



HP P2000 G3 FC MSA Array Systems



HP P2000 G3 FC/iSCSI Combo MSA Array Systems



HP P2000 G3 SAS MSA Array Systems



HP P2000 G3 10GbE iSCSI MSA Array Systems



HP P2000 G3 iSCSI MSA Array Systems

## HP P2000 G3 Modular Smart Arrays

Family data sheet

Delivers affordable, high-performing modular SAN arrays offering 8 Gb Fibre Channel, Combo Fibre Channel/iSCSI, 6 Gb SAS, 10GbE or 1 Gb iSCSI connectivity, 64 snaps standard, and optional Remote Snap for Fibre Channel and iSCSI models

How can the flexibility of the HP P2000 G3 Modular Smart Array (MSA) Systems help remedy large storage needs and small budgets? By offering high-performance 8 Gb Fibre Channel (FC), Combo FC/iSCSI, 6 Gb SAS, and 1 Gb or 10GbE iSCSI connected arrays designed for efficient storage consolidation at affordable prices. Additionally, the FC/iSCSI Combo controller offers the flexibility to share the array resources over two protocols, supporting the needs of dissimilar departments and budgets.

All P2000 G3 MSA Systems ship standard with 64 snapshots and HP Volume Copy Software enabled for increased data protection. The FC, Combo FC/iSCSI, and both iSCSI controllers also allow replication with optional HP P2000 Array Remote Snap Software. The arrays allow departments and small-to-medium businesses to grow capacity as needed—up to 149 drives—and allow mixing of LFF and SFF enterprise-class SAS, SAS MDL, as well as support archival-class SATA drives. It is possible to configure with a single controller for low initial cost or dual controllers for high availability for some of the most demanding entry-level situations.

### HP P2000 Remote Snap Software

HP P2000 Remote Snap Software offers controller-based, asynchronous replication technology that provides local or remote replication between two HP P2000 G3 FC, Combo, and 1GbE or 10GbE MSA Systems. P2000 Remote Snap Software functionality is based on existing snapshot technology offered by HP P2000 G3 MSA SAN Array products. Snapshots are used to track the data that needs to be replicated, as well as determine the difference in data updated on the master volume, reducing the amount of data that needs to be transferred.

Supporting both FC and iSCSI Ethernet interconnects provides flexible options to your application environments. It is easier to protect your investment with a snapshot-based replication that enables local and remote recovery, based on need. Leveraging the integrated 64 snapshots and the HP Volume Copy Software standard on the P2000 G3 FC, Combo, or iSCSI MSA Systems, the P2000 Remote Snap Software cost-effectively creates local or remote copies.



# Key features and benefits of P2000 G3 MSA Systems

## Easily managed, highly affordable, and highly efficient storage consolidation

- The HP P2000 G3 MSA Systems deliver low-cost, consolidated storage array solutions to meet departmental and small-to-medium businesses requirements with 8 Gb Fibre Channel (FC), Combo FC/iSCSI, 6 Gb SAS, and 1GbE or 10GbE iSCSI systems accommodating a variety of drive types.
- The P2000 G3 MSA Systems offer single controller models for low initial investment, or dual controllers for higher performance and data protection. The FC/iSCSI Combo controller allows sharing of resources between different departments with the most cost-effective protocol for the individual requirements and budget.
- The HP P2000 G3 MSA 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 which are able to simultaneously accommodate all three drive types.
- The P2000 G3 MSA Systems come standard with 64 snapshots and Volume Copy cloning capability enabled. Snapshots can be optionally boosted to 512 snaps, and the P2000 G3 FC, Combo, and iSCSI models support the P2000 Remote Snap Software (replication) option.

## Start small and grow in number of supported servers and total capacity—flexible

- The P2000 G3 FC MSA allows customers to grow their storage as demands increase up to 57.6 TB SAS, 288 TB SAS MDL, or 192 TB SATA MDL—supporting up to 64 hosts for FC, SAS, and 1GbE and 10GbE iSCSI arrays. The P2000 G3 MSA can support seven LFF enclosures and 96 drives; or five SFF enclosures and a maximum of 149 drives, and single- or dual-controllers that can accommodate any budget.
- Powerful controllers (FC, FC/iSCSI, SAS, and 1GbE and 10GbE iSCSI) and 2 GB of read/write cache per controller provide support for up to 64 hosts. Latest 8 Gb FC, 6 Gb SAS, and 10GbE iSCSI, and four-port 1GbE iSCSI technology means that users are assured fast and reliable access to their data.
- With 512 LUNs and greater than 40 TB LUN size depending on the RAID chosen, the P2000 G3 MSAs give an ideal number and size of 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 customer replaceable hot-plug components such as drives, controllers, fans, and power supplies.

