Contents

StorNext M660 Site Planning Guide

The StorNext M660 Metadata Appliance combines the high-performance, heterogeneous software file sharing and tiered, vendor-agnostic archiving benefits found in Quantum's StorNext data management software with the simplicity of purpose-built hardware document.

The StorNext M660 Metadata Appliance is offered in two models: M661 and M662.

Note: Content in this document applies to both Lattus and non-Lattus systems unless otherwise noted.

Included with your StorNext M660

The StorNext M660 is fully configured and pre-tested in the factory. Every StorNext M660 system comes with an accessory kit containing rack-mount hardware, and the *StorNext M660 User Essentials* (6-67643-01) document.

The StorNext M660 includes factory-installed and licensed software for:

- High Availability
- 10 SAN clients (any OS)
- One StorNext Gateway License for each MDC node
- Distributed Data Mover (DDM) License for the secondary MDC node

Professional Installation Requirements

The StorNext M660 Metadata Appliance requires onsite professional installation via Quantum or via a trained Quantum ASSP partner. The two StorNext Installation order part numbers are:

Part Number	Description
SSP6H-NSYN-000x	Quantum StorNext M660 Metadata Appliance Initial Onsite Installation and Configuration
SSP6H-NSYN-000x	Quantum StorNext M660 Metadata Appliance and Expansion Unit, Initial Onsite Installation & Configuration

For more information about the ASSP program, see Quantum ASSP Program on page 13.

Site Requirements

Quantum installation must be purchased with the StorNext M660.

Installation sites will need the following:

- A Storage Area Network (SAN) array compatible with QLogic 8 Gb Fibre Channel HBA
- A compatible SAN switch

Note: For detailed information on M660 SAN, SAS, and Lattus cabling, see the current *StorNext M660 Metadata Appliance Hardware Guide*.

- A standard 19-inch rack
- Power outlet compatibility with North American type NEMA 5-15P plugs or European CEE 7/7 plugs, or NEMA C13/14 if plugging into a rack power distribution unit (PDU).
- 100-240 VAC, 50-60HZ, 7A to 3.5A power
  - A base system can draw up to 21A
  - With an expansion unit can draw up to 28A

Shipping Information

The StorNext M660 ships on a pallet.

