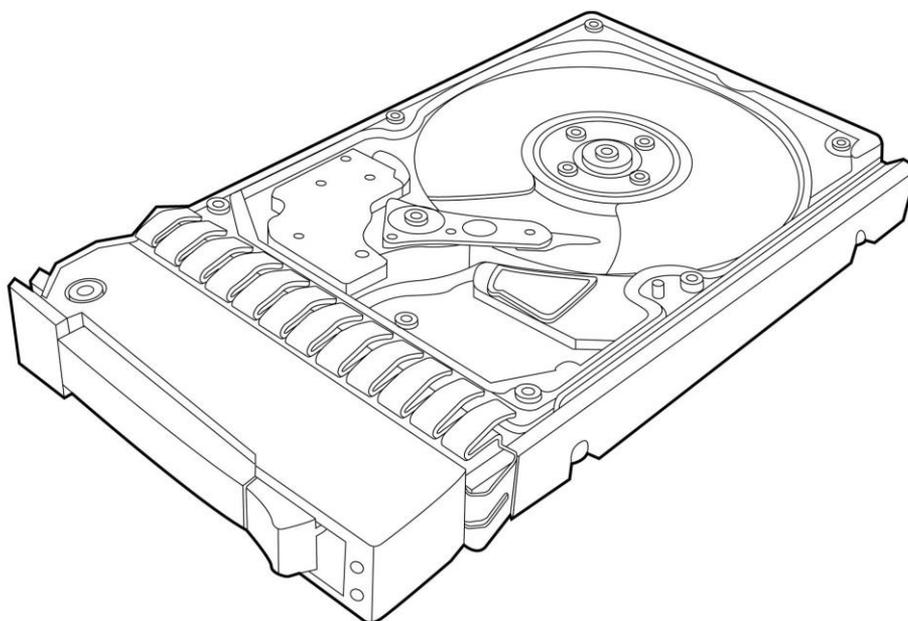


Overview

HP SAS Hard Drives

Serial Attached SCSI (SAS) provides a superior storage solution. With some storage requirements escalating and others becoming more complex, factors such as flexibility, performance, increased reliability, greater density, security, scalability and accessibility are more critical than ever. Today's organizations consist of different kinds of environments. Enterprise data centers must be online 24X7, fulfill requests from numerous users simultaneously, and allow for constant growth and expansion while in operation. Other customer environments require high capacity storage and high data availability for low I/O environments. HP's portfolio of SAS drives meets all these demands.



What's New

- HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive
- HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive
- HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive
- HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive
- HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive
- HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive

Models

HP 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 |

Overview

| | |
|---|------------|
| 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 |
| 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 | |
| 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 |
| 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 |
| HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive | 652753-B21 |
| SAS Hot Plug SmartDrive LFF (3.5-inch) Midline 512e Drives | |
| 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 |
| 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 | |
| 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 |

HP 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 |

Overview

| | |
|--|------------|
| 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

| | |
|--|------------|
| 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 |

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

HP 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 HP 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 HP 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 HP qualification process and are labeled "best-in-class." All our Enterprise drives are proven to be reliable and tuned for optimum performance in the HP 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 HP qualification process and are labeled "best-in-class." All our drives are proven to be reliable and tuned for optimum performance in the HP 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 HP 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 HP 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. HP hard drives are specifically designed and tested for flawless operation in your HP equipment. The integration of hard drives in HP 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>

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: HP SATA and SAS Hard drives are covered under the HP Care Pack/ Service Contract applied to the HP ProLiant Server. No separate HP Care Packs need to be purchased.

HP Technology Services for Industry Standard Servers and BladeSystem

HP Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HP 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 HP Care Pack Services

HP Care Pack 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 HP

Unlock all of the benefits of your technology investment by connecting your products to HP. 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 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HP Proactive Care Service and HP 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 HP 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 HP-branded hardware options not designated by HP 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 HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant> or <http://www.hp.com/services/bladesystem>

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.

| | | | | |
|---|--|---|--------------------|------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 10,000 rpm |
| | | | Bytes/Sector | 512 |
| | | Logical Blocks | 2,344,225,968 | |
| | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |

| | | | | |
|---|--|---|--------------------|------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 10,000 rpm |
| | | | Bytes/Sector | 512 |
| | | Logical Blocks | 1,758,174,768 | |
| | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |

| | | | |
|--|------------|-----------------|-------------------|
| HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty | 652583-B21 | Capacity | 600,127MB |
| | | Height | 0.62 in (15.6 mm) |
| | | Width | 2.98 in (75.7 mm) |

