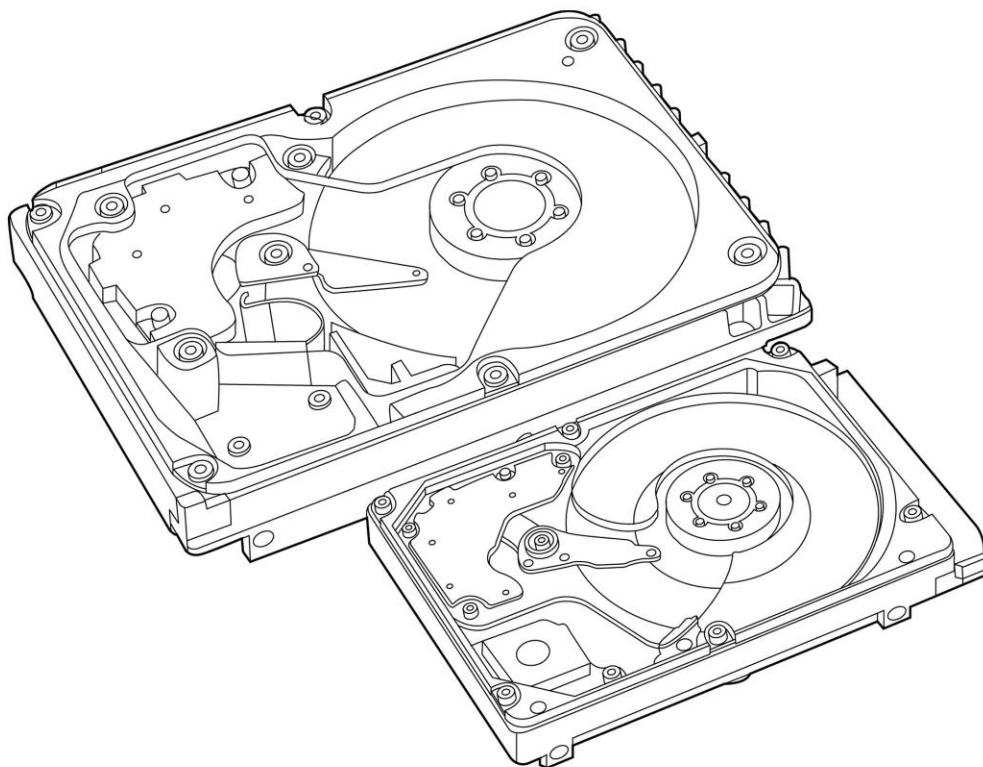# QuickSpecs

Overview

HP SATA Hard Drives

HP SATA drives are designed for the reliability and larger capacities demanded by today's entry server and external storage environments. HP SATA Midline drives are designed with economical reliability and performance for external storage, backups and archival applications. These high capacity drives provide the lowest $/GB to our customers and the best price advantage for non-mission critical applications with low workloads of 40% or less. HP SATA drives are available in both Large Form Factor (LFF) (3.5-inch) and Small Form Factor (SFF) (2.5-inch) and ship with a standard one year warranty, 1,0,0.

All HP hard drives pass a rigorous qualification process, which ensures that every HP drive is proven to perform in your HP ProLiant server. Before final certification, all HP SATA hard drives are optimized for compatibility and functionality, including support of SMART and HP Systems Insight Manager.

*S.M.A.R.T.: Self Monitoring Analysis and Reporting Technology, first developed at HP, detects possible hard disk failure before it occurs, allowing replacement of the component before failure occurs.

What's New

- HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e 1yr Warranty Hard Drive
- HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e 1yr Warranty Hard Drive

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Models

NOTE: SATA Drive Write Cache is disabled by default to minimize the risk of data loss in case of power loss. For information on how to enable Drive Write Cache on SATA drives via supported controllers and HBAs and what precautions should be followed please visit: http://www.hp.com/go/SATA
NOTE: 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.

QuickSpecs

Overview

HP 6G SATA "SmartDrive" Carriers

6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21

6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-B21
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

6G SATA Hot Plug with SmartDrive LFF (3.5-inch) 512e Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765255-B21
HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 512e 1yr Warranty Hard Drive	765253-B21

6G SATA Non-hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659337-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659341-B21

HP SATA Hot Plug Hard Drives
NOTE: These drives are not supported by Gen8/Gen9 servers.

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

HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21

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

HP 4TB 3G SATA 7.2k rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	694374-B21
HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	628059-B21
HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	454146-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21

HP SATA Non-Hot Plug Hard Drives

6G SATA Non-hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	628065-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659339-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659337-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive	659341-B21

SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives
NOTE: These drives are not supported by Gen8/Gen9 servers.

