

The data bedrock for energy applications

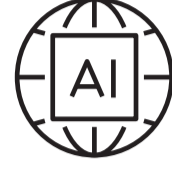
Power your energy workloads with Panasas

As energy companies race to supply increasing global demand, they face mounting pressure to meet critical sustainability initiatives. Addressing this dual challenge requires powerful high-performance computing (HPC), artificial intelligence, and machine learning (AI/ML) technologies.

Harnessing the value of huge volumes of data gives energy companies the strongest advantage – meaning the most successful organizations will be the ones making the smartest data infrastructure decisions.

Panasas designs workload-optimized storage solutions to power the energy sector’s most demanding HPC and AI/ML applications. Whether you’re performing mountains of seismic analyses, lighting up solar energy and batteries, or growing sustainable biofuel solutions, the PanFS® data engine running on ActiveStor® storage gives you limitless scalability, performance, and reliability.

Get more from your data, sooner



AI/ML techniques are integrated with core number crunching and analysis applications **to speed time** to results. AI/ML applications also offer more sensitive detection of patterns in the results, **helping you find more of what you want to find.**¹

Solution

PanFS, the operating system for the Panasas ActiveStor® Ultra XL appliance (the preferred Panasas solution for massive file volumes), uses **Dynamic Data Acceleration to optimize HPC and AI/ML workloads** by automatically and transparently placing data by type into the most efficient and cost-effective underlying storage media. Autotuning reduces runtime while an unmatched reliability architecture prevents unplanned downtime, so your applications stay running.

Challenge

Collecting and analyzing data

Companies identify the best places to dig, drill, build, or store by collecting and analyzing massive volumes of data. They use modeling and simulation augmented by AI/ML techniques to help predict energy reserves and optimize designs for harnessing renewables. These processing and simulation activities can be time consuming, and storage access bottlenecks often slow time to results.



Consolidate data for enhanced control, communication, and collaboration

Challenge

Eliminating data silos

Having data in unconnected silos reduces visibility, degrades team efficiency, and prevents access to data that multiple applications could otherwise analyze. Siloed data can also result in incomplete datasets, inefficient processes, and security vulnerabilities.



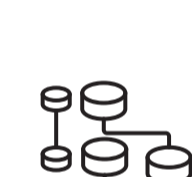
Data silos prevent easy data access across departments, restrict accurate data sharing, and **can create costly regulatory compliance issues.**²



Solution

Panasas storage solutions are designed to eliminate horizontal silos and enable data consolidation with unlimited scale-out. The PanFS parallel file system uses a single-tier architecture with intelligent data placement to achieve higher performance than vertical multi-tier architectures. Once consolidated with Panasas, **data can be more easily managed and shared between teams, without sacrificing performance.** And the simple, intuitive interface and easy scalability of Panasas ActiveStor solutions puts control of the entire data environment in the hands of a single administrator.

Make data visible, actionable, and economical



Unstructured data makes up **80% of enterprise data**, including machine-generated data, growing at **55% to 65%** per year. Proper tools are needed to turn these massive volumes of data into valuable information.³

Challenge

Storing and managing huge data deposits

Companies need to know what data they have, where it is, and how much it is costing them to store it.

Solution

The PanFS software suite includes PanView™, a data **insight tool that delivers comprehensive activity insights from a single dashboard for a holistic view of the storage environment.** Users can search, analyze, and identify data to reduce storage costs by revealing cold and duplicated data. In conjunction with PanMove™, data can then be seamlessly and securely moved between on-prem and cloud storage locations.



Move large volumes of data easily and quickly

Challenge

Transferring large output files

During data processing workflows – from collection to results – data often must be transferred or consolidated into large, less costly “parking lot” storage sites, moved between off-shore and on-shore sites, or to sometimes data centers or cloud providers, sometimes across large geographical distances, and then ultimately transferred to a customer. The process can be complex and both time and resource intensive.



