RETIRED: This document has been officially retired, and the base products listed herein are now considered obsolete and are no longer available for sale. Consequently, the information contained within may no longer be current. This document is provided exclusively for reference and informational purposes.

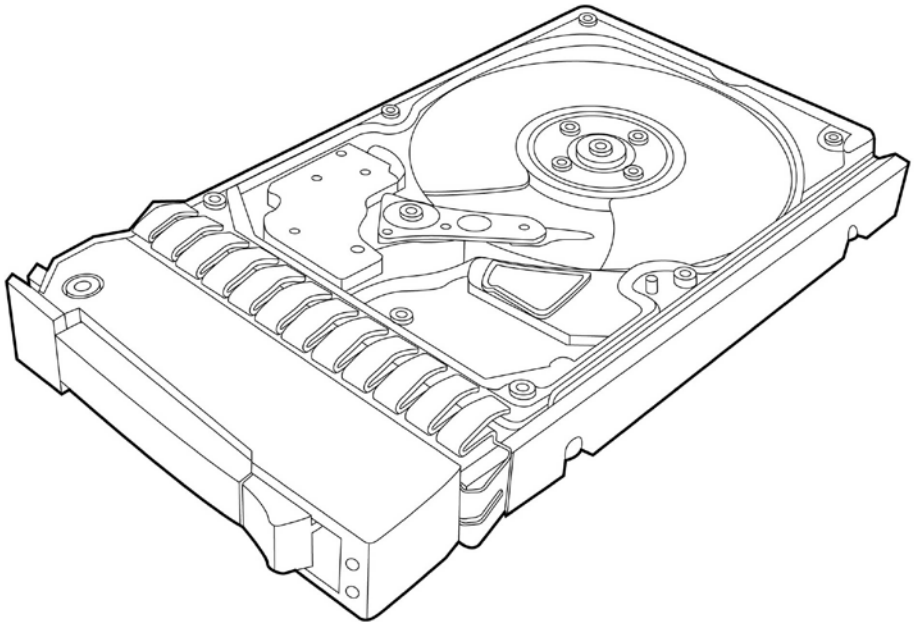
Overview

HPE Hard Disk Drives

HPE Hard Disk Drives (HDDs) delivers proven performance at industry leading capacities backed by high quality and reliability, preferred choice for many workloads ranging from small businesses to large enterprise.

HPE hard disk drives are optimized to deliver maximum performance on HPE server platforms, and are proven for applications that demand reliable performance in 24x7 operational environments. HPE HDDs offer customers great value per gigabyte without sacrificing performance. In addition, an industry-leading testing and qualification program ensures that our drives are rugged enough for any need.

HPE HDDs are available for three types of workloads —Entry, Midline and Enterprise, two interfaces—SAS and SATA, and in a variety of capacities—up to 10 TB and growing.



What's New

- HPE 10TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive
- HPE 10TB 12G SAS 7.2K rpm LFF (3.5in) 512e Midline 1yr Warranty Hard Drive
- HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive
- HPE 6TB 12G SAS 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive

Overview

Models

HPE SAS Hot Plug "SmartDrive" Carriers

SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781518-B21
HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785069-B21
HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	781516-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	785067-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759212-B21
HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759210-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	759208-B21

SAS Hot Plug SmartDrive SFF (2.5-inch) Enterprise 512e Drives

HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	791034-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC 512e Enterprise 3yr Warranty Hard Drive	748387-B21

SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive	832514-B21

SAS Hot Plug SmartDrive SFF (2.5-inch) Midline 512e Drives

HP 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765466-B21
HP 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	765464-B21

SAS Hot Plug SmartDrive LFF (3.5-inch) Enterprise Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652620-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652615-B21
HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	765424-B21
HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737394-B21
HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	737261-B21

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives

HPE 6TB 12G SAS 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	846514-B21
HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	761477-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HPE 3TB 12G SAS 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	846528-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HPE 1TB 12G SAS 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	846524-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	818367-B21
HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	818365-B21

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline 512e Drives

HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	819201-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765259-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765257-B21

Overview

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline 512e Performance Drives

HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793671-B21
HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	793669-B21

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline 512e Helium Drives

HPE 10TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	857644-B21
HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	861590-B21
HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793703-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	793699-B21

HPE SAS Hot Plug Drives

NOTE: These drives are not supported by Gen8/Gen9 servers.

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	718160-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	785079-B21
HP 900GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	785075-B21
HP 600GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	785073-B21
HP 300GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	785071-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3yr Warranty Hard Drive	627117-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
HP 600GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	785103-B21
HP 450GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	785101-B21
HP 300GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	785099-B21

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516828-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	516816-B21
HP 600GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive	737396-B21
HP 450GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive	737392-B21
HP 300GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive	737390-B21

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	605835-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	782669-B21
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	693689-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	625031-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507616-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507614-B21

SAS Hot Plug LFF (3.5-inch) Midline (MDL) 512e Helium Drives

HPE 10TB 12G SAS 7.2K rpm LFF (3.5in) 512e Midline 1yr Warranty Hard Drive	869347-B21
HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive	793701-B21
HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive	793697-B21

HPE SAS Non-Hot Plug Drives

SAS Non-Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	537809-B21

SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	516830-B21

Overview

HP 450GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	516826-B21

HPE SAS Quick Release Drives

SAS Quick Release SFF (2.5-inch) Enterprise (ENT) Drives

HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) Quick Release Dual Port ENT 3yr Warranty Hard Drive	718164-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive	574879-B21

SAS Quick Release LFF (3.5-inch) Enterprise (ENT) Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive	574758-B21

SAS Quick Release LFF (3.5-inch) Midline (MDL) Drives

HP 4TB 6G SAS 7.2k rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive	697956-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Quick-release Dual Port Midline 1yr Warranty Hard Drive	574761-B21

NOTE: Refer to the appropriate server QuickSpecs for full compatibility details.