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507774-B21
HP 1TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-B21

HP SATA Quick Release Hard Drives

6G SATA Quick Release SFF (2.5-inch) Midline (MDL) Drives
NOTE: These drives are supported by the SL Gen8 servers and Moonshot server.

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive	632080-B21

QuickSpecs

HP SATA Hard Drives

Overview

HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive	632078-B21

6G SATA Quick Release LFF (3.5-inch) Midline (MDL) Drives
NOTE: These drives are supported by the SL Gen8 servers.

HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) Quick-release Midline 1yr Warranty Hard Drive	697954-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive	647274-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive	672621-B21

QuickSpecs

Standard Features

Drive Quality

Today's entry-level servers and external storage solutions are seeing an increase in maximum storage capacity and demand for increased levels of drive quality. In the often-changing entry-level server and storage environment, storage has become a critical component of the information system, significantly defining both the systems reliability. This is why HP drives undergo an intense qualification process that eliminates firmware and O/S incompatibilities. All drives are proven to perform in the HP ProLiant and Modular Smart Array (MSA) storage systems for which they were designed.

Performance

Only those drives whose quality is suitable for an entry-level, external storage enclosures and server environments are selected through the HP qualification process. All our drives are proven to be reliable in the ProLiant server and MSA storage environment.

Native Command Queuing

Native Command Queuing (NCQ) is a technology designed to increase performance of SATA hard disk drives by allowing the individual hard disk to internally optimize the order in which received read and write commands are executed. This can reduce the amount of unnecessary going back-and-forth on the drive's heads, resulting in increased performance for workloads where multiple simultaneous read/write requests are outstanding, most often occurring in server or storage-type applications. Without NCQ the drive has to process and complete one command at a time. For NCQ to be enabled, it must be supported and turned on in the controller and in the hard drive itself.
NOTE: Please reference the HP Smart Array Controller website for NCQ enabled controllers at: http://www.hp.com/products/smartarray.
Please see SATA hard drive Technical Specifications section for specific capacities supported with NCQ.

Integration

Many issues customers have with third party Serial-ATA drives are integration related issues. When buying from another supplier, there is no guarantee that a drive has been correctly set for proper operation with ProLiant entry-level servers or MSA enclosures. These incompatibilities can create problems in configuration, can rob your system of performance, or at their worst, can result in data corruption. 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, controllers, and firmware are right for your ProLiant entry level server or MSA enclosures.

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 1 or 3 year limited on-site warranty, regardless of the warranty period of the system in which they are installed. However, the drive warranty is automatically uplifted when used in a server or MSA for which a care pack is purchased. Please see the below HP Care Pack Information section for additional services.
NOTE: SATA hard drives have a 1 year limited warranty regardless of the warranty period for the system in which they are installed.

Server and Storage Support

Please see the following URL for the latest list of supported servers and enclosures: http://www.hp.com/servers/hdd-documentation

QuickSpecs

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.
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

QuickSpecs

Technical Specifications

6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives

NOTE: To support HP hard drives exceeding 2.2TB, 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 2.2TB, you must create a boot volume using offline ACU version 8.75 or later. HP Smart Array controllers do not support boot volumes exceeding 2.2TB. Other controllers are not supported.

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-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	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.7 ms
			Average	<8.5 ms
			Full-Stroke	16.96 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-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	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.7ms
			Average	<8.5ms
			Full-Stroke	16.96ms
			Rotational Speed	7200
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	976,773,168

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Technical Specifications

	Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	753874-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	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	0.25ms
			Average	8.5 ms
			Full-Stroke	22 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)	
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-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	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	0.8 ms
			Average	8.5 ms
			Full-Stroke	16.2 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	7,814,037,168
		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21	**Capacity**	3,000,592,982,016	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	

QuickSpecs

Technical Specifications

	Interface	Serial ATA	
	Transfer Rate (Maximum)	6Gb/s	
	Native Command Queuing	Supported	
	Seek Time (typical reads, including settling)	Single Track	.5 ms
		Average	8.2 ms
		Full-Stroke	16.0 ms
		Rotational Speed	7,200 rpm
	Physical Configuration	Bytes/Sector	512
		Logical Blocks	5,860,533,168
	Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**658079-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	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.5 ms
			Average	<8.5ms
			Full-Stroke	16.0 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 SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	**657750-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	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.5 ms
			Average	<8.5 ms
			Full-Stroke	16.5 ms
			Rotational Speed	7,200 rpm

