

# Qumulo Data Storage



Data is growing at an unprecedented rate. Today's organizations are challenged with keeping up with the rapid pace of data growth, as well as ensuring that their storage platform meets their specific capacity and performance needs.

Performance-intensive apps need the speed of NVMe all-flash storage to ensure the highest possible throughput and the lowest latency. Data-intensive workloads are focused on storing lots of data, and while they can also benefit from the write performance of flash, their primary objective is high capacity.

Whether you need high-performance, high capacity, or a balance of both, Qumulo's file system was uniquely engineered to deliver whatever your apps need, with a choice of all-flash hardware for maximum throughput, or hybrid NVMe flash and disk nodes for optimal capacity.

All Qumulo storage clusters deliver high ingest performance for all workloads with flash-first writes. With our all-NVMe flash nodes, you'll see comparably high performance for all read operations too. On our hybrid-node hardware, Qumulo's AI-driven prefetch algorithms ensure that up to 90% of all reads are also from flash storage, while the disk tier delivers high capacity to let you store large amounts of data.

Qumulo customers can choose from a range of Arrow nodes to meet your specific requirements. The Active Class includes both NVMe all-flash and hybrid nodes designed to maximize overall performance. Customers can also select hybrid nodes from the General Class that focus primarily on high capacity and archive workloads, while still delivering the write performance of flash.

When multiple clusters are deployed, the clusters can work together to form a globally-distributed but highly connected storage fabric tied together with continuous replication. Clients interact with the storage clusters using industry-standard file protocols (SMB, NFS, FTP, S3 or the REST API), and administrators can manage the cluster via a web-based graphical user interface or command-line interface.



## Licensing Tiers

### Active Class All-NVMe

The Qumulo Active Class nodes are powered by the leading All-NVMe flash storage technology on the market. High throughput and incredibly low-latency enable unparalleled read and write performance.

### Active Class Hybrid-NVMe

Qumulo's Active Class hybrid nodes optimize performance by intelligently caching more active data to go flash-first based on usage. This results in the vast majority of reads and all writes going through flash storage while less active data sits on HDD storage.

### General Purpose

The General Purpose class makes all of your valuable data, no matter how long it's been archived, immediately available to you.

## Active Class All-NVMe Nodes

Per Node	P-23T	P-92T	P-184T	P-368T
Family	Arrow All-NVMe Flash			
Raw Storage Capacity	23 TB	92 TB	184 TB	368 TB
Rack Units	2U			
NVME Drives (hot swappable)	12 x 1.92TB	24 x 3.84TB	24 x 7.68TB	24 x 15.36TB
Connectivity Ports	4 x 100GbE (QSFP28)			
Management Ports	1GbE Base-T (RJ45)			
CPU	2 x INTEL Gold 6126, 12 cores/2.6Ghz			
Memory	192GB			
Power Supply	2 x 1100W (fully redundant, hot-swappable)			
Dimensions	3.5" x 17.2" x 29" (8.9cm x 43.7cm x 73.7cm)			
Weight	60 LBS (27 KG)			
Power Requirements	100 – 240V, 50/60hz			
Typical Power Consumption	450 W			
Typical Thermal Rating	1,535 BTU/hr			
Maximum Power Consumption	650 W			
Maximum Thermal Rating	2,217 BTU/hr			
Operating Temperature	50° F – 95° F (10° C – 35° C)			
Non-operating Temperature	-40° F – 158° F (-40° C – 70° C)			
Operating Relative Humidity	8% to 90% (non-condensing)			
Non-operating Relative Humidity	5% to 95% (non-condensing)			

## Certifications

Safety	UL, cUL
Country	FCC (USA), NRTL (USA and Canada), CE (European Economic Area)
Emissions	FCC Part 15 Class A, ICES-003 Class A
Immunity	North America

