

# New-Gen OceanStor Dorado 3000 Converged All-Flash Storage System



We are witnessing a transformative shift towards an intelligent world that is driven by large AI models. Rapidly evolving technologies and algorithms are no longer just a trend, and enterprise IT systems must adapt to and accommodate AI technology. The challenge now lies in how to integrate AI into conventional services. In addition, as the data keeps growing and is widely scattered, data privacy and data leakage prevention become key focus. A secure storage solution must be able to effectively prevent such risks.

Huawei's New-Gen OceanStor Dorado 3000 Converged All-Flash Storage rises to the occasion. It is designed to set a benchmark for all-flash storage, thus accelerating the evolution of enterprises' mission-critical applications in the AI era. The new-gen storage converges blocks, files, and objects for diverse mission-critical applications. It supports on-demand scaling of performance, capacity, and functions to meet the needs of growing access traffic, data volumes, and data types.

Powered by the industry-leading FlashLink® intelligent algorithm, the new-gen storage delivers 50% higher performance. With AI technology, it can answer 80% of professional storage-related questions online through built-in OceanStor Aico. Additionally, the DME intelligent management engine, which runs off a built-in large AI model, can locate faults in just 5 minutes, providing a superior user experience for mission-critical applications. It is ideal for finance, government, carrier, manufacturing, healthcare, education, energy, transportation, and emerging industries.

## Highlights

### Ever-New Convergence:

- Block, file, and object convergence for consistent customer experience

### Ever Fast:

- FlashLink® intelligent algorithm for 50% higher performance

### Ever Solid:

- RAID-TP to tolerate three-disk failures
- Integrated active-active solution for blocks, files, and objects

### AI-Powered:

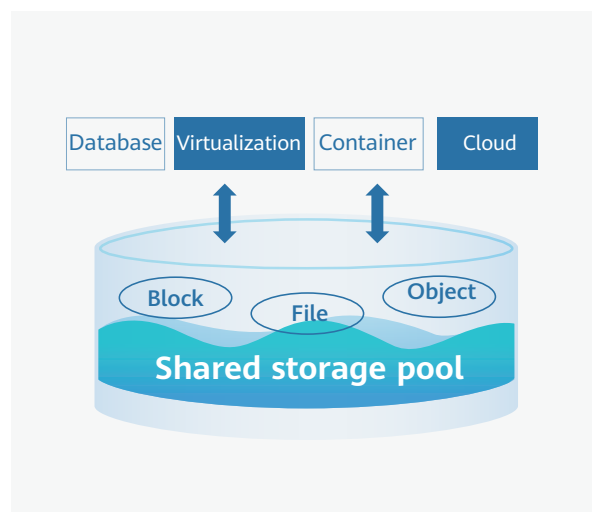
- OceanStor Aico for intelligent Q&A, covering 80% of questions
- AI Copilot for fault location in 5 minutes

## Ever-New Convergence

In the AI era, storage faces many challenges due to the rapid growth in the scale and types of applications, increasingly complex and diverse data, and the increasing scale of data. Huawei New-Gen OceanStor Dorado 3000 Converged All-Flash Storage innovatively converges cutting-edge tech to help manage complex services and ever-changing data.

### Protocol convergence:

As production service types and large AI models continue to expand and evolve, converged storage of blocks and files cannot keep up with evolving user service needs. Typical object storage uses a distributed storage architecture, which pales in comparison to traditional enterprise storage in terms of high performance (such as for AI scenarios) and reliability. Huawei's New-Gen OceanStor Dorado Converged All-Flash Storage uses a block-, file-, and object-native parallel architecture to provide ultra-low latency ( $\mu\text{s}$ -ms) and comprehensive data services. In particular, it provides quality storage services for diverse enterprise data.

