

Data sheet

# HP 3PAR StoreServ 10000 Storage



Setting a new standard



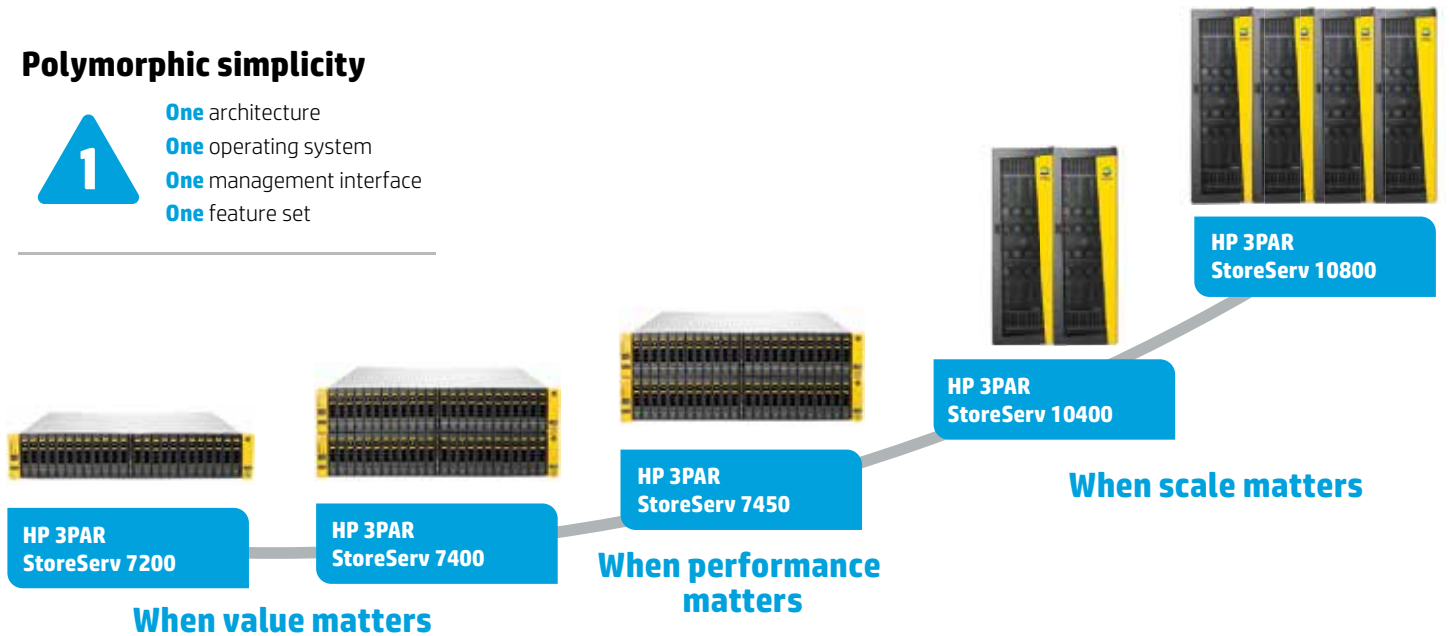
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Today's virtualized and cloud-ready environments need to host unpredictable application workloads—where capacity growth and workload demands are largely indeterminate, resistant to forecast, and can peak and trough without warning.

HP 3PAR StoreServ 10000 Storage is designed from the ground up to address existing growth and workload demands while helping you flexibly consolidate your storage to enhance your business agility. It imparts improved storage and power utilization, greater scalability, and simplified storage administration for the virtualized data center.

With its distinct architectural advantages, thin hardware capabilities, interoperability, uncompromised resiliency, high availability, and superior performance, it revolutionizes Tier 1 storage for the enterprise.

Figure 1. HP 3PAR StoreServ Storage



## Enterprise storage designed for virtual and cloud environments

The Tier 1 storage for cloud computing, HP 3PAR StoreServ 10000 Storage is designed to deliver enterprise IT as a service—simply, efficiently, and flexibly. Arrays feature a tightly coupled, clustered Mesh-Active architecture, secure multitenancy, 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. A flash-optimized architecture delivers the necessary I/O performance and workload agility to remove storage as a bottleneck in virtualized environments and allows you to double VM density on your physical servers.<sup>1</sup> The HP 3PAR StoreServ Gen4 ASIC in each of the system's controller nodes provides a hyper-efficient, silicon-based engine for autonomic space reclamation so that your thin storage remains capacity- and cost-efficient over time.

