

# On-Demand Capacity and Performance with Azure Native Qumulo Scalable File Service



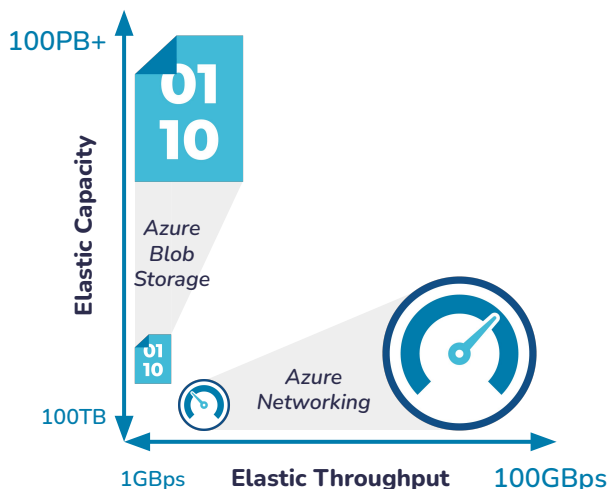
Azure Native Qumulo (ANQ) delivers more than just cost-effective file services at exabyte scale in the cloud. It provides an Azure-based unstructured data service that scales up automatically to give you more space, higher throughput, or both, when you need them, and then scales back down again when you don't.

## The Scale-anywhere Data Solution

Azure Native Qumulo's cloud-native architecture leverages Azure Blob Storage for capacity, meaning that you can scale your ANQ service up to virtually any size simply by adding data. It also means that deleting or migrating data from your ANQ service will automatically reduce its footprint and lower your monthly cost.

Just as with other object storage-based services, you'll only pay for the actual capacity you use. There's no need for you to guess how much capacity you might need, with the service expanding automatically as you add data. And since the service scales down again when you remove data, you're not paying for unused capacity as with other cloud-based services (and even your on-premises storage).

In fact, Azure Native Qumulo delivers a total cost of ownership that's comparable to what you'd pay for on-premises file storage, which can save you up to 80% of the cost of other file solutions on Azure. ANQ also delivers the same enterprise-class services – exabyte-scale storage capacity, multi-protocol support, snapshots, replication, quotas, and real-time data visibility – that you'd expect from an on-premises NAS.



## Capacity Elasticity

### On-demand capacity in Azure

Your monthly Azure Native Qumulo base subscription includes 100TB and scales up automatically as you add data above 100TB – and back down again as data is removed.

### Scale up and down seamlessly

ANQ's capacity is powered by Azure Blob Storage, so scalability is completely transparent. Your ANQ service can grow or shrink automatically as your data needs evolve. For example, you can scale to 100PB in a single namespace, and then back down to 100TB again, simply by adding and removing data.

### Pay only for what you use

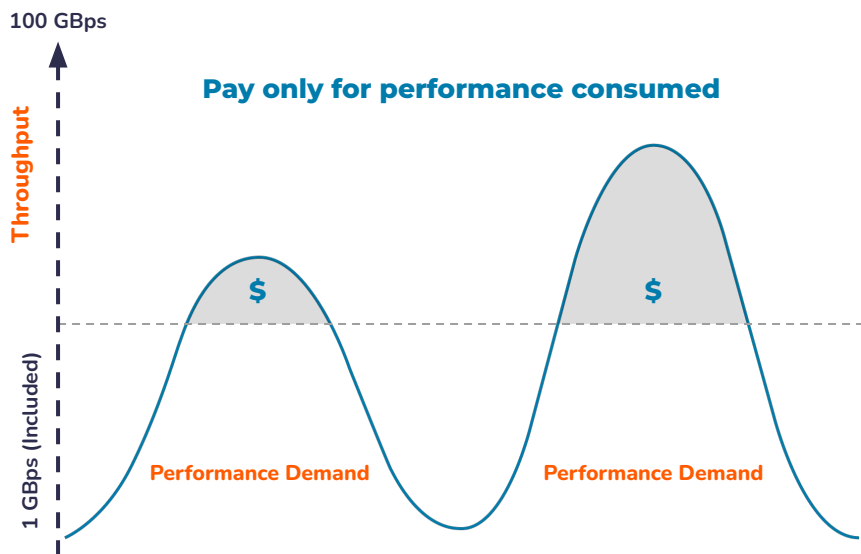
Cloud-native elasticity means you only pay for the storage space you actually use, while you're using it.

### Comparable to on-prem storage costs

Azure Native Qumulo's cloud-native architecture also means that the cost of file services in the cloud is now comparable to the cost of on-prem file storage and up to 80% less expensive than other cloud-file services!

## Cloud-Native Networking

Azure Native Qumulo's performance elasticity responds to increased workload demands the same way: by adding throughput as needed. If you need a temporary burst in throughput, your ANQ service instance will expand automatically in response to the increased workload demand.



If more throughput is needed, the service adds bandwidth in 1GBps increments, at a cost of \$0.00011 per GBps per TB stored<sup>1</sup>, up to 4GBps. You'll only pay for the throughput above the 1GBps that's included with your subscription, and only for as long as you use it.

If you need even higher levels of sustained throughput, Azure Native Qumulo can easily scale to over 100GBps – just contact Qumulo to arrange it.