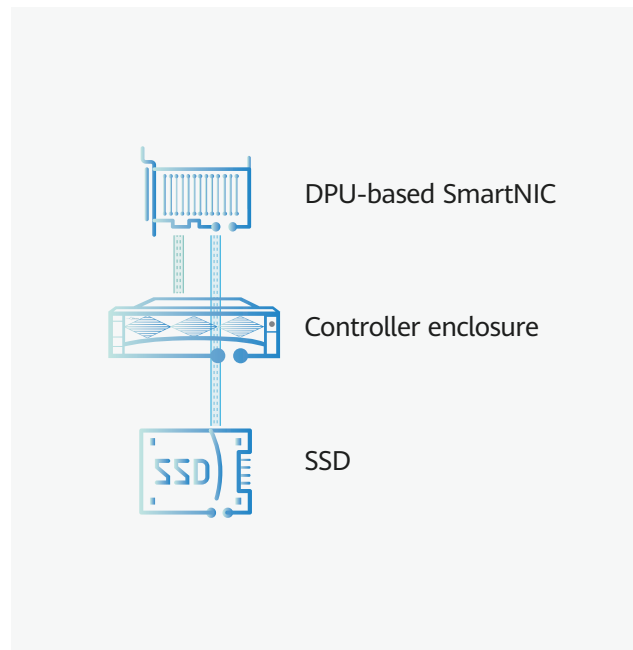


## Ever Fast

In the digital-intelligent era, data volume is growing rapidly, and the number of applications has skyrocketed from thousands to millions. This surge in access traffic presents significant challenges for storage performance. Huawei's New-Gen OceanStor Dorado 3000 Converged All-Flash Storage innovates hardware and software, providing up to 4 million IOPS and 0.03 ms ultra-low latency.

With high-performance Kunpeng processors at its core, the new-gen storage delivers a significant leap in processing capabilities. What's more, it is equipped with 200 Gbit/s RoCE\*, 64 Gbit/s FC, and PCIe 5.0, which delivers twice the system performance of the previous generation. Huawei's New-Gen OceanStor Dorado Converged All-Flash Storage stands out as the first to feature end-to-end NVMe, offering full support for NVMe over Fabric protocols, including NVMe over RoCE, NVMe over FC, and NVMe over TCP. This means the system can fully capitalize on NVMe protocols while reducing system latency to just 0.03 ms.

Huawei's New-Gen OceanStor Dorado 3000 Converged All-Flash Storage adopts the FlashLink® intelligent algorithm to improve SSD utilization. FlashLink® allows the processors of controllers, disks, and smart disk enclosures to collaborate, making the most of SSDs for I/O collaboration, garbage collection, and cold and hot data partitioning designs. With DPU-based SmartNIC, the new-gen storage also supports the separation of data flow and control flow, allowing massive data to flow directly to memory and disks. This addresses the CPU bandwidth and computing power bottlenecks, which directly leads to 50% higher performance, while delivering up to 4 million IOPS and 0.03 ms ultra-low latency.



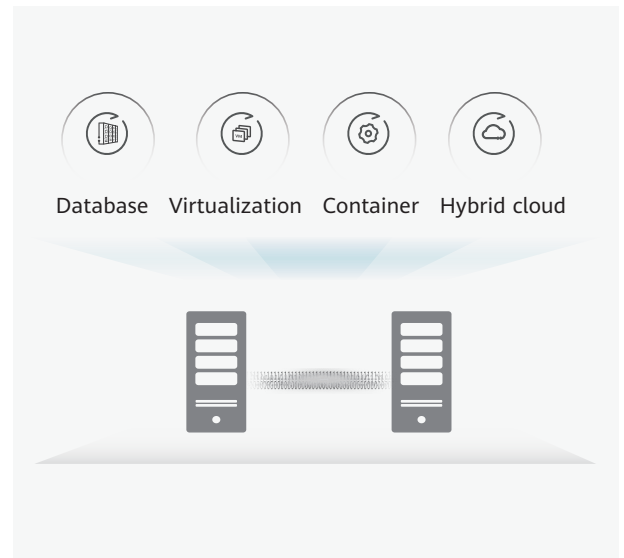
## Ever Solid

New-Gen OceanStor Dorado 3000 Converged All-Flash Storage delivers up to 99.999% system reliability and 99.9999% solution reliability thanks to improvements in systems and the storage solutions.

Huawei's New-Gen OceanStor Dorado Converged All-Flash Storage adopts RAID 2.0+, which supports RAID-TP to tolerate the simultaneous failure of three disks. The system is also equipped with innovative dynamic reconstruction technology. If there are fewer available disks than RAID member disks in a storage pool, the system retains the number of parity columns (M) and reduces the number of data columns (N) during reconstruction. Therefore, even if there are fewer available disks than RAID member disks in a storage pool due to consecutive disk faults or disk replacement, reconstruction can still be performed properly while ensuring user data redundancy.

The active-active solution is widely regarded as the most effective way for ensuring service continuity. It not only ensures zero service interruption and zero data loss if a single system is faulty, but also balances the service loads between two storage systems. In this way, the two storage systems provide services at the same time, and users can access the nearest storage system. The new-gen storage supports the gateway-free, integrated active-active solution for block, file, and object protocols\*, which delivers 99.9999% reliability for all services.

