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) D3610 with 12 drive bays and Small Form Factor (SFF) D3710 with 25 drive bays - offer modular solutions to simplify capacity expansion for HPE Gen10, Gen10+, and Gen11 ProLiant Servers, as well as for the HPE Alletra 4000 Data Storage Servers. 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 HPE Gen10/Gen 10+/Gen11 ProLiant Servers and HPE Alletra 4000 Data Storage Servers with the HPE Smart Array Smart Array E208e-p SR Gen10 and HPE Smart Array P408e-p SR Gen10 Storage Controllers. Gen11 ProLiant Servers support direct attach only with the HPE Smart Array E208e-p Storage Controller. The D3000 enclosures also support direct attach storage to HPE solutions including HPE NonStop, HPE Apollo and HPE StoreEasy that support the same storage controllers.

See the **Windows Server Catalog** for the latest supported configurations. Total support can grow as needed to up to 96 LFF drives or 200 SFF drives.

HPE D3710 Enclosure (SFF)

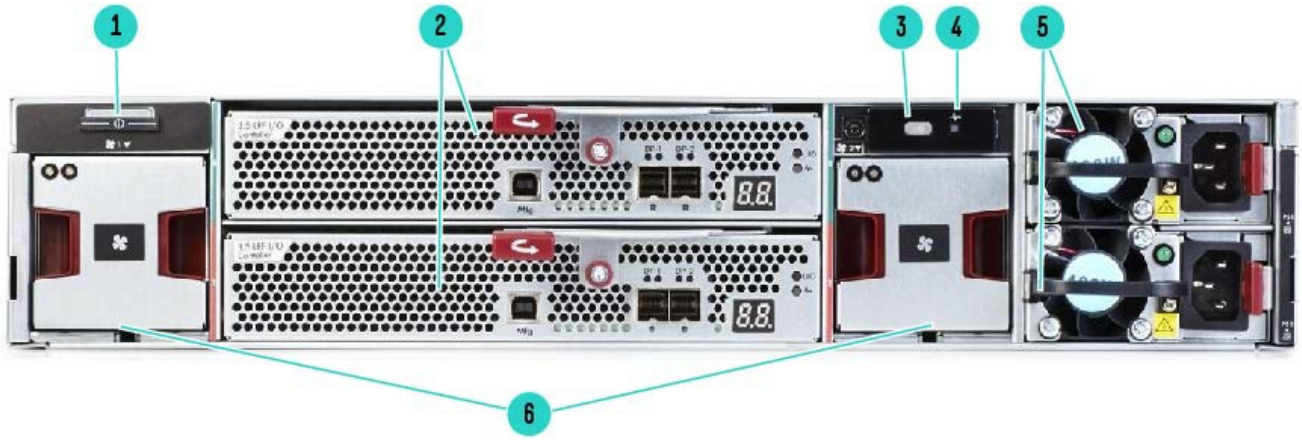
1. Disk drive in bay 1
2. System health LED
3. UID push button and LED

Overview

HPE D3610 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

Notes:

- A pull tab is provided for label placement.
- The I/O modules for both the HPE D3610 LFF and HPE D3710 SFF enclosures share the same layout.
- Power supplies might appear slightly different depending on specific SKUs.

Overview

Models

HPE D3000 SKU Enclosures

“A” SKU Disk Enclosures for HPE Gen10/Gen10+/Gen11 ProLiant Servers, HPE Alletra 4000

Description	SKU
HPE D3710 Enclosure	Q1J10A

“B” SKU Disk Enclosures with Lot 9 2023 compliance Power Supplies for HPE Gen10/Gen10+/Gen11 ProLiant Servers, HPE Alletra 4000

HPE D3610 Enclosure	Q1J09B
HPE D3710 Enclosure	Q1J10B

What's New

- Addition of HPE Gen11 ProLiant server and HPE Alletra 4000 storage support
- Updated information on SSD support