Technical Specifications

Hard Drive

| | | |
|--|-----------------------------|---------------|
| Depth | 4.67 in (118.7 mm) | |
| Interface | SAS | |
| Transfer Rate | 6 Gb/sec | |
| Synchronous (Maximum) | | |
| Seek Time | Single Track | 0.3 ms |
| (typical reads, including settling) | 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) | |

HP 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 | 6 Gb/sec | |
| Synchronous (Maximum) | | |
| Seek Time | Single Track | 0.3ms |
| (typical reads, including settling) | 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) | |

HP 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 | 6 Gb/sec | |
| Synchronous (Maximum) | | |
| Seek Time | Single Track | 0.3 ms |
| (typical reads, including settling) | 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) | |

Technical Specifications

| | | | | | |
|--|------------|--|-----------------------------|---------------|--|
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 10,000 rpm | |
| | | | Bytes/Sector | 512 | |
| | | | Logical Blocks | 585,937,500 | |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 10,000 rpm | |
| | | | Bytes/Sector | 512 | |
| | | | Logical Blocks | 2,344,225,968 | |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |
| HP 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 | | |
| | | Seek Time (typical reads, including settling) | Single Track | 0.10 ms | |
| | | | Average | 3.5 ms | |
| | | | Full-Stroke | 7.0 ms | |
| | | Physical Configuration | Rotational Speed | 10,000 rpm | |
| | | | Logical Blocks | 2,344,225,968 | |

Technical Specifications

| | | | | |
|--|--|--|-----------------------------|---------------|
| | | 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) | |

| | | | | | | |
|--|------------|---|--------------------|--|-----------------------------|---------------|
| HP 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) | |

| | | | | | | |
|--|------------|---|--------------------|--|-----------------------------|-------------|
| HP 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) | |

| | | | | |
|---|------------|--|--------------------|--|
| HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive | 652611-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 | |

Technical Specifications

| | | |
|--|-----------------------------|-------------|
| Seek Time (typical reads, including settling) | Single Track | 0.4 ms |
| | Average | 2.9 ms |
| | Full-Stroke | 5.3 ms |
| Physical Configuration | Rotational Speed | 15,000 rpm |
| | Bytes/Sector | 512 |
| | Logical Blocks | 585,937,500 |
| Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

HP 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 |
| Physical Configuration | Rotational Speed | 15,000 rpm |
| | Bytes/Sector | 512 |
| | Logical Blocks | 286,749,488 |
| Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

HP 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 |
| Physical Configuration | Rotational Speed | 15,000 rpm |
| | Bytes/Sector | 512 |
| | Logical Blocks | 1,172,123,568 |
| Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty

759210-B21

| | | |
|-----------------|-------------------|--|
| Capacity | 450,098MB | |
| Height | 0.62 in (15.6 mm) | |
| Width | 2.98 in (75.7 mm) | |

Technical Specifications

| | | | | |
|-------------------|--|-----------------------------|-------------|--|
| Hard Drive | 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 | |
| | Physical Configuration | Rotational Speed | 15,000 rpm | |
| | | Bytes/Sector | 512 | |
| | | Logical Blocks | 879,097,968 | |
| | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |

| | | | | | |
|--|------------|--|-----------------------------|-------------|--|
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 15,000 rpm | |
| | | | 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.

| | | | | |
|---|------------|--|--------------------|--|
| HP 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 | |

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 | 3,516,328,368 |
| | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) |

HP 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.

HP 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) | |
| 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 |

Technical Specifications

| | | | | |
|--|--|--|-----------------------------|---------------|
| | | 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) | |

HP 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) | | |

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.

