

Qumulo for Financial Services

Designed for High Performance Computing, Artificial Intelligence, and Machine Learning Use Cases

High Performance Computing (HPC) solutions, play an important role within the Financial Services industry today. Capturing, processing, and analyzing massive data volumes to predict stock trends and improve fraud detection has become increasingly dependant on petascale storage solutions with the performance to power machine learning and artificial intelligence applications.

As data volumes continue to grow from multiple sources, financial institutions are continuously challenged to keep up with the demands of storing and processing while meeting organizational security requirements. Qumulo delivers a fast, efficient file storage solution to address the performance and capacity demands of managing billions of both large and small files. Qumulo's NVMe All-Flash, Hybrid SSD/Disk Storage, Active Archive, and cloud platforms can handle extreme workloads and growing petabyte capacities, while being easy to securely deploy, scale and manage, on-prem or in cloud environments.

Qumulo NVMe All-Flash File Storage

To manage the low latency demands, backtesting, algorithmic trading, and fraud detection environment, Qumulo's All-Flash file storage exclusively uses NVMe and the very latest commercial, off-the-shelf components, instead of expensive, proprietary hardware. This all-NVMe platform accelerates time to results by delivering extremely consistent performance at petabyte scale.

Qumulo Hybrid SSD/Disk File Storage

Qumulo's flash-first Hybrid SSD/Disk platform contains a mix of solid state drives (SSDs) and hard disk drives (HDDs). Built on enterprise-class standard hardware, this platform delivers the speed of flash at the cost of disk, and can support multi-petabyte capacities. Managing growth is simple. Simply add nodes to the existing infrastructure to increase scale performance and capacity levels linearly, when required, with no disruption or downtime.

Qumulo Active Archive File Storage

Precision analytic workloads demand petabytes of data to be retained and readily available for use on a moments notice. Qumulo's enterprise-proven distributed file system is the world's most modern, hybrid cloud file storage solution, and Qumulo running on the Active Archive platform is the most dense, high performing active archive system available. Qumulo's solution has the economics of archive storage, better performance than other nearline storage offerings, and is designed for massive scalability in terms of performance, capacity and the number of files it can manage.

Qumulo for AWS

The growing size of data sets and the compute-intensive nature of AI and ML has made many companies consider using the cloud to take advantage of its elastic GPU resources and utility pricing. Qumulo's cloud-native file system allows organizations to effortlessly move file-based applications and workloads to the public cloud. Qumulo for AWS offers a full set of enterprise features, supports SMB, NFS and FTP, and can be configured to support a wide range of workloads.

QUMULO SOFTWARE FEATURES & BENEFITS

Scale HPC workloads across on-prem and cloud environments

With a single Qumulo file system Financial institutions can seamlessly scale to cloud environments for file storage, multi-site collaboration and, for compute performance processing.

Built-in enterprise data protection

- Erasure coding provides data protection at the block level and is faster, more configurable, and more space-efficient than alternatives such as mirroring and RAID.
- Snapshots capture the state of your file system or directory at a given point in time, providing organizations with the ability to restore single files or whole directories with the click of a button.
- Continuous replication provides you with continuous one-way asynchronous replication across storage clusters, whether on-prem or in the public cloud.

Fast, efficient file storage for HPC - AI/ML

Enterprise-proven file storage delivers cross protocol support, NFS and /SMB, with NVMe performance supporting a variety of different applications to support multiple projects with ease.

Optimized for both fast reads and writes

Built-in hybrid intelligent predictive cache and proactive prefetch enables fast reads and identifies read I/O patterns to proactively move data to the fastest media. Speeding time to results.

Real-time visibility across billions of files

Qumulo provides built-in real-time analytics, delivers actionable insights to identify storage usage and capacity trends, as well as user based performance. This helps to plan storage requirements to support new projects with ease.

Efficient enterprise level security for HPC

Qumulo integrates with Active Directory and LDAP for user security, to manage permissions, controls, and access restrictions for file applications, to create the smoothest workflow possible for mixed-protocol environments.

Qumulo Active Archive

| | K-144T | K-168T |
|-----------------------------------|---|------------------------------|
| Form Factor | 1U | 1U |
| Raw Storage Capacity | 144TB | 168TB |
| Storage Media (all hot-swappable) | 12 x 12TB HDD, 3 x 800GB SSD | 12 x 14TB HDD, 3 x 960GB SSD |
| CPU | Intel® Xeon-D D-1531 SOC, 6 cores, 2.2GHz | |
| Memory | 64GB | |
| Connectivity Ports | 2 x dual 10GbE (SFP+) | |

Qumulo Hybrid SSD/Disk

| | QC24 | QC40 | C-72T | C-168T | QC104 | QC208 | QC260 | QC360 |
|-----------------------------------|--|--------------|---|---------------|---|--------------|---------------|---------------|
| Form Factor | 1U | 1U | 1U | 1U | 4U | 4U | 4U | 4U |
| Raw Storage Capacity | 24TB | 40TB | 72TB | 168TB | 104TB | 208TB | 260TB | 360TB |
| Storage Media (all hot-swappable) | 4 x 6TB HDD | 4 x 10TB HDD | 12 x 6TB HDD | 12 x 14TB HDD | 26 x 4TB HDD | 26 x 8TB HDD | 26 x 10TB HDD | 36 x 10TB HDD |
| | 2 x 800GB SSD | | 4 x 480GB SSD | 4 x 960GB SSD | 13 x 480GB SSD | | | 4 x 1.6TB SSD |
| CPU | Intel® Xeon E3-1230 v6, 4 cores, 3.60GHz | | Intel® Xeon-D D-1531 SOC, 6 cores, 2.2GHz | | Intel® Xeon E5 2620v3, 6 cores, 2.40GHz | | | |
| Memory | 64GB | | | | 128GB | | 256GB | |
| Connectivity Ports | 2 x 10GbE (SFP+) | | 2 x 25GbE (SFP28) | | 4 x 40GbE (QSFP+) | | | |

Qumulo NVMe All-Flash

| | P-23T | P-92T | P-184T |
|----------------------------|---------------------------------------|------------------|------------------|
| Form Factor | 2U | 2U | 2U |
| Raw Storage Capacity | 23TB | 92TB | 184TB |
| SSD Drives (hot swappable) | 12 x 1.92TB NVMe | 24 x 3.84TB NVMe | 24 X 7.68TB NVMe |
| CPU | 2 x Intel Gold 6126, 12 cores, 2.6Ghz | | |
| Memory | 192GB | | |
| Connectivity Ports | 4 x 100GbE (QSFP+) | | |

Qumulo for AWS

| | Example 1 – High Performance | Example 2 – Balanced Performance |
|------------------|--------------------------------|----------------------------------|
| Cluster | Four m4.16xlarge EC2 instances | Four m4.2xlarge EC2 instances |
| Read Throughput | 1.8 GB/s | 270 MB/s |
| Write Throughput | 1.3 GB/s | 190 MB/s |

ABOUT QUMULO

Qumulo is the leader in enterprise-proven hybrid cloud file storage, providing real-time visibility, scale and control of your data across on-prem and cloud. For more information, visit www.qumulo.com.