

# QuantaStor SDS Backup and Archive Storage Solutions



OSNEXUS is transforming storage economics through innovations in Software Defined Storage (SDS) by delivering the enterprise SAN/NAS performance and capabilities modern workloads require while simultaneously eliminating the high costs associated with proprietary storage hardware.

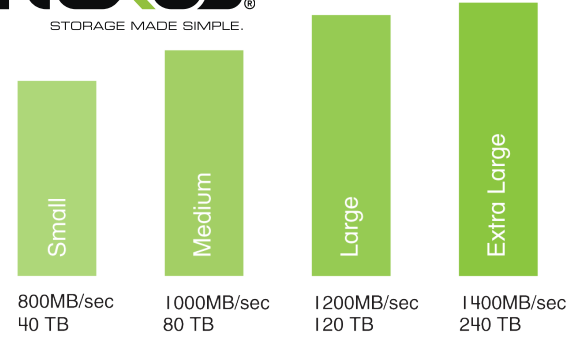


## Scale-out File Archive Storage Solutions

For applications that require a single massive namespace, QuantaStor can be deployed as a grid of appliances to deliver up to 4PB of storage in a single scale-out filesystem accessible via major protocols including NFS & CIFS. Scale-out solutions can be made highly available when storage is provisioned using erasure-coding or replica based storage layouts ensuring that the storage remains fully available to applications even when an appliance node is taken offline for maintenance or upgrades.

## Scale-up File Archive Storage Solutions

For applications that require 256TB or less, a single appliance can be setup to deliver highly economical storage for backup and archive. Additionally, features such as data compression, remote replication and snapshots are all available to single-node configurations. QuantaStor's grid management technology can also be used to combine appliances to simplify management of storage nodes deployed across global data centers. Performance of storage appliances increases with the number of disk drives used in the appliance. Typical performance for small appliances is in the 400MB/sec sequential range, while larger appliance can achieve aggregate throughput in excess of 1.4GB/sec with 10GbE.

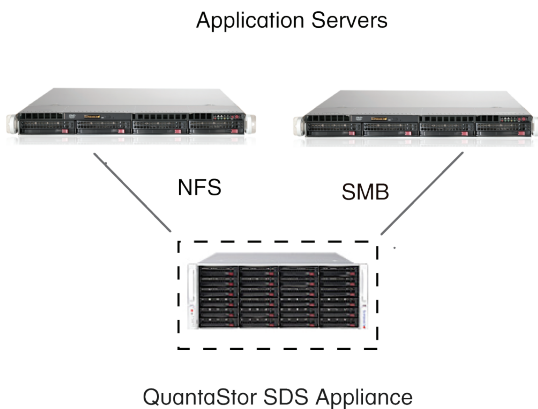


Single-node Storage Appliance Performance

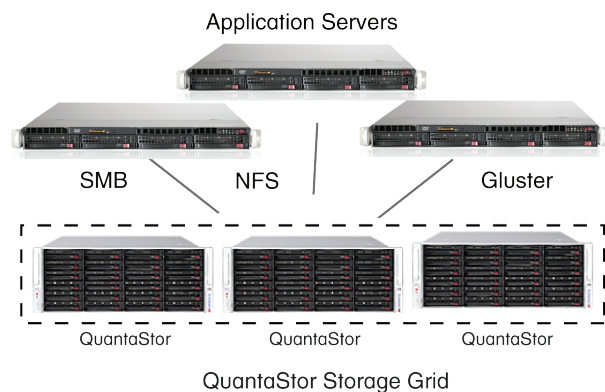
## Scale-up vs Scale-out Solution Capabilities

Backup & Archive Appliance Key Features	QuantaStor Single-node Appliance	QuantaStor Multi-node w/ Scale-out NAS
File Protocols	CIFS + NFS	CIFS + NFS
Maximum Capacity	256TB	16x256TB (4PB)
Data Compression	Yes	No
High-Availability	No	Yes
Bit-rot Protection	Yes	No
Snapshots	Yes	Available Fall 2015
Remote Replication	Yes	Scriptable
Active Directory	Yes	Yes

## Single-node Appliance



## Multi-node Appliance Grid



Expert included.

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## Key Features - Backup & Archive Solutions

### Maximizing Storage Capacity

QuantaStor supports variable levels of compression so that you can increase compression levels or even disable compression for pre-compressed media.

### Fault Tolerance and High Availability

Both single-node and multi-node solutions leverage hardware accelerated RAID to ensure fault-tolerance in the event of a disk failure. Multi-node scale-out configurations additionally can be made highly-available when configured to use erasure-coding or replica based file mirroring.

### Easy Data Migration

QuantaStor also has Backup Policies which can be used to automatically backup CIFS/NFS shares from any server or NAS appliance in your environment. This can be helpful for data migration from 3rd party and legacy NAS systems on your network.

### Security

QuantaStor has support for both software to ensure your archived data is secure, protected and meets regulatory compliance standards. QuantaStor's software encryption is AES256 based encryption and takes advantage of the latest in optimized encryption technology (AES-NI) built into the latest generation of Intel CPUs.

### Integrated Backup Agents

All major backup software products allow for backing up data to NAS storage via NFS and/or CIFS using disk-to-disk backup policies. QuantaStor also supports direct installation of the backup agents onto its Ubuntu Linux based SDS platform.

## Reference Hardware Configuration Guide

Configuration Size	Small	Medium	Large	Extra Large
	40TB	80TB	120TB	240TB
CPU Model	Intel Xeon E5 v2 or v3	Intel Xeon E5 v2 or v3	Intel Xeon E5 v2 or v3	Intel Xeon E5 v2 or v3
CPU Core Count	8	16	24	24
System Memory / RAM	64GB	128GB	128GB	256GB
Boot Disk	2x 500GB SATA	2x 500GB SATA	2x 500GB SATA	2x 500GB SATA
Network	2x 10GbE	2x 10GbE	2x 10GbE	2x 10GbE
HBA/RAID Controller	Avago or Adaptec	Avago or Adaptec	Avago or Adaptec	Avago or Adaptec
NVRAM Write-back Cache	Yes	Yes	Yes	Yes
Data Disk	10x 4TB SATA/SAS	20x 4TB SATA/SAS	30x 4TB SATA/SAS	30x 8TB SATA/SAS
Hot Spare Disks (optional)	2x 4TB SATA/SAS	2x 4TB SATA/SAS	2x 4TB SATA/SAS	2x 8TB SATA/SAS
Raw Disk Capacity	40TB	80TB	120TB	240TB
RAID Layout	RAID50(4D+1P)	RAID50(4D+1P)	RAID50(4D+1P)	RAID50(4D+1P)
Total Useable Capacity Yield	32TB	64TB	96TB	192TB
Random IOPS requirement	Low	Low	Low	Low
Use Cases:	General File and Block Storage	General File and Block Storage	General File and Block Storage	General File and Block Storage
License Tier	Small (up to 48TB)	Medium (up to 96TB)	Large (up to 128TB)	Extra Large (up to 256TB)



Expert included.