DX*i*6700 Series

High-performance, easy-to-deploy disk backup with deduplication and replication for NAS and fibre channel environments

Many IT departments needing faster backup, improved restores, more efficient DR, and lower costs have struggled to make the right product choices. Traditional D2D products fill up too quickly, and finding the right deduplication solution has been difficult. Appliances often have narrow scalability and interconnect options, forcing users to make decisions now that limit future choices, and hidden charges can make real costs unpredictable. Software-only options are often complex and limited in effectiveness.

The DXi6701 and DXi6702 appliances provide deduplication without compromise, combining broad scalability and high performance with leading value and unique extensibility to support the broadest range of IT environments today and into the future. Built on Quantum's DXi software, the DXi6701/02 appliances are purpose-built solutions that scale from 8 to 80TB of usable capacity in a single system, and provides fast backup performance—achieving up to 9.1TB/hour in conventional inline target mode, without restricting backup applications or requiring additional software installation. The DXi6701/02 gives IT departments optimal investment protection with a combination of maximum flexibility and value. All units provide simultaneous NAS, VTL, and OST interfaces, making it easy for users to add or change interconnect choices as their backup environments evolve. Optimized Synthetic Full Backups run with OST resulting in significantly reduced I/O traffic for backup and full restores. To keep costs low both at acquisition and in the future, the appliance base price includes all software licenses, including AES 256-bit encrypted remote replication for automated DR protection, direct tape creation for integrated long-term retention, and DXi Accent™ software for hybrid-mode deduplication.

With the DXi6701/02, IT departments are provided with multi-site, multi-tier protection that is easy to manage both for near-term restore and long-term retention in any backup environment. The end results are improved protection, streamlined management, and lower overall costs.

KEY BENEFITS

Industry-leading Scalability, Performance, and Interface Choices for Flexibility and Reduced Costs

- Scales from 8 to 80TB in a single system to support future needs cost effectively
- Provides disk-to-disk performance of up to 9.1TB/hour without restricting backup applications
- Supports OST Optimized Synthetic Full Backups for extremely rapid backups and restores
- Uses patented variable-length inline data deduplication technology to reduce typical disk usage by 90% or more

Use Replication to Improve and Automate Disaster Recovery Protection and Lower Costs

- Reduce typical bandwidth requirements by more than 90%, making remote replication a practical DR tool
- Reduce media handling, lower costs, and mitigate risk
- Replication supports 256-bit encryption for secured data disaster recovery
- DXi V1000 replication from edge sites provides DR for remote sites
- Enhanced network control with replication bandwidth scheduling

Simple and Affordable Protection for Physical and Virtual Servers

- Models include all software licenses including DXi Accent for distributed deduplication, making it easy and affordable to meet user needs
- User installable design reduces costs
- Works with all leading backup software and your existing infrastructure to provide high ROI
- Integrated support for vmPRO Software, providing faster, easier protection of virtual servers and optimized VM deduplication rates

