Contents

Professional Installation..... 2
Site Requirements..... 2
Shipping Information..... 3
System Components..... 3
Specifications..... 7
Selecting an Installation Location..... 12
Service..... 14
Quantum Customer Suport 14

StorNext Pro Foundation Site Planning Guide

The StorNext Pro Foundation Metadata Appliance is built to provide all the performance you expect from a StorNext Pro Solution, but sized for organizations like yours. With full-featured and rock-solid StorNext 5 collaboration software delivered on a true StorNext Metadata Appliance and provides 48 TB or 96 TB of raw storage capacity, this integrated solution is not only powerful and cost-effective but easy to deploy and maintain as well, making it ideal for your small post or broadcast production workgroup.

The StorNext Pro Foundation Metadata Appliance offers the powerful file-sharing capabilities of StorNext in an optimized appliance package. The appliance includes a pair of MDC (metadata controller) nodes in a High Availability (HA) configuration and a high-performance metadata/data array. An optional metadata array can be added to the appliance for additional file systems, performance and capacity.

During installation, the StorNext Pro Foundation Metadata Appliance is configured for use in StorNext environments to access both disk and tape libraries.

Professional Installation

The StorNext Pro Foundation Metadata Appliance requires onsite professional installation via Quantum or by a trained QuantumASSP partner. The two StorNext Installation order part numbers are:

Part number	Description
BSNPR-CFBS-048A	Quantum StorNext Pro Foundation Metadata Appliance Initial Onsite Installation & Configuration - 48TB Solution
BSNPR-CFBS-096A	Quantum StorNext Pro Foundation Metadata Appliance with Expansion Initial Onsite Installation & Configuration - 96TB Solution

For more information about the ASSP program, see Quantum ASSP Program on page 14.

Site Requirements

Quantum installation must be purchased with the StorNext Pro Foundation.

Installation sites will need the following:

- A Storage Area Network (SAN) array compatible with QLogic 8Gb Fibre Channel HBA
- A compatible SAN switch
- 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
  - A base system can draw up to:
    - 6.9 AMPS at 100 VAC
    - 2.9 AMPS at 240 VAC
  - A base system with a Expansion can draw up to:
    - 9.4 AMPS at 100 VAC
    - 4.0 AMPS at 240 VAC

Shipping Information

The Pro Foundation ships on a pallet. Note that:

- A base system weighs approximately 175 lb (79kg)
- A base system with Expansion weighs approximately 230 lb (104kg).

System Components

Figure 1 shows the front view of the Pro Foundation system, which consists of two MDC nodes, one 48 TB Metadata Array, and an optional 48 TB Expansion Array.

