Overview

HPE D3000 Enclosures

Manage your small and midrange business growing storage needs by deploying the next generation 12Gb SAS low cost, flexible tiered external storage system. Ideal for small application environments in SMBs, remote offices and departmental locations as well as tier 2 or 3 storage for enterprise customers. The 12Gb SAS enclosures - Large Form Factor (LFF) D3600 with 12 drive bays and Small Form Factor (SFF) D3700 with 25 drive bays - offer modular solutions to simplify capacity expansion of HPE Gen8 and Gen9 ProLiant server environments to external storage without having to make the full move to SAN or NAS. The Gen10 ProLiant server environments will be supported with the Large Form Factor D3610 and the Small Form Factor D3710 enclosures. The D3610 and the D3710 are aligned with the Gen10 ProLiant branding and industrial design. This allows you to buy what is needed today and purchase additional capacity as data storage needs grow.

The D3000 enclosures support direct attach storage to ProLiant Servers with the HPE Smart Array P421, P431, P441, P822 or the P841 Controllers. Blade 6Gb SAS connectivity is enabled using a HPE Smart Array P721m, P731m or the P741m Controllers, 6Gb SAS BL Switches and the D3000 enclosures. Gen10 branded supported controllers are the HPE Smart Array E208e-p SR Gen10 Controller and the HPE Smart Array P408e-p SR Gen10 Controller.

HPE H222 and the H241 Host Bus Adapters are also supported with the D3600/D3700 Enclosures. With the H241 HBA and the P741m (in HBA mode) deployment of software defined storage such as Microsoft Storage Spaces can be enabled with Gen9 servers. See the **Windows Server Catalog** for the latest supported configurations. The HPE D3000 Enclosures support HPE SmartDrive Carrier (Gen8 HPE ProLiant drives). Total support can grow as needed to up to 96 LFF drives or 200 SFF drives.

HPE D3000 Enclosure (SFF)

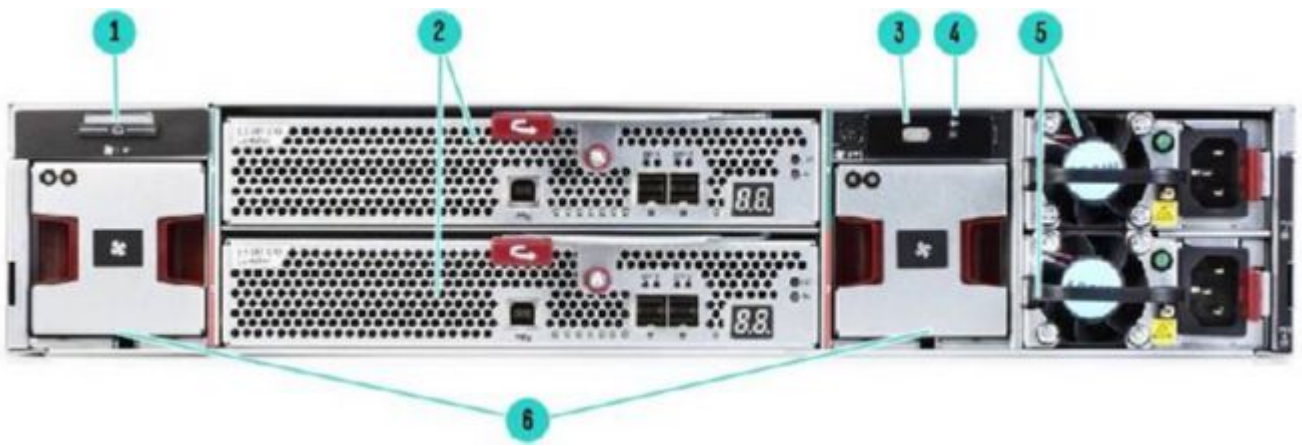
1. Disk drive in bay 1
2. System health LED
3. UID push button and LED

Overview

HPE D3000 Enclosure (LFF)

HPE D3000 Enclosure (Large and Small Form factor Features)

1. Disk drive in bay 1
2. System health LED
3. UID push button and LED



HPE D3000 Enclosure (Large and Small Form factor Features)
Rear Panel components

1. Metal cover with fan module ID[1]
2. I/O Module A and B
3. Rear UID push button
4. Rear system health ID
5. Power Supply
6. Fans

NOTE: [1]A pull tab is provided for label placement.

NOTE: The I/O modules for both the HPE D3600/D3610 LFF and HPE D3700/D3710 SFF enclosures share the same layout.

Overview

Models

HPE D3000 Enclosures

Description	Part Number
Disk Enclosures for HPE Gen10 ProLiant Servers	
HPE D3610 Enclosure	Q1J09A
HPE D3710 Enclosure	Q1J10A

NOTE: For external expansion behind HPE Gen10 ProLiant servers and BladeSystems the D3610 (LFF) and the D3710 (SFF) are the enclosures.

HPE D3610 Enclosure + Hard Drive Bundles

D3610 Bundles (For use with Gen10 ProLiant servers)

HPE D3610 w/12 4TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 48TB Bundle	Q1J11A
HPE D3610 w/12 6TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 72TB Bundle	Q1J12A
HPE D3610 w/12 8TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 96TB Bundle	Q1J13A
HPE D3610 w/12 10TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 120TB Bundle	Q1J14A

HPE D3710 Enclosure + Hard Drive Bundles

D3710 Bundles (for use with Gen10 ProLiant servers)

HPE D3710 w/25 600GB 12G SAS 10K SFF (2.5in) Enterprise Smart Carrier HDD 15TB Bundle	Q1J15A
HPE D3710 w/25 1.2TB 12G SAS 10K SFF (2.5in) Enterprise Smart Carrier HDD 30TB Bundle	Q1J17A
HPE D3710 w/25 1.8TB 12G SAS 10K SFF (2.5in) Enterprise Smart Carrier HDD 45TB Bundle	Q1J18A
HPE D3710 w/25 1TB 6G SAS 7.2K SFF (2.5in) Midline Smart Carrier HDD 25TB Bundle	Q1J19A
HPE D3710 w/25 2TB 12G SAS 7.2K SFF (2.5in) Midline Smart Carrier HDD 50TB Bundle	Q1J20A

What's New

Support for 14TB SAS and SATA Hard drives

Standard Features

Affordable, low cost Storage

- Purchase only what you need today and avoid up-front costs. Modular platform provides investment protection and by purchasing only what is needed today, allows for growth as storage requirements evolve. Buying storage only when needed simplifies planning and relieves budget pressures.
- HPE D3700/D3710: Maximum storage capacity of 60 TB SAS (2.4 TB SAS), 50 TB SAS MDL (2TB SAS MDL) or SATA (2TB SATA MDL) per enclosure scalable to 360TB SAS, 400 TB SAS MDL or SATA (dependent on the Smart Array Controller).
- HPE D3600/D3610: Maximum storage capacity of 7.2 TB SAS (600GB SAS) or 168 TB SAS MDL or SATA MDL (14TB SAS or SATA HDD) per enclosure scalable to 57.6 TB SAS, or 1344 TB SAS MDL or SATA MDL.
- Enterprise-class dual port SAS or archival-class SATA drives as the need and budget dictates
- All D3000 enclosure (LFF and SFF) models also support SAS and SATA Solid State Drives (SSD).

