Dell SC7020 Storage Controller 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 computer.

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

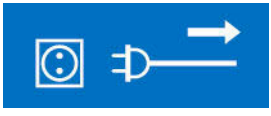
Consider the following best practices before setting up your SC7020 storage system.

- 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 (Tma) specified by the manufacturer.

Safety Warnings



Electrical disconnection

Indicates that all electrical supply connections to the storage system must be disconnected before proceeding.

The following information only applies to Fibre Channel storage systems.

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 may 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.

NOTE: See the safety and regulatory information that shipped with your Storage Center components. Warranty information is included as a separate document.

- The *Dell Storage Center SC7020 Storage System Deployment Guide* provides information about cabling storage controller hardware components and configuring a new storage controller using the 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 space in the rack to install the storage system.

Unpacking Storage Center Equipment

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

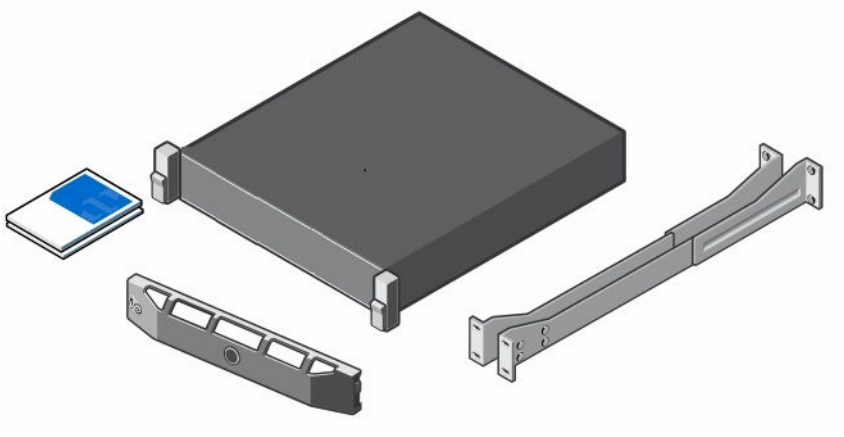


Figure 1. SC7020 Storage System Components

- Documentation
- Storage system
- Rack rails
- Front bezel
- Power and network cables (not shown)

Install the Storage System in a Rack

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

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 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:

- The storage system and expansion enclosures each require 3U of rack space for installation.
- Dell recommends using two people to install the rail, one at the front of the rack and one at the back.

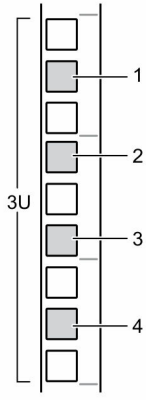


Figure 2. Hole Locations in Rack

1. Pin hole
2. Rack mounting screw hole
3. Pin hole
4. Rack mounting screw hole

Follow this procedure to install the storage system in a rack.

1. Position the left and right rail end pieces labeled `FRONT` facing inward and orient each end piece to seat in the holes on the front side of the vertical rack flanges.
2. Align each end piece with the top and bottom holes of the desired U space.
3. Engage the back end of the rail until it fully seats on the vertical rack flange and the latch clicks into place.
4.

