G3 MSA Array Systems deliver low cost, consolidated storage array technology to meet departmental and small to medium businesses requirements with 8 Gb Fibre Channel, Combo FC/iSCSI, or 6 Gb SAS solutions accommodating the Large and Small Form Factor SAS and SATA drives.

The HP P2000 G3 MSA Array Systems offer a choice of drives: high performance enterprise class dual-ported SAS drives, and low cost, high capacity archival class SAS MDL or SATA MDL. The array head comes standard with either 12 or 24 drive bays—and is able to accommodate all three drive types simultaneously.

The P2000 G3 MSA offers single controller models for low initial investment, or dual controllers for higher data protection. The FC/iSCSI Combo controller allows sharing of resources between different departments with the most cost-effective protocol. A wide choice of drive types means a high return on investment (ROI).

The P2000 G3 MSA comes standard with 64 snapshot and Volume Copy cloning capability enabled. Snapshots can be optionally boosted to 512 snaps, and the P2000 G3 FC MSA and FC/iSCSI models support the Remote Snap (replication) software option.

Start small and grow in number of supported servers and total capacity

The P2000 G3 MSA allows customers to grow their storage as demands increase up to 57.6 TB SAS or 192 TB SATA supporting up to 64 hosts for Fibre Channel attach. The P2000 G3 MSA can support up to 7 LFF drive enclosures and 96 drives or 5 SFF drive enclosures and a maximum of 149 drives.

Powerful new controllers and 2 GB of read/write cache provide support for up to 64 hosts. Latest (8 Gb Fibre Channel and 6 GB SAS) technology means that the users have fast and reliable access to their data.

The P2000 G3 MSA comes with 64 Snapshot and Volume Copy capability at no extra charge. Increased snapshot capability of 512 snaps is an option. Remote Snap software is also an option, allowing replication over iSCSI or Fibre Channel.

With 512 LUNs, the P2000 G3 FC MSA has more than sufficient LUNs for storage configuration flexibility.

Comprehensive data protection in an easily-administered SAN environment

Reduce risk of IT failure with dual active/active controllers, dual-ported drives, and redundant hardware components.

For increased data protection, the P2000 G3 MSA comes with a 64 Snapshot license (optional 512 snaps) and Volume Copy Software, giving space-efficient, copy-on-write snapshots and clones at no charge. Remote Snap software allowing replication over iSCSI or Fibre Channel is optional.

Reduced time to operation with easy and secure deployment. Reduced risk from operator errors, resulting in less downtime and data loss, while increasing customer satisfaction. Supports customer replaceable hot plug components such as drives, controllers, fans, and power supplies.

P2000 G3 controllers can be used to upgrade prior generations of MSA2000 G1 and G2 models regardless of protocol. The P2000 G3 FC, FC/iSCSI Combo, or SAS controllers support data-in-place upgrades, protecting the user's investment in JBODs (Just a Bunch of Disks) and drives while giving greater performance, functionality.



