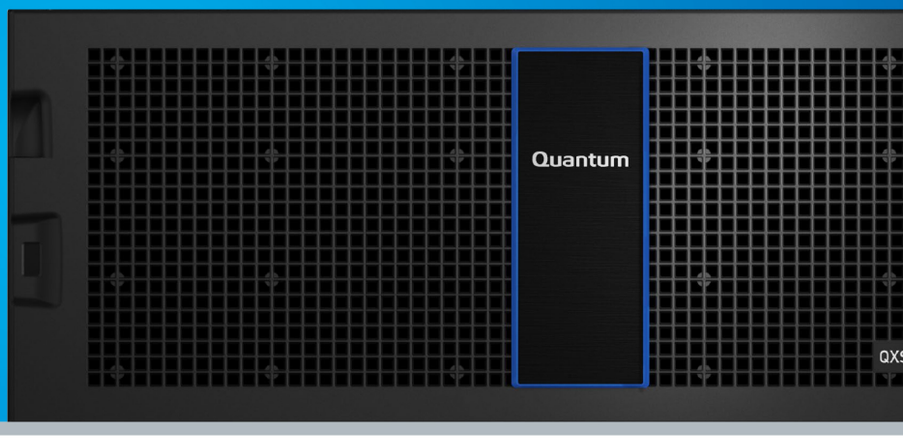
Quantum

QXS Hybrid Storage



> DATASHEET

Real-time, 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 also very expensive; or lack robust data management, effective data protection, and the ability to expand seamlessly.

REAL-TIME, INTELLIGENT TIERING TO OPTIMIZE PERFORMANCE

Storage needs to be fast and accessible to ensure applications get the data when they need it, flexible to deal with extremely random data, and easily scalable to deal with the continual growth in data.

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 not adequate 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

The Quantum QXS™ hybrid storage systems' real-time, automatic, intelligent tiering, Q-Tier, enables 90% of all-flash performance at 30% of the cost. 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.

QXS hybrid storage is tuned for primary storage found in virtualized environments, media & entertainment, video surveillance, and large unstructured data environments. The ruggedness of QXS, NEBS Level 3, and MIL-STD-810G compliance, is a perfect solution for telecom and the military as well as other environments that have challenging working conditions or requirements such as autonomous car testing.

FEATURES & BENEFITS

Intelligent, Real-Time Tiering
Optimizes your storage investment by ensuring frequently accessed data is in the highest-performing storage.

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

NEBS and Mil-Spec Compliant
Designed to be rugged to ensure you have access to your data in less-than-ideal environmental conditions such as heat, dust, and challenging storage environments outside of the data center.

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 90% of all-flash performance at 30% of the cost.

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

BUILDING BLOCKS FOR QXS ARCHITECTURE

Performance

CONTROLLER

- QXS-3 entry level
- QXS-4 performance
- QXS-6 high performance

Interface Options
- iSCSI
- FC
- SAS

Ensure you get the intelligence and connect speed you need.

Capacity

CHASSIS

4u56

2u48

2u24

2u12

Maximize storage capacity. Up to 1.9PB in the densest array available in the market.

Flexibility

DRIVES

SSD

2.5" HDD

3.5" HDD

Mix SSD with HDD to achieve the optimal system, or use all SSD or all HDD.

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.

Designed to Meet Industry Rugged Standards: NEBS Level 3 and MIL-STD-810G

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 Level 3-compliant for Telco**
- **MIL-STD-810G**

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 Level 3-compliant for Telco**
- **MIL-STD-810G**

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
- 120K Read IOPS
- 6400 MBps Read
- 5300 MBps Write

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

The QXS-456M is an appliance designed exclusively for StorNext® environments that provides extended online archive for customers who have significantly less than a petabyte of data and/or would prefer to use disk instead of tape for archive. The QXS-456M includes: QXS-4 controller with a 4U56 chassis, SFPs and cables, Storage Manager Capacity Licensing and Storage Manager Sdisk License. The appliance is available in 3 different capacity sizes:
- 224TB raw capacity consisting of 56 4TB 7.2 RPM NL-SAS Storage Manager capacity license for 186TB
- 336TB raw capacity consisting of 56 6TB 7.2 RPM NL-SAS Storage Manager capacity license for 279TB
- 448TB raw capacity consisting of 56 8TB 7.2 RPM NL-SAS Storage Manager capacity license for 372TB

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 Level 3-compliant for Telco**
- **MIL-STD-810G**

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

Performance
- 200K 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	