HIGH-PERFORMANCE FILE DATA MANAGEMENT AND DISTRIBUTED STORAGE

Supermicro & Qumulo Solutions for the Public Sector

A+ Single AMD EPYC™ 7003/7002 Series All-Flash NVMe Platform - AS -1114S-WN10RT

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Executive Summary

Supermicro and Qumulo deliver a high-performance, distributed file system to meet the performance and capacity demands that public sector organizations need to store, manage and access sensitive file data on-prem and in the cloud.

Qumulo's file data platform provides many built-in efficiencies to help organizations ease scaling complexities across the data center and cloud environments, enable migration to the cloud, reduce capital and operational costs, and proactively monitor and plan for future capacity and performance requirements. Qumulo supports public sector organizations across multiple use cases including, but not limited to:

- Video surveillance and security
- High-performance computing (HPC)

SUPERMICRO

Supermicro (Nasdaq: SMCI), the leading innovator in high-performance, high-efficiency server and storage technology is a premier provider of advanced server Building Block Solutions® for Enterprise Data Center, Cloud Computing, Artificial Intelligence, and Edge Computing Systems worldwide. Supermicro is committed to protecting the environment through its "We Keep IT Green®" initiative and provides customers with the most energy-efficient, environmentally-friendly solutions available on the market. www.supermicro.com

- Research computing
- Video editing and production
- Life Sciences

Supermicro's Qumulo file storage solution easily integrates into existing environments supporting multiple protocols, including SMB, NFS, FTP, and REST. In addition, the file data software is designed for maximum performance running on Supermicro's All-NVMe platform and for flexibility to enable organizations to run one file system that can scale across on-prem, hybrid, and multi-cloud environments at a petabyte scale.

Qumulo File Data Platform

Qumulo's file data platform is designed with flexibility, supporting Supermicro's high-performant, economical platform.
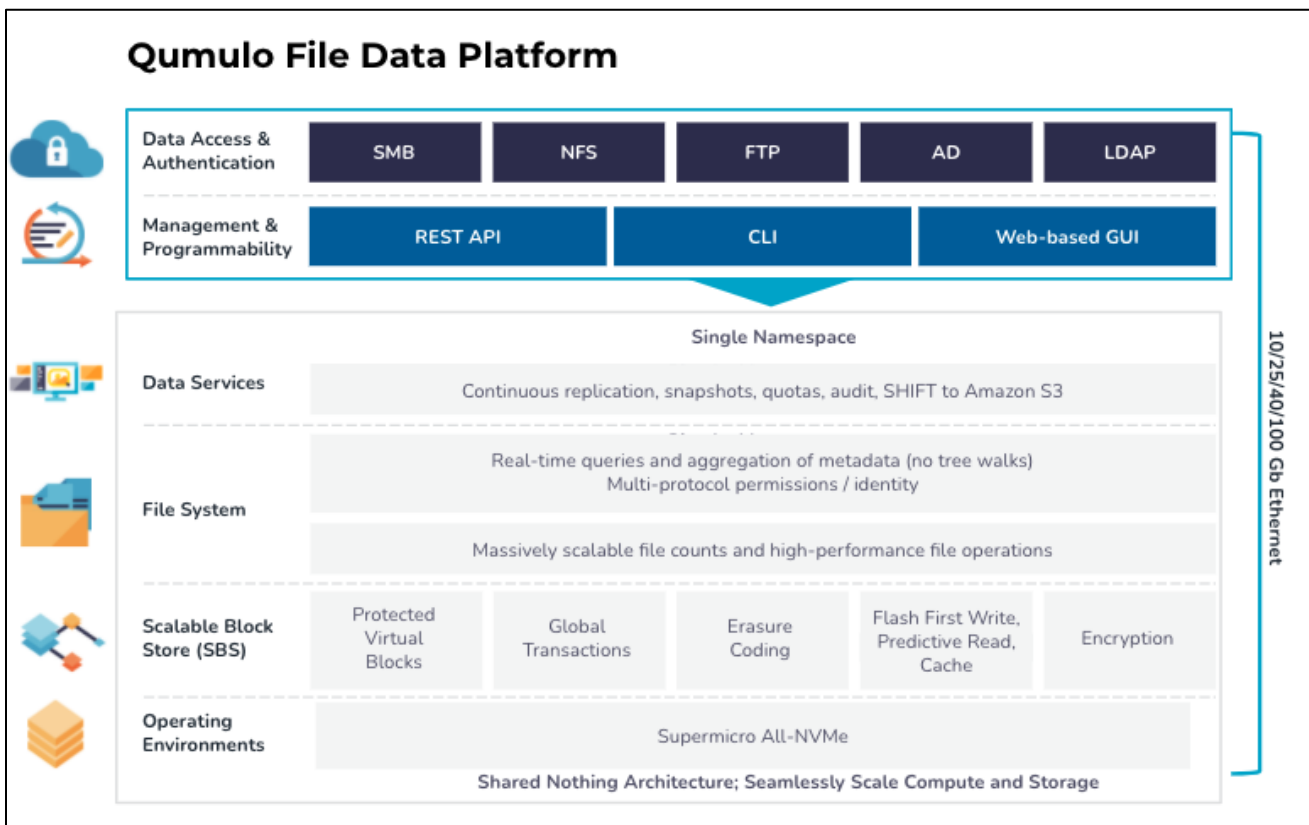

