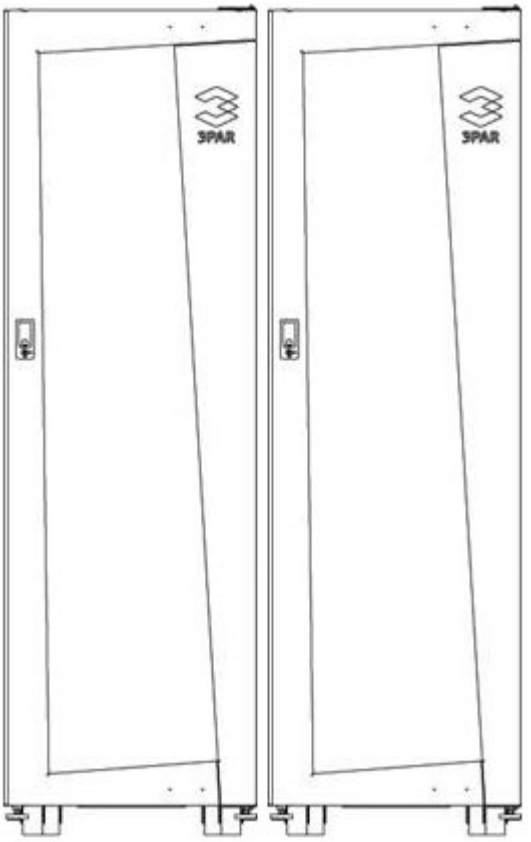
Overview

With the introduction of the HP P10000 3PAR V400 Storage System and HP P10000 3PAR V800 Storage Systems with Thin Built In™, HP 3PAR remains the first storage vendor to incorporate thin capabilities into array hardware. The two new HP 3PAR® Gen4 ASIC in each P10000 3PAR Controller Node provides hyper-efficient, silicon-based engines that drive simple, on-the-fly storage optimizations to maximize capacity utilization while delivering high service levels. The revolutionary innovations of the P10000 3PAR make it the heir to the HP 3PAR T-Class.



HP P10000 3PAR Storage Systems

Overview

Summary	V400	V800
Number of Controller Nodes	2 or 4	2, 4, 6, or 8
HP 3PAR Gen4 ASICs	4 or 8	4, 8, 12 or 16
Management Processors	4 - 8 Quad-Core 2.83 GHz	4 - 16 Quad-Core 2.83 GHz
Total Cache	96 - 192 GB	192 - 768 GB
Control Cache	32 - 64 GB	64 - 256 GB
Data Cache	64 - 128 GB	128 - 512 GB
Maximum Host Ports	96 ports	192 ports
Fibre Channel Host Ports[1]	0 - 96 ports	0 - 192 ports
10Gb/s iSCSI Host Ports[9]	0 - 16 ports	0 - 32 ports
Number of Drives	16[2] - 960 drives	16[2] - 1,920 drives
Raw Capacity (approx.)[3]	4.84 - 800 TB[4]	4.84 - 1600 TB[4]

Capacity Details		
RAID Levels	RAID 0, 1, 5, MP[5]	RAID 0, 1, 5, MP[5]
RAID 5 Data to Parity Ratios	2:1 - 8:1	2:1 - 8:1
RAID 6 Data to Parity Ratios	6:2, 14:2	6:2, 14:2
Drive Capacities (approximate GB[4]) (RAID levels, parity ratios, and drive capacities all mixable within the same Storage System)	100 SSD[6], 200 SSD[6], 300 FC, 600 FC, 1000 NL[7], 2000 NL[7]	100 SSD[6], 200 SSD[6], 300 FC, 600 FC, 1000 NL[7], 2000 NL[7]
Number of Drive Chassis (Each Drive Chassis holds up to 40 drives in 4U)	2[8] - 24 chassis	2[8] - 48 chassis

[1] Each port is full bandwidth 8 Gbit/s Fibre Channel capable
[2] Recommended minimum is 32 drives which results in a 9.6 TB minimum raw capacity.
[3] Maximum raw capacity currently supported with any and all drive types
[4] For storage capacity, 1 GB = 1,024,000,000 bytes and 1 TB = 1,000 GB
[5] RAID MP is HP 3PAR Fast RAID 6 Technology
[6] SSDs are Solid State Drives
[7] NL drives are Nearline (Enterprise SATA) disks
[8] Recommended minimum is 4 drive chassis per pair of controller nodes
[9] Each port is full bandwidth 10 Gbit/s iSCSI capable
NOTE: Specifications are subject to change without notice.

