

## ESG Lab Validation Report Summary

# Quantum DXi6900 Deduplication Appliance, Powered by StorNext 5

## Delivering Performance, Scale, and Security for Comprehensive Data Protection

The DXi6900 Series is the newest member of the Quantum comprehensive digital asset storage portfolio, and is designed to provide simple, cost-effective protection for midrange and enterprise sites. The DXi6900 is engineered to provide efficient protection of physical and virtual data, no matter the customer size, bringing even small and remote sites into a business continuance strategy. DXi6900 systems provide pay-as-you-grow scalability to 510TB of usable capacity—up to 7.2PB of logical capacity—in 32U of rack space with the highest levels of performance.

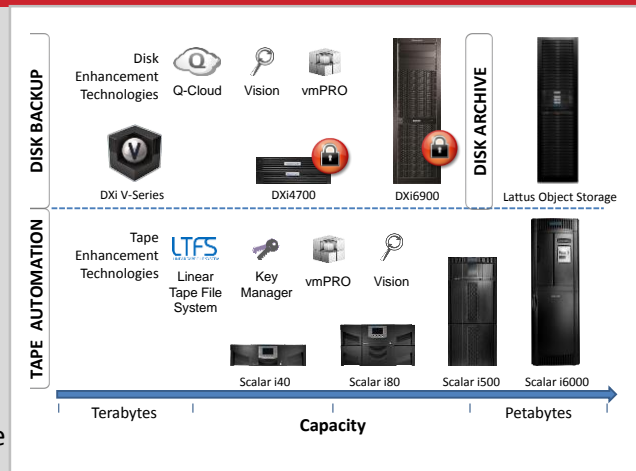
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### The Product

The Quantum DXi6900 is designed to provide high performance, flexible, pay-as-you-grow disk backup storage. The DXi6900 offers 17TB to 510TB useable capacity in 17TB licensable capacity-on-demand (CoD) increments, with enterprise class performance of up to 16.3TB/hour and improved data availability through Dynamic Disk Pools (DDP). 4TB self-encrypting drives and 256-bit AES encryption provide comprehensive data security. DXi appliances use multi-protocol support to provide universal connectivity.

All DXi-Series appliances run DXi software, providing enterprise class data protection. At the core of the DXi software is Quantum's StorNext, a high performance, extremely scalable file system which handles the file management associated with the deduplicated files and blockpool. DXi software uses patented variable-length, inline data deduplication, reducing data stored on disk by up to 90%, while automatic bandwidth-optimized replication provides a choice of protection approaches for remote sites over existing networks.

The DXi-Series appliances are part of Quantum's comprehensive digital asset storage portfolio, which includes Scalar LTO libraries, StorNext scale-out storage solutions, vmPRO virtual data protection software, Q-Cloud cloud backup and disaster recovery services, and Quantum Lattus, providing virtually infinite object storage capacity.



### Why This Matters

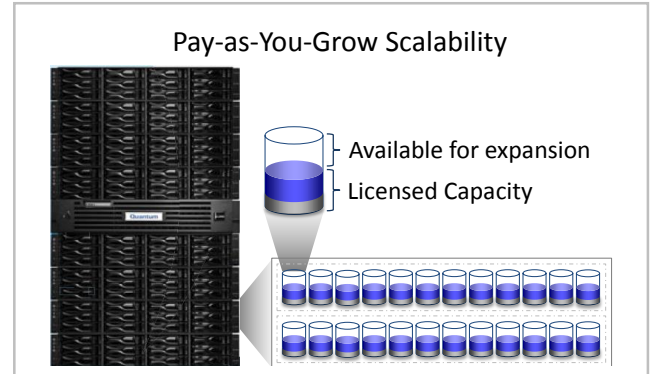
Widely publicized data breaches, privacy laws, and boardroom jitters are driving a behavioral shift towards data encryption. ESG research indicates that information security initiatives are the number one reported IT priority for the next 18 months, followed closely by improving data backup and recovery and managing data growth. IT administrators have been struggling for years to complete nightly backups on-time.

