HGST
a Western Digital brand

4U60 Storage Enclosure

Features

- Up to 60 integrated Ultrastar® drive modules
  - Available with 512e or 4Kn sector size (by part number)
  - Available option to configure up to 8 Ultrastar SSDs to create separate performance tiers within the enclosure
  - Available with SAS drives for HA application or with SATA drives for cost optimized applications
- Host connectivity 2 x SAS QSFP+ receptacles per IO Module; optional connectivity cables are available
  - QSFP+ to HD mini SAS cables for host
  - QSFP+ to QSFP+ cables for daisy-chaining*
- Hot Swappable: two power supplies (with integrated fans), drive modules, and IO modules
- Fully compliant with SAS 3.0 specification for operation up to 12Gbps
- Optional cable management arm eliminates tangled cables during servicing of hot-swappable CRUs
- SCSI Enclosure Services (SES-3)
- Microsoft Certified for Windows Server 2012 & Windows Server 2012 R2
- 5-year limited warranty on Ultrastar HDD modules, 3-year limited warranty on all other components

Up to 4 storage enclosures supported for daisy-chaining

The HGST 4U60 Storage Enclosure is a high-density, scalable, and cost-effective design, up to 60 Ultrastar® 3.5-inch drive modules (in multiples of 12) in a 4U enclosure. It offers 2x2x4-lane SAS 12Gb/s performance, high availability (HA), and hot-swappable components. The design is targeted towards data centers that need a dense solution with HA capabilities, while maintaining a low power profile.

4U JBOD
Up to 60 Ultrastar drive modules
Available with 4 drive module capacities[1]: 10TB, 8TB, 6TB and 4TB

Specifications

Capacity / Physical Size		
Capacity[1]		600TB with 10TB drive modules
Height		174.8 mm (6.88 in.) – 4 Rack Units
Width		424 mm (16.69 in.)
Depth		983 mm (38.7 in.) – including cable management
Weight	600TB / 480TB	89.81 kg (198 lbs.) – fully configured with 60 helium drive modules
	360TB / 240TB	93.71 kg (208 lbs) – fully configured with 60 air drive modules

Power and Cooling: Operating
Two 1,650W PSUs, hot swap and redundant
200-240VAC auto-ranging, 47Hz-63Hz input (high line power only)
N+1 redundant fans (fans integrated in PSU)

Environmental	OPERATING	NON-OPERATING
Temperature range	5° to 40°C (helium drives), 5° to 35°C (air drives)	-30° to 60°C
Humidity	8% to 80% (non-condensing)	8% to 80% (non-condensing)
Shock	3.5g 6ms Pulse vertical shock	8g 6ms Trapezoidal
Vibration	Random 0.25 Grms, 5-10Hz 0.05 g sine wave sweep, 10-300Hz	Random 0.6 Grms 10-300Hz
Acoustics	<7.5dB LwA @ 23ºC	

[1] One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drives, the operating system and other factors.

Available Products

4U60 Storage Enclosure (2x2x4 SAS 12Gb/s), with **SAS** HDD Modules

Part Number	Capacity	Sector Size	Encryption*	Description
1ES0091	600TB	512e	ISE	Fully populated enclosure with 60 Ultrastar He^{10} 10TB HDD Modules
1ES0093	600TB	512e	SE	Fully populated enclosure with 60 Ultrastar He^{10} 10TB HDD Modules
1ES0092	600TB	512e	TCG	Fully populated enclosure with 60 Ultrastar He^{10} 10TB HDD Modules
1ES0094	600TB	4Kn	ISE	Fully populated enclosure with 60 Ultrastar He^{10} 10TB HDD Modules
1ES0096	600TB	4Kn	SE	Fully populated enclosure with 60 Ultrastar He^{10} 10TB HDD Modules
1ES0095	600TB	4Kn	TCG	Fully populated enclosure with 60 Ultrastar He^{10} 10TB HDD Modules
1ES0034	480TB	512e	ISE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0031	480TB	512e	SE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0063	480TB	512e	TCG	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0035	480TB	4Kn	ISE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0033	480TB	4Kn	SE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0059	360TB	512e	ISE	Fully populated enclosure with 60 Ultrastar 7K6000 6TB HDD Modules
1ES0058	360TB	512e	SE	Fully populated enclosure with 60 Ultrastar 7K6000 6TB HDD Modules
1ES0068	360TB	512e	TCG	Fully populated enclosure with 60 Ultrastar 7K6000 6TB HDD Modules
1ES0061	360TB	4Kn	ISE	Fully populated enclosure with 60 Ultrastar 7K6000 6TB HDD Modules
1ES0060	360TB	4Kn	SE	Fully populated enclosure with 60 Ultrastar 7K6000 6TB HDD Modules
1ES0055	240TB	512e	ISE	Fully populated enclosure with 60 Ultrastar 7K6000 4TB HDD Modules
1ES0054	240TB	512e	SE	Fully populated enclosure with 60 Ultrastar 7K6000 4TB HDD Modules
1ES0067	240TB	512e	TCG	Fully populated enclosure with 60 Ultrastar 7K6000 4TB HDD Modules
1ES0057	240TB	4Kn	ISE	Fully populated enclosure with 60 Ultrastar 7K6000 4TB HDD Modules
1ES0056	240TB	4Kn	SE	Fully populated enclosure with 60 Ultrastar 7K6000 4TB HDD Modules
1ES0100	192TB	512e	ISE	Partially populated enclosure with 24 Ultrastar He^8 8TB HDD Modules
1ES0117	192TB	512e	SE	Partially populated enclosure with 24 Ultrastar He^8 8TB HDD Modules
1ES0101	144TB	512e	ISE	Partially populated enclosure with 24 Ultrastar 7K6000 6TB HDD Modules
1ES0102	144TB	512e	SE	Partially populated enclosure with 24 Ultrastar 7K6000 6TB HDD Modules
1ES0103	96TB	512e	ISE	Partially populated enclosure with 24 Ultrastar 7K6000 4TB HDD Modules
1ES0104	96TB	512e	SE	Partially populated enclosure with 24 Ultrastar 7K6000 4TB HDD Modules

4U60 Storage Enclosure (2x2x4 SAS 12Gb/s), with **SATA** HDD Modules

Part Number	Capacity	Sector Size	Encryption*	Description
1ES0079	480TB	512e	ISE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0080	480TB	512e	SE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0081	480TB	512e	SED	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0082	480TB	4Kn	ISE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0083	480TB	4Kn	SE	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules
1ES0084	480TB	4Kn	SED	Fully populated enclosure with 60 Ultrastar He^8 8TB HDD Modules

* Encryption options: TCG = Trusted Computing Group, SE = Secure Erase, ISE = Instant Secure Erase, SED = Self-encrypting Drive with Bulk Data Encryption

For a complete list of available HDD and SSD drive modules and accessories, see the P/N Selector tab at www.hgst.com/4U60.
Contact your HGST Sales representative for information on how to order.