STORAGE AWARDS
THE STORRIES IX
WINNER

NETWORKcomputing
AWARDS 2012
★ WINNER ★

NETWORKcomputing
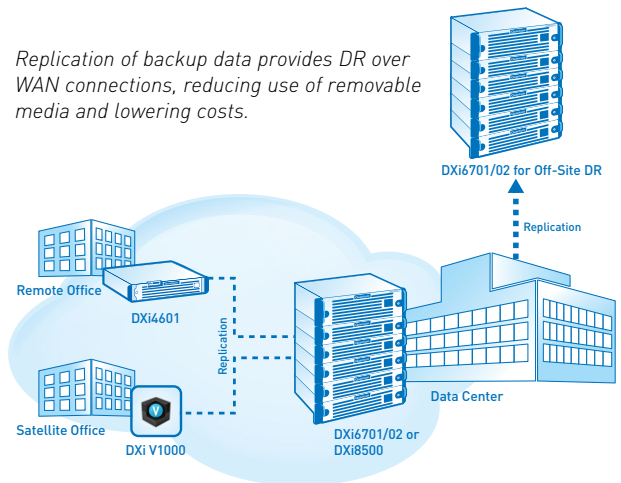AWARDS 2013
★ WINNER ★

Simple Solution Eases Difficult Backup Problems and Reduces Costs

The DXi6701/02 are high-performance appliances that provide a better disk backup solution by making the most advanced deduplication technology both affordable and easy-to-use. These models leverage the latest deduplication technology—along with solid state disk (SSD), advanced connectivity options, seamless scalability, and direct tape creation—in a scalable, purpose-built appliance that includes all software licenses—deduplication, replication, path-to-tape, NAS and OST interfaces, DXi® Advanced Reporting, and DXi Accent software for collaborative deduplication. The DXi6701/02 with DXi software provides the fastest inline deduplication in its class—up to 9.1TB/hour in conventional VTL or OST target operation. Its range of presentations—VTL, NAS, and OST—makes it easy to deploy in any backup environment. DXi appliances protect data on both physical and virtual servers, and they work effectively with all leading backup software applications to provide rapid return on user investment. In a recent IDC study, DXi customers enjoyed returns of $4.75 for every $1 invested over a three-year deployment, and the deduplication systems paid for themselves in savings within an average of seven months.

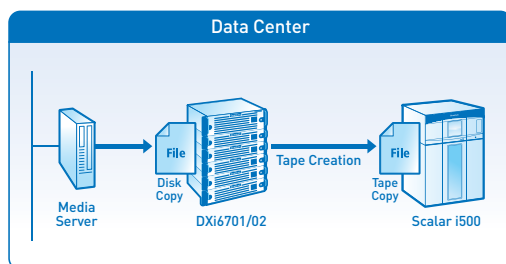| BACKUP PROBLEM	DXi6701/02 SOLUTION
Meeting backup and recovery windows	Disk performance and reliability for backup and restore, with up to 9.1TB/hour performance
Backing up distributed offices	NAS, VTL, OST interfaces, remote replication and DXi Accent for distributed deduplication DXi V1000, DXi Virtual Appliance provides complete replication capabilities from edge sites to DXi6701/02 at the datacenter
High backup costs	Reduced media use, fast return on investment
Running out of capacity	Scales from 8 to 80 TB, deduplication reduces disk need by 90% or more
Rapid data growth	Systems scale simply on site
Offsite security and DR	Encrypted (256-bit) replication, reduced removable media, integrated tape for low cost retention

Replication Provides Automated, LAN based DR Protection

DR protection for distributed sites is a persistent IT problem. Managing removable media across multiple remote sites is expensive, time-consuming, and error-prone. Traditional disk-to-disk systems don't offer an effective solution since backup volumes are too large to allow replication for most users. Quantum's deduplication technology makes remote replication a practical and cost effective tool for DR protection by dramatically reducing the bandwidth required to move backup data over networks. Offsite copies of backup sets are created automatically by DXi systems and copied to DR centers, letting users reduce or eliminate the need to manage removable media and dramatically reducing costs. Using the DXi V1000, a software virtual appliance DXi at remote sites, provides complete edge-based data protection with replication to datacenter sites with any resident DXi. The DXi-Series includes advanced features such as global deduplication, AES 256-bit encryption of transmitted data, optimized synthetic backups, replication scheduling, and file-by-file or cartridge-by-cartridge replication control as part of a fully automated, multi-site process.

Replication of backup data provides DR over WAN connections, reducing use of removable media and lowering costs.

