

# HPE 3PAR StoreServ Storage software

Streamline functions and accelerate system performance while delivering optimum value to customers



## Meeting demands of the modern data center

HPE 3PAR StoreServ Storage delivers the efficiency and agility required by virtual, cloud, and IT-as-a-Service (ITaaS) environments with a robust software portfolio. HPE 3PAR StoreServ Storage software includes both the Operating System that runs on HPE 3PAR StoreServ Storage and additional software products that run on customer hosts. HPE 3PAR Operating System software comes installed on HPE 3PAR StoreServ Storage and includes a collection of advanced internal virtualization capabilities that increase storage efficiency and reduce administration time. The additional HPE 3PAR StoreServ Storage software products offer enhanced capabilities that include thin storage technologies, data persistence, safe partitioning for virtual private arrays, virtual and remote copy capabilities and non-disruptive data mobility.

These software features are available and licensed as a part of HPE 3PAR Software Suite for replicating data, optimizing data placement while meeting the constantly fluctuating storage requirements, adhering to governance policies and file data service offerings to help consolidate and manage diverse workloads onto a single storage array—HPE 3PAR StoreServ Storage. Also available are the host-based software offerings, which give the resources to HPE 3PAR StoreServ Storage to address the needs of specific application environments and offer a consolidated data protection solution.

The HPE 3PAR Software Suites are described below:

## **HPE 3PAR Operating System Software Suite**

Provides advanced internal virtualization capabilities, and tools that increase storage management efficiency, capacity utilization and performance in enterprise and cloud data centers.

Supported across all HPE 3PAR StoreServ models the HPE 3PAR Operating System Software Suite simplifies storage management by handling provisioning and change management autonomically and intelligently, at a subsystem level and without administrator intervention.

Autonomic provisioning features do away with traditional storage planning by delivering instant, application-tailored provisioning. Fine-grained virtualization of low-level components and wide striping of data-enabled service levels helps the storage array remain high and predictable, even as the use of the system grows. Industry-leading ease of use is delivered through the simple, unified HPE 3PAR StoreServ Management Console and the powerful, scriptable HPE 3PAR Command Line Interface.

## **Key features and benefits**

Advanced features and tools aimed at delivering higher service levels and improving capacity utilization:

- Network simplification and security offered with iSCSI VLAN tagging.
- Security feature built into the HPE 3PAR OS to ensure end-to-end data protection in the form of HPE 3PAR Persistent Checksum.
- Web-based capacity management tool, which keeps a track of the system performance via HPE 3PAR System Reporter software.
- Effortless data migration from an existing HPE Enterprise Virtual Array (EVA) Storage, EMC Storage, Hitachi Data Systems (HDS) Storage, IBM Storage systems provided with HPE 3PAR Online Import software.
- Accelerate your application performance and reduce application response time for read intensive I/O workloads with HPE 3PAR Adaptive Flash Cache.
- VMware® VVols integration enables simple, granular VM-level control and DR.
- Simplified management with HPE 3PAR StoreServ Management Console.

HPE 3PAR StoreServ and the HPE 3PAR OS are optimized for flash, addressing the four flash design requirements for storage: performance acceleration, efficiency optimization, data mobility, and system resiliency.

Please refer to the [\*\*HPE 3PAR Operating System Software Suite\*\*](#) data sheet for more details.

#### Key highlights

- Leads to major cost savings by balancing the storage capacity requirements and reducing disk expenditures, especially in case of solid-state drives (SSDs).
- As the overall capacity footprint recedes, it helps in reducing storage software fees (physical per TB license).
- Delivers quicker paybacks by deduplicating data at a smaller granularity while providing better space savings and without stressing the CPU processing and memory.

#### Key highlights

- Cuts down upfront disk drive purchases by reducing the number of disks required to store application data, with “dedicate-on-write” approach that consumes physical capacity only, as it is actually needed for written data.
- Leverages the massive scalability of HPE 3PAR StoreServ Storage to enable customers to grow as business needs dictate by adding capacity easily and as needed.
- Works with HPE 3PAR Virtual Copy software and HPE 3PAR Remote Copy software to prevent unnecessary duplication of unwritten capacity during local and remote volume replication.

## HPE 3PAR Thin Deduplication software

The high performance levels demanded by flash-based media is delivered without sacrificing performance while concurrently delivering advanced data services such as replication and quality of service (QoS).

With HPE 3PAR Thin Deduplication software, the CPU-intensive jobs of calculating signatures for incoming data and verifying reads are offloaded to the ASIC. Via HPE 3PAR Express Indexing, the data signature comparisons are accelerated and ultra-fast detection of duplicate write requests is done in order to prevent duplicate data from being written. This helps in freeing up processor cycles to deliver advanced data services and service I/O requests. The hardware-assisted approach enables inline deduplication that carries multiple benefits, including increased capacity efficiency, flash performance protection, and flash media lifespan expansion.

## HPE 3PAR Thin Clone software

HPE 3PAR Thin Clone software acts as an extension of Thin Deduplication software for server virtualization environments, providing host-assisted deduplication that produces non-duplicative VM clones for Microsoft® Hyper-V and VMware ESXi.

## HPE 3PAR Thin Provisioning software

HPE 3PAR Thin Provisioning software<sup>1</sup> can make any organization more agile and efficient by mitigating upfront capacity reservations and allowing disk capacity to be purchased only as needed.