Host OS Support

Citrix® XenServer® | HP-UX® | IBM® AIX®

Microsoft® Windows®, including Microsoft® Windows® Server 2008 Hyper-V™

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

SUSE® Linux Enterprise | VMware ESX and ESXi

Features

Get Thin and Stay Thin

The revolutionary, zero-detect capable HP 3PAR Gen4 ASIC is a hyper-efficient storage optimization engine designed to power "fat-to-thin" volume conversions in silicon while preserving superior performance levels. Fat-to-thin volume conversions boost capacity utilization by removing allocated but unused space from traditional, "fat" storage volumes.

With the HP 3PAR Gen4 ASIC's built-in, hardware-based zero-detection capabilities, migration of "fat" volumes from other storage platforms to new "thin" volumes on an HP 3PAR Storage System is achieved with the greatest speed possible and without the application disruption of software-based implementations. The HP 3PAR Gen4 ASIC's enables the automatic migration of data from sparsely used pages to enable 128MB regions to be reclaimed for re-use by other volumes. With conversions taking place at the hardware level, more parallel memory transactions are possible and system performance is not impacted like it is with software-based approaches to volume optimization. Thin Built In capabilities within the HP P10000 3PAR also power the ongoing, automated optimization of thin provisioned volumes on HP 3PAR Storage Systems, so thin volumes stay thin.

Building Block for Cloud Computing

Building a converged infrastructure to support cloud and self-service computing models requires a high degree of virtualization that places new demands on storage. With their distinct architectural advantages, thin hardware capabilities, and superior performance, HP P10000 3PAR Storage Systems are purpose-built to meet the demands of highly virtualized environments. HP P10000 3PAR Storage Systems give enterprises and service providers the agility to respond quickly to changing business needs while maintaining the resiliency that "always-on" businesses demand.

Start Thin. HP 3PAR Thin Provisioning Software

HP 3PAR Thin Provisioning Software improves storage system efficiency and optimizes capacity utilization system-wide. It does this by addressing the problem of capacity over-allocation through eliminating the need to dedicate storage capacity on a per-application basis. Since its introduction, HP 3PAR Thin Provisioning Software has given HP 3PAR Utility Storage clients the ability to meet Green IT targets and reduce capacity purchases. Thin Provisioning makes this possible by cutting SAN costs, floor space requirements, and energy expenses by up to 75% and decreasing administration time by up to 90%. It does this by allowing organizations to purchase only the disk capacity they actually need, only as they actually need it through eliminating the need for up-front capacity allocation and dedicating resources to individual applications. This prevents clients from paying to power, house, and cool disks that they may not need for months or years to come, or may never actually need.

Get Thin. HP 3PAR Thin Conversion Software

With HP 3PAR Thin Conversion Software, a technology refresh no longer requires a terabyte-for-terabyte replacement, but instead offers the opportunity to eliminate 70-80% of the legacy capacity in a client's storage environment, simply and rapidly. Leveraging the zero-detection capability built into the HP 3PAR Gen3 ASIC, the new Gen4 ASIC combined with HP 3PAR Thin Conversion Software, still effectively and rapidly "thin" a heterogeneous data center to one-quarter of its original size or less while preserving service levels, and without impacting production workloads. The new ASIC enables the automatic migration of data from sparsely used pages to enable 128MB regions to be reclaimed for re-use by other volumes, driving efficient use of space beyond what was available with the Gen3 ASIC. This solution not only makes a technology refresh more affordable, but it reduces up-front capital costs as well as ongoing operational and environmental costs associated with powering, cooling, and housing storage equipment. It also provides space and power consumption relief for data centers approaching maximum density.

In an ideal world, all storage volumes would start thin using HP 3PAR Thin Provisioning Software. But in some cases, starting thin has not been an option, particularly when it comes to data stored on legacy arrays from traditional storage vendors. HP 3PAR Thin Conversion Software uses a virtualization mapping engine for space reclamation called the HP 3PAR Thin Engine, together with the unique hardware capabilities of the HP 3PAR Gen4 ASIC to extend the benefits of thin provisioning to existing storage volumes. In tandem with the HP 3PAR Gen4 ASIC, Thin Conversion enables inline, wire speed "fat-to-thin" conversions compatible with any host volume. HP 3PAR Utility Storage is the only storage platform to offer this built-in, hardware-accelerated, fat-to-thin conversion capability. With HP 3PAR Thin Conversion Software, clients can rapidly and non-disruptively shrink storage footprint, reduce storage TCO, and meet Green IT targets.