### Key features and benefits

#### Increase business agility

- Massively scalable, dynamically tiered, and multitenant, enabling clients to overcome the rigidity and high costs of IT sprawl
- Rapid, autonomic provisioning capabilities 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 to adapt to changing application and infrastructure requirements without active management
- Consolidate more applications on less infrastructure while delivering predictable performance to meet your SLAs
- Manage the performance of individual applications to eliminate contention and ensure performance is delivered where you need it most in multitenant environments through HP Priority Optimization
- Instantaneously deploy new applications and provision new clients without depending on the traditional storage purchasing cycle with HP 3PAR Thin Provisioning
- Support customized, improved security features, and even deliver “self-service” storage to multiple internal or external customers via optional HP 3PAR Virtual Domains software
- Protect against unauthorized access to data on HDDs and SSDs—including media or hardware theft—not just during usable drive life, but into retirement and even in the event of drive failure—with HP 3PAR StoreServ Data-at-Rest Encryption solutions

<sup>1</sup> See <http://www8.hp.com/us/en/products/data-storage/data-storage-products.html?compURI=1284456>

### **Reduce TCO for storage by up to 50 percent**

- Advanced internal virtualization, system-wide striping, and mixed-workload support reduce physical capacity purchases, storage footprint, power usage, and cooling needs without compromising performance
- HP 3PAR StoreServ Gen4 Thin Built In ASICs 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
- Platform innovations enhance media endurance to extend the life of your SSDs so you can get the most out of every dollar and I/O for increased storage return on investment (ROI)
- HP 3PAR Virtual Copy software reduces 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 and with capacity overheads comparable to popular RAID 5

### **Increase administrative efficiency by up to tenfold**

- HP 3PAR Operating System software provides dramatically simplified, autonomic provisioning and management that relieves administrators of tedious manual administration and reduces the potential for error
- 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 CLI offer industry-leading ease of use, including the ability to configure multimode, multisite disaster recovery in minutes
- Open administration support is provided via Simple Network Management Protocol (SNMP), Storage Management Initiative Specification (SMI-S), and a Web Services API
- 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 enable HP 3PAR StoreServ 10000 Storage to meet service level changes autonomically, intelligently, and without active management

### **Easily consolidate your siloed file servers**

- HP 3PAR StoreServ File Services allows you to provision file shares and block volumes from a single user interface on a common addressable pool of thin-provisioned 3PAR StoreServ Storage for high capacity utilization
- Autonomic reclamation of capacity for new block or file data as files are deleted by users with fully integrated HP 3PAR Thin Reclamation
- Provides nonintrusive data deduplication, with an average 50 to 60 percent space savings for file shares
- Automatically optimizes file resource use, thanks to advanced file classification features that drive data retention policy compliance and apply added security to sensitive files
- A single platform capable of supporting thousands of users concurrently accessing file data
- A single management experience for file, block, and even object storage needs as they arise
- One architecture and a single stack for HDDs, SSDs, or a mixture of both