HPE 3PAR Thin Provisioning software solves the problem of inefficient capacity utilization by breaking the traditional linkage between allocated and purchased capacity. Demand for thin provisioning solutions combined with increased attention to data center power consumption has put pressure on vendors to introduce thin provisioning solutions, but bolt-on implementations cannot deliver the simplicity or the efficiency of HPE 3PAR Thin Provisioning software.

With HPE 3PAR Thin Provisioning software, capacity is dedicated and configured autonomously, just in time, and without active management. It does not require planning or the need to configure storage into intermediary pools. The software creates a pool from which capacity is dedicated only as data is actually written. While other thin provisioning implementations use coarse allocation units that can range from 1 MB to 17 GB, HPE 3PAR Thin Provisioning software uses a fine-grained, 16 KB allocation unit to increase system efficiency.

<sup>1</sup> For more details visit HPE 3PAR Programs—Get Thinner Guarantee at [hpe.com/storage/getthinner](http://hpe.com/storage/getthinner).

**Key highlights**

- Leverages the HPE 3PAR ASIC and Thin Engine—a unique virtualization mapping engine for space reclamation—to drive the simple and rapid conversion of inefficient, fat volumes on legacy arrays to higher-utilization volumes on HPE 3PAR StoreServ.
- Reduces volume migration timeline dramatically from months to almost hours through hardware-accelerated conversion.
- Reduces capacity costs as volumes are consolidated in conjunction with data center virtualization.

**Key highlights**

- Leverages the unique hardware capabilities of HPE 3PAR ASIC to drive the ongoing inline thinning of volumes at wirespeeds, while preserving service levels and preventing disruption to production workloads.
- Mitigates the requirement for special host software or professional services aimed at heightening capacity utilization levels.
- Works with partner products building out a thin ecosystem that extends the benefits of thin technologies to other areas of the data center.

**HPE 3PAR Thin Conversion software**

Leverages zero-detection capabilities within the HPE 3PAR ASIC to drive the conversion of inefficient, fat volumes on legacy arrays to more efficient thin volumes on HPE 3PAR StoreServ.

HPE 3PAR Thin Conversion software<sup>2</sup> leverages the HPE 3PAR ASIC to drive the conversion of fat volumes on legacy arrays to more efficient thin volumes on HPE 3PAR StoreServ Storage. This thinning of volumes enables data centers to meet green IT targets, curb wastage of space, and increase utilization rates. The fat-to-thin conversion mechanism is built into array hardware, volume conversions take place in the data path, at wirespeeds, while preserving service levels and without disruption to production workloads.

With Thin Conversion software, a technology refresh no longer requires a terabyte-for-terabyte replacement, but instead offers the opportunity to reduce capacity requirements by 50 percent. And while doing this, it preserves service levels and prevents impact to production workloads, all without the need to invest in professional services.

**HPE 3PAR Thin Persistence software**

Thin volumes on HPE 3PAR StoreServ stay as lean and efficient as possible by leveraging the HPE 3PAR ASIC to reclaim unused space associated with deleted data non-disruptively.

HPE 3PAR Thin Persistence software<sup>3</sup> allows thin volumes on HPE 3PAR StoreServ Storage to stay lean and efficient. Writing and deleting large amounts of data can leave unused space within thin volumes. Even lots of small writes and deletions can eventually reduce the efficiency of thin volumes. This logical deletion of data without actually freeing up unused space creates a hidden utilization penalty that adds up over time. HPE 3PAR Thin Persistence software reclaims this unused space to increase capacity efficiency, keep costs down, and help defer the purchase of additional capacity to handle new data growth. HPE 3PAR Thin Persistence software also helps enterprises maintain sustainability targets by keeping down data center power and cooling needs.

Here is more on the industry's most comprehensive tools for thin storage—**HPE 3PAR Thin Technologies**.

<sup>2,3</sup> For more details visit HPE 3PAR Programs—Get Thinner Guarantee at [hpe.com/storage/getthinner](https://hpe.com/storage/getthinner)

## HPE 3PAR Replication Software Suite

Protects data, applications, and your business from the unpredictable by delivering simple, fast, and economical data protection and DR solutions.

### Includes

- HPE 3PAR Virtual Copy software
- HPE 3PAR Remote Copy software
- HPE 3PAR Peer Persistence software
- HPE 3PAR Cluster Extension software

HPE 3PAR Replication Software Suite is designed to offer autonomic replication, transparent failover, and point-in-time copies enabling seamless DR for critical data. This software suite bundles HPE 3PAR Virtual Copy, HPE 3PAR Remote Copy, HPE 3PAR Peer Persistence and HPE 3PAR Cluster Extension (CLX) software to help you protect, share and freely move data across data centers without impacting your business applications.

With **HPE 3PAR Virtual Copy software** capacity is never reserved upfront and data is never duplicated within the snapshot tree, HPE 3PAR Virtual Copy software helps users to protect and share data flexibly and affordably from any application without sacrificing performance, availability, or versatility. **HPE 3PAR Remote Copy software** protects data across different sites using simple but powerful replication technology. **HPE 3PAR Peer Persistence software** offers automated transparent failover across metropolitan distances and **HPE 3PAR Cluster Extension (CLX) software** enables automatic failover across data centers.

The intelligence and automation of the software suites offerings reduce complexity, human resource requirements, and potential errors at critical moments.

Here is more on [HPE 3PAR Replication Software Suite](#).

## HPE 3PAR Virtual Copy software

Enables HPE 3PAR StoreServ users to protect and share data flexibly and affordably from any application without sacrificing performance, availability, or versatility.

