

# OceanStor 5300, 5500, 5600, and 5800 V3 Mid-Range Storage Systems



OceanStor V3 mid-range storage systems

HUAWEI OceanStor 5300, 5500, 5600, and 5800 V3 mid-range storage systems (also referred to as the V3 mid-range storage systems) are next-generation unified storage products specifically designed for enterprise-class applications. Leveraging a storage operating system built on a cloud-oriented architecture, a powerful new hardware platform, and a suite of intelligent management software, the V3 mid-range storage systems deliver industry-leading functionality, performance, efficiency, reliability, and ease-of-use. They provide data storage for applications such as large-database Online Transaction Processing (OLTP)/ Online Analytical Processing (OLAP), file sharing, and cloud computing, and can be widely applied to industries ranging from government, finance, telecommunications, and energy, to media and entertainment (M&E). Meanwhile, the V3 mid-range storage systems can provide a wide range of efficient and flexible backup and disaster recovery solutions to ensure business continuity and data security, delivering excellent storage services.

## Product Features

### Storage Software Employing a Cloud-Oriented Architecture

#### Multiple Controllers

- **Scale-out capability:** The V3 mid-range storage systems allow resources to be linearly expanded online to a maximum of eight controllers, 1 TB of cache, and 5 PB of storage capacity, meeting business growth.
- **Load balancing:** The V3 mid-range storage systems implement load balancing among controllers and eliminate single points of failure to ensure high system availability and protect stability of online services. Multiple controllers concurrently process the same host service to eliminate the performance bottleneck of a single controller and significantly improve service processing efficiency.

#### Converged

- **Convergence of SAN and NAS:** SAN and NAS are converged to provide elastic storage, simplify service deployment, improve storage resource utilization, and reduce total cost of ownership (TCO). Underlying storage resource pools provide both block service and file service and shorten storage resource access paths to ensure that the two services are equally efficient.

- **Convergence of heterogeneous storage systems:** Thanks to the built-in heterogeneous virtualization function, the V3 mid-range storage systems can efficiently manage storage systems from other mainstream vendors and unify resource pools for central and flexible resource allocation.
- **Convergence of high-end, mid-range, and entry-level storage systems:** The V3 series storage systems are the only storage systems that enable high-end, mid-range, and entry-level storage systems to interwork seamlessly with one another. In this way, data can freely flow among storage products of different models without the assistance of third-party systems.
- **Convergence of SSDs and HDDs:** The advantages of traditional and solid-state storage media are combined, bringing the performance of different types of storage media into full play and striking an optimal balance between performance and cost.
- **Convergence of primary and backup storage:** The built-in backup function enables data to be efficiently backed up without additional backup software, simplifying backup solution management.

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## Intelligent

- **Multi-tenant and service level agreement (SLA):** The V3 mid-range storage systems enable storage resources to be intelligently allocated in cloud computing environments to meet the needs of enterprises and organizations. They also leverage data isolation and a range of data security policies such as data encryption and data destruction to meet varying data security requirements. They provide four service levels and allocate storage resources based on service priorities. Storage resources are first allocated to high-priority services to ensure system performance and shorten response time.
- **Smart series efficiency improvement suite:** The V3 mid-range storage systems leverage SmartTier (dynamic storage tiering), SmartMotion (intelligent data migration), and innovative SmartVirtualization (heterogeneous virtualization) to achieve vertical, horizontal, and cross-system 3D data flow, significantly improving storage resource utilization.
- **Hyper series data protection suite:** Data protection software such as remote replication, snapshot, and LUN copy is provided to meet user needs for local, remote, and multi-branch data protection, maximizing business continuity and data availability.

## Unified

- **Unified management:** The V3 mid-range storage systems provide powerful storage management software that supports global topology view, capacity analysis, performance analysis, fault diagnosis, and end-to-end service visualization to manage a wide range of devices.
- **Mobile management:** Users can use tablets and mobile phones to manage storage systems in real time. System status is sent automatically, making constant attendance by an engineer unnecessary.
- **Convenient management:** The V3 mid-range storage systems can be initially configured in five steps, which takes about 40 seconds, and expanded in two steps, which takes about 15 seconds.



## Industry-Leading Storage Hardware

- **Outstanding performance and specifications:** The V3 mid-range storage systems employ next-generation Intel multi-core processors, 16 Gbit/s Fibre Channel, 10 Gbit/s FCoE, and 56 Gbit/s InfiniBand host ports, PCIe 3.0 buses, and 12 Gbit/s SAS 3.0 disk ports, and provide up to 28 GB/s of system bandwidth to meet the requirements of bandwidth-intensive applications, such as video and other large files. They also offer million-level IOPS performance, outshining products from other vendors.
- **Exclusive SmartIO cards:** A SmartIO card supports 8 Gbit/s Fibre Channel, 16 Gbit/s Fibre Channel, 10 Gbit/s iSCSI, and 10 Gbit/s FCoE.
- **Industry-leading deduplication/compression cards:** The V3 mid-range storage systems support lossless data deduplication and compression, efficiently reducing data storage costs. In addition, they can leverage data encryption to secure data.

