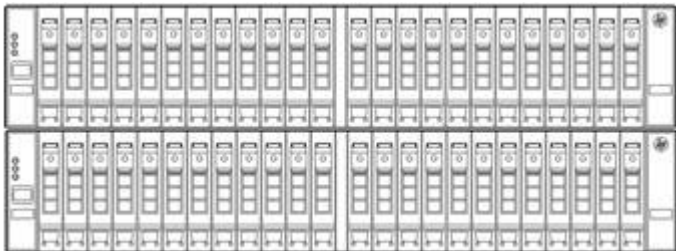## Overview

HPE 3PAR StoreServ 7450 Storage

HPE 3PAR StoreServ 7450 Storage is the only all-flash array in the industry that delivers the performance advantages of a purpose-built, flash-optimized architecture without compromising resiliency, efficiency, or data mobility. A flash-optimized architecture reduces the performance bottlenecks that can choke general-purpose disk arrays that have been retrofitted with solid-state disks (SSDs). However, unlike other purpose-built flash arrays, the 3PAR StoreServ 7450 doesn't require you to introduce an entirely new architecture into your environment to achieve flash-optimized performance. As a result, you don't have to sacrifice rich, Tier- 1 data services, quad 4-node resiliency, advanced functionality, or enterprise-class efficiency, or seamless data mobility between systems.
HPE 3PAR StoreServ 7450 storage delivers performance without compromises.

HPE 3PAR StoreServ 7450c Storage

What's New

NOTE: The term "HPE 3PAR StoreServ 7450 Storage" refers to the whole 7450 family, including both the new HPE 3PAR StoreServ 7450 Storage Converged Controller model (7450c) as well as the legacy HPE 3PAR StoreServ 7450 Storage model.

Summary	3PAR StoreServ 7450c
Number of Controller Nodes	2 or 4
HPE 3PAR Gen4 ASICs	2 or 4
Processors	2 - 4 eight-core 2.3 GHz
Total On-Node Cache	192 GiB
Total On-Node Cache per controller node pair	96 GiB
Maximum Host Ports	24 ports
8Gb/s Fibre Channel Host Ports	4 - 24 ports
16Gb/s Fibre Channel Host Ports	0 - 8 ports
10Gb/s iSCSI and FCoE Host Ports	0 - 8 ports
10Gb/s Ethernet Adapter	0 - 8 ports
1Gb/s Ethernet Adapter	0 - 16 ports
Maximum Initiators Supported	1024 or 2048
Built-in 1GbE Ports[5]	2 - 4

Overview

2U Controller Enclosure SAS Drive Capacity	24
Number of Solid State Drives	6 - 240
Raw Capacity (approx.)[1]	0.8 - 921.6 TiB[2]
Usable File Capacity	2 - 256TiB[4]

Capacity Details	3PAR StoreServ 7450c
RAID Levels	RAID 0, 1, 5, 6
RAID 5 Data to Parity Ratios	2:1 - 8:1
RAID 6 Data to Parity Ratios	4:2, 6:2, 8:2, 10:2, 14:2
Drive Capacities (approximate GB[2]) (RAID levels, parity ratios, and drive capacities all mixable within the same Storage System)	480GB MLC SSD[3], 920GB MLC SSD[3], 480GB cMLC SSD[3], 1.92TB cMLC SSD[3], 3.84TB cMLC SSD,
Number of Add-on Drive Enclosures (Each Drive Enclosure holds up to 24 drives in 2U for small form factor drives and 4U for large form factor drives)	0 - 18 enclosures

NOTE: Specifications are subject to change without notice.

[1] Maximum raw capacity currently supported with solid state drives.

[2] For storage capacity, 1 GiB = 1024^3 bytes and 1 TiB = 1024 GiB.

[3] SSDs are Solid State Drives.

[4] Usable file capacity supported for HPE 3PAR File Persona Software Suite.

[5] Two built-in 1GbE ports per node pair can be used either for Remote Copy (RCIP) or for File Persona.

Host OS Support

Citrix® XenServer® | HPE-UX® | HPE OpenVMS | IBM® AIX®

Microsoft® Windows® Server, including Microsoft® Hyper-V™

Oracle® Linux® (UEK and RHEL compatible kernels) | Oracle® Solaris

Red Hat® Enterprise Linux® | Red Hat® Enterprise Virtualization

SUSE® Linux Enterprise | Ubuntu | VMware vSphere™

For the latest information on supported operating systems refer to Single Point of Connectivity Knowledge for HPE Storage Products (SPOCK): http://www.hpe.com/storage/spock

Features

Accelerated	HPE 3PAR StoreServ 7450 Storage provides hundreds of thousands of IOPS to allow the highest level of performance for any application environment. With 3PAR system wide striping, data and I/O for each volume are striped widely across all system resources including CPUs, Ports, Cache and Drives. This wide striping enables the system to deliver accelerated performance levels (all resources supporting each volume) while avoiding any single point of bottleneck. Even a small volume can leverage the performance of hundreds of flash devices and all the system's controller nodes for optimal performance. In addition, the massively parallel architecture allows 3PAR to serve the IOPS at sub-millisecond latency levels, enabling high quality IOPS for each of the applications running on HPE 3PAR 7450 storage system.

Quality of Service - With HPE 3PAR Priority Optimization, you can consolidate multiple workloads on high-performing HPE 3PAR 7450 Storage system without compromising on performance of their key applications. A highly automated approach allows you to quickly and easily assign a minimum goal for I/O per second, bandwidth and latency to protect mission critical applications in enterprise environments. Or assign performance thresholds on workloads with lower service level requirements. This capability allow you to consolidate more applications on less infrastructure while delivering predictable performance to meet even the most demanding service level requirements.

HPE 3PAR Express Writes - HPE 3PAR Express Writes is a write acceleration feature built in to HPE 3PAR OS version 3.2.1 and later to optimize CPU utilization and, depending on workload, deliver greater throughput, up to 30 percent more IOPS, and 20 percent reduced latency[1]. All currently supported HPE 3PAR StoreServ Storage HBAs and hosts also support the HPE 3PAR Express Writes feature, and its benefits extend to both spinning drives and flash-based media.

[1]Based on a random, 100 percent write workload with an 8K block size.

Efficient	Reduce capacity requirements and extend flash media lifespan to lower costs. Stretch your Flash media investment for improved return on investment. 3PAR StoreServ is the only platform to guarantee to reduce your capacity requirements by 50%. 3PAR StoreServ can also extend the life of your Flash media by providing additional media endurance.

Get thin and stay thin - Thin technologies unique to the HPE 3PAR StoreServ family can reduce capacity requirements by 50%. Purchase only what you need, as you need it so you can focus resources on growing your business, not maintaining your storage. Additionally, the HPE 3PAR ASIC with Thin Built In features an efficient, silicon-based zero-detection mechanism. This unique hardware capability gives HPE 3PAR StoreServ Storage the power to remove allocated but unused space without impacting performance.

Data center virtualization - Increase virtualization return on investment. Double virtual machine density on your physical servers, spend up to 90 percent less time managing your storage, and support your virtualization deployment with 50 percent less storage capacity. HPE 3PAR StoreServ is built from the ground up to deliver performance that exceeds the demands of virtualized data centers along with transformative levels of simplicity, agility, and efficiency.

Do more with less -HPE 3PAR StoreServ 7450 Storage delivers hundreds of thousands of IOPS at under 1ms latency with less equipment to house, far fewer disks to power and cool, less hardware to retire after it has reached its end of life, and a reduced carbon footprint.

Features

Bulletproof	Eliminate downtime for performance-critical applications - A unique suite of persistent technologies power HPE 3PAR StoreServ 7450 Storage in delivering high availability and Tier 1 resiliency to performance critical applications. Achieve higher service levels for more users and applications with less infrastructure. Deliver higher performance levels, greater availability, and next-generation functionality to multiple user groups and applications from a single storage system.

High Availability - With the Get 6-Nines Guarantee, Hewlett Packard Enterprise PE ensures 99.9999% data availability with all HPE 3PAR StoreServ 7450 systems giving you the peace of mind that your performance critical applications are back with Tier-1 resiliency Intelligent data striping across all available enclosures provides HA Cage, the ability to maintain availability even when a whole drive enclosure fails. HPE 3PAR Persistent Cache in four node configurations eliminates performance impacts that result from unplanned component failures, making it a must-have for maintaining service levels in the virtual data center-a feature that you can't get from any all-flash storage platform built with 2-controllers architecture.

Futureproof	Move data seamlessly across systems and sites to balance performance and cost - HPE 3PAR StoreServ platform is autonomic (or effortless), and delivers polymorphic simplicity from midrange to high end to flash. Federated data mobility is yet another example of Polymorphic Simplicity. Simply and non-disruptively shift data between any model HPE 3PAR StoreServ system without additional management layers or appliances. This helps balance cost and performance to meet service-level requirements at the lowest cost while increasing business agility and minimizing risk. HPE 3PAR Peer Motion enables you to move applications that require flash-performance on 7450 at the right time without impacting its availability. This seamless application movement on and off of flash storage enables you to put your investment into flash technology to its most optimum usage. Simply and non-disruptively shift data between any model HPE 3PAR StoreServ system without additional management layers or appliances.

Service and Support, HP Care Pack, and Warranty Information

Warranty	3 Year, On-site Warranty Service for hardware components. 7x24 4-hour remote response with next business day on-site response

The warranty on the following HPE 3PAR StoreServ 7000 SSD product numbers is five years, parts only:

HP 3PAR StoreServ M6710 480GB 6G SAS SFF(2.5in) MLC 5yr Wty Solid State Drive	E7W54B
HP 3PAR StoreServ M6720 480GB 6G SAS LFF(3.5in) MLC 5yr Wty Solid State Drive	E7W55B
HP 3PAR StoreServ M6710 920GB 6G SAS SFF(2.5in) MLC 5yr Wty Solid State Drive	E7W24B
HP 3PAR StoreServ M6720 920GB 6G SAS LFF(3.5in) MLC 5yr Wty Solid State Drive	E7W25B
HP 3PAR StoreServ M6710 920GB 6G SAS SFF(2.5in) MLC FIPS Encrypt Solid State Drive	E7Y52A
HP 3PAR StoreServ M6710 480GB 6G SAS SFF(2.5in) cMLC Solid State Drive	E7Y55A
HP 3PAR StoreServ M6720 480GB 6G SAS LFF(3.5in) cMLC Solid State Drive	E7Y56A
HP 3PAR StoreServ M6710 1.92TB 6G SAS SFF(2.5in) cMLC Solid State Drive	E7Y57A
HP 3PAR StoreServ M6720 1.92TB 6G SAS LFF(3.5in) cMLC Solid State Drive	E7Y58A
HP 3PAR StoreServ M6710 1.92TB 6G SAS SFF(2.5in) FIPS Encrypted cMLC Solid State Drive	K0F27A
HP 3PAR StoreServ M6710 3.84TB 6G SAS SFF(2.5in) cMLC Solid State Drive	K2Q91A

Warranty on other HPE 3PAR StoreServ 7000 SSDs excluding the ones listed above is 3 years, parts only.

Hewlett Packard Enterprise warrants only that the Software media will be free of physical defects for a period of ninety (90) days from delivery.

For more information about Hewlett Packard Enterprise 's Global Limited Warranty and Technical Support, visit this link.

NOTE: SSDs have a limited number of writes that can occur before reaching the SSD's write endurance limit. This limit is generally high enough so wear out will not occur during the expected service life of an HPE 3PAR StoreServ under the great majority of configurations, IO patterns, and workloads. HPE 3PAR StoreServ tracks all writes to SSDs and can report the percent of the total write endurance limit that has been used. This allows any SSD approaching the write endurance limit to be proactively replaced before they are automatically spared out. An SSD has reached the maximum usage limit once it exceeds its write endurance limit. Following the product warranty period, SSDs that have exceeded the maximum usage limit will not be repaired or replaced under Hewlett Packard Enterprise support contracts.