The Quantum DXi6900 secures data at rest and in transit, reducing risk, avoiding potentially crippling costs, and preventing unauthorized data access. ESG Lab has validated that Quantum's DXi6900 is not only Quantum's highest performing disk backup and deduplication solution but achieves this feat while delivering high levels of data reduction on disk and over the wire; individual files can be restored in a matter of seconds. Quantum provides enterprise-class performance while reducing complexity and eliminating the need for capacity and performance planning.

## ESG Lab Validation Highlights

ESG Lab performed hands-on evaluation and testing of the DXi6900 at Quantum's Englewood, Colorado facilities. The following is a summary of the results:

- Performance** ESG Lab validated that Quantum's DXi6902 was able to sustain 16.3TB per hour of multithreaded enterprise backup throughput. A single Quantum DXi6902 disk backup system could be used to protect more than 130TB of data in an eight-hour shift using less than 20TB of disk space and restore individual files in a matter of seconds.
- Variable vs. Fixed-Length Dedupe** Quantum DXi variable-length deduplication was able to provide 85% data reduction for both structured and unstructured data, using full and incremental backup schedules, compared to just 50% reduction for fixed-length deduplication. This translates to easier integration into an organization's existing backup environment and substantial disk capacity and network bandwidth savings in large environments.
- StorNext** ESG Lab found that the StorNext file system's Intelligent metadata management, storage optimized for balanced performance, data integrity checking, and Dynamic Disk Pools (DDP) technology all work together to improve availability and performance simultaneously.
- Encryption** The DXi6900 supports data in-flight and at-rest encryption and secure file shred to meet the most stringent data security requirements. Quantum uses hardware-based encryption to eliminate performance impact.
- Scalability** With "pay as you grow" scalability, capacity can be added with a simple license key reducing complexity of capacity and performance planning.
- ISV Integration** The DXi6900 integrates with Symantec NetBackup AIR, which can reduce the time needed to return to business in the event of a disaster and improve restore service level agreements by tightening recovery time objectives (RTOs).
- Management** Quantum Vision, available for desktop and mobile devices, provides insight into the status and health of both disk and tape, enabling users to more easily



manage remote sites and multiple technologies though the entire data lifecycle.

- Cloud-Ready** The DXi6900 works seamlessly with Quantum Q-Cloud Protect to enable organizations to leverage a cloud-based data protection and DR service that uses Quantum encrypted, deduplicated replication to optimize offsite protection and recovery for as little as \$.01 per GB per month.
- VM Protection** ESG Lab used Quantum vmPRO software to seamlessly protect heterogeneous virtual machines in branch and remote offices, to back up and restore files in their native format, and replicate their backups to a DXi6902 in a central data center.

## Issues to Consider

ESG Lab tested the Quantum data protection products in a controlled lab setting. Due to the many variables in each production environment, capacity planning and application-level testing are recommended to ensure that the solution meets recovery time and recovery point objectives for your organization.

## The Bigger Truth

Backup and recovery are perennially near the top of the list of IT priorities for many organizations, along with server virtualization, information security, and managing data growth. As virtual environments grow and enterprises struggle with expanding data sets, the need to provide flexible, robust, and high performance data protection becomes ever more urgent.

Quantum's DXi data protection appliances are designed as a key component of a comprehensive solution to answer the needs of customers that require protection of the distributed enterprise, from data centers to remote and branch offices. Quantum enables customers to retain more data for fast and reliable restores and longer retention periods while minimizing impact on backups, while its tiered storage approach ensures data resides on storage matched to its value to the business. Quantum's DXi6900 Series offers a wide variety of capacity configurations with performance to satisfy the most stringent SLAs, reducing the need for performance tuning or planning. Comprehensive infrastructure management and analytics provided by Quantum ties the global environment together into a single, manageable entity. In sum, Quantum continues to excel at providing flexible, robust, and high performance data protection.

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