



VDURA ActiveStor Ultra 150 XL v2

High-Capacity, High-Performance, Mixed-Workload Storage Node

ActiveStor® Ultra 150 XL v2 (ASU-150X) is the VDURA®-certified high-capacity, hybrid, mixed-workload storage appliance. ASU-150X is built on industry-standard hardware chosen for its carefully balanced architecture, with emphasis on mixed-media storage.

ASU-150X 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 Direct-Flow® driver on client systems, PanFS provides parallel and redundant access to ASU-150X storage nodes to deliver the highest performance with unlimited scalability, enterprise reliability, and ease of management.

PanFS enables ASU-150X storage nodes to deliver high performance for mixed file size, HPC, and AI/ML workloads. ASU-150X delivers 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. ASU-150X is the ideal choice for a high-performance, mixed-workload storage system.

ASU-150X Server Enclosure

The ASU-150X server enclosure is a 4U, 19" rackmount, four-node chassis. The enclosure comes fully populated with four storage nodes (as shown in Figure 1) for a total enclosure-plus-JBOD HDD storage capacity of 1152 TB, SAS SSD capacity of up to 61.44 TB, and M.2 NVMe SSD capacity of 3.84 TB. Each enclosure also includes four Titanium-level, 96% energy efficient, redundant power supplies.

ASU-150X Storage Node

ASU-150X nodes are server nodes running the PanFS parallel file system. These nodes' design has been selected for its form factor, drive accessibility, and overall quality and reliability. ASU-150X nodes are configured with a balanced architecture focused on mixed-file storage, including CPU strength, DRAM capacity, drive performance, and networking bandwidth.



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



Figure 2. 4U24 JBOD enclosure, front view.

4U24 JBOD Enclosure

The 4U24 JBOD enclosure is a 4U, 19" rackmount, four-node chassis. The enclosure includes 24 3.5" hot-swap bays, hot-swap JBOD with dual SAS 12 G expander controller, dual BMC, toolless HDD tray, and two 550 W hot-swap redundant Platinum-level power supplies.

Predictable and Consistent High Performance

The ASU-150X 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.

ASU-150X and 4U24 JBOD Drive Configuration

The four server nodes in the ASU-150X server enclosure each have exclusive access to six drives in the 4U24 JBOD. The physical grouping of the drives in the JBOD for each server node match the physical grouping of the drives in the server enclosure.

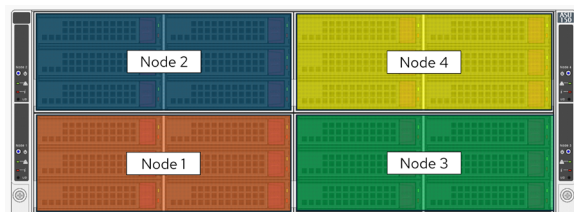


Figure 3. ASU-150X node placement.

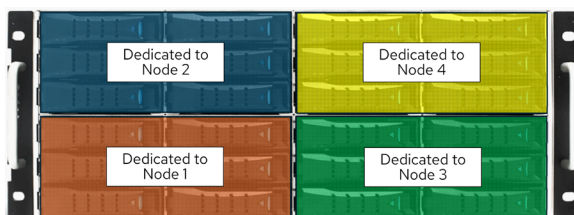


Figure 4. 4U24 JBOD drives match node placement.

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-150X 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.
- 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.

Surprising Simplicity

ASU-150X nodes are managed as part of the PanFS solution. No matter how many ASU-150X 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-150X 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.

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 XL v2 ordering details, contact your local VDURA representative.



ASU-150X Specifications

ASU-150X 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 Temperature	10–35°C (50–95°F)
Non-Operating Temperature	–40–60°C (–40–140°F)
Operating Humidity	8–90% (non-condensing)
Input Line Voltage	110–240 VAC, 50–60 Hz

4U24 JBOD Enclosure	
Hardware	19" rackmount chassis with rails
Power Supplies	2x 800 W Titanium-level
Height	6.9 inches (174 mm)–4 rack units
Width	17.2 inches (438 mm)
Depth	15.1 inches (386 mm)
Operating Temperature	10–35°C (50–95°F)
Non-Operating Temperature	–20–60°C (–4–140°F)
Operating Humidity	20–80% (non-condensing)
Input Line Voltage	100–240 VAC, 50–60 Hz

ASU-150X Node + JBOD	
Storage	HDD capacity: 288 TB (24 TB drives) SAS SSDs: 7.68 TB or 15.36 TB M.2 NVMe SSD: 960 GB
Memory	2x 16 GB DDR4 ECC RDIMM
NVDIMM	1x 16 GB DDR4 ECC NVDIMM-N
SSD	2x SAS SSD 1x M.2 NVMe SSD (boot only)
HDD	12x SATA HDD
NIC	25 GbE Dual SFP28 network SIOM
Other	Integrated BMC, IPMI, VGA, USB

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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