

New-Gen OceanStor 5310/5510/5610 Hybrid Flash Storage Systems

Huawei's New-Gen OceanStor 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 5310/5510/5610 storage supports 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 deployment 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 have supercharged the user's smooth migration of data to the cloud.
- The 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 and hot data perception and data collaboration algorithms that support self-learning in all scenarios are used to detect changes in service models and cold and hot data, helping promptly locate hot data in all scenarios.
- Elastic convergence of cache and tiers resolves challenges faced in the traditional practice and fuels the hot data acceleration, which results 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 supports 32 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 distributed 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 5310/5510/5610 storage supports 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 5310	OceanStor 5510	OceanStor 5610
Hardware Specifications			
Maximum Number of Controllers	16	16	16
Maximum Cache (Dual Controllers, Grows with the Expansion of Controllers)	128 GB to 2 TB	384 GB to 4 TB	768 GB to 8 TB
Supported Storage Protocols	FC, iSCSI, NFS, CIFS, FC-NVMe, NFS over RDMA, NVMe over RoCE, FTP*, HTTP*, NDMP, S3*, SFTP*		
Front-End Channel Port Types	8/16/32 Gbps FC/FC-NVMe, 1/10/25/40/100 Gbps Ethernet, 25 Gbps NVMe over RoCE/NFS over RDMA	8/16/32 Gbps FC/FC-NVMe, 1/10/25/40/100 Gbps Ethernet, 25 Gbps/100Gbps NVMe over RoCE/NFS over RDMA	
Back-End Channel Port Types	100 Gbps RDMA/SAS 3.0		
Maximum Number of Hot-Swappable I/O Modules per Controller Enclosure	6	12	
Maximum Number of Front-End Host Ports per Controller Enclosure	40	48	
Disk Types	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 three disks)		
Value-Added Software	SmartAcceleration, SmartThin, SmartQuota, SmartMulti-Tenant, SmartQoS, SmartVirtualization, SmartMigration, SmartCompression, SmartDedupe, SmartMigration for NAS, SmartMobility, SmartMove, HyperSnap, HyperReplication, HyperClone, HyperMetro, HyperCDP, HyperLock, HyperDetect*, HyperEncryption, HyperLink*, CloudVxLAN, CloudBackup*, NFS+		
Storage Management Software	Device Manager	UltraPath	DME IQ
Electrical Specifications			
Power Supply	100V to 240V AC±10%, 192V to 288V DC, -38.4V to -75V DC		200V to 240V AC±10%, 192V to 288V DC
Dimensions (H x W x D)	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 x 447 mm x 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 NVMe disk enclosure*: 86.1 mm x 447 mm x 620 mm NL-SAS disk enclosure: 175 mm x 447 mm x 488 mm		
Weight (Excl. Disk Units)	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 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		

*Contact Huawei sales staff if you need this specification.

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



Copyright © Huawei Technologies Co., Ltd. 2023. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without the prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions

 HUAWEI, and  are trademarks or registered trademarks of Huawei Technologies Co., Ltd. Other trademarks, product, service and company names mentioned are the property of their respective holders.

Disclaimer

The content of this manual is provided "as is". Except as required by applicable laws, no warranties of any kind, either express or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose, are made in relation to the accuracy, reliability or contents of this manual.

To the maximum extent permitted by applicable law, in no case shall Huawei Technologies Co., Ltd be liable for any special, incidental, indirect, or consequential damages, or lost profits, business, revenue, data, goodwill or anticipated savings arising out of, or in connection with, the use of this manual.

HUAWEI TECHNOLOGIES CO., LTD.
Bantian Longgang District
Shenzhen 518129, P.R. China
Tel: +86-755-28780808

www.huawei.com