Hewlett Packard Enterprise

HPE 3PAR Data Optimization Software Suite

Effortless storage. Today. Tomorrow. Every day.

HPE 3PAR StoreServ Storage: Agile Tier 1 storage capabilities from midrange to enterprise

As an organization that constantly makes leaps and strides toward growth, you've seen firsthand what it means to maintain a perfect balance between managing large and increasing data volumes, rising business demands, cost efficiency, and sustainable growth. And while you juggle these multiple facets within your business, you also consider advancements and changes on the outside that can deeply impact what goes on inside your business.

HPE 3PAR StoreServ Storage is an easy-to-deploy, affordable, upgradable system that has been designed from the ground up to meet fluctuating and mixed workload demands. With efficient, autonomic, and resilient Tier 1 capabilities and a unique, multi-node-capable storage architecture, HPE 3PAR StoreServ Storage provides affordable scalability to your data center, meeting your application demands and enabling sustainable growth. HPE 3PAR StoreServ Storage prepares and supports your data center regardless of what your future holds—whether it's server virtualization, an infrastructure refresh, or just simplifying storage to more efficiently handle rapid data growth.

Get smart with data optimization for HPE 3PAR StoreServ Storage

The HPE 3PAR Data Optimization Software Suite is designed specifically for storage requirements that are constantly changing. This software suite bundles HPE 3PAR Priority

Optimization software, HPE 3PAR Peer Motion software, HPE 3PAR Dynamic Optimization software, and HPE 3PAR Adaptive Optimization software to help you react quickly to constant ups and downs in allocation, capacity, and performance. The HPE 3PAR Data Optimization Software Suite also allows you to redistribute and refresh your storage nondisruptively, thus simplifying management, and increasing management efficiency.

Ensures efficient use of your storage

Policy-driven, autonomic storage tiering technologies make efficiency effortless by balancing cost and performance to meet service-level requirements for the lowest cost while increasing business agility and minimizing risk. The HPE 3PAR Data Optimization Software Suite leverages a proven, fine-grained data movement engine and applies it to independent regions within a volume to deliver highly reliable, nondisruptive, autonomic tiered storage to provide the right quality of service (QoS) to the right data at the right time so you can meet service-level targets.

Key features and benefits
Autonomic storage tiering:

- Reduces storage cost by accommodating usage spikes

- Delivers the required service level with fine-grained data movement

- Migrates data to less expensive storage tiers without manual intervention

- Allows varied tier definitions and usage limits by application

Optimized data agility of service levels:

- Assures service level performance for specific applications and workloads

- Adjusts volume service levels nondisruptively

- Enhances data service levels by tuning array characteristics

Nondisruptive data mobility:

- Efficiently uses storage resources with online, nondisruptive data placement

- Performs technology refreshes seamlessly

- Right sizes storage capacity to match written data

Enable service level performance

Consolidation of applications, workloads, and users onto one storage platform is a fundamental design deployed in many of today's modern data centers, reducing complexity and improving management efficiency, and improving the total cost of ownership. To ensure that your mission-critical applications get the required service level and performance without contention, apply a priority policy with **HPE 3PAR Priority Optimization**. This software enables certainty and predictability for each application and tenant so you can meet business needs. Create and modify threshold limits, including I/O per second and bandwidth and configure thresholds with real-time enforcement in seconds and sub-seconds. HPE 3PAR Priority Optimization has the industries only "Latency Goal" feature to set SLAs as low as 500 μs.

With HPE 3PAR Priority Optimization software, part of the HPE 3PAR Data Optimization Software Suite, you specify Service Level Objectives and Service Level Caps for IOPS (i.e., performance) and bandwidth. You can also define Latency Goals for your most mission-critical applications. If these goals are not met, Priority Optimization automatically adjusts the service levels of lower-priority applications and workloads in order to assure necessary QoS levels for your highest priority applications. Eliminate resource contention by throttling the I/O of one or more workloads to enable performance of others, ensuring your high priority applications and workloads meet their QoS targets.

Hassle-free multi-array bidirectional data movement

Nondisruptive multi-array bidirectional data mobility across systems enables you to load balance at will, refresh technology seamlessly, reduce asset lifecycle management costs, and lower technology-refresh CAPEX. As part of the HPE 3PAR Data Optimization Software Suite, **HPE 3PAR Peer Motion software** is the first nondisruptive, do-it-yourself data mobility tool for SAN storage.

