

## Key features and benefits

### Simplify and automate storage management with QoS

- Rapid, autonomic provisioning capabilities for non-disruptive optimization
- Autonomic service-level optimization through sub-volume tiering
- Open administration support through SMI-S, Web Services API, and OpenStack®
- Integration with HPE ConvergedSystem for additional management orchestration

### Massive consolidation of unpredictable mixed workloads

- Double VM density with a flash-optimized architecture
- Securely support multiple tenants from a single array with a Mesh-Active cluster
- "Six nines" data availability with a suite of persistent technologies
- Flexible and efficient replication for multisite disaster recovery
- Assure service levels for critical applications with QoS

- Protect against unauthorized access to data with Data-at-Rest Encryption solutions

### Optimize storage across systems and sites

- Cut capacity requirements by up to 75% with hardware enabled thin technologies without compromising performance
- Painless, no-cost migration from EMC arrays
- Online, non-disruptive data placement across all HPE 3PAR StoreServ Storage systems ensures efficient use of storage resources
- Storage federation enables data mobility and load balancing at will
- Polymorphic simplicity across Tier-1, midrange, and flash-based storage

### Thin-deduplication increases capacity efficiency without compromising performance

- Inline deduplication lowers flash cost by saving capacity up front without the need for any storage pools or post-processing
- Avoids unnecessary writes to flash media extending its life
- Integration with Peer Motion increases storage efficiency across systems

# HPE 3PAR StoreServ 10000 Storage

## Raising the bar

### Platinum standard for Modern Tier-1 Storage

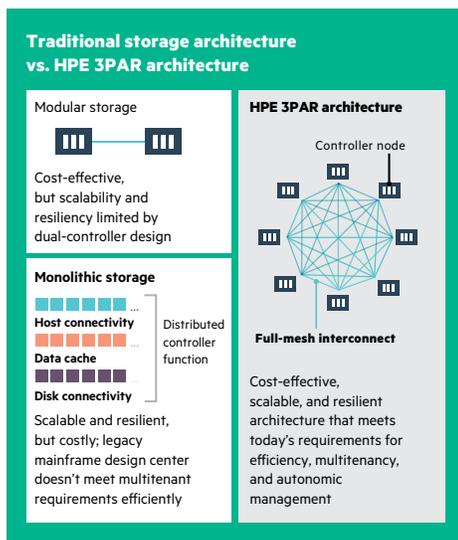
Have Cloud and IT as a Service (ITaaS) environments forced you to settle for Tier-1 storage that compromise agility and efficiency? Does your business suffer when storage can't scale to meet the needs of a cloud-based service delivery, or application performance can't keep up with demand, or complex disaster recovery can't eliminate the chance of downtime?

HPE 3PAR StoreServ Storage is the platinum standard for Tier-1 storage to meet the need of hybrid and private cloud and ITaaS environments delivering autonomic, efficient, multitenant, and federated storage. Achieve six nines availability with the same trusted and proven architecture chosen by 3 out of 4 of the world's largest managed service providers (MSPs). Double VM density on your physical servers through a flash-optimized architecture designed to deliver the necessary I/O performance and workload agility to remove storage as a bottleneck in virtualized environments. Reduce administration by 90 percent with self-configuring, self-provisioning, and self-optimized automation.

HPE 3PAR StoreServ 10000 Storage features a tightly coupled, clustered Mesh-Active architecture, secure multitenancy, and mixed

workload support to fuel Modern IT and Cloud environments (figure 1). You'll get on-the-fly storage optimization to maximize capacity utilization while delivering high service levels. You'll get assured Quality of Service (QoS) levels to an application, workload, or tenant without having to physically partition resources. You get unique thin technologies to reduce acquisition and operational costs by up to 50 percent guaranteed.<sup>1</sup> You'll be able to dramatically reduce the cost and complexity of a disaster recovery program with highly efficient replication, set up and tested in minutes, across any HPE 3PAR StoreServ model. You'll get an array built from the ground up to enable agile and efficient response to the changing business needs present in today's most demanding data centers.