Service and Support, HP Care Pack, and Warranty Information

Service and Support	Technology Services for increased uptime, productivity and ROI Trust Hewlett Packard Enterprise storage technology experts for every level of service and support. Our integrated portfolio of services for storage help customers reduce costs, optimize data, streamline storage management, and improve backup and recovery. Capitalizing on HPE Storage Systems' capabilities requires a service partner who understands your increasingly complex environment. Team with the people who know Hewlett Packard Enterprise infrastructure hardware and software best-the experienced professionals at HPE Services. Protect your business beyond warranty Warranty protects against manufacturer defects, however warranty uplifts, such as HPE Care Pack Services protect the business-by reducing downtime risks and providing operational consistency for mission-critical and standard business computing. What HPE Storage Technology Services can do for you HPE Storage Technology Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. HPE storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. Choose the right level of support, deployment and integration services Hewlett Packard Enterprise support recommendations are designed to help you enhance technology operations and lower risk-and make it easier for you to seek the right balance between affordability and service-level commitments. Depending on your individual support needs, choose from three levels of care that cover the entire lifecycle to better address your needs-Optimized Care, Standard Care, and Basic Care. If none of our support recommendations meet your needs, we can tailor a service solution for your unique support requirements. Only Hewlett Packard Enterprise brings together deep expertise, proactive and business critical support and a strong partner network-together with, a full set of infrastructure services designed to power a Converged Infrastructure
Optimized Care - delivers best performance and stability through deployment and proactive management practices	HPE Proactive Care Advanced - This service builds and incorporates on Proactive Care Service 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. Additional Option: 3 Year (or) 1 Year HPE Proactive Select Credits, HPE Data Sanitization Tier 1 Service
Standard Care - maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support	HPE Proactive Care 24x7- for a higher return on your storage investment, Proactive Care delivers hardware and software support services designed specifically for your technology; rapid access to Advanced Solution Center Specialists plus, Firmware/Software management and best practice advice. Customers can optimize the return on their IT investment and realize the advantage of running their business critical applications on virtualized infrastructure. Plus, HPE Proactive Select 20 credits per year, select from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education. Additional Option: 3 Year (or) 1 Year HPE Proactive Select Credits, HPE Data Sanitization Tier 1 Service

Service and Support, HP Care Pack, and Warranty Information

Basic Care - Minimum recommended support	HPE Proactive Care 24x7 - for a higher return on your storage investment, Proactive Care delivers hardware and software support services designed specifically for your technology; rapid access to Advanced Solution Center Specialists plus, Firmware/Software management and best practice advice. Customers can optimize the return on their IT investment and realize the advantage of running their business critical applications on virtualized infrastructure. Plus, 10 credits per year, select from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education. Additional Option: 3 Year (or) 1 Year HPE Proactive Select Credits, HPE Data Sanitization Tier 1 Service HPE Proactive Select is a flexible way to purchase services to fit your particular environment or situation. Working with an HPE Account Support Manager, you select a package of services in the form of services credits that include proactive services spanning many technologies and processes, such as on-site firmware upgrades, health checks, assessments, and education. You tailor the service delivery to improve time to production, optimize performance, or build in continuous improvements.
Implementation	Installation: Whichever level of care you select, consider our Installation and Startup Services for a smooth implementation. HPE 3PAR StoreServ 7000 Storage Installation and Startup Service - For smooth startup, this service provides you with deployment of your HPE 3PAR StoreServ 7000 Storage, ensuring proper installation into your storage environment and helping you realize the maximum benefit from your storage investment. http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-2568ENW.pdf
Related Services	HPE Storage Transformation Workshop - Explore data management transformation journey to business-aligned visions, aligning your specific situation and Hewlett Packard Enterprise's experiences. http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-9541ENW.pdf HPE 3PAR StoreServ Data Migration - Proven expertise and tools help you migrate data across your data center or around the globe. HPE 3PAR StoreServ Data Migration Service data sheet - US English (A4) HPE Storage Modernization Service - Modernize your storage to take better advantage of physical or virtualized server environments.. http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA3-4620ENW.pdf HPE StoreServ Integration Service - Integrate your new HPE 3PAR StoreServ system so that it is agile, performs effectively, and scales to rapid growth. http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-9254ENW.pdf HPE EVA to 3PAR Acceleration Service - The HPE EVA to 3PAR Acceleration Service can help guide you or even execute data migration activities on your behalf that can not only optimize, but provide OPEX and CAPEX savings as a result of your journey from EVA to 3PAR. This service provides customers with an alternative DIY ("do-it-yourself") data migration option with guidance from TS Storage migration specialists. With the help of migration experts, this service allows customers to execute an EVA to 3PAR data migration

Service and Support, HP Care Pack, and Warranty Information

at their own pace and lowered cost.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-4234ENW.pdf

HPE SAN Deployment Service - Hewlett Packard Enterprise delivers complete design and implementation services for Fibre Channel, FCoE, FCIP, SAS, and iSCSI storage area network (SAN) connectivity components. This service includes three levels of support based on the type of environment, ranging from simple to more complex. A trained service specialist guides the implementation of the storage switches in the SAN environment according to Hewlett Packard Enterprise quality standards.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/5981-8527EN.pdf

HPE Data Replication Solution Service for 3PAR Virtual Copy- HPE Data Replication Solution Service for HPE 3PAR Virtual Copy Software helps create, manage and configure local replication data mirroring and snapshot capabilities of 3PAR storage systems. This service enables snapshots and mirroring to facilitate data restores, minimize downtime for backups, perform application testing, support data mining use with decision-support tools.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-0217ENW.pdf

HPE Data Replication Solution Service for 3PAR Remote Copy- HPE Data Replication Solution Service for 3PAR Remote Copy Software configures real-time data mirroring between local and remote 3PAR storage systems to safeguard critical business information. Provides scalable deployment of HPE Remote Copy Software real-time data mirroring between a local and a remote 3PAR storage system.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA3-8627ENW.pdf
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA0-9431ENW.pdf

HPE 3PAR 7000 Replication Software Suite Installation and Startup Service - Provides implementation of the HPE 3PAR 7000 Replication Software Suite product. Replication Suite includes 3PAR Remote Copy, 3PAR Virtual Copy, and 3PAR Peer Persistence. The service is designed to help get HPE 3PAR 7000 Replication Software Suite up and running quickly and to provide a demonstration of the product's key features using sample or test data only.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-2570ENW.pdf

HPE 3PAR Peer Persistence Software Installation and Startup Service - Provides implementation of the HPE 3PAR Peer Persistence Software product. The service is designed to help get HPE 3PAR Peer Persistence up and running quickly and to provide a demonstration of the product's key features using sample or test data only.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-2772ENW.pdf

HPE 3PAR Adaptive Optimization Policy Implementation Service - HPE 3PAR Adaptive Optimization Policy Implementation Service provides analysis, recommendations, and implementation of HPE 3PAR Adaptive Optimization policies to enable storage tiering using data collected from the HPE 3PAR Storage system over time. With the assistance of a designated IT storage administrator, a service specialist works with the customer to implement Adaptive Optimization policies on the HPE 3PAR Storage system to help deliver service level optimization for virtual and cloud data centers while reducing cost, increasing agility and minimizing risk.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA2-3842ENW.pdf

Service and Support, HP Care Pack, and Warranty Information

HPE Storage Virtual Volume Design and Implementation Service- When redeploying an HPE StorageWorks Disk Array, the HPE Virtual Volume Design and Implementation Service provides the necessary activities required to design and implement a new virtual volume configuration.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA2-3764ENN.pdf

HPE Thin Volume Conversion Service - Provides evaluation and execution of conversion from standard to thin provisioned virtual volumes for HPE 3PAR Storage. A service specialist advises the customer on Hewlett Packard Enterprise thin provisioning best practices, provides evaluation of potential disk capacity savings if target virtual volumes are converted, and plans and implements thin conversion processing. The service leverages 3PAR thin provisioning capabilities to help optimize storage capacity, reduce cost, increase agility and maintain performance.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA2-3842ENW.pdf

HPE Performance Analysis Service for HPE Disk Arrays - The service provides data collection, detailed I/O analysis and enhancement recommendations for HPE 3PAR StoreServ Storage disk arrays, HPE EVA P6000 Storage disk arrays and HPE XP P9000 Storage disk arrays. HPE Performance Analysis Service for HPE Storage Disk Arrays provides a single engagement concerning the performance of a single HPE 3PAR StoreServ Storage disk array, HPE EVA P6000 Storage disk array and HPE XP P9000 Storage disk array
http://h20195.www2.hpe.com/V2/GetPDF.aspx/5982-6668EN.pdf

HPE 3PAR Health Check Service- The HPE 3PAR Health Check service is delivered as a single engagement, providing data collection, analysis, report creation, and a briefing session concerning the performance of a single HPE 3PAR StoreServ Storage System. This health check service is best for HPE 3PAR StoreServ Storage Systems that have been installed and are in normal production mode. It can also be used to establish a baseline for future reference to improve the effective use of your storage system.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-3225ENW.pdf

HPE 3PAR Storage Rebalance Service- The HPE 3PAR Rebalance Service helps balance data across your HPE 3PAR StoreServ Storage to take advantage of the capabilities of the array architecture. The service provides analysis, planning, and implementation of data movement and/or physical movement of drive magazines within the array.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-0280ENW.pdf

HPE EVA to 3PAR Acceleration Service - The HPE EVA to 3PAR Acceleration Service can help guide you or even execute data migration activities on your behalf that can not only optimize, but provide OPEX and CAPEX savings as a result of your journey from EVA to 3PAR. This service provides customers with an alternative DIY ("do-it-yourself") data migration option with guidance from TS Storage migration specialists. With the help of migration experts, this service allows customers to execute an EVA to 3PAR data migration at their own pace and lowered cost.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-4234ENW.pdf

HPE 3PAR Dynamic Optimization I&S - For Dynamic Optimization, implementation by Hewlett Packard Enterprise of tasks required to balance the HPE 3PAR storage system; the service provides the Customer with a product overview, advice, and suggested

Service and Support, HP Care Pack, and Warranty Information

strategies for use of Dynamic Optimization, and extended/ongoing analysis and/or implementation of Dynamic Optimization strategies can be accommodated at additional cost

The Service has further been described in the HPE 3PAR 7000 Software Installation and Startup Service Datasheet: http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-2569ENW.pdf

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 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	http://www.hpe.com/services/storage To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner HPE Care Pack Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners: - Services for customers purchasing from Hewlett Packard Enterprise or an enterprise reseller are quoted using Hewlett Packard Enterprise order configuration tools. - Customers purchasing from a commercial reseller can find HPE Care Pack Services at: http://www.hpe.com/go/lookuptool

Configuration

Step 1 - Choose a Base configuration

HPE 3PAR StoreServ 7450 configurations start with the selection of the Base. The Base includes controller nodes, bays for small form factor drives, and PCIe slots for host adapter cards. SAN Kits are also considered base configurations. The SAN Kits simplify ordering for SAN configurations with the array and extend the switch warranty to 3-years by including switches with an HPE 3PAR StoreServ 7450 Storage Base.