Flexible/Scalable

- Grow storage capacity easily by daisy-chaining up to eight D3600/D3610 or D3700/D3710 enclosures from a single Controller port. Up to 96 drives with the D3600/D3610 or 200 drives with the D3700/D3710, allowing for room to grow as storage demands increase behind a single controller/SAS HBA.
- Smart Array Controllers P431, P441, P822 or P841 support the mixing of the D3600 and the D3700 for expansion, Supports four (4) D3600 and four (4) D3700 (4xLFF and 4xSFF) allowing for expansion up to 148 drives. (Total of 8 enclosures in any combination). Flexibility to mix and match SAS and SATA drives in the same enclosure.
- The D3610 and D3710 support the Gen10 E208e-p and the P408e-p controllers
- Software defined storage services such as Microsoft Storage Spaces can be enabled.
- Microsoft Storage Spaces can be enabled with the H241 HBA, or the HPE P741m Smart Array Controller (in the HBA mode) and Gen9 servers. See the **Windows Server Catalog** for the latest supported configurations.

Manage

- Support for HPE SmartDrive Carrier (HPE ProLiant drives)
- Hassle free expansion - little IT expertise required.
- D3600/D3700 compatible with Gen8/Gen9 HPE Smart Array SAS controllers (P431, P441, P822, P841, P731m and P741m).
- D3610/D3710 compatible with the Gen10 HPE Smart Array SR controllers (E208e-p, and the P408e-p).
- The D3600/D3700 are also compatible with HPE H222 and the H241 Host Bus Adapters (HBAs) Familiar ProLiant management tools provided via the Smart Controller - SIM, ACU, and ORCA.
- Easy removal of parts provides better serviceability.

High performance 6Gb SAS host connectivity

- 12Gb SAS host connectivity enables a higher data transfer rate.
- End-to-end 12Gb SAS connectivity ensures a high performance storage solution using a Gen8/Gen9 P431, P441, P822, P841, P731m or the P741m Smart Array controller and the D3600/D3700 enclosures. D3600/D3700 enclosure are also supported with the HPE H222 and the H241 Host Bus

Standard Features

adapters (HBA).
- D3610/D3710 support Gen10 controllers only- E208e-p, P408e-p
- HPE Smart Cache feature is a controller-based read caching solution in a DAS environment that caches the most frequently accessed data ("hot" data) onto lower latency SSDs to dynamically accelerate application workloads.
- HPE SSD Smart Path feature included in the Smart Array software stack improves SSD read for all RAID levels and RAID 0 write operations by optimizing the path to each SSD attached to the controller.
- HPE Secure Encryption, available as an option, is a Smart Array controller-based data encryption solution for ProLiant Gen9 servers that protects sensitive, mission critical data is supported as an option.
- SAS disk enclosure support for c-Class BladeSystem utilizing the HPE 6Gb SAS BL Switch with the P731m or the P741m Smart Array Controllers.
- Since storage is contained within the rack, latency is reduced as data does not travel over large distances.

HPE Reliability

- Deploy with confidence. Hewlett Packard Enterprise offers a complete end-to-end storage solution including the D3600 and D3700 storage enclosures, Smart Array P431, P441, P822, P841, P731m or the P741m Controllers and HPE ProLiant Servers.
- Hewlett Packard Enterprise also offers a complete end-to-end storage solution including the D3610/D3710 storage enclosures, Smart Array E208e-p and the P408e-p and Hen10 HPE ProLiant servers.
- Familiar Smart Array technology of the P431, P441, P822, P841, P731m, P741m, E208e-p or the P408e-p Controllers enable support for RAID levels 0, 1, 1+0, 5 and RAID 6 with ADG, 50 and 60. Optional battery-backed write cache.
- Advanced Data Guarding (RAID 6): This is the highest level of fault tolerance. It allocates two sets of parity data across drives and allows simultaneous write operations. This level of fault tolerance can withstand two simultaneous drive failures without downtime or data loss.
- Distributed Data Guarding (RAID 5): This allocates parity data across multiple drives and allows simultaneous write operations.
- Receive pre-failure alerts with HPE SIM. When drives installed in D3000 disk enclosures are used in conjunction with the P431, P441, P822, P841, P731m, P741m, E208e-p or the P408e-p Smart Array Controller and Systems Insight Manager, the Smart Array firmware in HPE hard drives enables extensive fault prediction capabilities. If potential problems develop in one of the drives, the Smart Array Controller, Systems Insight Manager and/or Smart hard disk drive lets you know in advance so you can have the drive replaced, before it fails, under warranty.
- Remove / replace/ add components when system is running without service disruption with hot Plug drives, power and cooling.
- Redundant power and cooling provides increased reliability as failure of a power supply or fans does not interrupt system functioning.
- Dual domain SAS creates redundant pathways from servers to storage devices. The redundant paths created by these configurations reduce or eliminate single points of failure within the storage network. This provides increased levels of high availability with redundant paths from the controller to the drives. Dual domain SAS implementations make it possible to tolerate host bus adapter (HBA) failure, external cable failure, expander failure, failure in a spanned disk (JBOD) environments.

HPE D3000 Enclosures Components

The HPE D3000 Enclosures (hereafter referred to as "D3000") is a family of disk drive storage enclosure

Standard Features

with 12Gb SAS host connectivity. The D3000 is a 2U direct attach, external storage solution designed for small to medium size deployments or remote locations. These enclosures deliver industry-leading availability, storage density, and upgradeability to meet customers' demanding and growing storage needs. The D3000 delivers the ideal mix of low-cost and high capacity, for minimum I/O workloads such as reference data, archival, and disk-to-disk backup.

High Levels of Storage Density, Data Protection, and Functionality

- **Storage Capacity** - The SFF Gen8/Gen9 D3700 and the Gen10 D3710 enclosures support up to 25 (twenty five) 12G SFF SAS drives for a maximum capacity of 60 TB with 12G 2.4 TB SAS drives or 50 TB with 2 TB 12G SAS MDL or SATA MDL drives. D3700 also supports 12G SAS and 6G SATA Solid State Drives. Number of Solid State drives is limited to twenty five (25) per controller.
- The LFF Gen8/Gen9 D3600 and the Gen10 D3610 disk enclosures support up to 12 (twelve) 12 LFF SAS drives for a maximum capacity of 7.2 TB with 12G 600 GB SAS drives or 120 TB with 12G 10 TB SAS MDL or 6G 10 TB SATA MDL drives.
- **Data Protection** - D3000 is designed for a high level of data protection. It includes redundant fans and power supplies (standard), and supports various RAID levels including RAID6 with ADG, 50 & 60 (depending upon the Smart Array Controller used).
- **Storage Manageability** - The D3000 features familiar configuration and management tools such as Array Configuration Utility (ACU) and HPE Systems Insight Manager (SIM). Online Management Features include: Online Capacity Expansion, Online RAID Level Migration, Online Stripe Size Migration, Online Spares (Global).
- **Choice of Computing Platform** - The D3000 is designed and qualified for HPE ProLiant servers.
- **Advanced Data Guarding** (RAID 6 with ADG).
- **Fault Tolerance** - It allocates two sets of parity data across drives and allows simultaneous write operations. This level of fault tolerance can withstand two simultaneous drive failures without downtime or data loss.

