



P4500 G2 28.8 TB SAS Multi-Site SAN Solution



P4500 G2 14.4 TB SAS Virtualization SAN Solution



P4300 G2 7.2 TB SAS Starter SAN Solution



P4300 G2 16 TB MDL SAS Starter SAN Solution



P4800 G2 63 TB SAS BladeSystem SAN Solution



P4500 G2 120 TB MDL SAS Scalable Capacity SAN Solution

## HP StorageWorks P4000 G2 SAN Solutions

Family data sheet

**Storage needs are changing in light of server virtualization, data growth, business continuity demands, and cost pressures. Looking for a storage solution that can meet these goals and be added easily into your infrastructure?**

HP StorageWorks P4000 G2 SAN Solutions are proven for virtual servers, client virtualization, database, email, and business applications. With a pay-as-you-grow, all-inclusive pricing model (3-year support included), and intuitive storage management,

this SAN is perfect for the budget-minded. Does room for growth, high availability, and disaster recovery seem out of reach? The P4000 G2 SANs scale capacity and performance linearly, without incurring downtime or performance bottlenecks. Avoid expensive upgrades. P4000 G2 SANs remove any single points of failure across the SAN and offer data high availability, reducing risks without driving up costs. Reservation-less thin provisioning substantially increases your storage utilization, thus reduces costs.



# Reduce storage costs with an all-inclusive, enterprise feature set for physical and virtual environments. Reduce risk via data high availability. Increase business agility and scale SAN disruption free.



## Key features and benefits

### All-inclusive feature set for enterprise functionality at an affordable price

Storage Clustering allows you to consolidate multiple storage nodes into storage pools. All available capacity and performance is aggregated and available to every volume in the cluster. As your storage needs increase, the HP P4000 G2 can scale performance and capacity on-line.

Network RAID stripes and protects multiple copies of data across a cluster of storage nodes, removing any single point of failure in the HP P4000 G2 SAN. Applications can have continuous data availability in the event of a disk, controller, storage node, power, network, or site failure.

Thin Provisioning allocates space only as data is actually written. As a result, it doesn't require a pre-allocation of storage. This raises the overall utilization and efficiency of the HP P4000 G2 SAN, reduces costs, and ultimately increases the ROI.

Snapshots create thinly provisioned, instant point-in-time copies of data on a per-volume basis. Administrators access snapshots to recover individual files from the volume or rollback an entire volume. Built-in application integration provides automated quiescing for Microsoft® VSS applications.

Remote Copy replicates snapshots between P4000 G2 SANs at primary/remote locations. Copies are thinly provisioned with no space reservation required. Remote Copy enables centralized backup and disaster recovery on a per-volume basis and leverages application integrated snapshots for faster recovery.

## High availability and disaster recovery

HP P4000 G2 SANs stripe and protect multiple copies of data across a cluster of storage nodes, removing any single point of failure in the SAN. Applications have continuous data availability in the event of a disk, controller, storage node, power, network, or site failure. For an added level of protection, storage nodes can be strategically separated to protect your data from site failure.

HP P4000 G2 SANs include integrated replication for disaster recovery at no additional cost that simplifies management with simple failover and failback.

Administrators can add capacity, change protection level, increase performance, grow, and migrate volumes between HP P4000 G2 SAN clusters on the fly, with no application downtime.

## Scaling SAN capacity and performance without disruption

Avoid up-front cost and the potential performance constraints. Purchase only what's needed today, then grow the performance, capacity, and redundancy of your HP P4000 G2 SAN online as storage requirements evolve. Buying storage only when needed simplifies planning and relieves budget pressures.

Each time a storage node is added to the HP P4000 G2 SAN, the capacity, performance, and redundancy of the entire storage solution increases.

Add resources to the HP P4000 G2 SAN non-disruptively as capacity and performance requirements increase. Applications remain online during maintenance events (adding nodes, updating software or firmware) for proven availability.

VDI and client virtualization deployments are accelerated with HP reference architectures for VMware and Hyper-V/Citrix based on the high-density storage platform P4800 BladeSystem SAN.

## Easy-to-manage SANs for virtualized environments

Streamlined storage management for VMware (SRM integration, VDI plug-in), Hyper-V (application integrated snapshots), and Citrix (StorageLink plug-in).

Multiple data centers and sites managed from an all-inclusive "single pane-of-glass."

All of the HP P4000 G2 SAN features managed from the Centralized Management Console (CMC) for simple, easy-to-manage storage.

Facilitates proven operation with a built-in best-practice analyzer that automatically recommends SAN best practices and how to implement them.