The HPE 3PAR Operating System Suite that comes with HPE 3PAR StoreServ 10000 Storage includes everything you need to get started, including HPE 3PAR Thin Technologies. Optional software suites are also available offering unmatched Tier-1 services including advanced data optimization, replication, security, reporting, and application integration. It's storage that delivers resilience to eliminate chance of downtime, scalability to ensure investment protection, and performance to support stringent service-level agreements (SLAs) tied to multiple dynamic application and workloads.



**Figure 1.** Traditional storage architecture vs. HPE 3PAR architecture

## Managing storage shouldn't require dedicated experts

Gone are the days of employing armies of specialists who did capacity planning and implementation. Server virtualization, ITaaS, and cloud-based service delivery models have made for extremely active, unpredictable, and variable demands upon storage. You need a Modern Tier-1 Storage infrastructure that can scale to petabyte levels with dynamic provisioning tools and automated QoS software to manage things for you.

The HPE 3PAR Operating Systems helps simplify, automate, and expedite storage management by handling provisioning, tiering, and change management without administrator intervention. HPE 3PAR StoreServ automatically constructs volumes intelligently, based on available resources. This stands in contrast to manual provisioning approaches that require planning and manual addition of capacity to intermediary pools. HPE 3PAR StoreServ eliminates the learning curve and slashes storage management overhead.

Provisioning is managed intelligently and autonomically. Massively parallel and fine-grained striping of data across internal resources assures high and predictable service levels for all workload types. Service conditions remain high and predictable even as use of the system grows or in the event of a component failure while traditional storage planning, change management, and array-specific professional services are eliminated.

HPE 3PAR Operating System automatically creates a balanced system layout by mapping virtual volumes to many logical disks, and creating logical disks from chunklets drawn from many physical disks. As new hardware, drives, cages, and nodes are added to a system the existing data can be laid out to use the new components and benefits from additional system-wide striping.

Policy-driven, autonomic storage tiering technologies balance cost and performance to meet service-level requirements for the lowest cost, while increasing business agility and mitigating risk. For example, HPE 3PAR Adaptive Optimization software leverages a proven, fine-grained data movement engine and applies it to independent regions within a volume to deliver highly reliable, non-disruptive, autonomic-tiered storage to provide the right QoS to the right data at the right time so you can meet service level targets.

## Lower costs and meet today's demanding Tier-1 requirements

Industry-leading thin technologies reduce capacity requirements with HPE 3PAR StoreServ 10000 Storage by eliminating over-provisioning and providing fast and simple space reclamation. HPE 3PAR Gen4 ASICs in each controller node not only deliver mixed workload support, but provide the high-performance engine behind the system's unique thin technologies, allowing you to purchase 50 percent less storage to meet your application requirements—without compromising performance or utilization. With HPE 3PAR StoreServ Storage, you can save on the cost of a storage technology refresh and then maximize storage ROI over time by keeping incremental purchases, administration, and operating costs to a minimum. In fact, the HPE Get Thin Guarantee promises a minimum 50 percent reduction in capacity requirements when you replace legacy storage with HPE 3PAR StoreServ Storage—guaranteed.<sup>2</sup>

<sup>1, 2</sup> Subject to qualification and compliance with the HPE 3PAR Get Thin Guarantee Program Terms and Conditions, which will be provided by your HPE Sales or Channel Partner representative.

## Accelerate performance with a flash-optimized architecture featuring inline deduplication

Meet even the most stringent SLAs with performance acceleration for your most frequently accessed data. A flash-optimized architecture enables optimal performance of flash-based SSDs while block-level storage tiering and mixed workload optimization enable high levels of performance for both spinning and non-spinning media. As a result, you can put more applications on the same storage to lower total infrastructure cost. Unlike traditional arrays that require you to “scale up” to support growth or increase performance, the platform’s clustered, Mesh-Active design, with fine-grained virtualization and system-wide striping, delivers capacity and performance that scales up to 3.2 PB even at extremely high capacity utilization levels.

A feature of the 3PAR OS, HPE 3PAR Thin Deduplication software with patented Express Indexing is the only solution in the industry that delivers inline deduplication at scale with hardware acceleration. Thin Deduplication runs on any HPE 3PAR StoreServ array with an SSD tier to increase usable capacity, lower total cost of ownership, and extend flash media lifespan. In cases where there is a large amount of duplicate data, Thin Deduplication also improves write throughput and performance. Other storage architectures that support deduplication are not able to offer these benefits at the same capacity scale or at the same performance level.