HPE 3PAR StoreServ 7450 Base Configurations

Factory Integrated in HPE rack	HPE 3PAR StoreServ 7450c 2-node Storage Base	E7X87A
	HPE 3PAR StoreServ 7450c 4-node Storage Base	E7X62A
	HPE 3PAR StoreServ 7450 2-node Base	C8R35A
	HPE 3PAR StoreServ 7450 4-node Base	C8R37A
Factory Integrated in HPE rack in a Storage Centric Configuration	HPE 3PAR StoreServ 7450c 2-node for Storage Centric Rack	E7X89A
	HPE 3PAR StoreServ 7450c 4-node for Storage Centric Rack	E7X93A
	HPE 3PAR StoreServ 7450 2-node Base for Storage Centric Rack	E7W52A
	HPE 3PAR StoreServ 7450 4-node Base for Storage Centric Rack	E7W53A
Field Integrated	HPE 3PAR StoreServ 7450c 2-node Field Integrated Storage Base	E7X91A
	HPE 3PAR StoreServ 7450c 4-node Field Integrated Storage Base	E7X95A
	HPE 3PAR StoreServ 7450 2-node Base	C8R35A
	HPE 3PAR StoreServ 7450 4-node Base	C8R37A

- A minimum of one (1) configuration base must be ordered.
- The HPE 3PAR StoreServ 7450c 2N base configuration includes (2) controller nodes, 96 GB of cache, (24) small form factor drive bays, (4) built-in 8 Gb/sec FC ports, (4) 8Gb shortwave FC SFP, (2) PCIe adapter slots for host adapter cards - one slot per node, (2) 2m SAS cables, (2) 1U rack filler panels to reserve 2U of rack space above the 2-node Storage Base for a future upgrade to a 4-node configuration, (1) mounting rail kit, and power cords.
- The HPE 3PAR StoreServ 7450c 4N base configuration includes (4) controller nodes, 192 GB of cache, (48) small form factor drive bays, (8) built-in 8 Gb/sec FC ports, (8) 8Gb shortwave FC SFP, (4) PCIe adapter slots for host adapter cards - one slot per node, (4) 2m SAS cables, (4) node link cables, (2) mounting rail kits, and power cords.
- The HPE 3PAR StoreServ 7450 2-node base configuration includes (2) controller nodes, 64 GB of cache, (24) small form factor drive bays, (4) built-in 8 Gb/sec FC ports, (4) 8Gb shortwave FC SFP, (2) PCIe adapter slots for host adapter cards - one slot per node, (2) 2m SAS cables, (2) 1U rack filler panels to reserve 2U of rack space above the 2-node Storage Base for a future upgrade to a 4-node configuration, (1) mounting rail kit, and power cords.
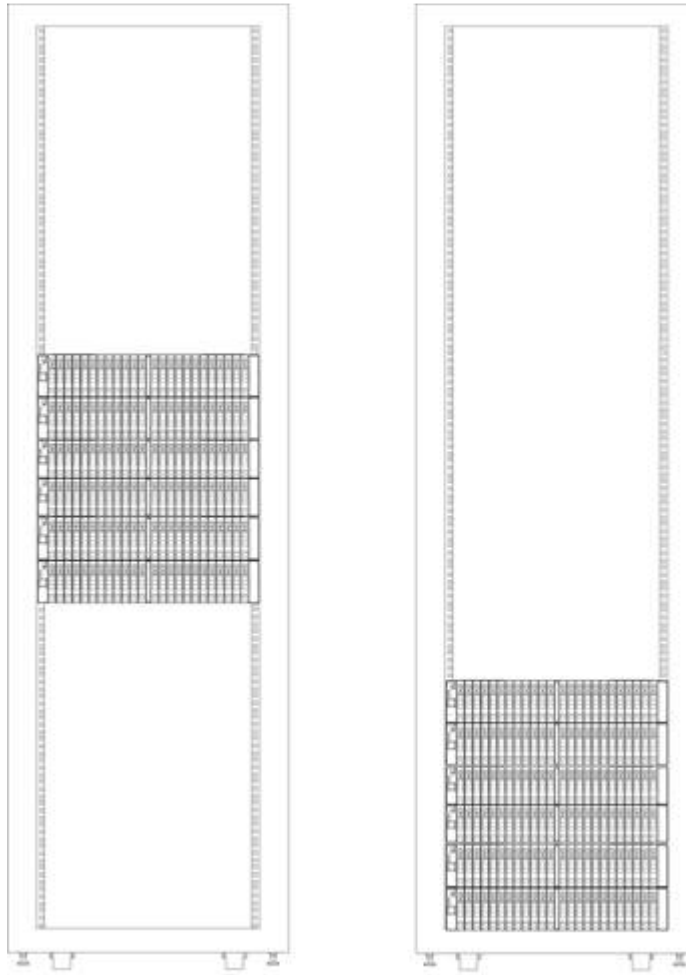
Configuration

- The HPE 3PAR StoreServ 7450 4-node base configuration includes (4) controller nodes, 128 GB of cache, (48) small form factor drive bays, (8) built-in 8 Gb/sec FC ports, (8) 8Gb shortwave FC SFP, (4) PCIe adapter slots for host adapter cards - one slot per node, (4) 2m SAS cables, (4) node link cables, (2) mounting rail kits, and power cords.
- All base configurations include (1) built-in 1GbE port for management and (1) 1GbE port for either Remote Copy over IP or File Persona, per node (support for File Persona only on 7450c).
- *Storage Centric Configuration
    - The Storage Centric rack versions of HPE 3PAR StoreServ 7450 are for CTO (factory Configure-To-Order) only. With a Storage Centric configuration, the storage system gets placed in the center of the rack so that future expansion of that storage system becomes easier.
    - In Storage Centric configurations, non-3PAR components, with the exception of certain StoreFabric Storage Networking switches, if added to the same order, get placed in a separate rack.

The following drawings show example configurations for a HPE 3PAR StoreServ 7450 4-node in Storage Centric and non-Storage Centric configurations

HPE 3PAR StoreServ 7450c 4N Storage Centric configuration

Configuration

StoreServ 7450c 4N Storage system in a storage centric configuration in a HPE Intelligent Series Rack

StoreServ 7450c 4N Storage system in a non-storage centric configuration in a HPE Intelligent Series Rack

HPE 3PAR StoreServ 7450c/7450 Upgrade Controller Node Pair

Use the HPE 3PAR StoreServ 7450c Upgrade Node Pair to convert an existing previously installed HPE 3PAR StoreServ 7450c 2N Storage Base into a 4-node configuration.

HPE 3PAR StoreServ 7450c Upgrade Node Pair   E7X92A

- Used to upgrade the E7X91A HPE 3PAR StoreServ 7450c 2-node Storage Base to a 4-node configuration.
- One (1) pair of controller nodes beyond the base configuration is supported on the 3PAR StoreServ 7450c.
- The 3PAR StoreServ 7450c Upgrade Node Pair includes (2) controller nodes, 96 GB of cache, (24) small form factor drive bays, (4) built-in 8 Gb/sec FC ports, (4) 8Gb shortwave FC SFP, (2) PCIe adapter slots for host adapter cards - one slot per node, (2) 2m SAS cables, (4) node link cables, (1) mounting rail kit, and power cords
-

Configuration

- The upgrade node pair includes (1) built-in 1GbE port for management and (1) 1GbE port for either Remote Copy over IP or File Persona, per node.

Use the HPE 3PAR StoreServ 7450 Upgrade Node Pair to convert an existing previously installed HPE 3PAR StoreServ 7450 2-node Storage Base into a 4-node configuration.

HPE 3PAR StoreServ 7450 Upgrade Node Pair   C8R36A

- Used to upgrade the C8R35A HPE 3PAR StoreServ 7450 2-node Storage Base to a 4-node configuration.
- One (1) pair of controller nodes beyond the base configuration is supported on the 3PAR StoreServ 7450.
- The 3PAR StoreServ 7450 Upgrade Node Pair includes (2) controller nodes, 64 GB of cache, (24) small form factor drive bays, (4) built-in 8 Gb/sec FC ports, (4) 8Gb shortwave FC SFP, (2) PCIe adapter slots for host adapter cards - one slot per node, (2) 2m SAS cables, (4) node link cables, (1) mounting rail kit, and power cords
- The upgrade node pair includes two built-in Gigabit Ethernet ports for management and Remote Copy over IP.

Step 2 - Choose Host Adapter

Host adapters can be ordered separately to be installed in the field or they can be factory configured into controller nodes. Host adapter cards provide the array with additional FC ports or with 10Gb/sec iSCSI/FCoE ports. The additional FC ports can be used for connection to hosts or used to connect to other HPE 3PAR StoreServ Storage systems in a Remote Copy relationship. The iSCSI/FCoE ports permit host connection in iSCSI and FCoE environments.
NOTE: Host adapters used with HPE 3PAR StoreServ 7450 are the same as the ones used with HPE 3PAR StoreServ 7000 family.
NOTE: Ethernet Adapters can be used only with the HPE 3PAR File Persona Software Suite for File services connectivity.

HPE 3PAR StoreServ 7000 Host Adapters

HP 3PAR StoreServ 7000 4-port 8Gb/sec Fibre Channel Adapter	QR486A
HP 3PAR StoreServ 7000 2-port 10Gb/sec iSCSI/FCoE Adapter	QR487A
HP 3PAR StoreServ 7000 2-port 16Gb Fibre Channel Adapter	E7X47A
HP 3PAR StoreServ 7000 2-port 10Gb Ethernet Adapter	E7X96A
HP 3PAR StoreServ 7000 4-port 1Gb Ethernet Adapter	E7X97A

- Fibre Channel (QR486A, E7X47A) and iSCSI/FCoE Adapters (QR487A) are used in the Storage Base products (E7X91A, E7X95A, C8R35A, and C8R37A) and the Upgrade Node Pair (E7X92A, and C8R36A).
- Ethernet Adapters (E7X96A, E7X97A) can be used exclusively with the HPE 3PAR File Persona Software Suite on the HPE 3PAR StoreServ 7450c Storage Base product (E7X91A, E7X95A) and Upgrade Node Pair (E7X92A).
- The 10Gb/s Ethernet Adapter (E7X96A) includes the the 10Gb/s SR SFP+
-

Configuration

- Because the Storage Base products and the Upgrade Node Pair include built-in FC ports, the host adapter cards are optional.
- QR486A and QR487A include one adapter card each. Adapters must be purchased in pairs.
- The QR486A includes (4) 8 Gb/s shortwave FC SFPs. The QR487A includes (2) 10 Gb/s SFPs. The E7X47A includes (2) 16 Gb/s shortwave FC SFPs.
- Each node in a node pair (a node pair is composed of the two controller nodes in a single 2U enclosure) must have the same number and type of adapters. FC, iSCSI/FCoE, and GbE adapters may not be intermixed in a node pair.
- The 4 ports of the FC adapter can be individually configured to connect to a host or to a remote array in an RC configuration.
- The two ports of the iSCSI/FCoE adapter can be individually configured by the user as iSCSI or FCoE.

Product	Nodes	Adapter Configurations permitted on all HPE 3PAR StoreServ 7450 systems								
		A*	B*	C*	D	E	F*	G	H*	I*
E7X91A C8R35A E7X87A C8R35A E7X89A E7W52A	Node 0 Node 1	Empty Empty	FC FC	iSCSI/FCoE iSCSI/FCoE						
E7X92A C8R36A	Node 2 Node 3	Empty Empty	FC FC	iSCSI/FCoE iSCSI/FCoE						
E7X95A C8R37A E7X62A C8R37A E7X93A E7W53A	Node 0 Node 1 Node 2 Node 3	Empty Empty Empty Empty	FC FC Empty Empty	iSCSI/FCoE iSCSI/FCoE Empty Empty	Empty Empty FC FC	Empty Empty iSCSI/FCoE iSCSI/FCoE	FC FC iSCSI/FCoE iSCSI/FCoE	iSCSI/FCoE iSCSI/FCoE FC FC	FC FC FC FC	iSCSI/FCoE iSCSI/FCoE iSCSI/FCoE iSCSI/FCoE

NOTE: If the configuration includes Remote Copy over Fibre Channel it is recommended that optional Fiber Channel HBAs are purchased as the built in ports will not offer sufficient connectivity.
* Factory default configurations for given quantities of adapters.