HP 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) | | |

Technical Specifications

| | | Temperature) | | |
|---|------------|--|-----------------------------|---------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 7200 rpm |
| | | | 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 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.

| | | | | |
|---|------------|--|-----------------------------|---------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 15000 rpm |
| | | | Bytes/Sector | 512 |
| | | | Logical Blocks | 1,172,123,568 |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

| | | | |
|--|------------|-----------------|-------------------|
| HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC | 652615-B21 | Capacity | 450,098MB |
| | | Height | 1.06 in (26.8 mm) |

Technical Specifications

Enterprise 3yr 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 | 0.2 ms |
| | Average | 3.5 ms |
| | Full-Stroke | 6.8 ms |
| Physical Configuration | Rotational Speed | 15000 rpm |
| | Bytes/Sector | 512 |
| | Logical Blocks | 879,097,968 |
| Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

HP 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 Synchronous (Maximum) | 12Gb/sec | |
| Seek Time (typical reads, including settling) | Single Track | 0.15 ms |
| | Average | 2.9 ms |
| | Full-Stroke | 5.9 ms |
| Physical Configuration | Rotational Speed | 15000 rpm |
| | Bytes/Sector | 512 |
| | Logical Blocks | 1,172,123,588 |
| Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

HP 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 |
| Physical Configuration | Rotational Speed | 15000 rpm |
| | Bytes/Sector | 512 |
| | Logical Blocks | 879,097,968 |
| Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

Technical Specifications

Temperature)

| | | | | | |
|--|------------|--|-----------------------------|-------------|--|
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 15000 rpm | |
| | | | 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 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 HP hard drives exceeding 2.2 TB, HP Smart Array Firmware version 5.0 or later is required for the following controllers:

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

| | | | | | |
|---|------------|---|--------------------|---------|--|
| HP 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 (typical reads, including settling) | Single Track | 0.25 ms | |
| | | | Average | 8.5 ms | |

Technical Specifications

| | | | | |
|--|--|--|-----------------------------|----------------|
| | | settling) | 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) | |

| | | | | |
|---|------------|--|-----------------------------|---------------|
| HP 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) | |

| | | | | |
|---|------------|--|-----------------------------|---------------|
| HP 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) | |

| | | | | |
|---|------------|------------------|--------------------|--|
| HP 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 | |

Technical Specifications

| | | |
|--|-----------------------------|---------------|
| 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 |
| Physical Configuration | Rotational Speed | 7200 rpm |
| | Bytes/Sector | 512 |
| | Logical Blocks | 3,907,029,168 |
| Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

HP 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 |
| Physical Configuration | Rotational Speed | 7200 rpm |
| | 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) 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 HP hard drives exceeding 2.2 TB, HP Smart Array Firmware version 5.0 or later is required for the following controllers:

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array

Technical Specifications

controllers do not support boot volumes exceeding 2.2 TB.

| | | | | |
|---|-----------------------------|-------------------------------------|--------------------|----------------|
| HP 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 | 12 Gb/sec | |
| | | Synchronous (Maximum) | | |
| | | Seek Time | Single Track | 0.7 ms |
| | | (typical reads, including settling) | 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 | 50° to 95° F (10° to 35° C) | | | |
| (System Inlet Air Temperature) | | | | |

| | | | | |
|---|-----------------------------|-------------------------------------|--------------------|---------------|
| HP 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 | 12 Gb/sec | |
| | | Synchronous (Maximum) | | |
| | | Seek Time | Single Track | 0.7 ms |
| | | (typical reads, including settling) | 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 | 50° to 95° F (10° to 35° C) | | | |
| (System Inlet Air Temperature) | | | | |

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.

Technical Specifications

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

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

| | | | | |
|---|------------|---|-----------------------------|----------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 7200 rpm |
| | | | Bytes/Sector | 512 |
| | | | Logical Blocks | 11,721,045,168 |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

| | | | | |
|---|------------|---|-----------------------------|---------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 7200 rpm |
| | | | Bytes/Sector | 512 |
| | | | Logical Blocks | 7,814,037,168 |
| | | 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 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.

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

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

| | | | | |
|--|------------|--|-----------------------------|----------------|
| HP 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) | |

| | | | | |
|--|------------|--|--------------------|---------|
| HP 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 | Single Track | 0.25 ms |
| | | | | |

Technical Specifications

| | | |
|--|-----------------------------|----------------|
| (typical reads, including settling) | 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.

| | | | | |
|--|------------|--|-----------------------------|---------------|
| HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive | 718160-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) | 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) | |

| | | | | |
|--|------------|---|--------------------|------------|
| HP 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 |

Technical Specifications

| | | | | |
|--|--|--|-----------------------------|---------------|
| | | 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) | |

| | | | | | | |
|--|------------|---|--------------------|--|-----------------------------|---------------|
| HP 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 |
| | | | | | Logical Blocks | 1,172,123,568 |
| | | | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

| | | | | | | |
|--|------------|---|--------------------|--|-----------------------------|-------------|
| HP 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) | |

| | | | | |
|--|------------|--|--------------------|--|
| HP 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 | |

