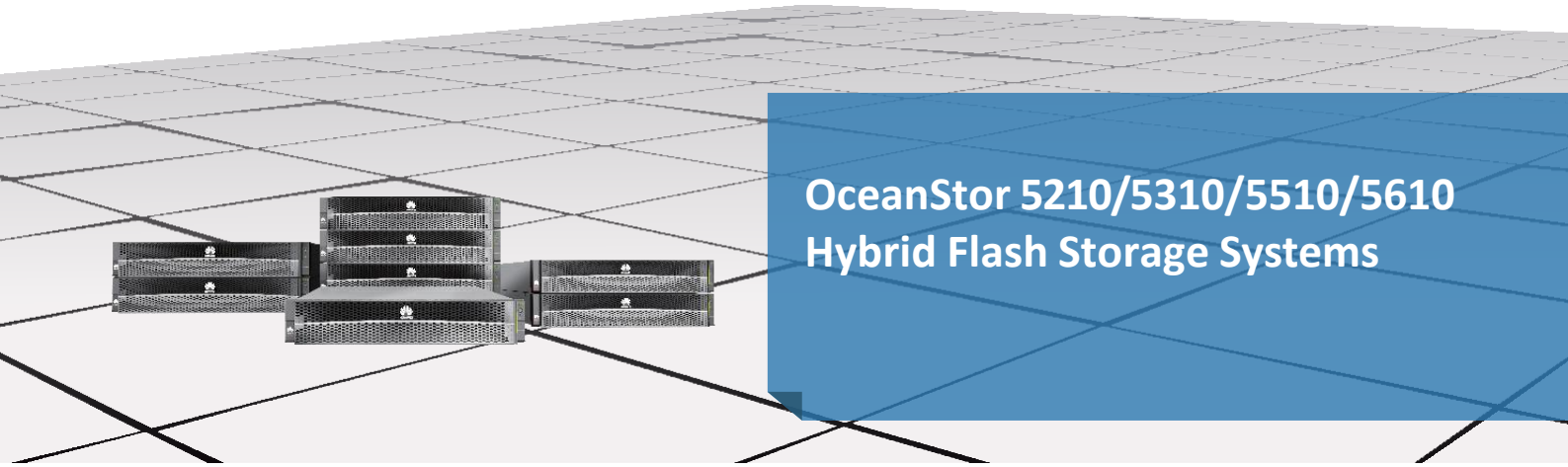
Data Sheet

OceanStor 5210/5310/5510/5610 Hybrid Flash Storage Systems



Huawei OceanStor 5210/5310/5510/5610 Hybrid Flash Storage Systems are designed for future data centers. Designed to help users achieve their business goals, they adopt Huawei's proprietary algorithms to efficiently deploy data across media, fully utilizing the SSD space to accelerate mission-critical data. Their comprehensive convergence and value-added features deliver leading system efficiency and reliability, while the built-in Insight module provides intelligent prediction. The systems supercharged by the features provide diversified storage services to users, ideal for the finance, government, manufacturing, education, healthcare, energy, and media and entertainment sectors.

Endless Evolution

Huawei OceanStor 5210/5310/5510/5610 storage systems support hybrid workloads such as blocks, files, virtualization, and containers, which meets the users' elastic service development requirements, improves storage resource utilization, and effectively reduces the total cost of ownership (TCO). In addition, balanced SAN and NAS services, supercharged by the Hyper and Smart features, provide diversified data protection and efficiency improvement capabilities for block and file systems. This provides users with comprehensive services.

Industry's only gateway-free active-active solution for both SAN and NAS reduces the number of faulty nodes, simplifies deployment, and improves system reliability. In addition, the active-active solution implements load-balancing active-active mirroring and non-disruptive cross-site failover, freeing users from the worry of system breakdown. What's more, the geo-redundant 3DC and 4DC data recovery (DR) solutions are also optional for even higher reliability.

The combination of private and public clouds, cloud backup, and container services has supercharged the user's smooth migration of data to the cloud.

The SAN + NAS ransomware protection solution that features the Air Gap technology and high-density snapshots can effectively defend against ransomware attacks and support fine-grained data restoration*.

The industry's only Storage + Optical Connection Coordination (SOCC) solution ensures efficient mitigation of active-active/replication link sub-health issues and completes link switchover within 2 seconds.

Flash-Like Performance

The global cold/hot data perception and data collaboration algorithms support self-learning in all scenarios. These algorithms are used to detect changes in service models and cold/hot data, helping promptly locate hot data in all scenarios.

Elastic convergence of cache and tiers eliminates the difficulties encountered when cache and tier storage resources are separated. This fuels the hot data acceleration, resulting in optimal data layout and simplified configuration.

Redirect-on-write (ROW) large block sequential write: Multiple small block discrete writes are aggregated into one consecutive large block write, reducing write amplification and ensuring stable write performance in all RAID arrays.

Low-latency RDMA connections among multiple controllers and fully-balanced active-active architecture enable a single LUN to deliver more than 90% of the system performance.

End-to-end NVMe architecture: Storage systems support 64 Gbps FC-NVMe/25 Gbps RoCE at the front end and 100 Gbps RDMA at the back end, which realizes end-to-end data acceleration and enables latency as low as 0.05 ms.

The global scale-out file system distributes subdirectories on multiple controllers, which relieves the performance pressure of frequent access to a large number of small file directories. Two layouts of metadata sequence tables and hash tables improve the system OPS by 30%.

Cost Effectiveness

Fewer SSDs and NL-SAS disks provide equivalent disk performance as SSDs + SAS or SSDs + SAS + NL-SAS.

