Quantum.

Contents

DX*i*8500 Site Planning Guide

The DXi8500 family of disk backup and replication appliances use Quantum's data deduplication technology to expand the amount of backup data users can retain on fast-recovery RAID systems by 10 to 50 times. The result is a cost-effective way for IT departments to store backup data on disk for months instead of days, providing high speed, reliable restores, increasing available data recovery points, and reducing media management.

For disaster recovery in distributed environments, the DXi8500 systems make automated WAN replication practical by dramatically reducing the bandwidth required to move backup data securely between sites.

DXi8500 solutions are integrated systems that are easy to install and use with all leading backup applications. They provide best-in-class performance with flexible, easy-to-use interface options including NAS, virtual library, or mixed presentations, as well as Ethernet and optional Fibre Channel connectivity. DXi8500 appliances are part of a comprehensive set of backup solutions, serviced and supported by Quantum, the leading global specialist in backup, recovery, and archive.

Note: This *Site Planning Guide* is for DXi8500 with DXi 2.2.1 Software.

Included with your DXi8500

The DXi8500 is fully configured to your specifications and pre-tested in the factory. Every DXi8500 Base system arrives either on several pallets with all parts included or partially installed in a rack. Each system comes with an accessory kit containing rack-mount hardware and a Quick Reference and Documentation CD, which includes the *Quantum DXi8500 User's Guide*.

Licenses

The following licenses are included with the DXi8500. Some licenses are pre-installed and some are included on License Certificates, as noted below.

- **VTL** - Enables the VTL interface to hosts. Additional virtual tape drives licenses are added through the VTL license area. (License key for 160 VTDs is pre-installed on all DXi8500 models.)

- **NAS** - Enables NAS (NFS, CIFS) connectivity. (License Certificate is included with all DXi8500 models.)

- **Backup Application Specific** - Enables the backup application specific path to tape capability. (License key is pre-installed on all DXi8500 models.)

- **Data Deduplication** - Enables data deduplication and compression. (License key is pre-installed on all DXi8500 models.)

- **Replication** - Enables replication to other DXi systems. (License key is pre-installed on all DXi8500 models.)

- **Storage Capacity** - Enables the installed storage capacity for the system. (License key is pre-installed on all DXi8500 models.)

  A storage capacity license key is pre-installed for all capacity shipped from the factory. You must install license keys for additional capacity purchased after the initial point of sale are installed.

  Note: If you purchase a storage capacity upgrade, a License Certificate to enable the additional capacity is included with the upgrade.

- **OST** - Enables OpenStorage backup with Symantec OST. (License Certificate is included with all DXi8500 models.)

The following license is available separately:

- **Data-at-Rest Encryption** - Enables the use of the Data-at-Rest Encryption capability to secure all data stored on the DXi8500.

DXi Accent

Quantum's DXi Accent software accelerates backups and reduces network bandwidth requirements by distributing deduplication between the backup server and DXi appliances. With DXi Accent, backup windows are reduced and network bottlenecks are eliminated.

To use DXi Accent, you must install the Quantum OST Client Plug-in on the media server. For information about installing the OST Plug-in and using DXi Accent, see the *Symantec NetBackup OST Configuration Guide*.

Data-at-Rest Encryption

Data-at-Rest Encryption uses Self Encrypting Drive (SED) technology to secure all data stored on the DXi8500. This includes file data and metadata, configuration files, and the DXi software and operating system. When Data-at-Rest Encryption is enabled, all hard drives in the DXi are paired with the disk controllers using encryption keys. After this, accessing data on the drives requires the same encryption keys and controllers that were used to write the data. This ensures that a drive that is physically removed from the DXi cannot be read using another system or device.

To enable Data-at-Rest Encryption, the feature must be licensed, and all of the drive controllers and hard drives (active and hot spares) in the DXi must support Self Encrypting Drive (SED) technology. A DXi8500 configuration with all 3TB SED hard drives meets the requirements for Data-at-Rest Encryption.

Installation

Rack Compatibility

Nearly all standard four-post EIA 19" server racks are compatible with the DXi8500 rack mount kits. Refer to Table 5 on page 15 for information about the physical characteristics and depth requirements for the DXi8500 system.

DXi8500 Setup and Configuration

After the hardware has been installed and initially configured by a Quantum field engineer, you are ready to use your DXi8500. The remote management web pages allow you to reconfigure your DXi8500 at any time.

Required Network Information

To utilize the remote management console of the DXi8500, you must connect it to your network.

Note the following considerations:

- Dynamic Host Command Protocol (DHCP) is not supported. You must provide a static IP address at the time of installation.
- The default IP Address is: **10.1.1.1**

You and other administrative users can always return to the remote management console to modify all DXi8500 settings, including network settings. Refer to the *DXi8500 User's Guide* included on the Quick Reference and Documentation CD for additional information on initially configuring your DXi8500.

Network Configuration

During network configuration, each individual interface on the DXi8500 can be configured as a subnet with its own network settings. Each physical Ethernet port can be configured as an interface. In addition, you can also create bonded interfaces (logical ports) consisting of two or more physical ports of the same type (1GbE or 10GbE).

You can specify the type of traffic allowed on each interface (management, replication, or data). Alternately, you can allow any traffic type on an interface. In this case, the routing of different traffic types, as well as firewall capability, must be controlled using the network infrastructure (routers and switches) that the DXi8500 is connected to.

> **Note:** Each configured network interface requires its own set of network settings (IP address, network mask, and gateway).

