



Qumulo

VS

Isilon

BATTLE OF HYBRID CLOUD STORAGE

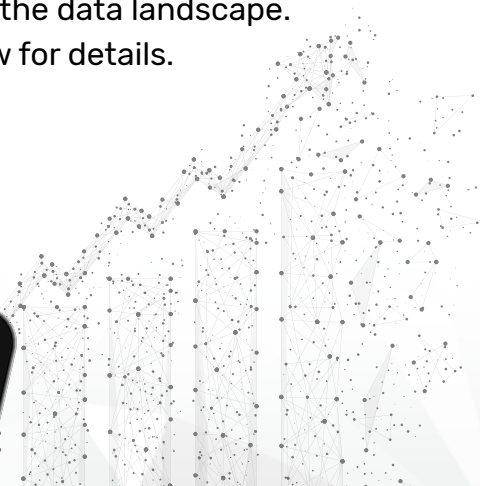
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You have more information under management than ever before – and there is no end in sight for continued data growth. As a matter of fact, you can expect about ten times the amount of data produced in 2025 than was produced in 2017. A large portion of this is unstructured data, including data generated via email, increasing amounts of higher resolution audio and video, social media content, images, documents, instant messages, sensor data, logs, metadata created by

embedded devices and more. This ever-increasing amount of data puts a lot of demands on existing legacy storage systems, which often are not up to the task.

Let's look at the way data is currently stored versus how modern systems, like Qumulo, handle file data demands with a scalable, flash-based architecture that easily evolves with the data landscape. See the chart below for details.



The Need for New Architectures in Hybrid Cloud File Storage

For many years, organizations have relied upon Dell EMC Isilon, a pioneering scale-out file storage solution, to dependably handle demanding file-based workloads. However, the size, complexity, and business-critical nature of unstructured data has grown dramatically since the introduction of Isilon's scale-out NAS architectures. The good news is that there are modern solutions that can handle today's cloud hybrid storage. One can fall behind if these additional options are not understood and considered.

Limited by its 1990's architecture, Isilon does not have the chops to keep up. Its data architecture is plagued by many pain points:

- Isilon's file system tree walks can take hours, days, or weeks, leaving systems exposed, slowing performance, and preventing access to cluster information.
- Only 80-85% of Isilon's file system capacity is usable.
- Implementing data protection is resource-expensive, especially on small files. Protection policies reduce hybrid cloud file storage efficiency as multiple copies of data are retained as protection blocks.
- Tiering in Isilon is complex and system-intensive, requiring the use of Smart Pools. Plus, a resource and time-consuming file system tree walk is necessary to run each tier job. This architecture puts the cluster in a constant state of tree walks, which can only happen serially, so many of the tree walks never complete.
- File system analytics (FAS) are not real-time, and often can never realistically be put into production.
- OneFS file system is not designed for and does not run in the public cloud.



Transforming from Scale-Out to Scale-Across

These pain points only scratch the surface of Isilon's legacy architecture, which remember was developed before the cloud was even a concept. In an age of constantly evolving business needs, organizations need improved architectures and solutions that are equipped to handle rapidly expanding, always-on file data availability. Scale-across storage solutions that are designed and developed with the size of unstructured data and the cloud in mind are therefore rapidly replacing Isilon.

Qumulo scale-across software was built to adapt to changing data requirements. The demand for applications and storage software to run in both the public cloud and the data center is only increasing. Qumulo was designed from the ground up by former Isilon employees who recognized the opportunity to improve upon voids and

weaknesses in legacy offerings, that were mismatched to the hybrid cloud world. Delivering software-centric, cloud extensible, simple enterprise data storage and management brought fast customer and market recognition to Qumulo.

Isilon vs. Qumulo

When your file data set grows larger over time it can quickly grow beyond what your legacy file system was designed for, leading to slower response times and difficulty recovering from failures. These are burdens on the teams that support and depend on data agility and can also decrease visibility into the contents of the file system.

Knowing this, it makes sense to choose a file storage system that adapts easily to the different life cycles of your data. If you are considering Isilon versus Qumulo, it's important to understand exactly what you're getting and how it will react to your changing data levels.



Category



Isilon

Approach to hardware

Hardware-independent

Hardware-independent; runs on industry standard hardware and the cloud.

Platforms: All NVMe

Does not utilize the performance advantages of the NVMe protocol, SSD with SAS protocol only. SSD with the SAS protocol strangles the performance of the SSDs. 4U Chassis with 4 nodes. HW limited by x8 SAS controller (6.5 GB/sec).

Standard 2U servers; latest NVMe SSDs. 40G: 9 GB/s. 100G: 13 GB/s.

Architecture

Built for SATA/SAS HDDs. Drive rebuild times vary by file count; overhead does not change with node count.

Hybrid architecture; flash-first. Drive rebuild times decrease as cluster size increases.