Configuration

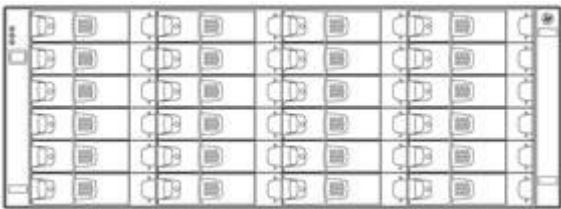| Product	Nodes	Ethernet Adapter Configurations permitted on HPE 3PAR StoreServ 7450c							
		A*	B*	C	D	E	F*	G*	H*
E7X91A E7X87A E7X89A	Node 0 Node 1	Empty Empty	Eth Eth						
E7X92A	Node 2 Node 3	Empty Empty	Eth Eth						
E7X95A E7X62A E7X93A	Node 0 Node 1 Node 2 Node 3	Empty Empty Empty Empty	Eth Eth Empty Empty	Empty Empty Eth Eth	Eth Eth FC FC	Eth Eth iSCSI/FCoE iSCSI/FCoE	FC FC Eth Eth	iSCSI/FCoE iSCSI/FCoE Eth Eth	Eth Eth Eth Eth
NOTE: * Factory default configurations for given quantities of adapters.									
NOTE: If the configuration includes Remote Copy over Fibre Channel it is recommended that optional Fiber Channel HBAs are purchased as the built in ports will not offer sufficient connectivity. **NOTE:** Ethernet Adapters can be used only with the HPE 3PAR File Persona Software Suite for File services connectivity available on HPE 3PAR StoreServ 7450c									

Step 3 - Choose Drive Enclosures

Add drive enclosures to expand the configuration and to add large form factor drives to the configuration. Drive enclosures can be ordered separately for installation in the field, or they can be factory configured in a rack. Drive enclosures are optional. Because the Storage Base products and the Upgrade Node Pair include small form factor drive bays, the minimum configuration does not require any additional drive enclosures. For larger configurations, attach drive enclosures. Each drive enclosure includes 24 drive bays. The HPE 3PAR StoreServ 7450 supports up to four (4) added drive enclosures per node pair. The two drive enclosure types can be intermixed in a single array.
NOTE: Drive enclosures used with HPE 3PAR StoreServ 7450 are the same as the ones used with HPE 3PAR StoreServ 7000 family.

HPE M6710 2.5 inch 2U SAS Drive Enclosure   HPE M6720 3.5 inch 4U SAS Drive Enclosure

Drive Enclosures

HP M6710 2.5 inch 2U SAS Drive Enclosure	QR490A
HP M6720 3.5 inch 4U SAS Drive Enclosure	QR491A
HP M6710 SFF(2.5in) SAS Field Integrated Drive Enclosure	E7X64A
HP M6720 LFF(3.5in) SAS Field Integrated Drive Enclosure	E7X66A

- Each drive enclosure includes 24 drive bays, (2) IO modules, (2) 1m SAS cables, (1) mounting rail kit, and power cables.
- The M6710 2U drive enclosure provides 24 SFF drive bays arranged in a single row.
- The M6720 4U drive enclosure provides 24 LFF drive bays,
-

Configuration

arranged in four (4) columns of six (6) slots each.

- Minimum of zero (0) drive enclosures, maximum of four (4) attached to C8R35A and E7X91A.
- Minimum of zero (0) drive enclosures, maximum of (8) attached to C8R37A and E7X95A.
- Drive enclosures are connected in daisy chains from the SAS ports of the controller nodes.
- The best practice is to balance the drive enclosures across the SAS ports, remembering that the controller node enclosures include (24) drives attached to the SAS port labeled DP-1.
- The best practice when including LFF and SFF drive enclosures in the same array is to arrange them in the rack so that all of the 2U enclosures that belong to one node pair are together and all of the 4U enclosures for that node pair are together. When connecting the backend SAS cables, intermix the M6710 and M6720 enclosures on each SAS port.
- With a four node configuration, the best practice is to attach the same number of drive enclosures to each node pair.
- To achieve highest availability in multi-enclosure configurations, configure a minimum of two (2) enclosures per node pair for RAID 1, a minimum of four (4) enclosures per node pair if RAID 5 is included, and a minimum of three (3) enclosures per node pair if RAID 6 is included. Include enclosures containing node pairs in the count with the M6710 enclosures.
- Drive bays that are not filled with a drive must be covered with a drive blank to preserve proper air flow.
- If future capacity upgrades are expected, include enough Drive Enclosures so that there are some empty bays in each enclosure after all drives are added.

Step 4 (a) - Choose Encryption (if needed)

At the time of initial system purchase, it must be decided if that system is supposed to be an encrypted system. Encryption functionality, once turned ON, cannot be turned OFF on a given StoreServ system. If an encrypted system is desired, only encrypted drives shall be included on the order along with the encryption LTU.

The HPE 3PAR StoreServ Data Encryption enables the encryption for all the data that is stored on the internal drives of the 3PAR StoreServ Storage. The 3PAR Encryption solution encrypts the data so that data cannot be read off a drive that is removed from the 3PAR Storage. In the event of a failure of the drive or the theft of a drive, the proper authentication key is required to be entered to gain access to the data stored within the drive. This method of encryption allows the user the comfort knowing all data contained on the drive is protected against internal and external risks. Organizations within the healthcare industry, financial services and public sectors are increasingly required to protect their sensitive information (patient records, personal identifying information, and intellectual property) from threats like unauthorized insider access, accidental disclosure, or theft.

NOTE: Encryption Drives used with HPE 3PAR StoreServ 7450 are the same as the ones used with HPE 3PAR StoreServ 7000 family.

HPE 3PAR StoreServ Data Encryption

Configuration

HP 3PAR StoreServ 7450 Data at Rest Encryption LTU	BC985A
HP 3PAR StoreServ 7450 Data at Rest Encryption E-LTU	BC985AAE
HP 3PAR StoreServ M6710 920GB 6G SAS SFF(2.5in) FIPS Encrypted MLC Solid State Drive	E7Y52A
HP 3PAR StoreServ M6710 1.92TB 6G SAS SFF(2.5in) FIPS Encrypted cMLC Solid State Drive	K0F27A

- An encrypted HPE 3PAR StoreServ array, i.e. any HPE 3PAR StoreServ array that has the HPE 3PAR Data Encryption license activated or intended to be activated, must have only self-encrypted drives installed.
- A non-encrypted HPE 3PAR StoreServ array can have a mix of encrypted and non-encrypted drives.
- Customers have option to turn on encryption, non-disruptively, at any time; even after data has been written to the system.
- * FIPS 140-2 Validated Self-Encrypting Drives (SEDs) have been certified by the U.S. National Institute of Standards and Technology (NIST) and Canadian Communications Security Establishment (CSE) as meeting the Level 2 security requirements for cryptographic modules as defined in the Federal Information Processing Standards (FIPS) 140-2 Publication
- Strengthen the DAR solution with an optional FIPS 140-2 Level 2 validated external key manager. Supports KMIP 1.1 for key management. communications.
- Supports HPE Enterprise Secure Key Manager 4.0 and SafeNet KeySecure k460 and k150 centralized key management.
- A data encryption license (LTU) is required to enable encryption on the array. One encryption license is required for each encrypted array.
- Once encryption is enabled on the HPE 3PAR StoreServ Storage, it cannot be disabled.
- The local key manager is included in the HPE 3PAR OS. There is not a separately orderable part number for the local key manager.

NOTE: The HPE 3PAR 7450 Data at Rest Encryption LTU are valid for both the HPE 3PAR StoreServ 7450 and HPE 3PAR StoreServ 7450c Storage systems.

Step 4 (b) - Choose Drives

Drives are orderable at the time the array is purchased, or can be added in the future when additional capacity is required. Unlike other HPE 3PAR StoreServ Storage systems where drives are sold in magazines of four, HPE 3PAR StoreServ 7000 drives are sold as single drives. Note that these drives are only compatible with the M6710 and M6720 drive enclosures.
NOTE: SSD Drives used with HPE 3PAR StoreServ 7450 are the same as the ones used with HPE 3PAR StoreServ 7000 family.

HPE 3PAR StoreServ 7450 SAS SSD Drives

HPE 3PAR SSDs		
	HP 3PAR StoreServ M6710 480GB 6G SAS SFF(2.5in) MLC 5yr Wty Solid State Drive	E7W54B
	HP 3PAR StoreServ M6720 480GB 6G SAS LFF(3.5in) MLC 5yr Wty Solid State Drive	E7W55B
	HP 3PAR StoreServ M6710 480GB 6G SAS SFF(2.5in) cMLC Solid State Drive	E7Y55A
	HP 3PAR StoreServ M6720 480GB 6G SAS LFF(3.5in) cMLC Solid State Drive	E7Y56A

Configuration

HP 3PAR StoreServ M6710 920GB 6G SAS SFF(2.5in) MLC 5yr Wty Solid State Drive	E7W24B
HP 3PAR StoreServ M6720 920GB 6G SAS LFF(3.5in) MLC 5yr Wty Solid State Drive	E7W25B
HP 3PAR StoreServ M6710 1.92TB 6G SAS SFF(2.5in) cMLC Solid State Drive	E7Y57A
HP 3PAR StoreServ M6720 1.92TB 6G SAS LFF(3.5in) cMLC Solid State Drive	E7Y58A
HP 3PAR StoreServ M6710 3.84TB 6G SAS SFF(2.5in) cMLC Solid State Drive	K2Q91A

- The minimum recommended initial quantity is eight (8) drives* per node pair
- Minimum upgrade quantity is 4 drives per node pair or 2 drives per enclosure, whichever is larger. Best practice is to run Autonomic Rebalance (also known as tunesys) after adding the drives.
- All node enclosures must contain either zero (0) or an even number of drives. All drive enclosures must contain an even number of drives, with a minimum of two.
- Minimum raw capacity is 0.8TB per node pair.
- Best practice is to add equal numbers of drives to all enclosures compatible with the drive type being added.
- With a four node configuration, the best practice is to attach the same number and type of drives to each node pair.
- Small Form Factor (SFF)-specific configuration practices
    - SFF drives may be loaded into the Storage Base enclosures, the Upgrade Node Pair enclosure and the M6710 drive enclosure.
    - SFF drives must be loaded in pairs of identical drives, beginning with the leftmost slot, slot 0, and filling to the right, leaving no empty slots between drives.
- Large Form Factor (LFF)-specific configuration practices
    - LFF drives may be loaded into the M6720 drive enclosure.
    - LFF drives must be loaded in pairs of identical drives starting at the bottom of a column, leaving no empty slots between drives in the column. It is permitted to have empty columns between columns containing drives. Different columns do not have to contain the same number of drives.
    - An all LFF drive configuration is permitted, leaving the Storage Base Enclosure empty.
- SSD specific configuration practices
    - SSD-only configurations are permitted.
    - Maximum of 120 SSDs per node pair.
    - The SFF and LFF SSDs allow the user to create SSD volumes that stripe across SFF and LFF enclosures.
- * 8 drives support RAID 1 and RAID 5. For RAID 6 choose 12 drives.

Configuration

Step 5 - Choose Service Processor Implementation

The HPE 3PAR Service Processor monitors the HPE 3PAR StoreServ 7450 and enables remote monitoring and remote servicing of the array. The key capabilities of the Service Processor is to:

- Enable rapid, proactive response to issues
- Provide a secure communication channel between the customer's data center and HPE 3PAR Central for:
  - Remote Online Software Upgrade; upgrade software with no application disruption
  - Remote Diagnostics; key diagnostic information maintained centrally on a historical basis
  - Remote Serviceability; provides fast predictive response and remediation

Each HPE 3PAR StoreServ 7000 requires its own Service Processor. The Service Processor functions as the communication interface between a customer's IP network and HPE 3PAR Central by managing all service-related communications. The Service Processor leverages the industry-standard HTTP over Secure Sockets Layer (HTTPS) protocol to secure and encrypt data communication.