HPE 3PAR Virtual Copy software flexibly delivers instant point-in-time copies of your data, so you can share and protect data from almost any application simply and affordably. Use HPE 3PAR Virtual Copy software to stay ahead of the innovation curve, for example, by enabling rapid application recovery, while containing costs with a thin-aware implementation that decreases the amount of physical capacity that is actually being consumed by your data.

Most traditional copy solutions lack flexibility and require too great an investment in online capacity to be considered economical. HPE 3PAR Virtual Copy software is a reservation-less, non-duplicative, copy-on-write software that consumes capacity only for changed data, in fine-grained increments and without ever duplicating changed data within a snapshot tree.

Please refer the [HPE 3PAR Virtual Copy software](#) brochure for more details.

### Key highlights

- Prevents preservation of capacity; only fine-grained capacity is consumed for changed data.
- Helps autonomic space reclamation using thin copy reclamation feature that frees up unused space following snapshot deletions to maintain high-capacity utilization over time.
- Protects against any noticeable performance impact, while providing the ability to recover applications from multiple points in time, on par with near continuous data protection solutions.

#### Key highlights

- Delivers multi-site replication that can be set up, tested and managed with just a few clicks from a single HPE 3PAR Management Console window, enabling simple, efficient DR using HPE 3PAR StoreServ.
- Allows mirroring of data between HPE 3PAR StoreServ systems of any model and configuration, lessening the incompatibilities and complexities associated with trying to mirror between midrange and high-end array technologies purchased from other vendors.
- Delivers native support for replication by using both Fibre Channel (FC) and IP out-of-the-box connectivity over an IP network that decrease the need for dedicated or specialized infrastructure such as FC extenders and converters.

#### Key highlights

- Presents a common seamless storage infrastructure to servers and hosts with inter-site storage federation and enabling a peer relationship between HPE 3PAR StoreServ Storage systems located at data centers separated by metropolitan distances.
- Allows load balancing across data centers by supporting Storage vMotion enabling VMs to move from one site to another without any downtime for their applications.
- Helps in achieving complete business continuity by making zero RTO possible with zero RPO.

## HPE 3PAR Remote Copy software

Provides enterprise and cloud data centers autonomic DR and replication technology to protect and share data from any application—simply, efficiently, and affordably.

HPE 3PAR Remote Copy software dramatically reduces the cost of remote data replication and DR by leveraging thin copy technology, enabling multi-site and multi-mode replication with both midrange and high-end arrays and reducing the need for professional services.

HPE 3PAR Remote Copy software offers fast and autonomic DR configuration; it can be set up and tested almost in minutes, from a single window. This software leverages the HPE 3PAR Thin Express ASIC to utilize expensive Remote Copy bandwidth efficiently. With support for synchronous long-distance replication, you can have an affordable, multi-site alternative for achieving low recovery-time objectives (RTOs) and zero-data-loss recovery-point objectives (RPOs) with complete distance flexibility.

Please refer to the [HPE 3PAR Remote Copy software](#) brochure for more details.

## HPE 3PAR Peer Persistence software

Federates your storage infrastructure across your data centers unconstrained by their physical boundaries and uses them effectively as one single storage resource.

HPE 3PAR Peer Persistence software helps companies to federate their HPE 3PAR StoreServ Storage systems present at geographically separated data centers. This inter-site federation of storage allows customers to use their data centers more effectively by allowing them to move applications from one site to another as per their business need, and more importantly, without any application downtime.

HPE 3PAR Peer Persistence software leverages the robust high availability (HA) solutions already available on HPE 3PAR StoreServ Storage systems and extends it even further by enabling a peer relationship between two HPE 3PAR StoreServ Storage systems located at geographically separated sites. Peer Persistence software is built on the same industry-leading mesh-active and massively parallel architecture that HPE 3PAR is known for and thereby allows HPE 3PAR customers with Remote Copy software setup to deploy Peer Persistence software without any appliance or additional hardware needed.

HPE 3PAR Peer Persistence software enables automatic switchover and switchback between two sites or data centers to be transparent to hosts and without any disruption to applications running on them. Peer Persistence software is VMware vSphere Metro Storage Cluster (vMSC) certified and is deployed with Remote Copy software without any additional support or resources.

HPE 3PAR Peer Persistence software support extends to Oracle Real Application Clusters (RAC), Microsoft Windows Server® 2008 R2 and 2012 R2, including Hyper-V and MSFT Cluster support. RHEL 6 and HPE-UX (11i v3) environments.

Please refer to the [HPE 3PAR Peer Persistence software](#) solution brief for more details.

### Key highlights

- Automated failover and failback between data centers, across distances reduce the complexity involved in a DR situation.
- A truly hands-free disaster-tolerant solution, as disks on the server on both the primary and secondary sites are recognized during the initial system boot; therefore, LUN presentation and LUN mapping changes are not necessary during failover or failback.

## HPE 3PAR Cluster Extension software

Offers protection against application downtime from fault, failure, or site disaster by extending a local cluster across data centers.

HPE 3PAR Cluster Extension (CLX) software<sup>4</sup> provides protection against system downtime with automatic failover of application services and read/write enabling of remotely mirrored HPE 3PAR StoreServ Storage systems. CLX adapts in real time, to real life situations, providing protection via rapid site recovery. CLX requires no server reboots or logical unit number (LUN) presentation/mapping changes during failover, this benefits if storage administrator is unaware of the outage, unable to respond or simply not present, for CLX can true hands-free failover/failback decision making.