> **Caution:** For effective bonded network use, a properly configured network switch is required. (A network switch is not supplied with the DXi8500.) The DXi8500 bonding settings must match the switch settings. If the switch settings and the DXi8500 settings do not match, your system may become inaccessible through the switch.

Firewall Ports

The following firewall ports must be opened for correct function of the DXi8500.

TCP Ports Opened for Management Traffic

- 22 (SSH)
- 80 (HTTP)
- 161 (SNMP)
- 162 (SNMP, trap)
- 443 (HTTPS)
- 1311 (Dell OpenManage)
- 8406 (HTTP, jettyd)
- 8407 (HTTP, thriftd)

TCP Ports Opened for DXi Replication Traffic

- 22 (DXi Replication)
- 80 (DXi Replication, OST)
- 1062 (DXi Replication, OST)

UDP Ports Opened for Data Traffic

- 111 (RPC, portmap)
- 628 (NFS, statd)

- 682 (NFS, rquotad)
- 880 (NFS, mountd)
- 2049 (NFS, nfsd)
- 32000 (NFS, lockd)

TCP Ports Opened for Data Traffic

- 111 (RPC, portmap)
- 139 (CIFS)
- 445 (CIFS)
- 628 (NFS, statd)
- 682 (NFS, rquotad)
- 860 (VTL)
- 880 (NFS, mountd)
- 2049 (NFS, nfsd)
- 3095 (OST)
- 3096 (OST)
- 3097 (OST)
- 3098 (OST)
- 3099 (OST)
- 3100 (OST)
- 3101 (OST)
- 3102 (OST)
- 3260 (VTL)
- 10001 (OST)
- 10002 (OST)
- 50002 (OST)
- 32000 (NFS, lockd)

Installation and Integration Services

Installation and integration of the DXi8500 system by Quantum is required. Please contact your Quantum sales representative to discuss installation services.

Path to Tape Options

Path to tape options are licensed features on the DXi8500 that allow you to export virtual media to an attached physical tape library. This feature is used in conjunction with Quantum's *Backup Application Specific* license and one of the following:

- Symantec NetBackup
- Symantec Backup Exec
- Oracle Secure Backup
- Atempo Time Navigator
- EMC Networker

Once this feature is enabled and configured, backup data can be moved directly from the DXi8500 system to a tape library. For a list of supported drives and libraries in the Backup Application Specific, see Table 1.

Table 1 Supported Tape Libraries in Backup Application Specific

Vendor	Tape Library
Quantum	Scalar i40 and i80
	Scalar i500
	Scalar i2000 and i6000
	Scalar 24
	Scalar 50 (PX502)
	PX500
	PX720
Dell	PV132T
	PVT136T
	ML6000
HP	ESL E Series
	EML Series
IBM	TS3500
Sun/STK	L180 (FC only)
	L700 (FC only)
	SL500 (FC only)
	SL3000 (FC only)

Service

DXi8500 Warranty

The DXi8500s warranty includes one year of Quantum's **Bronze** Support Plan for hardware. This includes 5x9xNBD onsite response time, 5x9 telephone support, and online resources. This warranty covers the DXi8500 and all drives including firmware downloads, telephone support, Email Reports, and Internet access to Quantum's online Customer Support Web site.

The Quantum Customer Support Web site features online service request processing, web-based event status tracking, and a comprehensive Knowledge Base. Quantum's Knowledge Base gives you 7X24 real-time electronic access to complete product and support resources and the expertise of Quantum's Global Services organization.

Service Package Upgrades

Quantum's Global Service organization is geared towards delivering the fastest possible response and root cause resolution, helping you maximize your backup investments, better manage processes, and make the best use of your resources. We ensure total customer satisfaction by providing comprehensive, responsive services on a worldwide basis.

A variety of support options are available to meet a range of budget and availability requirements. Quantum offers the following support plans:

- **Gold Support Plan** — 7x24x4 Hr on-site, 7x24 telephone support, 7x24 web support
- **Next Business Day (NBD) Gold Support Plan** — 5x9xNBD on-site response time, 7x24 telephone support, 7x24 web support
- **Bronze Support Plan** — 5x9xNBD on-site, 5x9 telephone support

For more information about these service plans, visit www.quantum.com or contact your Quantum sales representative.

Quantum service engineers are available around the world and are deployed to respond to onsite service demands. In addition, spare part depots are strategically located across the globe; service technicians have access to the parts and equipment necessary to maintain or repair your DXi8500.

Email Reports

The Email Reports capability can be configured to automatically send XML-based reports to e-mail recipients.

The report represents a snapshot of the system information at the time the report is generated. Quantum recommends generating and saving a report before performing a software upgrade or reconfiguring the system.

StorageCare™ Guardian

StorageCare Guardian is a remote monitoring and diagnostic solution that enables Quantum to proactively monitor the health of Quantum systems over the Internet and use intelligent diagnostics data to remotely service the equipment if issues arise.

StorageCare Guardian delivers more reliable backups and faster resolution time for customers at no additional cost for supported products under warranty or service contract.

More Reliable Backups

Leveraging the intelligence inside Quantum's storage systems, StorageCare Guardian proactively monitors the health of the units, uses diagnostics data to predict possible failures, and determines whether or not the problem involves a Quantum product or other critical components in the environment.

Faster Resolution Time

When issues occur, StorageCare Guardian provides better diagnostics data that will enable Quantum to identify the root cause for rapid problem resolution.