Virtual Service Processor

The Service Processor can be deployed either as a Virtual Service processor or a Physical Service Processor. A Virtual Service Processor (VSP) is included free with the 3PAR Base Operating System. The Virtual Service Processor can be installed on a that is provided by the customer before installation that, meet the following specifications:

- Virtualization operating system
  - VMware vSphere ESXi 4.1, 5.0, 5.1, 5.5
  - Microsoft Hyper-V Server 2008 R2, 2012, 2012 R2
- Server features
  - 2 GB RAM (minimum for the VSP Virtual Machine)
  - 256 GB free disk space (minimum for the VSP Virtual Machine)
    NOTE: VSP storage must not reside on the array it is managing.
  - DVD ROM or DVD RW
  - 1 Gb Ethernet port
  - For VSP on VMware, the server must be listed in the VMware Compatibility Guide
  - For VSP on Hyper-V, the server must be listed on the Windows Server Catalog

The customer must provide any hardware required to host the remote support software when deploying a Virtual Service Processor. For scheduled service calls, the customer shall make the Virtual Service Processor available to Hewlett Packard Enterprise for remedial activities at the agreed-upon time. The customer is responsible for maintaining the appropriate HPE 3PAR Remote Support Technology with a secure connection to Hewlett Packard Enterprise and any passwords required to access the local network and Virtual Service Processor. The customer is responsible for providing all necessary resources in accordance with the HPE 3PAR Service Processor Release Notes in order to enable the delivery of the service and options. Please contact a local Hewlett Packard Enterprise representative for further details on requirements, specifications, and exclusions.

Configuration

The physical Service Processor is a dedicated storage appliance located within the storage rack providing close proximity to the HPE 3PAR StoreServ 7000 Storage. The physical Service Processor is fully supported and maintained by HPE Services. The physical Service Processor has serial port connectivity that provides maintenance access for trouble shooting capabilities. If a VMware server is not available to run the virtual Service Processor, the physical Service Processor is the alternative choice for remote monitoring and remote service.

HPE 3PAR Policy Server
HPE 3PAR Policy Server works to implement customer-configurable remote service access policies. Installed on a customer-provided host, Policy Server provides the customer with ultimate flexibility and control to allow or deny outbound communication or remote service connections to and from an HPE 3PAR StoreServ Storage system. Policy Server also serves as the centralized point for collecting and storing audit logs of all diagnostic data transfers and authorized remote service connections to and from all configured HPE 3PAR Storage systems. HPE 3PAR Policy Server provides the

- The customer has complete control over policy administration.
- A centralized policy administration for all HPE 3PAR Storage systems is provided.
- A centralized audit log to facilitate security audits is provided.
- Up to 100 3PAR systems can be managed with a single 3PAR Policy Server license
- Policy Server 6.1.5 can be run on a Virtual Machine. For the latest information on supported hypervisors, refer to Single Point of Connectivity Knowledge for HPE Storage Products (SPOCK): http://www.hpe.com/storage/spock

HPE 3PAR Policy Manager Software LTU	TE400B

Step 6 - Choose Cables for host connection and remote copy connection

The optical cables listed below support 8 Gb/s FC and 10 Gb/s iSCSI/FCoE for host connect (FC and iSCSI/FCoE) and for Remote Copy connections (FC only). The copper1GbE cables are used for Remote Copy over IP or File Persona and for connection to the Management Port.

Cables

FC and 10GbE		
	HP 3PAR 4m 50/125 (LC-LC) Fiber Cable	QL281B
	HP 3PAR 6m 50/125 (LC-LC) Fiber Cable	QR631A
	HP 3PAR 10m 50/125 (LC-LC) Fiber Cable	QL266B
	HP 3PAR 25m 50/125 (LC-LC) Fiber Cable	QR593A
	HP 3PAR 50m 50/125 (LC-LC) Fiber Cable	QL267B
	HP 3PAR 100m 50/125 (LC-LC) Fiber Cable	QL268B
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A

Configuration

1GbE	HP 4.3m/14ft CAT5 RJ45 M/M Ethernet Cable	C7536A
	HP 7.6m/25ft CAT5 RJ45 M/M Ethernet Cable	C7537A
	HP 15.2m/50ft CAT5 RJ45 M/M Ethernet Cable	C7542A
Direct Attach Copper Cables*	**HPE 3COM**	
	HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
	HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
	HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HP X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C
	HPE ProCurve	
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X242 10G SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
	HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B
	Brocade	
	HP B-series SFP+ to SFP+ Active Copper 1.0m Direct Attach Cable	AP818A
	HP B-series SFP+ to SFP+ Active Copper 3.0m Direct Attach Cable	AP819A
	HP B-series SFP+ to SFP+ Active Copper 5.0m Direct Attach Cable	AP820A
	Cisco	
	HP C-series SFP+ to SFP+ Active Copper 7.0m Direct Attach Cable	QK701A
	NOTE: *The Direct Attach Support is available only for iSCSI protocol and is available only with HPE 3PAR OS version 3.1.3 and later	

Step 7 - Choose Racking Options

The HPE 3PAR StoreServ 7450 is compatible with most industry standard 4-post EIA 19 inch racks with square mounting holes, including the HPE Intelligent Series Rack and the HPE 10000 G2 Series Rack. The HPE 3PAR StoreServ 7450 can be factory configured and shipped in a rack or shipped without a rack for field integration into an existing rack. The rack used for factory integration is the HPE Intelligent Series Rack.

HPE Rack and Rack Options

Factory Integration	Select a rack to house your HPE 3PAR StoreServ 7450. **NOTE:** The HPE Intelligent Series Rack is the only series supported for factory configuration.
Primary Configuration	The HPE 3PAR StoreServ 7450 will be configured into an HPE Intelligent Series Rack with the appropriate power distribution units (PDUs). If other products such

Configuration

Rules	as servers or back-up products are included in the cab, a different PDU will be added (if required) or can be chosen from a list of appropriate offerings shown in the configuration tool. The HPE Intelligent Series Rack must be purchased for factory configuration. Additional 3PAR StoreServ 7450 controller node enclosures and drive enclosures may be ordered for multiple subsystem integration at the factory. The 3PAR StoreServ 7450 is also supported in HPE 10000 G2 Series racks for field installation. When calculating available U-space, assume that no space will be placed between the mounted components. For redundancy, order PDUs in quantities of two. Refer to the Configuration and User Guide in the Information Library at the Rack Solutions webpage.	
HPE Intelligent Series Racks	**NOTE:** The number of components that will fit in a rack varies and is determined by the interior U-space of the rack.	
	HP 47U 600mm x 1075mm Enterprise Shock Rack	BW912A
	HP 47U 1075mm Side Panel Kit	BW915A
	HP 42U 600mm x 1075mm Enterprise Shock Rack	BW904A
	HP 42U 1075mm Side Panel Kit	BW906A
	HP 36U 600mm x 1075mm Enterprise Shock Rack	BW896A
	HP 36U 1075mm Side Panel Kit	BW898A
	HPE 622 1075mm Pallet Intelligent Series Rack (22U) (available in a later release)	BW893A
	For more information on the HPE rack offerings, please see the following URL: http://h18004.www1.hpe.com/products/servers/platforms/rackandpower.html. For more information on rack options, see: http://www.hpe.com/products/rackoptions. For more information on PDUs, see: http://h18004.www1.hpe.com/products/servers/proliantstorage/power-protection/pdu.html.	
HPE PDU Pivot Kit	HP EVA PDU Pivot Kit	AG730A
	Used to reclaim 2U of space in an HPE Intelligent Series Rack with HPE 3PAR StoreServ 7000 configurations. This kit allows the PDUs to be placed in the back of the rack without requiring any rack U space.	
	NOTE: The use of the PDU Pivot Kit is strongly recommended and is the default option when orders are configured, as it will save 2U of valuable rack space.	
	NOTE: 0D1 will appear after this part number to indicate factory integration where appropriate.	
Performance Optimized Data Centers	HPE 3PAR StoreServ 7450 Storage is qualified for use in HPE Performance Optimized Data Centers. Go to http://www.hp.com/go/POD for more information.	
Non-HPE rack and power requirements	The Storage Bases, the Upgrade Node Pair, and the Drive Enclosures include mounting rails that are compatible with industry standard 4-post EIA 19 inch racks with square mounting holes. For detailed information on determining compatibility of a non-HPE rack, please review the information included in the HPE 3PAR StoreServ 7450 User Guide.	

Expansion Options

Configuration

Hewlett Packard Enterprise provides a variety of SAS cable kits to allow expansion of the HP3PAR StoreServ 7450. Note that the Storage Base products, the Upgrade Node Pair and the Drive Enclosures all include SAS cables. Most configurations will not require a SAS expansion cable kit.

SAS expansion cable kit	HP 6 Meter Expansion Cable Kit	AP879A
	If an HPE 3PAR StoreServ 7450 needs to be expanded into an adjacent rack, one 6 meter SAS expansion cable kit is required for every node pair that must access drive enclosures in the expansion rack. Each 6 meter SAS expansion cable kit contains four 6 meter SAS cables.	
	HP 2 Meter Expansion Cable Kit	AW566A
	f an HPE 3PAR StoreServ 7450 needs to be expanded within the same rack, but the new drive enclosure must be located some distance from the nearest existing drive enclosure within the same rack, one or two 2 meter SAS expansion cable kits is needed, depending on configuration. Each 2 meter SAS expansion cable kit contains two 2 meter SAS cables.	
	HP 1 Meter SAS Expansion Cable Kit	QR514A
	The 1 meter SAS expansion cable kit is provided for cases where a shorter SAS cable is required. Each 1 meter SAS expansion cable kit contains two 1 meter SAS cables. **NOTE:** The 2-node Storage Bases and Upgrade Node Pair come with four 2 meter SAS cables each and the 4-node Storage Base comes with eight 2 meter SAS cables. The Drive Enclosures come with two 1 meter SAS cables each.	

Step 8 - Choose Software

Hewlett Packard Enterprise provides an extensive selection of features for HPE 3PAR StoreServ Storage. All of the features available on the HPE 3PAR StoreServ 10000 Storage system are also available on the HPE 3PAR StoreServ 7450 Storage system, the result of a common architecture that spans from small and medium businesses to the largest global enterprise. For convenient ordering, the 3PAR StoreServ 7450 provides the features in Suites.

Two types of software licensing methods are employed with the HPE 3PAR StoreServ 7450. Some software titles are licensed per system; other titles are licensed by drive. With system-based licensing one license covers the whole array, independent of configuration or capacity. Drive-based licensing, in contrast, is licensed per installed drive. A software title with drive-based licensing includes two Licenses to Use (LTU), a Base LTU that enables the software feature for the system and a Drive LTU that licenses the use of one drive. For each software title, purchase one Base LTU per title per array, and one Drive LTU, for every drive, that is installed in the array, independent of drive type. For the HPE 3PAR StoreServ 7450 there is no Drive LTUs cap. For the HPE 3PAR StoreServ 7450c the Drive LTUs cap at 168. After reaching the cap, you do not need to purchase any more Drive LTUs for that title.

NOTE: All the HPE 3PAR 7450 Software LTU are valid for both the HPE 3PAR StoreServ 7450 and HPE 3PAR StoreServ 7450c Storage systems.

For more information regarding HPE 3PAR software see
http://h18006.www1.hpe.com/storage/solutions/3par/software.html.