New-Gen OceanStor Dorado Converged All-Flash Storage provides a diverse array of DR solutions for mission-critical applications in distributed databases, containers, and Huawei Cloud Stack to ensure service continuity. For Huawei Cloud Stack, the industry's unique active-active solutions in and across AZs, and across regions ensure zero data loss for cloud VMs. The system also provides industry-leading failover instead of switchover for stateful container nodes and the industry's unique active-active solutions across K8s clusters and K8s DR Star solutions, to ensure uninterrupted services in the event of a failure in the host, storage, or cluster.



## AI-Powered

AI is transforming a wide range of industries. Huawei's New-Gen OceanStor Dorado 3000 Converged All-Flash Storage fully unlocks the value of AI. By improving performance, enhancing resilience, and simplifying O&M, the new-gen storage is bringing enterprises' mission-critical applications into the AI era.

Using the Artificial Intelligence for IT Operations (AIOps) technology, New-Gen OceanStor Dorado ingests and analyzes vast amounts of Huawei data storage's O&M data, such as logs, monitoring information, and application performance data, to provide deep insights and help O&M teams make better decisions. The AIOps tool DME, which is used to power intelligent O&M and a data brain, significantly increases O&M efficiency and data productivity, and covers 80% of O&M scenarios through preset playbooks. For example, one-sentence instruction can replace several GUI steps, improving operation efficiency by 3 to 5 times. Along with unsupervised small models and a RAG knowledge base, DME can proactively detect log anomalies and locate fault root causes within 5 minutes, which makes O&M much more efficient.

# Technical Specifications

Model	OceanStor Dorado 3000
Number of Controllers	2-16
<b>Specifications of a Single Controller Enclosure</b>	
Cache	128 GB/192 GB/256 GB
Number of Disks	200
I/O Module Slots	6
Onboard Front-End Ports	8 x 10 Gb + 8 x 1 Gb
Onboard Back-End Ports	4 x SAS 3.0 or N/A
Front-End Port Rates	16/32/64 Gbit/s FC, 1/10/25/40/100 GbE, 25/100G RoCE (An interface module provides 2 or 4 interfaces.)
Front-End Port Types	FC, FC-NVMe, iSCSI, NVMe over RoCE, NVMe over TCP, NFS, SMB, NFS over RDMA, S3
Back-End Port Types	SAS3.0, 100G RDMA
Supported Disk Types	960 GB/1.92 TB/3.84 TB/7.68 TB SAS SSD 3.84 TB/7.68 TB/15.36 TB/30.72 TB NVMe SSD 3.84 TB/7.68 TB/15.36 TB/30.72 TB NVMe SED
<b>Software Features</b>	
RAID	RAID 5, RAID 6, RAID 10, RAID-TP, and more
Block Features	HyperSnap, HyperReplication, HyperClone, HyperMetro, HyperCDP, HyperLink SmartThin, SmartQoS, SmartDedupe, SmartCompression, SmartMulti-Tenant, SmartMigration, SmartErase, SmartVirtualization
File Features	HyperSnap, HyperReplication, HyperClone, HyperMetro, HyperCDP, HyperLink, HyperLock, SmartQuota, SmartQoS, SmartDedupe, SmartCompression, SmartMulti-Tenant, SmartMove, SmartMigration, SmartErase, SmartMobility, CloudVxLAN*, CloudBackup*
Object Features	HyperSnap, HyperClone, HyperCDP, HyperLock, HyperMetro* SmartQoS, SmartErase, SmartThin, SmartDedupe, SmartCompression, SmartMulti-Tenant
Client Software	NFS+, UltraPath
Storage Management Software	DeviceManager, DME, DME IQ, OceanStor BCManager
Supported Clients	Windows, Linux, VMware, UNIX
Supported Container Features	CSI, CDR, CSM
<b>Physical Specifications</b>	
Power Supply	SAS/NVMe controller enclosure: 100 V–240 V AC±10%, 192 V–288 V DC
	SAS disk enclosure/Smart NVMe SSD enclosure: 100 V–240 V AC±10%, 192 V–288 V DC
Dimensions (H × W × D)	SAS controller enclosure: 86.1 mm × 447 mm × 520 mm NVMe controller enclosure: 86.1 mm × 447 mm × 620 mm
	SAS disk enclosure: 86.1 mm × 447 mm × 410 mm Smart NVMe SSD enclosure: 86.1 mm × 447 mm × 620 mm
Weight (Incl. Disk Units)	SAS controller enclosure ≤ 30 kg NVMe controller enclosure ≤ 32 kg
	SAS disk enclosure ≤ 20 kg Smart NVMe SSD 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 max. temperature threshold decreases by 1°C for every altitude increase of 220 m
Operating Humidity	10% RH to 90% RH

\*Contact Huawei sales staff if you need this specification.

### For More Information

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



Huawei Enterprise APP



Huawei IT



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