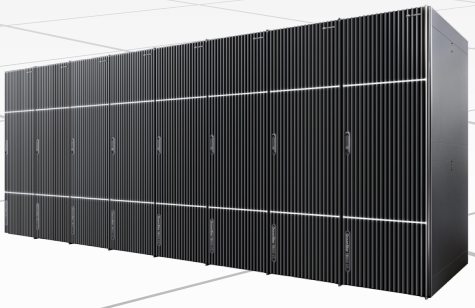

OceanStor 18500F&18800F V5 Mission-Critical All-Flash Storage Systems

OceanStor 18500F&18800F V5 mission-critical all-flash storage systems (OceanStor F V5 mission-critical storage for short) are Huawei's next-generation mission-critical all-flash arrays. They have incorporated all of the mature high availability features and enterprise-class functions of Huawei storage. Industry-leading scalability, performance, and hybrid-cloud-ready architecture enable OceanStor F V5 mission-critical storage to provide the optimal data services for enterprises along with simpler and more agile management. With top-of-industry reliability, performance, and solutions, OceanStor F V5 mission-critical storage is ideal for core enterprise applications. It fully satisfies the data storage requirements of large-database OLTP/OLAP, cloud computing and many other applications, thereby is widely applicable to sectors such as government, finance, telecommunications, energy, transportation, and manufacturing.

Product Highlights

Excellent Performance

Next-generation flash storage hardware, delivering top-of-industry performance

Industry-leading specifications

OceanStor F V5 mission-critical storage employs next-generation Intel multi-core processors, cutting-edge PCIe 3.0 buses, 12 Gbit/s SAS 3.0 high-speed disk ports, and up to 384 host ports. Supporting up to 768 GB/s system bandwidth, OceanStor F V5 mission-critical storage can support high-concurrency access to core databases with low latency.

Flexible scalability

OceanStor F V5 mission-critical storage supports high-speed enterprise-class SSD drives. A single storage system can be equipped with a maximum of 16 controllers, 16 TB of cache, and 3,200 SSDs, providing up to six million IOPS with 1ms latency as well as other industry-leading specifications.

Flash-oriented system architecture, ensuring rapid response to core services

Flash-oriented system architecture

OceanStor F V5 mission-critical storage uses Huawei's innovative flash architecture (featuring an optimized multi-core CPU, adaptive cache algorithm, self-developed SSD algorithm, and optimized drives) to achieve in-depth integration of system software and hardware. It fully utilizes the superior performance of all-flash storage to deliver superb experience of mission-critical business, helping enterprises to easily embrace the era of all-flash storage.

OceanStor F V5 mission-critical storage uses proprietary high-performance SSD controller chips with new-generation patented algorithms, providing users with reliable and high-performance SSD drives.

Proprietary flash-optimized controllers, an industry-leading mission-critical storage system architecture, and multi-controller load balancing design enable the new storage systems to provide powerful all-flash processing capabilities while fully meeting the algorithm processing requirements of all-flash systems. Moreover, advanced processor resource allocation algorithms, LDPC error correction algorithms, and RAID 2.0+ technology increase the life span of SSDs and enable fast I/O response, unleashing the potential of all-flash storage.

Solid Reliability

Cutting-edge SmartMatrix 2.0 system architecture

4-controller symmetric engine

OceanStor F V5 mission-critical storage innovatively integrates four controllers into the 6 U space of an engine. The controllers are interconnected through a passive backplane. In addition, continuous cache mirroring and back-end disk controller interconnection techniques are incorporated, offering industry-leading 4-controller redundancy. The four controllers act as a hot backup for each other. Even if three controllers fail to work at the same time, service stability is protected to maximize the continuity of mission-critical applications, preventing a single-point running status that can be seen in scenarios where traditional high-end storage systems are upgraded or a controller is faulty.

Load balancing

Load balancing is implemented among controllers, thereby accelerating application access and eliminating performance bottlenecks.

A full range of reliability technologies, helping customers achieve service continuity

Full hardware redundancy

All components and channels are redundant to prevent single points of failure. Fault detection, recovery, and isolation can be independently implemented for each component and channel, ensuring stable system running.

Unique rapid data restoration technology

Innovative block-level virtualization is employed to reduce the time needed to reconstruct 1 TB of data from 10 hours to 30 minutes. Compared with traditional storage systems, OceanStor F V5 mission-critical storage reduces the risk of data damage caused by disk failures by 95%.

DIX+PI end-to-end data protection

Based on PI and DIX, OceanStor F V5 mission-critical storage provides solutions to protect data integrity all the way from application systems to HBAs, storage systems, and disks. Such protection prevents damages to data, further protecting services.

A wide range of data protection software

The Hyper series of data protection software includes snapshot, clone, all-in-one backup, remote replication, and other data protection technologies. They protect user data locally, remotely, inside systems, and across different regions, and achieve 99.9999% availability, maximizing business continuity and data availability.

Leading converged SAN and NAS active-active solution

One OceanStor F V5 mission-critical storage array can support active-active deployment of both SAN and NAS, ensuring high availability for databases and file services. The gateway-free HyperMetro solution enables load balancing of active-active mirrors and non-disruptive cross-site takeover, ensuring zero loss of core application data and zero service interruption. Gateway-free design reduces customers' procurement spending and simplifies deployment. In addition, HyperMetro can be effortlessly upgraded to the geo-redundant layout with three data centers.

