

## All-Flash High-Performance SAN/NAS Solutions for Virtualization & OLTP

All-flash configurations are designed to deliver maximum IOPS and throughput for mission critical workloads and applications including server virtualization, VDI, and high load OLTP/database use cases.

### Performance Range

300K/150K R/W IOPS per Storage Pool based on 20x SSD in RAID10

### Appliance Configuration

2x QuantaStor SDS Appliances (cluster pair)

- QuantaStor v4 Enterprise Edition
- Supermicro SuperServer 2029P-C1R
- 2x Intel Xeon Gold 5122 Processors
- 256GB RAM (8x 32GB RDIMM)
- 2x 480GB SATA 6G Read Intensive SFF (boot)
- 1x onboard 3108 RAID Controller (boot)
- 2x LSI 9300-8e 12Gb SAS HBAs (one per Storage Enclosure)
- 2x Dual-port 10/25/40/50GbE Ethernet Adapters
- 2x Dual-port 16Gb FC Adapters (Qlogic) (optional)

### Configuration Notes

- Recommend RAID10 or RAIDZ1 (2d+1p) layout for maximum IOPS
- Recommend 25GbE or faster NICs
- Read Intensive (RI) SAS SSDs work well for most workloads as wear leveling spans all devices in a given storage pool.
- NIST 800-53, CJIS, HIPAA Compliant
- VMware Certified (iSCSI, FC, NFS) & VAAI Certified
- FIPS 140-2 option available Q3/2018
- Call-home via PagerDuty, Email, SNMP, Slack

### All-Flash High-Performance



2x Supermicro SuperServer 2029P-C1R

Up to 4x Supermicro SuperChassis  
SC216BE2C-R741JBOD  
2U 24 bay SFF SAS

### Storage Enclosure Options



Supermicro SuperChassis  
SC216BE2C-R741JBOD  
2U 24 bay SFF SAS

- Add up to 6x additional storage enclosure units (8 total) may be added to each controller pair. Each enclosure is connected to dedicated HBA controller ports on both servers.
- Storage enclosures may be partially populated.
- Growing capacity in increments of 8x, 16x, or 24x drives is recommended.



Supermicro based hardware platform

## Hybrid Performance SAN/NAS Solutions for Virtualization & OLTP

Using a combination of HDD with SSD for read and write performance acceleration, QuantaStor hybrid SAN/NAS configurations are ideal for a broad spectrum of general application workloads and use cases including OLTP, VDI and server virtualization.

### Performance Range

15K – 30K IOPS per Storage Pool  
2GB – 3GB/sec read/write sequential per Storage Pool

### Appliance Configuration

2x QuantaStor SDS Appliances (cluster pair)

- QuantaStor v4 Enterprise Edition
- Supermicro SuperServer 2029P-C1R
- 2x Intel Xeon Gold 5118 Processors
- 256GB RAM (8x 32GB RDIMM)
- 2x 480GB SATA 6G Read Intensive SFF (boot)
- 1x onboard 3108 RAID Controller (boot)
- 2x LSI 9300-8e 12Gb SAS HBAs (one per Storage Enclosure)
- 2x Dual-port 10/25/40/50GbE Ethernet Adapters
- 2x Dual-port 16Gb FC Adapters (Qlogic) (optional)

### Storage Enclosure Configuration

- Add up to 6x additional storage enclosure units (8 total) may be added to each controller pair. Each enclosure is connected to dedicated HBA controller ports on both servers.
- 2x 800GB SAS Mixed-use SSDs per enclosure for write acceleration
- Storage enclosures may be partially populated.

### Configuration Notes

- Storage grid scales to 32x controller pairs (64 appliances total)
- Storage grids may span sites and use different hardware configurations
- Recommend RAID10 or RAIDZ1 (2d+1p) layout for maximum IOPS
- NIST 800-53, CJIS, HIPAA Compliant
- VMware Certified (iSCSI, FC, NFS) & VAAI Certified
- FIPS 140-2 option available Q3/2018
- Encryption, compression, high-availability, remote-replication included
- Call-home via PagerDuty, Email, SNMP and Slack channel

### Hybrid Performance



2x Supermicro SuperServer 2029P-C1R

Up to 4x Supermicro SuperChassis  
SC216BE2C-R741JBOD  
2U 24 bay SFF SAS

### Hybrid Capacity



2x Supermicro SuperServer 2029P-C1R

Up to 4x Supermicro  
SuperChassis 946SE2C-R1K66JBOD  
4U 60 bay 3.5" LFF SAS

Supermicro based hardware platform

## S3/SWIFT Object Storage for Biotech, Energy, Media & CDN Workloads

Using a combination of HDD with SSD for improved read and write performance acceleration QuantaStor scale-out object storage configurations are ideal for a broad spectrum object storage workloads requiring hyper-scale to 64PB using the S3 and SWIFT REST based protocols. Scale-out object storage configurations can start with as few as three appliances with scale to sixty-four appliances enabling organizations to easily scale on demand with zero downtime.

### Appliance Configuration

QuantaStor SDS Object Storage Appliance

- QuantaStor v4 Enterprise Edition
- 2x Intel Xeon Gold 6142 Processors
- 256GB (8x 32GB RDIMM)
- 2x 480GB SATA 6G Read Intensive SFF (boot)
- 1x 3108 AOC or Broadcom MegaRAID 9341-4i RAID Controller (boot)
- 1x onboard LSI 3008 SATA/SAS HBA (data drives)
- 2x Dual-port 10/25/40/50GbE Ethernet Adapters
- Up to 60x (or 45x) 6/8/10/12TB Enterprise SATA HDDs
- NVMe Kit / AOC-SLG3-2E4R 2-port Controller, 6 bay drive cage, trays, cables
- Up to 6x NVMe SSD devices (journal devices), 2x minimum

### Storage Grid Configuration:

- 3x QuantaStor SDS Appliances minimum
- 64x QuantaStor SDS Appliances maximum

### Configuration Notes

- Usable capacity depends replica count or erasure coding selection. 66% usable is a good estimation guideline (4k+2m).
- Separate front-end and back-end networks are recommended but not required.
- Compression & AES 256 bit encryption included
- SMB/NFS gateway access included
- Integrates with Ceph Luminous, see documentation for S3 API coverage
- Automatable via extensive QuantaStor REST APIs & multi-platform QS CLI
- NIST 800-53, CJIS, HIPAA Compliant
- FIPS 140-2 option available Q3/2018
- Call-home via PagerDuty, Email, SNMP, Slack

### S3/SWIFT Object Storage Cluster



SuperStorage 4U Server  
6049P-E1CR60L  
(or 6049P-E1CR45L)

SuperStorage 4U Server  
6049P-E1CR60L  
(or 6049P-E1CR45L)

SuperStorage 4U Server  
6049P-E1CR60L  
(or 6049P-E1CR45L)

SuperStorage 4U Server  
6049P-E1CR60L  
(or 6049P-E1CR45L)

SuperStorage 4U Server  
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Supermicro based hardware platform