Low Total Cost of Ownership

The modular, scalable design of the D3000 disk enclosure family provides an extremely flexible platform. You can buy what you need today and purchase additional capacity as your data storage needs grow, instead of making a large up-front investment. Additional drives and enclosures can be easily added as your needs dictate.

- **Cascading** - The D3700, D3710, D3600 and the D3610 have the unique capability of cascading up to eight (8) enclosures behind a single SAS port (depends on the Smart Array Controller).
- **Pre-Failure Warranty -** Drives installed in either the D3600, D3610, D3700 or the D3710 and monitored under HPE Systems Insight Manager are supported by a Pre-Failure (replacement) Warranty (3 years for SAS drives). Pre-Failure Warranty allows for the replacement of designated drives in the D3600 or the D3700 before they actually fail when using HPE Systems Insight Manager on HPE ProLiant servers.

NOTE: Some operating systems may not support all of these features.

- **Integrated Configuration and Management Tools** - The D3000 family utilizes the standard, integrated set of Smart Array management and utility software for HPE ProLiant Servers. These tools consistently lower the cost of ownership by reducing training and technical expertise necessary to install and maintain HPE server storage.

D3000 Disk Enclosures

HPE D3600/D3610 (LFF) Disk Enclosures

The 2U array houses up to twelve (12) 3.5 inch HPE SmartDrive Carrier (Gen8 HPE ProLiant) hot pluggable SAS and SATA drives.
Each D3600/D3610 includes the following standard components:

- D3600/D3610 base enclosure with redundant power supplies and fan modules
- Two (2) integrated 12Gb SAS IO Modules
- Rack mounting hardware kit
- Two (2) 0.5m HD Mini-SAS cables
- Two (2) PDU interconnect cords

HPE D3700/D3710 (SFF) Disk Enclosures

The 2U array houses up to twenty five (25) 2.5 inch HPE SmartDrive Carrier (Gen8 HPE ProLiant) hot pluggable SAS, SATA and Solid State drives.
Each D3700/D3710 includes the following standard components:

- D3700/D3710 base enclosure with redundant power supplies and fan modules
- Two (2) integrated 12Gb SAS IO Modules
- Rack mounting hardware kit
- Two (2) 0.5m HD Mini-SAS cables
- Two (2) PDU interconnect cords

HPE Smart Array P431 Features

- The SA-P431 Controller supports up to 200 physical drives
- The SA-P431 Controller supports the HPE D3600 and the HPE D3700 Disk Enclosure (up to 8 daisy chained). Seamless upgrades to current or next generation HPE high performance and high capacity Serial Attached SCSI Smart Array controllers.
- 12 Gb/s SAS technology delivers high performance and data bandwidth and contains full compatibility with 6 Gb/s SATA technology
- PCI Express Gen3 x8 link width delivers high performance and data bandwidth up to 8GT/s theoretical maximum bandwidth
- 2 GiBytes Flash Backed Write Cache (FBWC) provides read ahead caching and write back caching with indefinite write cache data retention in the case of unexpected power outage
- Standard on the P431 are RAID 6, RAID 60, RAID 1 ADM, Capacity Expansion, mirror split, recombine and rollback in Online Mode, Drive Erase, Performance Optimization-Degraded Reads and Read Coalescing, Move/Delete any individual LUNs
- The HPE SSD Smart Path feature included in the Smart Array software stack improves SSD reads for all RAID levels and RAID 0 write operations by optimizing the path to each SSD attached to the controller
- The HPE SmartCache feature (HPE Smart Cache license is required on P431) is a controller-based read caching solution in a DAS environment that caches the most frequently accessed data ("hot" data) onto lower latency SSDs to dynamically accelerate application workloads
- Mix-and-match SAS and SATA hard drives lets you deploy drive technology as needed to fit your computing environment

For more information see: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111365**

HPE Smart Array P441 Features

- The SA-P441 Controller supports up to 200 physical drives
- The SA-P441 Controller supports the MSA2040 (Shared storage), HPE D3600 Disk Enclosure and HPE D3700 Disk Enclosure (up to 8 daisy chained in dual domain configuration). Seamless upgrades to current or next generation HPE high performance and high capacity Serial Attached SCSI Smart Array controllers.
- 12Gb/s SAS technology delivers high performance and data bandwidth and contains full compatibility with 6Gb/s SATA technology
- PCI Express Gen3 x8 link width delivers high performance and data bandwidth up to 8GT/s theoretical maximum bandwidth
- 4 GiBytes Flash Backed Write Cache kit (FBWC) provides read ahead caching and write back caching with indefinite write cache data retention in the case of unexpected power outage
- Supports legacy and UEFI boot operation on Gen9 servers
- Standard on the P441 are RAID 6, RAID 60, RAID 1 ADM, Capacity Expansion, mirror split, recombine, and rollback in Online Mode, Drive Erase, Performance Optimization-Degraded Reads and Read Coalescing, Move/Delete any individual LUNS
- The HPE SSD Smart Path feature included in the Smart Array software stack improves SSD reads for all RAID levels and RAID 0 write operations by optimizing the path to each SSD attached to the controller The HPE SmartCache feature (HPE Smart Cache license is required on P441) is a controller-based read and write caching solution in a DAS environment that caches the most frequently accessed data ("hot" data) onto lower latency SSDs to dynamically accelerate application workloads
- HPE Secure Encryption is a Smart Array controller-based data encryption solution for ProLiant Gen9 servers that protects sensitive, mission critical data.
- Mix-and-match SAS and SATA hard drives lets you deploy drive technology as needed to fit your computing environment
- Software consistency on most current shipping Smart Array products: HPE Smart Storage Administrator (HPE SSA), HPE Systems Insight Manager, and HPE Intelligent Provisioning. The HPE Smart Storage Administrator configures and manages a host of Smart Array controllers and other storage devices using a single interface. It replaces the HPE Array Configuration Utility (ACU) with an updated design and configuration enhancements
- Low-profile PCI Express form factor - ships with a full size (attached) and a low profile bracket for deployment flexibility based on slot availability
- Rapid rebuild
- HBA or RAID mode
- Power efficiency

For more information see: **HPE Smart Array P441 Controller (QuickSpecs/c04346300.pdf)**

HPE Smart Array P822 Features

- Second Generation 6Gb/s SAS Controllers
- The SA-P822 Controller supports up to 200 drives
- PCIe 3.0 with DDR3-1333 cache.
- Write-back caching (with FBWC)

For more information: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111513**