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HP SATA Hard Drives

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 SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21	**Capacity**	500,107MB	
		Height	1.06 in (26.8 mm)	
		Width	4.16 in (105.8 mm)	
		Depth	6.69 in (170.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.5ms
			Average	<8.5ms
			Full-Stroke	16.3ms
			Rotational Speed	7200
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	976,773,168
		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

6G SATA Hot Plug with SmartDrive LFF (3.5-inch) 512e Drives

HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e 1yr Warranty Hard Drive	765255-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	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	0.7ms
			Average	8.5 ms
			Full-Stroke	15.7 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)	

HP 4TB 6G SATA 7.2K rpm LFF (3.5-inch) SC 512e	765253-B21	**Capacity**	4,000,787MB	
		Height	1.06 in (26.8 mm)	

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Technical Specifications

1yr Warranty Hard Drive

Width	4.16 in (105.8 mm)	
Depth	6.69 in (170.0 mm)	
Interface	Serial ATA	
Transfer Rate (Maximum)	6Gb/s	
Native Command Queuing	Supported	
Seek Time (typical reads, including settling)	Single Track	0.7ms
	Average	8.5 ms
	Full-Stroke	15.7 ms
	Rotational Speed	7,200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	7,814,037,168
Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

6G SATA Non-hot Plug LFF (3.5-inch) Midline (MDL) Drives

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive   628065-B21

Capacity	3,000,592,982,016	
Height	1.028 in (26.1 mm)	
Width	4.00 in (101.6 mm)	
Depth	5.75 in (146.0 mm)	
Interface	Serial ATA	
Transfer Rate (Maximum)	6Gb/s	
Native Command Queuing	Supported	
Seek Time (typical reads, including settling)	Single Track	.5 ms
	Average	8.2 ms
	Full-Stroke	16.0 ms
	Rotational Speed	7,200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	5,860,533,168
Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

NOTE: To support 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.
Other controllers are not supported

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Technical Specifications

HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	**659339-B21**	Capacity	2,000,398MB	
		Height	1.028 in (26.1 mm)	
		Width	4.00 in (101.6 mm)	
		Depth	5.75 in (146.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.5 ms
			Average	<8.5ms
			Full-Stroke	16.0 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 SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	**659337-B21**	Capacity	1,000,204MB	
		Height	1.028 in (26.1 mm)	
		Width	4.00 in (101.6 mm)	
		Depth	5.75 in (146.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.5ms
			Average	<8.5 ms
			Full-Stroke	16.3ms
			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)	

HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	**659341-B21**	Capacity	500,107MB	
		Height	1.028 in (26.1 mm)	
		Width	4.00 in (101.6 mm)	
		Depth	5.75 in (146.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command	Supported	

QuickSpecs

Technical Specifications

Queuing		
Seek Time (typical reads, including settling)	Single Track	.5 ms
	Average	<8.5 ms
	Full-Stroke	17.55 ms
	Rotational Speed	7,200 rpm
Physical Configuration	Bytes/Sector	512
	Logical Blocks	1,953,525,168
Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

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

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

HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot plug Midline 1yr Warranty Hard Drive	625609-B21	**Capacity**	1,000,204MB	
		Height	0.63 in (16.0 mm)	
		Width	3.00 in (72.2 mm)	
		Depth	5.38 in (136.6 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.7ms
			Average	<8.5ms
			Full-Stroke	16.96ms
			Rotational Speed	7200
		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 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21	**Capacity**	500,107MB	
		Height	0.63 in (16.0 mm)	
		Width	3.00 in (72.2 mm)	
		Depth	5.38 in (136.6 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.5 ms
			Average	8.2 ms
			Full-Stroke	17.55 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512

QuickSpecs

HP SATA Hard Drives

Technical Specifications

	Logical Blocks	976,773,168
Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

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

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

HP 4TB 3G SATA 7.2k rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	694374-B21	Capacity	4,000,787MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.25 in (184.2 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	0.8 ms
			Average	8.5 ms
			Full-Stroke	16.2 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	7,814,037,168
		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	628059-B21	Capacity	3,000,592,982,016	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.25 in (184.2 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	<8.5 ms
			Full-Stroke	16.9 ms

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HP SATA Hard Drives

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		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)	

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	507632-B21	**Capacity**	2,000,398MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.25 in (184.2 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	<8.5 ms
			Full-Stroke	16.9 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 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive	458928-B21	**Capacity**	500,107MB	
		Height	1.04 in (26.4 mm)	
		Width	4.36 in (110.7 mm)	
		Depth	7.25 in (184.2 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	2.0 ms
			Average	<8.5 ms
			Full-Stroke	21.0 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)	

