Nominee: Quantum

Nomination title: Quantum QXS hybrid storage for SSD/Flash Storage Product of the Year

The highly attractive combination of significant cost reduction and application deployment flexibility has driven virtualisation to become one of the most widely adopted new technologies in computing history. With this

flexibility comes the requirement that the storage on which the applications and user data resides be flexible enough to keep up with changing usage patterns. Storage utilisation has quickly transformed from predictable, to predictably changing, to unpredictably random. Manual tuning and reallocation can't keep up, and replacing disks with flash isn't cost effective and undermines the savings originally promised by virtual computing.

To meet the demands of these random workloads, Quantum QXS hybrid storage uses Q-Tier real-time intelligent tiering

software to move data among different tiers of storage within an array, including flash, high-performance HDDs, and lower cost HDDs, based on real-time data access patterns.

Tiering data requires both compute power and storage bandwidth. Unlike other hybrid storage arrays that tier data daily to avoid performance degradation during peak hours, QXS hybrid storage arrays have dedicated processing and dual active-active controllers to tier data every 5 seconds—constantly promoting active workloads to the fastest tier available with no reduction in performance. This provides the most-needed data with the highest I/O possible, and also reduces the bottlenecks and noisy-neighbour effects associated with static storage.

The net effect is that users can achieve flash performance for data sets that need it without overprovisioning expensive flash storage infrastructure. For the other arrays that tier the data as a batch process at the end of the day, the tiering occurs far too late—by that time, different data sets are being accessed.

As well as intelligent data tiering which enables the optimal use of higher-cost, high-performance storage, there are various other important benefits that make the QXS hybrid storage solution so unique. These include...

Speed –

The QXS hybrid storage has been built to be fast. QXS hybrid systems maximise performance regardless of disk type or configuration—all disk, all flash or flash and disk. With as little as 10% capacity dedicated to flash, QXS hybrid performance is up to 200,000 IOPS and is on par with all-flash arrays at a fraction of the cost. Designed for demanding sequential I/O performance, we use multi-core processing, active-active controllers, and separate paths for internal management and external data access.

Systems pre-configured for optimisation –

QXS hybrid storage is offered with 1-button configurations. These 1-button configurations are optimised for specific workflows and applications that have been extensively tested by Quantum. There is no risk or uncertainty when pre-defined, thoroughly tested QXS hybrid storage systems are installed.

Reliability –

With QXS industry-leading reliability, users can be assured that your mission-critical applications will always be available. With the dual, redundant design, QXS systems eliminate single points of failure. Designed to meet military and telecommunications specifications, the systems will perform, without failure, in extreme conditions.

Exceed requirements –

QXS true hybrid storage systems' automatic, intelligent tiering optimises flash and disk to keep performance up and costs down. For most applications, up to 95% of IOPS can come from as little as 10% flash. Flexibility and scalability are required to manage an efficient storage environment. QXS systems are available in a variety of configurations, including up to 3 tiers of storage within an array, and seamlessly support additional SSDs, HDDs, and expansion chassis when needed.

Designed for high performance, efficiency, reliability, and scalability Quantum QXS hybrid storage portfolio optimises flash and disk to significantly lower operating and capital costs. As Oxford Health Informatics Service' data centre manager Kevin Woodley put it: "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!"

Why nominee should win

Designed for high performance, efficiency, reliability, and scalability Quantum QXS hybrid storage portfolio optimises flash and disk to significantly lower operating and capital costs. It offers…

- **Intelligent, real-time tiering:** Optimises 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 maximises performance regardless of disk type or configuration.

- **Designed for reliability, proven 99.999% availability:** Ensures 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.

- **Optimising budgets:** QXS provides all-flash performance at a fraction of the cost of an all-flash system