CLX integration provides efficiency that preserves operations and delivers investment protection because it monitors and recovers disk pair synchronization on an application level while offloading data replication tasks from the host. Implementation of a CLX solution facilitates the highest standards of data integrity and protects your valuable information against the threat of downtime—whether planned or unplanned. Hewlett Packard Enterprise provides proven strategies, services, and technologies to reduce your exposure and vulnerability.

## HPE 3PAR Data Optimization Software Suite

Offers the freedom to configure, optimize, and reconfigure your HPE 3PAR StoreServ Storage for improved control, efficiency, and effectiveness all without disturbing users or applications.

HPE 3PAR Data Optimization Software Suite is designed specifically for storage requirements that are constantly changing. This software suite bundles HPE 3PAR Adaptive Optimization, HPE 3PAR Dynamic Optimization, HPE 3PAR Priority Optimization and HPE 3PAR Peer Motion software to help you react quickly to constant fluctuations in allocation, capacity management, and performance of applications.

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. **HPE 3PAR Dynamic Optimization software** analyzes how volumes use physical disks and automatically makes intelligent, non-disruptive adjustments to help ensure optimal volume performance and capacity utilization. Application of priority policies with **HPE 3PAR Priority Optimization software** ensures that the mission-critical applications within the HPE 3PAR StoreServ Storage system get the required service level and performance without contention. Do-it-yourself data migration offered by **HPE 3PAR Peer Motion software** enables non-disruptive data mobility across systems providing the flexibility to load balance at will, refresh technology seamlessly, reduce asset lifecycle management costs, and lower technology refresh.

Together the software suites offerings provides the flexibility to react quickly to changing application and infrastructure requirements all while balancing cost and performance.

Here is more on [\*\*HPE 3PAR Data Optimization Software Suite\*\*](#).

### Includes

- HPE 3PAR Adaptive Optimization software
- HPE 3PAR Dynamic Optimization software
- HPE 3PAR Priority Optimization software
- HPE 3PAR Peer Motion software

<sup>4</sup> For HPE 3PAR StoreServ 20000 and 8000 Storage, HPE 3PAR Replication Software Suite includes HPE 3PAR Cluster Extension Software.

### Key highlights

- Allows you to meet virtual and cloud performance demands in a smaller footprint and to deliver significantly lower storage equipment costs than using Fibre Channel (FC) drives alone, by using SSDs for Tier 0 storage.
- Incorporates a high degree of user control and several policy override mechanisms; a flexible implementation allows analysis and data movement to be scheduled and resource usage limits and tier definitions to be varied by application.
- Supports multiple Adaptive Optimization configurations and the coexistence of tiered and non-tiered application volumes, delivering the ability to consolidate a wide range of applications onto a single array.

### Key highlights

- Alters service levels of a volume non-disruptively with a single click, without scheduling, planning, or impacting application performance; each storage volume resides on a single tier, but maintains mobility between tiers throughout the application lifecycle.
- Adjusts the RAID level, subsystem failure protection level, drive type, stripe width, or radial placement of volumes seamlessly to achieve peak data QoS levels.
- Cuts down the cost of overprovisioning needed to accommodate usage spikes as well as the time-consuming, manual migration of data to lower tiers, thus reducing storage costs.

## HPE 3PAR Adaptive Optimization software

Provides an autonomic storage-tiering solution that enables virtual and cloud data centers to deploy service-level enhancements on a broad scale, at a low cost with low risk.

HPE 3PAR Adaptive Optimization software delivers the next generation in storage tiering by taking a fine-grained, highly automated approach to service-level improvement. Policy-driven, granular data movement takes place autonomically, providing highly reliable, non-disruptive, cost-effective storage tiering at the sub-volume level; thus delivering the right QoS to the right data at the right time.

HPE 3PAR Adaptive Optimization software operates on the principle of I/O access density, which is based on 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 SSDs can deliver higher performance at a lower cost than traditional storage platforms. HPE 3PAR Adaptive Optimization software works with the HPE 3PAR Security Software Suite to analyze actual user I/O patterns, which enables Adaptive Optimization software to move only the blocks with high I/O activity to premium SSD storage.

Please refer to the [HPE 3PAR Adaptive Optimization](#) technical white paper to find out more.

## HPE 3PAR Dynamic Optimization software

Alleviates costly and time-consuming QoS-level management by giving organizations the ability to react autonomically to changing application and infrastructure requirements.

HPE 3PAR Dynamic Optimization software enables organizations to achieve peak data QoS levels at the lowest cost, at all times, across all stages of the disk-based data lifecycle. It enables users to alter service levels associated with a storage volume non-disruptively (RAID level, subsystem failure protection level, drive type, stripe width, or radial placement) and to rebalance storage volumes, each with a single click. HPE 3PAR Policy Advisor for Dynamic Optimization software is an add-on application that analyzes how volumes on HPE 3PAR StoreServ Storage uses physical disk space and makes intelligent, autonomic adjustments to facilitate improved volume distribution and tiering of storage volumes.

Converts fully provisioned volumes to thin volumes (and vice versa) and converts thin or fully provisioned volumes to deduplicated volumes to save space. This space can then be utilized for volumes that are sparsely consumed and this results in performance acceleration as the impact is migration of FAT volumes to a hard-disk-drive (HDD) tier from a SSD tier.

**Key highlights**

- Assures QoS for your most mission-critical applications; creates and modifies threshold limits including IOPS, bandwidth, and latency to meet business needs.
- Configures thresholds by volume set with real-time enforcement measured in seconds or sub-seconds.
- Avoids resource contention in the storage system by throttling the I/O of one or more workloads to allow performance of others.
- Controls and balances the distribution of the powerful HPE 3PAR StoreServ Storage disk bandwidth across multiple production, and test and development workloads on a single system.