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 D3710: Maximum storage capacity of 384TB SAS (with 15.36TB SAS RI SSDs) or 60TB SAS (with 2.4TB SAS HDDs) per enclosure scalable to 3072TB with SAS SSDs or 480TB with SAS HDDs (dependent on the Smart Array Controller).
- HPE D3610: Maximum storage capacity of 240TB SAS or SATA (with 20TB SAS or SATA HDDs) per enclosure scalable to 1,920TB SAS MDL (dependent on Smart Array Controller).
- 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 D3610 or D3710 enclosures from a single Controller port. Up to 96 drives with the D3610 or 200 drives with the D3710, allowing for room to grow as storage demands increase behind a single controller/SAS HBA.
- The D3610 and D3710 support the Gen10 E208e-p and the P408e-p Gen10 Smart Array SR controllers for Gen10 and Gen10+ ProLiant servers and only the Gen10 E208e-p for Gen11 ProLiant servers.
- Software defined storage services such as Microsoft Storage Spaces can be enabled.

Manage

- Support for HPE Smart Carrier (HPE ProLiant drives)
- Hassle free expansion - little IT expertise required.
- D3610/D3710 compatible with the Gen10 HPE Smart Array SR controllers (E208e-p, and the P408e-p), depending on ProLiant server generation.
- Easy removal of parts provides better serviceability.

High performance 12Gb 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 Gen10 controllers.
- 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.
- 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 D3000 storage enclosures, Smart Array E208e-p or P408e-p controllers and Gen10/Gen10+ HPE ProLiant servers. Only the E208e-p is supported for Gen11 ProLiant servers.
- Familiar Smart Array technology of the E208e-p or the P408e-p Controllers enable support for multiple RAID levels – see specific HPE SR Gen10 Smart Array QuickSpec for more details.. 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. Supported on P408e-p controller only.

Standard Features

- 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 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 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 Gen10 D3710 enclosures support up to 25 (twenty five) 12G SFF SAS drives for a maximum capacity of 384TB SAS (with 15.36TB SAS RI SSDs) or 60TB SAS (with 2.4TB SAS HDDs).
- The LFF Gen10 D3610 disk enclosures support up to 12 (twelve) 12 LFF SAS drives for a maximum capacity of 240TB SAS or SATA (with 20TB SAS or SATA HDDs).
- **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).
- **Computing and Storage Platform Support** - The D3000 is designed and qualified for HPE Gen 10, Gen10+, and Gen11 ProLiant servers, as well as the HPE Alletra 4000.Both D3000 enclosures are also supported on other HPE server and storage platforms that have qualified the HPE Smart Array SR Gen10 Controllers.
- **Advanced Data Guarding** (RAID 6 with ADG) – supported on P408e-p controller only.
- **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 D3610 and D3710 have the unique capability of cascading up to eight (8) enclosures behind a single SAS port. The mixing of D3610 and D3710 in one cascade is not supported.

Standard Features

- **Pre-Failure Warranty -** Drives installed in either the D3610 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 D3610 or the D3710 before they actually fail when using HPE Systems Insight Manager on HPE ProLiant servers.
  Notes: 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 D3610 (LFF) Disk Enclosures

The 2U array houses up to twelve (12) 3.5 inch HPE Smart Carrier (Gen10/Gen10+/Gen11 HPE ProLiant and Alletra 4000) hot pluggable SAS and SATA drives.

Each D3610 includes the following standard components:

- 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 D3710 (SFF) Disk Enclosures

The 2U array houses up to twenty five (25) 2.5 inch HPE Smart Carrier (Gen10/Gen10+/Gen11 HPE ProLiant and Alletra 4000) hot pluggable SAS and SATA drives.

