

Dell SC7020 and SC7020F Storage Systems Getting Started Guide

Regulatory Model: E03T
Regulatory Type: E03T001



Notes, Cautions, and Warnings



NOTE: A NOTE indicates important information that helps you make better use of your product.



CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Setting Up the Storage System

Consider the following best practices when setting up an SC7020 series storage system.

- Dell recommends that you use a dedicated SAN network for data transmission when using a Fibre Channel or iSCSI storage system.
- Always configure redundant data paths to provide alternate paths to and from the host server should one of the data paths become disabled.
- Before connecting any cables between the storage system and host server or expansion enclosure, physically label each port and connector.
- Always follow proper power-up and power-down procedures when cycling power across the network. Verify that critical network components are on separate power circuits.



NOTE: This product is intended for restricted access locations, such as a dedicated equipment room or equipment closet.



WARNING: If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.

Safety Warnings



Two person lift required

A fully configured SC7020 series storage system weighs approximately 45 kg (100 lb). Use appropriate lifting methods when installing the storage system.

Laser Radiation for Fibre Channel Storage Systems



CAUTION: Class I laser radiation when open, avoid exposure to beam.





WARNING: Laser radiation, avoid direct exposure to beam.

The unit is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class I (1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 60825-1:2007.

Class I laser products are not considered to be hazardous. The laser system and unit are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance or prescribed service condition.

Locating Your Service Tag

Your storage system is identified by a unique service tag and Express Service Code.

The service tag and Express Service Code are found on the front of the system by pulling out the information tag. Alternatively, the information might be on a sticker on the back of the storage system chassis. This information is used by Dell to route support calls to the appropriate personnel.



NOTE: The Quick Resource Locator (QRL) code on the information tag is unique to your system. Scan the QRL to get immediate access to your system information using your smart phone or tablet.

Other Information You May Need

To install the storage system, you may need the following additional information:

- *Dell SC7020 and SC7020F Storage Systems Owner's Manual*
Provides information about an SC7020 series storage system, such as hardware features, replacing hardware components, and technical specifications.
- *Dell Storage Manager Administrator's Guide*
Provides instructions for using the Data Collector Manager and the Dell Storage Manager Client.



Installation and Configuration

Before you begin installation, make sure that the site where you plan to install the storage system has standard power from an independent source or a rack power distribution unit with a UPS.

In addition, verify that there is a 3U space in the lower 20U of the rack to install the storage system. If you plan to install the storage system above the lower 20U of a rack, a customer-provided mechanical lift must be used to avoid injury.

Unpacking Storage Center Equipment

Unpack the storage system and identify the items in your shipment.

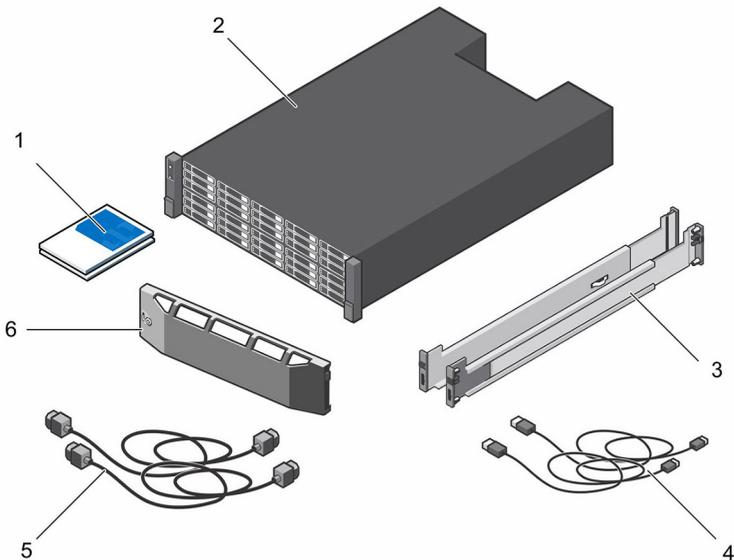


Figure 1. SC7020 Series Storage System Components

- | | | | |
|----|------------------|----|----------------|
| 1. | Documentation | 2. | Storage system |
| 3. | Rack rails | 4. | USB cables (2) |
| 5. | Power cables (2) | 6. | Front bezel |



Install the Storage System in a Rack

Install the storage system and other Storage Center system components in a rack.

About this task

Mount the storage system and expansion enclosures in a manner that allows for expansion in the rack and prevents the rack from becoming top-heavy.

The SC7020 series storage system ships with a ReadyRails II kit. The rails come in two different styles: tool-less and tooled. Follow the detailed installation instructions located in the rail kit box for your particular style of rails.



NOTE: Dell recommends using two people to install the rails, one at the front of the rack and one at the back.

Steps

1. Position the left and right rail end pieces labeled FRONT facing inward.
2. Align each end piece with the top and bottom holes of the appropriate U space.