HPE 3PAR 7450 Operating System Software Suite (Required)

HPE 3PAR OS SW Suite - 3PAR	HPE 3PAR 7450 Operating System Software Suite is the foundation software of HPE 3PAR StoreServ 7450 Storage, combining advanced virtualization capabilities with simple storage management, high efficiency, and world class

Configuration

| Operating System, System Setup, and Management Software | performance. The included comprehensive thin provisioning capabilities allow your storage to start thin, get thin and stay thin. System Tuner and Autonomic Rebalance help maintain high performance over time. Migrating your existing data from HPE EVA, EMC CX4 or EMC VNX Storage and 3PAR systems to HPE 3PAR StoreServ 7450 is easy with the included 1 year Online Import license. HPE 3PAR SmartStart Software, included in the suite, guides you through the configuration of the service processor, HPE 3PAR StoreServ Storage and the application hosts - making storage setup quick and easy. HPE 3PAR 7450 Operating System Software Suite is a required purchase. It uses drive-based licensing. For more information see http://www.hp.com/go/3PAR. | |

HP 3PAR 7450 Operating System Software Suite Base LTU	BC890B
HP 3PAR 7450 Operating System Software Suite Base E-LTU	BC890BAE
HP 3PAR 7450 Operating System Software Suite Drive LTU	BC891A
HP 3PAR 7450 Operating System Software Suite Drive E-LTU	BC891AAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR 7450 Replication Software Suite

| HPE 3PAR 7000 Replication Software Suite - Local Replication, Remote Replication and Transparent Failover | The HPE 3PAR Replication Software Suite offers automatic replication, transparent failover and Point-in-Time (PIT) copies enabling seamless disaster recovery for critical data. These features provide an agile, efficient and simple solution to protect against the unpredictable. This suite is ideal for virtualized data centers demanding data availability and business continuity 24x7. HPE 3PAR 7450 Replication Software Suite consists of HPE 3PAR Remote Copy Software, HPE 3PAR Peer Persistence Software and HPE 3PAR Virtual Copy Software, which are also available separately. Replication Software Suite uses drive-based licensing. For more information see **NOTE:** The Peer Persistence feature provides transparent failover in VMware cluster environments and requires the Remote Copy feature as a prerequisite. | |

HP 3PAR 7450 Replication Software Suite Base LTU	BC892A
HP 3PAR 7450 Replication Software Suite Base E-LTU	BC892AAE
HP 3PAR 7450 Replication Software Suite Drive LTU	BC893A
HP 3PAR 7450 Replication Software Suite Drive E-LTU	BC893AAE

NOTE: If the configuration includes Remote Copy over Fibre Channel it is recommended that optional Fiber Channel HBAs are purchased as the built in ports will not offer sufficient connectivity
* Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR 7450 Security Software Suite

| HPE 3PAR 7000 Security Software Suite | HPE 3PAR 7450 Security Software Suite provides secure administrative segregation of users and hosts, allowing individual user groups and applications to confidently share a 3PAR StoreServ 7450 system. It also allows you to secure volumes and copies so they cannot be deleted, even by a 3PAR StoreServ 7450 user with the highest level privileges. When coupled with reservationless, non-duplicative, read-only virtual copies (snapshots), the Virtual Lock feature enables you to retain frozen, point-in-time copies of your data to assist internal data retention and simplify compliance with internal governance procedures. HPE |

Configuration

3PAR 7450 Security Software Suite consists of HPE 3PAR Virtual Domains Software and HPE 3PAR Virtual Lock Software, which are also available separately. Security Software Suite uses drive-based licensing.

HP 3PAR 7450 Security Software Suite Base LTU	BC908A
HP 3PAR 7450 Security Software Suite Base E-LTU	BC908AAE
HP 3PAR 7450 Security Software Suite Drive LTU	BC909A
HP 3PAR 7450 Security Software Suite Drive E-LTU	BC909AAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR 7450 Data Optimization Software Suite

HPE 3PAR 7450 Data Optimization Software Suite - Rebalance, Redistribute, and Refresh

The HPE 3PAR 7450 Data Optimization Software Suite makes sure that data is on the right storage asset at the right time. This suite rebalances, redistributes and refreshes storage non-disruptively with features that provide autonomic storage tiering and dynamic data mobility, reducing cost and increasing agility. HPE 3PAR 7450 Data Optimization Software Suite consists of HPE 3PAR Priority Optimization , HPE 3PAR Dynamic Optimization, HPE 3PAR Adaptive Optimization and HPE 3PAR Peer Motion (providing federation capability for data mobility), which are also available separately. Data Optimization Software Suite uses drive-based licensing. For more information see
NOTE: The Adaptive Optimization feature requires HPE 3PAR Reporting Software Suite as a prerequisite.

HP 3PAR 7450 Data Optimization Software Suite V2 Base LTU	BD272A
HP 3PAR 7450 Data Optimization Software Suite V2 Base E-LTU	BD272AAE
HP 3PAR 7450 Data Optimization Software Suite V2 Drive LTU	BD273A
HP 3PAR 7450 Data Optimization Software Suite V2 Drive E-LTU	BD273AAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR 7450c File Persona Software Suite

HPE 3PAR File Persona Software Suite - Converged Block, File and Object Access

The HPE 3PAR File Persona Software Suite is a licensed feature of the 3PAR OS that enables a rich set of file protocols and core file data services on a 3PAR StoreServ system. As a feature of the 3PAR OS, the File Persona inherits the industry leading architecture and Block Persona benefits of 3PAR StoreServ. It extends the spectrum of primary storage workloads natively addressed by 3PAR StoreServ from virtualization, databases, and applications via the Block Persona to also include client workloads such as home directory consolidation, group/department shares, and corporate shares via the File Persona - all with truly Converged Controllers, truly agile capacity, and truly unified management.
The File Persona is supported on the 3PAR StoreServ 7450c. It requires the installation of 1GbE (E7X97A) or 10GbE (E7X96A) network cards.
For more information see http://www.hpe.com/go/3PAR/FilePersona
NOTE: The File Persona feature requires HPE 3PAR 7450 Operating System Software Suite as a prerequisite.

Configuration

HPE 3PAR 7450c File Persona Software Suite 1TB LTU	BD411A
HPE 3PAR 7450c File Persona Software Suite 1TB E-LTU	BD411AAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR 7450 Reporting Software Suite

HPE 3PAR Reporting Software Suite - Historical Performance and Capacity Management Tool

The HPE 3PAR 7450 Reporting Software Suite includes System Reporter, a historical performance and capacity management tool for storage reporting, monitoring, and troubleshooting. Also included is 3PARInfo, a command line tool that allows you to view HPE 3PAR StoreServ Storage configuration information. Reporting Software Suite uses system-based licensing. For more information see

HP 3PAR 7450 Reporting Suite LTU	BC914B
HP 3PAR 7450 Reporting Suite E-LTU	BC914BAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR Application Software Suite for Oracle

HPE 3PAR Application Software Suite for Oracle - Application Protection

The HPE 3PAR Application Software Suite for Oracle provides everything you need for protecting Oracle databases, including Recovery Manager for Oracle and Oracle Space Reclamation capabilities. Recovery Manager for Oracle is an extension to 3PAR Virtual Copy that intelligently creates, manages, and presents time-consistent snapshot images of Oracle® databases for rapid application recovery, near-continuous data protection, data sharing, and non-disruptive backup. Application Software Suite for Oracle uses system-based licensing. For more information see.
NOTE: HPE 3PAR Virtual Copy Software is a prerequisite, purchased independently or in the HPE 3PAR Replication Software Suite.

HP 3PAR 7450 Application Suite for Oracle LTU	BC918B
HP 3PAR 7450 Application Suite for Oracle E-LTU	BC918BAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR Application Software Suite for SQL

HPE 3PAR Application Software Suite for SQL - Application Protection

The HPE 3PAR Application Software Suite for SQL protects Microsoft® SQL databases with Recovery Manager for Microsoft® SQL and the 3PAR VSS Provider software. 3PAR Recovery Manager for Microsoft® SQL Server is an extension to 3PAR Virtual Copy that eases costs and administration by providing rapid, affordable online recovery of Microsoft® SQL Server databases from multiple, highly granular point-in-time snapshots. Quickly recover a database to a known point in time, speeding up a variety of operations including rapid recovery of the production SQL server. Application Software Suite for SQL uses system-based licensing. For more information see
NOTE: HPE 3PAR Virtual Copy Software is a prerequisite, purchased independently or in the HPE 3PAR Replication Software Suite.

Configuration

HP 3PAR 7450 Application Suite for Microsoft SQL LTU	BC917B
HP 3PAR 7450 Application Suite for Microsoft SQL E-LTU	BC917BAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR Application Software Suite for Exchange

HPE 3PAR Application Software Suite for Exchange - Application Protection

The HPE 3PAR Application Software Suite for Exchange provides you the essentials for protecting your Microsoft Exchange data, including Recovery Manager for Exchange and the VSS Provider software. Recovery Manager for Exchange is an extension to 3PAR Virtual Copy that intelligently creates and manages snapshots that can be used to quickly restore Exchange instances or databases (or non-disruptively back them up to tape) for near-continuous data protection. Application Software Suite for Exchange uses system-based licensing. For more information see http://h18006.www1.hpe.com/storage/software/3par7000/as-exchange/index.html.
NOTE: HPE 3PAR Virtual Copy Software is a prerequisite, purchased independently or in the HPE 3PAR Replication Software Suite.

HP 3PAR 7450 Application Suite for Microsoft Exchange LTU	BC916B
HP 3PAR 7450 Application Suite for Microsoft Exchange E-LTU	BC916BAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR Application Software Suite for VMware

HPE 3PAR Application Software Suite for VMware - Application Protection

The HPE 3PAR Application Software Suite for VMware provides everything you need to make your VMware environment more agile and efficient-including Recovery Manager for VMware, Host Explorer for VMware, VASA support, and three essential plug-ins: the VMware Site Replication Manager (SRM) Adapter, the 3PAR VAAI plug-in, and the 3PAR management plug-in for VMware View. Application Software Suite for VMware uses system-based licensing. For more information see.
NOTE: HPE 3PAR Virtual Copy Software is a prerequisite, purchased independently or in the HPE 3PAR Replication Software Suite.

HP 3PAR 7450 Application Suite for VMware LTU	BC915B
HP 3PAR 7450 Application Suite for VMware E-LTU	BC915BAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE 3PAR Application Software Suite for Microsoft Hyper-V

HPE 3PAR Application Software Suite for Hyper-V - Application Protection

The HPE 3PAR Application Software Suite for Hyper-V provides you the essentials for protecting your Microsoft Hyper-V environment, including Recovery Manager for Hyper-V and the VSS Provider software. Recovery Manager for Hyper-V is an extension to 3PAR Virtual Copy that intelligently creates and manages snapshots that can be used to quickly restore Hyper-V VMs (or non-disruptively back them up to tape) for near-continuous data protection. Application Software Suite for Hyper-V uses system-based licensing.
NOTE: HPE 3PAR Virtual Copy Software is a prerequisite, purchased independently or in the HPE 3PAR Replication Software Suite.

Configuration

HP 3PAR 7450 Application Suite for Microsoft Hyper-V LTU	BD190B
HP 3PAR 7450 Application Suite for Microsoft Hyper-V E-LTU	BD190BAE

NOTE: * Insert AE at the end of a part number for an electronic LTU (eg. XXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

HPE Cluster Extension Software

HPE Cluster Extension Software-High Availability

HPE Cluster Extension Software (CLX) offers protection against application downtime from fault, failure, or site disaster by extending a local cluster between data centers over metropolitan distance. CLX reinstates critical applications at a remote site within minutes or seconds after an adverse event. CLX integrates with the OS clustering software (such as MS Cluster Service in Windows) and the remote mirroring software on storage (such as HPE 3PAR Remote Copy Software on HPE 3PAR systems) to automate failover and failback between sites. This dual integration enables the cluster service to verify the status of the storage as well as the server cluster; thus allowing the correct failover and failback decisions to be made which minimize downtime, and accelerates recovery without human intervention. Thus the Cluster Extension Software can help customers achieve 'zero' RPO and RTO in minutes or seconds. For more information, including how Cluster Extension Software is licensed, see http://h18006.www1.hpe.com/storage/software/ces/index.html.

HPE StoreFront Remote SaaS Portal

HPE StoreFront Remote SaaS Portal

The HPE StoreFront Remote SaaS Portal provides proactive tools and integrated data collection from the HPE 3PAR StoreServ Storage arrays that call home to deliver unique insights and analytics all in one dashboard. Identify capacity and performance issues early through intuitive capacity and performance trend analysis and forecasting.   These valuable analytics help maximize asset utilization and optimize the datacenter with recommendations and remedial actions when issues arise. Users can log into http://www.storefrontremote.com to claim their arrays and get access for free.

Step 9 - Choose Options for Storage Networking

Hewlett Packard Enterprise's comprehensive portfolio of Storage Area Network infrastructure products and solutions are designed to meet a range of storage networking needs from small and midsized businesses to the largest corporate enterprises. HPE StoreFabric storage networking SAN Solutions deliver scalability, performance, and broad interoperability required for critical data and applications.