Multi-level Convergence

Powered by the latest OceanStor OS, OceanStor F V5 mission-critical all-flash storage provides converged and unified resource pools with the agility of resource scheduling, enabling free data mobility and helping enterprise IT architectures evolve to cloud-based architectures.

Convergence of all types of flash storage

Huawei has the most complete flash product portfolio and supports interconnection between different types, levels, and generations of flash storage. Convergence of data, management and O&M empowers up to six million IOPS at 1 ms latency of the flash storage arrays, while ensuring the long-term reliability of SSDs.

Convergence of SAN and NAS

SAN and NAS are converged to provide elastic storage, improve storage resource utilization, and reduce the total cost of ownership (TCO). The new OceanStor F V5 mission-critical storage not only converges SAN and NAS to support multiple types of services, but also provides industry-leading SAN and NAS performance and functions.

Convergence of storage resource pools

The built-in heterogeneous virtualization function enables OceanStor F V5 mission-critical storage to take over the storage arrays of different levels, types, and models from other mainstream vendors, and integrate them into a unified resource pool. This eliminates data silos, achieves unified resource management, and enables automated service orchestration. In addition, data can be automatically migrated from third-party storage to Huawei storage without interrupting services. Huawei's automatic migration tool reduces the migration time by 60% on average.

Convergence of multiple data centers

The converged SAN and NAS active-active solution provides cross-data center service continuity assurance and makes the networking simpler. Active-active data center deployment can be smoothly upgraded to the geo-redundant 3DC layout to achieve the highest level of service continuity protection. Customers can also deploy hierarchical data centers for the purpose of centralized disaster recovery. Currently, Huawei storage supports the backup of data from 64 subordinate data centers to a central data center.

Intelligent Services

Accelerating the cloud transformation of enterprises

Intelligent O&M

eService enables cloud-based monitoring, around-the-clock proactive monitoring, minute-level fault sensing, automatic fault reporting, and automatic ticket creation. eService can also automatically inspect every aspect of a device's status, provide cloud-ready evaluation services, automatically analyze workload characteristics, generate an analysis report with one click, recommend storage design schemes, offer intelligent trend prediction, and plan expansion in advance.

Hybrid cloud solution

Huawei offers a hybrid-cloud-based storage solution for enterprises, which implements on- and off-premises resource collaboration and data mobility. Public cloud is regarded as a storage tier. Customers can perform cross-cloud data backup and migration, achieving smooth cloud transformation of storage services.

Product Specifications

Name	OceanStor 18500F V5	OceanStor 18800F V5
Hardware Specifications		
Architecture	SmartMatrix 2.0 all-flash architecture	
Latency	< 1 ms	
Maximum number of controllers	16	
Processor	Multi-core processors	
System cache (expands with the number of controllers)	512 GB to 16 TB	1 TB to 16 TB
Supported storage protocols	Fibre Channel, FCoE, iSCSI, InfiniBand, NFS, CIFS, FTP, HTTP	
Types of front-end ports	8/16/32 Gbit/s Fibre Channel, 10 Gbit/s FCoE, 1/10/25/40/100 Gbit/s Ethernet, 56 Gbit/s InfiniBand	
Type of back-end ports	SAS 3.0 (single port 4 x 12 Gbit/s)	
Maximum number of ports per host	384	
Maximum number of disks	2,400	3,200
Disk type	Enterprise-class SSD	
Key Software Features		
Maximum number of hosts	65,536	
Maximum number of LUNs	65,536	
Data protection software	HyperSnap (snapshot), HyperClone (clone) HyperCopy (copy), HyperMirror (volume mirroring) HyperMetro (active-active arrays), HyperReplication (remote replication) HyperLock (WORM), HyperVault (all-in-one backup)	
Mission-critical business protection	SmartQoS (intelligent service quality control) SmartPartition (intelligent partitioning)	

Resource efficiency improvement software	SmartMigration (intelligent LUN migration), SmartVirtualization (intelligent heterogeneous virtualization) SmartMulti-tenant (intelligent multi-tenant), SmartQuota (quota management) SmartDedupe (intelligent deduplication), SmartCompression (intelligent compression) SmartThin (intelligent thin provisioning), SmartMotion (intelligent data motion) SmartErase (intelligent data destruction)
Storage management software	UltraPath (host multipath), BCManager (DR management) DeviceManager (single-device management software), eSight (centralized O&M management software) eService (remote maintenance management)
Compatible operating systems	AIX, HP-UX, Solaris, Linux, and Windows
Virtualization environments	Virtualization platforms: FusionSphere, VMware, XenServer, Hyper-V Value-added features: VMware VAAI/VASA/SRM, Hyper-V vSphere, vCenter
Physical Specifications	
Power supply	Cabinet: AC: 220 V/240 V/380 V, 32A
Dimensions	Maximum cabinet dimensions (including external pulleys and support feet): 600 mm (W) x 1,232 mm (D) x 2,000 mm (H)
Weight	Fully loaded weight: System cabinet: 680 kg Disk enclosure: 540 kg

For More Information

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

Huawei Enterprise APP

Huawei IT

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