Figure 1 Pro Foundation Base System with Expansion

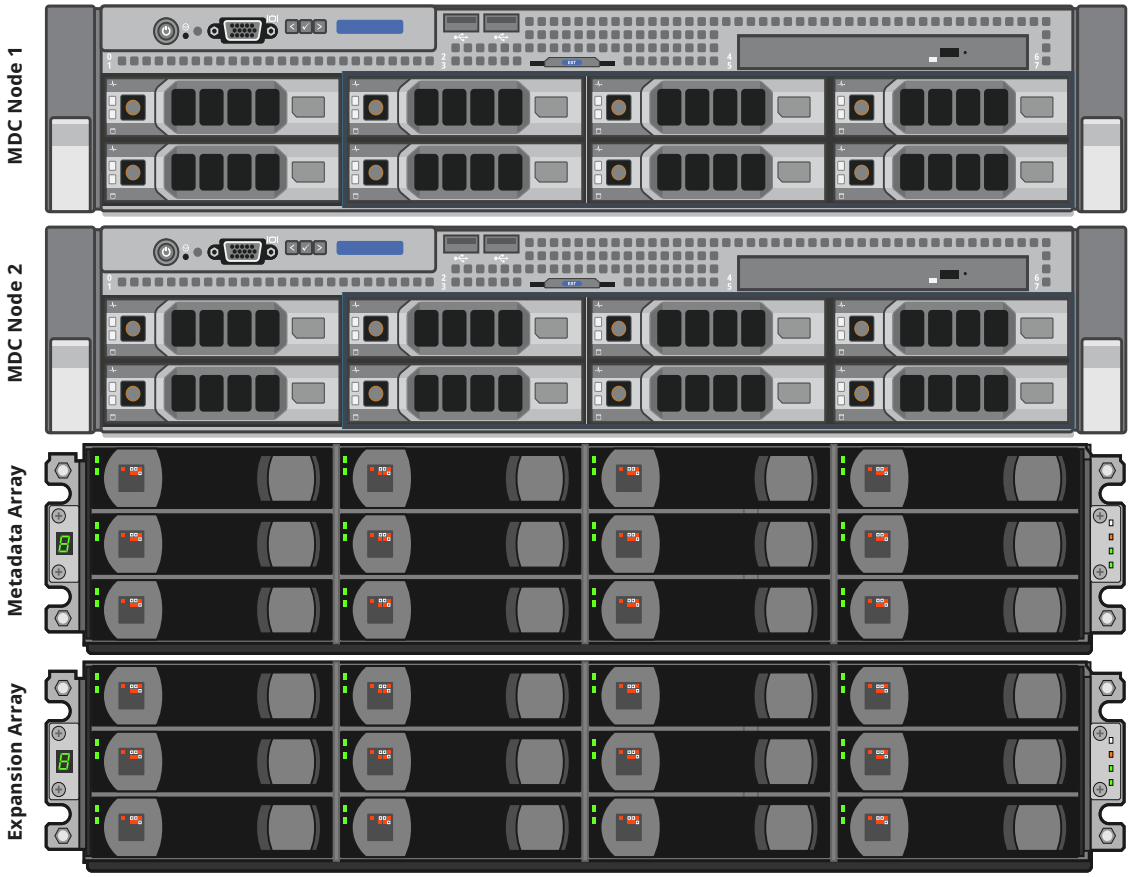


Figure 2 shows the front view of the MDC Nodes.