Standard Features

What is SAS?	Serial Attached SCSI (SAS) is the evolution of the SCSI interface. SAS Enterprise drives satisfy the enterprise data center requirement of scalability, performance, reliability and manageability, while providing an enterprise storage infrastructure for both enterprise SAS drives and SATA disk drives. SAS Midline drives provide the lowest dollars per gigabyte and economical reliability and performance. The SAS interface is compatible with SATA devices. This compatibility provides users with unprecedented choices for server and storage subsystem deployment.
Drive Quality and Performance	Today's distributed enterprise is seeing larger, more complex applications, an increase of mission-critical data moving to the server, increasing demand for transaction processing and critical server consolidation. In this environment, storage has become a critical component of the information system, significantly defining both the systems reliability and performance. This is why Hewlett Packard Enterprise drives undergo an intense qualification process that eliminates firmware and O/S incompatibilities. All drive firmware is specific to our drives and is designed to maximize both functionality and compatibility. All drives are proven to perform in the Hewlett Packard Enterprise systems for which they were designed. While selecting the drives in our Enterprise portfolio, only those drives whose performance is suitable for an enterprise environment are selected through the Hewlett Packard Enterprise qualification process and are labeled "best-in-class." All our Enterprise drives are proven to be reliable and tuned for optimum performance in the Hewlett Packard Enterprise equipment for which they were designed. The drives in our Midline portfolio undergo a similar qualification process to ensure that you get the economical reliability and performance you need for your low workload (less than 40% I/O) environments.
Performance	Only those drives whose performance is suitable for an enterprise environment are selected through the Hewlett Packard Enterprise qualification process and are labeled "best-in-class." All our drives are proven to be reliable and tuned for optimum performance in the Hewlett Packard Enterprise equipment for which they were designed.
Pre-Failure Alert	When used in conjunction with a SMART Array Controller and Systems Insight Manager, the SMART capable 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. **NOTE:** All drives are protected by a Pre-Failure Alert when used with a HPE Smart Array controller and Systems Insight Manager, allowing hard drives to be replaced before failure under warranty. In addition, all drives are covered by a one or three-year limited on-site warranty period for the system in which they are installed. The drive warranty is automatically uplifted when used in a server or MSA for which a Care Pack is purchased. Please see the Support Services section below for additional services.
Integration	Many issues customers have with third party drives are "simple" integration issues. When buying from another supplier, there is no guarantee that a drive has been correctly set for proper operation with ProLiant servers and storage systems. These incompatibilities can create problems in configuration, can rob your system of performance, or at their worst, can cause you to lose data. HPE hard drives are specifically designed and tested for flawless operation in your Hewlett Packard Enterprise equipment. The integration of hard drives in Hewlett Packard Enterprise systems means that cables, SCSI ID settings, termination, hot plug drive trays and firmware are right for your ProLiant server or storage system.
Support Matrix	Please see the following URL for the latest list of supported servers and enclosures: **http://www.hp.com/go/proliantoptions**

Standard Features

Warranty

SAS Enterprise hard drives have a 3 year limited warranty regardless of the warranty period for the system in which they are installed.
SAS Midline hard drives have a 1 year limited warranty regardless of the warranty period for the system in which they are installed.

Service and Support

Service and Support	**NOTE:** HPE SATA and SAS Hard drives are covered under the HPE Care Pack/ Service Contract applied to the HPE ProLiant Server. No separate HPE Care Packs need to be purchased. **HPE Technology Services for Industry Standard Servers and BladeSystem** HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time. **Protect your business beyond warranty with HPE Pointnext operational services** HPE Pointnext operational services enable you to order the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement for the term you select.
Connect your devices to HPE	Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77% reduction in down time, near 100% diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support.
Warranty	ATA, SATA and MDL SAS hard drives have a maximum warranty period of one (1) year regardless of the warranty period for the system in which they are installed.
Service Coverage	For ProLiant servers and storage systems, the service on the main product covers HPE-branded hardware options not designated by Hewlett Packard Enterprise as requiring separate coverage that are qualified for the server, are purchased at the same time or afterward, and are internal to the enclosure. The service also covers external monitors up to 22 inches in size and tower UPS products during their supported life of up to 5 years beyond sales discontinuance. These items will be covered at the same service level as the main product.
For more information	To learn more on services for HPE ESSN Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: **http://www.hp.com/services/proliant** or **http://www.hp.com/services/bladesystem**
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.