**Key highlights**

- Provides online, non-disruptive, on-demand data mobility between any HPE 3PAR StoreServ Storage system.
- Works with Peer Motion Manager, a capability within HPE 3PAR Management Console, to automate, simplify, and foolproof the migration of data between HPE 3PAR StoreServ Storage systems, thereby enabling a do-it-yourself data migration approach while lowering the need for professional services.
- Non-disruptive data mobility between any-to-any HPE 3PAR StoreServ Storage systems unlocks the flexibility to enhance the purchase and addition of new resources to an existing system over its lifecycle.

**HPE 3PAR Priority Optimization software**

Achieves service levels and offers predictable performance for an application or workload.

HPE 3PAR Priority Optimization software ensures that mission-critical applications get the required service level and performance without contention. 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 software enables service levels for applications, virtual domains, and workloads as business requirements dictate. It protects mission-critical applications in enterprise environments by specifying service-level objectives (SLOs) 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 software automatically adjusts the service levels of lower-priority applications and workloads 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.

Priority Optimization's "Latency goal" feature enables SLAs as low as 500  $\mu$ s, making it possible to configure service-level objectives for KB/s and I/O bandwidth on a virtual volume set (VVset) or between different virtual domains.

Please refer to the [HPE 3PAR Priority Optimization software](#) data sheet to find out more.

**HPE 3PAR Peer Motion software**

Non-disruptive data mobility across systems enables customers to load balance at will, update technology seamlessly, improve asset lifecycle management, and lower technology refresh CAPEX.

HPE 3PAR Peer Motion software is a non-disruptive, do-it-yourself data migration tool for enterprise block storage. HPE 3PAR Peer Motion software customers can load balance I/O workloads across systems at will, perform technology update seamlessly, reduce costs for asset lifecycle management and lower capital expenditure (CAPEX) associated with technology refresh. Unlike traditional block migration approaches, HPE 3PAR Peer Motion software enables customers to migrate storage volumes between any HPE 3PAR StoreServ Storage online, non-disruptively and without complex planning or dependency on extra tools.

HPE 3PAR Peer Motion software leverages HPE 3PAR ASIC to power the simple and rapid inline conversion of inefficient, fat volumes on source arrays to more efficient, higher-utilization thin volumes on the destination system. Peer Motion Manager, a built-in capability within HPE 3PAR Management Console orchestrates all stages of the data migration lifecycle to enable data migration that is simple and foolproof.

Federated multi-array bidirectional data mobility between HPE 3PAR StoreServ Storage systems is easy to implement and manage via the HPE 3PAR StoreServ Management Console (SSMC).

Please refer to the [HPE 3PAR Peer Motion software](#) data sheet to find out more.

## HPE 3PAR File Persona Software Suite

Truly converged solution from a single storage array with multi-protocol support that is simple and efficient to deploy and manage.

HPE 3PAR File Persona Software Suite is designed to enable a rich set of file protocols file data services and an Object Access API (REST). By unlocking File Persona capabilities, system administrators gain the ability to provision file shares and block volumes from a single user interface. The software comprises of two sets, namely Block Persona that is ideal for virtualization, database, and application workloads and File Persona that enables enterprise file sync and share, home directory consolidation, group/departmental shares, corporate shares, and custom cloud applications—all from truly converged controllers, with truly agile capacity, designed for truly unified management.

Here is more on [HPE 3PAR File Persona Software Suite](#).

## HPE 3PAR Security Software Suite

Offers the provision of securing consolidated environment and the flexibility and efficiency of protecting data from intentional or unintentional deletion.

### Includes

- HPE 3PAR Virtual Domain software
- HPE 3PAR Virtual Lock software

HPE 3PAR Security Software Suite helps deliver secure access and improved storage services for separate applications and user groups, while providing an efficient and cost-effective way to comply with data retention requirements, for example, complying with internal governance policies or e-Discovery. This suite bundles HPE 3PAR Virtual Domain and HPE 3PAR Virtual Lock software that together deliver a policy-based, virtual implementation that preserves the benefits of massively distributing and sharing each application workload across all system resources.

The inclusion of **HPE 3PAR Virtual Domain software** in this suite helps deliver multiple autonomous, secure, and policy-based virtual systems within a single massively scalable HPE 3PAR StoreServ Storage system. **HPE 3PAR Virtual Lock software** ensures efficient and cost-effective ways to comply with data retention requirements, like internal governance policies or e-Discovery. During the user-specified retention period, volumes and copies can be read but are protected against deletion, even by an administrator with the highest-level user privileges.

HPE 3PAR Security Software Suite avails administrators the ability to retain the benefits of storage consolidation including greater resource utilization but with reduced administration.

Here is more on [HPE 3PAR Security Software Suite](#).

**Key highlights**

- Enables the creation of up to 1,024 protected, virtual private arrays within a single, massively scalable HPE 3PAR StoreServ Storage by delivering a simple, efficient, and scalable approach to protect segregation within a consolidated platform.
- Policy-based, virtual implementation that preserves the benefits of massively distributing and sharing each application workload across all system resources (ports, processors, cache, loops and disk drives).
- With virtual implementation having advanced security, users only have access to virtual domains and logical elements that they have been granted access by a master administrator.

**Key highlights**

- The HPE 3PAR Virtual Lock software allows a user-configurable retention period that enables individual storage volumes or copies to be locked for a specified period of time.
- When used in conjunction with HPE 3PAR Virtual Copy software for reservation-less, non-duplicative snapshots, HPE 3PAR Virtual Lock software delivers an extremely simple and efficient approach to data retention.

