Western Digital

Product Brief

Ultrastar® Data102 3000 Series Hybrid Storage Platform

The Next Generation External Storage Platform

Designed for High Density, Flexibility, and Reliability

The Ultrastar Data102 3000 Series Hybrid Storage Platform is a key element of next-generation disaggregated storage and software-defined storage (SDS) systems, delivering high density and the flexibility to balance performance with cost. The storage platform provides immense amounts of raw storage in a compact and efficient form factor. The Ultrastar Data102 3000 is designed to future proof your investment, with support for emerging technologies such as 24Gb/s SAS host connectivity.

Building on 50+ Years of Storage Design Experience

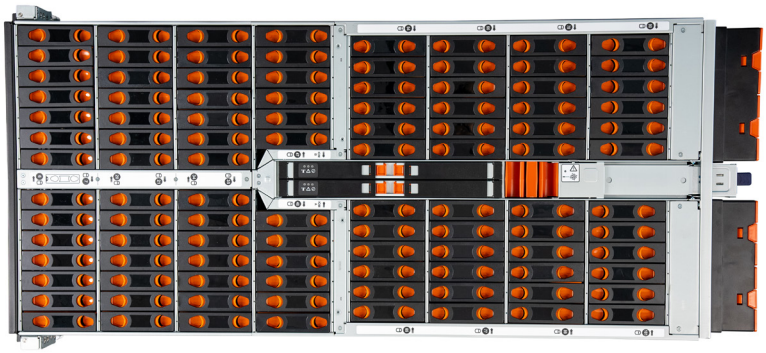
Conventional dense disk shelves frequently suffer from performance degradation due to induced vibration from adjacent drives. Traditional platforms also have thermal challenges as the cooling air passes over successive rows of drives, losing effectiveness as it is heated up along the airflow path. Developing storage devices and platforms side-by-side, we address these challenges from Silicon to Systems Design, a set of technologies focused on a holistic view of devices, platform, and their interactions. The first two of these innovative technologies are IsoVibe™ and ArcticFlow™. IsoVibe reduces vibration-induced performance degradation, while ArcticFlow overcomes the cooling issues by introducing cool air into the middle of the platform. Both these technologies contribute to long-term reliability, enabling our five-year limited warranty on the entire platform.

Ideal for Enterprise and Cloud Applications

This platform addresses the demanding storage needs of enterprise customers, storage OEMs, cloud service providers and resellers/integrators that require dense, shared HDD storage. The Ultrastar Data102 3000 Hybrid Storage Platform provides the flexibility to specify the HDD combinations to balance capacity, performance and cost.

Features

- Up to 102 Ultrastar HDDs (SAS or SATA)
- Up to 2.65PB[1] of raw storage[2] in 4U
- Up to 4 units may be daisy-chained for a total raw capacity of 10.6PB
- Patented IsoVibe technology ensures maximum performance even in heavy workloads
- Innovative cooling architecture leveraging ArcticFlow technology
- Dual-port SAS for high availability or single-port SATA for cloud-like applications and economics
- Up to 12 x 24Gb/s SAS-4 host connections
- Enterprise-grade redundant and hot-swappable Power Supply Units (PSU), I/O Modules (IOM), Host Expander Modules (HEM), and fans
- Rack-mounted top cover for quick and easy service



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IsoVibe

IsoVibe Patented Vibration Isolation Technology

Precise cuts in the baseboard provide suspension for the drives in the chassis, isolating them from transmitted vibration. The result is that consistent performance is maintained, even when all the drives are working hard.

ArcticFlow

Innovative ArcticFlow Thermal Zone Cooling Technology

By introducing cool air into the center of the chassis, drives operate at lower and more consistent temperatures than conventional systems. This results in lower fan speeds, reduced vibration, lower power consumption, quieter operation and ultimately higher reliability.

Resource Manager

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A GUI-based tool that enables real-time monitoring and management of the platform and provides a consolidated dashboard displaying the most critical information including, platform configuration, health monitoring, and maintenance.

Specifications

Max. Drives	102 x 3.5in drives
Drive Interface	12Gb/s SAS 6Gb/s SATA
Available Drive Capacities	HDD up to 24TB CMR or 26TB SMR
Host Interface	Dual, redundant 24Gb/s HEMs, 6 Mini-SAS HD ports per HEM
Weight	Product without drives: 31.8kg / 70lbs Product with 102 HDDs: 116.58kg / 257lbs
LED Indicators	Front: Power, ID, Fault Rear: ID Drive: Fault
Physical Dimensions	Height: 175mm / 6.89in Width: 448.82mm / 17.67in Depth: 1048.52mm / 41.28in Depth in Rack: Max of 1197mm / 47.13in w/dual CMA
Management	SCSI Enclosure Services (In-Band) Redfish-based API (Out-of-Band, via RJ45) Resource Manager (Out-of-Band, via RJ45) IPMI Support (Out-of-Band, via RJ45)
Power Options	Platinum: Dual 100-240V AC, 1600W PSUs[3] Titanium: Dual 100-240V AC, 1600W PSUs[3]
Cooling	4 enclosure fans, front-to-rear system cooling with zero-loss backflow prevention 1 I/O Module Fan Dual PSUs with built-in fans
Environmental	Operating Temperature: 5°C to 35°C Non-op Temperature: -20 to 70°C Humidity: 8 to 90% relative humidity Operating Altitude: -300m to 3048m / -984 ft to 10,000 ft Sound Power: < 8.0Bels or 80.0dB @ 23±2°C
Serviceability	Cable-free hot-swappable IOMs, PSUs, HEMs, Fans, and Drives

[1] One terabyte (TB) is equal to one trillion bytes and one petabyte (PB) is equal to 1,000 TB. Actual user capacity may be less due to operating environment.
[2] Ultrastar Data102 3000 Series Hybrid Storage Platform total raw capacity of 2.24PB using 22TB CMR HDDs and 2.65PB using 26TB SMR HDDs.
[3] Low-line voltage AC 100-180V for Platinum and Titanium PSUs is supported for reduced capacities.

How to Read Model Number

Example: Ultrastar Data102 3231, 2nd Generation with Dual IOM SAS, 6x HEM 24G, and 22TB CMR HC570

1st digit = JBOD Generation
- 3: Ultrastar Data102 2nd Generation

2nd digit = Interface
- 1: Single IOM SATA
- 2: Dual IOM SAS

3rd digit = Connectivity
- 1: 2x HEM 24G
- 2: 4x HEM 24G
- 3: 6x HEM 24G

4th digit = HDD Generation
- 1: 22TB CMR HC570
- 2: 26TB SMR HC670
- 3: 18TB CMR HC550
- 4: 16TB CMR HC550
- 5: 22TB CMR HC580
- 6: 24TB CMR HC580
- 7: 26TB SMR HC680
- 8: 27TB SMR HC680
- 9: 28TB SMR HC680

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