Technical Specifications

| | | | | |
|---|------------|---|--|---|
| | | Seek Time (typical reads, including settling) | Single Track Average Full-Stroke | 0.20 ms 4.0 ms 7.45 ms |
| | | Physical Configuration | Rotational Speed Bytes/Sector Logical Blocks | 10,000 rpm 512 585,937,500 |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |
| HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive | 785079-B21 | Capacity Height Width Depth Interface Transfer Rate Synchronous (Maximum) Seek Time (typical reads, including settling) | 1,200,243MB 0.63 in (16.0 mm) 3.1 in (78.7 mm) 5.45 in (138.4 mm) SAS 12 Gb/sec | 0.10 ms 3.7 ms 7.3 ms 10,000 rpm |
| | | Physical Configuration | Bytes/Sector Logical Blocks | 512 2,344,225,968 |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |
| HP 900GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive | 785075-B21 | Capacity Height Width Depth Interface Transfer Rate Synchronous (Maximum) Seek Time (typical reads, including settling) | 900,185MB 0.63 in (16.0 mm) 3.1 in (78.7 mm) 5.45 in (138.4 mm) SAS 12 Gb/sec | 0.10 ms 3.5 ms 7.0 ms 10,000 rpm |
| | | Physical Configuration | Bytes/Sector Logical Blocks | 512 1,758,174,768 |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |
| HP 600GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty | 785073-B21 | Capacity Height Width | 600,127MB 0.63 in (16.0 mm) 3.1 in (78.7 mm) | |

Technical Specifications

| | | | |
|--|-------------------------------------|--------------------|---------------|
| Hard Drive | Depth | 5.45 in (138.4 mm) | |
| | Interface | SAS | |
| | Transfer Rate | 12 Gb/sec | |
| | Synchronous (Maximum) | | |
| | Seek Time | Single Track | 0.11 ms |
| | (typical reads, including settling) | 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) | | |

| | | | | |
|---|-------------------------------|-------------------------------------|--------------------|------------|
| HP 300GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive | 785071-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 | 12 Gb/sec | |
| | | Synchronous (Maximum) | | |
| | | Seek Time | Single Track | 0.10 ms |
| | | (typical reads, including settling) | 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) | | | |

| | | | | |
|--|-------------------------------|-------------------------------------|--------------------|------------|
| HP 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 | 6 Gb/sec | |
| | | Synchronous (Maximum) | | |
| | | Seek Time | Single Track | 0.40 ms |
| | | (typical reads, including settling) | 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) | | | |

Technical Specifications

| | | | | | |
|--|------------|--|-----------------------------|---------------|--|
| HP 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 | |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |
| HP 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) | | |
| HP 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 | |

Technical Specifications

| | | | | | |
|---|------------|--|-----------------------------|----------------|-------------|
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | Logical Blocks | 879,097,968 |
| HP 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 | | |
| | | 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.

| | | | | | |
|--|------------|--|-----------------------------|--|---------------|
| HP 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) | | |

Technical Specifications

| | | | | | |
|--|------------|--|-----------------------------|---------------|--|
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 15,000rpm | |
| | | | Bytes/Sector | 512 | |
| | | | Logical Blocks | 879,097,968 | |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 15,000rpm | |
| | | | Bytes/Sector | 512 | |
| | | | Logical Blocks | 1,172,123,568 | |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | | |
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 15,000rpm | |
| | | | Bytes/Sector | 512 | |

Technical Specifications

| | | | | | |
|--|------------|--|-----------------------------|--|-----------------------------|
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | Logical Blocks | 879,097,968 |
| HP 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 | | |
| | | 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 | |
| | | Physical Configuration | Rotational Speed | 15,000rpm | |
| | | | 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.

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

Technical Specifications

HP 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 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) | |

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.