**Key highlights**

- Migrates data online from HPE EVA Storage, EMC storage, HDS storage or IBM Storage to HPE 3PAR StoreServ Storage with no complexity.
- Uses HPE Command View EVA software (for HPE EVA Storage) and HPE 3PAR Online Import Utility (for EMC<sup>5</sup> HDS<sup>6</sup> and IBM Storage<sup>7</sup>) to automate and simplify data migration.
- Leverages HPE 3PAR ASIC to power the simple and rapid conversion of inefficient “thick” volumes on the source system to the more efficient “thin” volumes on the destination HPE 3PAR StoreServ Storage.

<sup>5</sup> HPE 3PAR Online Import support for EMC storage extends to EMC VMAX, EMC VNX, EMC CLARiiON CX4 storage systems.

<sup>6</sup> HPE 3PAR Online Import support for Hitachi storage systems extends to HDS TagmaStore NSC, USP, and VSP storage systems.

<sup>7</sup> HPE 3PAR Online Import support for IBM Storage systems extends to IBM XIV Gen2 and IBM XIV Gen3 Storage systems.

**HPE 3PAR Virtual Domain software**

Lifts service levels and lowers cost by enabling consolidation on “virtual private arrays” on shared HPE 3PAR StoreServ Storage systems, while preserving the benefits of massively parallel load balancing.

By providing administrative segregation of users, hosts, and application data, HPE 3PAR Virtual Domain software allows hosting providers to deliver virtual private array services and enterprise IT organizations to deliver “self-service” storage that is both protected and capable of high QoS levels. Through consolidation onto the massively parallel and dynamically tiered HPE 3PAR StoreServ Storage, individual user groups and applications achieve greater storage service levels (performance, availability, and functionality) than pre-consolidation levels with less infrastructure. HPE 3PAR Virtual Domains software is ideal for both internal and external storage service providers and for any enterprise deploying a converged infrastructure.

**HPE 3PAR Virtual Lock software**

Provides HPE 3PAR StoreServ Storage users with an efficient and cost-effective way to comply with data retention requirements, for example, to comply with internal governance policies or e-Discovery.

HPE 3PAR Virtual Lock software gives users the ability to protect data volumes and volume copies from intentional or unintentional deletions. During the user-specified retention period, volumes and copies can be read but are protected against deletion, even by an administrator with the highest-level user privileges.

HPE 3PAR Virtual Lock software is thin aware, so it works on both standard and thin-provisioned storage volume copies, and is completely compatible with HPE 3PAR Virtual Copy, HPE 3PAR Remote Copy, and HPE 3PAR Thin Provisioning software.

**HPE 3PAR Online Import software**

Effortless migration of data from HPE EVA Storage, EMC storage, HDS storage or IBM Storage array to HPE 3PAR StoreServ Storage enables customers to improve lifecycle management accompanied by smooth technology refreshes.

HPE 3PAR Online Import software gets customers to a modern Tier 1 storage solution quickly and effortlessly. Move data from HPE EVA Storage, EMC storage,<sup>5</sup> HDS storage<sup>6</sup> or IBM storage<sup>7</sup> to HPE 3PAR StoreServ Storage, a family of products that deliver a multi-tenant federated solution designed for virtualized or cloud environments.

## HPE 3PAR Online Import support for HPE EVA Storage

Using the familiar HPE Command View EVA software as the orchestration platform, HPE 3PAR Online Import software enables the migration of data from a source HPE EVA array to a destination HPE 3PAR StoreServ Storage system. It enables direct data migration from the HPE EVA to HPE 3PAR StoreServ Storage array without the need of host resources in the actual migration of data. EVA virtual disks and host configuration information can be migrated to HPE 3PAR StoreServ Storage without the need to change host configuration or interrupting data access.

## HPE 3PAR Online Import support for other storage arrays

HPE 3PAR Online Import software enables a smooth migration of data from a source array to a destination HPE 3PAR StoreServ Storage array, with minimal to no disruption. It enables data migration from a source array to destination HPE 3PAR StoreServ Storage array without the need of host resources in the actual migration of data and leverages HPE 3PAR Thin Express ASIC for efficient inline thin volume conversion while migrating data.

The source arrays supported under HPE 3PAR Online Import Software are:

- EMC Storage systems: EMC VMAX, EMC VNX, EMC CLARiiON CX4 storage array
- HDS Storage systems: HDS TagmaStore Network Storage C Controller [NSC], HDS Universal Storage Platform [USP], HDS Virtual Storage Platform [VSP] storage array
- IBM Storage systems: IBM XIV Gen 2 and IBM XIV Gen 3 storage array

This entire orchestration is enabled by HPE 3PAR Online Import Utility.

### Key highlights

- Delivers on SLAs with fast, non-disruptive, application-consistent backup and recovery.
- Eliminates cost and complexity of traditional backup approaches with flat backup from HPE 3PAR StoreServ to HPE StoreOnce.
- Protects applications with the availability of snapshots and the protection of backups.
- Empowers hypervisor and application owners to control backup and recovery directly and seamlessly from their preferred native interfaces.

## HPE Recovery Manager Central

Converged data protection for business critical applications without any impact to applications.

HPE Recovery Manager Central (RMC) software integrates HPE 3PAR StoreServ primary storage with HPE StoreOnce Backup Systems to provide a converged availability and flat backup service that augments traditional backup approaches. Combining the performance of local and remote snapshots with the protection of backups, RMC enables fast, efficient, reliable, and simple protection for your business-critical applications.

