



VDURA ActiveStor Ultra 150

High-Performance, Mixed Workload Storage Node

The ActiveStor Ultra 150 (ASU-150) is the VDURA®-certified hybrid mixed-workload storage appliance. ASU-150 is built on industry-standard hardware chosen for its carefully balanced architecture, with emphasis on mixed media storage and is available in sets of four nodes per enclosure.

ASU-150 storage nodes are powered by PanFS®, the VDURA parallel file system, and are capable of serving up to hundreds of gigabytes of data per second from a single namespace. Together with ActiveStor® director nodes and the DirectFlow® driver on client systems, PanFS provides parallel and redundant access to ASU-150 storage nodes to deliver the highest performance with unlimited scalability, enterprise reliability, and ease of management.

PanFS enables ASU-150 storage nodes to deliver high performance for mixed file size, HPC, and AI/ML workloads. Delivering the mixed-file performance and scalability required to process datasets of the size and complexity associated with high-performance computing in manufacturing, life sciences, energy, financial services, media & entertainment, and university & government research, the ASU-150 is the ideal choice for a high performance, mixed workload storage node.

ASU-150 Enclosure

The ASU-150 enclosure is a 4U, 19" rackmount, four-node chassis. The enclosure comes fully populated with four ASU-150 nodes per enclosure (as shown in Figure 1) for a total enclosure HDD storage capacity of up to 576 TB, SATA or SAS SSD capacity of up to 30.72 TB, and/or M.2 NVMe SSD capacity of 15.36 TB. Each enclosure also includes four titanium-level, 96% energy efficient, redundant power supplies.

ASU-150 Node

The ASU-150 node is a server node running the PanFS parallel file system. The node's design has been selected for its form factor, drive accessibility, and overall quality and reliability. The ASU-150 node has been configured with a balanced architecture focused on mixed-file storage, including CPU strength, DRAM capacity, self-encrypting drives (SEDs), drive performance, and networking bandwidth. The capacity of HDDs and SATA SSDs can vary and are specified by the ASU-150 model number ordered.



Figure 1. ASU-150 enclosure with four storage nodes.



Figure 2. ASU-150 storage node, top view.

Predictable and Consistent High Performance

The ASU-150 is the industry's best price/performance parallel file system solution. Because PanFS has a scale-out architecture, the system's storage capacity, DRAM caching, and network bandwidth all grow incrementally and linearly as you add more storage nodes.

The PanFS file system delivers data in parallel from storage nodes to the application, multiplying the bandwidth an application can achieve to a single file. Data flows directly from storage nodes to the application without any hops through intermediate servers or extra network links.

Dual-Actuator HDD Support

ASU-150 features support for dual-actuator HDDs, increasing its throughput to nearly double that of its predecessor, ASU-100. This enhancement enables organizations to achieve a substantial boost in performance capacity, gaining the benefits of higher speed without the cost multiplier associated with all-flash systems.

Dynamic Data Acceleration and Mixed Workloads

PanFS Dynamic Data Acceleration (DDA) technology takes the complexity out of tiered high-performance storage systems by maximizing the efficiency of all storage media in a seamless, all-hot system that matches I/O patterns. DDA automatically adapts to changing file sizes and mixed workloads without the need for tuning or manual intervention. To provide this combination of excellent performance and low cost per TB, ASU-150 nodes optimize use of a balanced set of media to store the component objects that PanFS uses to manage files:

- DRAM is used as an extremely low latency cache of the most recently read or written data and metadata.
- NVDIMMs are the lowest latency type of storage and are used to store metadata transaction and user data logs.
- High-performance SSDs provide low-latency access and high-bandwidth storage for the metadata database.
- SATA or SAS SSDs provide cost-effective and high-bandwidth storage and store small component objects.
- HDDs provide high-bandwidth data storage at a low cost and are used to store large component objects.

Hardware-based Encryption at Rest

Using both industry-standard self-encrypting SATA SSDs and hard disk drives (SEDs), ASU-150 nodes provide hardware-based encryption with zero performance impact and support complete cryptographic erasure of both types of SEDs upon command.

Surprising Simplicity

ASU-150 nodes are managed as part of the PanFS solution. No matter how many ASU-150 nodes you add, all nodes in the realm are managed from one graphical user interface (GUI) or command-line interface (CLI).

Low Cost to Own and Operate

The ASU-150 has a low cost of acquisition due to its large capacity storage architecture on commodity hardware. In addition, PanFS reduces operational complexity—only minimal staff are needed to administer and manage the system, with no extensive training required.

About VDURA



VDURA is at the forefront of AI and HPC data storage and management, catering to on-premises, public cloud, and hybrid environments. Renowned for its unparalleled blend of performance, durability, and reliability, our Data Platform builds upon our legacy as pioneers and leaders in parallel NAS technology. Offering a unique integration of diverse storage media within a single architecture and global namespace, VDURA empowers customers with unmatched flexibility, simplicity, and cost-effectiveness. Our integrated approach ensures the highest levels of data protection, integrity, and availability, fueling relentless innovation in AI and HPC. Explore more at www.VDURA.com.

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ASU-150 Specifications

ASU-150 Enclosure	
Hardware	19" rackmount chassis with rails
Power Supplies	4x 1200 W titanium-level
Height	6.96 inches (177 mm)–4 rack units
Width	17.63 inches (448 mm)
Depth	29.00 inches (737 mm)
Operating Temp.	10–35°C (50–95°F)
Non-operating Temp.	–40–60°C (–40–140°F)
Operating Humidity	8–90% (non-condensing)
Input Line Voltage	110–240 VAC, 50–60 Hz

ASU-150 Node		
Storage	Total HDD capacity: 96 TB or 144 TB SATA SSDs: 15.36 TB M.2 NVMe SSD: 3.84 TB	Total HDD capacity: 108 TB SAS SSDs: 15.36 TB or 30.72 TB
Memory	2x 16 GB DDR4 ECC RDIMM	
NVDIMM	1x 16 GB DDR4 ECC NVDIMM-N	
SSD	2x TCG-SED SATA SSD 1x M.2 NVMe SSD	2x TCG-SED SAS SSD 1x M.2 NVMe SSD (boot only)
HDD	6x TCG-SED HDD	
NIC	25 GbE Dual SFP28 network SIOM	
Other	Integrated BMC, IPMI, VGA, USB	

Timely High-Quality Service and Support

Unlike open-source solutions and even commercial alternatives from broad portfolio vendors, VDURA offers timely, world-class L1–L4 support.

More Information and Ordering Details

For more information and ASU-150 ordering details, contact your local VDURA representative.