HP StorageWorks P2000 G3 FC MSA Array Systems



HP StorageWorks P2000 G3 SAS MSA Array Systems



Technical specifications	HP StorageWorks P2000 G3 FC MSA Array Systems	HP StorageWorks P2000 G3 SAS MSA Array Systems
Models	<p>Pre-configured array with (2) 8 Gb G3 FC controllers in a Large Form Factor, 12 drive bay chassis</p> <p>Pre-configured array with (2) 8 Gb G3 FC controllers in a Small Form Factor, 24 drive bay chassis</p> <p>Pre-configured array with (2) G3 FC/iSCSI Combo controllers in a Large Form Factor, 12 drive bay chassis</p> <p>Pre-configured array with (2) G3 FC/iSCSI Combo controllers in a Small Form Factor, 24 drive bay chassis</p>	<p>Pre-configured array with (2) 6 Gb G3 SAS controllers in a Large Form Factor, 12 drive bay chassis</p> <p>Pre-configured array with (2) 6 Gb G3 SAS controllers in a Small Form Factor, 24 drive bay chassis</p>
Drive Description	149 SFF SAS/SATA or 96 LFF SAS/SAS MDL/SATA Maximum including expansion, supported, depending on model	149 SFF SAS/SATA or 96 LFF SAS/SAS MDL/SATA Maximum including expansion, supported, depending on model
Capacity	192 TB Maximum Including expansion, depending on model	192 TB Maximum Including expansion, depending on model
Storage expansion options	P2000 3.5-inch disk enclosure or D2700 2.5-inch disk enclosure	P2000 3.5-inch disk enclosure or D2700 2.5-inch disk enclosure
Host interface	8 Gb Fibre Channel (2) Ports per controller or 8 Gb Fibre Channel (2) Ports per controller and 1 GbE iSCSI (2) Ports per controller	6 Gb SAS (4) Ports per controller
Storage controllers	(1 or 2) P2000 G3 Fibre Channel MSA Controller (1 or 2) P2000 G3 Fibre Channel/iSCSI Combo MSA Controller Installed controllers must match	(1 or 2) P2000 G3 SAS MSA Controller Installed controllers must match
SAN Backup support	Yes	Yes
OV Storage Mirroring support	Yes	Yes
Systems Insight Manager support	Yes	Yes
Operating Systems support (Depending on the model)	<p>Microsoft® Windows® 2008</p> <p>Microsoft Windows 2003</p> <p>Red Hat Linux</p> <p>SUSE Linux</p> <p>HP-UX</p> <p>VMware</p> <p>Solaris</p> <p>HP OpenVMS</p> <p>Citrix XenServer</p> <p>Microsoft Windows Server 2008 - Hyper-V</p> <p>Detailed information available at: http://www.hp.com/storage/spock</p>	<p>Microsoft® Windows® 2008</p> <p>Microsoft Windows 2003</p> <p>Red Hat Linux</p> <p>SUSE Linux</p> <p>Microsoft Windows Server 2008 - Hyper-V</p> <p>VMware</p> <p>Detailed information available at: http://www.hp.com/storage/spock</p>
Clustering support	Windows, Linux, HP-UX, OpenVMS	Windows, Linux
Form factor	2U	2U
Warranty	3-year parts only Next Business Day	3-year parts only Next Business Day
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/13551_div/13551_div.pdf	

The total package—Software

HP StorageWorks 2000 Snapshot Software	HP 2000 Snapshot Software enables increased data protection by creating recovery points for your data, taking 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 are a great complement to tape or disk backup strategy. HP 2000 Snapshot Software functionality is controller-based, so no host resources are used; and they are space-efficient and provide copy-on-write capability. For more information visit: http://www.hp.com/go/P2000	64 snapshots included 512 snapshots available
HP StorageWorks 2000 Volume Copy Software	HP 2000 Volume Copy Software makes a physical copy of the data to another set of disks within the same array. One of the 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 2000 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. The P2000 G3 arrays ship standard with 64 snapshots and volume copy. For more information please visit: http://www.hp.com/go/P2000	Included
HP StorageWorks P2000 Array Remote Snap Software	HP StorageWorks P2000 Array System Remote Snap Software is storage-based asynchronous replication technology that provides remote replication on the HP StorageWorks P2000 G3 FC & FC/iSCSI MSA Arrays. HP Remote Snap functionality is based on existing Snapshot technology. Supporting both Ethernet and Fibre Channel interconnects provides flexible options to your application environments. Protect your investment with Snapshot-based replication, enabling local and remote recovery based on need. For more information please visit: http://www.hp.com/go/RemoteSnap	Optional (FC and FC/iSCSI only)
HP StorageWorks Storage Mirroring	HP StorageWorks Storage Mirroring prevents data loss from failure, error, or disaster. It provides replication and recovery of valuable Windows and Linux data to another server. Proactive replication is a key strategy coupled with tape backup and snapshot technology for up-to-the-second data protection. Having replicated data co-located enables customers to recover their static and transactional data in seconds to minutes. For more information please visit: http://h18006.www1.hp.com/products/storage/software/sm/index.html	Optional

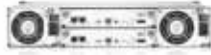
HP StorageWorks 2000i G2 Modular Smart Array

Delivers an affordable, highly efficient storage array solution for entry-level customers with 1 GbE iSCSI solutions matched with the newest Small and Large Form Factor SAS, SAS MDL, and SATA MDL drives.

