

5 Top Reasons Why PanFS Tops Lustre

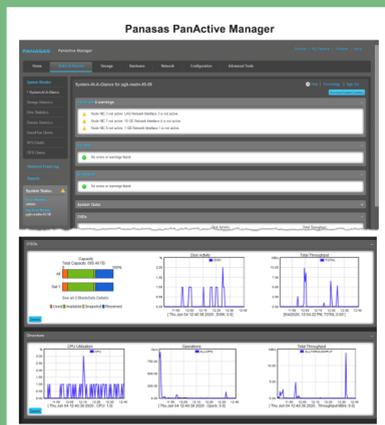
01 PhD in Lustre Not Required

While Lustre is an open-source parallel file system, for practical purposes, it is currently only supported by Whamcloud, a division of DDN that sells Lustre-based systems. This means that rolling your own Lustre storage solution requires a dedicated team of specialists who effectively do their own tech support, which can end up costing more than an additional \$300K a year. Bringup times on new Lustre installations also vary widely, ranging from a week in the best cases to several months in the worst ones.

Panasas ActiveStor® systems running the PanFS® parallel file system roll in pre-configured, with bringup times consistently being just one or two days. Panasas solutions are so easy to deploy, operate, and maintain that a single IT admin with no specialized expertise can oversee a PanFS storage environment, or realm, of any size. Our 24/7 world-class customer support means that you get our undivided attention the moment you need it. You save time, gain productivity, and enjoy a significantly lower TCO in the long run.

02 Simple, Frustration-Free Management

Lustre management is CLI-based (command-line interface) with inconsistent open-source and commercial GUI (graphical user interface) versions for monitoring, so admins need additional training on DDN's version of Lustre to manage it. Lustre admins must manually tune and re-tune their systems to maintain performance as workloads change. Recovery from a Lustre crash can be painstakingly difficult, often taking admins weeks – or even months – to fully resolve.



The PanFS parallel file system has built-in automation features that manage data placement, so PanFS admins don't have to worry about tuning, retuning, or error recovery. It also includes an easy-to-use single management console, allowing you to perform all management tasks through either the CLI or the GUI. You get easy monitoring and performance management, flexible storage allocations, as well as addons, upgrades, and firmware updates in just a few clicks.

03 Scalable Data Protection and Reliability

Lustre has a primitive data reliability architecture with slow rebuild rates that increase the odds of data loss, especially as the total capacity of the system grows. Crashes are common, and rebuilds at scale can take many days. Lustre's

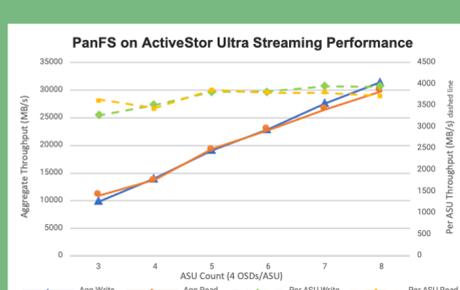
Data Protection Comparison

Feature	PanFS	Lustre with LDISKFS
Native data protection (RAID)	Erasure coding & RAID 10, 5, 6, 6+	None
Detect, repair silent data corruption	Yes	None / hardware dependent
Snapshot	Yes	None

old-school hardware-based RAID implementations do not provide file level erasure coding.

The PanFS parallel file system uses a modern data reliability architecture that gets even more reliable as the total capacity of the PanFS realm scales, with rebuilds taking hours rather than days. Patented PanFS per-file object erasure coding ensures per-file fault isolation, safeguard against total loss of multiple storage nodes, and the ability to use different RAID schemes for different files within the same volume. The PanFS reliability architecture enables continuous data integrity checks by verifying the erasure codes for each file.

04 No Tiers Means No Tears



Lustre is typically deployed in a multi-tier system where you pay for hardware that doesn't contribute to your performance. Because high performance comes from the uppermost scratch space in a Lustre

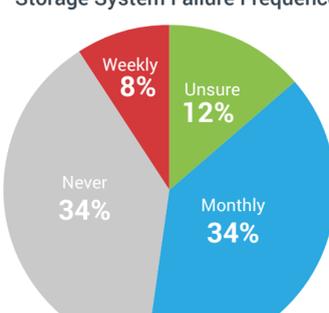
environment, the hardware you buy for other tiers, such as project storage, is just for capacity – it doesn't contribute to the visible performance of your storage system. And Lustre's unreliability requires duplicating the data you're working on and copying it back and forth between project storage and scratch space.

The PanFS parallel file system utilizes a highly reliable, single-tier architecture that allows you to read and write project storage directly. Equally performant read and write streaming is ideal for storage consolidation projects and multipurpose usage. With Panasas, you can simultaneously host unified scratch, home directories, and project file storage on a single platform that delivers HPC streaming and mixed workload performance.

05 Unparalleled Uptime

Lustre's emphasis on high performance comes at the cost of reliability, which means lower uptime. Block-level RAID like Lustre is prone to silent corruption, system failures, and long unplanned downtimes. Storage that is frequently down prevents the compute cluster from executing anything, which ultimately wastes a very expensive resource.

Storage System Failure Frequency



34% of organizations report monthly storage outages – **nearly 20%** are down for a week or more.

Panasas has hardened the PanFS parallel file system over two decades to deliver the most reliable and stable HPC storage platform. PanFS has built-in prevention and automated rapid failure recovery logic that avoids Lustre's common corruption issues to deliver unmatched uptime. With Panasas, you get continuous background data scrubbing, capacity balancing, snapshots, and quad-replicated directories. One PanFS admin has reported going over 8 years without a single moment of unplanned downtime.

About Panasas

Panasas builds a portfolio of data solutions that deliver exceptional performance, unlimited scalability, and unparalleled reliability – all at the best total cost of ownership and lowest administrative overhead. The Panasas data engine accelerates AI and high-performance applications in manufacturing, life sciences, energy, media, financial services, and government. The company's flagship PanFS® data engine, and ActiveStor® storage solutions combine extreme performance, scalability, and security with the reliability and simplicity of a self-managed, self-healing architecture. The Panasas data engine solves the world's most challenging problems: curing diseases, designing the next jetliner, creating mind-blowing visual effects, and using AI to predict new possibilities.

For more information, visit www.panasas.com or follow us on [LinkedIn](#).