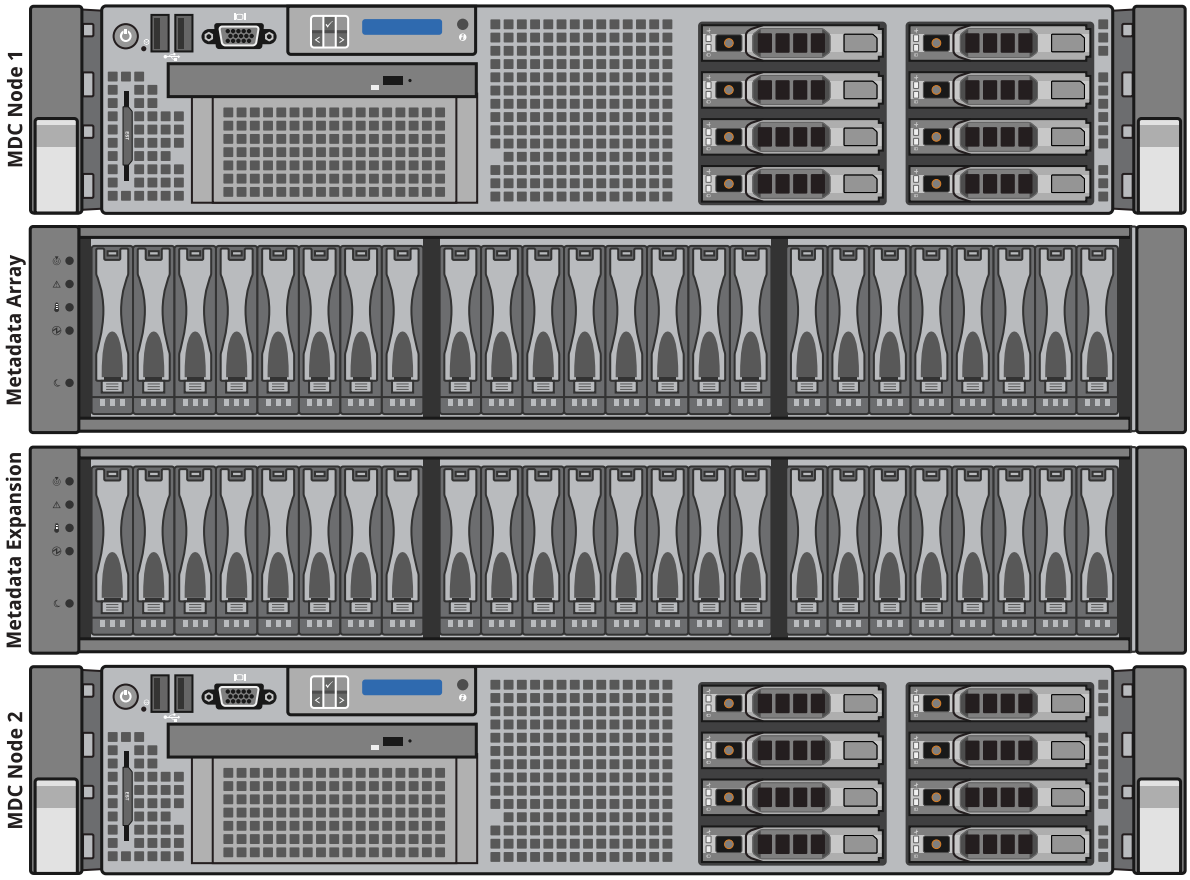
- A base system weighs a total of 285lb (129kg).
- A base system and expansion unit when ordered together weighs a total of 360lbs (163kg).

Note: The optional metadata expansion unit when purchased separately ships in a box measuring 31x24x10in (79x61x25cm) and weighs 75lbs (34kg).

StorNext M660 System Components

The StorNext M660 system consists of two MDC nodes, a metadata array, and an optional metadata expansion unit. (see Figure 1).

Figure 1 StorNext M660 System Components



To see the front view of the MDC Nodes and the metadata array storage, see Figure 2 and Figure 3.

Figure 2 StorNext M660 MDC Node (Front View)

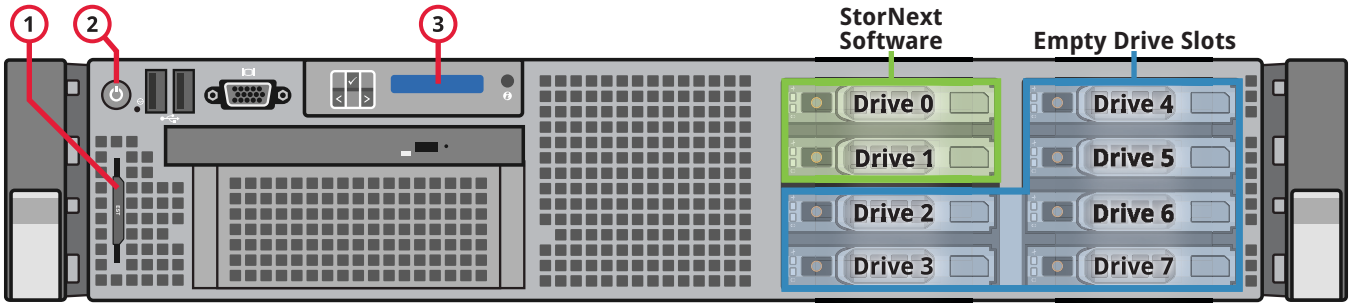


Figure 3 StorNext M660 Metadata Storage (Front View)

StorNext M660 Specifications

EMI Certification
This product is certified under the regulatory model name E14S.