StorageCare Guardian can be downloaded from:

http://www.quantum.com/ServiceandSupport/Services/GuardianInformation/Index.aspx

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. For systems with a larger scope, 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. Vision's centralized reporting and flexible trend analysis tools help users optimize system value by giving them automated, flexible access to the information they need to make proactive decisions concerning on-going system administration, dynamic capacity planning, and system-wide troubleshooting.

DXi8500 Configurations

The DXi8500 is a disk appliance designed to work with leading backup applications. DXi8500 systems are available with 40TB–320TB native usable capacity (with 2TB drives) or 45TB–330TB native usable capacity (with 3TB drives).

Array Module and Expansion Modules

Array modules and Expansion modules contain SATA hard drives in a RAID 6 configuration.

- **Modules with 2TB drives** - Each Array module (RAID) and Expansion module (EXP-MOD) contains 16 hard drives and provides a usable capacity of 20TB.

- **Modules with 3TB drives** - Each Array module (RBOD) and Expansion module (EBOD) contains 12 hard drives and provides a usable capacity of 15TB (Array) or 30TB (Expansion).

New DXi8500 Systems Shipped from the Factory

Customers can purchase a DXi8500 system with all 2TB drives or a DXi8500 system with all 3TB drives.

Systems With 2TB Drives

When configuring new 2TB base systems:

- Up to 9 Array modules can be added in the base rack.

- A 10th Array module can be added in an expansion rack. A second metadata module is required for 5 or more Array modules.

- After all of the Array modules have been added, from 1 to 6 Expansion modules can be added to an expansion rack, up to the maximum usable capacity of 320TB for the system.

For detailed information, see Table 2 on page 12.

Systems With 3TB Drives

When configuring new 3TB base systems:

- Up to 2 Array modules and 10 Expansion modules can all fit in the base rack, up to the maximum usable capacity of 330TB for the system.

- The second Array module is required for 6 or more Expansion modules.

- A second metadata module is required for 2 Array modules.

For detailed configuration information, see Table 3 on page 13.

DXi8500 Capacity Upgrades

Customers can expand the capacity of their DXi8500 system by adding Array modules and Expansion modules.

Expanding 2TB Base Systems

For capacity upgrades, Array and Expansion modules can be purchased with 2TB or 3TB drives.

> **Note:** DXi8500 systems running version 1.x software have a maximum capacity of 200TB. Adding a 3TB Array or Expansion module to a 1TB base system is not supported.

- **Adding Modules with 2TB drives** - The capacity expansion strategy is to add all 2TB Array modules first and then begin adding 2TB Expansion modules.
    - If the system has only a single Metadata module, you must add a second Metadata module when adding the fifth 2TB Array module.
    - The system's total capacity is limited by the system maximum usable capacity of 320TB (10 2TB Array modules plus 6 2TB Expansion modules).
    - Up to 9 2TB Array modules will be in the base rack with a 10th 2TB Array module and up to 6 2TB Expansion modules in the expansion rack.

> **Note:** The un-racked 2TB configurations have up to 8 Array modules in the base rack and 2 Array modules in the expansion rack.

- **Adding Modules with 3TB drives** - The capacity expansion strategy is to add one 3TB Array module first and then begin adding 3TB Expansion modules.
    - If the system has only a single Metadata module, you must add a second Metadata module when adding the first 3TB Array module.
    - A second 3TB Array module is required for 6 or more 3TB Expansion modules.
    - The system's total capacity is limited by the system maximum usable capacity of 330TB.
    - An expansion rack is required if the rack space required for all Array modules and Expansion Modules (2TB or 3TB) exceeds 27 U.

> **Caution:** After you add a 3TB Array module to a 2TB base system, all future capacity expansion for the system *must* use 3TB Array and Expansion modules only.

> **Note:** To add a 3TB Array module or Expansion modules to a 2TB base system, the DXi8500 must be running DXi 2.1.2_85 Software.

Expanding 3TB Base Systems

For capacity upgrades, Array and Expansion modules can be purchased with 3TB drives.

- A second 3TB Array module is required for 6 or more 3TB Expansion modules.

- If the system has only a single Metadata module, you must add a second Metadata module when adding the second 3TB Array module.

- The maximum usable capacity of the system is 330TB.

DXi8500 Configuration and Shipping Information

In Table 2 and Table 3, the quantity specified in the **Required Rack Space** column indicates the total U's for just the components shown in each configuration. In Quantum's racked configurations, there is an additional 2U's of open air between the two switches (2TB systems) or beneath the first Metadata module (3TB systems).

The DXi8500 can be ordered and shipped in the following 2TB drive and 3TB drive configurations:

Table 2 DXi8500
Configurations (2TB)

Native Usable Capacity (TB)	Nominal Capacity (TB)	Required Rack Space	Components (Quantity)								Total Weight	
			System Node	Ethernet Switch	Fibre Channel Switch	Metadata Modules	Array Modules	Expansion Modules	RPS for Ethernet Switch	Racks/Pallets	Lbs	Kg
40	64	15U	1	1	1	1	2	-	1	1/1	717.1	325.3
60	96	18U	1	1	1	1	3	-	1	1/1	806.6	365.9
80	128	21U	1	1	1	1	4	-	1	1/1	896.1	406.5
100	160	26U	1	1	1	2	5	-	1	1/1	1,044.4	473.7
120	192	29U	1	1	1	2	6	-	1	1/1	1,133.9	514.3
140	224	32U	1	1	1	2	7	-	1	1/1	1,223.4	554.9
160	256	35U	1	1	1	2	8	-	1	1/1	1,312.9	595.5
180	288	38U	1	1	1	2	9	-	1	1/1	1,402.4	636.1
200	320	41U	1	1	1	2	10	-	1	2/2	1,821.9	826.4
220	352	44U	1	1	1	2	10	1	1	2/2	1913.9	868.1
240	384	47U	1	1	1	2	10	2	1	2/2	2005.9	909.8
260	416	50U	1	1	1	2	10	3	1	2/2	2097.9	951.5
280	448	53U	1	1	1	2	10	4	1	2/2	2,189.9	993.2
300	480	56U	1	1	1	2	10	5	1	2/2	2,281.9	1,034.9
320	512	59U	1	1	1	2	10	6	1	2/2	2,373.9	1,076.6