Each D3710 includes the following standard components:

- 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

HP Smart Array E208e-p SR Gen10 Controller – For use with Gen10, Gen10+, Gen11 ProLiant, and Alletra 4000

- 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) – only supported on ProLiant Gen10/Gen10+
- HPE SSD Smart Path

Standard Features

- Rapid Parity Initialization (RPI)
- Rapid rebuild
- Drive Sanitize - only supported on ProLiant Gen10/Gen10+
- 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 – For use with Gen10 and Gen10+ ProLiant

- 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)

RAID

Depending on Smart Array controller model, 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 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.

Standard Features

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 in a spanned disk (JBOD) environments. Requires FW v 3.x.

Power Supply Information

The D3000 “A” SKU Disk Enclosures use a 1200W Common Slot power supply that is used in multiple HPE solutions. The maximum output power of this supply exceeds what is needed by the D3000 enclosures. The power supply meets multiple Energy Efficiency Initiatives:

- 1200W, 92%: Climate Savers Computing Initiative GOLD and ECOS Consulting 80PLUS GOLD

The D3000 "B" SKU Disk Enclosures use a 550W power supply designed for the D3000 to meet the needs of the European Union’s Lot 9 2023 power supply regulations which go into effect on January 1, 2023.

- 550W, 96%: Climate Savers 80PLUS Platinum

Notes: The only hardware difference between the “A” SKU and the “B” SKU is the power supply. The 80 PLUS program is a 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.
- 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

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

Service and Support

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 Services operational services.

Notes: 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**

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.
https://www.hpe.com/services

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.
https://www.hpe.com/services/consulting

HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.
HPE Managed Services | HPE

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.
https://www.hpe.com/services/operational

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

Service and Support

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.
https://www.hpe.com/services/techcare

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:
https://www.hpe.com/services/lifecycle

For a list of the most frequently purchased services using service credits, see the **HPE Service Credits Menu**

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE 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.

Service and Support

How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at **https://ssc.hpe.com/portal/site/ssc/**

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.
https://support.hpe.com/hpesc/public/home/signin

Consume IT On Your Terms

HPE GreenLake edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE"
https://www.hpe.com/us/en/contact-hpe.html

For more information
http://www.hpe.com/services

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.

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.

Configuration Information

Step 1: Base Configuration

HPE D3610 Enclosure

Description	SKU
HPE D3610 Enclosure	Q1J09B

Notes: Gen10 branded D3000 enclosure for use with Gen10/Gen10+ ProLiant servers. The only hardware difference between the "A" SKU and the "B" SKU is the power supply.

HPE D3710 Enclosure

HPE D3710 Enclosure	Q1J10A
HPE D3710 Enclosure	Q1J10B

Notes: Gen10 branded D3000 enclosure for use with Gen10/Gen10+ ProLiant servers. The only hardware difference between the "A" SKU and the "B" SKU is the power supply.

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 – "A" SKUs	HPE D3610 Enclosure	Q1J09A-#0D1
HPE D3610 – "B" SKUs	HPE D3610 Enclosure	Q1J09B-#0D1
HPE D3710 – "A" SKUs	HPE D3710 Enclosure	Q1J10A-#0D1
HPE D3710 – "B" SKUs	HPE D3710 Enclosure	Q1J10B-#0D1

Step 2: Array Controllers

Smart Array Controllers Supported

Gen10/Gen10+ HPE ProLiant Servers – only supported with D3610/D3710 Enclosures

Description	SKU
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

Notes:

- The E208e-p supports Gen10, Gen10+ and Gen11 ProLiant servers
- The P408e-p supports Gen10 and Gen10+ ProLiant servers. They are not supported in Gen11.
- Firmware version 2.0 or higher required on the listed Smart Array Controllers.
- Up to eight (8) D3610 can be cascaded for a total of 96 drives.
- Up to eight (8) D3710 can be cascaded for a total of 200 drives.