For additional details on SAN infrastructure components and options and storage compatibility information, please visit: http://hpe.com/go/san or select from the part numbers below.

Fibre Channel Host Bus Adapters	Brocade Fibre Channel HBAs	
	HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B
	HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B
	Emulex Fibre Channel HBAs	
	HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
	HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B

Configuration

	QLogic Fibre Channel HBAs	
	HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
	HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
Fibre Channel Switches	HPE B-series	
	8 Gb Fibre Channel Switches	
	HP 8/8 Base (0) e-port SAN Switch	AM866B
	HP 8/8 (8) Full Fabric Ports Enabled SAN Switch	AM867B
	HP 8/24 Base (16) Full Fabric Ports Enabled SAN Switch	AM868B
	16 Gb Fibre Channel Switches	
	HP SN3000B 16Gb 24-port/12-port Active Fibre Channel Switch	QW937A
	HP SN3000B 16Gb 24-port/24-port Active Fibre Channel Switch	QW938A
	HP SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch	QK753B
	HP SN6000B 16Gb 48-port/48-port Active Fibre Channel Switch	QR480B
	HP SN6000B 16Gb 48-port/24-port Active Power Pack+ Fibre Channel Switch	QK754B
	HP SN6000B 16Gb 48-port/48-port Active Power Pack+ Fibre Channel Switch	QR481B
	FCoE, Extension and Embedded Switches	
	HP 1606 FCIP 4-pt Enabled 8Gb FC 2-pt Enabled 1GbE Base Switch	AP862B
	HP 1606 FCIP 16-pt Enabled 8Gb FC 6-pt Enabled 1GbE Full Switch	AP863B
	HP 1606 FCIP 16-pt Enabled 8Gb FC 6-pt Enabled 1GbE Power Pack+ Switch	AP864B
	Brocade 8/12c SAN Switch for BladeSystem c-Class	AJ820B
	Brocade 8/24c SAN Switch for BladeSystem c-Class	AJ821B
	Brocade 8/24c Power Pack+ SAN Switch for BladeSystem c-Class	AJ822B
	HPE H-series	
	HP 8/20q Fibre Channel 8-ports Active Switch **NOTE:** 8 device ports active, upgradeable to 20 device ports active	AQ233B
	HP 8Gb Simple SAN Connection Kit **NOTE:** 8 device ports active, upgradeable to 20 device ports active	AK241B
	HP 8/20q Fibre Channel Switch **NOTE:** 16 switch ports active, upgradeable to 20 device ports active	AK242B
	HP SN6000 Stackable 8Gb 24-port Single Power Fibre Channel Switch **NOTE:** 20 device ports active/4 stacking (ISL) ports active	AW575B
	HP SN6000 Stackable 8Gb 24-port Dual Power Fibre Channel Switch **NOTE:** 20 device ports active/4 stacking (ISL) ports active	AW576B
	HP SN6000 Stackable 12-port Single Power FC Switch **NOTE:** 8 device ports/4 stacking (ISL) ports active, upgradeable to 20 device ports active	BK780B
	HPE C-series	
	HP SN6000C 8Gb 16-port Fibre Channel Switch	AW585A
	HP SN6000C 8Gb 32-port Fibre Channel Switch	AW586A

Configuration

	Cisco MDS 8/12c Fabric Switch for HP BladeSystem c-Class	AW563A
	Cisco MDS 8/24c Fabric Switch for HP BladeSystem c-Class	AW564A
	Cisco MDS 9124 8-ports Active Fabric Switch	AG646A
	Cisco MDS 9124 16-ports Active Fabric Switch	AG647A
HPE Intelligent Infrastructure Analyzer Software (IIAS)	HP Intelligent Infrastructure Analyzer Software LTU	TC400A
HPE Intelligent Infrastructure Analyzer Software (IIAS)	HP Intelligent Infrastructure Analyzer Software E-LTU	TC400AAE
	An online monitoring and diagnostic solution intended to manage the physical layer of a Storage Area Network (SAN) consisting of HPE B-series and/or H-series Fibre Channel switches and directors. It uses industry-standard protocols (such as SNMP, SMI-S, Telnet) to monitor the physical layer across the SAN and to diagnose changes/events in Small Form-factor Pluggable (SFP) transceiver states/characteristics. It also presents the SAN topology, inventory and diagnostic information to the user in real-time.	
HPE Virtual Connect	HPE 3PAR StoreServ 7000 Storage supports direct attach with HPE Virtual Connect FlexFabric. Please refer to SPOCK for HPE Virtual Connect information. http://h20272.www2.hpe.com/index.aspx	
PremierFlexOM4 cable options	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
	HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
OM3 FC LC-LC cables options	HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
	HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
	HP LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
	HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
	HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
	HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
	HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A

Configuration

Step 10 - Federation / Data Migration

HPE provides several ways to migrate your data from older arrays. Peer Motion provides federation with other 3PAR arrays, which includes the ability to migrate data to HPE 3PAR StoreServ 7450 Storage.
(Peer Motion is part of the HPE 3PAR 7450 Data Optimization Software Suite). Peer Motion Software is also available as a standalone license

HPE 3PAR Peer Motion Software	HP 3PAR 7450 Peer Motion Software Base LTU	BC906A
	HP 3PAR 7450 Peer Motion Software Drive LTU	BC907A

NOTE: * Insert AE at the end of a part number for an electronic LTU (XXXXXAAE). E-Delivery should be ordered with any Standalone or Upgrade software order.

Online Import allows you to easily migrate data from HPE EVA, EMC CX4 or EMC VNX Storage arrays to the HPE 3PAR StoreServ 7450, a 1 year Online Import license is built into the HPE 3PAR 7450 Operating System Software Suite. Additional licenses are available to order.

HPE 3PAR Online Import Software	HP 3PAR 7450 Online Import Software 180 day LTU	BD195A

NOTE: * Insert AE at the end of a part number for an electronic LTU (XXXXXBAE). E-Delivery should be ordered with any Standalone or Upgrade software order.
In addition HPE supports the MPX200.

HPE MPX200 Multi-protocol and Heterogeneous Data Migration

The HPE MPX200 Multiprotocol Router provides support for HPE 3PAR StoreServ 7000 and 10000 as well as 3PAR F/T, including 1GbE iSCSI and 10GbE iSCSI and FCoE target support. MPX200 iSCSI provides an alternative option for HPE 3PAR storage systems if you don't want to dedicate native iSCSI ports on your array. The MPX200 also facilitates the sharing of iSCSI/FCoE connectivity simultaneously for HPE 3PAR storage systems from the same MPX200. For Data Migration the MPX200 provides high performance migration from P6000/EVA to HPE 3PAR storage systems and simplifies Data Migration from third party storage such as IBM and EMC to HPE 3PAR.The MPX200 is an ideal solution enabler for HPE 3PAR customers. http://www.hpe.com/go/mpx200

FCIP Software	HP MPX200 Half Chassis FCIP License	TA766A
	HP MPX200 Full Chassis FCIP License	TA767A
Data Migration Software	HP MPX200 1TB Full Chassis Data Migration License	TA762A
	HP MPX200 5TB Full Chassis Data Migration License	TA763A
	HP MPX200 Full Chassis 1 Array Data Migration License	TA764A

Configuration

Step 11- Adding a File Controller

With HPE 3PAR StoreServ File Controller you get an efficient, bulletproof, and effortless way to provide file storage from HPE 3PAR StoreServ Storage. 3PAR StoreServ File Controller saves you time and money by supporting hundreds to thousands of concurrent users and diverse file workloads .It also has non-intrusive data deduplication that provides an average 50-60% in space savings. It provides security through features such as built-in encryption, sophisticated access controls, online snapshots, and the ability to run endpoint protection and backup software onboard so that data is protected at rest and in flight.

HPE 3PAR StoreServ File Controllers are clustered file gateway configurations with transparent failover and online rolling maintenance updates that deliver continuous availability of data to users, servers, and applications. With a straightforward and consistent management experience, it also provides robust capabilities for demanding 24 x 7 file storage environments.

See the HPE 3PAR StoreServ File Controller QuickSpecs for more information on specifications and options at: http://www8.hpe.com/h20195/v2/GetHtml.aspx?docname=c04637524

Add a Power Cord

The HPE 3Par StoreServ File Controller comes standard with at least one rack (IEC-IEC) PDU power cord. If you wish to use wall outlet power instead, you can choose a country- or region-specific power cord.

3Par StoreServ File Controller	HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
	HP C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord	AF557A
	HP C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord	AF558A
	HP C13 - Nema 5-15P TH/PH 250V 10Amp 1.83m Power Cord	AF559A
	HP C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord	AF560A
	HP C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord	AF561A
	HP C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord	AF562A
	HP C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord	AF569A
	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
	HP C13 - SI-32 IL 250V 10Amp 1.83m Power Cord	AF564A
	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
	HP C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	AF572A
	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
	HP C13 - NBR-14136 BR 250V 10Amp 1.83m Power Cord	AF591A

Features and Benefits

HPE 3PAR StoreServ 7450 Product Dimensions, and Weight

Physical Dimensions	Height in/mm/U	Width in/mm	Depth in/mm	Max Weight lb/kg
42U Intelligent Series Rack	79.0/2006.6	23.5/597.8	44.30/1125.2	243/110 (empty)
HPE 3PAR StoreServ 7450c 2-node Storage Base (no host adapters, no drives)	3.46/87.95/2	19/483	26.6/676.1*	47.7/21.6
HPE 3PAR StoreServ 7450c 2-node Storage Base (with two host adapters, no drives)	3.46/87.95/2	19/483	26.6/676.1*	48.7/22.1
HPE 3PAR StoreServ 7450c 4-node Storage Base (no host adapters, no drives)	6.925/175.9/4	19/483	26.6/676.1*	97.8/44.4
HPE 3PAR StoreServ 7450c 4-node Storage Base (with four host adapters, no drives)	6.925/175.9/4	19/483	26.6/676.1*	99.8/45.3
HPE M6710 2.5 inch 2U SAS Drive Enclosures (without drives)	3.46/87.95/2	19/483	24.8/630.7	33.5/15.2
HPE M6720 3.5 inch 4U SAS Drive Enclosures (without drives)	6.89/175/4	19/483	24.9/631.4	42.9/19.5
SFF SAS drive with carrier	3.42/86.85**	0.78/19.9**	896/227.7	0.7/0.32 (varies by type)
LFF SAS drive with carrier	1.18/30.0**	4.36/110.84**	8.67/220.26	1.9/0.86 (varies by type)

NOTE: * includes length of ejector handles
** includes RFI clips

Power Requirements
Input Voltage (VAC)   100 - 240 VAC
Frequency (Hz)   50 - 60

Features and Benefits

Component	Idle (watts / BTU/hr)	Transactional (watts / BTU/hr)
Node Pair (7450/7450c), no drives, no add-on host adapters	344 / 1173	363 / 1238
4-port 8Gb/sec Fibre Channel Adapter	24 / 81.7	32.6 / 111
2-port 16Gb/s Fibre Channel Adapter	9.47 / 32.3	9.89 / 33.7
2-port 10Gb/sec iSCSI/FCoE Adapter	34 / 115.8	40 / 136.4
2-port 10Gb/s Ethernet Adapter	5.69 / 19.4	5.71 / 19.5
4-port 1Gb/s Ethernet Adapter	1.97 / 6.7	1.97 / 6.7
HPE M6710 2.5 inch 2U SAS Drive Enclosure, no drives	150 / 512 (average)	150 / 512 (average)
HPE M6720 3.5 inch 4U SAS Drive Enclosure, no drives	164 / 559 (average)	164 / 559 (average)
400GB MLC SSD	3.3/11.3	5.8/19.8
480GB MLC SSD	2.2/ 7.5	5.5/18.7
920GB MLC SSD	2.2/7.5	5.5/18.7
480GB cMLC SSD	3.2/11	7.1/24.4
1920GB cMLC SSD	3.5/11.9	8.9/30.5
3840GB cMLC SSD	3.4 / 11.64	11.0 / 37.56