DXi6701/02 for Off-Site DR

Replication

Remote Office

DXi4601

Replication

Data Center

Satellite Office

DXi V1000

DXi6701/02 or DXi8500

Integrates Backup and Restore with Long-Term Retention

Data Center

File

Disk Copy

DXi6701/02

Tape Creation

File

Tape Copy

Media Server

Scalar i500

Close integration with backup applications reduces complexity and improves protection. The DXi6701/02 writes data directly from disk to a tape library, bypassing the media server. The process is controlled and media is cataloged by the backup application.
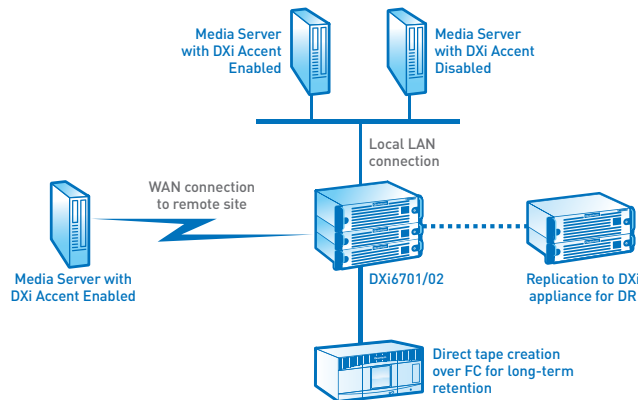
The DXi6701/02 offers an application-specific direct path-to-tape as a standard feature on all models to provide optimal integration of short-term backup/restore with economical long-term retention. This feature writes backup data directly from the DXi appliance to an attached tape library over an 8Gb FC link, without sending the data back through a media server. Direct tape creation reduces loading on media servers, and it makes tape creation an automated process that takes place outside the backup window. Quantum's application-specific path-to-tape is integrated with leading backup applications, giving users a single point of control and media catalogs that automatically track data across disk and tape layers. The direct path-to-tape is fully compatible with DXi Accent, providing practical integration of low-cost, long-term retention with the industry's most advanced hybrid-mode deduplication.

DXi Accent Accelerates Backup over Networks

DXi Accent is software that unlocks the power of collaborative deduplication to increase backup speeds in bandwidth-constrained environments while maintaining integrated support for DR and long-term retention. In situations where the network from the backup server to the appliance has limited bandwidth or high latency, overall performance can be too slow to support users' backup window requirements. DXi Accent provides the solution by allowing the backup server to collaborate in the deduplication process, off-loading part of the dedupe activity so that only unique blocks are sent over the LAN or WAN to the DXi appliance. The result of this hybrid operation is faster backup in network-constrained environments and a software alternative to disk appliances for remote locations. With DXi Accent, this backup acceleration does not introduce compromises—there is still one, central deduplication index and data pool for maximum data reduction, simplicity, and data integrity. For maximum flexibility, a single DXi app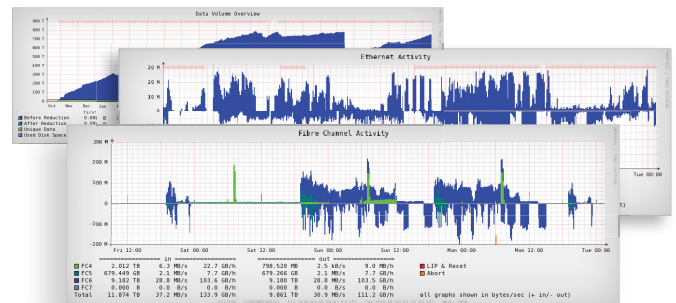liance can support DXi Accent's hybrid operation and conventional target mode operation at the same time, and the backup server can be either local (LAN connection) or remote (WAN). When DXi Accent is enabled, all other DXi features—including replication and direct tape creation—are still supported, providing a unique level of integration with automated DR protection and cost-effective long-term retention. DXi Accent supports NetBackup using the OST API.

Media Server with DXi Accent Enabled

Media Server with DXi Accent Disabled

Local LAN connection

WAN connection to remote site

Media Server with DXi Accent Enabled

DXi6701/02

Replication to DXi appliance for DR

Direct tape creation over FC for long-term retention

DXi Accent software accelerates backup over networks with limited bandwidth by moving part of the deduplication process to the media server in a collaborative, hybrid operation. When DXi Accent is enabled, only unique blocks are moved over the network to the appliance. Replication and direct tape creation integrate automated DR protection and low-cost long-term data retention.