### Increased performance and extended media lifespan

Flash-optimized software innovations like the HPE 3PAR Adaptive Read and Write features enable a more granular approach than can be achieved with spinning media by matching the size of host reads and writes to flash media to avoid unnecessary data reads

and writes. This significantly reduces latency and enhances backend performance to meet the requirements of response-time sensitive applications like Oracle Database and Microsoft® Exchange. Reducing unnecessary writes also helps extend the life of flash-based media for better cost efficiency. Not only this, but all HPE 3PAR SSDs are now covered by a 5-year warranty. This warranty includes replacement of the SSDs for any failure including write wear level limit being reached.<sup>3</sup> Additional innovations to the HPE 3PAR StoreServ Storage platform deliver media endurance benefits that enable you to extend the life of your SSDs to get the most out of every dollar and I/O for increased storage return on investment (ROI).

HPE 3PAR Express Writes is a built-in HPE 3PAR OS write acceleration feature that optimizes CPU utilization to increase throughput, deliver up to 30 percent more IOPS, and reduce latency by up to 20 percent depending on workload.<sup>4</sup> These benefits extend to both spinning drives and flash-based media. Read acceleration, is also built in to the HPE 3PAR OS via HPE 3PAR Adaptive Flash Cache, a feature that allows SSDs to act as an extension of system cache. This feature can as much as double read rates and reduce latency up to 70 percent with HPE 3PAR StoreServ Storage arrays that are configured with SSDs.

A high-performance architecture also allows you to get more out of your VMware vSphere® deployment, where extensive use of virtual memory pages to disk can limit VM consolidation on your physical servers when paired with legacy storage, but not with HPE 3PAR StoreServ Storage. In fact, HPE stands behind your ability to double VM density on your physical servers when replacing legacy storage with HPE 3PAR StoreServ Storage, including the 10000 series models, with the industry’s only Get Virtual Guarantee.<sup>5</sup>

## Bulletproof storage with “Six-Nines” availability

A unique set of data resilience and security products power HPE 3PAR StoreServ 10000 Storage in delivering high availability and Tier-1 resilience to Cloud and ITaaS in multitenant environments. HPE 3PAR Persistent Cache preserves service levels, so they are not impacted by unplanned component failures—a key requirement for the virtual data center. HPE 3PAR Persistent Ports allows non-disruptive upgrades to HPE 3PAR StoreServ 10000 Storage systems without relying on multipathing software or failover initiation. This feature also automatically fails over a front-end controller node port that experiences physical connection loss due to a cable or switch failure in order to preserve service levels.

Modern Tier-1 resilience is delivered by HPE 3PAR Peer Persistence software, with VMware vSphere Metro Storage Cluster (vMSC) certification and support for Microsoft Windows Server® and Microsoft Windows® Hyper-V environments. With Peer Persistence, you’ll be able to federate storage across data centers, regardless of physical boundary constraints. Automated failover and failback between two sites or data centers is transparent to hosts, which keeps your VMware® deployments seamlessly running even in the event of a disaster.

With the Get 6-Nines Guarantee program, you can achieve 99.9999 percent data availability with any new 4-node or more HPE 3PAR StoreServ systems giving you the peace of mind that your mission-critical applications are backed by storage with Tier-1 resiliency.<sup>6</sup>

<sup>3</sup> 5 years of warranty coverage is offered on 480 GB and 920 GB MCL SSD drives. Contact your HPE representatives for details.

<sup>4</sup> Based on a random, 100 percent write workload with an 8K block size.

<sup>5, 6</sup> Subject to qualification and compliance with the HPE 3PAR Get Virtual Guarantee Program Terms and Conditions, which will be provided by your HPE Sales or Channel Partner representative.