The Express Protect feature of RMC facilitates direct backup of HPE 3PAR StoreServ Storage snapshots to HPE StoreOnce Backup System. This reduces the expense and complexity associated with traditional backup server-centric infrastructure. RMC delivers fast, efficient, and reliable recovery from synthetic full backups. These are generated inline using the prior set of objects and leverage HPE 3PAR StoreServ SnapDiff technology, which sends only changed blocks to the StoreOnce Backup System. Snapshots backed up on StoreOnce are self-contained volumes that can be restored back to the original or different HPE 3PAR StoreServ array in the event of a disaster. This level of data protection cannot be achieved with snapshots alone. All backups are deduplicated using StoreOnce technology, thus reducing backup storage requirements by up to 20X on average.

Please visit the [HPE StoreOnce Recovery Manager Central](#) website for more details.

**Key highlights**

- Integrates with optional HPE 3PAR Recovery Manager software for VMware vSphere to give VMware administrators seamless, rapid online recovery from within the vCenter console.
- Works with HPE 3PAR Recovery Manager software to enable VMware administrators to create and view hundreds of space-efficient, PIT snapshots of VMs and their associated storage volumes.

**HPE 3PAR Management Plug-in software for VMware vCenter**

Integrates with VMware vCenter Server so VMware administrators can view HPE 3PAR StoreServ Storage resources connected to the VMware infrastructure by using a native VMware interface.

HPE 3PAR Management Plug-in software for VMware vCenter offers administrators access to powerful management capabilities from within the VMware vCenter Server management console. VMware administrators can gain greater visibility into storage resources and precise insight into how individual VMs are mapped to data stores and individual volumes on HPE 3PAR StoreServ Storage. With this plug-in, QoS characteristics for individual storage volumes such as RAID level, subsystem failure protection level, drive type, and volume size and type are all displayed within the familiar easy-to-use vCenter Server virtualization management console. When used in conjunction with HPE 3PAR Recovery Manager software for VMware vSphere, this plug-in also gives VMware administrators the power of rapid online recovery from within the vCenter console.

**HPE 3PAR Storage Replication Adapter software for VMware vCenter SRM**

Provides end-to-end DR for virtualized environments.

The HPE 3PAR Storage Replication Adapter (SRA) software provides simple, reliable, end-to-end DR for VMware vSphere environments. By integrating HPE 3PAR Remote Copy software with VMware vCenter Site Replication Manager (SRM) for automated DR management, organizations can protect their applications seamlessly and effectively without duplicating DR investments in both storage and server layers.

Find out more on [HPE 3PAR SRA software for VMware vCenter SRM](#) here.

**HPE 3PAR Recovery Manager software for Hyper-V**

Provides simple and efficient protection and rapid online recovery of VHDs and individual VMs.

HPE 3PAR Recovery Manager software for Hyper-V is an array-based, online VM snapshot and recovery solution that gives superior control over data protection and recovery in Hyper-V environments. By leveraging HPE 3PAR Virtual Copy software, Recovery Manager software for Hyper-V enables administrators to non-disruptively create space-efficient, application-consistent, point-in-time snapshots to protect and recover VHDs and individual VMs.

**Key highlights**

- Creates highly space-efficient snapshots enabling tighter SLAs without the use of separate agents installed on individual VMs, with an array-based approach that leverages HPE 3PAR Virtual Copy software.
- Provides a simple, automated solution to enable administrators to efficiently protect and recover VHDs, Hyper-V VMs, and individual files.

**Key highlights**

- Does away with the backup window and associated “race to daylight” by integrating with Microsoft Volume Shadow Copy Service (VSS) to power the creation of hundreds of non-disruptive, application-consistent snapshots for off-host backup.
- Allows snapshot instances to be managed efficiently, from an easy-to-use GUI on the host that helps control administration costs.

## **HPE 3PAR Recovery Manager software for Microsoft Exchange**

Provides rapid, efficient online backup and recovery of entire Microsoft Exchange Server DBs or even an individual email from multiple, highly granular point in time.

HPE 3PAR Recovery Manager software intelligently creates and manages highly granular and capacity-efficient Exchange-aware snapshots. These snapshots can then be used to restore Exchange instances or databases (DBs) quickly, or to back them up non-disruptively to tape for near-continuous data protection. As HPE 3PAR Recovery Manager software is built on HPE 3PAR Virtual Copy software, scores of reservation-less snapshots can be kept online economically, allowing for extended or frequent Exchange DB recovery points.

## **HPE StoreFront Manager for Microsoft**

Enables administrators to monitor, provision, and control HPE 3PAR StoreServ Storage resources using Microsoft System Center interface.

**HPE StoreFront Manager for Microsoft** provides a comprehensive integration with Microsoft System Center (SCOM and System Center Virtual Machine Manager [SCVMM]) to enable management and monitoring of HPE 3PAR StoreServ Storage running in Microsoft Hyper-V environment via HPE 3PAR Management Pack for SCOM and HPE Storage UI add-in for SCVMM software.

**HPE 3PAR Management Pack for SCOM** provides a single-pane-of-glass view to discover and monitor predefined rules to display events/alerts, capacity and health dashboards for physical, virtual, and logical components of HPE 3PAR Storage in a diagrammatic view.

HPE Storage also provides complete integration to enable all storage management functionality provided by Microsoft SCVMM via SMI-S providers.