Figure 2 Pro Foundation Metadata MDC Node - Front View

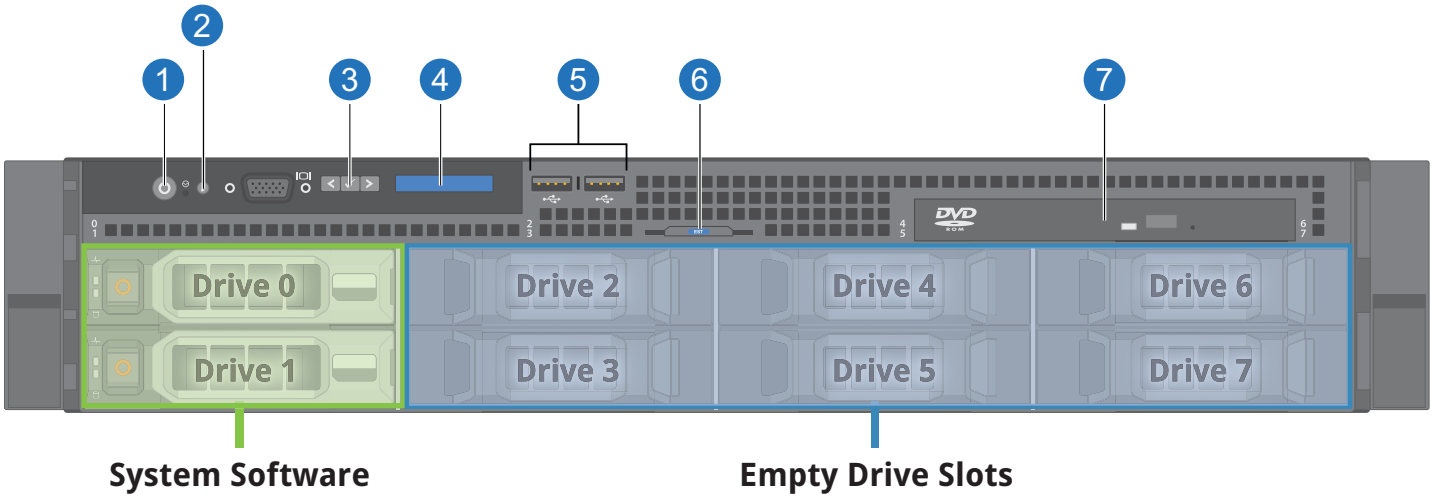


Table 1 shows the StorNext Pro Foundation MDC Node indicators and buttons.

Table 1 Pro Foundation MDC Node - Indicators and Buttons

Item	Indicators and Buttons
1	Power Switch
2	Video Port (Service Only)
3	LCD Buttons
4	LCD Panel
5	USB Ports (Service only)
6	Service Tag
7	DVD Drive

Figure 3 provides a rear view of the StorNext Pro Foundation MDC Node.

Figure 3 Pro Foundation MDC Node (Rear View)

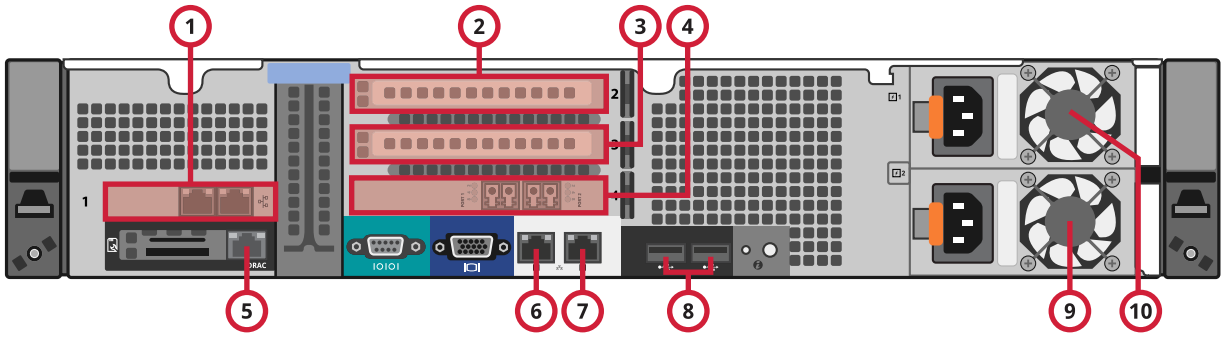


Table 2 provides a description of the items located on the rear of the StorNext Pro Foundation MDC Node.

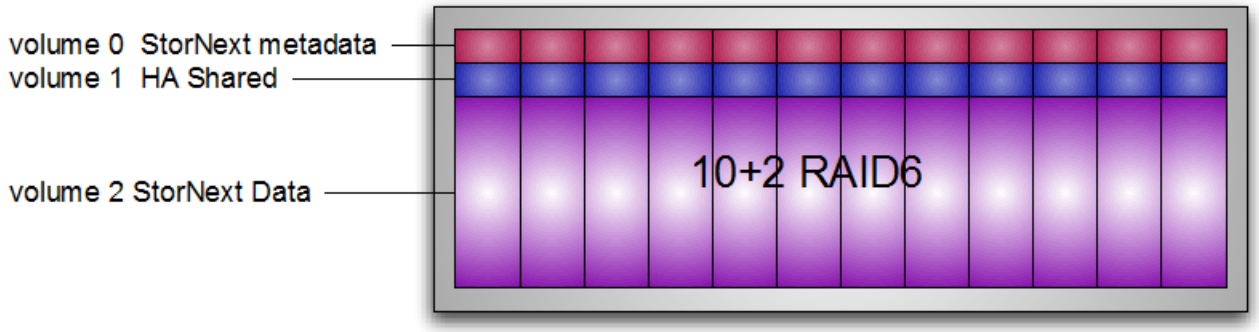
Table 2 StorNext Pro Foundation MDC Node Item Descriptions (Rear View)