Standard Features

HPE Smart Array P841 Features

- The SA-P841 Controller supports up to 200 physical drives
- PCI Express Gen3 x8 link width delivers high performance and data bandwidth up to 8GT/s theoretical maximum bandwidth
- 4 GiBytes Flash Backed Write Cache kit (FBWC) provides read ahead caching and write back caching with indefinite write cache data retention in the case of unexpected power outage
- Supports legacy and UEFI boot operation on Gen9 servers
- Standard on the P841 are RAID 6, RAID 60, RAID 1 ADM, Capacity Expansion, mirror split, recombine, and rollback in Online Mode, Drive Erase, Performance Optimization-Degraded Reads and Read Coalescing, Move/Delete any individual LUNS
- The HPE SSD Smart Path feature included in the Smart Array software stack improves SSD reads for all RAID levels and RAID 0 write operations by optimizing the path to each SSD attached to the controller
- The HPE SmartCache feature (HPE Smart Cache license is not required on P841) is a controller-based read and write caching solution in a DAS environment that caches the most frequently accessed data ("hot" data) onto lower latency SSDs to dynamically accelerate application workloads
- Optional HPE Secure Encryption is a Smart Array controller-based data encryption solution for ProLiant Gen9 servers that protects sensitive, mission critical data.
- PCIe form factor - Full height, half-length card
- Rapid rebuild
- HBA mode
- Power efficiency capabilities

HP Smart Array E208e-p SR Gen10 Controller

- Storage interface (SAS/SATA)
- 8 SAS lanes across 2 x4 external Mini-SAS HD ports
- 12Gb/s SAS, 6Gb/s SATA technology
- Mix-and-match SAS and SATA drives to the same controller
- Support for SAS tape drives
- PCI Express 3.0 x8 link
- RAID 0, 1, 5, 10
- Mixed Mode (RAID logic drives and HBA physical drives simultaneously)
- Legacy and UEFI boot operation
- UEFI System Utilities (storage configuration)
- Up to 238 physical drives
- Up to 64 logical drives
- HPE Smart Array SR Secure Encryption (optional license)
- HPE SSD Smart Path
- Rapid Parity Initialization (RPI)
- Rapid rebuild
- Drive Sanitize
- Performance Optimization-Degraded Reads and Read Coalescing
- Power efficiency
- Seamless upgrades from HPE Smart Array Software RAID
- Seamless upgrades to HPE Smart Array P-class Controllers

HP Smart Array P408e-p SR Gen10 Controller

Standard Features

- Storage interface (SAS/SATA)
- 8 SAS lanes across 2 x4 external Mini-SAS HD ports
- 12Gb/s SAS, 6Gb/s SATA technology
- Mix-and-match SAS and SATA drives to the same controller
- Support for SAS tape drives, SAS tape autoloaders and SAS tape libraries
- 4 GB Flash-Backed Write Cache (FBWC)
- PCI Express 3.0 x8 link
- RAID 0, 1, 5, 6, 10, 50, 60, 1 ADM, 10 ADM (Advanced Data Mirroring)
- Mixed Mode (RAID logic drives and HBA physical drives simultaneously)
- Legacy and UEFI boot operation
- UEFI System Utilities (storage configuration)
- Up to 238 physical drives
- Up to 64 logical drives
- HPE Smart Array SR SmartCache (optional license)
- HPE Smart Array SR Secure Encryption (optional license)
- HPE SSD Smart Path
- Rapid Parity Initialization (RPI)
- Rapid rebuild
- Drive Sanitize
- Performance Optimization-Degraded Reads and Read Coalescing
- Power efficiency
- Seamless upgrades from HPE Smart Array S-class and E-class controllers
- FIPS 140-2 Level 1 Implementation Under Test (expected validation complete in 2018)

Smart Array P741m Feature

- Eight (8) 12Gb/s SAS physical links distributed equally across 4 external 2x ports to support up to four 6Gb/s SAS Switches
- 12Gb/s SAS technology delivers up to 1200 MB/s theoretical bandwidth per physical lane
- 6 GB/s SATA technology delivers up to 600 MB/s theoretical bandwidth per physical lane for directly attached SATA drives.
- RAID 0, 1, 10, 5, 50, 6, 60, 1 ADM, 10 ADM
- P741m can support HBA mode which enables deployment of Software Defined Storage such as Microsoft Storage Spaces and VMWare VSAN
- HPE Smart Cache feature (HPE Smart Cache license is not required on P741m) is a controller-based read caching solution in a DAS environment that caches the most frequently accessed data ("hot" data) onto lower latency SSDs to dynamically accelerate application workloads.
- HPE SSD Smart Path feature included in the Smart Array software stack improves SSD read for all RAID levels and RAID 0 write operations by optimizing the path to each SSD attached to the controller
- HPE Secure Encryption, available as an option, is a Smart Array controller-based data encryption solution for ProLiant Gen9 servers that protects sensitive, mission critical data is supported as an option
- PCI Express Gen3 x8 link
- 4 GiBytes Flash Backed Write Cache (FBWC) provides read ahead caching and write back caching with indefinite write cache data retention in the case of unexpected power outage.

For more information see:
https://www.hpe.com/us/en/product-catalog/servers/smart-array-controllers-and-smart-host-bus-adapters.hits-12.html

---

Standard Features

HPE H222 Host Bus Adapter

- SAS technology delivers high performance and data bandwidth up to 6 Gb/s per physical link
- Mix-and-match SAS and SATA hard drives; deploy drive technology as needed
- PCIe x8 (8 GB/s bandwidth)
- PCIe 3.0 x8 capable

For more information see: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111514**

HPE H241 Host Bus Adapter

- SAS technology delivers high performance and data bandwidth up to 12Gb/s per physical link
- Mix-and-match SAS and SATA hard drives; deploy drive technology as needed
- PCIe 3.0 x8 (8GB/s bandwidth)
- Enables deployment of Software Defined Storage such as Microsoft Storage Spaces for the D3000 enclosures with Gen9 servers.

6Gb SAS BL Switch

- Hot Pluggable 6Gb/s SAS Switch for HPE c-Class BladeSystem
- Sixteen internal blade bay ports containing 2x 6Gb/s SAS links
- Eight external Mini-SAS ports containing 4x 6Gb/s SAS links
- Use the embedded Virtual SAS Manager GUI or CLI interface to zone switch ports or drive bays to server bays.
- Supported by c3000 and c7000 c-Class BladeSystem enclosures.

HPE SmartDrive Carrier (Gen8)
HPE SmartDrive Carrier features:

- New drive mechanical design
- Enhanced display of self-describing icons with intuitive and improved LED function
- Hard drive status indicator
- Animated drive activity spinner
- "Do not remove" indicator reduces logical drive failures due to accidental removal of a drive
- Smart carrier authentication to verify that both drive and carrier are HPE-qualified options
- Drive error log NVRAM with black-box recorder, for better failure analysis and resolution.

RAID
Several fault tolerant configurations keep data available and servers running while drives are being replaced - RAID levels that offer fault tolerance include:

- **RAID 50 (RAID 5+0)** protects against failure of one drive (and failure of particular multiple drives). RAID 50 is a nested RAID method that uses RAID 0 striping across RAID 5 arrays. RAID 50 tolerates one drive failure in each spanned array without loss of data. RAID 50 requires less rebuild time than single RAID 5 arrays RAID 50 requires a minimum of six drives.
- **RAID 60 (RAID 6+0)** allows administrators to split the RAID 6 storage across multiple external boxes. RAID 60 requires a minimum of eight drives. RAID 60 is a nested RAID method that uses RAID 0 block-level striping across multiple RAID 6 arrays with dual distributed parity. With the inclusion of dual

Standard Features

parity, RAID 60 will tolerate the failure of two disks in each spanned array without loss of data.