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## Technical Specifications

Model	5300 V3	5500 V3	5600 V3	5800 V3
<b>Controller Enclosure Specifications</b>				
Storage processors	Multi-core processors			
System cache (expanded with the number of controllers)	32 GB to 128 GB	48 GB to 384 GB	64 GB to 512 GB	64 GB to 1024 GB
Max. number of controllers	8	8	8	8
Supported storage protocols	Fibre Channel, FCoE, iSCSI, InfiniBand, NFS, CIFS, HTTP, FTP			
Front-end port types	1 Gbit/s Ethernet, 10 Gbit/s FCoE, 10 Gbit/s TOE, 16 Gbit/s Fibre Channel, 56 Gbit/s InfiniBand			
Back-end port type	SAS 3.0 (each port supporting 4 x 12 Gbit/s)			
Max. number of I/O modules per controller	2	2	8	8
Max. number of front-end ports per controller	12	12	28	28
Max. number of disks supported by two controllers	500	750	1000	1250
Disk types	SSD, SAS, NL-SAS			
Supported RAID levels	0, 1, 3, 5, 6, 10, 50			
Max. number of snapshots(LUN)	256	1024	2048	2048
Max. number of LUNs	2048	4096	4096	8192
Max. number of snapshots per file system	2048			
Max. capacity of a single file	256 TB			
<b>Key Software Features</b>				
Data protection software	HyperSnap (snapshot), HyperCopy (LUN copy), HyperClone (clone), HyperMirror (volume mirror), HyperReplication (remote replication), HyperLock (WORM)			
Mission-critical service protection	SmartQoS (intelligent QoS control), SmartPartition (intelligent partitioning), SmartCache (intelligent SSD caching)			
Resource efficiency improvement	SmartTier (intelligent storage tiering), SmartThin (intelligent thin provisioning), SmartMotion (intelligent data migration), SmartMulti-Tenant (multi-tenant), SmartMigration (LUN migration), SmartCompression (online compression), SmartDedupe (online deduplication), SmartQuota (quota management), SmartErase (data destruction)			
Storage management software	UltraPath (multipathing management), Cloud Service (remote maintenance and management), ReplicationDirector (disaster recovery management software)			

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<b>Virtualization Features</b>				
Heterogeneous virtualization	Consolidates storage resources of mainstream products to manage and allocate them in a flexible and unified manner.			
Block virtualization	Balanced data distribution, quick fault recovery			
Support for computing virtualization	Supported virtual machines: VMware, Citrix, Hyper-V Value-added features related to virtual environments: support for VMware VAAI and integration of vSphere and vCenter			
<b>Physical Specifications</b>				
Power supply	AC: 100 V to 127 V or 200 V to 240 V DC: 192 V to 288 V or -48 V to -60 V		AC: 100 V to 127 V or 200 V to 240 V DC: 192 V to 288 V	
Dimensions (H x W x D)	2 U controller enclosure: 86.1 mm x 447 mm x 750 mm (3.39 in. x 17.60 in. x 29.53 in.)		3 U controller enclosure: 130.5 mm x 447 mm x 750 mm (5.14 in. x 17.60 in. x 29.53 in.)	
	2 U disk enclosure: 86.1 mm x 447 mm x 490 mm (3.39 in. x 17.60 in. x 19.29 in.)			
	4 U disk enclosure: 175 mm x 447 mm x 490 mm (6.89 in. x 17.60 in. x 19.29 in.) 4 U high-density disk enclosure: 175 mm x 447 mm x 790 mm (6.89 in. x 17.60 in. x 31.10 in.)			
Weight	2 U controller enclosure: ≤ 37 kg (81.59 lb) 2 U disk enclosure: ≤ 20 kg (44.10 lb) 4 U disk enclosure: ≤ 40 kg (88.20 lb) 4 U high-density disk enclosure: ≤ 91 kg (200.66 lb)		3 U controller enclosure: ≤ 50 kg (110.25 lb) 2 U disk enclosure: ≤ 20 kg (44.10 lb) 4 U disk enclosure: ≤ 40 kg (88.20 lb) 4 U high-density disk enclosure: ≤ 91 kg (200.66 lb)	
Operating temperature	5°C to 40°C at altitudes below 1800 m (5905.44 ft.) 5°C to 30°C at altitudes from 1800 m (5905.44 ft.) to 3000 m (9842.40 ft.)			
Operating humidity	5% RH to 90% RH			

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