## Technical specifications

	<b>HP 3PAR StoreServ 10400</b>	<b>HP 3PAR StoreServ 10800</b>
<b>Drive description</b>	SFF SAS LFF Fibre Channel/ SATA/SAS/Nearline SAS/SSD	SFF SAS LFF Fibre Channel/ SATA/SAS/Nearline SAS/SSD
<b>Drive type</b>	100 GB SFF SAS SLC SSD 200 GB SFF SAS SLC SSD 400 GB SFF SAS MLC SSD 300 GB 15k LFF FC 600 GB 15k LFF FC 1 TB 3G 7.2k LFF SATA 2 TB 3G 7.2k LFF SATA 300 GB 15k SFF SAS 450 GB 10k SFF SAS 900 GB 10k SFF SAS 2 TB 7.2k LFF SAS (960) maximum supported	100 GB SFF SAS SLC SSD 200 GB SFF SAS SLC SSD 400 GB SFF SAS MLC SSD 300 GB 15k LFF FC 600 GB 15k LFF FC 1 TB 3G 7.2k LFF SATA 2 TB 3G 7.2k LFF SATA 300 GB 15k SFF SAS 450 GB 10k SFF SAS 900 GB 10k SFF SAS 2 TB 7.2k LFF SAS (1920) maximum supported
<b>Capacity</b>	1.1 PB	2.2 PB
<b>Host interface</b>	8 Gb/s Fibre Channel (96) ports; or 10 Gb/s iSCSI (16) ports, and 8 Gb/s Fibre Channel (80) ports	8 Gb/s Fibre Channel (192) ports; or 10 Gb/s iSCSI (32) ports, and 8 Gb/s Fibre Channel (160) ports
<b>Type and number of disk enclosures</b>	(24) HP 3PAR StoreServ 40-drive chassis	(48) HP 3PAR StoreServ 40-drive chassis
<b>Drives per enclosure</b>	40	40
<b>Cache</b>	16 GB control and 32 GB data included per node	32 GB control and 64 GB data included per node
<b>Storage controllers</b>	Up to four 10400 quad-core 2.8 GHz Controller Nodes	Up to eight 10800 quad-core 2.8 GHz Controller Nodes
<b>Warranty (parts-labor-onsite)</b>	3/3/3	3/3/3

## Software suites for HP 3PAR StoreServ Storage

HP 3PAR StoreServ Storage supports the same operating system and software offerings as the other members of the HP 3PAR StoreServ family. As with all HP 3PAR StoreServ Storage systems, you have the opportunity to purchase software bundled into a series of suites designed to simplify purchasing and save you money. Selected software titles may also be purchased separately, as indicated below.

<b>HP 3PAR Operating System Software Suite</b>	Required for all new HP 3PAR StoreServ systems, this foundational software suite gives you everything you need to get up and running quickly and efficiently. This suite includes the HP 3PAR Operating System, HP 3PAR Management Console, and HP 3PAR Host Explorer—software designed to get you off to a quick start with your new HP 3PAR StoreServ system. It also includes all of the platform’s thin software offerings— HP 3PAR Thin Provisioning, HP 3PAR Thin Conversion, and HP 3PAR Thin Persistence. Other highlights of this suite include HP 3PAR Full Copy, autonomic rebalancing capabilities that help you get optimal use out of future capacity expansions, and support for standard multipathing software for high availability in clustered environments. A 180-day license for online import is included to enable migration from HP EVA Storage.
<b>HP 3PAR Replication Software Suite</b>	This optional suite bundles HP 3PAR Virtual Copy with HP 3PAR Remote Copy Software, both also sold separately for all HP 3PAR StoreServ models. Included in this bundle is Peer Persistence, which enables peer federation for VMware clusters to improve overall availability. Licensed based on system capacity.
<b>HP 3PAR Data Optimization Software Suite</b>	This optional software bundle combines HP 3PAR Dynamic Optimization, HP 3PAR Adaptive Optimization, HP 3PAR Peer Motion, and HP 3PAR Priority Optimization Software so you can move data and workloads between arrays without impacting applications, users, or services. Licensed based on system capacity, the four software titles bundled in this suite are also sold separately for all HP 3PAR StoreServ models. Depending on purchase date, titles included in this suite may vary. Check the <a href="#">HP 3PAR Software QuickSpec</a> for complete details. For the 10000 models only, the HP 3PAR Optimization Suite is available and includes Adaptive Optimization and Dynamic Optimization.
<b>HP 3PAR Security Software Suite</b>	This optional suite bundles HP 3PAR Virtual Domains and HP 3PAR Virtual Lock Software, both also sold separately for all HP 3PAR StoreServ models. With this suite, you can segregate access and deliver robust storage services for different applications and user groups with additional security attached to the retention of storage volumes. Licensed based on system capacity.
<b>HP 3PAR Application Software Suite for VMware</b>	Everything you need to make your VMware environment more agile and efficient—including HP 3PAR Recovery Manager for VMware, Host Explorer for VMware, vSphere APIs for Storage Awareness (VASA) support, and three essential plug-ins: the VMware Site Replication Manager (SRM) Adapter, the HP 3PAR VAAI Plug-in, and the HP 3PAR Management Plug-in for VMware View. This suite is optional and licensed on a per-system basis.
<b>HP 3PAR Application Software Suite for Hyper-V</b>	Protect your Microsoft® Hyper-V environment with HP 3PAR Recovery Manager for Microsoft Hyper-V and the HP 3PAR VSS Provider Software, included in this optional suite and licensed on a per-system basis.
<b>HP 3PAR Application Software Suite for Exchange</b>	This bundle gives you the essentials for use with Microsoft Exchange, including HP 3PAR Recovery Manager for Exchange and the VSS Provider Software. This suite is optional and licensed on a per-system basis.
<b>HP 3PAR Application Software Suite for Oracle</b>	Everything you need for protecting Oracle databases, including HP 3PAR Recovery Manager for Oracle and Oracle space reclamation capabilities, sold as an optional suite and licensed on a per-system basis.
<b>HP 3PAR Application Software Suite for SQL</b>	Protect Microsoft SQL databases with HP 3PAR Recovery Manager for Microsoft SQL and the HP 3PAR VSS Provider software, bundled with this optional suite and licensed on a per-system basis.
<b>HP 3PAR Reporting Software Suite</b>	Enhance system visibility and reporting capabilities with this optional suite, which includes HP 3PAR System Reporter software and the HP 3PARinfo application, licensed on a per-system basis.