Item	Description
1	**Slot 1** - Customer facing 2-Port 1GbE NIC card
2	**Slot 2** - Empty
3	**Slot 3** - Empty
4	**Slot 4** - QLogic Dual-Port 8 Gb FC HBA
5	iDRAC Port (For Service Only); each node has a unique IP address: **Node 1 IP address: 10.17.21.51** **Node 2 IP address: 10.17.21.52**
6	Integrated Service Only Port (For Service Only); each node has a unique IP address: **Node 1 IP address: 10.17.21.1** **Node 2 IP address: 10.17.21.2**
7	Integrated 1GbE (Customer-Facing) Ports
8	USB Ports
9	Secondary Power Supply
10	Primary Power Supply

The StorNext Pro Foundation Metadata data, metadata and High Availability shared File System (HAFS) on separate LUNs “carved” from a single 10+2 RAID group. Figure 4 shows the logical layout of the 12 drives. While the drives are shown in a vertical orientation, in order to explain how the disk data is organized, the actual array drives are arranged horizontally. Here’s how the volume data is “carved”:

- Volume 0 – StorNext metadata - 1% of capacity
- Volume 1 – HA shared – 2% of capacity
- Volume 2 – StorNext data – 97% of capacity

Figure 4 Pro Foundation Metadata Array - Logical RAID Layout



Specifications

Appliance Specifications

EMI Certification
This product is certified under the regulatory model name E19S.

Appliance	
Hardware	• 6U system - without Expansion • 8U system - with Expansion • Dual metadata controllers (MDCs) with High Availability failover enabled • One dedicated metadata/data array • One metadata/data Expansion Array (optional)
Software included in base price	• 4 File System SAN client licenses - 2 in use on the Pro Foundation - 1 for each MDC node • One High Availability license
Hardware reliability	• Dual metadata controllers with automatic failover • Redundant power supplies • Redundant cooling fans • Automated FC I/O path failover • 12GB mirrored RAID-6 SuperCap-backed cache

Appliance Software Environment	
StorNext Supported Release	StorNext 5 Release 5.2
Client OS support	Linux, Windows, AIX, HP-UX, UNIX, Solaris, and Mac OS

Metadata/Data Array Disk Capacity and Allocation		
Trays of disk	Metadata/data Array Only	Metadata/Data Array with Expansion
Number of File Systems	1	1-2
Maximum Files	195,312,500	390,625,000
Metadata + HA - GBytes	1200	2400
Total Capacity - GBytes	40000	80000
Metadata overhead - GBytes	1200	2400
Data Capacity - TBytes	38.80	77.60
Average file size - KBytes	198.66	198.66

Appliance Physical Characteristics	
Width (side to side)	17.7 in (45cm)
Depth (front to back)	26.8 in (68.1cm)
Height	10.5 in (26.7cm) without Expansion 14 in. (35.56 cm) with Expansion
Single MDC Node Weight	57.54 lb (26.2 kg)
Metadata/data Array Weight	59.2 lb (26.9 kg)
Metadata/data Expansion Array Weight	56.6 lb (25.6 kg)

Appliance Cables and Cabling Hardware	
Ethernet	Six 25-ft (7.6m) Ethernet cables with RJ45 connectors
Fibre Channel (FC)	Optical Fibre Channel cables with connectors
FC Hardware	Small form-factor pluggable (SFP) transceivers
SAS (Expansion-only)	Four SAS to mini-SAS cables for Metadata/data Array to Expansion Array cabling.

