Data Sheet

OceanStor 5310/5510 Capacity Flash Storage

Cost efficiency

Compared with HDD products of the same capacity, Huawei OceanStor 5310/5510 Capacity Flash Storage systems reduce power consumption by 60% and physical space by 92%, delivering excellent energy savings.

Industry-leading data and control plane separated architecture and unique NFS+, the NAS multipathing software, deliver the highest performance among same-level products.

Three data reduction technologies deliver a 3:1 data reduction ratio for SAN and 1.6:1 for NAS.

Smooth upgrade

OceanStor 5310/5510 Capacity Flash Storage systems support online homogeneous block and file migration and heterogeneous file migration with minute-level interruption, helping enterprises achieve smooth service migration.

A single OceanStor 5310/5510 Capacity Flash Storage system can meet a wide variety of needs as it supports block, file, and object storage and vSphere APIs for Array Integration (VAAI) and Container Storage Interface (CSI) plugins.

Comprehensive intelligent management through data management and intelligent analysis tools supports performance evaluation 60 days in advance and capacity expansion evaluation 365 days in advance, helping enterprises with early upgrade planning and intelligent O&M.

Robust resilience and reliability

Intra-disk intelligent single level cell (SLC) caching technology reduces write amplification of capacity-optimized SSDs and prolongs their lifespan by 60%.

Ransomware protection measures, such as honey files, ransomware detection, secure snapshots, and Air Gap, protect users from ransomware attacks.

Integrated SAN and NAS gateway-free active-active architecture prevents breakdowns of bussiness-critical applications.

Huawei OceanStor 5310/5510 Capacity Flash Storage systems run on all-flash hardware systems with FlashLink® intelligent algorithms, producing excellent, innovative capacity density and efficiency for enterprise services.

Designed for sectors such as government, finance, healthcare, education, energy, and manufacturing, Huawei OceanStor 5310/5510 Capacity Flash Storage systems support applications such as virtualization, service tiering, resource integration, file sharing, disaster recovery (DR), backup, and archiving. The systems provide all-flash storage suited to all industries to help customers maximize return on investment (ROI).

Product Highlights

Cost efficiency

Energy saving

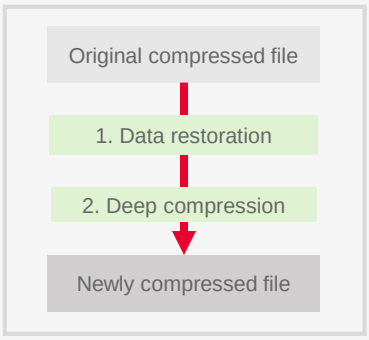
Energy consumption of storage products directly increases O&M costs. Increasing data volume entails higher investment in devices with high energy consumption. Therefore, energy-saving storage devices are essential. Huawei 5310/5510 Capacity Flash Storage systems use industry-leading capacity-optimized SSDs with high density to reduce energy consumption by 60% and space used by 92% compared with HDD products of the same capacity. This significantly slashes energy consumed by data centers, enabling enterprises to achieve higher efficiency at lower costs. The systems are ideal for all enterprises, especially those whose equipment rooms have power limits.

30% higher performance

Huawei OceanStor 5310/5510 Capacity Flash Storage systems use end-to-end self-development capabilities to run on an architecture that separates the data and control planes. By directly connecting the data layer to the storage system and bypassing the CPU, the systems deliver lower latency while greatly improving performance. In addition, the products provide the industry's unique NFS+, the NAS multipathing software, to deliver 4x higher file performance and 30% higher general performance than similar mainstream storage options, providing excellent performance experience for customers.

*Contact Huawei sales staff if you need this specification.

OceanStor 5310/5510 Capacity Flash Storage



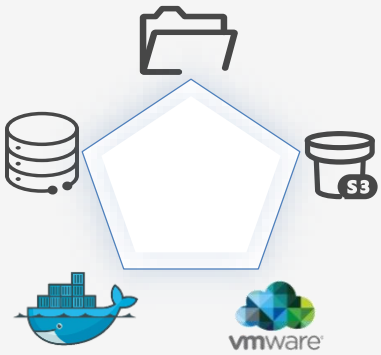
Multiple data reduction technologies

To maximize ROI, enterprises tend to store more data using the same investments. Huawei OceanStor 5310/5510 Capacity Flash Storage systems provide up to 1,024 PiB effective capacity with multiple data reduction technologies. This means they achieve a 3:1 data reduction ratio for SAN and 1.6:1 for NAS, enabling optimal data efficiency.

The systems use multiple deduplication technologies for similar data to achieve a better data reduction ratio than peer vendors. In addition, the products support metadata deduplication, which compares metadata changes at different time points to reduce metadata flushing to disks and improve data processing efficiency. The systems innovatively use scenario-specific file compression algorithms and support in-depth secondary compression of compressed data in some scenarios. With the vector parallel encoding technology, the compression ratio is improved by 20%, helping enterprises maximize the utilization of storage space.

Smooth upgrade

Smooth migration



An increasing number of enterprises are focusing on service continuity during system upgrades, especially smooth function upgrades. Huawei OceanStor 5310/5510 Capacity Flash Storage systems provide a smooth migration solution for business-critical services. The solution supports online homogeneous block and file migration, without affecting upper-layer services. It also supports heterogeneous file migration with minute-level service interruption, which shortens the service downtime, prevents long-time service interruptions, and enhances enterprise data resilience during system upgrades.