Note: For 2TB un-racked systems, up to 8 Array modules can be used in the base rack due to space requirements for the PDUs, and a maximum of 2 Array modules and 6 Expansion modules can be used in the expansion rack. Power strips are available as an option to an un-racked configuration (1 pallet / 4 boxes). Optional Power Strip Upgrade Kit (US version: PN 8-00726-01 / International version: PN 8-00726-02).

Table 3 DXi8500
Configurations (3TB)

Native Usable Capacity (TB)	Nominal Capacity (TB)	Required Rack Space	Components (Quantity)							Total Weight	
			System Node	Ethernet Switch	Metadata Modules	Array Modules	Expansion Modules	RPS for Ethernet Switch	Racks/Pallets	Lbs	Kg
45	72	12U	1	1	1	1	1	1	1/1	1070.0	485.3
75	108	14U	1	1	1	1	2	1	1/1	1130.0	512.6
105	144	16U	1	1	1	1	3	1	1/1	1190.0	539.8
135	180	18U	1	1	1	1	4	1	1/1	1250.0	567.0
165	216	20U	1	1	1	1	5	1	1/1	1360.0	616.9
180	252	24U	1	1	2	2	5	1	1/1	1420.0	644.1
210	288	26U	1	1	2	2	6	1	1/1	1480.0	671.3
240	324	28U	1	1	2	2	7	1	1/1	1540.0	698.5
270	360	30U	1	1	2	2	8	1	1/1	1600.0	725.7
300	396	32U	1	1	2	2	9	1	1/1	1660.0	753.0
330	432	34U	1	1	2	2	10	1	1/1	1720.0	780.2

Note: For 3TB un-racked systems, power strips are available as a separately ordered upgrade. Separate Power Strip Upgrade Kit (US version: PN 9-02691-01 / International version: PN 9-02691-02).

DXi8500 Shipping Information

For detailed information about the various DXi8500 configurations that can be shipped to you, see DXi8500 Configurations on page 9.

Cables Shipped with the DXi8500

The DXi8500 includes four Ethernet cables, six Fibre Channel cables, and two 10 GbE Optical or Copper (Twinax) cables. See Table 4.

Table 4 Cables Shipped with the DXi8500

Type of DXi8500 Cables	Quantity
Ethernet — 25 ft.	4
Fibre Channel — 6 m	6
Includes one of the following cable options: • 10 GbE Optical — 10 m • 10 GbE Copper (Twinax) — 5 m, compatible with Cisco 5000 Series Data Center Class switches	2 or 4 Two 10 GbE cables are shipped with the DXi8500 system, either optical or copper (Twinax), but only one type of cable can be used. If the optional 10 GbE card is selected, then two additional cables will be shipped. Note: The 10 GbE Copper (Twinax) cable options that Quantum provides do not support all switches. Please note the supported switches during the purchase-configuration process, and if the Twinax cables supplied by Quantum are NOT compatible with your switch, then you will need to provide your own compatible Twinax cables from your switch vendor. Be sure to have these available before the system installation takes place.

DXi8500 Specifications

The DXi8500 has the following specifications, which are categorized as follows:

- Physical Specifications
- Environmental Specifications

Note: For hard drive specifications, see the appropriate hard drive product manual.

Physical Specifications

This section provides information about the dimensions and other physical characteristics of the DXi8500 system components:

Table 5 Physical Characteristics

DXi8500 Rack	
Width (side to side)	23.75 inches (60.3 cm)
Depth (front to back)	40.75 inches (103.5 cm) **Note:** Without the doors installed, the depth is two inches shorter, or 38.75 inches (98.4 cm).
Height	78 inches (198.1 cm)
Weight (stand alone)	330 pounds (149.7 kg)
DXi8500 System Node	
Bezel width	19 inches (48.3 cm)
Chassis width	16.6 inches (42.2 cm)
Chassis depth	27.5 inches (69.9 cm)
Chassis height	6.8 inches (17.3 cm)
Weight	105 pounds (47.6 kg)
DXi8500 Metadata Modules	
Bezel width	19 inches (48.3 cm)
Chassis width	17.6 inches (44.7 cm)
Chassis depth	20 inches (50.8 cm)
Chassis height	3.4 inches (8.6 cm)
Weight	58.8 pounds (26.7 kg)