Environmental Specifications

Operating Temperature	41° to 104° F (5° to 40° C) - Reduce rating by 1° F for each 1000 ft altitude (1.8° C/1,000 m)
Shipping Temperature	32° to 140° F (0° to 60° C)
Altitude (ft/m) max.	10,000 ft / 3,048 m
Shipping Altitude (ft/m) max.	40,000ft/ 12,192 m
Humidity	10% to 90% non condensing
Shipping Humidity	10% to 90% non condensing
Operating Vibration	0.25 G, Sine, 5-500 Hz, 0.1 Grms, Random 10-100Hz
Non-operating Vibration	0.5 G, 5 - 500 Hz, Sine
Operating Shock	2 G, 11ms, half-sine
Non-operating Shock	10 G, 11ms, half-sine
Maximum Air Flow	Storage Base and Upgrade Node Pair - 109 CFM per enclosure M6710 Drive Enclosure - 105 CFM M6720 Drive Enclosure - 109 CFM
Electromagnetic Compatibility	CISPR 22:2008/ EN55022:2010 Class A CISPR 24:2010/ EN 55024:2010 IEC 61000-3-2:2005/ EN 61000-3-2:2006 +A1:2009 +A2:2009 IEC/ EN 61000-3-3:2008 AS/NZS CIPSR 22: 2009 Class A CNS 13438:2006 Class A 47 CFR Part 15 Subpart b Class A

Features and Benefits

ICES-003 Issue 4 Class A
V-3/2012.04 Class A
RRA Notice No. 2011-24 (2011.12.23) Class A
RRA Notice No. 2011-25 (2011.12.23)

Acoustics Sound pressure level measured per ISO 7779 specifications during normal operating fan conditions, from a minimum of 4,000 RPM to a maximum of 10,000 RPM	Fan Speed (RPM)	7450c 2N Storage Base	7450c 4N Storage Base	M6710 2.5" 2U SAS Drive Enclosure	M6720 3.5" 4U SAS Drive Enclosure
	Typical	72	74	66	67
	Maximum	93	97	85	88

Typical operations assume 20 degrees centigrade ambient with a fan speed of 4000 RPM.

Safety

IEC 60950-1:2005 (2nd Edition)
EN 60950-1:2006 +A11:2009
EN 62479:2010
CNS 14336-1 2nd Edition
UL 60950-1 2nd Ed.
CAN/CSA C22.2 No. 60950-1

Certifications / Markings

cTUVus Mark
TUV T-mark (EN 60950)
CE Mark
FCC Class A
IC Class A
VCCI Class A
BSMI Class A
KCC
GOST-R
C-Tick
WEEE
China RoHS
EU RoHS

NOTE: Specifications are subject to change without notice. Acoustics and power consumption for the node pair has been measured with Gold efficiency PCM.

Appendix

Appendix

This Appendix includes the technical specification of the HPE 3PAR StoreServ 7450 Storage.

Summary	3PAR StoreServ 7450
Number of Controller Nodes	2 or 4
HPE 3PAR Gen4 ASICs	2 or 4
Processors	2 - 4 eight-core 2.3 GHz
Total On-Node Cache	128 GiB
Total On-Node Cache per controller node pair	64 GiB
Maximum Host Ports	24 ports
8Gb/s Fibre Channel Host Ports	4 - 12 ports
16Gb/s Fibre Channel Host Ports	0 - 4 ports
10Gb/s iSCSI and FCoE Host Ports	0 - 8 ports
Maximum Initiators Supported	1024 or 2048
2U Controller Enclosure SAS Drive Capacity	24
Number of Solid State Drives	6[1] - 240
Raw Capacity (approx.)[2]	0.8 - 460.8 TiB[3]

Capacity Details	3PAR StoreServ 7450
RAID Levels	RAID 0, 1, 5, 6
RAID 5 Data to Parity Ratios	2:1 - 8:1
RAID 6 Data to Parity Ratios	4:2, 6:2, 8:2, 10:2, 14:2
Drive Capacities (approximate GB[3]) (RAID levels, parity ratios, and drive capacities all mixable within the same Storage System)	100GB SSD4, 200GB SSD, 480GB SSD, 920GB SSD, 480GB cMLC SSD, 1.92TB cMLC SSD
Number of Add-on Drive Enclosures (Each Drive Enclosure holds up to 24 drives in 2U for small form factor drives and 4U for large form factor drives)	0 - 8 enclosures

NOTES:
[1] The minimum drive quantity is permitted as long as the total raw capacity is at least 0.8 TB.
[2] Maximum raw capacity currently supported with solid state drives.
[3] For storage capacity, 1 GB = 1,000,000,000 bytes and 1 TB = 1,000 GB.
[4] SSDs are Solid State Drives.
NOTE: Specifications are subject to change without notice.

HPE 3PAR StoreServ 7450 Product Dimensions, and Weight

Physical Dimensions	Height in/mm/U	Width in/mm	Depth in/mm	Max Weight lb/kg

Appendix

HPE 3PAR StoreServ 7450 2-node Storage Base (no host adapters, no drives)	3.46/87.95/2	19/483	26.6/676.1*	47.7/21.6
HPE 3PAR StoreServ 7450 2-node Storage Base (with two host adapters, no drives)	3.46/87.95/2	19/483	26.6/676.1*	48.7/22.1
HPE 3PAR StoreServ 7450 4-node Storage Base (no host adapters, no drives)	6.925/175.9/4	19/483	26.6/676.1*	97.8/44.4
HPE 3PAR StoreServ 7450 4-node Storage Base (with four host adapters, no drives)	6.925/175.9/4	19/483	26.6/676.1*	99.8/45.3

NOTE: * includes length of ejector handles
** includes RFI clips

Environmental Specifications

Operating Temperature	41° to 104° F (5° to 40° C) - Reduce rating by 1° F for each 1000 ft altitude (1.8° C/1,000 m)
Shipping Temperature	32° to 140° F (0° to 60° C)
Altitude (ft/m) max.	10,000 ft / 3,048 m
Shipping Altitude (ft/m) max.	40,000ft/ 12,192 m
Humidity	10% to 90% non-condensing
Shipping Humidity	10% to 90% non-condensing
Operating Vibration	0.25 G, Sine, 5-500 Hz, 0.1 Grms, Random 10-100Hz
Non-operating Vibration	0.5 G, 5 - 500 Hz, Sine
Operating Shock	2 G, 11ms, half-sine
Non-operating Shock	10 G, 11ms, half-sine
Maximum Air Flow	Storage Base and Upgrade Node Pair - 109 CFM per enclosure M6710 Drive Enclosure - 105 CFM M6720 Drive Enclosure - 109 CFM
Electromagnetic Compatibility	CISPR 22:2008/ EN55022:2010 Class A CISPR 24:2010/ EN 55024:2010 IEC 61000-3-2:2005/ EN 61000-3-2:2006 +A1:2009 +A2:2009 IEC/ EN 61000-3-3:2008 AS/NZS CIPSR 22: 2009 Class A CNS 13438:2006 Class A 47 CFR Part 15 Subpart b Class A ICES-003 Issue 4 Class A V-3/2012.04 Class A RRA Notice No. 2011-24 (2011.12.23) Class A

Appendix

Acoustics Sound pressure level measured per ISO 7779 specifications during normal operating fan conditions, from a minimum of 4,000 RPM to a maximum of 10,000 RPM	RRA Notice No. 2011-25 (2011.12.23)			
	Fan Speed (RPM)	7450 2N Storage Base	7450 4N Storage Base	M6710 2.5" 2U SAS Drive Enclosure	M6720 3.5" 4U SAS Drive Enclosure
	Typical	72	74	66	67
	Maximum	93	97	85	88

Typical operations assume 20 degrees centigrade ambient with a fan speed of 4000 RPM.

Safety

IEC 60950-1:2005 (2nd Edition)
EN 60950-1:2006 +A11:2009
EN 62479:2010
CNS 14336-1 2nd Edition
UL 60950-1 2nd Ed.
CAN/CSA C22.2 No. 60950-1

Certifications / Markings

cTUVus Mark
TUV T-mark (EN 60950)
CE Mark
FCC Class A
IC Class A
VCCI Class A
BSMI Class A
KCC
GOST-R
C-Tick
WEEE
China RoHS
EU RoHS

NOTE: Specifications are subject to change without notice. Acoustics and power consumption for the node pair has been measured with Gold efficiency PCM.

Summary of Changes

Date	Version History	Action	Description of Change
01-Dec-2015	From Version 24 to 25	Changed	Changes were made throughout the QuickSpecs
02-Oct-2015	From Version 23 to 24	Added	Added the HPE StoreFront Remote SW
18-Sept-2015	From Version 22 to 23	Changed	Changes made to the Service and Support and Features and Benefits Sections.
17-Aug-2015	From Version 21 to 22	Changed	Updated the usable file capacity for File Persona to a max of 256TiB and built-in RCIP port support for File Persona
19-Jun-2015	From Version 20 to 21	Changed	What's New section was updated
05-Jun-2015	From Version 19 to 20	Changed	Changes made to the Configuration and Overview Sections
01-Jun-2015	From Version 18 to 19	Added	New lower cost 3.84TB cMLC SSDs available. New 1.92TB FIPS Encrypted cMLC SSD available.
		Changed	Changes made to the Configuration and Service and Support Sections
		Deleted	Removed all the File Controller Section since it now has its own QS.
30-Mar-2015	From Version 17 to 18	Changed	OBS SKUs removed (AG851B & C8569A), Entered 7450c SW SKUs for File Persona, Updated the limited availability message.
20-Feb-2015	From Version 16 to 17	Changed	Changes made to the Overview and Service and Support Sections.
09-Feb-2015	From Version 15 to 16	Changed	Changes made to the Feature and Benefits and What´s New Sections
1-Dec-2014	From Version 14 to 15	Added	Added section about HPE 3PAR File Persona Software Suite
10-Nov-2014	From Version 13 to 14	Changed	Changes were made throughout the QuickSpecs.
29-Aug-2014	From Version 12 to 13	Changed	Changes were made throughout the QuickSpecs
22-Aug-2014	From Version 11 to 12	Changed	Removed this entire bullet: "Encrypted and non-encrypted drives can be mixed in a non-encrypted array"
18-Aug-2014	From Version 10 to 11	Changed	Changes were made throughout the Overview and Configuration section. SKU s descriptions were updated
18-Jul-2014	From Version 9 to 10	Added	Configuration section - WSS2012 R2 Upgrade section added (D4T73A); Standard Features - Power Supply changed from 2x 460 W to 2 x 750 W;
03-Jul-2014	From Version 8 to 9	Changed	Changes were made throughout the QuickSpecs
27-Jun-2014	From Version 7 to 8	Changed	Changes were made throughout the QuickSpecs
10-jun-2014	From Version 6 to 7	Changed	Overview & What´s new section; Features; Carepack information
11-apr-2014	From Version 5 to 6	Changed	The QuickSpecs was reconfigured.

Summary of Changes

31-mar-2014	From Version 4 to 5	Changed	Warranty and Hard Drives were revised.
09-dec-2013	From Version 3 to 4	Added	HPE 3PAR StoreServ 7450 2-node and 4-node Base for Storage Centric Racks were added to Step 1 in Configuration HPE 3PAR StoreServ M6710 and M6720 480GB 6G SAS SFF and LFF MLC Solid State Drives and HPE 3PAR StoreServ M6710 and M6720 920 GB 6G SAS SFF ad LFF MLC Solid State Drives were added to Step 4b in Configuration
28-jun-2013	From Version 2 to 3	Changed	Changes were made throughout the Configuration section.
18-jun-2013	From Version 1 to 2	Changed	Host OS Support was revised.

f 𝕏 in ✉

Sign up for updates

★ Rate this document

c04111384 - 14602 - Worldwide - V25 - 1-December-2015

Hewlett Packard Enterprise