

# HP P10000 3PAR Storage Systems

Data sheet

**HP P10000 3PAR Storage Systems are designed to deliver enterprise IT as a resilient utility service in order to drive agility and efficiency in enterprise-class, virtual, and cloud data centers.**

## Introduction

Today's growing number of virtualized and cloud-ready environments host unpredictable application workloads—where capacity growth and workload demands are largely indeterminate, resistant to forecast, and can peak and trough without warning. HP 3PAR Storage Systems address existing demands while helping you consolidate storage environments flexibly. The next-generation HP 3PAR Storage Systems impart improved storage and power utilization, greater scalability, and simplified storage administration for the virtualized data center. With their distinct architectural advantages, thin hardware capabilities, interoperability, uncompromised availability, and superior performance, they revolutionize utility storage for enterprise-wide deployments.

## Are you looking for enterprise storage designed for virtual and cloud environments?

The new Tier 1 storage system for cloud computing, HP P10000 3PAR Storage Systems are designed to deliver enterprise IT as a utility service simply, efficiently, and flexibly. The arrays feature a tightly coupled clustered architecture, secure multi-tenancy, and mixed workload support to fuel enterprise-class virtual and cloud data centers. Use of unique thin technologies reduces acquisition and operational costs by up to 50 percent while autonomic management features improve administrative efficiency by up to tenfold. The HP 3PAR Gen4 ASIC in each of the system's controller nodes provides a hyper-efficient, silicon-based engine that



drives on-the-fly storage optimization to maximize capacity utilization while delivering high service levels. The arrays are built from the ground up to enable agile and efficient response to the changing business needs present in today's demanding data centers.

## Key Features and Benefits

### Increase business agility

- Massively scalable, dynamically tiered, multi-tenant P10000 3PAR arrays—part of the HP Converged Infrastructure—enable clients to overcome the rigidity and high costs of IT sprawl, so that resources can be shifted away from operations and toward innovation and strategic initiatives.
- Rapid, autonomic provisioning capabilities enable enterprise clients to reduce new project deployment windows and speed-up time-to-market for new applications and services.
- Autonomic service-level optimization through the use of optional HP 3PAR Dynamic Optimization and Adaptive Optimization software delivers the agility to react quickly to changing application and infrastructure requirements without the need for active management.
- HP 3PAR Thin Provisioning software enables the instantaneous deployment of new applications and provisioning of new clients without depending on the traditional storage purchasing cycle.
- Secure multi-tenancy supports the use of HP 3PAR Virtual Domains software (the first and only storage hypervisor-like technology on the market) to deliver customized, improved security features, and even “self-service” storage to multiple internal or external customers.



## Reduce total cost of ownership for storage by up to 50 percent

- Advanced internal virtualization, wide striping, and mixed workload support reduce physical capacity purchases, storage footprint, power usage, and cooling needs without compromising performance.
- The two HP 3PAR Gen4 ASICs with Thin Built In inside every controller node have the ability to drive silicon-based thin conversion to reduce legacy storage capacity requirements and reclaim allocated-but-unused capacity to maintain optimal capacity utilization.
- HP 3PAR Thin Provisioning software reduces capacity waste by allowing clients to purchase only the disk capacity they actually need, only when they actually need it for written data.
- Works with HP 3PAR Virtual Copy software, a reservationless, copy-on-write thin technology, to reduce the capacity associated with frequent disk-based snapshots and creates virtual copies that can be mounted and used instantly.
- Fast RAID 5 boosts RAID 5 performance to within 10 percent of RAID 1 but with significantly less capacity overhead; Fast RAID 6 (RAID MP) delivers enhanced protection while maintaining performance levels within 15 percent of RAID 10<sup>1</sup> and with capacity overheads comparable to popular RAID 5.

## Increase administrative efficiency by up to tenfold building block for cloud computing

- The HP 3PAR InForm Operating System software that runs on all HP 3PAR arrays provides dramatically simplified, autonomic provisioning and management that relieves administrators of tedious manual administration and reduces the potential for error.
- The HP 3PAR Thin Provisioning software does away with array planning by enabling administrators to provision storage just once for the lifetime of an application.
- The simple, unified HP 3PAR Management Console and an extremely powerful and scriptable Command Line Interface (CLI) offer industry-leading ease-of-use, including the ability to configure multi-mode, multi-site disaster recovery in minutes.
- Integration with HP CloudSystem Matrix provides a simplified way to provision and scale storage for public and private cloud environments.
- HP 3PAR Dynamic Optimization and Adaptive Optimization software enables P10000 3PAR systems to meet service level changes autonomically, intelligently, and without active management.