- **RAID 6 with ADG**: Allocates the equivalent of two parity drives across multiple drives and allows simultaneous write operations Distributed Data Guarding (RAID 5): Allocates parity data across multiple drives and allows simultaneous write operations. Drive Mirroring (RAID 1 and 1+0 Striped Mirroring): Allocates half of the drive array to data and the other half to mirrored data, providing two copies of every file.

Dual Domain

Dual domain SAS creates redundant pathways from servers to storage devices. The redundant paths created by these configurations reduce or eliminate single points of failure within the storage network. This provides increased levels of high availability with redundant paths from the controller to the drives. Dual domain SAS implementations make it possible to tolerate external cable failure, expander failure, failure in a spanned disk (JBOD) environments. Requires FW v 3.x.

Common Slot Power Supply

The D3000 Disk enclosures use the 460W Common Slot Power supply.
HPE's Common Slot Power supplies meet multiple Energy Efficiency Initiatives:

- 460W, 92%: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on 80Plus.org.

Utilities

The D3000 disk enclosure family utilizes a single, consistent set of utility software for storage and RAID management, setup, configuration and troubleshooting. This consistency reduces the cost of ownership by reducing the training and technical expertise necessary to install and maintain your HPE server storage solution.

Configuration Utilities	Array Configuration Utility (ACU) [On-line for Microsoft and Linux, Remote Web-Based & Off-line] Option ROM Configuration for Arrays (ORCA), NetWare ACU CPQONLIN (only online support no Web based support)
Management/Health Utilities	HPE Systems Insight Manager

Array Configuration Utility (ACU)

- Provides a graphical view of HPE drive array configurations.
- Easy to use Wizards for configuration.
- Web Based ACU supports On-Line, Remote Web Based and Off-line configuration.
- Supports on-line configuration for Microsoft, NetWare and Linux.

HPE Systems Insight Manager (SIM)

- Powerful storage, server and server option management tool.
- Monitor storage from a remote central location.

Standard Features

- Browser based Insight Manager 7 provides full access from anywhere on the Intranet, eliminating the need for a dedicated Insight Manager console.

Supported Operating Systems
Gen8/Gen9 HPE ProLiant Servers
For information on supported Operating Systems, see the following Smart Array QuickSpecs:
P441: **HPE Smart Array P441 Controller (QuickSpecs/c04346300.pdf)**
P822: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111513**
H222: **https://www.hpe.com/h20195/v2/GetHTML.aspx?docname=c04111514**

For latest information on **HPE Smart Array Gen10 Controllers for HPE ProLiant DL, ML and Apollo Servers** please refer to their
QuickSpecs. (E208i-a,E208i-p,E208e-p,P408i-a,P408i-p,P408e-p,P816i-a)

HPE BladeSystem Servers
For Information on Supported Operating Systems, see the following Smart Array QuickSpecs:
P731m: **https://h20195.www2.hpe.com/v2/getdocument.aspx?docname=c04111381**
P741m:
https://www.hpe.com/us/en/product-catalog/servers/smart-array-controllers-and-smart-host-bus-adapters.hits-12.html

---

Service and Support

Storage Software

Microsoft Windows 2012, Storage Spaces:

Software Defined Storage implementation, included in Microsoft Windows 2012 R2 software
Microsoft Storage Spaces can be enabled with the H241 HBA, or the HPE P741m Smart Array Controller (in the HBA mode) and Gen9 servers.
See: the **Windows Server Catalog** for the latest supported configurations.

Warranty

Three-year limited parts only warranty, including hardware diagnostic support, pre-failure warranty (coverage of hard drives, memory and processors). The warranty is fully supported by HPE Services and a worldwide network of resellers and service providers. In addition 90-day's getting started software telephone support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HPE Pointnext operational services.

NOTE: The D3000 family has a limited 3 year parts only warranty. SAS and Solid State drives have 3 year warranty. SAS MDL and SATA MDL and SATA Solid State Drives have 1 year warranty.

The D3000 has been designed with customer self-repairable parts to minimize repair time and provide greater flexibility in performing defective parts replacement. Refer to HPE's limited warranty Statement and parts replacement instructions for further details. **http://h20564.www2.hpe.com/hpsc/wc/public/home**

Service and Support

Services to accelerate time to results

HPE Storage Services bring you a rich portfolio of consulting and support services designed to add value to our core storage products and solutions. We have the know-how and experience to put storage technology to work for you. We work closely with you as your strategic partner, leveraging our full services portfolio to make sure that everything works to optimize your enterprise.
Choose from services aligned to our storage product offerings and lifecycle. From mission-critical onsite services to innovative web-based remote support, you choose the precise level of attention and support your business demands.

Discover, plan, and design

Choose from a rich portfolio of services to make the most of HPE D3000 Disk Enclosures so you can efficiently and affordably consolidate, manage, and extract value from unstructured data.

HPE Services can help you discover needs and create a plan for simplifying the environment, reducing risk, and maximizing your storage investments

---

HPE Storage Efficiency Analysis - The HPE Storage Efficiency Analysis provides customers with a view of their storage infrastructure and operating environment; highlighting recommendations for improvements. The report provides extensive insight about the existing storage environment, opportunities for efficiency gains, asset aging and replacement through interaction with key decision makers.

Service and Support

HPE Storage Impact Analysis (SIA): The HPE Storage Impact Analysis service provides a 2-4 week discovery engagement with executive summary presentation. The goal of this service is to help provide customers guidance on storage related issues and develop remediation plans.

HPE Storage Modernization Service: The HPE Storage Modernization service is a 4-6 week service that defines the customers envisioned target storage environment based on a proven solution design methodology. Hewlett Packard Enterprise architects will quickly perform tool-assisted automatic discovery and facilitate a two-day strategy workshop with all key stakeholders involved in the storage infrastructure initiative.

Deploy and integrate
We can help you configure, set up, and efficiently use your HPE D3000 Enclosures as well as help migrate data, improve capacity utilization, and establish information management standards used across backup, replication, and archiving needs.

HPE Storage Data Migration Services - End-to-end data migration service providing seamless discovery, assessment, planning, and design, completely customizable to your organization's storage area network or network attached storage environment and using innovative software to help you migrate to HPE storage quickly and efficiently.

HPE Storage and Data Residency Service - Strategic augmentation of your current environment with HPE resources who become your trusted advisor to provide answers that are right for your storage and backup environment.

HPE Proactive Select - A flexible way to purchase services to fit your environment with an extensive menu of HPE Proactive Select event and technical services, such as onsite firmware upgrades, health checks, assessments, and education.

Operate and support
Choose the right support to maximize uptime, free up your resources, and achieve improved value-as you get the most out of the existing IT assets while accelerating time-to-revenue.