DXi8500 Array Modules	
Bezel width	**2TB drives** — 19.0 inches (48.2 cm) **3TB drives** — 19.1 inches (48.5 cm)
Chassis width	**2TB drives** — 17.5 inches (44.4 cm) **3TB drives** — 17.8 inches (45.1 cm)
Chassis depth	**2TB drives** — 21.5 inches (54.6 cm) **3TB drives** — 21.8 inches (55.2 cm)
Chassis height	**2TB drives** — 5.3 inches (13.3 cm), 3U each **3TB drives** — 3.4 inches (8.7 cm), 2U each
Weight	**2TB drives** — 89.5 pounds (40.6 kg) **3TB drives** — 59.0 pounds (26.8 kg)
DXi8500 Expansion Modules	
Bezel width	**2TB drives** — 19.0 inches (48.2 cm) **3TB drives** — 19.1 inches (48.5 cm)
Chassis width	**2TB drives** — 17.5 inches (44.4 cm) **3TB drives** — 17.8 inches (45.1 cm)
Chassis depth	**2TB drives** — 21.5 inches (54.6 cm) **3TB drives** — 21.8 inches (55.2 cm)
Chassis height	**2TB drives** — 5.3 inches (13.3 cm), 3U each **3TB drives** — 3.4 inches (8.7 cm), 2U each
Weight	**2TB drives** — 92.0 pounds (41.7 kg) **3TB drives** — 57.0 pounds (25.9 kg)
Ethernet Switch	
Chassis width	17.3 inches (43.9 cm)
Chassis depth	15.2 inches (38.6 cm)
Chassis height	1.7 inches (4.3 cm)
Weight	12.2 pounds (5.5 kg)
Fibre Channel Switch (2TB configurations only)	
Chassis width	16.9 inches (42.9 cm)
Chassis depth	24 inches (61.1 cm)
Chassis height	1.7 inches (4.3 cm)
Weight	21 pounds (9.5 kg)

RPS for Ethernet Switch	
Chassis width	17.3 inches (43.9 cm) **Note:** The bezel is the same width as the unit.
Chassis depth	10.1 inches (25.7 cm)
Chassis height	1.7 inches (4.3 cm)
Weight	11.1 pounds (5.0 kg)
Power Strips (Un-racked)	
Power Strip (installed)	Width (with mounting ears): 19 in. (48.26 cm)
	Depth: 7 in. (17.7 cm)
	Height: 4 – 1U, 1.75 in. (4.44 cm) panels — one panel needed for every six expansion modules
	Weight: 11 pounds (4.98 kg)
Power Strip (shipping)	Width: 38 in. (96.5 cm)
	Depth: 27 in. (68.5 cm)
	Height: 19 in. (48.26 cm)
	Weight: 75 pounds (34 kg)

DXi8500 Weights

A fully-configured base rack with 2TB drives weighs approximately 1,402 pounds (636 kg), and a fully-configured expansion rack weighs approximately 972 pounds (441 kg).

A fully-configured base rack with 3TB drives weighs approximately 1720 pounds (780 kg).

Note: The DXi8500 rack is supported by 4 hard rubber casters which are spaced approximately 18 inches apart, 24 inches front to back. With a fully configured system, the maximum load per caster will not exceed 300 kg.

Depending on your needs, the DXi8500 can be ordered and shipped in different configurations. For detailed information about the different weights for various DXi8500 system component configurations, see DXi8500 Configurations on page 9.