**HPE Storage UI add-in for SCVMM** provides enhanced monitoring, provisioning, and control of HPE 3PAR Storage in Hyper-V and ESXi environments with an integrated view of VMs, hosts, LUNs, CPGs, and associated storage resources on HPE 3PAR Storage.

Find out more on [\*\*HPE StoreFront Manager for Microsoft\*\*](#) here.

## HPE 3PAR Software Suites

<b>HPE 3PAR Operating System Software Suite</b>	<p>Required for all new HPE 3PAR StoreServ Storage systems, this foundational software suite gives you everything you need to get up and running quickly and efficiently. Powered by the HPE 3PAR Gen5 ASIC, HPE 3PAR Thin Technologies including—HPE 3PAR Thin Provisioning, HPE 3PAR Thin Persistence, HPE 3PAR Thin Conversion and HPE 3PAR Thin Deduplication software, form the base of this software suite. Performance acceleration is assured by HPE 3PAR Adaptive Flash Cache which reduce application response times.</p> <p>Network simplification and security are covered with iSCSI VLAN tagging. Simplified management is offered by the HPE 3PAR StoreServ Management Console and HPE 3PAR Host Explorer software. 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 software and autonomic rebalancing capabilities that help optimize the use of future capacity expansions, and support for standard multipathing software for high availability in clustered environments. A one-year license for HPE 3PAR Online Import is included to enable migration from HPE EVA, EMC Storage,<sup>8</sup> HDS Storage<sup>9</sup> or IBM Storage<sup>10</sup> systems.</p>
<b>HPE 3PAR Replication Software Suite</b>	<p>This suite bundles HPE 3PAR Virtual Copy with HPE 3PAR Remote Copy software, both also sold separately for all HPE 3PAR StoreServ Storage 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 software offers simple and cost-effective data protection for efficient multi-tenant disaster recovery.</p> <p>Also included in this bundle is HPE 3PAR Peer Persistence software, which ensures transparent automatic failover over metropolitan distances using Remote Copy synchronous mode. For HPE 3PAR StoreServ 20000 and 8000 systems this Suite also includes HPE 3PAR Cluster Extension software, which enables automatic failover across data centers using Remote Copy asynchronous mode.</p>
<b>HPE 3PAR Data Optimization Software Suite</b>	<p>This software bundle combines HPE 3PAR Dynamic Optimization, HPE 3PAR Adaptive Optimization, HPE 3PAR Priority Optimization, and HPE 3PAR Peer Motion software together. HPE 3PAR Dynamic Optimization software delivers the required service levels for the lowest possible cost throughout the data lifecycle. HPE 3PAR Adaptive Optimization software improves storage utilization by enabling cost-optimized storage tiering. HPE 3PAR Priority Optimization assures service levels with QoS controls for mission-critical applications. HPE 3PAR Peer Motion software enables load balancing at will wherein movement of data and workloads between arrays does not impact applications, users, or services. These four software titles are also sold separately for all HPE 3PAR StoreServ Storage models. Depending on purchase date, titles included in this suite may vary. Check the HPE 3PAR software QuickSpecs for complete details.</p>
<b>HPE 3PAR File Persona Software Suite</b>	<p>This licensed feature of the HPE 3PAR Operating System enables rich file protocols from SMB/CIFS to NFS and FTP, file data services from quota management to file snapshots and retention/immaturity, and a RESTful Object Access API for programmatic access to files. It extends the spectrum of workloads natively addressed by HPE 3PAR StoreServ Storage to include home directories and user shares, content management and collaboration, data preservation/governance, and custom cloud applications. Management is truly unified through the HPE 3PAR StoreServ Management Console and the powerful, scriptable HPE 3PAR CLI.</p>
<b>HPE 3PAR Security Software Suite</b>	<p>This software suite bundles HPE 3PAR Virtual Domains and HPE 3PAR Virtual Lock software. 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.</p>
<b>HPE 3PAR Application Software Suite for Microsoft Hyper-V</b>	<p>Protect your Microsoft Hyper-V environment with HPE 3PAR Recovery Manager software for Microsoft Hyper-V and the HPE 3PAR VSS Provider software, included in this software bundle.</p>
<b>HPE 3PAR Application Software Suite for Microsoft Exchange</b>	<p>This bundle gives you the essentials for use with Microsoft Exchange, including HPE 3PAR Recovery Manager software for Microsoft Exchange and the VSS Provider software.</p>
<b>HPE StoreOnce Recovery Central Manager</b>	<p>This suite bundles everything you need to protect your critical applications running on HPE 3PAR StoreServ Storage. RMC software allows you to create, manage and automate crash-consistent snapshots for any application and app-consistent snapshots for VMware vSphere, Microsoft SQL Server and Oracle<sup>11</sup>. In addition, RMC allows you to perform flat backup to HPE StoreOnce systems for converged data protection.</p>

<sup>8</sup> HPE 3PAR Online Import support for EMC Storage extends to EMC VMAX, EMC VNX and EMC CLARiiON CX4 Storage systems.

<sup>9</sup> HPE 3PAR Online Import support for Hitachi Storage system extends to Hitachi Data Systems (HDS) TagmaStore Network Storage Controller (NSC), Universal Storage Platforms (USP), and Virtual Storage Platforms (VSP) Storage systems.

<sup>10</sup> HPE 3PAR Online Import support for IBM Storage extends to IBM XIV Gen 2 and IBM XIV Gen 3 systems.

<sup>11</sup> Recovery Manager Central for Oracle (RMC-O) supports RHEL and OEL environments. For Solaris SPARC, IBM AIX and HP-UX environments, use the HPE 3PAR Applications Suite for Oracle.



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