HPE Proactive Care 24x7 - Hardware and software support services designed specifically for your technology with rapid access to Advanced Solution Center Specialists plus firmware and software management and best practice advice
https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf

HPE Support Plus 24 - Support for environments where proactive help from Hewlett Packard Enterprise is not required, with 24x7 hardware and software support onsite that includes third-party support with a maximum four-hour onsite response.

Service and Support

HPE Proactive Care Personalized Support - An option-if you have HPE Proactive Care- to bring increased personalization of the Proactive Care support experience through the assignment of an Account Service Manager (ASM) who provides IT best practice advice to help address IT issues and projects.
https://www.hpe.com/us/en/services/proactive-care-central.html

---

HPE Education Services - Comprehensive training for new, as well as experienced, storage administrators designed to expand your skills and keep you up to speed with the latest storage and virtualization technology from HPE Storage.
https://education.hpe.com/us/en/training/index.html

Optimized Care - Delivers the highest levels of performance and stability through deployment and proactive management practices

- Choose from three levels of operate and support care
- HPE Proactive Care 24x7-Plus, 20 credits per year

Additional options -HPE Proactive Care Personalized Support (once per Proactive Care support new environment), an additional day of HPE Personalized Support, and 10 additional HPE Proactive Select credits per year

---

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-Plus, 10 credits per year
Additional options -HPE Proactive Care Personalized Support (once per Proactive Care support new environment), an additional day of HPE Personalized Support, and 10 additional HPE Proactive Select credits per year.

Basic Care - Minimum recommended support

HPE Support Plus 24- Plus, 10 credits per year
Additional options - 10 HPE Proactive Select credits per year

---

Remote Support Automation
HPE Automation provides 24x7 coverage, proactive problem prevention, accurate problem diagnosis and faster problem resolution, as well as interactive support portals and tools. This is an integral, and cost-free, part of your HPE support relationship and we are continually investing in additional cutting-edge capabilities to make it better.

For more information
https://www.hpe.com/us/en/support.html
To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner
HPE Pointnext operational services are sold by HPE and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order

Service and Support

configuration tools.

- Customers purchasing from a commercial reseller can find HPE Pointnext operational services at: **https://www.hpe.com/us/en/buy-parts-products.html**

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Configuration Information

Step 1: Base Configuration

Model Description	SKU
HPE D3610 Enclosure	
HPE D3610 Enclosure	Q1J09A
NOTE: Gen10 branded D3000 enclosure for use with Gen10 ProLiant servers	
HPE D3610 SAS Dual Port MDL drives bundles	
HPE D3610 w/12 4TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 48TB Bundle	Q1J11A
HPE D3610 w/12 6TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 72TB Bundle	Q1J12A
HPE D3610 w/12 8TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 96TB Bundle	Q1J13A
HPE D3610 w/12 10TB 12G SAS 7.2K LFF (3.5in) Midline Smart Carrier HDD 120TB Bundle	Q1J14A
HPE D3710 Enclosure	
HPE D3710 Enclosure	Q1J10A
NOTE: Gen10 branded D3000 enclosure for use with Gen10 ProLiant servers.	
HPE D3710 SAS Dual Port Drive Bundles	
HPE D3710 w/25 600GB 12G SAS 10K SFF (2.5in) Enterprise Smart Carrier HDD 15TB Bundle	Q1J15A
HPE D3710 w/25 1.2TB 12G SAS 10K SFF (2.5in) Enterprise Smart Carrier HDD 30TB Bundle	Q1J17A
HPE D3710 w/25 1.8TB 12G SAS 10K SFF (2.5in) Enterprise Smart Carrier HDD 45TB Bundle	Q1J18A
HPE D3710 w/25 1TB 6G SAS 7.2K SFF (2.5in) Midline Smart Carrier HDD 25TB Bundle	Q1J19A
NOTE: HPE SKU name in some systems incorrectly indicates that these bundles are 10K drives. Both bundles are shipped with 7.2K SFF drives.	
HPE D3710 w/25 2TB 12G SAS 7.2K SFF (2.5in) Midline Smart Carrier HDD 50TB Bundle	Q1J20A
NOTE: HPE SKU name in some systems incorrectly indicates that these bundles are 10K drives. Both bundles are shipped with 7.2K SFF drives.	

Configure to Order Program Information

The HPE D3000 models and options may or may not be factory installed in a rack with add-on controllers, and hard drives. The D3000 enclosures may be integrated with ProLiant servers or as standalone storage.

Model	Model Description	SKU
HPE D3610	HPE D3610 Enclosure	Q1J09A-#0D1
HPE D3710	HPE D3710 Enclosure	Q1J10A-#0D1
HPE D3600	HPE D3600 Enclosure	QW968A-#0D1
HPE D3700	HPE D3700 Enclosure	QW967A-#0D1

Configuration Information

Step 2: Array Controllers

Smart Array Controllers Supported

Description	SKU
Gen10 HPE ProLiant Servers - only supported with D3610/D3710 Enclosures	
HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	804405-B21
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21

NOTE: Firmware version 2.0 or higher required on the listed Smart Array Controllers.
NOTE:

- Up to eight (8) D3600 can be cascaded for a total of 96 drives.
- Up to eight (8) D3700 can be cascaded for a total of 200 drives.
- Smart Array Controllers P421, P43, P44, P822 and P841 support the mixing of the D3600 and the D3700 for expansion.
- Supports eight (8) D3600 and/or D3700 allowing for expansion up to 148 drives (total of 8 enclosures in any combination).

Smart Array Controllers /Switches

BladeSystem Servers

HPE 6Gb SAS Switch Single Pack for HPE BladeSystem c-Class	BK763A

NOTE: D3600/D3700 6Gb SAS BL Switch support requires Firmware version 1.34.

NOTE: HPE Smart Array P741m/4GB FBWC controller option kit does not include the HPE Smart Storage Battery the backup power source necessary to protect the data on the Flash-backed Write Cache. HPE Smart Storage Battery is an item that has to be purchased separately if this is the first P-series Smart Array controller on your Gen9 server.

Step 3: Choose HPE ProLiant Servers/MSA Arrays/HPE Integrity Servers

HPE ProLiant Server Compatibility

D3600/D3700 only

HPE ProLiant Servers: For up to date compatibility, see the following URL for complete Smart Array P431, P441, P822, P841, P721m, P741m Controller and HBA H221, H222compatibility and support information: **https://www.hpe.com/us/en/product-catalog/servers/smart-array-controllers-and-smart-host-bus-adapters.hits-12.html**

BladeSystem Server Compatibility - P731m Controller
HPE ProLiant BL420c Gen8
HPE ProLiant BL460c Gen8
HPE ProLiant BL465c Gen8
HPE ProLiant BL660cGen8

NOTE: For BL420c Gen8 & BL460c Gen8 - P731m is a Type B mezzanine .It can only be installed onmezzanine slot 2 which requires a second processor for functionality. The BL420c, BL465c, andBL460c

Configuration Information

Gen8 can only support one Type B mezzanine.
For BL465 Gen8 - P731m is a Type B mezzanine and can only be installed on mezzanine slot 2
For BL660c Gen8 - P731m is a Type B mezzanine. It can only be supported on mezzanine slot 2 and mezzanine slot 3. The BL660c Gen8 can support up to two Type B mezzanines.