Electrical per MDC Node	
North American power	• Two 10-ft (3m) NEMA 5-15P locking power cords • Two 4-ft (1.2m) NEMA c13 to C14 power cords (rack power)
European power	• Two 7-ft (2m) CEE 7/7 locking power cords • Two 4-ft (1.2m) NEMA c13 to C14 power cords (rack power)
Input voltage	100 to 240VAC
Frequency	50 to 60Hz
Rated current	10.0 – 5.0 amps
Maximum power consumption	275 watts

Customer-facing Ports, Per MDC Node	
Ethernet I/O	Three 1GbE ports.

Electrical per Metadata Array	
North American power	• Two 10-ft (3m) NEMA 5-15P locking power cords • Two 4-ft (1.2m) NEMA c13 to C14 power cords (rack power)
European power	• Two 7-ft (2.1m) CEE 7/7 locking power cords • Two 4-ft (1.2m) NEMA c13 to C14 power cords (rack power)
Input voltage	100 to 240VAC
Frequency	50 to 60Hz
Rated current	4.5 – 1.9 AMPS
Maximum power consumption	383 watts

Metadata and Expansion Arrays	
Array chassis (each)	1 x 2U chassis with 12 x 3.5" slots
Metadata/data Array drives	1x 12, 4 TB 3.5" SAS Drives
Metadata with Expansion Array drives	2 x 12, 4 TB 3.5" SAS Drives
RAID configuration	RAID 6
Fibre Channel and SAS I/O - Metadata/data array	Two controllers each containing 4 x 8 Gb FC connections, and one 6 Gb SAS connection.
SAS I/O - Expansion array	One 6 Gb SAS-IN connection One 6 Gb SAS-OUT connection

Climatic Environment	
Temperature	• Operating: 50° to 95°F (10° to 35°C) with a maximum temperature gradation of 10°C per hour **Note:** 35°C (95°F) is the maximum temperature for the StorNext M440 at sea level. For altitudes above 2,950 ft (899.2m), decrease the operating temp 0.9°C for every 1,000 ft (304.8m) of altitude. • Shipping and Storage: -4° to 140°F (-20° to 60°C)
Relative Humidity	• Operating: 20% to 80%, non-condensing • Shipping and Storage: 5% to 95%, non-condensing
Altitude	• Operating: 0 to 10,000 ft (0 to 3048m) • Shipping and Storage: 0 to 35,000 ft (0 to 10688m)
Heat	Operating: 2389 BTUs

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

Installation Specifications

Internal Rack Dimension Requirements	
Width	19 in (48.3 cm)
Depth	28.4 (72.05 cm)
Height	6U - without Expansion 8U - with Expansion

Supported Mounting Hardware and Rack Rail Hole Types	
Mounting Hardware	#10-32 Screws
	M5 Screws
Hole Types	Square Holes
	Circular Through Holes (unthreaded and threaded “broadcast”-types)

Required Clearances for Proper Airflow	
For Racks Without Doors	6.5 in (16.5 cm)
For Racks With Doors - Front and Back	23 in (58.4 cm)

Selecting an Installation Location

When choosing an installation site for the Pro Foundation system, consider the following requirements:

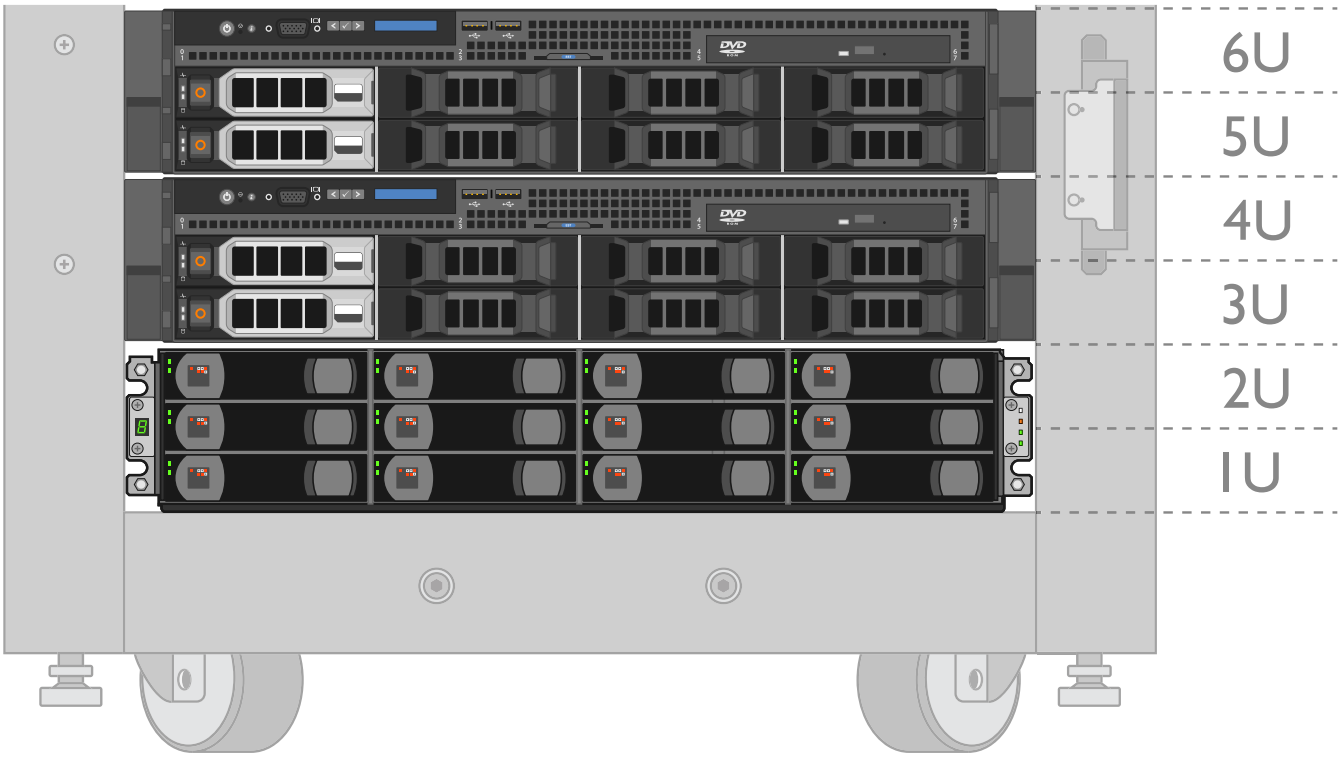
- Rack Space Requirements
- Climatic Environment on page 10