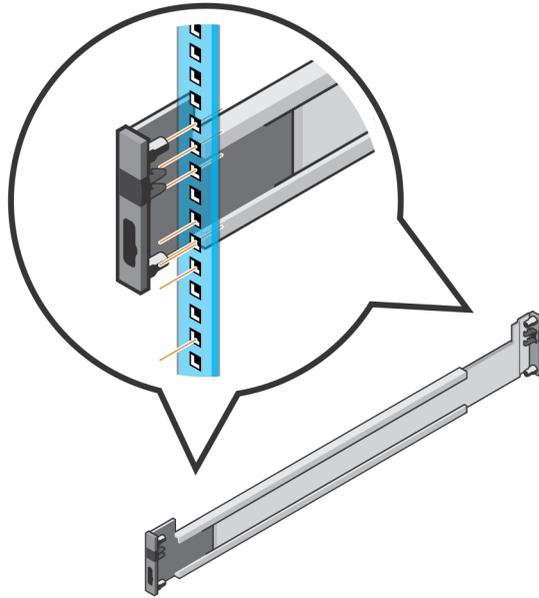


Figure 2. Attach the Rails to the Rack

3. Engage the back end of the rail until it fully seats and the latch locks into place.
4. Engage the front end of the rail until it fully seats and the latch locks into place.
5. Align the system with the rails and slide the storage system into the rack.

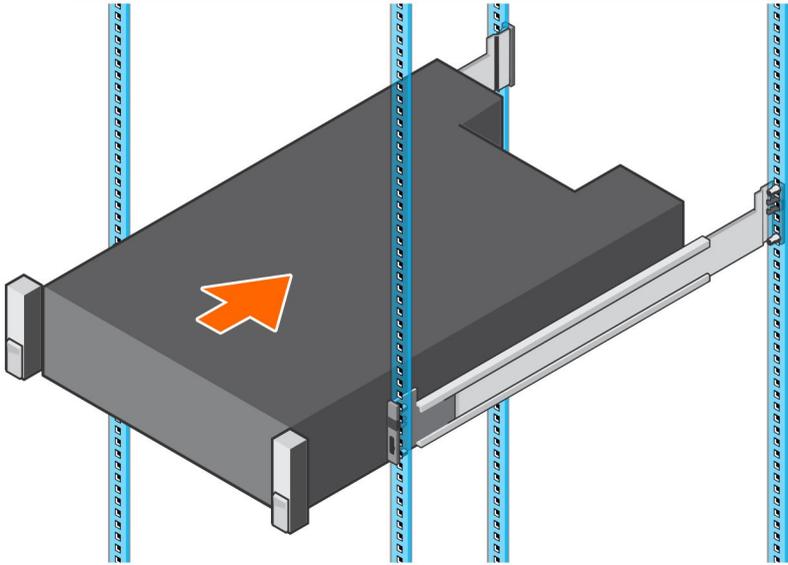


Figure 3. Slide the Storage System Onto the Rails

6. Lift the latches on each side of the front panel and tighten the screws to the rack.

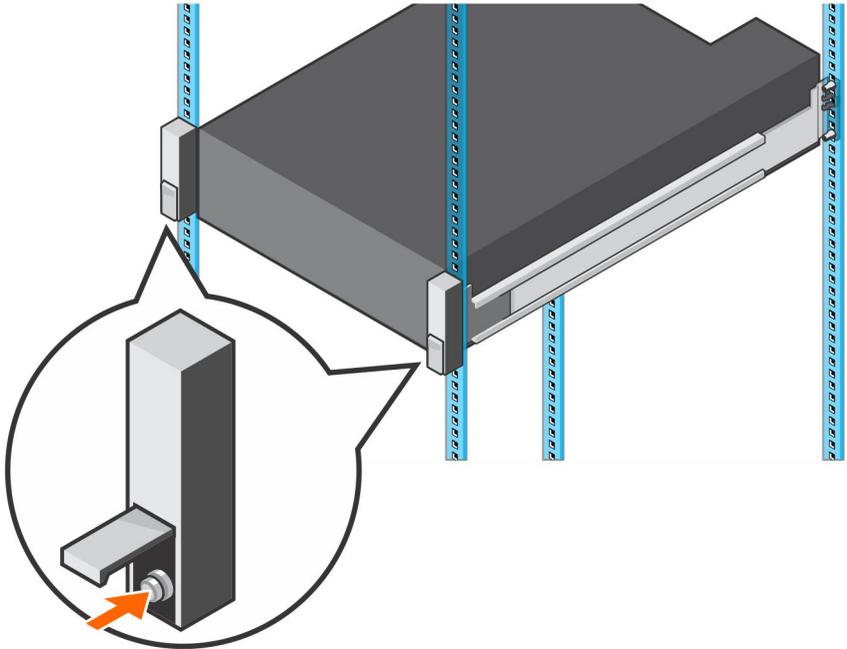


Figure 4. Tighten the Screws

If the Storage Center system includes expansion enclosures, mount the expansion enclosures in the rack. See the instructions included with the expansion enclosure for detailed steps.