Appliance	
Hardware	• 6U for base system, and 8U with expansion unit. • Dual metadata controllers (MDCs) with automatic failover. • One dedicated metadata array.
Software included in base price	• 10 File System SAN client licenses. • One High Availability license option. • One StorNext Gateway with unlimited DLC clients for each MDC node. • Distributed Data Mover (DDM) license for secondary MDC node.
Hardware reliability	• Dual meta data controllers with automatic failover • Redundant power supplies • Redundant cooling fans • Automated SAS I/O path failover • Two hot spare drives in the metadata storage • 4 GB mirrored RAID battery-backed cache • Two drives: RAID 1 for metadata and boot disks

Appliance Software Environment	
StorNext version	Initial release: StorNext 4.2.2.0.1
Number of user file systems	Four with the base unit, and eight with the expansion unit
Client OS support	Linux, Windows, AIX, HP-UX, UNIX, Solaris, and Mac OS

Appliance Physical Characteristics	
Width (side to side)	17.7in (45cm)
Depth (front to back)	26.8in (68.1cm)
Height	• For the base unit, 10.5in (26.7cm) • For the expansion unit, 14.0in (35.2cm)
Weight (standalone)	57.54lbs (26.2kg)

Appliance Cables	
Ethernet	• For the StorNext M661, Twenty-two 25ft (7m) Ethernet cables with RJ45 connectors • For the StorNext M662 with optical, Four 19ft (9m) optical Ethernet cables with LC connectors, and 14 25ft (7m) Ethernet cables • For the StorNext M662 with Twinax copper, Four 16ft (5m) Twinax Copper Ethernet cables with SPF+ connectors, and 14 25ft (7m) Ethernet cables
Fibre Channel (FC)	Eight 19ft (6m) optical Fibre Channel cables with LC connectors
SAS	• For StorNext M660 base, four 3ft (1m) SAS cables for metadata array to MDC node cabling. • For StorNext M660 expansion, two 3ft (1m) SAS cables for metadata expansion to metadata array cabling.

Electrical per MDC Node	
North American power	• Two 10ft (3.0m)NEMA 5-15P locking power cords • Two 4ft (1.2m) NEMA c13 to C14 power cords (rack power)
European power	• Two 7ft (2m) CEE 7/7 locking power cords • Two 4ft (1.2m) NEMA c13 to C14 power cords (rack power)
Input voltage	100 to 240VAC
Frequency	50 to 60Hz
Rated current	7.0 – 3.5 amps
Maximum power consumption	384 watts

Customer-facing Ports, Per MDC Node	
Fibre Channel I/O	Four 8 Gb Fibre Channel ports
Ethernet I/O	• For the StorNext M661, eleven 1 GbE ports. • For the StorNext M662, two 10 GbE ports and seven 1 GbE ports.

Electrical per Metadata Array	
North American power	• Two 10ft (3m) NEMA 5-15P locking power cords • Two 4ft (1.2m) NEMA c13 to C14 power cords (rack power)
European power	• Two 7ft (2m) CEE 7/7 locking power cords • Two 4ft (1.2m) NEMA c13 to C14 power cords (rack power)
Input voltage	100 to 240VAC
Frequency	50 to 60Hz
Rated current	7.0 – 2.9 amps
Maximum power consumption	356 watts

Metadata Array and Metadata Expansion Unit	
Array chassis	2U chassis with 24 2.5”-slots
Array drives	Twenty-four 2.5” SAS drives
RAID configuration	RAID 1 array, plus two hot spares
Metadata & Journal	Each file system is stored on dedicated RAID 1 stripe
SAS I/O	• For the metadata array, two SAS controllers with two 6 Gb SAS connections each. • For the metadata expansion unit, two ESM cannisters with two 6 Gb SAS connections each.