Technical Specifications

SAS Hot Plug SmartDrive SFF (2.5-inch) Enterprise Drives

Application	SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	**718162-B21**	**Capacity**	1,200,243MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.3 ms
			Average	4.6 ms
			Full-Stroke	8.9 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	2,344,225,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**652589-B21**	**Capacity**	900,185MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.21 ms
			Average	3.8 ms
			Full-Stroke	7.4 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,758,174,768
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 6G SAS 10K rpm SFF (2.5-inch) SC	**652583-B21**	**Capacity**	600,127MB	
		Height	0.62 in (15.6 mm)	

Technical Specifications

Enterprise 3yr Warranty Hard Drive		**Width**	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.3 ms
			Average	4.0 ms
			Full-Stroke	8.0 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) Quick Release Dual Port ENT 3yr Warranty Hard Drive	**718164-B21**	**Capacity**	1,200,243MB	
		Height	0.740 in (18.8 mm)	
		Width	2.909 in (73.9 mm)	
		Depth	3.945 in (100.2 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.3ms
			Average	4.6ms
			Full-Stroke	8.9ms
			Rotational Speed	10,000rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	2,344,225,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**652572-B21**	**Capacity**	450,098MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.3 ms
			Average	4.0 ms
			Full-Stroke	8.0 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968

Technical Specifications

		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**652564-B21**	**Capacity**	300,000MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.3 ms
			Average	4.0 ms
			Full-Stroke	8.0 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**781518-B21**	**Capacity**	1,200,243MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.10 ms
			Average	3.7 ms
			Full-Stroke	7.3 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	2,344,225,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**785069-B21**	**Capacity**	900,185MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	

Technical Specifications

		Seek Time (typical reads, including settling)	Single Track	0.10 ms
			Average	3.5 ms
			Full-Stroke	7.0 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,758,174,768
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**781516-B21**	**Capacity**	600,127MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.11 ms
			Average	3.3 ms
			Full-Stroke	6.6 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**785067-B21**	**Capacity**	300,000MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.10 ms
			Average	3.3 ms
			Full-Stroke	6.7 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 6G SAS 15K rpm SFF (2.5-inch) SC	**652611-B21**	**Capacity**	300,000MB	
		Height	0.62 in (15.6 mm)	

Technical Specifications

Enterprise 3yr Warranty Hard Drive		**Width**	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.4 ms
			Average	2.9 ms
			Full-Stroke	5.3 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**652605-B21**	**Capacity**	146,815MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.4 ms
			Average	3.0 ms
			Full-Stroke	7.0 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	286,749,488
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**759212-B21**	**Capacity**	600,127MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568

Technical Specifications

		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**759210-B21**	**Capacity**	450,098MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	**759208-B21**	**Capacity**	300,000MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SmartDrive SFF (2.5-inch) Enterprise 512e Drives

Application	SAS 512e drives are intended for servers and storage solutions that are 4K aligned. These drives are suitable for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

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HPE 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	**791034-B21**	**Capacity**	1,800,360MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.10 ms
			Average	3.7 ms
			Full-Stroke	7.3 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	3,516,328,368
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive	**748387-B21**	**Capacity**	600,127MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives

Application	SAS Midline drives are intended for servers and storage solutions where high capacities are required. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	**652749-B21**	**Capacity**	1,000,204MB
		Height	0.62 in (15.6 mm)
		Width	2.98 in (75.7 mm)
		Depth	4.67 in (118.7 mm)

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		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.7 ms
			Full-Stroke	17.16 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	**652745-B21**	**Capacity**	500,107MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.7 ms
			Full-Stroke	17.16 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	976,773,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive	**832514-B21**	**Capacity**	1,000,204MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	6.8 ms
			Full-Stroke	17.00 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

Technical Specifications

SAS Hot Plug SmartDrive SFF (2.5-inch) Midline 512e Drives

Application

SAS Midline 512e drives are intended for servers and storage solutions that are 4K aligned. These drives are intended for servers and storage solutions where high capacities are required. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.

Transfer rate

The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 2TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	**765466-B21**	**Capacity**	2,000,398MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.7 ms
			Full-Stroke	17.16 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1TB 12G SAS 7.2K rpm SFF (2.5-inch) SC 512e 1yr Warranty Hard Drive	**765464-B21**	**Capacity**	1,000,204MB	
		Height	0.62 in (15.6 mm)	
		Width	2.98 in (75.7 mm)	
		Depth	4.67 in (118.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.7 ms
			Full-Stroke	17.16 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SmartDrive LFF (3.5-inch) Enterprise Drives

Application

SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work

Technical Specifications

	load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.			
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.			
HPE 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	**652620-B21**	**Capacity**	600,127MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.2 ms
			Average	3.5 ms
			Full-Stroke	6.8 ms
			Rotational Speed	15000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	**652615-B21**	**Capacity**	450,098MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.2 ms
			Average	3.5 ms
			Full-Stroke	6.8 ms
			Rotational Speed	15000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	**765424-B21**	**Capacity**	600,127MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate	12Gb/sec	

Technical Specifications

		Synchronous (Maximum)		
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,588
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	**737394-B21**	**Capacity**	450,098MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive	**737261-B21**	**Capacity**	300,000MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

Technical Specifications

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives

Application SAS Midline drives are intended for servers and storage solutions where high capacities are required. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.