Comprehensive functions

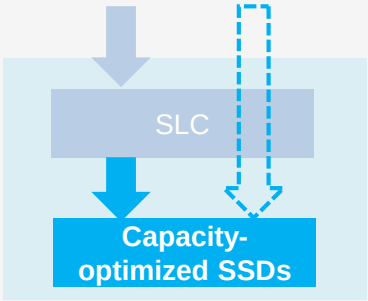
The all-flash upgrade of enterprises transforms databases and virtualization, as well as files and containerization. Huawei OceanStor 5310/5510 Capacity Flash Storage systems support block, file, and object storage and VAAI and CSI plugins to meet diverse service storage requirements. One storage system can provide multiple storage services.

Intelligent O&M

Huawei OceanStor 5310/5510 Capacity Flash Storage systems support intelligent management tools and software including data management and intelligent analysis tools. This achieves comprehensive intelligent management in terms of resource planning, service provisioning, system optimization, risk prediction, and fault locating. Capacity expansion evaluation can be performed 365 days in advance and performance evaluation can be performed 60 days in advance to help enterprises better plan upgrades and intelligent storage O&M.

Robust resilience and reliability

SSD lifespan extension



SSD lifespans are limited by the number of reads and writes. Huawei OceanStor 5310/5510 Capacity Flash Storage systems use built-in SLC caching technology to separate hot and cold data. This improves storage read/write performance, alleviating lifespan issues of capacity-optimized SSDs caused by write amplification, and increasing the number of reads and writes. In this way, the lifespans of capacity-optimized SSDs are extended by 60%.

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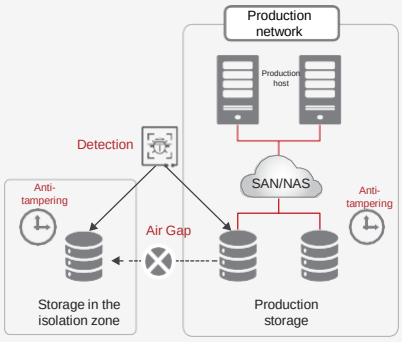

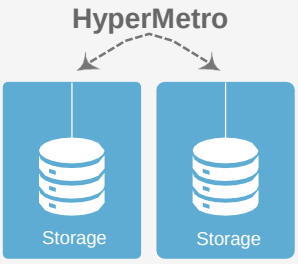

Data resilience and ransomware protection

Ransomware has become a global major cyber threat. Huawei OceanStor 5310/5510 Capacity Flash Storage systems provide SAN and NAS multi-layer protection measures, such as honey files, ransomware detection, secure snapshots, and Air Gap, to achieve comprehensive data protection. This helps achieve a 99.99% ransomware identification rate thanks to honey files and ransomware file interception before ransomware attacks, real-time ransomware detection during ransomware attacks, and comprehensive, intelligent ransomware detection and analysis after ransomware attacks. Data recovery in seconds using secure snapshots can also further reduce the impact of ransomware.

Always-on services

As digital transformation thrives, data is becoming more valuable than ever. All-flash storage systems carry bussiness-critical enterprise services, making continuity critical. Huawei OceanStor 5310/5510 Capacity Flash Storage systems use an integrated SAN and NAS gateway-free active-active solution to reduce faulty nodes, simplify system deployment, and improve system reliability. The solution also implements load balancing active-active mirroring and non-disruptive cross-site failover, preventing bussiness-critical applications from breakdowns.

Technical Specifications

Model	OceanStor 5310 Capacity Flash Storage	OceanStor 5510 Capacity Flash Storage
Hardware Specifications		
System Cache (Dual-Controller)	128–256 GB	256–2048 GB
Maximum Effective Capacity per Controller Enclosure	2 PiB	16 PiB
Supported Storage Protocols	FC, iSCSI, FC-NVMe, NVMe over RoCE, NFS, CIFS, NDMP, NFS over RDMA	FC, iSCSI, FC-NVMe, NVMe over RoCE, NFS, CIFS, NDMP, NFS over RDMA, S3*
Front-End Port Types	8/16/32/64 Gbps FC/FC-NVMe, 10/25/40/100 GbE, 25 Gbps NVMe over RoCE/NFS over RDMA	
Back-End Port Types	100 Gbps RDMA	
Maximum Number of Hot-Swappable I/O Modules per Controller Enclosure	6	12
Maximum Number of Front-End Ports per Controller Enclosure	40	48
Disk Types	15.36/30.72/61.44TB TB high-capacity palm-sized NVMe SSD	
Software Specifications		
RAID Levels	RAID 10*, RAID 5, RAID 6, RAID-TP (tolerating simultaneous failure of 3 disks)	
Value-Added Features	SmartDedupe, SmartVirtualization, SmartCompression, SmartMigration, SmartThin, SmartQoS, SmartQuota, SmartMulti-Tenant, SmartMigration for NAS, SmartMobility, SmartMove, HyperSnap, HyperReplication, HyperClone, HyperMetro, HyperLock, HyperCDP, HyperEncryption, HyperDetect*, HyperDetect for SAN*, HyperLink, CloudBackup, CloudVxLAN*, NFS+	
Storage Management Software	DeviceManager, UltraPath, DME IQ	
Electrical Specifications		
Power Supply	200 V to 240 V AC±10%, 192 V to 288 V DC	
Dimensions (H x W x D)	Controller enclosure: 86.1 mm x 447 mm x 620 mm	Controller enclosure: 86.1 mm x 447 mm x 920 mm
	Smart NVMe disk enclosure: 86.1 mm x 447 mm x 620 mm	
Weight (Incl. Disk Units)	NVMe controller enclosure: ≤ 32 kg Smart NVMe disk enclosure: ≤ 35 kg	NVMe controller enclosure: ≤ 50 kg Smart NVMe disk enclosure: ≤ 35 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: http://e.huawei.com.

Huawei Enterprise APP

Huawei IT

HUAWEI TECHNOLOGIES CO., LTD.

Bantian Longgang District

Shenzhen 518129, P.R. China

Tel: +86-755-28780808

www.huawei.com