Electrical per Metadata Expansion Unit	
North American power	• Two 10ft (3m) NEMA 5-15P locking power cords • Two 4ft (1.2m) NEMA c13 to C14 power cords (rack power)
European power	• Two 7ft (2m) CEE 7/7 locking power cords • Two 4ft (1.2m) NEMA c13 to C14 power cords (rack power
Input voltage	100 to 240VAC
Frequency	50 to 60Hz
Rated current	7.0 – 2.9 amps
Maximum power consumption	281 watts

Climatic Environment	
Temperature	• Operating: 50° to 95°F (10° to 35°C) • Shipping and Storage: -4° to 140°F (-20° to 60°C) • Decrease operating temp 0.9°C per 1,000ft (304.8m) above 2,950ft (899.2m)
Relative Humidity	• Operating: 20% to 80%, non-condensing • Shipping and Storage: 5% to 95%, non-condensing
Altitude	• Operating: 0 to 10,000ft (0 to 3,048m) • Shipping and Storage: 0 to 35,000ft (0 to 10688m)
Heat	Operating: 2389BTUs

Shock and Vibration	
Maximum Vibration	• Operational: 0.26 G's random vibration, 5 to 350Hz • Non-operational: 0.5 G's random vibration, 5 to 350Hz
Maximum Shock	• Operational: 2 G's for 11ms, 1/2 sine • Non-operational: 3.5 G's for 11ms, 1/2 sine

Selecting Installation Location

When choosing an installation site for the StorNext M660 system, consider the following requirements:

Rack Space Requirements

This section provides information about the rack space requirements, and specific details about the StorNext M660 components and configuration options.

A base StorNext M660 system occupies 6U of rack space and should be racked with the metadata array between the two MDC nodes, as shown in Figure 4.

The StorNext M660, with the optional expansion unit, requires 8U of rack space and should be racked with the metadata expansion unit above MDC node 2 (the bottom node), and the metadata array racked below MDC node 2 (the top node), as shown in Figure 5 on page 11.

Note: If capacity expansion is a possibility, consider leaving 2U of rack space open above the bottom system node.