Management Tools Maximize Value in Deduplication Environments

Effective management is critical for obtaining full value from deduplication deployments. Quantum provides the industry's most advanced set of management tools for disk appliances and the entire backup infrastructure. DXi Advanced Reporting, included on all DXi appliances, sets new standards for onboard intelligence by giving users a detailed view of internal operations and providing them with years of backup and replication data for extended trend analysis. DXi Advanced Reporting reduces administration time, streamlines performance tuning, and helps users maximize the value of their DXi appliances. Quantum Vision® management software provides industry-unique capabilities, giving IT departments global management of all their Quantum disk and tape systems from a single console. Quantum Vision also provides storage administrators mobile access to their Vision data anywhere, anytime—through the Vision for iPhone/iPad and Vision for Android apps.

Quantum management tools provide details of internal appliance operations and single-console views across all of a user's disk and tape systems. They reduce management time, streamline performance tuning, accelerate troubleshooting, and provide trend analysis information for proactive decision-making that maximizes system value.

Enabled by Quantum's vmPRO Software for VMware Protection

Quantum vmPRO™ software is the VM data protection solution that works with DXi appliances to simplify and accelerate backup, restore, and DR protection in virtual environments while reducing IT costs. The vmPRO software utilities present a file system view of VM files, automatically create native-format VM copies on secondary disk, reduce VM backup data by up to 75%, and boost deduplication rates. All vmPRO utilities operate inside the virtual environment, eliminating the need for external servers, and they support third-party backup applications, providing optimized results in consolidated environments. Quantum vmPRO software provides optimized support for DXi appliances, providing the most effective deduplication rates and the fastest VM recovery in the industry.

INTERFACES

VTL Fibre Channel
Partitions (max):	64
Drives (max):	256
Cartridges per Partition (max):	9,000
Emulations (libraries):	Scalar 24, Scalar i40/i80, Scalar 100, Scalar i500, Scalar i2000, Scalar i6000
Emulations (drives):	DLT7000, SDLT 320, SDLT 600, DLT-S4, LTO-1, LTO-2, LTO-3, LTO-4, LTO-5

NAS backup target
Presentations:	CIFS and/or NFS
Shares:	128 max

OpenStorage (OST) API
Presentations:	Symantec Storage Servers and Logical Storage Units
Shares:	128 max

INLINE PERFORMANCE

NAS Interface:	6.5TB/hour
OST Interface:	6.4TB/hour*
VTL Interface:	9.1TB/hour
DXi Accent:	8.8TB/hour**

SYSTEM REDUNDANCY

RAID 6, redundant power, redundant cooling, hot-swap drives, power supplies, and fans.

HOST TO APPLIANCE H/W INTERFACE

Two 8Gb FC ports for VTL, six 1GbE ports (DXi6701), two 1GbE ports, two 10GbE ports (DXi6702)

SOFTWARE LICENSES INCLUDED

The base price of the DXi6701/02 includes licenses for NAS, VTL, OST, deduplication, replication, path-to-tape (PTT) and DXi Accent software for hybrid deduplication.

CAPACITY AND SCALABILITY

Usable capacity:	8TB to 80TB
Logical capacity:	160TB to 1,600TB
Scaling increment:	16TB

PHYSICAL CHARACTERISTICS

Dimensions:
System Node:	3U, [17.2in (W) × 5.1in (H) × 25.5in (D)] - [43.7cm (W) × 13.2cm (H) × 64.8cm (D)]
Expansion Module:	2U, [17.2in (W) × 3.5in (H) × 25.5in (D)] - [43.7cm (W) × 8.9cm (H) × 64.8cm (D)]

Weight:
System Node:	125lbs (32.7kg)
Expansion Module:	75lbs (23.6kg)
Expansion:	Up to nine expansion modules with 1TB or 2TB drives, 2U each

POWER SPECIFICATIONS

Power Input:	NEMA 5-15P to C13 power cord
Input Voltage:	100 to 240VAC, 50-60Hz
Rated Current:	10A @100V, 4A @240V

Power Consumption:
System Node:	570 Watts, 5.7A @ 100 VAC, 1945 BTU/hr
	570 Watts, 2.4A @ 240 VAC, 1945 BTU/hr
Expansion Module:	230 Watts, 2.3A @ 100 VAC, 785 BTU/hr
	230 Watts, 1.0A @ 240 VAC, 785 BTU/hr