Figure 1 -Qumulo File Data Platform

August 2022

Massive Scalability

Qumulo's distributed file system is designed to scale to billions of files and store all file sizes efficiently. The scalable block store offers unprecedented scalability, optimized performance, and data protection. Qumulo's file data platform serves petabytes of data, millions of operations, and thousands of users.

Qumulo's file data system scales in performance to meet the demands of the most challenging workloads. One file data lake in the cloud supports different workflows and applications without compromising manageability, flexibility, or performance. Users can scale capacity and performance up and down on the cloud to match workflows.

Organizations can scale across their data center and the cloud without impacting performance. Qumulo linearly scales and automatically rebalances when additional nodes are added. The rebuild times get faster the more extensive the cluster. A single Supermicro 100 node cluster provides 15+PB of All-NVMe storage.

Supermicro All-NVMe	
Server model	AS -1114S-WN10RT
Form Factor	1U server
Configurations	30TB, 76TB, 153TB per node
CPU	AMD EPYC 24 core 2.8 GHz
Network Port	4 x 100GbE
MGMT Port	Base-T (RJ45)
Memory	128GB

Table 1 – A cluster requires a minimum of 4 nodes

Scales Across On-Prem, Hybrid, and Multi-Cloud Environments

Qumulo's file data platform delivers a single file solution using the same software, whether your data is in the cloud, on-prem, or scaling across both. Users can burst compute in AWS or Google Cloud and shift primary workloads to the cloud without needing to rewrite the application, although studies have shown that this may not be economical.

With continuous replication, organizations can quickly transfer data from an on-prem cluster to a cloud cluster to perform computations and then transfer the results back to the on-prem storage. In addition, Qumulo Shift for Amazon S3 is a feature that enables users to copy data to the Amazon S3 native format for easy access to AWS services, if the required services are not available in an on-prem data center.

Real-Time Analytics for Visibility and Control

Qumulo's file data platform is designed for data intelligence, allowing users to predict usage trends and better manage capacity. With Qumulo's integrated, real-time analytics, storage administrators can easily monitor performance, including throughput, IOPS, and latency. Real-time analytics give administrators the insights they need to manage issues proactively, optimize workflows, and make well-informed planning decisions for the future.

Data Security and Protection

Qumulo's file data platform provides encryption for data in flight with SMBv3 and TCP secured by TLS and provides software-based encryption at rest via an AES-256 bit implementation. In addition, Qumulo provides FIPS 140-2 Level 1 encryption for data at rest. Integrated data protection is included via snapshot replication for simple, cost-effective backups. Qumulo provides the same file system and separate namespaces for active and backed-up data, no additional applications are required.

Conclusion

Supermicro and Qumulo Software-Defined file storage solution bundle provides data security and protection and unbeatable performance, and is highly and easily scalable across private, hybrid, and public cloud. It's an ideal data management platform for public sectors. To learn more, please visit: https://www.supermicro.com/en/solutions/qumulo.

SOLUTION BENEFITS

- **Simple Management –** One single, easy-to-use file data management and storage system with a modern user interface that provides real visibility with integrated analytics.
- **Efficiency** – 100% of user-provisioned capacity is available for file storage, in contrast to the 70% to 80% usable capacity of legacy NAS.
- **Enhanced performance with All-NVMe –** Tuned to optimize performance and capacity on Supermicro's All-NVMe platform
- **Real Visibility with Real-Time Analytics –** Monitor performance, capacity, and usage of the entire file system with a real-time view at the directory/file level to simplify resource management and reduce costs.
- **All Inclusive and Transferable License –** Qumulo's file software is a single subscription license with all functionality, future updates, and enhancements included. It is completely transferable to the cloud or to new hardware.
- **Customer Success** – Customers are in direct contact with Qumulo Customer Success Managers who are experienced enterprise storage professionals or Qumulo file system engineers.

ABOUT QUMULO

Qumulo is the leading file data platform for multi-cloud environments, providing unrivaled freedom, control and real-time visibility for file data at massive scale. Fortune 500 companies, major film studios, and the largest research facilities in the world trust Qumulo to help them innovate with their mission-critical digital files. The Qumulo experience makes file data management simple with continuous new features, a single solution for all workloads, and access to customer success experts on your schedule.
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