Only **36%** of large data migration projects stay within their forecasted budgets.⁴



Solution

The Panasas PanMove data movement software, part of the PanFS software suite, **enables companies to easily and efficiently copy, move, and synchronize data** between Panasas storage and AWS, Azure and Google Cloud object storage, and between Panasas storage and any S3 object store. The result is reduced data movement time, reduced complexity, and greater confidence that data has been moved successfully.

Secure and protect data in a scalable, reliable storage environment

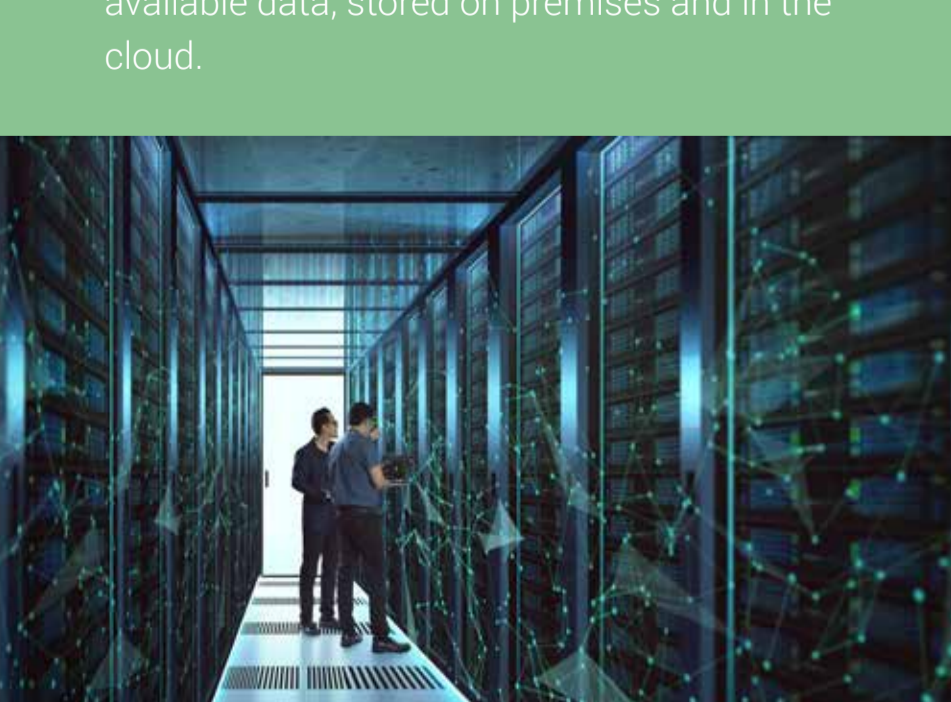
Challenge

Protecting and preserving data

Energy data may reside in small files or petabyte-sized volumes. As storage can be tapped by thousands of nodes reading and writing data at the same time, companies must have reliable, readily available data, stored on premises and in the cloud.



Reliability of HPC storage systems is critical, as typical recovery times in the event of **storage failure can range from hours to days to weeks**, accompanied by proportionally large downtime costs and lost productivity.⁵



Solution

ActiveStor® Flash, ActiveStor® Ultra, and ActiveStor Ultra XL **provide reliable, flexible, scalable data backup options.** PanMove enables easy and efficient movement of data between locations and in the cloud for rapid retrieval and cost-effective storage. When combined with the add-on Panasas PanMove Backup and Archive licenses, the PanMove suite supports a complete data lifecycle for all HPC and AI environments.

The exploration, acquisition, and production of energy depends on reliable, affordable, and high-performance data storage solutions. Discover what makes Panasas different.

[Download the architectural overview](#)

For more information, visit www.panasas.com/industries/energy/

¹ www.simplilearn.com/advantages-and-disadvantages-of-artificial-intelligence-article

² www.techtarget.com/searchdatamanagement/definition/data-silo

³ www.datamation.com/big-data/structured-vs-unstructured-data/

⁴ www.forbes.com/sites/moorinsights/2021/03/15/overcoming-the-challenges-of-data-migration/

⁵ www.panasas.com/wp-content/uploads/2020/04/Hyperion_Importance-of-TCO-for-HPC-Storage-Buyers_Q1-20_FINAL_2020-04-22.pdf