Stay Thin. HP 3PAR Thin Persistence Software and Thin Copy Reclamation

To realize the ultimate efficiency and cost-saving benefits of starting thin or getting thin, storage also needs to stay thin. An industry first, HP 3PAR Thin Persistence Software ensures that thin volumes on the array stay as lean and efficient as possible. Thin Persistence Software accomplishes this by using the HP 3PAR Thin Engine with the system's built-in zero-detect capability to reclaim unused space associated with deleted data. With Thin Persistence, space reclamation on HP 3PAR arrays takes place simply, quickly, and without disruption to production workloads.

Thin Copy Reclamation is an HP 3PAR InForm Operating System Software feature that performs a similar function to HP 3PAR Thin Persistence Software, but uses the HP 3PAR Thin Engine to reclaim unused space from thin copies (virtual copy snapshots and remote copies) rather than thin volumes.

On average, HP 3PAR Utility Storage clients already purchase 60% less capacity than with traditional storage arrays. With HP 3PAR Thin Persistence and Thin Copy Reclamation, customers can improve this average capacity savings by another 10% for a total savings of up to 70%. Volumes and snapshots can now stay thin to help sustain Green IT targets, defer the cost of purchasing raw capacity to handle new data growth, and keep costs down without the need to purchase special host-based software or retaining professional services.

HP 3PAR Peer Motion

HP 3PAR Peer Motion Software is a non-disruptive, do-it-yourself data migration tool for enterprise

Software

Software	Storage Area Networks. With Peer Motion, HP 3PAR Storage System customers can load balance I/O workloads across systems at will, perform technology refresh seamlessly, cost-optimize asset lifecycle management, and lower technology refresh capital expenditure. Unlike traditional block migration approaches, Peer Motion enables customers to migrate storage volumes between any HP 3PAR Storage Systems online, non-disruptively, and without complex planning or dependency on extra tools. Peer Motion leverages HP 3PAR Thin Built In™ technology to power the simple and rapid conversion of inefficient, "fat" volumes on source arrays to more efficient, higher-utilization "thin" volumes on the destination 3PAR Storage System. Peer Motion Manager is an add-on application that orchestrates all stages of the data migration lifecycle to ensure data migration is simple and fool-proof.
HP Storage Management Pack for Microsoft System Center	The HP Management Pack for Systems Center Operations Manager provides seamless integration with Microsoft Systems Center Operations Manager and now System Center Essentials by integrating predefined discovery and state monitoring policies, event processing rules and tasks, and diagram and topology views for the storage system. For more information: http://h18000.www1.hp.com/products/quickspecs/14202_na/14249_na.html HP Storage Management Pack can be downloaded free from the following website: https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=SCOM

Warranty

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

HP 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 HP's Global Limited Warranty and Technical Support, visit: http://www.hp.com/products/storageworks/warranty

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Service and Support

Technology Services for increased uptime, productivity and ROI

TRUST HP 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 HP Storage Systems' capabilities requires a service partner who understands your increasingly complex environment. Team with the people who know HP infrastructure hardware and software best-the experienced professionals at HP Services.

Protect your business beyond warranty

Warranty protects against manufacturer defects, however warranty uplifts, such as HP Care Pack Services protect the business-by reducing downtime risks and providing operational consistency for mission-critical and standard business computing.

What HP Storage Technology Services can do for you

HP Storage Technology Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. HP 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

HP 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 HP brings together deep expertise, proactive and business critical support and a strong partner network-plus, a full set of infrastructure services designed to power a Converged Infrastructure.