Data visibility

Extremely basic, using flash plugins. InsightIQ add-on requires tree walks, scales poorly, and runs in VM off cluster.

Rich visuals. You can see historical data, multiple clusters, client traffic, throughput and IOPS. Troubleshoot quickly.

Block size

8K

4K

Protection system

File-based

Block-based

Reprotect time

Dependent on file size

Independent of file size

Storage efficiency

Uses only about 80-85% of TB usable storage without negatively impacting performance. Space reserved for only 2 or 3 drive failures, not protection. Quotas are complicated and not always accurate due to necessity of tree walks.

Can fill a cluster to 100% of usage TB. Space reserved for drive failures and protection. Quotas are usable and accurate due to real-time analytics.

Mirroring

Files less than or equal to 128 KB are mirrored; any piece of a file that doesn't fit into the 128 KB stripe is mirrored and often mirrored multiple times.

All files use block protection system.

Predictability

Reports only consumed (used space and protection overhead) and raw space and not in real-time.

Accurately and in real-time reports both consumed and available usable space.

Analytics & management

Provides basic network performance metrics on cluster; deeper data requires tree walks and InsightIQ off cluster.

Analytics and management are real-time.

File system structure

Journal-then-write

Land-on-flash

Cloud

Archive to cloud; no offering to run file system software in the cloud.

Run active workloads in cloud with the software-defined file system; runs in the cloud, on-premise, or both utilizing the exact same software and management GUI.

Qumulo's Key Differentiators

Qumulo is a modern software-defined file system with data intelligence – a quality that far surpasses improvements made to an outdated legacy file system. Qumulo provides key differences in efficiency, simplicity, and performance.

Data-Aware Intelligence

Isilon was designed in an age where structured data was the challenge and unstructured was insignificant and not valued. Enter the democratization of AI and ML. With simple to use analytics tools companies began to see the value in keeping, often forever, and analyzing all the data they collect. Add to this the machine generated data that has become common, and now you have billions and billions of files to store and manage.

This file data growth caused storage to become unmanageable. IT was unable to answer questions such as: How much data do I have? Which departments or individuals are using the most data? What data can we archive and what still needs to be accessible? Qumulo is able to answer these questions and many more,

due to its real-time insight into what's driving the growth of your storage footprint. It eliminates guesswork into storage performance, usage, and IOPS via client IP address, data hotspots, and visualized reports.

A predictive, read-ahead cache gives performance benefits on both read and write of SSD, with the cost benefits of HDD. A programmable API interface not only allows common tasks to be automated, but also enables chargeback.

Efficiency

Isilon (and other storage of that era) was never designed to have 100% usable capacity – usually more like 80%. Qumulo is designed to fill a cluster to 100% of usable capacity, giving you what you paid for, and is optimized for mixed IO environments.

In addition, recovery is highly efficient in an environment that does not require tree walks to recover failed drives. Because Qumulo rebuilds the file system at the block level, drive rebuilds are much faster than Isilon. Re-protect times are consistent, predictable, and measured in hours, not days or weeks, with no over-provisioning.



Keeping it Simple

Qumulo's pricing strategy is simple: a single annual subscription covers everything. Organizations can move licenses to newer generations of hardware or to the cloud without undergoing an entire system purchasing process – the license just transfers. Isilon, on the other hand, has a configuration and price matrix. Qumulo is a future-proof, lower-cost of adoption, modern storage technology. Organizations can run workloads in the

cloud or in the data center and leverage the cloud to burst workloads.

Performance

Qumulo offers dramatic improvements in small file performance, rebuild times, and file contention compared with legacy scale-out architectures. The block-based protection system increases performance in mixed-file environments and is significantly faster, because every write is stored to flash and tiered to disk over time.

What About Customer Support?

Isilon has a good support structure and in some cases will send an engineer to your door. You, of course, want equal or better support from Qumulo. As former system administrators, Qumulo's customer success managers are storage experts with decades of experience

supporting petabyte-level storage. Qumulo uses cloud monitoring to monitor cluster health, which is a top driver of satisfaction among users. Qumulo also offers a dedicated Slack line directly into customer success, so you get an immediate response. No completing a ticket, no escalation of questions – they just get answered.

What Next?

As you can see, traditional storage that wasn't meant for real-time analytics or cloud environments is playing catch-up in today's world. As your data multiplies you need to consider if the direction you are taking for data storage will sustain your business' competitiveness in the future.

If this is intriguing, you are ready to learn more about Qumulo's future-proof software. Qumulo is pre-tested on a variety of HPE Apollo hardware options and on the AWS marketplace. Comport specializes in storage modernization and is a certified partner of Qumulo and HPE. Comport also offers cloud and managed services, if you are interested in these directions.

Contact Comport today to continue the conversation in person, tailored to your environment. We will help with technical expertise, assessments and a roadmap.

✉ **Contact: info@comport.com** >