

HP 3PAR F-CLASS AND T-CLASS STORAGE SYSTEMS

Family data sheet

HP 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.

While the HP 3PAR F-Class makes an ideal midrange storage platform, the high-end HP 3PAR T-Class offers powerful array-based virtualization, delivering enterprise IT as a utility service. With their distinct architectural advantages, thin hardware capabilities, interoperability, uncompromised availability, and superior performance, HP 3PAR Storage Systems revolutionize utility storage for both midsized and enterprise-wide deployments.

HP 3PAR T-Class Storage Systems

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

HP 3PAR T-Class Storage Systems are designed to deliver enterprise IT as a utility service simply, efficiently, and flexibly. T-Class arrays feature a tightly coupled clustered architecture, secure multitenancy, and mixed workload support to fuel enterprise-class virtual and cloud data centers. The use of unique thin technologies reduces acquisition and operational costs by up

to 50 percent,¹ while autonomic management features improve administrative efficiency by up to tenfold.² The HP 3PAR Gen3 ASIC in each of the system's controller nodes provides a hyperefficient, silicon-based engine that drives on-the-fly storage optimization to increase capacity utilization while delivering high service levels. T-Class arrays are built from the ground up to enable an agile and efficient response to the changing business needs present in today's demanding data centers.

HP 3PAR F-Class Storage Systems

Are you looking for midrange storage that doesn't force compromises?

Midrange storage customers are often asked to compromise on scalability and availability because of budgetary constraints. Consolidation and virtualization initiatives place demands on storage that traditional midrange arrays are not designed to meet. Purchasing premium-priced monolithic arrays is one solution to this dilemma, but it is not always an economically viable option. HP 3PAR F-Class Storage Systems overcome the limitations of midrange arrays, offering the same pioneering HP 3PAR Architecture, Mesh-Active controller technology, secure multitenancy, and mixed workload support as HP 3PAR T-Class Storage Systems, but in a scaled-down, quad-controller-capable array.

Purchase 50 percent fewer systems.³ Reduce capacity, power, cooling, and floor space by up to 75 percent.⁴ Increase administrative efficiency by up to tenfold.⁵ Your results may vary—all without compromising performance, scalability, or availability.

^{1, 2, 3} TechValidate research on HP 3PAR Utility Storage, www.techvalidate.com/product-research/3par-utility-storage/facts

⁴ HP 3PAR Thin Guarantee flyer, <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-4015ENW.pdf>

⁵ Using HP 3PAR Thin Provisioning software, <http://h18006.www1.hp.com/storage/solutions/3par/technologies.html#tt>



Key features and benefits

Increase business agility

- Massively scalable, dynamically tiered, multitenant HP 3PAR arrays—part of the HP Converged Infrastructure—enable clients to overcome the inflexibility 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 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 (optional) enables the instantaneous deployment of new applications and provisioning of new clients without depending on the traditional storage purchasing cycle.
- Secure multitenancy supports the use of optional HP 3PAR Virtual Domains software (the first and only storage hypervisor-like technology on the market) to deliver customized, secure, and even “self-service” storage to multiple internal or external customers.

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



Calculate your potential savings from migrating your current storage systems to HP 3PAR systems, using our Savings Calculator. Click here to check your savings...

<https://alinean.austin.hp.com/roianalyst/AutoLogin.do?d=367474359620691270>

- Advanced internal virtualization, wide striping, and mixed workload support reduce physical capacity purchases, storage footprint, power usage, and cooling needs without compromising performance.

- HP 3PAR Gen3 ASIC, with Thin Built In technology inside every controller node, has the ability to drive silicon-based thin conversion to reduce legacy storage capacity requirements and reclaim allocated-but-unused capacity to maintain enhanced capacity utilization.
- Optional HP 3PAR Thin Provisioning software reduces capacity waste by allowing clients to purchase only the disk capacity as and when they actually need it for written data.
- The storage systems work with optional HP 3PAR Virtual Copy software, a reservationless, copy-on-write thin technology, to reduce the capacity associated with frequent disk-based snapshots and create 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 10⁶ and with capacity overheads comparable to popular RAID 5.

Increase administrative efficiency by up to tenfold

- The HP 3PAR Inform Operating System software, which runs on all HP 3PAR arrays, provides dramatically simplified autonomic provisioning and management to relieve administrators of tedious manual administration and reduce the potential for error.
- The HP 3PAR Thin Provisioning software (optional) 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 multimode, multisite disaster recovery in minutes.
- Integration with HP CloudSystem and HP BladeSystem Matrix provides a simplified way to provision and scale storage for public and private cloud environments.
- HP 3PAR Dynamic Optimization software and Adaptive Optimization software (optional) enable HP 3PAR systems to meet service-level changes autonomically, without active management.