**Consolidate with confidence**

Achieve higher service levels for more users and applications with less infrastructure. When combined with Tier-1 resiliency, the multicontroller scalability and extreme flexibility built into HPE 3PAR StoreServ Storage makes deploying and maintaining separate storage silos to deliver different QoS levels obsolete. High and predictable levels of service for all workload types are assured through the massively parallel and fine-grained striping of data across all internal resources (disks, ports, loops, cache, processors, etc.) so that, as the use of the system grows—or in the event of a component failure—service conditions remain high and predictable. Unlike application-centric approaches to storage, one-click autonomic rebalancing on HPE 3PAR StoreServ Storage enables you to optimize QoS levels without service disruption, pre-planning, or the need to purchase separate arrays to support different service levels.

HPE 3PAR Virtual Domains software allows you to securely partition resources within a shared infrastructure to separate users and hosts to allow secure, shared storage. HPE 3PAR Priority Optimization allows you to deliver assured QoS levels without having to physically partition resources by giving you the flexibility and control to prioritize your most mission-critical applications and workloads by specifying minimum thresholds for IOPS (i.e., performance), bandwidth, and latency (i.e., application response time). When

these minimum thresholds are reached, the system automatically adjusts the service levels of lower-priority applications and workloads in order to assure that necessary QoS levels for your highest priority applications can be maintained. With the combination of Priority Optimization and Virtual Domains, you can specify these minimum thresholds to protect individual tenants as well. This feature also prevents a single tenant from monopolizing resources.

**The security features you require**

The HPE 3PAR StoreServ Data-at-Rest Encryption solution protects data from both internal and external security breaches. If your application or environment requires protection from unauthorized access of the data on a drive, then consider this solution. HPE 3PAR StoreServ models are fully FIPS 140-2 compliant, support intelligent key management, and available with self-encrypting drives (SEDs), where data is encrypted as it is written to the drive. You get the peace of mind in knowing that all data contained on these drives is protected against unauthorized access, even if a drive is stolen, fails, or has to be retired. 3PAR StoreServ now offers drives that are FIPS 140-2 validated, which is often a compliance requirement in Health Care, Financial, and Public Sector market segments. HPE 3PAR Data-at-Rest Encryption supports all of the advanced data services on 3PAR StoreServ Storage.

**Affordable, flexible disaster recovery**

In order to meet service level demands for Modern IT and Cloud environments, high availability and uncompromising data protection are must-haves. With HPE 3PAR StoreServ 1000 Storage, you can decrease downtime while dramatically reducing the cost of remote data replication and disaster recovery (DR) with highly efficient, multimode replication across all HPE 3PAR StoreServ models. HPE 3PAR Remote Copy software allows you to achieve low recovery time objectives (RTOs) and zero-data-loss recovery point objectives (RPOs) with complete distance flexibility. And since HPE 3PAR Remote Copy configuration is autonomic, set-up only requires one step so you can protect your data from the start. Refer to the **[HPE 3PAR Replication Software Suite data sheet](#)** for additional details on Remote Copy and related functionality.

High availability and uncompromising data protection are must-haves for any enterprise data center. With HPE 3PAR StoreServ 10000 Storage, you can dramatically reduce the cost of remote data replication and DR with highly efficient, multimode replication across all HPE 3PAR StoreServ models.

**Table 1.** HPE 3PAR Remote Copy software benefits

Key attribute	HPE 3PAR	Other vendors
<b>Autonomic configuration:</b> Set up and test DR in minutes without professional services	✓	✗
<b>Ease of operation:</b> Unified management console for “do-it-yourself” DR	✓	✗
<b>Cost efficiency:</b> Multimode, multisite replication supported between high-end and midrange arrays, keeping costs down	✓	✗
<b>Capacity efficiency:</b> “Thin provisioning-aware” replication cuts capacity purchases by 75% or more	✓	✗
<b>Any-to-any native replication:</b> Flexibly mirror data between any HPE 3PAR StoreServ model and varying service level (RAID level, drive type, etc.)	✓	✗

## Balancing cost and performance without compromising Tier-1 requirements

Modern Tier-1 environments with virtualization, flexible business needs, and all sorts of clouds have made for extremely active, unpredictable, and variable demands upon storage. For your business to consistently deliver high levels of application performance at an affordable cost, your storage architecture must allow easy data movement to keep up with the pace of change. For example, at times of peak demand on certain applications, you want the associated data placed on your fastest storage technology. You also need the flexibility to meet different service levels without having to manage multiple storage islands with incompatible management interfaces and data service technologies.