Rack Space Requirements

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

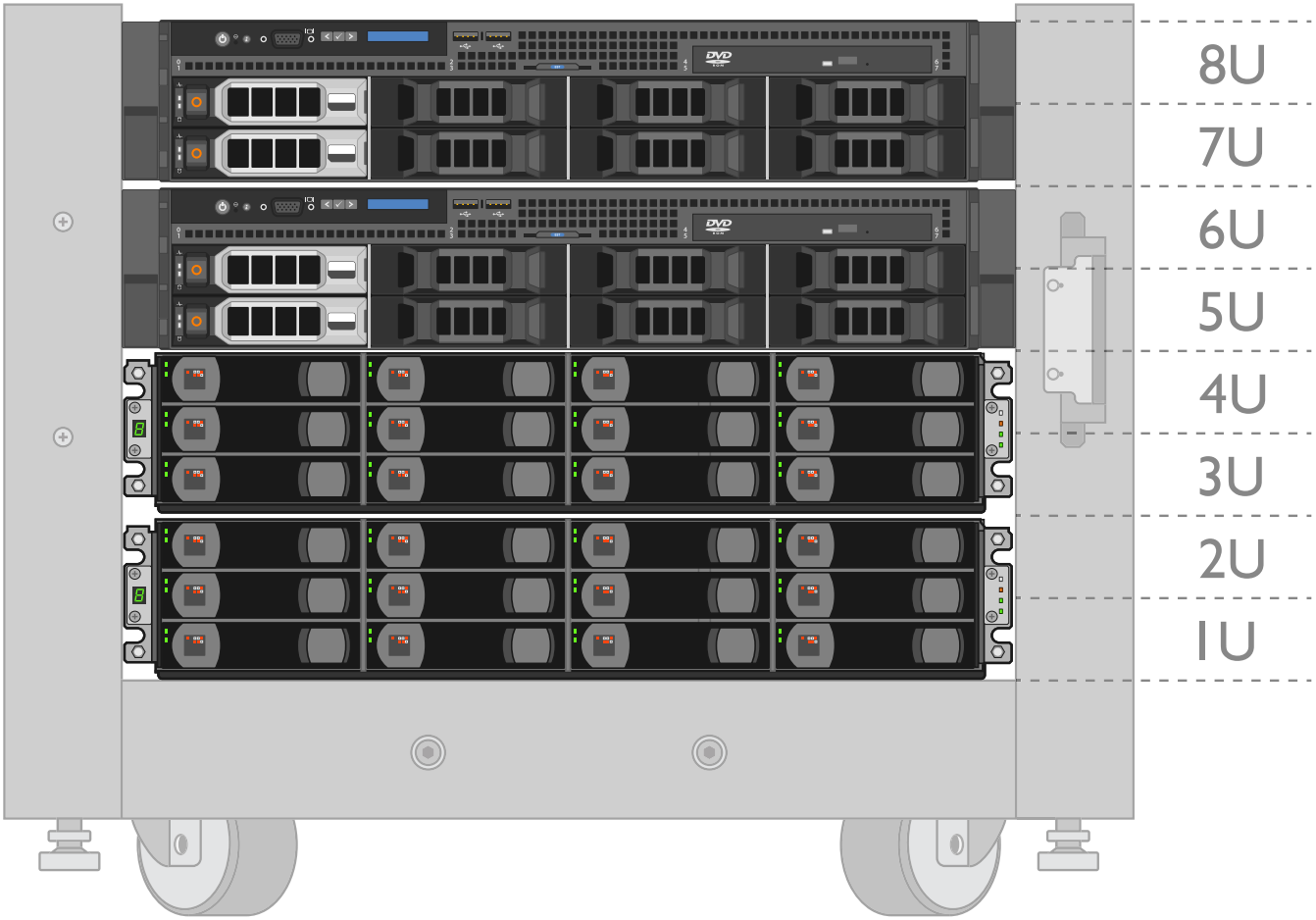
The Pro Foundation without Expansion occupies 6U of rack space and should be racked with the Metadata/data Array located beneath MDC Node 2, and MDC Node 1 located at the top, as shown in Figure 5.

Figure 5 Pro Foundation Rack Configuration - Without Expansion



The Pro Foundation with Expansion occupies 8U of rack space and should be racked with the Expansion Array (if used) located at the bottom, the Metadata/data Array located beneath MDC Node 2, and MDC Node 1 located at the top, as shown in Figure 6.

Figure 6 Pro Foundation Rack Configuration - With Expansion



Service

Pro Foundation Warranty

The StorNext Pro Foundation standard warranty includes one year of Quantum's Gold Next Business Day (NBD) Support Plan (7x24xNBD on-site). An uplift support plan to Gold Support (7x24x4hr on-site) is also available.

StorNext Pro Foundation customers may choose to purchase additional years of Gold NBD warranty service after the first year of Gold NBD.

All add-on StorNext software features must be purchased with the equivalent service level of the StorNext Pro Foundation; similarly, all add-on StorNext software licenses must co-terminate with the StorNext Pro Foundation 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.

Service Levels

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

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 Pro Foundation Metadata Appliance. Quantum ASSP partners will be eligible to offer first tier support on the StorNext Pro Foundation once they've been trained and certified on the StorNext Pro Foundation product.

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

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

6-68272-01 Rev B, April 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.