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

- [HP Smart Array P212 Controller](#)

Technical Specifications

- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

**HP 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 | 6 Gb/sec | |
| Synchronous (Maximum) | | |
| Seek Time | Single Track | 0.7 ms |
| (typical reads, including settling) | 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 | 50° to 95° F (10° to 35° C) | |
| (System Inlet Air Temperature) | | |

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

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

**HP 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 | 6 Gb/sec | |
| Synchronous (Maximum) | | |
| Seek Time | Single Track | 0.5 ms |
| (typical reads, including settling) | Average | <8.1 ms |
| | Full-Stroke | 15.5 ms |
| | Rotational Speed | 7,200 rpm |

Technical Specifications

| | | |
|--|-----------------------------|---------------|
| 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 HP hard drives exceeding 2.2 TB, HP Smart Array Firmware version 5.0 or later is required for the following controllers:

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

| | | | | |
|--|------------|--|-----------------------------|---------------|
| HP 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) | |

| | | | | |
|--|------------|---|--------------------|---------------|
| HP 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 |

Technical Specifications

Operating Temperature 50° to 95° F (10° to 35° C)
(System Inlet Air Temperature)

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

| | | | | |
|---|--|---|--------------------|----------------|
| HP 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 HP hard drives exceeding 2.2 TB, HP Smart Array Firmware version 5.0 or later is required for the following controllers:

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

| | | | |
|---|------------|------------------|--------------------|
| HP 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 |

Technical Specifications

| | | |
|-------------------------------------|-----------------------------|----------------|
| Transfer Rate | 12 Gb/sec | |
| Synchronous (Maximum) | | |
| Seek Time | Single Track | 0.25 ms |
| (typical reads, including settling) | 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 | 50° to 95° F (10° to 35° C) | |
| (System Inlet Air Temperature) | | |

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

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller
- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

SAS Non-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.

| | | | | | |
|---|--------------------------------|-------------------------------------|---------------------|------------|--|
| HP 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 | 6 Gb/sec | | |
| | | Synchronous (Maximum) | | | |
| | | Seek Time | Single Track | 0.20 ms | |
| | | (typical reads, including settling) | 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 | 50° to 95° F (10° to 35° C) | | | |
| | (System Inlet Air Temperature) | | | | |

Technical Specifications

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.

| | | | | |
|---|------------|---|--|-------------------------|
| HP 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 Average Full-Stroke | 0.2ms 3.5ms 6.8ms |
| | | Physical Configuration | Rotational Speed | 15,000 rpm |
| | | | Bytes/Sector | 512 |
| | | | Logical Blocks | 1,172,123,568 |
| | | Operating Temperature (System Inlet Air Temperature) | 50° to 95° F (10° to 35° C) | |

| | | | | |
|---|------------|---|--|-------------------------|
| HP 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 Average Full-Stroke | 0.2ms 3.5ms 6.8ms |
| | | Physical Configuration | Rotational Speed | 15,000 rpm |
| | | | 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.

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.

| | | | | |
|--|------------|--|-----------------------------|---------------|
| HP 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) | |

| | | | | |
|---|------------|--|-----------------------------|-------------|
| HP 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.

Technical Specifications

| | | | | |
|---|------------|--|-----------------------------|---------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 15,000 rpm |
| | | | 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.

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.

| | | | | |
|---|------------|--|-----------------------------|---------------|
| HP 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 |
| | | Physical Configuration | Rotational Speed | 7,200 rpm |
| | | | 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 HP hard drives exceeding 2.2 TB, HP Smart Array Firmware version 5.0 or later is required for the following controllers:

- HP Smart Array P212 Controller
- HP Smart Array P410 Controller
- HP Smart Array P411 Controller

Technical Specifications

- HP Smart Array P711m Controller
- HP 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. HP Smart Array controllers do not support boot volumes exceeding 2.2 TB.

| | | | | | |
|--|------------|--|-----------------------------|---------------|--|
| HP 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 | |
| | | Physical Configuration | Rotational Speed | 7,200 rpm | |
| | | | Bytes/Sector | 512 | |
| | | | Logical Blocks | 3,907,029,168 | |
| | | 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 offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

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 web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

Summary of Changes

| Date | Version History | Action | Description of Change: |
|--|-----------------------|---------|--|
| 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: |
| | | | HP 1.8TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive |
| | | | HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 512e 3yr Warranty Hard Drive |
| | | | HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive |
| 01-Jun-2015 | From Version 49 to 50 | Added | HP 8TB 12G SAS 7.2K rpm LFF (3.5-inch) 512e Helium 1yr Warranty Hard Drive |
| | | | HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC 512e Helium 1yr Warranty Hard Drive |
| | | | HP 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. |
| 01-Jun-2015 | From Version 49 to 50 | Changed | Service and Support section was revised. |
| | | 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: |
| | | | HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive |
| | | | HP 900GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive |
| | | | HP 600GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive |
| | | | HP 300GB 12G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive |
| | | | HP 6TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive |
| | | | HP 4TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive |
| HP 1.2TB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr | | | |

Summary of Changes

| | | | |
|-------------|-----------------------|---------|--|
| | | | <p>Warranty Hard Drive</p> <p>HP 900GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive</p> <p>HP 600GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive</p> <p>HP 300GB 12G SAS 10K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive</p> <p>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.</p> |
| 28-Aug-2014 | From Version 46 to 47 | Changed | <p>Updated What's New with the following information:</p> <p>HP 300GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive</p> <p>HP 450GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive</p> <p>HP 600GB 12G SAS 15K rpm LFF (3.5-inch) SC Converter Enterprise 3yr Warranty Hard Drive</p> <p>HP 300GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive</p> <p>HP 450GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive</p> <p>HP 600GB 12G SAS 15K rpm LFF (3.5-inch) CC Enterprise 3yr Warranty Hard Drive</p> <p>HP 300GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive</p> <p>HP 450GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive</p> <p>HP 600GB 12G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive</p> <p>HP 300GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive</p> <p>HP 450GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr Warranty Hard Drive</p> <p>HP 600GB 12G SAS 15K rpm SFF (2.5-inch) Enterprise 3yr</p> |

Summary of Changes

| | | | |
|-------------|-----------------------|-------------------------------|--|
| | | | <p>Warranty Hard Drive</p> <p>HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive</p> <p>HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive</p> <p>HP 6TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive</p> <p>Updated Models throughout the QuickSpecs.</p> <p>Changes made in the Technical Specifications section.</p> |
| 18-Aug-2014 | From Version 45 to 46 | <p>Changed</p> <p>Removed</p> | <p>Models section was revised.</p> <p>Removed HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Non-hot Plug Dual Port Enterprise 3yr Warranty Hard Drive and HP 300GB 6G SAS 15K rpm LFF (3.5-inch) Quick-release Dual Port Enterprise 3yr Warranty Hard Drive from Models and Technical Specifications sections.</p> |
| 07-Mar-2014 | From Version 44 to 45 | Changed | Changes were made throughout. |
| 09-Dec-2013 | From Version 43 to 44 | Added | <p>Updated What's New with the following information:</p> <p>HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive</p> <p>Added part numbers 718162-B21, 718160-B21, 718164-B21 to the Models and Technical Specifications sections.</p> |
| 13-May-2013 | From Version 42 to 43 | Added | <p>Updated What's New with the following information:</p> <p>HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive</p> <p>HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive</p> <p>HP 4TB 6G SAS 7.2k LFF (3.5-inch) Quick-release Dual Port MDL 1y Warranty Hard Drive</p> <p>Added part numbers 695510-B21, 693689-B21, 697956-B21 to the Models and Technical Specifications sections.</p> |
| 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, 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 | <p>Removed HP 72GB GG SAS 15K rpm Drive from Model node.</p> <p>Removed HP 72GB GG SAS 15K rpm Drive node from Technical Specifications section.</p> |
| 27-Jul-2012 | From Version 35 to 36 | Changed | Change made in Technical Specifications section. |

Summary of Changes

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|-------------|-----------------------|---------|--|
| 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 | HP 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 HP 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 | HP 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 | HP 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, HP 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 QuickSpec. |
| 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 QuickSpec 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 HP 146GB and 72GB 6G SAS 15K SFF DP ENT HDD to SAS Hot Plug SEE Enterprise (ENT) Drives and SAS Non-Hot Plug SEE Enterprise (ENT) Drives to Hard Drives throughout the QuickSpec. |
| 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 HP 300GB 6G SAS 10K SFF DP ENT HDD, HP 146GB 6G SAS 10K SFF DP ENT HDD and HP 146GB 3G SAS 15K SFF DP ENT HDD Hard Drives throughout the QuickSpec. |
| 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 QuickSpec. |
| 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 QuickSpec was rewritten. NOTE that the title has changed. |
| 11-Feb-2008 | From Version 10 to 11 | Changed | Changes were made throughout the QuickSpec. |
| 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 QuickSpec 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. |

Summary of Changes

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|-------------|---------------------|---------|--|
| 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 HP 146GB 3G SAS 10K SFF SP HDD Hard Drives throughout the QuickSpec. |
| 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.