

flexFS – Supercharged Cloud File System

- High-performance, POSIX-compliant elastic file system
- Transcends HPC aggregate throughput limitations
- Multi-cloud – utilizes any object store (AWS S3, OCI Object Storage, etc.)
- Easily serves 1000s of concurrently active hosts with minimal infrastructure
- Exceptional price-performance

Scale Your Science, Not Your Spend

4 Ways to Save Time and Money

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Save on file storage costs
 2-5x cheaper than EFS or FSx for Lustre
 Pay only for what you use
- 
Save on distributed computing costs
 Big savings on large HPC jobs from reduced file I/O wait time
- 
Avoid end user downtime
 High elasticity eliminates the need for production-disruptive cluster resizing
- 
Lower operational overhead
 Minimal infrastructure to monitor and maintain
 No re-provisioning to increase or decrease capacity

Example Use Cases

- High-throughput HPC**
 Preprocessing, transcoding, transformations, complex distributed computations
- High-throughput HPC with latency sensitivity**
 Cryo-EM, video rendering, omics pipelines, AI training and inferencing
- Enterprise data ecosystem**
 Collaborative, shared data hub
- Large scale image storage**
 Cryo-EM, microscopy, MRI
- Backup data store**
 Archival & disaster recovery
- Multi-cloud and hybrid storage**
 Data bridge
- Any large-scale, demanding workload**
 flexFS is tunable over a range of performance from fully throughput-optimized to fully latency-optimized

Performance vs Conventional Cloud Storage

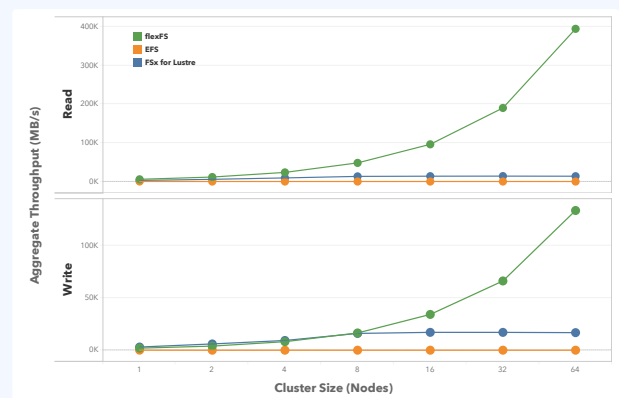


Figure 1: Comparison of write and read throughput performance as cluster size grows.

flexFS throughput scales indefinitely as cluster size grows, but both EFS and FSx for Lustre hit a performance ceiling. FSx for Lustre throughput can be increased, but only by increasing capacity – and cost.

Feature	flexFS	AWS S3, Google Cloud Storage, OCI Object Store, etc.	AWS EFS, Google Filestore, OCI File Storage, etc.	AWS FSx for Lustre, Lustre on GCP, Lustre on OCI, etc.
POSIX compliant	✓		✓	✓
Elastic capacity	✓	✓	✓	
Elastic throughput	✓	✓	✓	
Throughput scalable to 1000s of active hosts	✓	✓		✓
Capacity & throughput scale independently	✓	✓	✓	
Tunable for low latency	✓		✓	✓
Cloud agnostic / multi-cloud	✓			(standalone Lustre, not FSx)
Low operational overhead	✓	✓	✓	
Continuous data protection (time travel)	✓			
End-to-end encryption	✓			
Native, tailorable compression	✓			(LZ4 only)

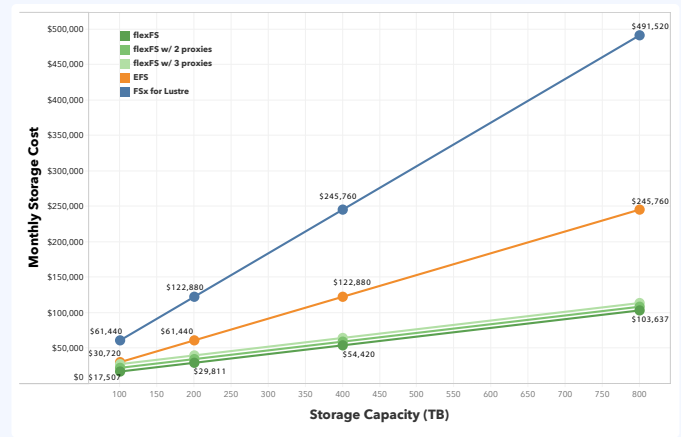


Figure 2: Comparison of monthly cost at different storage capacities for flexFS, EFS, and Lustre

flexFS is 2x **cheaper** than EFS and 4x **cheaper** than Luster as data volume grows

Latency performance is optimized using one or more optional "proxy servers" to form a distributed write-back cache. You can tune the proxy service to cache all blocks, or a specific number of blocks per file (e.g., the first ten) in each volume as needed.

Increasing the number of proxy servers does not significantly impact costs.

** Example pricing in AWS us-east-1 region (early 2025). Actual prices vary based on configuration

¹AWS charges each time data is transferred to and from EFS storage

And there's more!

- Data at-rest and in-flight encryption security is turned on by default. Adding optional end-to-end encryption ensures no one outside your organization – not even the cloud providers themselves – can access your data.
- Continuous data protection creates a snapshot for every data modification, enabling you to restore a volume or file to any previous point in time – as far back as your settable retention policy allows.
- Full support for extended file attributes (xAttr), extended Access Control Lists (xACL), and Linux advisory file locking.
- Drop-in replacement for Amazon EFS, FSx for Lustre, and other file systems on AWS – as well as those on Microsoft Azure, Google Cloud, Oracle Cloud Infrastructure and other cloud service providers.
- Customers such as Alnylam, Amgen, Bristol Myers Squibb and NASA are using flexFS in production for high-performance computing (HPC) – and for general-purpose file sharing by hundreds of concurrent users.

CHECK OUT

docs.flexfs.io

[flexFS Cryo-EM Benchmark](#)

INTRIGUED?

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