Transfer rate The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 6TB 12G SAS 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	**846514-B21**	**Capacity**	6,001,175MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.5 ms
			Full-Stroke	15.7 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	11,721,045,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**761477-B21**	**Capacity**	6,001,175MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time	Single Track	0.25 ms

Technical Specifications

		(typical reads, including settling)	Average	8.5 ms
			Full-Stroke	22.0 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	11,721,045,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**695510-B21**	**Capacity**	4,000,787MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.5 ms
			Full-Stroke	15.7 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	7,814,037,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**652766-B21**	**Capacity**	3,000,592MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.3 ms
			Full-Stroke	15.7 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	5,860,533,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 3TB 12G SAS 7.2K rpm LFF (3.5in) SC	**846528-B21**	**Capacity**	3,000,592MB	
		Height	1.06 in (26.8 mm)	

Technical Specifications

Midline 1yr Warranty Hard Drive		**Width**	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.32 ms
			Average	7.45 ms
			Full-Stroke	14.2 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	5,860,533,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**652757-B21**	**Capacity**	2,000,398MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.5 ms
			Full-Stroke	18.2 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	3,907,029,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**652753-B21**	**Capacity**	1,000,204MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.5 ms
			Full-Stroke	18.2 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512

Technical Specifications

			Logical Blocks	1,953,525,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1TB 6G SATA 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive	**861691-B21**	**Capacity**	1,000,204MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.32 ms
			Average	7.45 ms
			Full-Stroke	14.2 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**818367-B21**	**Capacity**	4,000,787MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.8 ms
			Average	8.5 ms
			Full-Stroke	15.7 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	7,814,037,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**818365-B21**	**Capacity**	2,000,398MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	

Technical Specifications

Transfer Rate Synchronous (Maximum)	12 Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.8 ms
	Average	8.5 ms
	Full-Stroke	15.7 ms
	Rotational Speed	7200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	3,907,029,168
Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline 512e Drives

Application

SAS 512e drives are intended for servers and storage solutions that are 4K aligned. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.

Transfer rate

The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1 yr Warranty Hard Drive — **819201-B21**

Capacity	8,001,563MB	
Height	1.06 in (26.8 mm)	
Width	4.16 in (105.8 mm)	
Depth	6.69 in (170.0 mm)	
Interface	SAS	
Transfer Rate Synchronous (Maximum)	12 Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.7 ms
	Average	8.5 ms
	Full-Stroke	15.7 ms
	Rotational Speed	7200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	15,628,053,168
Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

Technical Specifications

HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e 1yr Warranty Hard Drive	**765259-B21**	**Capacity**	6,001,175MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.5 ms
			Full-Stroke	15.7 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	11,721,045,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e 1yr Warranty Hard Drive	**765257-B21**	**Capacity**	4,000,787MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.5 ms
			Full-Stroke	15.7 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	7,814,037,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline 512e Performance Drives

Application	SAS 512e Performance drives are intended for servers and storage solutions that are 4K aligned with highest performance output in the Midline portfolio. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

Technical Specifications

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	**793671-B21**	**Capacity**	6,001,175MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.25 ms
			Average	7.6 ms
			Full-Stroke	15 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	11,721,045,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Performance 1yr Warranty Hard Drive	**793669-B21**	**Capacity**	4,000,787MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.25 ms
			Average	7.6 ms
			Full-Stroke	15 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	7,814,037,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SmartDrive LFF (3.5-inch) Midline 512e Helium Drives

Application

Helium Drives are filled with Helium resulting in less power consumption. SAS 512e drives are intended for servers and storage solutions that are 4K aligned. The drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.

Technical Specifications

Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 10TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	**857644-B21**	**Capacity**	10,000,831 MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.22 ms
			Average	8.0 ms
			Full-Stroke	16.0 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	19,532,873,728
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive	**861590-B21**	**Capacity**	8,001,563MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.22 ms
			Average	8.0 ms
			Full-Stroke	16.0 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	15,628,053,168
		Operating Temperature	50° to 95° F (10° to 35°	

Technical Specifications

		(System Inlet Air Temperature)	C)	
HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	**793699-B21**	**Capacity**	6,001,175MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.25 ms
			Average	8.5 ms
			Full-Stroke	16.0 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	11,721,045,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive	**793703-B21**	**Capacity**	8.001,563MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.25 ms
			Average	8.5 ms
			Full-Stroke	16.0 ms
			Rotational Speed	7200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	15,628,053,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

Application	SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 1.2TB 6G SAS 10K	**718160-B21**	**Capacity**	1,200,243MB

Technical Specifications

rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive		**Height**	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.3 ms
			Average	4.6 ms
			Full-Stroke	8.9 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	2,344,225,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	**619291-B21**	**Capacity**	900,185,481,216	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.21 ms
			Average	3.57 ms
			Full-Stroke	7.30 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,758,174,768
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	**581286-B21**	**Capacity**	600,127,266,816	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.4 ms
			Average	4.0 ms
			Full-Stroke	8.0 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512

Technical Specifications

			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	**581284-B21**	**Capacity**	450,098,159,616	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.4 ms
			Average	4.0 ms
			Full-Stroke	8.0 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	**507127-B21**	**Capacity**	300,000,000,000	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.20 ms
			Average	4.0 ms
			Full-Stroke	7.45 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1.2TB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	**785079-B21**	**Capacity**	1,200,243MB	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	

Technical Specifications

		Seek Time (typical reads, including settling)	Single Track	0.10 ms
			Average	3.7 ms
			Full-Stroke	7.3 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	2,344,225,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 900GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	**785075-B21**	**Capacity**	900,185MB	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.10 ms
			Average	3.5 ms
			Full-Stroke	7.0 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,758,174,768
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	**785073-B21**	**Capacity**	600,127MB	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.11 ms
			Average	3.3 ms
			Full-Stroke	6.6 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 12G SAS 10K rpm SFF (2.5-inch)	**785071-B21**	**Capacity**	300,000MB	
		Height	0.63 in (16.0 mm)	