Figure 4 Rack Configuration for Base StorNext M660 System

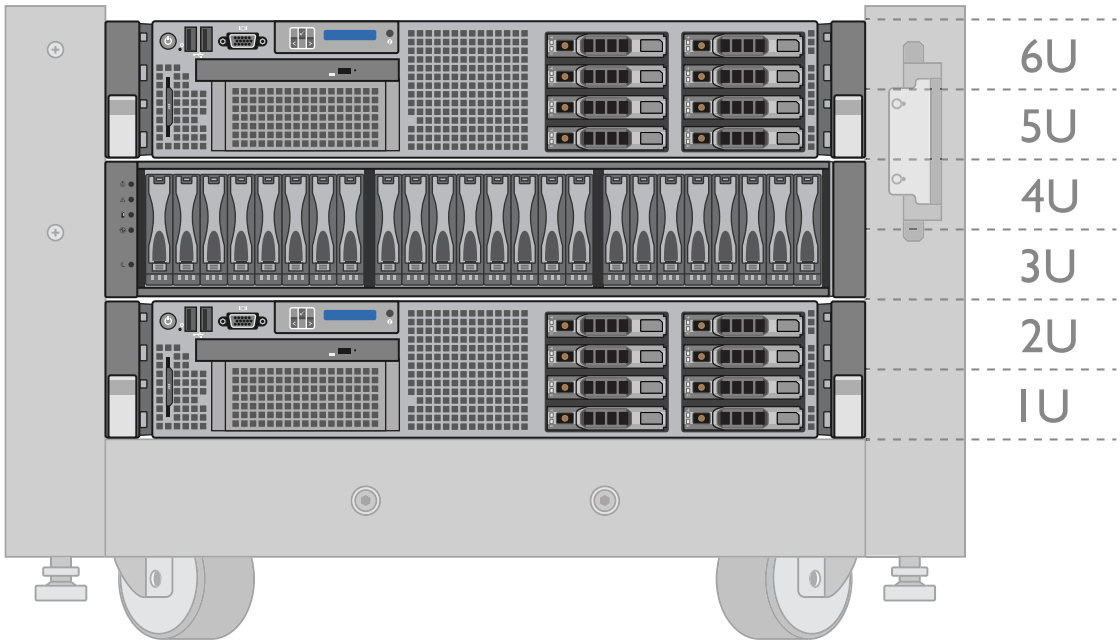
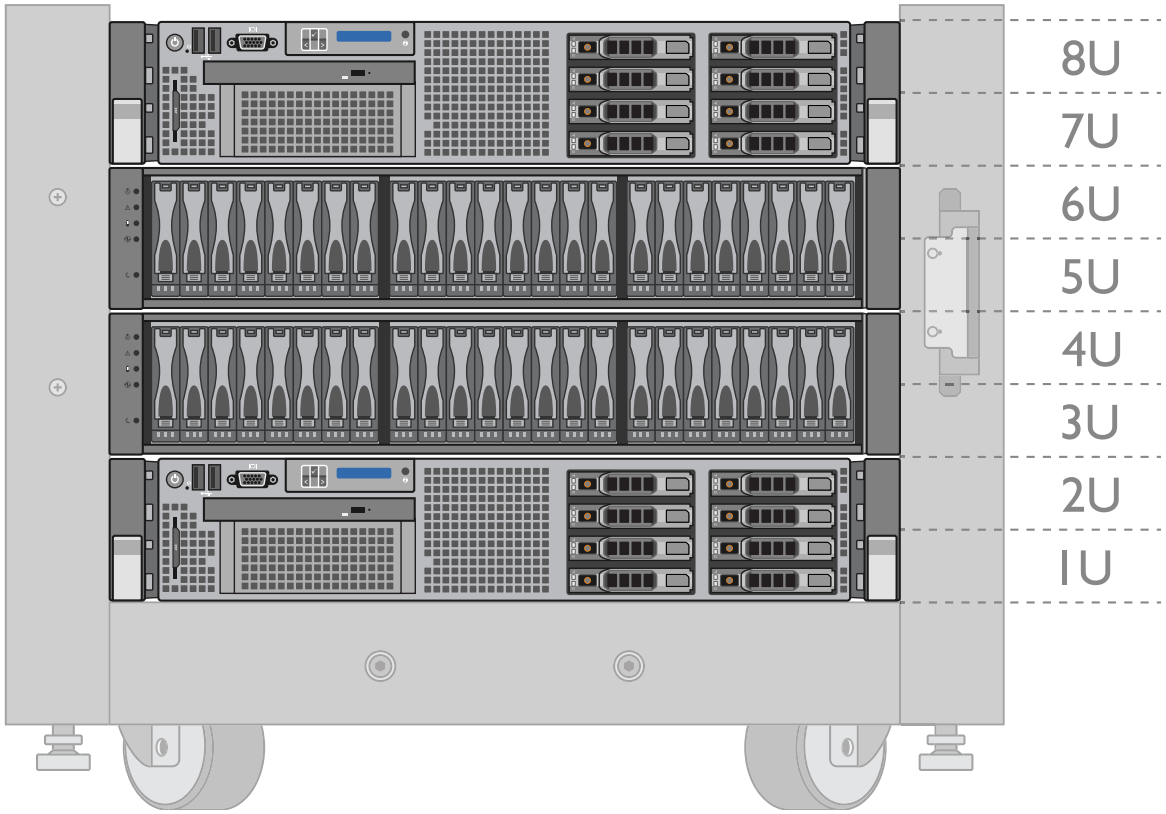


Figure 5 Rack Configuration of StorNext M660 with Expansion



Internal Rack Dimensions

The minimum rack space required for the StorNext M660 follows:

- Width — 19 inches (48.3 cm)
- Depth — 28.4 inches (72.06 cm)
- Height — 6 U (8U with optional Metadata Expansion Unit, shown in Figure 5.)