The HP StorageWorks 2000i G2 Modular Smart Array selection of SAN devices features the very latest in efficient consolidation, functionality, and technology—at very affordable prices. The ideal customers needing to consolidate their storage include smaller companies with tight budgets and limited IT expertise, or larger companies that have perhaps hundreds of smaller departments and remote locations.

The MSA2000i G2 features a 1 Gb Ethernet (1 GbE) iSCSI connected array. It allows customers to grow their storage as demands increase up to 36 TB SAS, 120 TB SAS MDL, or SATA MDL, supporting up to 32 hosts for iSCSI attach. All models support the optional HP StorageWorks 2000 Modular Smart Array Snapshot Software, which offers controller-based snapshot; and Volume Copy, which gives cloning functionality. Planning for future growth is easy by starting with the basic modular pieces and adding capacity as needs arise. The MSA2000i G2, like all of the MSA2000 arrays, can be upgraded in the future to P2000 G3 models.

HP StorageWorks MSA2000i G2 Array Systems



Technical specifications	HP StorageWorks 2000i G2 Modular Smart Array
Number of drives	99 SFF or 60 LFF Maximum including expansion
Capacity	120 TB Maximum with expansion Depending on drive type
Storage expansion options	MSA2000 3.5-inch disk enclosure (single or dual I/O) MSA70 2.5-inch disk enclosure (single or dual I/O)
Host interface	1 GbE iSCSI (2) Port per controller
Storage controllers	(2) MSA2300i G2 Maximum
Clustering support	Yes Windows and Linux
SAN Backup support	Yes
OV Storage Mirroring support	Yes
Systems Insight Manager support	Yes
Supported Operating Systems	Microsoft Windows Server 2008 IA32, x64, IA64 (Standard, Enterprise, Data center) Microsoft Windows Server 2008 R2 Microsoft Windows 2003 R2 Microsoft Windows 2003 x64, IA64 Red Hat Linux VMware Microsoft Windows Server 2008 Hyper-V For a detailed operating support list, please visit www.hp.com/storage/spock
Form factor	2U
Warranty	3-year parts only Next Business Day, no labor, or onsite support
QuickSpec URLs	http://h18000.www1.hp.com/products/quickspecs/13330_div/13330_div.pdf
The total package—Software	
HP StorageWorks 2000 Modular Smart Array Snapshot Software	HP 2000 Modular Smart Array 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. HP 2000 Modular Smart Array 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 Optional
HP StorageWorks 2000 Modular Smart Array Volume Copy Software	HP 2000 Modular Smart Array 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. For more details, visit http://hp.com/go/msa2000 Optional

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. For more details, visit

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. For more details, visit 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

HP Technology Services—consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, no matter what. Boost availability and avoid downtime, trust our expertise to optimize your HP solution.

Recommended Services

3-Year HP Support Plus 24 Service: For a higher return on your storage technology, our 3-year combined reactive support service delivers integrated onsite hardware/software support services available 24x7x365, including access to HP technical resources, 4-hour response, onsite hardware support, and software updates.

HP StorageWorks MSA Family Disk Array Installation and Startup Service: For smooth startup, this service provides hardware and software installation.

HP Proactive Select Service: Enhance your reactive support with a menu of selectable proactive services allowing you to accelerate the ROI of your IT environment and more quickly take advantage of your investment — whether optimizing time to production, optimizing performance or building in continuous improvements.

Related Services

HP Entry Storage Data Migration Service for Windows: Provides deployment services for HP StorageWorks Storage Mirroring Data Migration software.

Trust the Services professionals at HP; for more information, contact your HP sales representative or HP-authorized Channel Partner, or visit <http://www.hp.com/hps>



To understand how you can achieve efficient storage consolidation at affordable prices, visit: <http://hp.com/go/msa2000>

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