HPE 3PAR StoreServ Storage increases agility and removes boundaries between individual storage systems in your data center by supporting federated data mobility across the entire HPE 3PAR StoreServ portfolio—including HPE 3PAR StoreServ 10000 Storage. This peer-based storage federation lets you move data and workloads between arrays without impact to applications, users, or services. Map workloads to the right resources and establish tiers of storage across the data center for different SLAs (figure 2). Lower costs and manage capacity at a data center level by thinly provisioning volumes with the freedom to move data between systems.

Refresh technology effortlessly by streamlining the movement of volumes from older systems and non-disruptively update storage without application impact. And if you are currently an HPE EVA Storage customer, you can use it to import data from your current HPE EVA Storage system onto your new HPE 3PAR StoreServ array, providing you with a simple upgrade path. If you are looking to consolidate your EMC Symmetrix VMAX, CLARiiON CX4, and VNX arrays, new HPE 3PAR Online Import capabilities make it easier for you to move from legacy EMC Storage to HPE 3PAR StoreServ. Every HPE 3PAR StoreServ Storage system comes with 3PAR Online Import Software at no additional charge for 180 days—giving you painless, non-disruptive migration so that you can finally say goodbye to the “land of no.”<sup>7</sup>

## Storage customized for your application

Your critical business infrastructure and applications require a single storage infrastructure that can deliver the service levels, application availability, and efficiencies that your business requires. HPE 3PAR StoreServ 10000 Storage allows you to consolidate applications onto a single, high-performance system, giving your business the flexibility to meet changing business needs on demand.

Get more out of your virtualization deployment. HPE 3PAR StoreServ Storage is built to deliver performance that exceeds the demands of virtualized environments along

with transformative levels of simplicity, agility, and efficiency. Integration with Microsoft System Center and VMware® vCenter™, gives you enhanced visibility into storage resources and precise insight into how VMs are mapped to data stores and system volumes. Support for VMware Virtual Volumes (VVols), enables granular VM-level storage control, disaster recovery, and quality of service in VMware environments with VMware vSphere 6. HPE 3PAR Recovery Manager for VMware vCenter provides vSphere administrators with superior granularity and control of array-based snapshots that can be used for rapid online data protection and recovery. Integration with VMware vSphere API for Array Integration (VAAI), VMware vStorage APIs for Storage Awareness (VASA), Microsoft Offload Data Transfer (ODX), and thin provisioning enable HPE 3PAR StoreServ Storage to improve virtual infrastructure performance, efficiency, and scalability. Low latency levels allow you to get more out of your VMware deployment, where extensive use of virtual memory pages to disk can limit virtual machine consolidation on physical servers when paired with legacy storage.

Database performance and availability are so critical that many organizations apply generous capacity and management resources to maintain needed service levels. HPE 3PAR StoreServ 10000 Storage removes these inefficiencies, eliminating tradeoffs between capacity utilization, efficiency, and performance. For example, with HPE 3PAR Thin Persistence software and the Oracle ASM Storage Reclamation Utility (ASRU), your Oracle databases stay thin by autonomically



Figure 2. Data mobility to manage SLAs at a data center level

<sup>7</sup> HPE 3PAR Online Import software provides support for EMC Symmetrix VMAX, VNX and CLARiiON CX4 Storage arrays.

reclaiming stranded database capacity. And HPE offers the cost-effective Oracle- and SQL-aware snapshot technologies, HPE 3PAR Recovery Manager for Oracle and HPE 3PAR Recovery Manager for SQL Server.

A unique, clustered, Mesh-Active controller interconnection delivers performance that scales even with extremely high levels of capacity utilization. Low latency levels meet the requirements of response-time sensitive applications like Oracle Database

and Microsoft Exchange and allow you to get more out of your VMware deployment, where extensive use of virtual memory pages to disk can limit virtual machine consolidation on your physical servers when paired with legacy storage. By contrast, deploying HPE 3PAR StoreServ Storage enables you to double virtual machine density on your physical servers—guaranteed.