Technical Specifications

Enterprise 3yr Warranty Hard Drive		**Width**	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.10 ms
			Average	3.3 ms
			Full-Stroke	6.7 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3 yr Warranty Hard Drive	**627117-B21**	**Capacity**	300,000,000,000	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.40 ms
			Average	2.9 ms
			Full-Stroke	5.30 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	**512547-B21**	**Capacity**	146,815,737,856	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.4 ms
			Average	3.0 ms
			Full-Stroke	7.0 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	286,749,488

Technical Specifications

		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	**785103-B21**	**Capacity**	600,127MB	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	**785101-B21**	**Capacity**	450,098MB	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive	**785099-B21**	**Capacity**	300,000MB	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	

Technical Specifications

	Seek Time (typical reads, including settling)	Single Track	0.15 ms
		Average	2.9 ms
		Full-Stroke	5.9 ms
		Rotational Speed	15,000 rpm
	Physical Configuration	Bytes/Sector	512
		Logical Blocks	585,937,500
	Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

Application SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.

Transfer rate The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 600GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	**516828-B21**	**Capacity**	600,127,266,816	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.2ms
			Average	3.5ms
			Full-Stroke	6.8ms
			Rotational Speed	15,000rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 6G SAS 15K rpm LFF (3.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	**516816-B21**	**Capacity**	450,098,159,616	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.2ms
			Average	3.5ms
			Full-Stroke	6.8ms
			Rotational Speed	15,000rpm

Technical Specifications

		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 600GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive	**737396-B21**	**Capacity**	600,127MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15ms
			Average	2.9ms
			Full-Stroke	5.9ms
			Rotational Speed	15,000rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive	**737392-B21**	**Capacity**	450,098MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	12 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.15 ms
			Average	2.9 ms
			Full-Stroke	5.9 ms
			Rotational Speed	15,000rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 300GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive	**737390-B21**	**Capacity**	300,000MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	

Technical Specifications

	Transfer Rate Synchronous (Maximum)	12 Gb/sec	
	Seek Time (typical reads, including settling)	Single Track	0.15 ms
		Average	2.9 ms
		Full-Stroke	5.9 ms
		Rotational Speed	15,000rpm
	Physical Configuration	Bytes/Sector	512
		Logical Blocks	585,937,500
	Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

Application SAS Midline drives are intended for servers and storage solutions where high capacities are required. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.

Transfer rate The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	**605835-B21**	**Capacity**	1,000,204,886,016	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	8.2ms
			Full-Stroke	17.55 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	976,773,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	**507610-B21**	**Capacity**	500,107,862,016	
		Height	0.63 in (16.0 mm)	
		Width	3.1 in (78.7 mm)	
		Depth	5.45 in (138.4 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including	Single Track	0.5 ms
			Average	8.2ms

Technical Specifications

	settling)	Full-Stroke	17.55 ms
		Rotational Speed	7,200 rpm
	Physical Configuration	Bytes/Sector	512
		Logical Blocks	976,773,168
	Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives

Application

SAS Midline drives are intended for servers and storage solutions where high capacities are required. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.

Transfer rate

The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive — **782669-B21**

Capacity	6001175 MB	
Height	1.04 in (26.4 mm)	
Width	4.36 in (110.7 mm)	
Depth	7.43 in (188.7 mm)	
Interface	SAS	
Transfer Rate Synchronous (Maximum)	6 Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.25 ms
	Average	8.5 ms
	Full-Stroke	22.0 ms
	Rotational Speed	7,200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	11,721,045,168
Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

Technical Specifications

HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	**693689-B21**	**Capacity**	4,000,787MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.7 ms
			Average	8.5 ms
			Full-Stroke	15.7 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	7,814,037,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 3TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	**625031-B21**	**Capacity**	3,000,592,982,016	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	<8.1 ms
			Full-Stroke	15.5 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	5,860,533,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array

Technical Specifications

Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	**507616-B21**	**Capacity**	2,000,398,934,016	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	8.5 ms
			Full-Stroke	16.2 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	3,907,029,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 1TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline 1yr Warranty Hard Drive	**507614-B21**	**Capacity**	1,000,204,886,016	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.43 in (188.7 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	8.5 ms
			Full-Stroke	16.2 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Hot Plug LFF (3.5-inch) Midline (MDL) 512e Helium Drives

Technical Specifications

Application	SAS Midline drives are intended for servers and storage solutions where high capacities are required. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive — **793697-B21**

Capacity	6,001,175MB	
Height	1.04 in (26.4 mm)	
Width	4.36 in (110.7 mm)	
Depth	7.43 in (188.7 mm)	
Interface	SAS	
Transfer Rate Synchronous (Maximum)	12 Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.25 ms
	Average	8.5 ms
	Full-Stroke	16.0 ms
	Rotational Speed	7200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	11,721,045,168
Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive — **793701-B21**

Capacity	8.001,563MB	
Height	1.04 in (26.4 mm)	
Width	4.36 in (110.7 mm)	
Depth	7.43 in (188.7 mm)	
Interface	SAS	
Transfer Rate Synchronous (Maximum)	12 Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.25 ms
	Average	8.5 ms
	Full-Stroke	16.0 ms
	Rotational Speed	7200 rpm