- For increased data protection, the P2000 G3 MSA Systems come standard with snapshot software offering space-efficient, copy-on-write snapshots, and clones at no extra charge, while optional Remote Snap (replication) is available with selected models.
- Reduce time-to-operation with easy and enhanced deployment, and reduce risk from operator errors, that result in less downtime and data loss, while increasing customer satisfaction. P2000 G3 MSA Systems support customer replaceable hot-plug components such as drives, controllers, fans, and power supplies.
- HP P2000 G3 MSA controllers support upgrading prior generations of MSA2000 G1 and G2 models, regardless of protocol to G3 level. The P2000 G3 FC, FC/iSCSI Combo, SAS, 10GbE or four-port 1GbE iSCSI controllers support data-in-place upgrades to the older models, thereby protecting the user's investment in JBODs and drives, and delivering greater performance and functionality.

## HP Services

Tap into the HP support services advantage—backed by the strategic and technical know-how of our consulting experts—for a single source solution that makes the most of your investments. Depending on your individual support requirements, choose from three levels of care that cover the entire lifecycle to better address your needs:

**Optimized Care:** Delivers best performance and stability through deployment and proactive management practices.

- HP Storage MSA/P2000 Family Disk Array Installation and Startup Service
- 3-Year HP Critical Advantage<sup>1</sup> Level 3 Service **OR** 3-Year HP Critical Service
- Optional related services: HP Entry Storage Data Migration Service for Windows®, HP Proactive Select

**Standard Care:** Maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support.

- HP Storage MSA/P2000 Family Disk Array Installation and Startup Service
- 3-Year HP Critical Advantage<sup>1</sup> Level 2 Service **OR** HP Proactive 24 Service
- Optional related services: HP Storage Data Migration; HP Proactive Select

**Basic Care:** Minimum recommended support

- HP Storage MSA/P2000 Family Disk Array Installation and Startup Service
- 3-Year HP Support Plus 24 Plus, 30 Proactive Select credits
- Optional related services: HP Entry Storage Data Migration Service for Windows, HP Proactive Select

If none of our support recommendations meet your needs, we can tailor a service solution for your unique support requirements. Only HP brings together deep expertise, proactive and business critical support, and a strong partner network—plus, a full set of infrastructure services designed to power a Converged Infrastructure.

For more information visit [www.hp.com/services/storage](http://www.hp.com/services/storage).

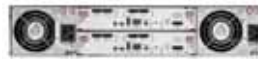
<sup>1</sup> For storage used by business critical applications running on virtualized and x86 infrastructures