Given the importance of Microsoft Exchange for mission-critical email communications,

many organizations devote significant amounts of storage capacity and management resources to this essential application. HPE 3PAR StoreServ 10000 Storage enables you to support a large number of mailboxes with a larger size limit while reducing cost per mailbox from dollars to cents. In addition, with HPE 3PAR Recovery Manager for Exchange, you can recover email messages quickly, affordably, and from multiple points in time.

## Technical specifications

	HPE 3PAR StoreServ 10400	HPE 3PAR StoreServ 10800
<b>Storage controllers</b>	2–4	2–8
<b>Maximum host ports</b>	96	192
<b>Fibre Channel</b>	0–96	0–192
<b>10 Gb iSCSI</b>	0–16	0–32
<b>Maximum initiators per system</b>	4,096	8,192
<b>Drive types (mixable)</b>	Fibre Channel and SAS (performance, nearline, SSDs)	Fibre Channel and SAS (performance, nearline, SSDs)
<b>Maximum Hard Disk Drives (HDDs)</b>	16–960	16–1920
<b>Maximum Solid State Drives (SSDs)</b>	256	512
<b>Maximum capacity raw (HDD/SSD)</b>	1.6 PB/236 TB	3.2 PB/471 TB

## Software suites for HPE 3PAR StoreServ Storage

HPE 3PAR StoreServ Storage supports the same operating system and software offerings as the other members of the HPE 3PAR StoreServ family. As with all HPE 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>HPE 3PAR Operating System Software Suite</b>	Required for all new HPE 3PAR StoreServ systems, this foundational software suite gives you everything you need to get up and running quickly and efficiently. This suite includes the HPE 3PAR Operating System, HPE 3PAR Management Console, and HPE 3PAR Host Explorer—software designed to get you off to a quick start with your new HPE 3PAR StoreServ system. It also includes all of the platform's thin software offerings—HPE 3PAR Thin Provisioning, Thin Conversion, and Thin Persistence, and Thin Clones. Other highlights of this suite include HPE 3PAR Adaptive Flash Cache, HPE 3PAR Express Writes, HPE 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 EMC Symmetrix VMAX, CLARiiON CX4 and EMC VNX arrays as well as HPE EVA Storage.
<b>HPE 3PAR Replication Software Suite</b>	This optional suite bundles HPE 3PAR Virtual Copy with HPE 3PAR Remote Copy software, both also sold separately for all HPE 3PAR StoreServ models. Included in this bundle is Peer Persistence, which enables peer federation for VMware and Windows clusters to improve overall availability. Licensed based on system capacity.
<b>HPE 3PAR Data Optimization Software Suite</b>	This optional software bundle combines HPE 3PAR Dynamic Optimization, HPE 3PAR Adaptive Optimization, HPE 3PAR Peer Motion, and HPE 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 HPE 3PAR StoreServ models. Depending on purchase date, titles included in this suite may vary. Check the <b>HPE 3PAR Software QuickSpecs</b> for complete details. For the 10000 models only, the HPE 3PAR Optimization Suite is available and includes Adaptive Optimization and Dynamic Optimization.

## Software suites for HPE 3PAR StoreServ Storage (continued)

<b>HPE 3PAR Security Software Suite</b>	This optional suite bundles HPE 3PAR Virtual Domains and HPE 3PAR Virtual Lock Software, both also sold separately for all HPE 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>HPE 3PAR Application Software Suite for VMware</b>	Everything you need to make your VMware environment more agile and efficient—including HPE 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 HPE 3PAR VAAI Plug-in, and the HPE 3PAR Management Plug-in for VMware vCenter. This suite is optional and licensed on a per-system basis.
<b>HPE 3PAR Application Software Suite for Hyper-V</b>	Protect your Microsoft Hyper-V environment with HPE 3PAR Recovery Manager for Microsoft Hyper-V and the HPE 3PAR VSS Provider Software, included in this optional suite and licensed on a per-system basis.
<b>HPE 3PAR Application Software Suite for Exchange</b>	This bundle gives you the essentials for use with Microsoft Exchange, including HPE 3PAR Recovery Manager for Exchange and the VSS Provider Software. This suite is optional and licensed on a per-system basis.
<b>HPE 3PAR Application Software Suite for Oracle</b>	Everything you need for protecting Oracle databases, including HPE 3PAR Recovery Manager for Oracle and Oracle space reclamation capabilities, sold as an optional suite and licensed on a per-system basis.
<b>HPE 3PAR Application Software Suite for SQL</b>	Protect Microsoft SQL databases with HPE 3PAR Recovery Manager for Microsoft SQL and the HPE 3PAR VSS Provider software, bundled with this optional suite and licensed on a per-system basis.
<b>HPE 3PAR Reporting Software Suite</b>	Enhance system visibility and reporting capabilities with this optional suite, which includes HPE 3PAR System Reporter software and the HPE 3PARInfo application, licensed on a per-system basis.