Optimized Care - delivers best performance and stability through deployment and proactive management practices	HP Critical Service-Designed for environments where downtime cannot be tolerated, HP monitors your environment around-the-clock, 365 days a year. We implement improvement projects to mitigate risks and reduce incidents. If outages do occur, they are addressed immediately with access to our dedicated critical support escalation resources. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-1613ENW.pdf
Standard Care - maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support	HP Proactive 24 Service-This is the right choice for environments where some downtime is acceptable. HP helps manage your IT environment for improved performance, stability, and availability. Your incidents are addressed 24x7, with a maximum 4-hour onsite response 365 days a year. http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9842EN.pdf
Basic Care - Minimum recommended support	3-Year HP Support Plus 24-This service provides support for environments where some downtime is expected. HP provides around-the-clock hardware and software support onsite, including third-party support. We also provide cost-saving software updates and monitor ongoing operations through the latest remote tools. http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf

Service and Support, HP Care Pack, and Warranty Information

Implement right from the start	**Whichever level of care you select, it includes**:
	HP 3PAR Storage System Installation and Startup Service-HP installs and tests your hardware and software onsite, including configuration. We deliver a custom tailored storage deployment, properly integrated into your environment. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-2345ENW.pdf
3PAR Remote Support Tools	**Support Recommendations include fully integrated remote supported**-core design and fabric of 3PAR industry benchmark remote support systems. Site-specific data used both proactively and reactively with real-time monitoring and information extraction tools. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-4141ENW.pdf
Additional services to meet your needs	**HP Storage Data Migration**-Proven expertise and tools help you migrate data across your data center or around the globe. http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-4107EN.pdf
	HP Enhanced Implementation Service for SANs-HP delivers complete design and implementation services for Fibre Channel, FCoE, FCIP, SAS, and iSCSI SAN connectivity components. http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-8527EN.pdf
	HP 3PAR Storage Assessment Service-We offer customized technical and operational guidance for an HP 3PAR Storage infrastructure, along with recommendations to help improve availability levels and ongoing environment management. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-2346ENW.pdf
	HP QuickStart Service for HP 3PAR Storage Systems-Choose the most effective, appropriate methods for configuring and migrating to a HP 3PAR platform. http://www8.hp.com/us/en/services/services-detail.html?compURI=tcm:245-826727&pageTitle=Consulting-Services&contentView=business
For more information	www.hp.com/services/storage To learn more on HP Storage Services, please contact your HP sales representative or HP Authorized Channel Partner
	HP Care Pack Services are sold by HP and HP Authorized Service Partners: • Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools. • Customers purchasing from a commercial reseller can find HP Care Pack Services at: www.hp.com/go/lookuptool

HP P10000 3PAR Base Configurations

HP P10000 V400 3PAR 16GB Control/32GB Data Cache NEMA Rack Configuration Base	QR584A
HP P10000 V400 3PAR 16GB Control/32GB Data Cache IEC Rack Configuration Base	QR632A
HP P10000 V400 3PAR 16GB Control/32GB Data Cache Rackmount Configuration Base	QR633A
HP P10000 V800 3PAR 32GB Control/64GB Data Cache NEMA Rack Configuration Base	QR585A
HP P10000 V800 3PAR 32GB Control/64GB Data Cache IEC Rack Configuration Base	QR637A

- A minimum of one (1) configuration base must be ordered
- The base configuration for NEMA/IEC includes two Controller Nodes, one 2-meter Cabinet, service processor
- The Rackmount Configuration Base (QR633A) includes two Controller Nodes, rackmount kit (for backplane, controllers and service processor), service processor. A rackmount kit must be ordered separately for each drive chassis (see Drive section below). These rackmount kits are strictly for new installations into non-HP 3PAR racks.
- The V400 base configuration includes total cache: 32GB control / 64GB data
- The V800 base configuration includes total cache: 64GB control / 128GB data
- The base configuration and node configurations, shown in the section below, have built-in Gigabit Ethernet ports for management and Remote Copy over IP
- The base configurations do not include adapters (beyond embedded ports), drive chassis, drives, cables or expansion cabinets. These are to be ordered separately
- NEMA stands for the National Electrical Manufacturers Association. IEC stands for the International Electrotechnical Commission
    - With respect to P10000, NEMA (National Electrical Manufacturers Association) and IEC (International Electrotechnical Commission) refer to the plug types used. Generally, NEMA plugs are used in North America and IEC plugs are used everywhere else. There are exceptions, e.g., NEMA plugs are used in Japan.
    - The NEMA connector plug type used on the P10000 NEMA is the L6-30P with 1+1 redundant. The NEMA receptacles used on the P10000 NEMA are the L6-30R with 1+1 redundant
    - The IEC connector plug type used on the P10000 IEC is the IEC 60309, blue 30/32A, 2P+E with 1+1 redundant. The IEC receptacles used on the P10000 IEC are the IEC 60309, blue 30/32A, 2P+E with 1+1 redundant