## Technical specifications

### HP P2000 G3 FC & Combo MSA Systems



### HP P2000 G3 SAS MSA Systems



### HP P2000 G3 1GbE & 10GbE iSCSI MSA Systems



<b>Models</b>	<ul style="list-style-type: none"> <li>• Preconfigured array with (2) 8 Gb G3 FC controllers in a LFF, 12 drive bay chassis</li> <li>• Preconfigured array with (2) 8 Gb G3 FC controllers in a SFF, 24 drive bay chassis</li> <li>• Preconfigured array with (2) G3 FC/iSCSI Combo controllers in a LFF, 12 drive bay chassis</li> <li>• Preconfigured array with (2) G3 FC/iSCSI Combo controllers in a SFF, 24 drive bay chassis</li> </ul>	<ul style="list-style-type: none"> <li>• Preconfigured array with (2) 6 Gb G3 SAS controllers in a LFF, 12 drive bay chassis</li> <li>• Preconfigured array with (2) 6 Gb G3 SAS controllers in a SFF, 24 drive bay chassis</li> </ul>	<ul style="list-style-type: none"> <li>• Preconfigured array with (2) G3 1 or 10GbE iSCSI controllers in a LFF, 12 drive bay chassis</li> <li>• Preconfigured array with (2) G3 1 or 10GbE iSCSI controllers in a SFF, 24 drive bay chassis</li> </ul>
<b>Drive description</b>	149 SFF SAS/SATA or 96 LFF SAS/SATA Maximum including expansion, supported, depending on model	149 SFF SAS/SATA or 96 LFF SAS/SATA Maximum including expansion, supported, depending on model	149 SFF SAS/SATA or 96 LFF SAS/SATA Maximum including expansion, supported, depending on model
<b>Capacity</b>	288 TB Maximum Including expansion, depending on model	288 TB Maximum Including expansion, depending on model	288 TB Maximum Including expansion, depending on model
<b>Storage expansion options</b>	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	P2000 3.5-inch disk enclosure or D2700 2.5-inch disk enclosure
<b>Host interface</b>	8 Gb Fibre Channel (2) ports per FC controller 8 Gb Fibre Channel (2) ports and 1GbE iSCSI (2) ports per Combo Controller Depending on model	6 Gb SAS (4) ports per controller	10GbE (2) ports per controller or 1GbE (4) ports per controller
<b>Storage controllers</b>	(2) P2000 G3 Fibre Channel MSA Controller included (2) P2000 G3 Fibre Channel/iSCSI Combo MSA Controllers included Depending on model	(2) P2000 G3 SAS MSA Controllers included	(2) P2000 G3 1GbE (2) 10GbE iSCSI MSA Controllers included Depending on model
<b>SAN Backup support</b>	Yes	Yes	Yes
<b>Systems Insight Manager support</b>	Yes	Yes	Yes
<b>Operating Systems support (depending on the model)</b>	Microsoft® Windows Server 2008 Microsoft Windows Hyper-V Microsoft Windows 2003 VMware HP-UX Mac OS OpenVMS Red Hat Linux SUSE Linux Solaris  Detailed information available at: <a href="http://www.hp.com/storage/spock">http://www.hp.com/storage/spock</a>	Microsoft Windows Server 2008 Microsoft Windows Hyper-V Microsoft Windows 2003 VMware Red Hat Linux SUSE Linux Solaris  Detailed information available at: <a href="http://www.hp.com/storage/spock">http://www.hp.com/storage/spock</a>	Microsoft Windows Server 2008 Microsoft Windows Hyper-V Microsoft Windows 2003 VMware Red Hat Linux SUSE Linux  Detailed information available at: <a href="http://www.hp.com/storage/spock">http://www.hp.com/storage/spock</a>
<b>Form factor</b>	2U	2U	2U
<b>Warranty</b>	Three-year parts only next business day	Three-year parts only next business day	Three-year parts only next business day
<b>QuickSpecs URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13551_div/13551_div.pdf">http://h18000.www1.hp.com/products/quickspecs/13551_div/13551_div.pdf</a>		

## The total package—Software

<b>HP MSA2000 Snapshot Software</b>	HP MSA2000 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.  MSA2000 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: <a href="http://www.hp.com/go/P2000">http://www.hp.com/go/P2000</a> .	Included
<b>HP MSA2000 Volume Copy Software</b>	HP MSA2000 Volume Copy Software makes a physical copy of the data to another set of disks within the same array. One of the benefits of MSA2000 Snapshot Software and MSA2000 Volume Copy Software is the ability to mount a snap or volume copy to another server for backup, application testing, or data mining. 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. The P2000 G3 MSA Systems ship standard with 64 snapshots and volume copy. For more information, please visit: <a href="http://www.hp.com/go/P2000">http://www.hp.com/go/P2000</a> .	Included
<b>HP P2000 Array Remote Snap Software</b>	HP P2000 Array Remote Snap Software is a storage-based, asynchronous replication technology that provides remote replication on the HP P2000 G3 MSA Systems (FC and Combo FC/iSCSI only). HP Remote Snap functionality is based on existing snapshot technology. Supporting both Ethernet and Fibre Channel interconnects provides flexible options for your application environments. Protect your investment with snapshot-based replication that enables local and remote recovery, based on need. For more information, please visit: <a href="http://www.hp.com/go/RemoteSnap">http://www.hp.com/go/RemoteSnap</a> .	Optional

## Service and support

### HP Factory Express

HP Factory Express provides customization and deployment services along with your storage and server purchases. You can customize hardware to your exact specifications in the factory—helping speed deployment. For more information, visit [www.hp.com/go/factoryexpress](http://www.hp.com/go/factoryexpress).

### Customer technical training

We offer 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 online and onsite training. For more information, visit [www.hp.com/learn/storage](http://www.hp.com/learn/storage).

### HP Financial Services

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

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



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