

Quantum®

QXS Hybrid Storage



> DATASHEET

Automated, intelligent systems providing flash speeds at a fraction of the cost

As businesses aim to achieve faster time-to-market and greater customer satisfaction, they look to IT to keep pace by providing a faster, more responsive infrastructure. This challenge is compounded by unrelenting data growth and ongoing pressure on IT budgets. IT leaders recognize that, all too often, storage is the bottleneck in their business. Many of today's storage systems are either all flash—which are fast but are also very expensive—or lack robust data management, effective data protection, and the ability to expand seamlessly.

REAL-TIME, INTELLIGENT TIERING TO OPTIMIZE PERFORMANCE

Traditionally, storage system tradeoffs have been between cost, manageability, reliability, and performance. Acquiring a storage system that had the performance needed was very expensive and often very difficult to manage. With less-expensive storage systems, performance was often inadequate and the reliability questionable. Having a storage system that was high performing, highly reliable, easy to manage, and securely expandable while staying within budget was seen as a pipe dream. That is, until now.

OPTIMAL COMBINATION OF PERFORMANCE, SCALE, FLEXIBILITY, AND ECONOMY

Quantum QXS hybrid storage systems' real-time, automatic, intelligent tiering, Q-Tier, enables all-flash-like performance. The QXS Q-Tools provide easy-to-use storage management capability including thin provisioning and caching. With scalable, customizable configurations, QXS storage enables IT to achieve the perfect blend of flash and disk to meet all their requirements with respect to reliability, performance, and cost.

The performance of the QXS arrays exceeded all of our expectations and demands, enabling us to deliver on our '3 minutes to boot, 15 minutes to recover' service level agreement, we call this our ASAP SLA!

- Kevin Woodley,
Data Centre Manager,
Oxford Health Informatics Service

FEATURES & BENEFITS

Intelligent, real-time tiering

Optimizes your storage investment by ensuring frequently accessed data is in the highest performing storage.

Blazing Speed

Designed for demanding sequential I/O performance, QXS hybrid storage maximizes performance regardless of disk type or configuration.

Designed for reliability, proven 99.999% availability

Ensure your mission-critical applications always have access to data. QXS hybrid storage systems are designed with industry-leading, high-reliability specifications and no single point of failure.

Optimizing your budget

QXS provides all-flash performance at a fraction of the cost of an all-flash system.

> **LEARN MORE:**
www.quantum.com/hybridstorage

BUILDING BLOCKS FOR QXS ARCHITECTURE

CONTROLLER (Performance)



- QXS-3
- QXS-4
- QXS-6

Interface Options

- iSCSI
- FC
- SAS



CHASSIS OPTIONS (Capacity)



2u48



4u56



2u24



2u12



DEVICES (Flexibility)



2.5" HDD



3.5" HDD



SSD



Ensure you get the intelligence and connect speed you need.

Maximize storage capacity; combination of SSD and HDD, all HDDs or all SSDs.

Based on your application performance needs and your budget. Use all HDDs, all SSDs, or mix SSD with HDD to achieve the optimal system.

Q-Tier

- Real-time
- Intelligent
- Automated

Ensures the most frequently used data is in the highest-performing storage. Constant background scanning for "hot" data with the "hot" data moved immediately—no waiting.



QXS Q-Tools

1. **Cache – SSD Read Cache**
Cache supports SSD / HDD configurations, which dramatically increases the amount of read-cache available to the storage system.
2. **Thin – Thin Provisioning**
Thin provisioning streamlines the tasks of provisioning and modifying volumes, allowing IT managers to respond to data growth as needed.
3. **Pool – Automatic Pooling**
Pool simplifies the definition and management of tiered pools of storage with a powerful, yet simple to manage, storage virtualization layer.
4. **Quick – RAID Rapid Rebuilds**
Quick delivers an accelerated rebuild operation as only the sectors that contain actual data are rebuilt, resulting in up to 5 times faster restoration of the RAID set.
5. **Snap – Virtualized Snapshots**
Snap is a powerful new Advanced Copy which includes point-in-time snapshots and asynchronous replication.