### Converged data protection with HPE StoreOnce

If you are looking for virtually instant application-consistent backups for your VMware environment, look no further than rapid and granular backup and recovery with HPE StoreOnce Backup and HPE StoreOnce Recovery Manager Central for fast, efficient, reliable, and simple backup and recovery with your HPE 3PAR StoreServ Storage system. This solution transforms traditional approaches to backup and recovery, giving you application-aware, storage integrated data protection that bypasses traditional backup server-based processes.

By connecting HPE 3PAR StoreServ Storage directly to HPE StoreOnce Backup, you can maintain business productivity by expediting the backup and recovery process and eliminating application performance impact. This streamlined backup process also reduces total cost of ownership for storage by leveraging HPE StoreOnce Backup systems for cost-effective backup retention. The native movement of snapshots from HPE 3PAR StoreServ Storage to HPE StoreOnce Backup assures that any online storage threats are quickly mitigated with always-available, single-click data recovery. This is all made possible by HPE StoreOnce Recovery Manager Central, which allows VMware owners to seamlessly manage snapshots, backup, and recovery directly from within VMware vCenter.

## Data sheet

Optimize your IT investment strategy with new ways to acquire, pay for, and use technology, in lock-step with your business and transformation goals. [hpe.com/solutions/hpefinancialservices](http://hpe.com/solutions/hpefinancialservices)

HPE 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)

Gain the skills you need with ExpertOne training and certification from HPE. With HPE Converged Storage training, you will accelerate your technology transition, improve operational performance, and get the best return on your HPE 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)



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

## HPE Technology Services

### Expert HPE storage consultants and service professionals

Sit down with you and your team to map your storage needs. Not only can we help you accelerate implementation and reduce deployment risk, but we can also help you realize the full value of your storage purchases as you transform storage for the idea economy.

### Advise, transform, and integrate

Navigate through the complexities of storage, backup, archive, disaster recovery, and Big Data with advisory, transformation, and integration consulting.

### Deploy and implement

Access expertise to support deployment, operations, relocation, sanitization, and disposal, plus improvement-focused education.

### Operate and support

Find the level of personalized, proactive, and simplified support right for your business.

**Note:** Specific service availability varies by product.

### Foundation Care

System-level IT hardware and software support delivers flexible coverage window and response time for more choice and simplicity.

### Proactive Care

Combined reactive and proactive services provide easy-to-purchase, cost-efficient system-level support coupled with personalized expert advice and products connected to HPE to help prevent problems and reduce downtime.

### HPE Proactive Care Advanced

Builds and incorporates on Proactive Care and also gives customers personalized technical and operational advice from an assigned, local Account Support Manager for personalized technical collaboration, flexible access to specialist skills to help optimize business critical IT, and enhanced Critical Incident Management to help so the business is not affected if there is a system or device outage.

### Datacenter Care

Get the support you need to deploy, operate, and evolve your data center environment to be hybrid-cloud ready with single-point-of-accountability for HPE and others' product.

Get connected and get back to business—HPE Storage Technology Services provide the path to get your HPE Storage solutions and your business connected to HPE. Once connected, our experts are able to scan your system and run health checks, then use that data to create personalized reports and recommendations for actions to take to prevent problems and downtime.

To learn more, visit: [hpe.com/services/storage](http://hpe.com/services/storage)

Learn more at [hp.com/go/StoreServ10000](http://hp.com/go/StoreServ10000)



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