SATA Non-Hot Plug LFF (3.5-inch) Midline (MDL) Drives

NOTE: These drives are not supported by Gen8/Gen9 servers. To support HP hard drives exceeding 2.2 TB on pre Gen8 servers, HP

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Technical Specifications

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.
Other controllers are not supported

NOTE: Gen8 servers require Gen8 specific Smart Array Controllers

HP 2TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507774-B21			
		Capacity	2,000,398MB	
		Height	1.028 in (26.1 mm)	
		Width	4.00 in (101.6 mm)	
		Depth	5.75 in (146.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	0.5 ms
			Average	<8.5 ms
			Full-Stroke	16.9 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 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	507772-B21			
		Capacity	1,000,204MB	
		Height	1.028 in (26.1 mm)	
		Width	4.00 in (101.6 mm)	
		Depth	5.75 in (146.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	2.0 ms
			Average	<8.5 ms
			Full-Stroke	25.0 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168

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		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	
HP 500GB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot Plug Midline 1yr Warranty Hard Drive	458941-B21	**Capacity**	500,107MB	
		Height	1.028 in (26.1 mm)	
		Width	4.00 (101.6 mm)	
		Depth	5.75 in (146.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	3Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	2.0 ms
			Average	<8.5 ms
			Full-Stroke	21.0 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)	

6G SATA Quick Release SFF (2.5-inch) Midline (MDL) Drives (Gen8 only)

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive	632080-B21	**Capacity**	1,000,204MB	
		Height	0.74 in (18.8mm)	
		Width	2.91 in (73.9 mm)	
		Depth	3.95 in (100.2 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.7ms
			Average	<8.5ms
			Full-Stroke	16.96ms
			Rotational Speed	7200
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	976,773,168
		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) Quick Release Midline 1yr Warranty Hard Drive	632078-B21	**Capacity**	500,107MB	
		Height	0.74 in (18.8mm)	
		Width	2.91 in (73.9 mm)	
		Depth	3.95 in (100.2 mm)	

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Technical Specifications

Interface	Serial ATA	
Transfer Rate (Maximum)	6Gb/s	
Native Command Queuing	Supported	
Seek Time (typical reads, including settling)	Single Track	.7ms
	Average	<8.5ms
	Full-Stroke	16.96ms
	Rotational Speed	7200
Physical Configuration	Bytes/Sector	512
	Logical Blocks	976,773,168
Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

6G SATA Quick Release LFF (3.5-inch) Midline (MDL) Drives (Gen8 only)

HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive   697954-B21

Capacity	4,000,787MB	
Height	1.16 in (29.6 mm)	
Width	4.16 in (105.6 mm)	
Depth	5.79 in (147.0 mm)	
Interface	Serial ATA	
Transfer Rate (Maximum)	6Gb/s	
Native Command Queuing	Supported	
Seek Time (typical reads, including settling)	Single Track	0.8ms
	Average	8.5ms
	Full-Stroke	16.2ms
	Rotational Speed	7200
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 SATA 7.2K rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive   647274-B21

Capacity	3,000,592,982,016	
Height	1.16 in (29.6 mm)	
Width	4.16 in (105.6 mm)	
Depth	5.79 in (147.0 mm)	
Interface	Serial ATA	
Transfer Rate (Maximum)	6Gb/s	
Native Command Queuing	Supported	
Seek Time (typical reads, including settling)	Single Track	.5ms
	Average	<8.5ms
	Full-Stroke	16.3ms

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Technical Specifications

	Physical Configuration	Rotational Speed	7200
		Bytes/Sector	512
		Logical Blocks	976,773,168
	Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive	**672621-B21**	**Capacity**	1,000,204MB	
		Height	1.16 in (29.6 mm)	
		Width	4.16 in (105.6 mm)	
		Depth	5.79 in (147.0 mm)	
		Interface	Serial ATA	
		Transfer Rate (Maximum)	6Gb/s	
		Native Command Queuing	Supported	
		Seek Time (typical reads, including settling)	Single Track	.5 ms
			Average	<8.5 ms
			Full-Stroke	16.5 ms
			Rotational Speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	1,953,525,168
		Operating Temperature (system inlet air temperature)	50° to 95° F (10° to 35° C)	