With its native integration into Azure Blob Storage and Azure Networking, ANQ is the only cloud file storage platform that gives you the flexibility to scale throughput up and down so you get the performance you need without having to add capacity that you don't.

## Throughput Elasticity

### Dynamically scale throughput up and down

Need more throughput from your cloud-file service? Azure Native Qumulo scales up to 4GBps and back down automatically in response to performance demand. You can scale further to virtually any speed that your workload requires by contacting the Qumulo support team.

### More demand leads to higher performance

An Azure Native Qumulo instance automatically increases its throughput in response to higher demands on the service. A single ANQ service instance can scale to over 100GBps in response to multiple concurrent workloads.

### Scale performance independently of capacity

Unlike many other cloud file solutions, Azure Native Qumulo lets you scale to whatever level of throughput you need without requiring you to add more capacity at the same time.

### Full cloud elasticity

With Azure Native Qumulo's fully cloud-native architecture, you pay for only what you use while you use it. As your workload's throughput scales down, the system automatically returns to the 1GBps that's included with your subscription.

<sup>1</sup> Pricing current as of December 2023

## Azure Native Qumulo – Performance

We ran a series of tests on a standard Azure Native Qumulo instance to see what level of throughput the service could deliver in your environment. Our testing included both single-stream (to and from a single client connected to the service) and concurrent (how much sustained throughput the service could deliver to multiple clients simultaneously) workloads.

The results are in the following table:

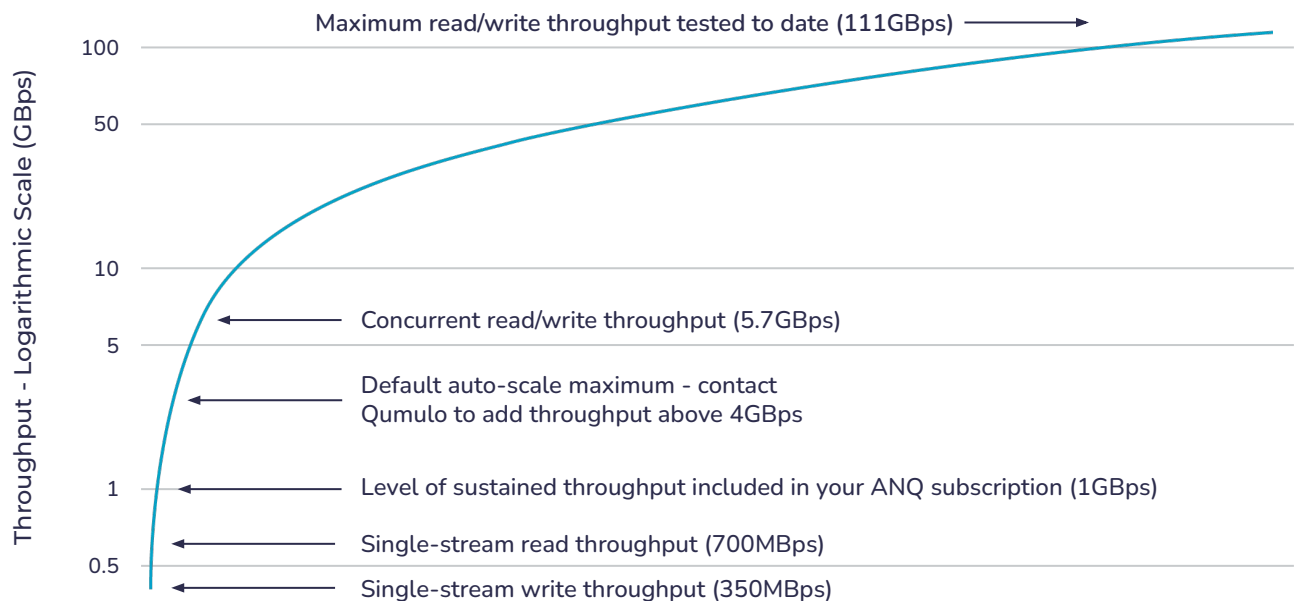
	Write throughput (MBps)	Read throughput (MBps)	File size	Block size
Single stream*	350 MBps*	700 MBps	1 GB+	1 MB
Concurrent (multistream)*	5.7 GBps**	5.7 GBps		

\* Workloads optimized for throughput. Contact Qumulo if your workload requires IOPS-optimized file storage on Azure.

\*\* Actual throughput may vary based on block size and file-access patterns.

\*\*\* Throughput automatically increases on demand to 4GBps per service instance. While you may see throughput that exceeds 4GBps in certain circumstances, results are not guaranteed and may vary. Contact Qumulo in advance to arrange for >4GBps throughput.

Using the same data profile, we ran an additional test against an Azure Native Qumulo service instance that was configured for very high throughput. To show there's no connection between used capacity and total throughput, we ran this last test against a freshly deployed service instance.



The result: our ANQ test instance delivered 111GBps sustained write throughput for the duration of the test!

Only Azure Native Qumulo offers elastic throughput that delivers the performance you need on demand. And only Azure Native Qumulo ensures that you only pay for the throughput you actually use.

To learn more about Azure Native Qumulo deployment, features, and pricing, visit the [Microsoft Azure Marketplace](#).