Storage performance improved 24-fold, backup times reduced by 75 percent, storage footprint consolidated by 66 percent, and storage administration time cut by 90 percent—find out how we made history on Wall Street with the HP 3PAR Storage System:

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA1-6517ENW.pdf>

⁶ Green Storage, <http://h18006.www1.hp.com/storage/solutions/3par/technologies.html#gs>

Technical specifications

	HP 3PAR T-Class Storage Systems	HP 3PAR F-Class Storage Systems
Drive description	Large form factor (LFF) Fibre Channel/SATA/solid-state disk (SSD)	LFF Fibre Channel/SATA/SSD
Drive type	300 GB 15k Fibre Channel 600 GB 15k Fibre Channel 1 TB 3G 7.2k LFF SATA 2 TB 3G 7.2k LFF SATA 50 GB SSD 100 GB SSD 200 GB SSD 1,280 maximum, depending on the model None included	300 GB 15k Fibre Channel 600 GB 15k Fibre Channel 1 TB 3G 7.2k LFF SATA 2 TB 3G 7.2k LFF SATA 50 GB SSD 100 GB SSD 200 GB SSD 384 maximum, depending on the model None included
Capacity	800 TB raw Maximum, depending on the model None included	384 TB maximum, depending on the model None included
Host interface	4 Gb Fibre Channel (128) ports; or 1 Gb iSCSI (32) ports Maximum, depending on the model None included	4 Gb Fibre Channel (24) ports; or 1 Gb iSCSI (16) ports Maximum, depending on the model None included
Type and number of disk enclosures	(32) HP 3PAR 40-drive chassis Maximum None included	(24) HP 3PAR 16-drive chassis Maximum, depending on the model None included
Drives per enclosure	40 Maximum, depending on the model	16 Maximum
Cache	96 GB data cache maximum, depending on the model	24 GB data cache maximum, 16 GB control cache maximum, depending on the model
Storage controllers	(8) HP 3PAR Dual-core 2.33 GHz T-Class Controller Node Maximum, depending on the model	(4) HP 3PAR 2.33 GHz F-Class Controller Node Maximum, depending on the model
Compatible operating systems	Microsoft® Windows® Server 2008 Microsoft Windows Hyper-V Oracle Enterprise Linux HP-UX Citrix XenServer Red Hat Enterprise Linux SUSE Linux Enterprise Server IBM AIX Egenera PAN Manager NetApp Data ONTAP ONStor EverON Oracle Solaris VMware ESX and ESXi SSH is supported for CLI. HP 3PAR InForm CIM API and SNMP are also supported.	
Warranty	3-year parts, 3-year labor, 3-year onsite support	

The total package—software

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.

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 thinner, 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 Dynamic Optimization software: Aligning application requirements with data quality-of-service (QoS) levels on demand, HP 3PAR Dynamic Optimization software is an autonomic storage tiering tool that allows nondisruptive distribution and redistribution application volumes across tiers.

HP 3PAR Adaptive Optimization software: The HP 3PAR Adaptive Optimization Software takes a fine-grained, highly automated approach to service-level optimization. Policy-driven, granular data movement takes place autonomically, providing highly reliable, nondisruptive, cost-optimized storage tiering at the subvolume level to deliver the right QoS to the right data at the right time on a large scale.

HP 3PAR System Tuner software: Maintaining peak performance without impacting service levels or changing pre-existing service-level characteristics such as RAID level, HP 3PAR System Tuner Software autonomically and nondisruptively detects potential bottlenecks and hotspots then rebalances volumes.

HP 3PAR Virtual Copy software: Built on thin copy technology, HP 3PAR Virtual Copy software is a reservationless, nonduplicative 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 one of the most flexible and cost-effective ways 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 Continentalclusters 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.

QuickSpecs URLs

http://h18000.www1.hp.com/products/quickspecs/13883_div/13883_div.pdf

http://h18000.www1.hp.com/products/quickspecs/13884_div/13884_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.

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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.

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Redefining storage solutions for enterprise clouds and for midrange enterprises

To learn how HP 3PAR Storage Systems can help your business cut costs, visit www.hp.com/go/3PAR.

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 better 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*

Optional related service: HP Storage Data Migration; HP Enhanced Implementation Service for SANs; HP 3PAR Storage Assessment Service

Standard Care: maintains a 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*

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 www.hp.com/services/storage.

* 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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