HPE 3PAR Peer Motion software saves CAPEX on your technology asset refresh because it uses the HPE 3PAR ASIC to power the simple and rapid conversion of inefficient, "fat" volumes on your source system to more efficient, higher-utilization "thin" volumes on the HPE 3PAR StoreServ Storage system. Peer Motion leverages the same Thin built-in technology of the HPE 3PAR ASIC to remove allocated but unused storage capacity, so the purchased capacity on the destination system can be right-sized for written data. You can increase data QoS levels and lower capital expenditures because Peer Motion can also adjust the RAID level, subsystem failure protection level, drive type, stripe width, and radial placement of volumes.

Unlike traditional block migration approaches, Peer Motion software enables you to move storage volumes between multiple HPE 3PAR StoreServ systems online, nondisruptively, and without complex planning. With HPE 3PAR Peer Motion, there is no need to introduce any external appliance in the data path nor any additional overhead on the host resources for the data mobility. HPE 3PAR Peer Motion offers multi-array bidirectional data mobility, which helps setup your federation upfront and enables back and forth data movement between multiple HPE 3PAR StoreServ Storage systems that are part of an HPE 3PAR storage federation within the same data center.

The HPE 3PAR StoreServ Management Console included with the HPE 3PAR StoreServ Storage systems is the orchestration tool used for setting up the storage federation and manages all stages of the data lifecycle to enable simple and foolproof data mobility.

Become more proactive

With the inclusion of **HPE 3PAR Dynamic Optimization** software in the Data Optimization Suite, you'll be able to realign application requirements with data QoS levels on demand by nondisruptively redistributing application volumes across tiers. Dynamic Optimization analyzes how volumes use physical disks and automatically makes intelligent, nondisruptive adjustments to help ensure optimal volume performance and capacity utilization. Dynamic Optimization results in major capacity savings by converting data to thin volumes during the online transfer and not restoring the redundant volumes.

Dynamic Optimization also gives you the ability to nondisruptively alter service levels associated with a storage volume with a single click. Use Dynamic Optimization to seamlessly adjust the following service level parameters for optimizing data QoS levels:

- RAID level—for example, convert between RAID 10 and RAID 5, or RAID 10 and RAID 6.

- Subsystem failure protection level—for example, a volume with "cage-level" availability can tolerate the failure of a drive enclosure because its RAID sets use chunklets from different drive enclosures, while a volume with "drive-level" availability can tolerate a drive failure.

- Drive type—choose between SSDs, enterprise-class Fibre Channel or SAS drives, or more economical midline SAS or SATA drives.

- Stripe width—stripe volumes across a variety of system resources (controllers, cache, disks, and loops) to leverage the system's fine-grained virtualization capabilities and achieve superior performance.

- Radial placement—place data directly on inner or outer tracks of disk platters to impact performance.

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.

The agility to do more for less

The inclusion of **HPE 3PAR Adaptive Optimization software** in this suite helps deliver an increase in IOPS and reduced latency at a lower storage cost than traditional storage. Adaptive Optimization operates on the principle of I/O access density, which is the observation that for most applications, a very small amount of the total user data receives most of the I/O accesses. By configuring only the very active data blocks on Tier 0 storage and the rest of your application data on SAS or nearline SAS storage, an HPE 3PAR StoreServ Storage system configured with a small number of solid state drives (SSDs) can deliver higher performance at a lower cost than traditional storage platforms. HPE 3PAR Adaptive Optimization works with the HPE 3PAR Security Software Suite to analyze actual user I/O patterns, which enables Adaptive Optimization to move only the blocks with high I/O activity to premium SSD storage.

Transform your data center into one that is scalable, enables growth, and meets enterprise-class application demands. Find out more on **hp.com/go/3parstoreserv**.