Boosts the value of P4000 SAN Solutions by adding Windows®-powered IP-based gateway services. Fully featured HP StorageWorks P4000 Unified NAS Gateway includes support for multiple file protocols (CIFS, NFS, and so on), deduplication, print services, and high availability through Microsoft Clustering.



**P4300 G2 7.2 TB SAS Starter SAN Solution**

Perfect for first time virtualization projects, the P4300 G2 7.2 TB SAS Starter SAN delivers the performance and features required to simplify storage and grow your environment non-disruptively.



**P4300 G2 16 TB MDL SAS Starter SAN Solution**

Perfect for consolidating storage for Windows or Linux servers, the P4300 G2 16 TB MDL SAS Starter SAN delivers all features required to simplify storage and grow non-disruptively with your environment.

<b>Drive Description</b>	16 LFF SAS Supported	16 LFF MDL SAS
<b>Drive Type</b>	450 GB 3G 15K LFF Dual-port ENT SAS 16 Included	1 TB 3G 7.2K LFF Dual-port MDL SAS 16 Included
<b>Capacity</b>	7.2 TB Starting 115.2 TB Maximum	16 TB Starting 256 TB Maximum
<b>Storage Expansion Options</b>	Use storage clustering capability and add incremental P4000 G2 Storage Systems into the SAN to expand storage capacity. P4300 G2 3.6 TB SAS Storage System	Use storage clustering capability and add incremental P4000 G2 Storage Systems into the SAN to expand storage capacity. P4300 G2 8 TB MDL SAS Storage System
<b>Host Interface</b>	1 GbE iSCSI (4) Ports or; 10 Gb/sec iSCSI (4) Ports	1 GbE iSCSI (4) Ports or; 10 Gb/sec iSCSI (4) Ports
<b>Supported Operating Systems</b>	Apple OS X Citrix XenServer HP-UX IBM AIX Microsoft Windows 2003 Microsoft Windows 2008 Novell NetWare Oracle® Enterprise Linux Red Hat Linux SUN Solaris SUSE Linux VMware <a href="http://www.hp.com/go/P4000Compatibility">www.hp.com/go/P4000Compatibility</a>	Apple OS X Citrix XenServer HP-UX IBM AIX Microsoft Windows 2003 Microsoft Windows 2008 Novell NetWare Oracle Enterprise Linux Red Hat Linux SUN Solaris SUSE Linux VMware <a href="http://www.hp.com/go/P4000Compatibility">www.hp.com/go/P4000Compatibility</a>
<b>All-inclusive Enterprise Feature Set based on SAN/iQ</b>	Hyper-redundant clustered storage	Hyper-redundant clustered storage
	Redundant, hot plug power supplies; redundant fans; redundant, hot plug hard drives, integrated storage controller with battery-backed DDR2 cache; disk RAID 5, 6, and 10; hyper-redundant clustered storage: Network RAID levels (per volume) 0, 5, 6, 10, 10+1, and 10+2 for up to four copies of your data allows data to remain available in the event of a disk, controller, storage node, power, network, or site failure.	Redundant, hot plug power supplies; redundant fans; redundant, hot plug hard drives, integrated storage controller with battery-backed DDR2 cache; disk RAID 5, 6, and 10; hyper-redundant clustered storage: Network RAID levels (per volume) 0, 5, 6, 10, 10+1, and 10+2 for up to four copies of your data allows data to remain available in the event of a disk, controller, storage node, power, network, or site failure.
	Thin Provisioning	Thin Provisioning
	Application Integrated Snapshots	Application Integrated Snapshots
	Remote Copy; Asynchronous Replication with Bandwidth Throttling; Multi-Site/DR Solution Pack with synchronous replication.	Remote Copy; Asynchronous Replication with Bandwidth Throttling; Multi-Site/DR Solution Pack with synchronous replication.
	SmartClone	SmartClone
<b>Warranty (parts-labor-onsite)</b>	3/3/3	3/3/3
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13552_div/13552_div.pdf">http://h18000.www1.hp.com/products/quickspecs/13552_div/13552_div.pdf</a>	



**P4500 G2 14.4 TB SAS Virtualization SAN Solution**

For virtual environments, the P4500 G2 14.4 TB SAS Virtualization SAN offers optimized shared storage, cost effective high availability, scalable performance, and non-disruptive configuration changes.



**P4500 G2 28.8 TB SAS Multi-Site SAN Solution**

Simplify high availability with a cost effective P4500 G2 28.8 TB SAS Multi-Site SAN. Avoid downtime in the event of a site failure with a fully automated, synchronously replicated storage system.