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<sup>1</sup> Green Storage (link to—<http://h18006.www1.hp.com/storage/solutions/3par/technologies.html#gs>)

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## Technical Specifications

Product name	HP P10000 3PAR Storage Systems
Drive description	LFF Fibre Channel/SATA/SSD Serial Attached SCSI (SAS) ready
Drive type	100 GB Solid State Drive 200 GB Solid State Drive 300 GB 15K Fibre Channel 600 GB 15K Fibre Channel 2 TB 3G 7.2K LFF SATA 1920 maximum supported, depending on model
Capacity	800 TB maximum for V400 1.6 PB maximum for V800
Host interface	8 Gb/sec Fibre Channel (192) Ports Maximum, depending on model. 10Gb/s iSCSI and FCoE (available soon)
Type and number of disk enclosures	(48) 3PAR 40-drive chassis Maximum, depending on model
Drives per enclosure	40 Maximum supported None included
Cache	768 GB Maximum, depending on model
Storage controllers	(8) HP P10000 3PAR quad-core 2.8 GHz Controller Node Maximum supported, depending on model

## Technical Specifications (Contd.)

<b>Compatible operating systems</b>	Microsoft® Windows® 2008 Microsoft Windows 2003 Hyper-V Oracle Enterprise Linux HP-UX Citrix XenServer Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) IBM AIX NetApp Data ONTAP Oracle Solaris VMware ESX, ESXi 4.0 Update 1 and vSphere 5.0 SSH is supported for CLI HP 3PAR InForm CIM API
<b>Warranty</b>	3-year parts, 3-year labor, 3-year onsite support

## The Total Package—software

**The HP 3PAR InForm Operating System software:** HP 3PAR InForm OS comes installed on the HP 3PAR Storage System. The HP 3PAR InForm OS includes a collection of advanced internal virtualization capabilities to increase storage efficiency and reduce administration time.

**The HP 3PAR Peer Motion software:** With HP 3PAR Peer Motion, customers can load balance I/O workloads across systems at will, perform technology refresh seamlessly, cost-optimize asset lifecycle management, and lower technology refresh capital expenditure.

**HP 3PAR Thin Suite software:** A suite of three software titles that increase efficiency and cut costs based on the HP 3PAR Gen4 Thin Built In ASIC, allowing storage to start thin, get thin, and stay thin. Thin Provisioning is an autonomic and efficient software solution that enables you to start thin by purchasing capacity only as your applications truly require it for written data. Thin Conversion converts traditional “fat” volumes to thin more efficient volumes, so data can get thin. Thin Persistence keeps data thin over time by deleting unused and stranded capacity, allowing storage to stay thin.

**HP 3PAR Optimization Suite software:** Three software titles that optimize service levels autonomically, affordably, and on a large scale. Dynamic Optimization is an autonomic storage tiering tool that allows non-disruptive distribution and redistribution application volumes across tiers to align application requirements with data QoS levels on demand. Adaptive optimization offer fine-grained, sub-volume, autonomic tiering, and System Tuner maintains balanced performance non-disruptively.

**HP 3PAR Virtual Copy software:** Built on thin copy technology, HP 3PAR Virtual Copy software is a reservationless, non-duplicative snapshot product that allows you to affordably protect and share data from any application.

**HP 3PAR Remote Copy software:** Built on thin copy technology, HP 3PAR Remote Copy software delivers a solution that dramatically simplifies remote data replication and disaster recovery in the most flexible and cost-effective way possible.

**HP 3PAR GeoCluster software:** HP 3PAR GeoCluster software provides an automated disaster recovery solution for HP 3PAR Storage Systems, reducing administration and recovery times in a Microsoft Windows environment.

**HP Cluster Extension software:** This solution protects against system downtime with automatic failover of application services and read/write enabling of remotely mirrored storage over metropolitan distances.

**HP Serviceguard:** Increase uptime in HP-UX environments with HP Serviceguard support for MetroCluster and Continental Clusters synchronous replication and automated failover for rapid recovery.

**HP 3PAR Recovery Manager Software:** Available for Microsoft Exchange, Microsoft SQL, Oracle and VMware vSphere, Recovery Manager software provides rapid, efficient online backup and recovery for these major business applications.

QuickSpec URLs: [http://h18004.www1.hp.com/products/quickspecs/14103\\_div/14103\\_div.pdf](http://h18004.www1.hp.com/products/quickspecs/14103_div/14103_div.pdf)

## 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 to speed deployment. 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. Visit: [www.hp.com/learn/storage](http://www.hp.com/learn/storage)

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<sup>2</sup> For storage used by business critical applications running on virtualized and x86 infrastructures. 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.

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## 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 3PAR Storage System Installation and Startup Service
- 3-Year HP Critical Service or HP Critical Advantage Level 3 with additional 60 CA flexible credits<sup>2</sup>
- Optional related services: HP Storage Data Migration; HP Enhanced Implementation Service for SANs
- HP 3PAR Storage Assessment Service

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

- HP 3PAR Storage System Installation and Startup Service
- 3-Year HP Proactive 24 Service or HP Critical Advantage Level 2 with additional 30 CA flexible credits<sup>2</sup>
- Optional related service: HP Storage Data Migration; HP Enhanced Implementation Service for SANs
- HP 3PAR Storage Assessment Service

**Basic Care:** Minimum recommended support

- HP 3PAR Storage System Installation and Startup Service
- 3-Year HP Support Plus 24 Plus, 30 Proactive Select credits
- Optional related service: HP Storage Data Migration; HP Enhanced Implementation Service for SANs
- HP 3PAR Storage Assessment Service

For more information, visit <http://www.hp.com/services/storage>.

Delivering enterprise IT as a utility service simply, efficiently, and flexibly. Cut your business costs; arm yourself with HP 3PAR Storage Systems to battle sprawl, visit [www.hp.com/go/p10000](http://www.hp.com/go/p10000).



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