Supported Rack Rail Hole Types

- 10-32/M5 Mounting Hardware Supported
- Square Holes
- Circular Through Holes (un-threaded)

Component Weights

The out-of-box weight of the following components are:

- MDC Nodes — 47 pounds (21.3 kg) each
- Metadata Storage — Metadata Array 58.6lb (26.6kg); Expansion Unit 57lb (25.6kg)

Clearance Information

For proper air flow, the following clearances are required for the front and back of the StorNext M660 system:

- Doors removed — 6.5 inches (16.5 cm)
- Doors installed — Front and Back: 23 inches (58.4 cm)

Environmental Conditions

The installation site must have the following environmental conditions:

- Humidity: 20% – 80% non-condensing
- Temperature: 15°C – 35°C (59°F – 95°F)

> **Note:** 35°C (95°F) is the maximum temperature for the StorNext M660 at sea level. For every 1000 feet (305 meters) of altitude, the maximum temperature is reduced by 1° C. For example, the maximum temperature for a StorNext M660 at 1000 feet (305 meters) is 34°C (93°F).

- Altitude: –984 to 10000 feet (–300 to 3048 meters)

These environmental conditions apply when the StorNext M660 system is in operation.

Service

StorNext M660 Warranty

The StorNext M660 standard warranty includes one year of Quantum's Bronze Support Plan. This includes 5x9 telephone support and next-business-day on-site response.

StorNext M660 customers may choose to purchase additional years of Bronze support, or a warranty uplift that offers extended hours and more comprehensive on-site support.

All add-on StorNext software features must be purchased with the equivalent service level of the StorNext M660; similarly, all add-on StorNext software licenses must co-terminate with the StorNext M660 service contract, so that the termination dates are the same for all components.

For questions about support or coverage in any of the Quantum service zones, contact Quantum customer support.

Warranty coverage or uplifts may not be available in all areas. Please contact your local Quantum representative for more information concerning areas and type of warranty and service coverage that is available.

Service Levels

The StorNext M660 includes one year of Bronze Support as a product warranty. Uplift support plans are also available—and advisable:

- Next Business Day Gold: 7x24xNBD on-site
- Gold Support: 7x24x4hr on-site
- Extension of Bronze: 5x9xNBD on-site

Service renewal prices are the same as the initial prices and are sold on an annual basis.

All add-on StorNext software features must be purchased with the equivalent service level of the StorNext M660; similarly, all add-on StorNext software licenses must co-terminate with the StorNext M660 service contract, so that the termination dates are the same for all components.

Equivalent service levels between StorNext Software and the StorNext M660 appliance are:

Software Service Levels	StorNext M330 Service Levels
Silver (5x9 telephone)	Bronze (5x9xNBD on-site)
Gold (7x24 telephone)	Next Business Day Gold (7x24x4hr on-site)

Warranty coverage or service uplifts may not be available in all areas. Contact your Quantum representative for information concerning available warranty and service coverage.

Quantum ASSP Program

The Quantum Authorized Software Service Provider (ASSP) program has been extended to cover both StorNext software as well as the StorNext M660 Metadata Appliance. Quantum ASSP partners will be eligible to offer first tier support on the StorNext M660 once they've been trained and certified on the StorNext M660 product.

Quantum ASSP partners who have been trained on the installation and configuration of the StorNext M660 may also choose to offer their own professional onsite installation services for the StorNext M660 product.

For inquiries about the Quantum ASSP program for StorNext, contact your local Quantum representative.

6-67642-01 Rev D, March 2016

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
APAC: +800-7826-8887 (toll free) or +603-7953-3010
Worldwide: http://www.quantum.com/ServiceandSupport

Quantum
BE CERTAIN

About Quantum

Quantum is a proven global expert in Data Protection and Big Data management, providing specialized storage solutions for physical, virtual and cloud environments. From small businesses to major enterprises, more than 50,000 customers trust Quantum to help maximize the value of their data by protecting and preserving it over its entire lifecycle. With Quantum, customers can Be Certain they're able to adapt in a changing world—keeping more data longer, bridging from today to tomorrow, and reducing costs. See how at www.quantum.com/BeCertain.