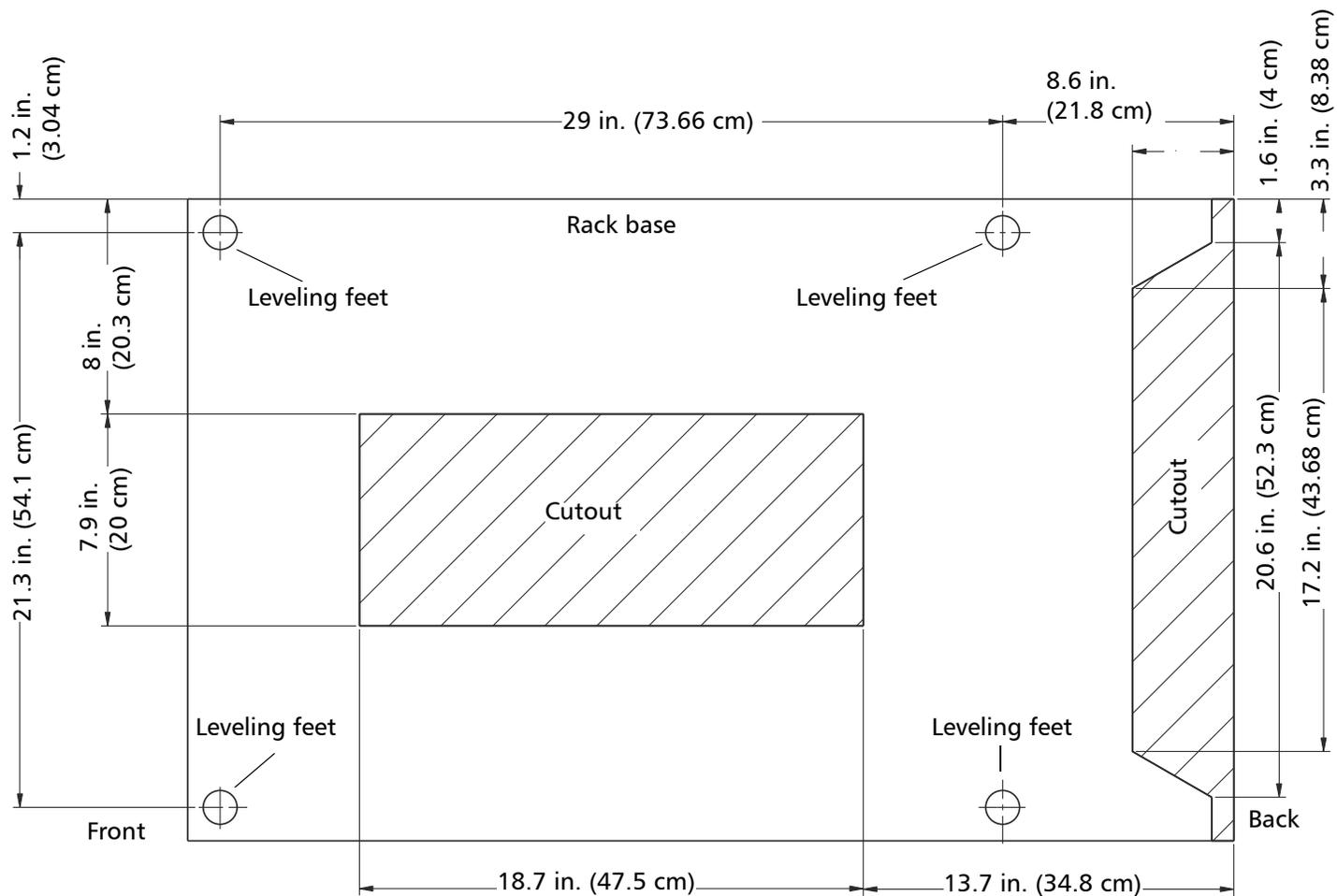# Adjustable Leveling Feet and Cutout Locations
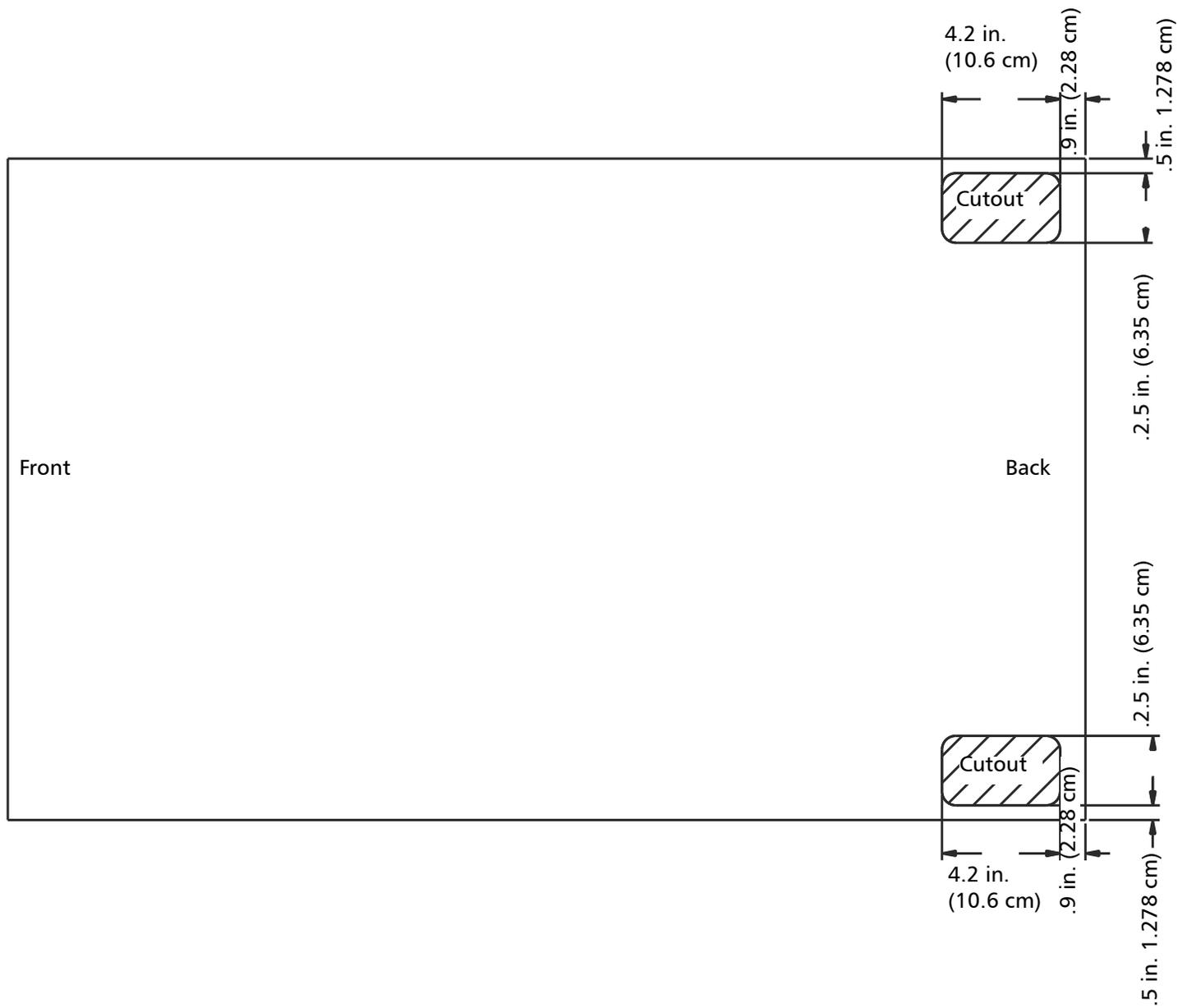
Figure 1 Bottom View

Figure 2 Top View

4.2 in.
(10.6 cm)

.9 in. (2.28 cm)

.5 in. 1.278 cm)

Cutout

2.5 in. (6.35 cm)

Front

Back

2.5 in. (6.35 cm)

Cutout

.9 in. (2.28 cm)

4.2 in.
(10.6 cm)

.5 in. 1.278 cm)

Table 6 Storage Capacity

DXi8500 System Capacity (RAID 6)

Nominal Capacity (factory configurations)	**2TB drives** — From 64 to 512TB **3TB drives** — From 72 to 432TB
Native Usable Capacity (factory configurations)	**2TB drives** — From 40 to 320TB • 16 2TB drives (RAID 6 with 2 hot spares) per Array or Expansion module (factory default) **3TB drives** — From 45 to 330TB • 12 3TB drives (RAID 6 with 5 global hot spares) per Array module (factory default) • 12 3TB drives (RAID 6) per Expansion module (factory default)
Capacity increments per Array module and Expansion module.	**2TB drives** — The capacity is increased by increments of 20TB. **3TB drives** — The capacity is increased by increments of 15TB (Array module) or 30TB (Expansion module).

