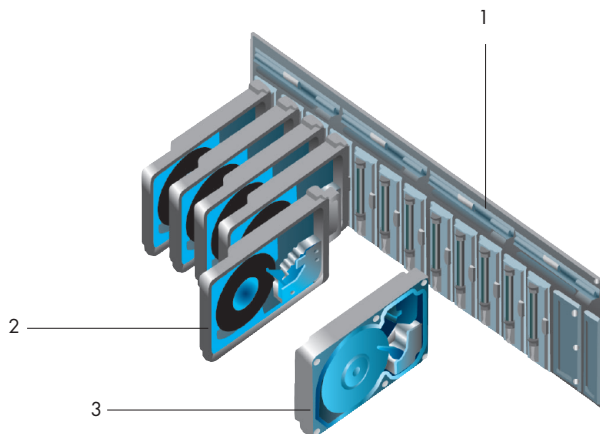


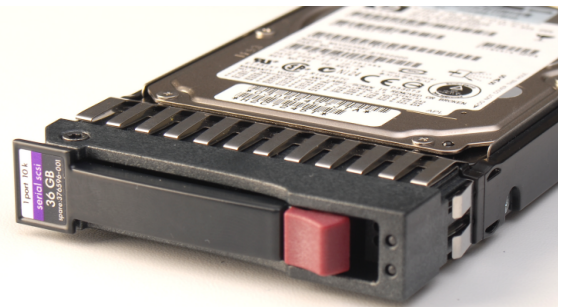
HP ProLiant servers

Serial attached technology overview



Commonality—SAS architecture accommodates Direct Attached Storage Devices for both SAS and SATA disk drives.

1. System backplane
2. SAS drives
3. SATA drives



HP serial attached technology offers flexibility, scalability, performance and reliability.



Serial attached SCSI drives (SAS) are the enterprise drive of choice.

Typical applications include: workload intensive environments such as database, e-mail, file and print. With the new SAS technology, HP helps customers store and manage information better. Serial Attached SCSI (SAS) drives -the latest evolution of SCSI- can be used for mission-critical or performance-oriented applications. SAS drives are supported by a 3-year limited warranty.

Serial attached ATA drives (SATA) are the entry level, light-duty cycle drive of choice.

Typical applications include: front-end server environments such as log file, OS and nearline storage opportunities. SATA drives are also used for disk backup, mirroring or non-mission-critical reference data. SATA drives are supported by a 1-year limited warranty.

Both SATA and SAS drives can co-exist together on the same backplane within an HP ProLiant server or in an HP drive enclosure such as the HP StorageWorks Modular Smart Array50 (MSA50), offering you the performance, reliability and flexibility to meet your most stringent data center needs.

Small form factor SAS drives: 36GB, 72GB and 146GB¹ capacities at 10,000 rpm (2.5" form factor)

- Reliability
 - Designed for 24x7 mission-critical applications
 - 16% greater MTBF than 3.5" drives
- Performance
 - Improved seek time
 - Improved sustained transfer rates
 - Bandwidth scales with each disk drive
- Efficiency
 - Half the power consumption of 3.5" drives
 - Smaller form factor enabling better airflow
- Capacity
 - More drive bays per system
 - More spindles per platform

Large form factor SAS drives: 36GB, 72GB and 146GB capacities at 15,000 rpm (3.5" form factor)

- Performance
 - Serial point-to-point connections

SATA drives: 60GB capacity at 5,400 rpm (2.5" form factor). 80GB, 160GB, 250GB & 500GB at 7,200 rpm (3.5" form factor)

- Entry-level drive
 - Light-duty cycle, non-mission-critical applications

Hard Disk drive compatibility				
HP ProLiant Server model	Small form Factor (2.5")		Large form Factor (3.5")	
	SAS	SATA	SAS	SATA
ML150 G3			• ²	•
ML310 G3 ³			• ²	•
ML350 G4p ³			• ²	•
ML350 G5 (Entry)			•	•
ML350 G5 (Base)	•	•		
ML370 G4 ³	•	•		
ML370 G5	•	•		
ML570 G3 ³	•	•		
ML570 G4	•	•		
DL140 G3 ³			• ⁴	• ⁵
DL320 G4			• ²	•
DL360 G4p	• ⁶	•		• ⁷
DL360 G5	•	•		
DL380 G4 ⁶	•	•		
DL380 G5	•	•		
DL385 ³	•	•		
DL385 G2	•	•		
DL580 G3 ⁶	•	•		
DL580 G4	•	•		
DL585 ^{2,8}	•	•		
DL585 G2	•	•		
BL20p G4	•	•		
BL460c	•	•		
BL480c	•	•		

Hard Disk drive selector				
Capacity	Small form Factor (2.5")		Large form Factor (3.5")	
	SAS	SATA	SAS	SATA
36GB	375859-B21		375868-B21	
72GB	375861-B21		375870-B21	
146GB	431958-B21 ¹		375872-B21	
60GB		379306-B21		
80GB				349237-B21
160GB				349238-B21
250GB				349239-B21
100GB				395473-B21

Serial Attached SCSI features and benefits

Feature	Benefits
Thinner cable and fewer signals	<ul style="list-style-type: none"> Improved chassis airflow and cooling resulting in easier cable routing for density Faster HDD access times and improved IOPS
Disk/backplane interoperability	<ul style="list-style-type: none"> Customer flexibility and scalability Simplifies IT support
Leverages industry standards and current software stack	<ul style="list-style-type: none"> Faster time to market and ease of transition Improved interoperability performance
3 Gb /s performance	<ul style="list-style-type: none"> Improved overall bandwidth Growth roadmap to 12 Gb/s resulting in investment protection
Smaller connectors	<ul style="list-style-type: none"> Small form factor drives
Point-to-point topology	<ul style="list-style-type: none"> Dedicated, scalable throughput resulting in improved IOPS
Prefailure warranty	<ul style="list-style-type: none"> Allows scheduled system downtime
Cyclical redundancy checking	<ul style="list-style-type: none"> Improved data integrity

For more information visit www.hp.com/go/serial



¹ Available October 2006. ² Requires SAS controller. ³ Serial models. ⁴ Hot Plug models. ⁵ See server specs for Non Hot-Plug drives. ⁶ SAS models. ⁷ SATA models. ⁸ Requires 379090-B21 [8 drive SAS cage].