Step 4: Choose Hard Drives

HPE D3600/D3610 Enclosures - Large Form Factor (LFF)

15K SAS LFF (3.5in) Hard Disk Drives

Description	SKU
HPE 600GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware HDD	P04695-B21
HPE 300GB SAS 12G Enterprise 15K LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware HDD	P04693-B21
7.2K SAS Midline LFF (3.5in) Hard Disk Drives	
HPE 14TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	P09153-B21
HPE 12TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	881779-K21
HPE 10TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	857644-K21
HPE 8TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	819201-K21
HPE 6TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861754-K21
HPE 4TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872487-K21
HPE 2TB SAS 12G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872485-K21
7.2K SATA LFF (3.5in) Hard Disk Drives	
HPE 14TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	P09163-B21
HPE 12TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	881785-K21
HPE 10TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	857648-K21
HPE 8TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	819203-K21
HPE 6TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty 512e HDD	861750-K21
HPE 4TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872491-K21
HPE 2TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Digitally Signed Firmware HDD	872489-K21
HPE 1TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty HDD	861691-K21
Large Form Factor Solid State Drives	
SAS Mixed Use LFF (3.5in) Solid State Drive	
HPE 800GB SAS 12G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P04529-K21
SATA Read Intensive LFF (3.5in) Solid State Drive	

Configuration Information

HPE 1.92TB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09693-K21
HPE 960GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09689-K21
HPE 480GB SATA 6G Read Intensive LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09687-B21

SATA Mixed Use- LFF (3.5in) Solid State Drive

Description	SKU
HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P07932-B21
HPE 1.92TB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09724-K21
HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P09718-K21
HPE 960GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P07928-K21
HPE 480GB SATA 6G Mixed Use LFF (3.5in) SCC 3yr Wty Digitally Signed Firmware SSD	P07924-K21

HPE D3700/D3710 - Small Form Factor (SFF)

10K SAS SFF (2.5in) Hard Disk Drives

HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	881457-K21
HPE 1.8TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e Digitally Signed Firmware HDD	872481-K21
HPE 1.2TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872479-K21
HPE 600GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872477-K21
HPE 300GB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	872475-K21

15K SAS SFF (2.5in) Hard Disk Drives

HPE 900GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870759-K21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870753-K21
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870757-K21
HPE 300GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty Digitally Signed Firmware HDD	870753-K21

7.2K SAS Midline SFF (2.5in) Hard Disk Drives

HPE 2TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e HDD	765466-K21
HPE 1TB SAS 12G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	832514-K21

7.2K SATA Midline SFF (2.5in) Hard Disk Drives

HPE 2TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty 512e Digitally Signed Firmware HDD	765455-K21
HPE 1TB SATA 6G Midline 7.2K SFF (2.5in) SC 1yr Wty Digitally Signed Firmware HDD	655710-K21

NOTE: SATA drives are single ported and therefore do not have a fail-over path intrinsic to their design. Only Dual Port (DP) SAS drives will work in the Dual Domain environment.

Configuration Information

Small Form Factor 12G SAS Solid State Drives

SAS Mixed Use SFF (2.5in) Solid State Drives

HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09096-K21
HPE 6.4TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04539-K21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04537-K21
HPE 3.2TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09094-K21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09092-K21
HPE 1.6TB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04533-K21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04527-K21
HPE 800GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09090-K21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09088-K21
HPE 400GB SAS 12G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04525-K21

SAS Read Intensive SFF (2.5in) Solid State Drives

Description	SKU
HPE 15.3TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06592-K21
HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04523-K21
HPE 7.68TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06590-K21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06588-K21
HPE 3.84TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04521-K21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04519-K21
HPE 1.92TB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06586-K21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06584-K21
HPE 960GB SAS 12G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04517-K21

SAS Write Intensive SFF (2.5in) Solid State Drives

HPE 3.2TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04547-K21
HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04545-K21
HPE 1.6TB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09102-K21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09100-K21
HPE 800GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04543-K21

Configuration Information

HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04541-K21
HPE 400GB SAS 12G Write Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09098-K21

NOTE: Number of drives is limited to twenty five (25) per controller.
NOTE: SAS Solid State drives are dual path and dual domain.
NOTE: Cascading is supported in both single and dual domain environments.

Small Form Factor 6G SATA Solid State Drives

SATA Mixed Use- SFF (2.5in) Solid State Drives

HPE 3.84TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P00896-K21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09722-K21
HPE 1.92TB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07930-K21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07926-K21
HPE 960GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09716-K21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P09712-K21
HPE 480GB SATA 6G Mixed Use SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P07922-K21

SATA Read Intensive- SFF (2.5in) Solid State Drives

HPE 7.68TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04482-K21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06200-K21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04570-K21
HPE 3.84TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04480-K21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04478-K21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04566-K21
HPE 1.92TB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06198-K21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06196-K21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04564-K21
HPE 960GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04476-K21

Configuration Information

Description	SKU
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04474-K21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P06194-K21
HPE 480GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04560-K21
HPE 240GB SATA 6G Read Intensive SFF (2.5in) SC 3yr Wty Digitally Signed Firmware SSD	P04556-K21

Step 5: Choose Rack Option

Refer to the HPE Infrastructure products page for more information on HPE racks and rack options:
https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html

Step 6: Choose Cables

Cable Options

Cables to be used for connecting the HPE D3600/D3700 with the HPE Smart Array P822, Controllers and H222 Host Bus Adapters

HPE 0.5m External Mini SAS High Density to Mini SAS Cable	691971-B21
HPE 1.0m External Mini SAS High Density to Mini SAS Cable	716189-B21
HPE 2.0m External Mini SAS High Density to Mini SAS Cable	716191-B21
HPE 4.0m External Mini SAS High Density to Mini SAS Cable	716193-B21

Cables to be used for connecting D3600/D3700/D3610/D3710 with the Smart Array P431, P441,P841, P731m, P741m, E208e, P408e Controllers, and H241 Host Bus Adapter (HD connector)

HPE External 1.0m (3ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716195-B21
HPE External 2.0m (6ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716197-B21
HPE External 4.0m (13ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable	716199-B21

NOTE:* #0D1 will appear after this part number on your sales order if factory integration is indicated.

Power Cord Options

If customers require a power cord other than the included PDU style cords, they can check the power cord matrix for the appropriate SKU. See the following power cord matrix for details **https://buy.hpe.com/b2c/us/en/options/power-cables-power-cords/power-connections/power-connections/hpe-power-cords/p/5326473**.

NOTE: An optional longer 2meter PDU power cable (C14 to C13 style connector) for customers who would like additional length for connections to existing power distribution modules located on the right side of the rack. This is purely optional as the included .7meter power cables will also reach the right sides of the rack. (D3700 power supplies are on the left side of the enclosures). If desired, the quantity to order is 1 AF573A HPE RDNT 2m,10A, C13-C14 JMPR CORD.