Table 7 Cable Drops

DXi8500 Ethernet and Fibre Channel Cable Drops

1 GbE Ethernet Cable Drops	1 to 4 Ethernet connections for NAS connectivity, replication, and remote management
Fibre Channel Cable Drops (with path to tape)	4 Fibre Channel connections for VTL host or SAN connections and 2 Fibre Channel connections for Path to Tape connection.
10 GbE — Embedded 10 GbE — PCI Optional	2 or 4 (10 GbE) Ethernet connections (2 standard / 2 optional) The 10 GbE is available in an optical or copper (Twinax) type, but only one type of cable can be used. **Note:** The 10 GbE Copper (Twinax) cable options that Quantum provides do not support all switches. Please note the supported switches during the purchase-configuration process, and if the Twinax cables supplied by Quantum are NOT compatible with your switch, then you will need to provide your own compatible Twinax cables from your switch vendor. Be sure to have these available before the system installation takes place.

Table 8 Interfaces

Virtual (Emulated) Tape Library Interfaces

Interfaces	SCSI-2 medium changer command sets: • Quantum DXi7500 • ADIC Scalar 100, ADIC Scalar i2000, or ADIC Scalar i500 • ADIC Pathlight VX • Quantum Scalar i40/i80 or Quantum Scalar i6000 • Quantum DXi6700 or Quantum DXi8500 • Quantum DX3000 or Quantum DX5000 • Quantum PX500 or Quantum PX720 • ATL M2500, ATL P1000, or ATL P7000 Tape drive command sets: • Quantum DLT-S4, SDLT600, SDLT320, or DLT7000 • Certance LTO-2 and LTO-3 • IBM LTO-1, LTO-2, LTO-3, LTO-4, or LTO-5 • HP LTO-1, LTO-2, LTO-3, LTO-4, or LTO-5
	NAS backup target: NFS or CIFS Virtual library: Fibre Channel connectivity Different partitions in same appliance can present different interfaces simultaneously
Number of virtual drives	**DXi8500 with 128 GB or 256 GB RAM** - 512 VTDs maximum (no more than 160 VTDs active at any one time)
Number of partitions	64 maximum
Number of shares	128 maximum **Note:** NFS version: NFSv2 and NFSv3 **Note:** Samba version: 3.6.0

Node Interfaces

Hardware	• 4 ports 10/100/1000 BaseT Ethernet (RJ45 connector) and up to 6 ports 8 Gb Fibre Channel (LC Connector) per system. (Path to Tape option uses 2 FC ports.) • 2 or 4 ports 10,000 BaseT Ethernet (optical LC connector or Twinax T-connector)

Table 9 Software Capabilities

Software Capabilities

Application Specific Path to Tape	Physical tape can be written in background over a dedicated Fibre Channel connection without using media server or backup SAN. Function maintains barcode integrity between virtual and physical tapes and is compatible with backup software direct to tape commands (e.g., NetBackup 6.5)

High availability Hardware Features	Dual RAID controllers (active-active)
	Redundant power
	Redundant cooling
	Hot swap drives, power supplies, and fans
Replication	DXi8500 models offer support for remote replication.
	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-at-Rest Encryption	Data-at-Rest Encryption uses Self Encrypting Drive (SED) technology to secure all data stored on the DXi8500, including file data and metadata, configuration files, and the DXi software and operating system

Table 10 Rack Power Specifications

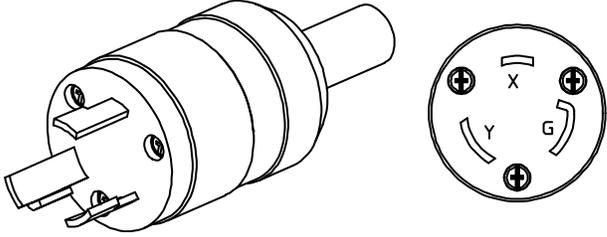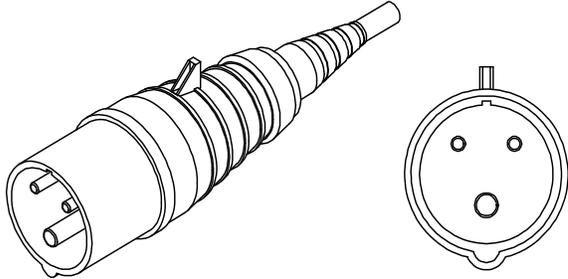| Location	Total AC Line Cords For Each Rack	Voltage Single Phase 50-60 hz	Required Protective Service	Delivered Power Connector	Line Cord Amps
North America	4	200–240	30 amp	NEMA L6-30P	30
International	4	240	32 amp	IEC60309	32

Table 11 Power Requirements (2TB Drives)