Technical Specifications

Physical Configuration	Bytes/Sector	512
	Logical Blocks	15,628,053,168
Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 10TB 12G SAS 7.2K rpm LFF (3.5in) 512e Midline 1yr Warranty Hard Drive — **869347-B21**

Capacity	10,000,831 MB	
Height	1.04 in (26.4 mm)	
Width	4.36 in (110.7 mm)	
Depth	7.43 in (188.7 mm)	
Interface	SAS	
Transfer Rate Synchronous (Maximum)	12 Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.22 ms
	Average	8.0 ms
	Full-Stroke	16.0 ms
	Rotational Speed	7200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	19,532,873,728
Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

SAS Non-Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

Technical Specifications

Application	SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 300GB 6G SAS 10K rpm SFF (2.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	**537809-B21**	**Capacity**	300,000,000,000	
		Height	0.591 in (15.00 mm)	
		Width	2.750 in (69.85 mm)	
		Depth	3.937 in (100.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6 Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.20 ms
			Average	4.0 ms
			Full-Stroke	7.45 ms
			Rotational Speed	10,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Non-Hot Plug LFF (3.5-inch) Enterprise (ENT) Drives

Application	SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 600GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	**516830-B21**	**Capacity**	600,127,266,816	
		Height	1.028 in (26.1 mm)	
		Width	4.0 in (101.6 mm)	
		Depth	5.787 in (147.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.2ms
			Average	3.5ms
			Full-Stroke	6.8ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568

Technical Specifications

		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	
HPE 450GB 6G SAS 15K rpm LFF (3.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive	**516826-B21**	**Capacity**	450,098,159,616	
		Height	1.028 in (26.1 mm)	
		Width	4.0 in (101.6 mm)	
		Depth	5.787 in (147.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.2ms
			Average	3.5ms
			Full-Stroke	6.8ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	879,097,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Quick Release SFF (2.5-inch) Enterprise (ENT) Drives

Application	SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) Quick-release Dual Port ENT 3y Warranty Hard Drive	**697572-B21**	**Capacity**	1,200,243MB	
		Height	0.740 in (18.8 mm)	
		Width	2.909 in (73.9 mm)	
		Depth	3.945 in (100.2 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	4.6ms
			Average	8.9ms
			Full-Stroke	8.0ms
			Rotational Speed	10,000rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	2,344,225,968
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

Technical Specifications

HPE 300 GB 6G SAS 10K SFF (2.5-inch) Quick-release Dual Port ENT 3y Warranty Hard Drive	**574879-B21**	**Capacity**	300,000,000,000	
		Height	0.740 in (18.8 mm)	
		Width	2.909 in (73.9 mm)	
		Depth	3.945 in (100.2 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.3ms
			Average	4.0ms
			Full-Stroke	8.0ms
			Rotational Speed	10,000rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	585,937,500
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Quick Release LFF (3.5-inch) Enterprise (ENT) Drives

Application	SAS Enterprise drives are intended for servers and storage solutions with mission critical and high work load intensive applications where 24/7 duty cycles are a requirement, such as database applications and high transaction level applications.
Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 600 GB 6G SAS 15K LFF (3.5-inch) Quick-release Dual Port ENT 3y Warranty Hard Drive	**574758-B21**	**Capacity**	600,127,266,816	
		Height	1.165 in (29.6 mm)	
		Width	4.157 in (105.6 mm)	
		Depth	5.787 in (147.0 mm)	
		Interface	SAS	
		Transfer Rate Synchronous (Maximum)	6Gb/sec	
		Seek Time (typical reads, including settling)	Single Track	0.2ms
			Average	3.5ms
			Full-Stroke	6.8ms
			Rotational Speed	15,000 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,172,123,568
		Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

SAS Quick Release LFF (3.5-inch) Midline (MDL) Drives

Application	SAS Midline drives are intended for servers and storage solutions where high capacities are required. These drives have moderately-priced reliability and performance for non-mission critical, low workload applications, such as disk backup, archival, and reference applications.

Technical Specifications

Transfer rate	The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

HPE 4TB 6G SAS 7.2k rpm LFF (3.5-inch) Quick-release Dual Port MDL 1y Warranty Hard Drive — **697956-B21**

Capacity	4,000,787MB	
Height	1.165 in (29.6 mm)	
Width	4.157 in (105.6 mm)	
Depth	5.787 in (147.0 mm)	
Interface	SAS	
Transfer Rate Synchronous (Maximum)	6Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.7 ms
	Average	8.5 ms
	Full-Stroke	15.7 ms
	Rotational Speed	7,200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	7,814,037,168
Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support HPE hard drives exceeding 2.2 TB, HPE Smart Array Firmware version 5.0 or later is required for the following controllers:

- HPE Smart Array P212 Controller
- HPE Smart Array P410 Controller
- HPE Smart Array P411 Controller
- HPE Smart Array P711m Controller
- HPE Smart Array P812 Controller

To use hard drives exceeding 2.2 TB, you must create a boot volume using offline ACU version 8.75 or later. HPE Smart Array controllers do not support boot volumes exceeding 2.2 TB.