Software suites for HPE 3PAR StoreServ Storage

HPE 3PAR Operating System Software Suite	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. Powered by HPE 3PAR ASIC, HPE 3PAR StoreServ's Thin Technologies, which include HPE 3PAR Thin Provisioning, HPE 3PAR Thin Persistence, HPE 3PAR Thin Conversion, HPE 3PAR Thin Deduplication form the base of this software suite. Performance acceleration is assured by HPE 3PAR Adaptive Flash Cache by reducing application response time. Simplified management is offered by HPE 3PAR Operating System, HPE 3PAR StoreServ Management Console, HPE 3PAR Host Explorer, and HPE SmartStart—software designed to get you off to a quick start with your new HPE 3PAR StoreServ system; HPE 3PAR System Reporter and HPE 3PARInfo software are designed to track performance and capacity utilization trends for multiple HPE 3PAR StoreServ Systems. Other highlights of this suite include HPE 3PAR Full Copy, autonomic rebalancing capabilities that help you optimize the use of future capacity expansions, and support for standard multipathing software for high availability in clustered environments. A one-year license for online import is included to enable migration from HPE EVA or EMC[1] or HDS.[2]
HPE 3PAR Replication Software Suite	This suite bundles HPE 3PAR Virtual Copy with Remote Copy Software, both also sold separately for all HPE 3PAR StoreServ models. HPE 3PAR Virtual Copy software protects and shares data affordably with rapid recovery using reservation-less, non-duplicative, copy-on-write snapshots. HPE 3PAR Remote Copy offers simple and cost effective data protection for efficient multi-tenant disaster recovery. Also, included in this bundle is Peer Persistence, which ensures automatic transparent failover across data centers using Remote Copy Synchronous mode. For HPE 3PAR StoreServ 20000, the Suite also includes Cluster Extension Software, which enables automatic failover over distance using Remote Copy Asynchronous mode.
HPE 3PAR Data Optimization Software Suite	This software bundle combines HPE 3PAR Dynamic Optimization, Adaptive Optimization, Peer Motion, and Priority Optimization software together. HPE 3PAR Dynamic Optimization delivers the required service levels for the lowest possible cost throughout the data lifecycle. HPE 3PAR Adaptive Optimization improves storage utilization by enabling cost-optimized storage tiering. HPE 3PAR Peer Motion enables load balancing at will wherein, movement of data and workloads between arrays is initiated without impacting applications, users, or services. HPE 3PAR Priority Optimization assures service levels with QoS controls for mission-critical applications. 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 **HPE 3PAR Software QuickSpecs** for complete details.
HPE 3PAR File Persona Suite	This software suite enables file protocol services and an Object Access API to extend the spectrum of primary storage workloads natively addressed by HPE 3PAR StoreServ Storage systems with Converged Controllers. With this solution, the architectural benefits of HPE 3PAR StoreServ Storage can be extended to the following use cases: home directory consolidation, group, departmental and corporate shares, and custom cloud applications.
HPE 3PAR Security Software Suite	This software suite bundles HPE 3PAR Virtual Domains and 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.
HPE 3PAR Application Software Suite for VMware®	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 View®.[3]
HPE 3PAR Application Software Suite for Hyper-V	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 suite.
HPE 3PAR Application Software Suite for Exchange	This bundle gives you the essentials for use with Microsoft Exchange, including HPE 3PAR Recovery Manager for Exchange and the VSS Provider Software.
HPE 3PAR Application Software Suite for Oracle	Everything you need for protecting Oracle databases, including HPE 3PAR Recovery Manager for Oracle and Oracle Space Reclamation capabilities.
HPE 3PAR Application Software Suite for SQL	Protect Microsoft SQL databases with HPE 3PAR Recovery Manager for Microsoft SQL and the HPE 3PAR VSS Provider Software.
HPE StoreOnce Recovery Central Manager	By combining the performance of snapshots with the protection of backups, this software integrates HPE 3PAR StoreServ with HPE 3PAR StoreOnce Backup Systems to provide a converged availability and flat backup service that augments traditional backup processes. With this automated, non-intrusive software, the simplicity and performance of snapshots can be combined with the reliability and cost effective retention of deduplicated backups.

[1] HPE 3PAR Online Import support for EMC Storage extends to EMC VMAX, EMC VNX, EMC CLARiiON CX4 Storage systems.

[2] HPE 3PAR Online Import support for Hitachi Storage systems extends to Hitachi Data Systems (HDS) TagmaStore Network Storage Controller (NSC), Universal Storage Platforms (USPs), and Virtual Storage Platforms (VSPs) Storage systems.

[3] HPE 3PAR Application Software Suite for VMware support extends to HPE 3PAR StoreServ 7000 and 10000 Storage systems up to the OS version OS 3.2.1.

HPE Technology Services for 3PAR StoreServ Storage

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.

Advice, transform, and integrate
Navigate through the intricacies 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.

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

HPE 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 Hewlett Packard Enterprise to help prevent problems and reduce downtime.

HPE Proactive Care Advanced
Incorporates and builds on Proactive Care to give 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.

HPE 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 Hewlett Packard Enterprise and others' products.

Get connected and get back to business— HPE Storage Technology Services provide the path to getting your HPE Storage solutions and your business connected to Hewlett Packard Enterprise. 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.

For more information, visit **hpe.com/services/storage**.

Learn more at
hp.com/go/3parstoreserv

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

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