Technical Specifications

LED Indicators for HDDs	HPE SmartDrive Carrier Drives	
LED Indicators on Front Panel	Bi-color green/amber for health/fault Blue for UID Heartbeat LED Fault LED UID button/LED	
LED Indicators on Rear Panel	I/O Module LED (2) identify/On/Fault; Port (2) Link good/ link fault UID button/LED Heartbeat LED Fault LED Fan LED Power supply LED	
Host Interface	8 x wide SAS 12Gb/s ports	
Maximum Number of Drives	Up to 12 3.5 inch (D3600/D3610) or 25 2.5 inch (D3700/D3710) SAS or SATA drives Up to 25 2.5 inch (Solid State Drives per controller	
Acoustics Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	Idle Acoustic Noise (sound power)	LWAd= 7.0 B
	Idle Acoustic Noise (sound pressure)	LpAm - 53 dBA
	Operating Acoustic Noise (sound power)	LWAd= 7.0 B
	Operating Acoustic Noise (sound pressure)	LpAm - 53 dBA
Temperature Range	**Operating**	50° to 104° F (10° to 40° C)
	Shipping	-22° to 149° F (-30° to 65° C) **NOTE:** Rated 1°C per 1000 feet of elevation to 10,000 ft.
Relative Humidity	**Operating**	10% to 90%
	Non-operating	0% to 95%
Maximum wet bulb temperature	**Long-term storage (operating)**	82.4° F (28° C)
	Short-term storage (non-operating)	101.6° F (38.7° C)
Input Power	**Rated Input Voltage**	100 to 240 VAC (Common- slot Power Supply)

Technical Specifications

Requirements	**Rated Input Frequency**	50 to 60 Hz (Common-slot Power Supply)
	Rated Input Current	6A/3A
	Input Power max	403W
Heat Dissipation (maximum)	1331/Btu/hr.1160.Btu/hr **NOTE:** standard conversion from Watts to Btu/hr = 3.413 Btu/hr per Watt.	
Upgradeable Firmware	Yes, Offline only. Firmware updates available through hpe.com	
Disk Drives and Enclosure Protocol Support	HPE 3.5 inch (D3600/D3610) or 2.5 inch (D3700/D3710) SAS 6/12Gb/s	
I/O Module	**Connector Type**	IPass (mini-SAS)
	Number of Ports	Two (one IN, other is OUT)
	Bandwidth	SAS-3 (12Gb/s)
	Protocols supported	SAS 3.0
HPE D3600/ Enclosure	**2U Rack Form Factor**	Large Form Factor
	Dimensions (HxWxD)	3.44" x 17.64" x 23.54" in (8.7 x 44.8 x 59.8 cm)
	Weight (base unit)	38 lb (17.2 kg)
	Weight (with all LFF drives)	60 lb (27.2 kg)
HPE D3700 Enclosure	**2U Rack Form Factor**	Small Form Factor
	Dimensions (HxWxD)	3.44" x 17.64" x 21.48" in (8.7 x 44.8 x 54.6 cm)
	Weight (base unit)	38 lb (17.2 kg)
	Weight (with all SFF drives)	54.90 lb (24.9 kg)
D3600/D3700	**Shipping package dimensions**	D3600 - 11.13" x 23.75" x 38.12" (LFF) D3700 - 11.13" x 23.75" x 36.12" (SFF)
	Shipping weight (Gross)	78lbs (35.38kg)

Summary of Changes

Date	Version History	Action	Description of Change
06-Apr-2020	Version 34	Changed	Overview and Configuration Information sections were updated
02-Dec-2019	Version 33	Changed	Configuration Information section was updated.
04-Nov-2019	Version 32	Changed	Removed Obsolete drives and made minor corrections
03-Sep-2019	Version 31	Changed	Added support for 14TB SAS and SATA HDDs
01-Jul-2019	Version 30	Changed	Overview, At Glance and Service and Support sections were updated.
13-May-2019	Version 29	Changed	SKUs were added in Configuration Information section.
02-Apr-2019	Version 28	Changed	Overview and Configuration Information Section were updated.
05-Mar-2018	Version 27	Changed	The descriptions of Q1J19A and Q1J20A SKUs were updated.
05-Feb-2018	Version 26	Changed	At a Glance section was revised.
04-Dec-2017	Version 25	Changed	Overview, At a Glance, D3000 Enclosure Components, and Configuration Information were revised.
23-Oct-2017	Version 24	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
25-Sept-2017	Version 23	Changed	Changes made throughout QuickSpecs.
07-Aug-2017	Version 22	Changed	Changes made throughout QuickSpecs.
11-Jul-2017	Version 21	Changed	Changed made to the entire document
27-Mar-2017	Version 20	Changed	SKUs added and some other deleted.
28-Nov-2016	Version 19	Changed	Changed made to the entire document
30-Sept-2016	Version 18	Changed	Changes made in the Configuration Section
13-May-2016	Version 17	Changed	Changes made to the Product Highlights and Configuration Info Sections.
23-Oct-2015	Version 16	Changed	Changes made to the Product Highlights and Configuration Information Sections.
02-Oct-2015	Version 15	Changed	Changed made to the Overview and Configuration Information Sections.
04-Sept-2015	Version 14	Changed	Changed the firmware from 2.02 to 1.72
10-Jul-2015	Version 13	Changed	Changed the Step 4 in the Configuration Information Section. SKUs descriptions were updated.
01-Jun-2015	Version 12	Changed	Changes made to the D3000 Enclosure Components, At a Glance, Product Highlights, Configuration and Overview Sections
30-Mar-2015	Version 11	Changed	Changes made to the D3000 Enclosure Components, At a Glance, Product Highlights and Configuration Sections.
13-Feb-2015	Version 10	Added	added the new 12G HDDs, Obsolete SKUs removed and SKUs descriptions updated
12-Dec-2014	Version 9	Changed	Changes made to the Configuration Information section, SKU descriptions were updated, Obsolete SKUs were removed.
01-Dec-2014	Version 8	Changed	Changes made through all QuickSpecs.
03-Oct-2014	Version 7	Changed	Changes made through all QuickSpecs.
22-Aug-2014	Version 6	Changed	Updated the following: What's new; At a Glance - Affordable, low cost Storage - D3600 maximum storage changed from 48TB to 72TB and 384TB to 576TB; D2000 enclosure components - High Levels of Storage Density, Data Protection

Summary of Changes

			and Functionality - changed 48TB to 72TB and 4TB to 6TB; Configuration Information - Step 4 Choose Hard Drives - added 737261-B21, 737394-B21, 765424-B21, 759208-B21, 759210-B21, 759212-B21, 761477-B21, 753874-B21
13-Aug-2014	Version 5	Changed	Formatting Change
16-May-2014	Version 4	Changed	At A Glance and Configuration Information were revised.
18-Apr-2014	Version 3	Changed	Product descriptions were revised.
11-Apr-2014	Version 2	Added	HPE Smart Array P431/4GB FBWC 6GB=2 ports Ext SAS Controller was added to Smart Array Controllers Supported.
01-Mar-2014	Version 1	New	New QuickSpecs

Sign up for updates

For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.

Hewlett Packard Enterprise

c04227611 - 14866 - Worldwide - V34 - 06-April-2020