Install the Front Bezel

Install the bezel on the front of the storage system.

1. Hook the right end of the bezel onto the storage system.

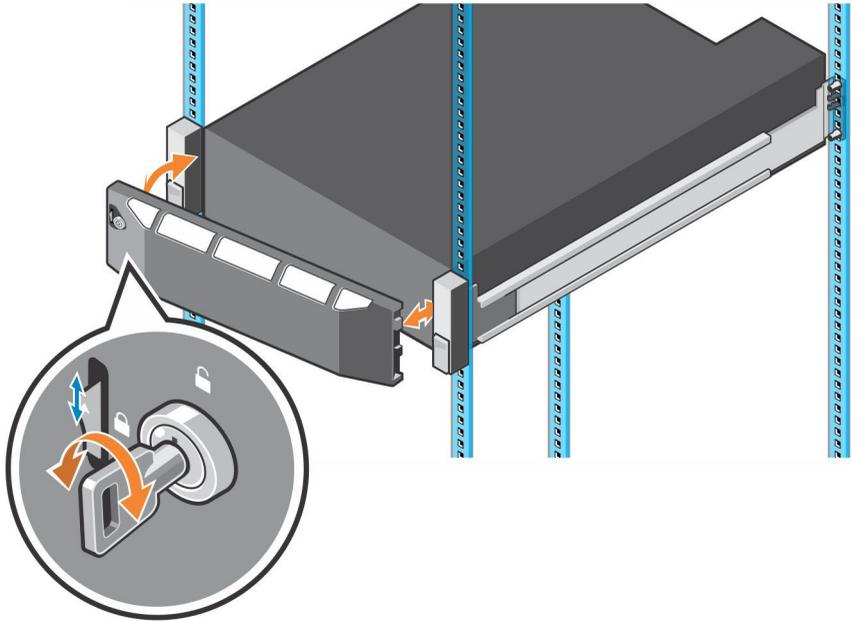


Figure 5. Front Bezel

2. Insert the left end of the bezel into the securing slot until the release latch snaps into place.
3. Secure the bezel with the keylock.

Connect the Power Cables

Connect power cables to the storage system.

1. Make sure that the power switches are in the OFF position before connecting the power cables.
2. Connect the power cables securely to both power supply/cooling fan modules in the storage system chassis.

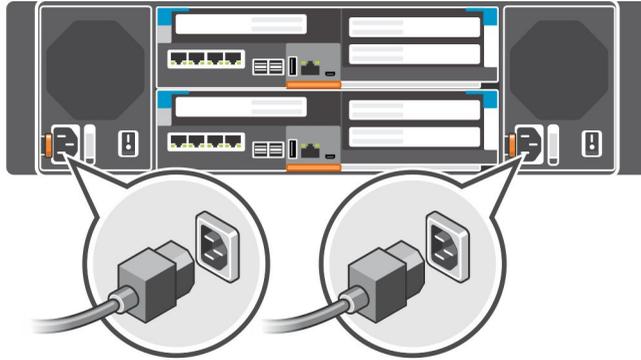


Figure 6. Connect the Power Cables

3. Use the straps to secure the power cables to the storage system chassis.

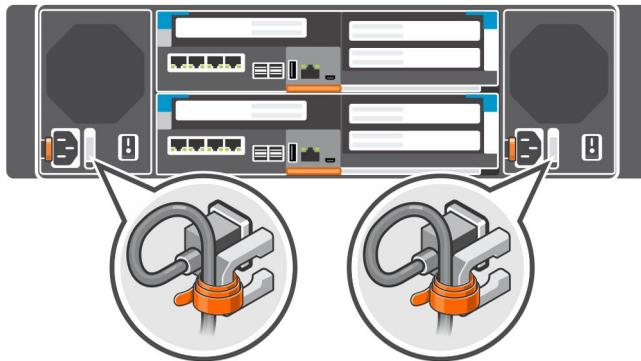


Figure 7. Secure the Power Cables

4. Plug the other end of the power cables into a grounded electrical outlet or a separate power source such as an uninterruptible power supply (UPS) or a power distribution unit (PDU).

NOM Information (Mexico Only)

The following information is provided on the device described in this document in compliance with the requirements of the official Mexican standards (NOM):

Importer	Dell Inc. de México, S.A. de C.V Paseo de la Reforma 2620-11 º Piso Col. Lomas Atlas 11950 México, D.F.
Model number	E03T
Supply voltage	200–240 VAC
Frequency	50/60 Hz
Current consumption	8.8 A

Technical Specifications

The technical specifications of the SC7020 series storage systems are displayed in the following tables.