<b>Drive Description</b>	24 LFF SAS Supported	48 LFF SAS Supported
<b>Drive Type</b>	600 GB 6G 15K LFF Dual-port ENT SAS 24 Included	600 GB 6G 15K LFF Dual-port ENT SAS 48 Included
<b>Capacity</b>	14.4 TB Starting 230.4 TB Maximum	28.8 TB Starting 230.4 TB Maximum
<b>Storage Expansion Options</b>	Use storage clustering capability and add incremental P4000 G2 Storage Systems into the SAN to expand storage capacity: HP StorageWorks P4500 G2 7.2 TB SAS Storage System	Use storage clustering capability and add incremental P4000 G2 Storage Systems into the SAN to expand storage capacity: HP StorageWorks P4500 G2 7.2 TB SAS Storage System
<b>Host Interface</b>	1 GbE iSCSI (4) Ports or; 10 Gb/sec iSCSI (4) Ports	1 GbE iSCSI (8) Ports or; 10 Gb/sec iSCSI (8) Ports
<b>Supported Operating Systems</b>	Apple OS X Citrix XenServer HP-UX IBM AIX Microsoft Windows 2003 Microsoft Windows 2008 Novell NetWare Oracle Enterprise Linux Red Hat Linux SUN Solaris SUSE Linux VMware <a href="http://www.hp.com/go/P4000Compatibility">www.hp.com/go/P4000Compatibility</a>	Apple OS X Citrix XenServer HP-UX IBM AIX Microsoft Windows 2003 Microsoft Windows 2008 Novell NetWare Oracle Enterprise Linux Red Hat Linux SUN Solaris SUSE Linux VMware <a href="http://www.hp.com/go/P4000Compatibility">www.hp.com/go/P4000Compatibility</a>
<b>All-inclusive Enterprise Feature Set based on SAN/iQ</b>	Hyper-redundant clustered storage	Hyper-redundant clustered storage
	Redundant, hot plug power supplies; redundant fans; redundant, hot plug hard drives, integrated storage controller with battery-backed DDR2 cache; disk RAID 5, 6, and 10; hyper-redundant clustered storage: Network RAID levels (per volume) 0, 5, 6, 10, 10+1, and 10+2 for up to four copies of your data allows data to remain available in the event of a disk, controller, storage node, power, network, or site failure.	Redundant, hot plug power supplies; redundant fans; redundant, hot plug hard drives, integrated storage controller with battery-backed DDR2 cache; disk RAID 5, 6, and 10; hyper-redundant clustered storage: Network RAID levels (per volume) 0, 5, 6, 10, 10+1, and 10+2 for up to four copies of your data allows data to remain available in the event of a disk, controller, storage node, power, network, or site failure.
	Thin Provisioning	Thin Provisioning
	Application Integrated Snapshots	Application Integrated Snapshots
	Remote Copy; Asynchronous Replication with Bandwidth Throttling; Multi-Site/DR Solution Pack with synchronous replication.	Remote Copy; Asynchronous Replication with Bandwidth Throttling; Multi-Site/DR Solution Pack with synchronous replication.
	SmartClone	SmartClone
Centralized Management Console, HP ProLiant Integrated Lights-Out 2 Remote Management, Baseboard Mgmt Controller IPMI 2.0	Centralized Management Console, HP ProLiant Integrated Lights-Out 2 Remote Management, Baseboard Mgmt Controller IPMI 2.0	
<b>Warranty (parts-labor-onsite)</b>	3/3/3	3/3/3
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13552_div/13552_div.pdf">http://h18000.www1.hp.com/products/quickspecs/13552_div/13552_div.pdf</a>	



**P4500 G2 120 TB MDL SAS Scalable Capacity SAN Solution**

Perfect for consolidating large Windows, Linux, Unix data volumes, the P4500 G2 MDL SAS 120 TB SAN delivers all the features required to simplify storage and grow your environment non-disruptively.



**P4800 G2 63 TB SAS BladeSystem SAN Solution**

Perfect for powering large Client Virtualization deployments, the P4800 G2 63 TB SAS BladeSystem SAN delivers leading storage flexibility, ease, \$/GB and storage density.