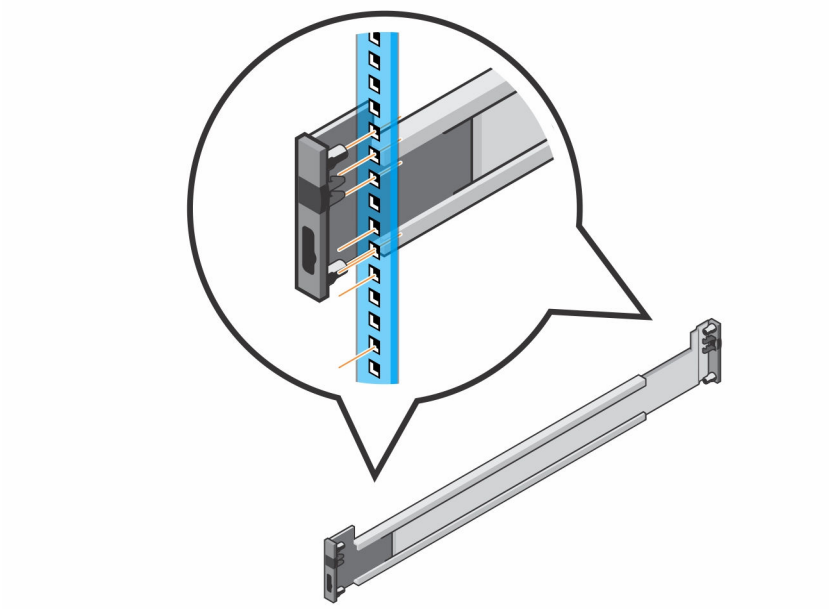


Figure 3. Attach the rails to the rack

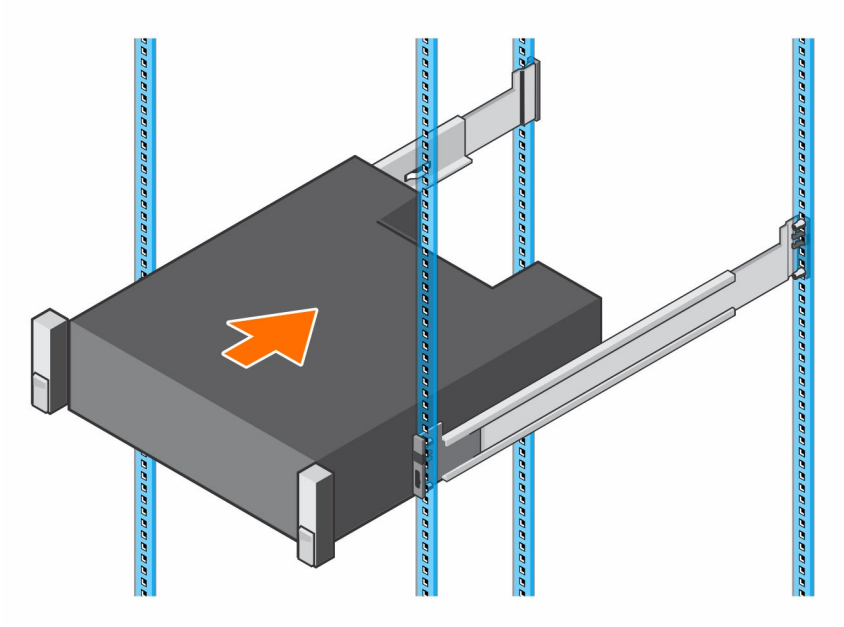


Figure 4. Slide the storage system onto the rails

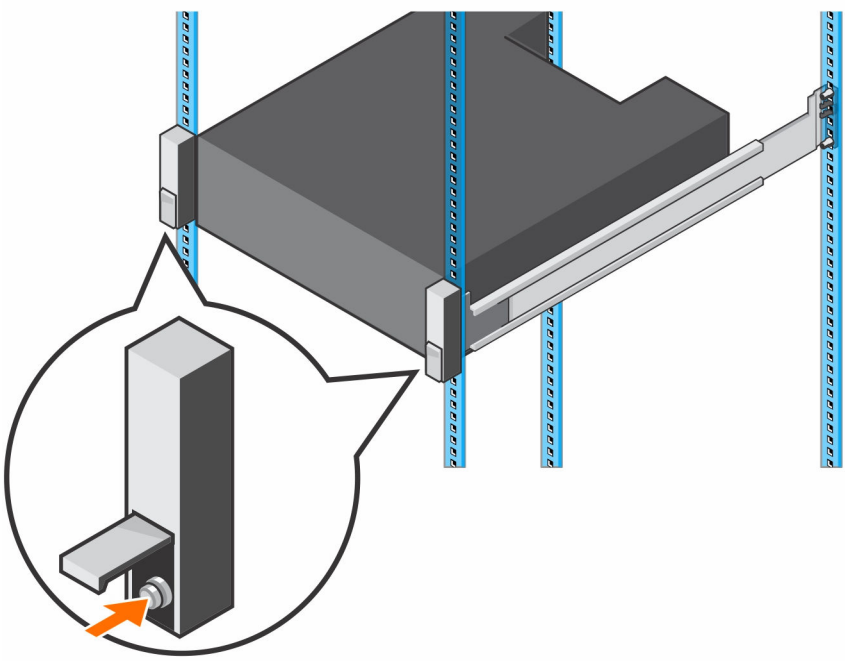


Figure 5. Tighten the screws

4. Repeat these steps to position and seat the front end piece of the vertical flange.

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.

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.