## Active Class Hybrid NVMe Nodes

Per Node	QVRG2-96T	QVRG2-240T	C-192T	C-432T
Family	Quiver Hybrid		Arrow Hybrid	
Raw Storage Capacity	96 TB	240 TB	192 TB	432 TB
Rack Units	1U		2U	
HDD Drives (hot swappable)	12 x 8TB	12 x 20TB	24 x 8TB	24 x 18TB
NVMe Drives (hot swappable)	4 x 960GB or 4 x 1.92TB or 4 x 3.84TB	4 x 1.92TB or 4 x 3.84TB or 4 x 7.68TB	6 x 1.6TB	6 x 3.2TB
Connectivity Ports	2 x 25GbE (SFP28) 2 x 100GbE (QSFP28)		2 x 100GbE (QSFP28)	
Management Ports	1GbE Base-T (RJ45)			
CPU	2 x INTEL Silver 4210 10 cores/2.2GHz		AMD Rome 7282 16 cores/2.8 GHz	
Memory	96GB		128GB	
Power Supply	2 x 700 W (fully redundant, hot-swappable)		2 x 600 W (fully redundant, hot-swappable)	
Dimensions	1.7" x 17.6" x 34.7" (4.32cm x 44.8cm x 88.1cm)		3.2" x 17.3" x 33.1" (8.1cm x 43.9cm x 84.1cm)	
Weight	66 LBS (30 KG)		94 LBS (43 KG)	
Power Requirements	90-264V, 47/63hz		100 – 240V, 50/60hz	
Typical Power Consumption	389 W		385 W	321 W
Typical Thermal Rating	1327 BTU/hr		1314 BTU/hr	1085 BTU/hr
Maximum Power Consumption	469 W		585 W	456 W
Maximum Thermal Rating	1600 BTU/hr		1995 BTU/hr	1556 BTU/hr
Operating Temperature	41° F – 95° F (5° C – 35° C)		50° F – 95° F (10° C – 35° C)	
Non-operating Temperature	-40° F – 158° F (-40° C – 70° C)		-40° F – 158° F (-40° C – 70° C)	
Operating Relative Humidity	20% to 85% (non-condensing)		8% to 90% (non-condensing)	
Non-operating Relative Humidity	10% to 95% (non-condensing)		5% to 95% (non-condensing)	

## Certifications

Safety	UL, cUL
Country	FCC (USA), NRTL (USA and Canada), CE (European Economic Area), Aus/NZ*
Emissions	FCC Part 15 Class A, ICES-003 Class A
Immunity	North America

## General Purpose

Per Node	QVRG2-96T	QVRG2-240T	K-432T
Family	Quiver Hybrid		Arrow Hybrid
Raw Storage Capacity	96 TB	240 TB	432 TB
Rack Units	1U		2U
HDD Drives (hot swappable)	12 x 8TB	12 x 20TB	24 x 18TB
NVMe Drives (hot swappable)	4 x 960GB or 4 x 1.92TB or 4 x 3.84TB	4 x 1.92TB or 4 x 3.84TB or 4 x 7.68TB	6 x 1.6TB or 6 x 3.2TB
Connectivity Ports	2 x 25GbE (SFP28)		
Management Ports	1GbE Base-T (RJ45)		
CPU	2 x INTEL Bronze 3204 6 cores/1.9GHz		AMD Rome 7282 16 core/2.8GHz
Memory	64GB		128GB
Power Supply	2 x 700 W (fully redundant, hot-swappable)		2 x 600W (fully redundant, hot-swappable)
Dimensions	1.7" x 17.6" x 34.7" (4.32cm x 44.8cm x 88.1cm)		3.2" x 17.3" x 33.1" (8.1cm x 43.9cm x 84.1cm)
Weight	66 LBS (30 KG)		94 LBS (43 KG)
Power Requirements	90-264V, 47/63hz		100 – 240V, 50/60hz
Typical Power Consumption	373 W		321 W
Typical Thermal Rating	1327 BTU/hr		1095 BTU/hr
Maximum Power Consumption	441 W		456 W
Maximum Thermal Rating	1600 BTU/hr		1494 BTU/hr
Operating Temperature	41° F – 95° F (5° C – 35° C)		50° F – 95° F (10° C – 35° C)
Non-operating Temperature	-40° F – 158° F (-40° C – 70° C)		-40° F – 158° F (-40° C – 70° C)
Operating Relative Humidity	20% to 85% (non-condensing)		8% to 90% (non-condensing)
Non-operating Relative Humidity	10% to 95% (non-condensing)		5% to 95% (non-condensing)

## Certifications

Safety	UL, cUL
Country	FCC (USA), NRTL (USA and Canada), CE (European Economic Area)
Emissions	FCC Part 15 Class A, ICES-003 Class A
Immunity	North America