Data flows from edge to core across storage systems (high-end, mid-range, entry-level) and convergence of all-flash, hybrid flash, and backup storage reduce storage costs because no gateway or additional software is required.

Predictable, scalable, and high-performance storage infrastructure meets the requirements of unpredictable business growth. Huawei OceanStor 5210 storage system support a maximum of 8 controllers and OceanStor 5310/5510/5610 storage systems support a maximum of 16 controllers, resulting in a linear increase of IOPS and storage capacity.

DME interconnects with mainstream IT service management platforms like Ansible and ServiceNow, reducing O&M costs.

Technical Specifications

Model	OceanStor 5210	OceanStor 5310	OceanStor 5510	OceanStor 5610
Hardware Specifications				
Maximum Number of Controllers	8	16	16	16
Maximum Cache (Dual-Controller; Expands with Controllers)	128 GB- 512GB	128 GB to 2 TB	384 GB to 4 TB	768 GB to 8 TB
Supported Storage Protocols	FC, iSCSI, NFS, CIFS, SMB, NDMP and S3	FC, iSCSI, NFS, CIFS, FC-NVMe, NFS over RDMA, NVMe over RoCE, FTP*, NDMP, S3 and NVMe over TCP	FC, iSCSI, NFS, CIFS, FC-NVMe, NFS over RDMA, NVMe over RoCE, FTP*, HTTP*, NDMP, S3, SFTP* and NVMe over TCP	
Front-End Port Types	8/16/32/64 Gbps FC, 1/10/25 Gbps Ethernet	8/16/32/64 Gbps FC, 1/10/25/40/100 Gbps Ethernet, 25/100 Gbps RoCE	8/16/32/64 Gbps FC, 1/10/25/40/100 Gbps Ethernet, 25/100 Gbps RoCE	
Back-End Port Types	SAS 3.0	100 Gbps RDMA/SAS 3.0		
Maximum Number of Hot-Swappable I/O Modules per Controller Enclosure	4	6	12	
Maximum Number of Front-End Ports per Controller Enclosure	28	40	48	
Disk Types	SAS TLC SSD, SAS, NL-SAS	NVMe TLC SSD, SAS TLC SSD, SAS, NL-SAS		
Software Specifications				
RAID Levels	RAID 10*, RAID 5, RAID 6, and RAID-TP (tolerating simultaneous failure of 3 disks)			
Value-Added Features	SmartAcceleration, SmartThin, SmartQuota, SmartMulti-Tenant, SmartQoS, SmartVirtualization, SmartMigration, SmartCompression, SmartDedupe, SmartMigration for NAS, SmartMobility, SmartMove, HyperSnap, HyperReplication, HyperClone, HyperMetro, HyperCDP, HyperLock, HyperDetect*, HyperDetect for SAN*, HyperEncryption, HyperLink*, CloudVxLAN, CloudBackup*, NFS+			
Storage Management Software	DeviceManager, UltraPath, DME IQ			
Electrical Specifications				
Power Supply	100 V to 240 V AC±10%, 192 V to 288 V DC, –38.4 V to –75 V DC			200 V to 240 V AC±10%, 192 V to 288 V DC
Dimensions (H x W x D)	2.5-inch controller enclosure: 520 mm x 410 mm x 86.1 mm 3.5-inch controller enclosure: 600 mm x 447 mm x 86.1 mm	2.5-inch controller enclosure: 86.1 mm x 447 mm x 520 mm 3.5-inch controller enclosure: 86.1 mm x 447 mm x 600 mm NVMe controller enclosure*: 86.1 mm × 447 mm × 620 mm	2.5-inch controller enclosure: 86.1 mm x 447 mm x 820 mm 3.5-inch controller enclosure: 86.1 mm x 447 mm x 900 mm NVMe controller enclosure*: 86.1 mm x 447 mm x 920 mm	
	SAS disk enclosure: 86.1 mm x 447 mm x 410 mm NL-SAS disk enclosure: 175 mm x 447 mm x 488 mm	SAS disk enclosure: 86.1 mm x 447 mm x 410 mm NVMe disk enclosure*: 86.1 mm x 447 mm x 620 mm NL-SAS disk enclosure: 175 mm x 447 mm x 488 mm		

*Contact Huawei sales staff if you need this specification.

Technical Specifications

Model	OceanStor 5210	OceanStor 5310	OceanStor 5510	OceanStor 5610
Weight (Excl. Disk Units)	2.5-inch controller enclosure: 23.75 kg 3.5-inch controller enclosure: 24.1 kg	2.5-inch controller enclosure: 23.75 kg 3.5-inch controller enclosure: 24.1 kg NVMe controller enclosure*: 21.25 kg	2.5-inch controller enclosure: 38.05 kg 3.5-inch controller enclosure: 38.5 kg NVMe controller enclosure*: 40.65 kg	
	2.5-inch SAS disk enclosure: 13.4 kg 3.5-inch SAS disk enclosure: 26.5 kg	2.5-inch SAS disk enclosure: 13.4 kg 3.5-inch SAS disk enclosure: 26.5 kg NVMe disk enclosure*: 24.95 kg		
Operating Temperature	–60 m to +1800 m altitude: 5°C to 35°C (cabinet) or 40°C (enclosure) 1800 m to 3000 m altitude: The maximum temperature threshold decreases by 1°C for every altitude increase of 220 m			
Operating Humidity	10% to 90% RH			

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To learn more about Huawei storage, please contact your local Huawei office or visit the Huawei Enterprise website: https://e.huawei.com.

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