Configuration Information

Step 3: Choose Hard Drives and Solid State Drives

HPE D3610 Enclosures - Large Form Factor (LFF)

7.2K SAS Midline LFF (3.5in) Hard Disk Drives

Description	SKU
HPE 20TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53552-K21
HPE 18TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37664-K21
HPE 16TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e ISE Multi Vendor HDD	P23863-K21
HPE 14TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e Multi Vendor HDD	P09153-K21
HPE 12TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e Multi Vendor HDD	881779-K21
HPE 10TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty 512e ISE Multi Vendor HDD	P53558-K21
HPE 8TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty 512e Multi Vendor HDD	819201-K21
HPE 6TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty 512e Multi Vendor HDD	861754-K21
HPE 4TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Multi Vendor HDD	872487-K21
HPE 2TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Multi Vendor HDD	872485-K21

7.2K SATA LFF (3.5in) Hard Disk Drives

HPE 20TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e ISE Multi Vendor HDD	P53555-K21
HPE 18TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e ISE Multi Vendor HDD	P37673-K21
HPE 16TB SATA 6G Midline 7.2K LFF (3.5in) SC 1yr Wty Helium 512e Digitally Signed Firmware HDD	P23957-K21
HPE 14TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e Multi Vendor HDD	P09163-K21
HPE 12TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e Multi Vendor HDD	881785-K21
HPE 10TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty 512e ISE Multi Vendor HDD	P53559-K21
HPE 8TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty 512e Multi Vendor HDD	819203-K21
HPE 6TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty 512e Multi Vendor HDD	861750-K21
HPE 4TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Multi Vendor HDD	872491-K21
HPE 2TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Multi Vendor HDD	872489-K21
HPE 1TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Multi Vendor HDD	861691-K21

Large Form Factor Solid State Drives

SAS Mixed Use LFF (3.5in) Solid State Drive

HPE 1.92TB SAS 12G Mixed Use LFF SCC Value SAS Multi Vendor SSD	P37013-K21

HPE D3710 - Small Form Factor (SFF)

10K SAS SFF (2.5in) Hard Disk Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty 512e Multi Vendor HDD	881457-K21
HPE 1.8TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty 512e Multi Vendor HDD	872481-K21
HPE 1.2TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872479-K21
HPE 600GB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872477-K21
HPE 300GB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872475-K21

15K SAS SFF (2.5in) Hard Disk Drives

HPE 900GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870759-K21
HPE 600GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870757-K21
HPE 300GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870753-K21

Configuration Information

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

Description	SKU
HPE 2TB SAS 12G Business Critical 7.2K SFF SC 1-year Warranty 512e HDD	765466-K21
HPE 1TB SAS 12G Business Critical 7.2K SFF SC 1-year Warranty HDD	832514-K21

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

HPE 2TB SATA 6G Business Critical 7.2K SFF SC 1-year Warranty 512e HDD	765455-K21
HPE 1TB SATA 6G Business Critical 7.2K SFF SC 1-year Warranty HDD	655710-K21

Notes: 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.

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 SC Multi Vendor SSD	P49056-K21
HPE 3.84TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37017-K21
HPE 3.2TB SAS 12G Mixed Use SFF SC Multi Vendor SSD	P49052-K21
HPE 1.92TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37011-K21
HPE 1.6TB SAS 12G Mixed Use SFF SC Multi Vendor SSD	P49048-K21
HPE 960GB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37005-K21
HPE 800GB SAS 12G Mixed Use SFF SC Multi Vendor SSD	P49046-K21

SAS Read Intensive SFF (2.5in) Solid State Drives

HPE 15.36TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49044-K21
HPE 7.68TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49039-K21
HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37003-K21
HPE 3.84TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49034-K21
HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37001-K21
HPE 1.92TB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49030-K21
HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36999-K21
HPE 960GB SAS 12G Read Intensive SFF SC Multi Vendor SSD	P49028-K21
HPE 960GB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36997-K21

Notes:

- SAS Solid State drives are dual path and dual domain.
- 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 1.92TB SATA 6G Mixed Use SFF SC PM897 SSD	P47816-K21
HPE 960GB SATA 6G Mixed Use SFF SC PM897 SSD	P47815-K21
HPE 960GB SATA 6G Mixed Use LFF SCC Multi Vendor SSD	P47419-K21
HPE 480GB SATA 6G Mixed Use SFF SC PM897 SSD	P47814-K21

Configuration Information

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

Description	SKU
HPE 3.84TB SATA 6G Read Intensive SFF SC PM893 SSD	P47813-K21
HPE 1.9TB SATA 6G Read Intensive SFF SC PM893 SSD	P47812-K21
HPE 960GB SATA 6G Read Intensive SFF SC PM893 SSD	P47811-K21
HPE 480GB SATA 6G Read Intensive SFF SC PM893 SSD	P47810-K21
HPE 480GB SATA 6G Read Intensive LFF SCC Multi Vendor SSD	P47807-K21

Step 4: 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 5: Choose Cables

Cable Options

Cables to be used for connecting D3610/D3710 with the Smart Array E208e, P408e Controllers (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

Notes: #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/us/en/options/power-cables-power-cords/power-connections/power-connections/hpe-power-cords/p/5326473.

Notes: 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.
(D3710 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

System Architecture		
LED Indicators for HDDs	HPE Smart 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 (D3610) or 25 2.5 inch (D3710) SAS or SATA drives	
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) **Notes:** 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)
“A” SKU Input Power Requirements	**Rated Input Voltage**	100 to 240 VAC (Common- slot Power Supply)
	Rated Input Frequency	50 to 60 Hz (Common-slot Power Supply)
	Rated Input Current	9A/6A
	Output Power max	1200W
“B” SKU Input Power Requirements	**Rated Input Voltage**	100 to 240 VAC
	Rated Input Frequency	50 to 60 Hz
	Rated Input Current	6.5A/3.2A
	Output Power max	550W
Heat Dissipation (maximum)	1331/Btu/hr.1160.Btu/hr **Notes:** standard conversion from Watts to Btu/hr = 3.413 Btu/hr per Watt.	

Technical Specifications

Upgradeable Firmware	Yes, Offline only. Firmware updates available through hpe.com	
Disk Drives and Enclosure Protocol Support	HPE 3.5 inch (D3610) or 2.5 inch (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 D3610/ 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 D3710 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)
D3610/D3710	**Shipping package dimensions**	D3610 - 11.13" x 23.75" x 38.12" (LFF) D3710 - 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
04-Dec-2023	Version 44	Changed	HPE Services Rebranding Obsolete SKUs were removed
17-Apr-2023	Version 43	Changed	Overview, Standard Features, Service and Support, Configuration Information and Technical Specifications sections were updated Update to multiple areas of content
10-Jan-2023	Version 42	Changed	Overview, Standard Features and Configuration Information sections were updated Gen11 ProLiant server support, removed SSD support limitation
05-Dec-2022	Version 41	Changed	Overview, Standard Features, Service and Support and Configuration Information sections were updated Added “B” SKUs for the enclosures with associated power supply information. Removed obsolete drives and bundles
06-Jun-2022	Version 40	Changed	Updated supported HDDs and SSDs
06-Dec-2021	Version 39	Changed	Updated supported HDDs and SSDs
01-Nov-2021	Version 38	Changed	Service and Support and Configuration Information sections were updated
01-Feb-2021	Version 37	Changed	Overview, Standard Features and Configuration Information sections were updated
07-Dec-2020	Version 36	Changed	Overview and Configuration Information sections were updated
03-Aug-2020	Version 35	Changed	Changes made throughout QuickSpecs.
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.

Summary of Changes

Date	Version History	Action	Description of Change
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 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

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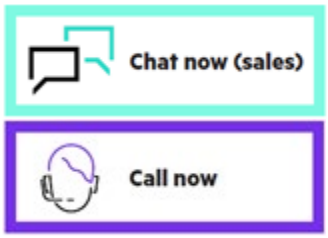

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.

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