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Summary of Changes

Date	Version History	Action	Description of Change:
09-Feb-2015	From Version 28 to 29	Added	Added the following to the Models and Technical Specifications Sections: 765253-B21 HP 4TB 6G SATA 7.2K 3.5in 512e SC MDL HDD 765255-B21 HP 6TB 6G SATA 7.2K 3.5in 512e SC MDL HDD
		Changed	What's New section was changed. Service and Support section was revised.
28-Aug-2014	From Version 27 to 28	Added	Added the following to the Models and Technical Specifications sections: HP 6TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive
		Changed	Overview and What's New sections were revised.
18-Aug-2014	From Version 26 to 27	Changed	Models section was revised.
		Removed	Removed HP 3TB 3G SATA 7.2K rpm LFF (3.5-inch) Non-hot plug Midline 1yr Warranty Hard Drive from Models and Technical Specifications sections.
09-Dec-2013	From Version 25 to 26	Removed	Discontinued models were removed.
23-Nov-2013	From Version 24 to 25	Removed	Discontinued models were removed.
24-Jul-2013	From Version 23 to 24	Removed	Discontinued models were removed.
19-Feb-2013	From Version 22 to 23	Changed	Added the following to the Models and Technical Specifications sections: HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive HP 4TB 3G SATA 7.2k rpm LFF (3.5-inch) Quick Release Midline 1yr Warranty Hard Drive HP 4TB 3G SATA 7.2k rpm LFF (3.5-inch) Midline 1yr Warranty Hard Drive
11-May-2012	From Version 21 to 22	Changed	Changed "Smart Drive" to "SmartDrive" in the Models section.
09-Apr-2012	From Version 20 to 21	Changed	Change made in the Models section only.
22-Mar-2012	From Version 19 to 20	Changed	Changes made to the Models and Technical Specifications sections.
06-Mar-2012	From Version 18 to 19	Changed	Changes made throughout the entire QuickSpec.
20-Oct-2011	From Version 17 to 18	Changed	Changes made in the North America and Canada versions only.
29-Aug-2011	From Version 16 to 17	Removed	Removed SATA Hot Plug SFF (2.5-inch) Entry (ETY) Drives
20-Jun-2011	From Version 15 to 16	Changed	Service and Support was completely revised and HP 3TB 3G SATA 7.2K rpm LFF Midline and Non-hot Plug Midline Drives and HP 500GB 3G SATA 7.2K rpm SFF Non-hot Plug Entry Drive were added.
25-Apr-2011	From Version 14 to 15	Removed	HP 250GB 3G SATA 7.2K rpm SFF Midline Drive was

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Summary of Changes

			removed from Models and Technical Specifications sections.
08-Apr-2011	From Version 13 to 14	Changed	Minor edit was made in Technical Specifications.
06-Apr-2011	From Version 12 to 13	Changed	Seek Time and Physical Configuration were revised for the HP 1TB 3G SATA 7.2K rpm SFF Hot Plug Midline Hard Drive in Technical Specifications.
05-Apr-2011	From Version 11 to 12	Added	HP 250GB and 1TB 3G SATA 7.2K rpm SFF Hot plug Midline 1yr Warranty Hard Drives were added throughout.
14-Jun-2011	From Version 10 to 11	Changed	Changes made in the North America and Canada versions only.
05-Oct-2010	From Version 9 to 10	Added	Service and Support section was added.
21-Jun-2010	From Version 8 to 9	Removed	HP 750GB 3G SATA 7.2k rpm LFF Midline and Non-hot Plug Midline 1yr Warranty Hard Drives and HP 250GB 3G SATA 7.2k rpm LFF Midline and Non-hot Plug Midline 1yr Warranty Hard Drives were removed.
01-Apr-2010	From Version 7 to 8	Changed	Changes made in the Technical Specifications section only.
16-Feb-2010	From Version 6 to 7	Added	HP 2TB 3G SATA 7.2k rpm Midline 1yr Warranty and Non-hot Plug Midline 1y Wty Hard Drives, HP 1TB 3G SAS 7.2k rpm Non-hot Plug Midline 1y Wty Hard Drive and HP 250GB 2G SATA 7.2k rpm Entry 1yr Warranty and Non-hot Plug Entry 1y Wty Hard Drives were added to Models.
13-Jul-2009	From Version 5 to 6	Changed	Completely revised Models throughout the QuickSpec, as well as made other minor additional edits within the Overview section.
09-Dec-2008	From Version 4 to 5	Changed	Completely revised the Pre-Failure Alert section in the Standard Features.
15-Sep-2008	From Version 3 to 4	Changed	The Models in the Overview and Technical Specifications sections were rewritten.
16-May-2008	From Version 2 to 3	Changed	Change made in the Technical Specifications sections.
12-May-2008	From Version 1 to 2	Changed	Changes made throughout the Overview and Technical Specifications sections.