jetstor

HPC Archives, Built to Scale
Fibre Channel + Ultrastar® 26TB SAS

80PB **DEPLOYED**

16/32G **Fibre Channel**

22x **ACTIVE PODS**

WD™

When a major government entity needed a massive, long-horizon archive that could grow without disruption, stay off the production network, and behave predictably at scale, **JetStor delivered.**

Why JetStor + Western Digital

JetStor sets a POD-based site design on Fibre Channel with straightforward serviceability, while Western Digital anchors capacity with Ultrastar® 26TB SAS. Together they form a stable base that enables the following capabilities:

➤ **Fabric isolation**
Archive I/O on dedicated FC paths

➤ **Deterministic access**
Zoning + multipath for steady behavior

➤ **Repeatable growth**
Scaled seamlessly by POD

➤ **Enterprise media**
SAS consistency for archive workloads

FIT

HPC & RESEARCH

AI/ML DATA

M&E ARCHIVES

MED IMAGING

GOV/DEFENSE

At a Glance

🔵 POD MAKEUP
JetStor head (XS3324D) + 5× 4U/24-bay JBODs

🔵 CAPACITY
~80PB raw deployed (22 PODs; ~3.5 PB each; **3,200 drives**)

🔵 FABRIC
Dual 16/32G Brocade Fibre Channel (A/B)

🔵 MEDIA
Ultrastar® 26TB SAS (Western Digital)

CORE SETUP

- **NAMING** — Applied consistent IDs for fabrics, hosts, and PODs to unify operations.

- **LABELING** — Implemented end-to-end labels for fast and accurate path tracing.

- **ACCESS MAP** — Mapped projects to FC paths with clear owners for secure routing.

- **RUNBOOK** — Published step-by-step procedures to ensure routine upkeep.

KEY BENEFITS

- **PROVEN BLUEPRINT** — Our fixed site pattern shortened planning and ensured consistency.

- **ZERO DOWNTIME** — One fabric stayed live while the other was serviced, preventing disruptions.

- **SEAMLESS SCALING** — The modular layout allowed massive capacity scaling without redesigns.

- **PREDICTABLE GROWTH** — Capacity expanded in exact POD steps with known power and space impacts.

HOW WE BUILT IT

1 Initialized A/B fabric (Brocade 16/32G FC) and cabled the first JetStor head.

2 Scaled systematically by adding 5 JBODs per POD, dual-attaching to A/B fabrics.

3 Deployed all 22 PODs (~80PB raw) to complete the unified, resilient archive.

From First POD to 80 PB

ith A/B fabrics live, capacity was integrated in predictable POD-sized steps. Each milestone ensured stable zoning and cabling, resulting in a flawless 80 PB rollout without network disruption.

MILESTONES	WHAT CHANGED
+1 POD	Dual-attached to A/B; added zone pair; verified MPIO and cable map.
5 PODs	Extended zones; completed rigorous dual-path verification
11 PODs	Balanced A/B lanes; snapshotted network topology for stability.
22 PODs (full site)	Finalized zones; delivered fully operational ~80 PB raw capacity.

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We chose Western Digital 26TB drives to deliver the best balance of reliability, capacity, and density per rack. In our experience, WD drives have been extremely dependable, consistently offering the lowest RMA rates in the industry. This ensures our customers receive the highest performance and peace of mind with every deployment.

Gene Leyzarovich
Founder of JetStor

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SCAN TO LEARN MORE

Discover how scalable, reliable archives can accelerate your research and simplify long term data management.