HPE 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Quick-release Dual Port MDL 1yr Warranty Hard Drive — **574761-B21**

Capacity	2,000,398,934,016	
Height	1.165 in (29.6 mm)	
Width	4.157 in (105.6 mm)	
Depth	5.787 in (147.0 mm)	
Interface	SAS	
Transfer Rate Synchronous (Maximum)	6Gb/sec	
Seek Time (typical reads, including settling)	Single Track	0.7 ms
	Average	8.5 ms
	Full-Stroke	18.2 ms
	Rotational Speed	7,200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	3,907,029,168

Technical Specifications

	Operating Temperature (System Inlet Air Temperature)	50° to 95° F (10° to 35° C)
Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett Packard Enterprise offers end-of-life product return, trade-in, and recycling programs, in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner. **http://www8.hp.com/us/en/hpe/hp-information/livingprogress/environmentalprogress/product-recycling.html#.V-lPA_krKiM** The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment. **http://www8.hp.com/us/en/hpe/hp-information/livingprogress/environmentalprogress/product-recycling.html#.V-lPA_krKiM**

Summary of Changes

Date	Version History	Action	Description of Change
23-Oct-2017	**From Version 55 to 56**	**Changed**	**Care Pack naming and Service and Support- Parts and Materials updated.**
28-Nov-2016	From Version 54 to 55	Added	Added new HDD offering.
		Changed	Overview, Models, and Technical Specifications were revised.
		Removed	Obsolete hard disk drives were removed from the QuickSpecs.
26-Sep-2016	From Version 53 to 54	Added	Added new SAS offering. HPE 3TB 12G SAS 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive HPE 1TB 12G SAS 7.2K rpm LFF (3.5in) SC Midline 1yr Warranty Hard Drive
06-Jun-2016	From Version 52 to 53	Added	HPE 8TB 12G SAS 7.2K rpm LFF (3.5in) 512e SC Midline 1yr Warranty Hard Drive was added to the QuickSpecs.
16-Feb-2016	From Version 51 to 52	Added	Added new SKUs 832514-B21, 818367-B21, and 818365-B21 to the Models and Technical Specifications sections.
		Changed	What's New changed to: HPE 1TB 12G SAS 7.2K rpm SFF (2.5in) SC Midline 1yr Warranty Hard Drive HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive
28-Sep-2015	From Version 50 to 51	Changed	12G SAS drives indicated transfer rate as 6Gb/sec. Changed transfer rate to 12Gb/sec.
01-Jun-2015	From Version 49 to 50	Added	Updated What's New with the following information: HPE 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive HPE 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive Added part numbers 791034-B21, 748387-B21, 793703-B21, 793699-B21, 793701-B21, and 793697-B21 to the Models and Technical Specifications sections.
		Changed	Service and Support section was revised.

Summary of Changes

		Removed	Obsolete SKUs 516814-B21 and 516824-B21 were removed.
30-Mar-2015	From Version 48 to 49	Added	Added new SAS Hard Drives offering.
		Changed	Overview and Technical Specifications were revised.
09-Feb-2015	From Version 47 to 48	Added	Updated What's New with the following information: HPE 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive HPE 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive HPE 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive HPE 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive HPE 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive HPE 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive HPE 1.2TB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive HPE 900GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive HPE 600GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive HPE 300GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive Added part numbers 781518-B21, 785069-B21, 781516-B21, 785067-B21, 765259-B21, 765257-B21, 785079-B21, 785075-B21, 785073-B21, and 785071-B21 to the Models and Technical Specifications sections.
28-Aug-2014	From Version 46 to 47	Changed	Updated What's New with the following information: HPE 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive HPE 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive HPE 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive HPE 300GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive

Summary of Changes

			HPE 450GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive HPE 600GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive HPE 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive HPE 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive HPE 300GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive HPE 450GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive HPE 600GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive HPE 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive HPE 6TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive Updated Models throughout the QuickSpecs. Changes made in the Technical Specifications section.
18-Aug-2014	From Version 45 to 46	Changed	Models section was revised.
		Removed	Removed HPE 600GB 6G SAS 10K rpm SFF (2.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive and HPE 300GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive from Models and Technical Specifications sections.
07-Mar-2014	From Version 44 to 45	Changed	Changes were made throughout.
09-Dec-2013	From Version 43 to 44	Added	Updated What's New with the following information: HPE 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive Added part numbers 718162-B21, 718160-B21, and 718164-B21 to the Models and Technical Specifications sections.
13-May-2013	From Version 42 to 43	Added	Updated What's New with the following information: HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr

Summary of Changes

			Warranty Hard Drive HPE 4TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive HPE 4TB 6G SAS 7.2k LFF (3.5-inch) Quick-release Dual Port MDL 1y Warranty Hard Drive Added part numbers 695510-B21, 693689-B21, and 697956-B21 to the Models and Technical Specifications sections.
19-Apr-2013	From Version 41 to 42	Changed	Changes made to the NOTES in the Models section.
12-Apr-2013	From Version 40 to 41	Added	Added new NOTES to the Models section.
19-Feb-2013	From Version 39 to 40	Added	Added part numbers 697574-B21, 693648-B21, and 697572-B21 to the Models and Technical Specifications sections.
26-Nov-2012	From Version 38 to 39	Added	Added missing sub-header in Overview section.
07-Nov-2012	From Version 37 to 38	Added	Added missing sub-header in Overview section.
06-Aug-2012	From Version 36 to 37	Removed	Removed HPE 72GB GG SAS 15K rpm Drive from Model node. Removed HPE 72GB GG SAS 15K rpm Drive node from Technical Specifications section.
27-Jul-2012	From Version 35 to 36	Changed	Change made in Technical Specifications section.
11-May-2012	From Version 34 to 35	Changed	Changed "Smart Drive" to "SmartDrive" in the Models section.
06-Mar-2012	From Version 33 to 34	Changed	Models was updated. Note that the title has changed.
14-Nov-2011	From Version 32 to 33	Added	HPE 300GB 6G SAS 15K rpm SFF Hot Plug Enterprise Drive was added.
04-Aug-2011	From Version 31 to 32	Changed	Description changes made in the Hard Drives section.
20-Jun-2011	From Version 29 to 31	Changed	Service and Support was completely revised and HPE 3TB 6G SAS 7.2K rpm LFF Dual Port Midline Hard Drive was added.
09-May-2011	From Version 28 to 29	Added	Added new SKU to the Models and Technical Specifications sections. Updated the Service and Support section.
05-Apr-2011	From Version 27 to 28	Added	HPE 1TB 6G SAS 7.2K rpm SFF Hot plug Midline 1yr Warranty Hard Drive was added throughout.
14-Jan-2011	From Version 25 to 26	Changed	Change made in the North America and Canada versions only.
18-Nov-2010	From Version 24 to 25	Changed	Models were updated.
05-Oct-2010	From Version 23 to 24	Changed	Service and Support was completely revised.
29-Mar-2010	From Version 22 to 23	Added	HPE 450GB and 600GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise Hard Drives were added to SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives, HPE 600GB 6G SAS 10K SFF (2.5-inch) Non-Hot Plug Dual Port ENT Hard Drive was added to SAS non-Hot Plug SF (2.5-inch) Enterprise (ENT) Drives and 1TB and 2TB 6G SAS 7.2K rpm LFF (3.5-inch) Dual Port Midline Hard Drives were added to SAS Hot Plug LFF (3.5-inch) Midline (MDL) Drives.
16-Feb-2010	From Version 21 to 22	Changed	Hard drive descriptions were revised to reflect warranty information.
14-Sep-2009	From Version 20 to 21	Changed	Updated Models throughout the QuickSpecs.
14-Jul-2009	From Version 19 to 20	Changed	Changes made in the Models and Technical Specifications sections.
13-Jul-2009	From Version 18 to 19	Added	SAS Hot Plug SFF Midline (MDL) Drives to the QuickSpecs and Application, Warranty, Transfer Rate, 3G and 6G and System Inlet Air Temperature throughout the Technical Specifications section.
02-Jun-2009	From Version 17 to 18	Added	Added the HPE 146GB and 72GB 6G SAS 15K SFF DP ENT HDD to SAS Hot Plug SEE Enterprise (ENT) Drives and SAS

Summary of Changes

			Non-Hot Plug SEE Enterprise (ENT) Drives to Hard Drives throughout the QuickSpecs.
27-Apr-2009	From Version 16 to 17	Changed	Changes made in the What's New, Models and Technical Specifications sections.
30-Mar-2009	From Version 15 to 16	Added	Added the HPE 300GB 6G SAS 10K SFF DP ENT HDD, HPE 146GB 6G SAS 10K SFF DP ENT HDD and HPE 146GB 3G SAS 15K SFF DP ENT HDD Hard Drives throughout the QuickSpecs.
10-Dec-2008	From Version 14 to 15	Changed	Change made in the North America and Canada versions only.
08-Dec-2008	From Version 13 to 14	Changed	Completely revised the Introduction in the Overview section and Models throughout the QuickSpecs.
17-Nov-2008	From Version 12 to 13	Changed	There were changes made to the Standard Features and Technical Specifications sections.
14-Jul-2008	From Version 11 to 12	Changed	The QuickSpecs was rewritten. NOTE that the title has changed.
11-Feb-2008	From Version 10 to 11	Changed	Changes were made throughout the QuickSpecs.
23-Sep-2007	From Version 9 to 10	Changed	Corrected the name of one of the 3.5-inch drives in the Technical Specifications section (was incorrectly listed as a 300-GB drive instead of 146-GB).
05-Sep-2007	From Version 8 to 9	Changed	Changes made throughout the QuickSpecs except for the Service and Support section.
17-Jul-2007	From Version 7 to 8	Changed	Changes made to the Drive Quality section of Standard Features only.
16-Jan-2007	From Version 6 to 7	Changed	Changes made within the OVERVIEW and TECHNICAL SPECIFICATIONS sections.
14-Nov-2006	From Version 5 to 6	Changed	Changes made within the OVERVIEW and TECHNICAL SPECIFICATIONS sections.
25-Sep-2006	From Version 4 to 5	Added	Added the HPE 146GB 3G SAS 10K SFF SP HDD Hard Drives throughout the QuickSpecs.
23-Mar-2006	From Version 3 to 4	Added	"For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less." to the Copyright Notice.
03-Mar-2006	From Version 2 to 3	Changed	Changes made in the TECHNICAL SPECIFICATIONS section only.
06-Feb-2006	From Version 1 to 2	Changed	In OVERVIEW and TECHNICAL SPECIFICATIONS, updated part number descriptions. Updated Copyright Notice.



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

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Summary of Changes