QXS-3 Series

BEST-IN-CLASS RELIABILITY AND HIGH AVAILABILITY

- **Dual RAID Controller** (Active/Active)
- **2 Ports per Controller** for maximum value
- **Flexible Interface Options** (CNC)
- **8Gb/16Gb FC or 1/10Gb iSCSI**
- **Easy to Set Up and Use** with the RAIDar 2.0 user interface
- **Support HDD and SSD Options**
- **Available with DC Power**
- **Scale to 96 Drives (SFF) - 3 Expansion JBODs**
- **Scales up to 384TB**
- **NEBS-compliant for Telco**
- **MIL-STD-810F/G**

Form/Fit

- 2U12, 2U24
- Interface options per system
 - CNC: 4 x 8Gb/16Gb FC or
 - CNC: 4 x 10Gb iSCSI

Performance

- 40K Read IOPS
- 3300 MBps Read
- 2400 MBps Write

Patented Technology

- EcoStor™: Battery-free protection
- Cache: Low-latency cache mirroring



QXS-4 Series

BEST-IN-CLASS PRICE/PERFORMANCE

- **Increased Bandwidth** & 4 ports per controller
- **Hybrid Interface** with 16G FC & 10G iSCSI
- **Future-Proof** for next-gen host interconnect
- **Data Management Services (DMS) Support**
- **WIN 2012, SMI-S Support**
- **Full Drive Encryption Capable**
- **Scale to 1.9PB**
- **NEBS-compliant for Telco**
- **MIL-STD-810F/G**

Form/Fit

- 2U12, 4U56 LFF
- 2U24, 2U48 SFF
- Interface options per system
 - CNC: 8 x 4Gb/8Gb/16Gb FC or
 - CNC: 8 x 1Gb/10Gb iSCSI or
 - 8 x 12Gb SAS or
 - CNC Hybrid: 4 x iSCSI + 4 x FC

Performance

- 100K Read IOPS
- 6400 MBps Read
- 5300 MBps Write

Patented Technology

- EcoStor™: Battery-free protection
- Cache: Low-latency cache mirroring



QXS-6 Series

HIGH PERFORMANCE

- **Increased Bandwidth** & 4 ports per controller
- **Hybrid Interface** with 16G FC & 10G iSCSI
- **Future-Proof** for next-gen host interconnect
- **Data Management Services (DMS) Support**
- **WIN 2012, SMI-S Support**
- **Full Drive Encryption Capable**
- **Scale to 1.9PB**
- **NEBS-compliant for Telco**
- **MIL-STD-810F/G**

Form/Fit

- 4U56 LFF
- 2U48 SFF
- Interface options per system
 - 8 x 12Gb SAS or
 - CNC Hybrid: 4 x iSCSI + 4 x FC

Performance

- 100K Read IOPS
- 12000 MBps Read
- 5700 MBps Write

Patented Technology

- EcoStor™: Battery-free protection
- Cache: Low-latency cache mirroring

TECHNICAL SPECIFICATIONS

| | 2U-12 Drive | 2U-24 Drive | 2U-48 Drive | 4U-56 Drive |
|-------------------------|---|-------------|---------------|-------------|
| QXS-3 SERIES | | | | |
| Controller Ports | 4 FC, iSCSI, or 4-8 SAS Ports | | | |
| Controller Connectivity | 16Gb, 8Gb Fibre Channel 10Gb, 1Gb iSCSI 12Gb SAS | | | |
| Primary Capacity | 96TB | 48TB | | |
| Expanded Capacity | 384TB | 192TB | | |
| Read Performance | 3.3GB/s Read | | | |
| Write Performance | 2.4GB/s Write | | | |
| Supported Drive Sizes | 3.5" | 2.5" | | |
| Supported Drive Types | SSD, SAS 10K RPM, 15K RPM, and Nearline Drives | | | |
| Mix SSD & HDD | Yes | | | |
| QXS-4 SERIES | | | | |
| Controller Ports | 8 FC, SAS, or iSCSI Ports | | | |
| Controller Connectivity | 16Gb, 8Gb, 4Gb Fibre Channel 10Gb, 1Gb iSCSI 12Gb SAS CNC Hybrid: 4 x iSCSI + 4 x FC | | | |
| Primary Capacity | 96TB | 48TB | 96TB | 448TB |
| Expanded Capacity | 768TB | 384TB | 384TB | 1.9PB |
| Read Performance | 6.4GB/s Read | | | |
| Write Performance | 5.3GB/s Write | | | |
| Supported Drive Sizes | 3.5" | 2.5" | | 3.5" |
| Supported Drive Types | SSD, SAS 10K RPM, 15K RPM, and Nearline Drives | | | |
| Mix SSD & HDD | Yes | | | |
| QXS-6 SERIES | | | | |
| Controller Ports | | | 8 SAS | 8 SAS |
| Controller Connectivity | | | 12Gb SAS | 12Gb SAS |
| Primary Capacity | | | 96TB | 448TB |
| Expanded Capacity | | | 384TB | 1.9PB |
| Read Performance | | | 12GB/s Read | |
| Write Performance | | | 5.7GB/s Write | |
| Supported Drive Sizes | | | 2.5" | 3.5" |
| Supported Drive Types | | | SSD, SAS | |
| Mix SSD & HDD | | | Yes | |

To learn more about Quantum QXS Hybrid Storage, please visit www.quantum.com/hybridstorage

Quantum
BE CERTAIN