HP P10000 3PAR Controller Node Configurations

HP P10000 V400 3PAR 2.8-GHz 16GB Control/32GB Data Cache Controller Node	QR586A
HP P10000 V800 3PAR 2.8-GHz 32GB Control/64GB Data Cache Controller Node	QR638A
HP P10000 V400 3PAR 2.8-GHz 16GB Control/32GB Data Cache Upgrade Controller Node	QR603A
HP P10000 V800 3PAR 2.8-GHz 32GB Control/64GB Data Cache Upgrade Controller Node	QR640A

- One (1) pair of Controller Nodes beyond the base configuration is supported on the V400
- One (1), two (2) and three (3) pairs of Controller Nodes beyond the base configuration is supported on the V800
- The V400 Controller Nodes includes total cache: 32GB control / 64GB data
- The V800 Controller Nodes includes total cache: 64GB control / 128GB data

- The node configurations and base configuration, shown in the section above, have built-in Gigabit Ethernet ports for management and Remote Copy over IP

HP P10000 3PAR Disk Adapters

HP P10000 3PAR 4-Port 8Gb Fibre Channel Adapter	QR591A
HP P10000 3PAR 4-Port 8Gb Fibre Channel Upgrade Adapter	QR608A

- Two (2) required per node or four (4) per node pair
- Disk Adapters must be ordered in addition to the base configurations and controller node configurations

HP P10000 3PAR Host Adapters

HP P10000 3PAR 4-Port 8Gb Fibre Channel Adapter	QR591A
HP P10000 3PAR 4-Port 8Gb Fibre Channel Upgrade Adapter	QR608A
HP P10000 3PAR 2-Port 10Gb Converged Network Adapter	QR630A
HP P10000 3PAR 2-Port 10Gb Converged Network Upgrade Adapter	QR610A

- QR630A and QR610A enable 10Gb/s iSCSI through a CNA

HP P10000 3PAR Drive Chassis

HP P10000 3PAR 40-disk Drive Chassis	QR592A
HP P10000 3PAR 40-Disk Upgrade Drive Chassis	QR609A
HP P10000 3PAR rackmount Kit for 40-disk Drive Chassis	QR598A

- When ordering QR633A, one QR598A must be ordered for each QR592A ordered
- When adding Drive Chassis to a system with QR633A, one QR598A must be ordered for each QR609A ordered

HP P10000 3PAR Drives

HP 3PAR SSDs	HP P10000 3PAR 4x100GB 4Gb Solid State Drive Magazine	QR619A
	HP P10000 3PAR 4x200GB 4Gb Solid State Drive Magazine	QR620A
	HP P10000 3PAR 4x100GB 4Gb Solid State Drive Upgrade Magazine	QR624A
	HP P10000 3PAR 4x200GB 4Gb Solid State Drive Upgrade Magazine	QR625A
HP 3PAR FC HDDs	HP P10000 3PAR 4x300GB 4Gb FC 15K Drive Magazine	QR621A
	HP P10000 3PAR 4x600GB 4Gb FC 15K Drive Magazine	QR622A
	HP P10000 3PAR 4x300GB 4Gb FC 15K Drive Upgrade Magazine	QR626A
	HP P10000 3PAR 4x600GB 4Gb FC 15K Drive Upgrade Magazine	QR627A
HP 3PAR NL HDDs	HP P10000 3PAR 4x1 TB 4Gb SATA 7.2K Drive Magazine	QR676A
	HP P10000 3PAR 4x2 TB 4Gb SATA 7.2K Drive Magazine	QR623A
	HP P10000 3PAR 4x1 TB 4Gb SATA 7.2K Drive Upgrade Magazine	QR677A
	HP P10000 3PAR 4x2 TB 4Gb SATA 7.2K Drive Upgrade Magazine	QR628A

HP 3PAR Cables

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 P10000 3PAR optional Cabinets

HP P10000 3PAR 2m Expansion NEMA Rack	QR596A
HP P10000 3PAR 2m Expansion IEC Rack	QR639A
HP P10000 3PAR V400 standalone rackmount kit	QR678A

- QR678A can only be ordered as an upgrade part to a system containing either QR584A or QR632A only
- The strict use of QR678A is for relocating either QR584A or QR632A to a non-HP 3PAR rack.
- When ordering QR678A, one QR598A must be ordered for each QR592A ordered
- When adding Drive Chassis to a system with QR678A, one QR598A must be ordered for each QR609A ordered