<b>Drive Description</b>	60 LFF MDL SAS	140 LFF SAS
<b>Drive Type</b>	2 TB 3G 7.2K LFF Dual-port MDL SAS 60 Included	450 GB 3G 15K LFF Dual-port SAS 140 Included
<b>Capacity</b>	120 TB Starting 360 TB Maximum	63 TB Starting 252 TB Maximum
<b>Storage Expansion Options</b>	Use storage clustering capability and add incremental P4000 G2 Storage Systems into the SAN to expand storage capacity: HP StorageWorks P4500 G2 24 TB MDL SAS Storage System	Use storage clustering capability and add incremental P4000 G2 Storage Systems into the SAN to expand storage capacity: P4800 G2 63 TB SAS BladeSystem SAN
<b>Host Interface</b>	1 Gb/sec iSCSI (20) Ports or; 10 Gb/sec iSCSI (5) Ports	3 Gb/sec SAS (8) Ports
<b>Supported Operating Systems</b>	Apple OS X Citrix XenServer HP-UX IBM AIX Microsoft Windows 2003 Microsoft Windows 2008 Novell NetWare Oracle Enterprise Linux Red Hat Linux SUN Solaris SUSE Linux VMware <a href="http://www.hp.com/go/P4000Compatibility">www.hp.com/go/P4000Compatibility</a>	Apple OS X Citrix XenServer HP-UX IBM AIX Microsoft Windows 2003 Microsoft Windows 2008 Novell NetWare Oracle Enterprise Linux Red Hat Linux SUN Solaris SUSE Linux VMware <a href="http://www.hp.com/go/P4000Compatibility">www.hp.com/go/P4000Compatibility</a>
<b>All-inclusive Enterprise Feature Set based on SAN/iQ</b>	Hyper-redundant clustered storage supported	Hyper-redundant clustered storage
	Redundant, hot plug power supplies; redundant fans; redundant, hot plug hard drives, integrated storage controller with battery-backed DDR2 cache; disk RAID 5, 6, and 10; hyper-redundant clustered storage: Network RAID levels (per volume) 0, 5, 6, 10, 10+1, and 10+2 for up to four copies of your data allows data to remain available in the event of a disk, controller, storage node, power, network, or site failure.	Redundant, hot plug power supplies; redundant fans; redundant, hot plug hard drives, integrated storage controller with battery-backed DDR2 cache; disk RAID 5, 6, and 10; hyper-redundant clustered storage: Network RAID levels (per volume) 0, 5, 6, 10, 10+1, and 10+2 for up to four copies of your data allows data to remain available in the event of a disk, controller, storage node, power, network, or site failure.
	Thin Provisioning	Thin Provisioning
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	Remote Copy; Asynchronous Replication with Bandwidth Throttling; Multi-Site/DR Solution Pack with synchronous replication.	Remote Copy; Asynchronous Replication with Bandwidth Throttling; Multi-Site/DR Solution Pack with synchronous replication.
	SmartClone	SmartClone
	Centralized Management Console, HP ProLiant Integrated Lights-Out 2 Remote Management, Baseboard Mgmt Controller IPMI 2.0.	Centralized Management Console, HP ProLiant Integrated Lights-Out 2 Remote Management, Baseboard Mgmt Controller IPMI 2.0.
<b>Warranty (parts-labor-onsite)</b>	3/3/3	3/3/3
<b>QuickSpec URL</b>	<a href="http://h18000.www1.hp.com/products/quickspecs/13552_div/13552_div.pdf">http://h18000.www1.hp.com/products/quickspecs/13552_div/13552_div.pdf</a>	

## HP StorageWorks P4000 1 or 2-node Unified NAS Gateway

This 1 or 2 node file server gateway adds Windows based file and print services to the P4000 SAN. All of your important client and server data can be managed, scaled, and protected on a P4000 SAN solution. Powered by the popular Windows Storage Server 2008, Enterprise x64 Edition, up to eight P4000 Unified NAS Gateways can be clustered together to enable high availability and scalable NAS performance.

The P4000 Unified NAS Gateway can host a variety of storage management applications. The P4000 Central Management Console and CLIQ are preinstalled. HP StorageWorks Command View EVA can be supported as well. Once you add a P4000 Unified NAS Gateway for file/iSCSI services, it's like getting an array or SAN manager for free.

### 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](http://www.hp.com/go/factoryexpress)

#### Technical training

Consider education as an integral part of your strategy to get a first-rate 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](http://www.hp.com/learn/storage)

## 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 fine-tune 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 Installation and Startup Service:** For StorageWorks P4000 SAN Solutions to help get your P4000 G2 SAN up and running quickly.

**HP Proactive Select Service:** To improve IT performance and manageability using cost effective flexible proactive services.

#### Related Services

**3-Year HP Proactive 24:** HP Proactive 24 Service is an integrated hardware/software support solution that combines industry-leading technical assistance with proactive account services to cover the entire IT infrastructure and to improve the stability, availability, and operational effectiveness of the IT environment.

**HP Entry Storage Data Migration Service for Windows:** This service 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>

## HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire, manage, and ultimately retire your 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)

To learn more about how you can manage your virtual environment and benefit from high availability of data, while still keeping costs low and mitigating your risks through HP StorageWorks P4000 G2 SAN Solutions, visit [www.hp.com/go/P4000](http://www.hp.com/go/P4000)

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