Customize your IT lifecycle management, from acquisition of new IT, management of existing assets, and removal of unneeded equipment. [hp.com/go/hpfinancialservices](http://hp.com/go/hpfinancialservices)

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

## Customer technical training

Gain the skills you need with ExpertOne training and certification from HP. With HP Converged Storage training, you will accelerate your technology transition, improve operational performance, and get the best return on your HP investment. Our training is available when and where you need it, through flexible delivery options and a global training capability. Visit [hp.com/learn/storage](http://hp.com/learn/storage).

## HP Technology Services for HP 3PAR StoreServ Storage

Choose from a rich portfolio of services to make the most of HP Storage, so you can move with confidence to take full advantage of the broadest, most advanced portfolio in the industry.

**Discover, plan, and design**—understand your options and build it right from day one:

- HP Backup Recovery Efficiency Analysis
- HP Backup Recovery Impact Analysis
- HP Backup Recovery Modernization
- HP Storage Cloud Design Service

**Deploy and integrate**—increase uptime and decrease risk as you free up your resources:

- HP 3PAR StoreServ Storage Installation and Startup Service
- HP 3PAR Software Installation and Startup Service
- HP EVA to HP 3PAR StoreServ Acceleration Service
- HP Data Replication Solution Service
- HP Enhanced Implementation Service for SANs
- HP 3PAR Adaptive Optimization Policy Implementation Service
- HP Storage Virtual Volume Design and Implementation Service
- HP Thin Volume Conversion Service
- HP 3PAR StoreServ Health Check
- HP Performance Analysis Service
- HP 3PAR Rebalance Service
- HP 3PAR Storage Assessment Service
- HP Proactive Select



Take five minutes to calculate the potential three-year cost savings and ROI you can expect by migrating from your current storage to an HP 3PAR StoreServ solution. [Click here](#) to go to the HP Storage Quick ROI Calculator.

**Operate and support**—meet service level agreements (SLAs) with the right support level. Choose from three levels of operate and support care:

- **Optimized Care**—delivers the highest levels of performance and stability through deployment and proactive management practices  
HP Critical Service  
Additional options: 10 HP Proactive Select credits per year, per array
- **Standard Care**—maintains a high level of uptime, along with expert help to cut the cost and complexity of implementation and support:  
HP Proactive Care 24x7—plus, 20 credits per year, per array  
Additional options: HP Proactive Care Personalized Support (once per each new Proactive Care support environment), HP Personalized Support Additional Day, and an additional 10 HP Proactive Select credits per year, per array
- **Basic Care**—minimum recommended support  
Proactive Care 24x7—plus, 10 credits per year, per array  
Additional options: 10 Proactive Select credits per year, per array

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 [hp.com/services/storage](http://hp.com/services/storage).

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