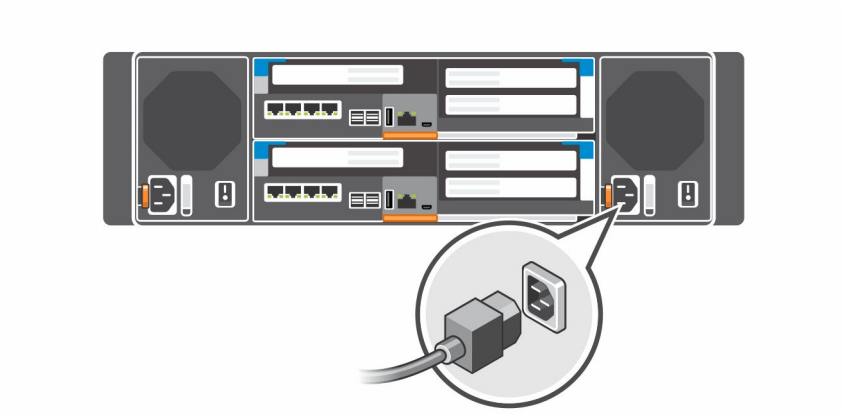


Figure 6. Connect the Power Cables

3. Fasten the velcro strap to the power supply handle to prevent accidental pulling of the power cable.
4. Plug the other end of the power cables into a grounded electrical outlet or a separate power source such as an uninterrupted 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 ° 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 storage systems are displayed in the following tables.

Drives	
SAS hard drives	Up to 30 2.5-inch SAS hot-swappable hard drives (12GB SAS)

Storage Controllers	
Storage controllers	Up to two hot-swappable storage controllers with one mezzanine card and three IO slots.

Storage Connectivity	
Configurations	Storage Center supports up to 168 drives in one redundant-path SAS chain • An SC7020 supports up to 12 SC400 expansion enclosures or 6 SC420 expansion enclosures

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

Back-Panel Ports Connectors (per Storage Controller)	
Fibre Channel, iSCSI, or SAS connectors	Connection to a Fiber Channel fabric, iSCSI network
Ethernet connectors	**MGMT**: 100 Mbps, or 1 Gbps embedded Ethernet port used for Storage Center management
SAS connectors	12GB SAS connectors for additional expansion enclosures **NOTE:** SAS connectors are SFF-8086/SFF-8088 compliant

Back-Panel Ports Connectors (per Storage Controller)	
Serial connector	NOTE: Not for customer use

LED Indicators	
Front panel	• One two-color LED indicator for system status. • One single-color LED indicator for power status. • ID button with a single-color LED indicating boot status and pressed states
Hard drive carrier	• One single-color activity LED • One single-color LED status indicator per drive
Storage controller	• Two single-color LEDs per Ethernet port indicating activity and link speed • One dual-color LEDs per SAS connector indicating port activity and status • One single-color LED indicating status • One single-color LED indicating fault • One single-color LED for identification
Power supply/ cooling fan	Two LED status indicators for Power Supply Status, AC Fail status, DC Fail status, and Fan Fail status

Power Supplies	
AC power supply (per power supply)	
Wattage	1485 W (maximum wattage: 1764 W)
Voltage	200–240 VAC (8.8A)
Heat dissipation	1764 W (6019 BTU/hr)
Maximum inrush current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 45 A per power supply for 40 ms or less

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.)
Weight (maximum configuration)	34.4 kg (76 lb.)
Weight without drives	25 kg (55 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) 52°C (126°F) maximum 2,000 to 3,048 m (6,562 to 10,000 ft) 47°C (117°F) maximum 3,048 to 4,000 m (10,000 to 13,123 ft)
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

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 msec +/- 10% (equivalent to 20 in/sec [51 cm/sec])

Environmental	
Storage	71 G +/- 5% with pulse duration of 2 msec +/- 10% (equivalent to 35 in/sec [89 cm/sec])
Altitude	
Operating	3,048 meters (10,000 feet) **≤35°C (95°F) Maximum Rating**—Maximum temperature is reduced by 1°C/300 meter (1°F/547 feet) above 950 meters (3,117 feet) **40°C (104°F) Maximum Rating**—Maximum temperature is reduced by 1°C/175 meter (1°F/319 feet) above 950 meters (3,117 feet) **≥45°C (113°F) Maximum Rating**—Maximum temperature is reduced by 1°C/125 meter (1°F/228 feet) above 950 meters (3,117 feet)
Storage	12,000 meters (39,370 feet)
Airborne Contaminant Level	
Class	G1 or lower as defined by ISA-S71.04-1985