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE
Operating:	50° to 95°F	(10° to 35°C)
Shipping & Storage:	-40° to 158°F	(-40° to 70°C)

RELATIVE HUMIDITY
Operating:	20 to 80% non-condensing
Shipping & Storage:	5 to 95% non-condensing

ALTITUDE
Operating:	-100 to 10,000ft (-30 to 3,048m)
Shipping & Storage:	-100 to 39,370ft (-30.5 to 12,000m)

REPLICATION INCLUDED FOR ALL UNITS

Replication-compatible with DXi systems using NAS, VTL, or OST presentations. Replication is asynchronous, one-to-one or multiple-to-one configurations; partitions in same unit act as replication source or target; units with partitions acting as replication targets can also support local backup; data is deduplicated and encrypted (AES 256-bit) prior to transmission; enhanced network control with replication bandwidth scheduling; file- or cartridge-based replication provides automated access to data at the target; CLI supports scripting/scheduling. Configurations support replication bandwidth control.

DIRECT TAPE CREATION INCLUDED

Direct tape creation—physical tape can be written in background over dedicated Fibre Channel connections without using media server or backup SAN. DXi6701/02 units support direct to tape operation under Symantec NetBackup and Backup Exec, OST (Netbackup), EMC Networker, Oracle Secure Backup, and Atempo Timenavigator with full control of the tape creation process and tracking of media barcodes by the application.

SYMANTEC OPENSTORAGE (OST) API SUPPORT

Support for OST is a standard feature for all DXi6701/02 units, allowing users to write data to OST logical storage units (LSUs) and enabling application-aware replication in NetBackup and Backup Exec environments. Support includes Optimized Duplication, Auto Image Replication (AIR), Granular Restore Technology (GRT), and OST direct path-to-tape introduced in NetBackup 6.5.4. OST Optimized Synthetic Full Backups is supported to reduce network I/O and shorten time to perform full restore from incremental backups.

DXi ACCENT

DXi Accent software, a standard feature on DXi6701/02 models, allows the backup server to collaborate in the deduplication process, off-loading part of the data reduction activity so that only unique blocks are sent over the network to the DXi appliance. This hybrid approach provides faster backups over bandwidth constrained LANs or WANs. DXi Accent can be enabled or disabled on a per-media server basis. Initial support for DXi Accent is provided through the NetBackup OpenStorage (OST) API.

DXi ADVANCED REPORTING

DXi Advanced Reporting, which is included on all DXi appliances, sets new standards for onboard intelligence by giving users a detailed view of internal appliance operations and provides them with years of backup and replication data for extended trend analysis. DXi Advanced Reporting reduces administration time, improves operations, streamlines performance tuning, and helps users maximize the value of their DXi appliances.

vmPRO

Quantum vmPRO software is a complete data protection solution for virtual environments. Combining simplified management, optimized protection and future flexibility, vmPRO brings unique value to virtual data protection. Protecting virtual data in native VMDK allows customers to easily restore virtual data in seconds, instantly boot VMs from the DR site or the cloud, and integrate simply with their existing backup infrastructure. Combined with DXi appliances, vmPRO can reduce resource utilization by as much as 95% and deliver best-of-breed cloud-based data protection.

Q-CLOUD READY

Quantum Q-Cloud™ provides a new, innovative Cloud backup and DR strategy designed specifically for virtual and physical environments. Q-Cloud is a subscription-based solution that allows customers of all sizes to keep more data offsite for a longer period of time by efficiently replicating data to the Cloud with a simple, cost-effective approach. Q-Cloud is a secure cloud data protection solution that integrates with your existing backup software and reduces risk for IT Departments with a convenient option to efficiently replicate your data to the cloud.

Performance in target mode—does not require use of DXi Accent software.
**DXi Accent improves throughput in bandwidth-constrained environments.*

Quantum.
BE CERTAIN

www.quantum.com • 866-809-5230