Racked Capacity (TB)	Power (Watts)	Number of Primary AC Connections Required	Number of Secondary AC Connections Required	Total Primary AC Current @220 Vac	Total Secondary AC Current @220 Vac
20	1570	2	2	7.1	7.1
40	1948	2	2	8.9	8.9
60	2326	2	2	10.6	10.6
80	2703	2	2	12.3	12.3
100	3271	2	2	14.9	14.9
120	3649	2	2	16.6	16.6
140	4027	2	2	18.3	18.3
160	4405	2	2	20.0	20.0
180	4782	2	2	21.7	21.7
200	5160	4	4	23.5	23.5

Racked Capacity (TB)	Power (Watts)	Number of Primary AC Connections Required	Number of Secondary AC Connections Required	Total Primary AC Current @220 Vac	Total Secondary AC Current @220 Vac
220	5487	4	4	24.9	24.9
240	5813	4	4	26.4	26.4
260	6140	4	4	27.9	27.9
280	6466	4	4	29.4	29.4
300	6793	4	4	30.9	30.9
320	7119	4	4	32.4	32.4

Table 12 Power Requirements (3TB Drives)

Racked Capacity (TB)	Power (Watts)	Number of Primary AC Connections Required	Number of Secondary AC Connections Required	Total Primary AC Current @220 Vac	Total Secondary AC Current @220 Vac
45	1787	2	2	8.1	8.1
75	1987	2	2	9.0	9.0
105	2187	2	2	9.9	9.9
135	2387	2	2	10.8	10.8
165	2587	2	2	11.8	11.8
180	3154	2	2	14.3	14.3
210	3354	2	2	15.2	15.2
240	3554	2	2	16.2	16.2
270	3753	2	2	17.1	17.1
300	3953	2	2	18.0	18.0
330	4153	2	2	18.9	18.9

Table 13 Power Receptacle
Requirements

DXi8500 Racked Power Receptacle Requirements

Power Cable Length	The following cable lengths reflect the length of cable available outside of the rack. **Power cable routed through the TOP of the rack:** • 1 foot (.304 meters) **Power cable routed through the BOTTOM of the rack:** • 6 feet (1.82 meters) If the power source is further away than the above mentioned distances, contact Quantum Sales for an available 10 feet (3.04 meters) extension cable.
Power connector types	**North America**: Each 30Amp power strip contains a single NEMA L6-30P power cord (**Default power cord**) **Outside North America**: Each 32Amp power strip contains a single IEC60309 power cord:

Note: It is highly recommended that at least one power source has UPS protection.

Environmental Specifications

Table 14 provides various DXi8500 environmental specifications.

Table 14 Environmental Specifications

Climatic Environment		
Temperature	Operating	10° to 30°C (50° to 86°F)* **Note:** The maximum temperature gradient is 10° per hour. **Note:** Air entry (cool air) is to the front of the rack, and air exit (hot air) is to the rear of the rack. Airflow is maintained by the cooling fans in each component.
	Shipping and storage	–20° to 60°C (–4° to 140°F)
Relative humidity	Operating	20% to 80% non-condensing
	Shipping and storage	15% to 95%, non-condensing
Altitude	Operating	Up to 10,000 ft. (up to 3,048 m)
	Shipping and storage	Up to 39,370 ft. (up to 12,000 m)
Heat	Operating	**2TB drives** — 24,297 BTUs (maximum configuration for 2 racks) **3TB drives** — 14,175 BTUs (maximum configuration)
Shock and Vibration — Operational Axis		
Shock	Operational: 2 G's for 11ms, ½ sine Non-operational: 3.5 G's for 11ms, ½ sine	
Vibration	Operational: 0.26 G's random vibration, 5–350 Hz Non-operational: 0.5 G's random vibration, 5–350 Hz	
Acoustical Noise		
Sound power level	Operating	72 dBA (single rack) 75 dBA (dual racks)
	Idle	72 dBA (single rack) 75 dBA (dual racks)
Sound pressure @ bystander	Operating	67 dBA (single rack) 70 dBA (dual racks)
Agency Certifications		
Safety	IEC 60950, UL 60950 / CSA C22.2 - No. 60950-00, CE	
Emissions	FCC Part 15 Class A, ICES-003 Class A, VCCI Class A, CISPR 22 Class A, EN55022 Class A, EN61000-3-2, EN61000-3-3	

* 35°C (95°F) is the maximum temperature for the DXi8500 at sea level. For every 1000 feet (305 meters) of altitude, the maximum temperature is reduced by 1° (example: the maximum temperature for a DXi8500 at 1000 feet (305 meters) is 34°C (93°F)).

Caution: The DXi8500 system is designed to be installed in a rack enclosure. Ensure that the operating temperature inside the rack enclosure does not exceed the maximum rated ambient temperature. Do not restrict air flow to the DXi8500 components.

For assistance, contact the Quantum Customer Support Center:
USA: 1-800-284-5101 (toll free) or +1-720-249-5700
EMEA: +800-7826-8888 (toll free) or +49-6131-3241-1164
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Worldwide: http://www.quantum.com/ServiceandSupport

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About Quantum

Quantum Corp. (NYSE:QTM) is the leading global storage company specializing in backup, recovery and archive. Combining focused expertise, customer-driven innovation, and platform independence, Quantum provides a comprehensive range of disk, tape, media and software solutions supported by a world-class sales and service organization. This includes the DXi™-Series, the first disk backup solutions to extend the power of data deduplication and replication across the distributed enterprise. As a long-standing and trusted partner, the company works closely with a broad network of resellers, OEMs and other suppliers to meet customers' evolving data protection needs.