Technical Specifications

Physical Specifications

2-Meter Cabinet

Dimensions (width x height x depth)	23.6 x 76.5 x 36 in	60 x 194.3 x 91.3 cm
Service Clearance (front and back)	Front/Rear: 36 in / 30 in	Front/Rear: 91.4 cm / 76.2 cm
Weight (not populated)	439.8 lb	195.5 kg
Maximum Weight (fully populated)	1,880 lb	852.8 kg
Maximum Weight per Leveling Foot	470 lb	213.2 kg
Maximum Load per Leveling Foot	149.6 lb/sq in	10.5 kg/sq cm

Component Weights

V400 Base Configuration[1]	654.1 lb	296.7 kg
V800 Base Configuration[1]	747.1 lb	338.9 kg
2 Controller Nodes (fully populated)	133 lb	60.4 kg
Drive Chassis (fully populated)	180 lb	81.6 kg
Service Processor	13.3 lb	6.0 kg

Supported Host FC Connections

FC Connector Type from Storage System to Host Port	LC to LC
FC Cable Core Diameter	OM3
Connector Boot Length	standard

Power and Heat

Power Supply Requirements

Input Voltage (VAC)	220 (200 - 240)
Frequency (Hz)	50 - 60
Circuit Breaker Maximum	30 A per PDU[6] (de-rated to 24 A)
Power Connectors for 2-Meter Cabinet	(4) L6-30P with 1+1 redundant or (4) IEC 60309 with 1+1 redundant
Power Receptacles	(4) L6-30R with 1+1 redundant or (4) IEC 60309 with 1+1 redundant

Maximum Potential Power Draw per 2-Meter Cabinet

Watts per Cabinet	9,984 watts / 34,075 BTU/h

Actual Power Draw / Heat Dissipation

Service Processor	317 watts / 1,082 BTU/h
Drive Chassis (without Drive Magazines)[2]	200 watts / 683 BTU/h

	Transactional[3] (watts / BTU/h)	**Idle (watts / BTU/h)**
4 x 100-GB SSD Drives	9.8 / 33	5.5 / 19
4 x 200-GB SSD Drives	10.3 / 35	7 / 24
4 x 300-GB FC Drive Magazine	75 / 256	57 / 195

Technical Specifications

4 x 600-GB FC Drive Magazine	76 / 258	65 / 222
4 x 2-TB NL Drive Magazine	62 / 211	38 / 131
Controller Node Pair	1,315 / 4,487	990 / 3,378
Example Full Cabinet Configuration (4-Node V400; 6 Drive Chassis, 240 600-GB drives,1 service processor)	8,707 / 29,710	7,397 / 25,240

Environmental Specifications

Temperature (°F/°C), 0 - 3,000 ft / 0 - 914.4 m	50 - 104°F / 10 - 40°C
Temperature (°F/°C), 3,000 - 10,000 ft / 914.4 m - 3,048 m	50 - 95°F / 10 - 35°C
Altitude (ft/m) max.	10,000 ft / 3,048 m
Humidity (%), Non-condensing	20 - 80%
Raised Floor	Recommended
Emissions / RFI / EMI	FCC Class A, EN55022 Class A,EN55024: 1998, VCCI Class A
Safety	CE Mark, C-TUVus Mark, TUV GS Mark, CB Scheme with all country deviations
Energy Consumption Efficiency[5] (Japan Green Law)	0.011

[1] Includes 2-meter rack and two controller nodes (fully populated)
[2] Up to 10 drive magazines (40 drives) of any combination of FC, NL, and up to 2 SSD magazines (8 SSD drives) per Drive Chassis
[3] Under maximum load
[4] Includes power and heat dissipation specifications for the Service Processor as follows: 317 Watts, 1082 BTU/hr, 100 - 240 VAC Input Voltage, 50 - 60 Hz Frequency, and (1) IEC-320 Power Receptacle
[5] Japan Green Law statement of compliance: The energy consumption efficiency value has been calculated per requirements for Category-N Magnetic Disk Drive Units by dividing the power consumption, measured according to the definition in the Law Concerning the Rational Use of Energy, by the storage capacity defined in the Energy Conservation Law. The efficiency value is based on a host-maximized V800 configuration using 600GB drives.
[6] Power Distribution Unit
NOTE: Specifications are subject to change without notice.

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For drives, 1 TB = 1 trillion bytes. Actual formatted capacity is less.