Drives	
SC7020: SAS hard drives	Up to 30 2.5-in. SAS hot-swappable hard drives (12 Gb SAS)
SC7020F: SAS SSDs	Up to 30 2.5-in. SAS hot-swappable SSDs (12 Gb SAS)

Storage Controllers	
Storage controllers	<p>Two hot-swappable storage controllers with one mezzanine card and three I/O card slots per storage controller.</p> <p>Each storage controller has an internal battery backup unit. Write cache is mirrored between the two storage controllers. If a power failure occurs,</p>

Storage Controllers	
	the battery backup unit provides power to the storage controller so that the write cache can be saved to an SSD within the storage controller.

Storage Connectivity	
Configurations	<p>SC7020: Supports a total of 500 drives and 192 drives per SAS chain. Each SAS chain supports up to sixteen SC400 expansion enclosures or eight SC420 expansion enclosures.</p> <p>SC7020F: Supports a total of 500 SSDs and up to 192 SSDs per SAS chain. Each SAS chain supports up to eight SC420F expansion enclosure.</p>

Redundant Array of Independent Disks (RAID)	
Controller	Two hot-swappable storage controllers
Management	RAID management using the Storage Manager

Back-Panel Ports Connectors (per Storage Controller)	
Fibre Channel or iSCSI front-end connectors	Connection to a Fiber Channel fabric or iSCSI network
Ethernet connectors	MGMT – 1 Gbps or 10 Gbps embedded Ethernet port used for Storage Center management
SAS back-end connectors	<p>12 Gb SAS ports for connections to expansion enclosures</p> <p> NOTE: SAS connectors are SFF-8644 compliant.</p>
Serial connector (micro USB)	Used for initial configuration and support-only functions



LED Indicators	
Front panel	<ul style="list-style-type: none"> · One dual-color LED indicator for system status · One single-color LED indicator for power status · Identification button with a single-color LED
Hard drive carrier	<ul style="list-style-type: none"> · One single-color activity LED · One dual-color LED status indicator per drive
Storage controller	<ul style="list-style-type: none"> · Two single-color LEDs per Ethernet port indicating activity and link speed · One dual-color LED per SAS connector indicating port activity and status · One single-color LED indicating status · One single-color LED indicating system faults · One single-color LED for system identification
Power supply/cooling fan	One dual-color LED handle indicating power supply and cooling fan status

Power Supply Units (PSU)		
AC power supply (per power supply)	PSU Type 1	PSU Type 2 (Japan Only)
Maximum output power	1485 W	1485 W
Maximum input power	1688 W	1707 W
Maximum input current	8.8 A	17.5 A
Maximum inrush current	55 A for 10 ms or less	55 A for 10 ms or less
Nominal input voltage operating range	200–240 VAC	100–240 VAC
Nominal input frequency	50/60 Hz	50/60 Hz
Thermal output/heat dissipation	693 BTU per hour	757 BTU per hour

Available Hard Drive Power (Per Slot)	
Supported hard drive power consumption (continuous)	Up to 1.2 A at +5 V Up to 0.5 A at +12 V

Physical	
Height	13.34 cm (5.25 in.)
Width	44.50 cm (17.5 in.)
Depth	78.27 cm (31 in.)
Approximate weight (maximum configuration)	45 kg (100 lb)
Approximate weight without drives	35 kg (77 lb)

Environmental	
For additional information about environmental measurements for specific storage system configurations, see dell.com/environmental_datasheets .	
Temperature	
Operating	10°C (50°F) to 35°C (95°F) with a maximum temperature gradation of 20°C/hour (36°F/hour) Operating above 35°C could result in data loss
Storage	–40° to 65°C (–40° to 149°F) at a maximum altitude of 12,000 m (39,370 ft)
Relative humidity	
Operating	10% to 80% (noncondensing) with 29°C (84.2°F) maximum dew point
Storage	5% to 95% (noncondensing) with 33°C (91°F) maximum dew point
Maximum vibration	



Environmental	
Operating	0.21 G at 5–500 Hz for 15 min
Storage	1.04 G at 2–200 Hz for 15 min
Maximum shock	
Operating	31 G +/- 5% with pulse duration of 2.6 ms +/- 10% (equivalent to 20 in./sec [51 cm/sec])
Storage	71 G +/- 5% with pulse duration of 2 ms +/- 10% (equivalent to 35 in./sec [89 cm/sec])
Altitude	
Operating	3,048 m (10,000 ft) ≤35°C (95°F) Maximum Rating – Maximum temperature is reduced by 1°C/300 m (1°F/547 ft) above 950 m (3,117 ft)
Storage	12,000 m (39,370 ft)
Airborne Contaminant Level	
Class	G1 or lower as defined by ISA-S71.04-1985