




SC5020 and SC5020F Storage Systems

Getting Started Guide

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.

© 2017 – 2018 Dell Inc. or its subsidiaries. All rights reserved. Dell, EMC, and other trademarks are trademarks of Dell Inc. or its subsidiaries. Other trademarks may be trademarks of their respective owners.

Setting Up the Storage System

Consider the following best practices when setting up an SC5020 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 SC5020 series storage system weighs approximately 43 kg (95 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.

Topics:

- [Locating Your Service Tag](#)
- [Other Information You May Need](#)
- [Installation and Configuration](#)
- [NOM Information \(Mexico Only\)](#)
- [Technical Specifications](#)

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:

- *SC5020 and SC5020F Storage Systems Owner's Manual*

Provides information about an SC5020 series storage system, such as hardware features, replacing hardware components, and technical specifications.

- *Dell Storage Manager Administrator's Guide*

Provides instructions for using the Dell Storage Manager software.

- *Unisphere and Unisphere Central for SC Series Administrator's Guide*

Provides instructions and information for managing storage systems using Unisphere and Unisphere Central for SC Series.

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.

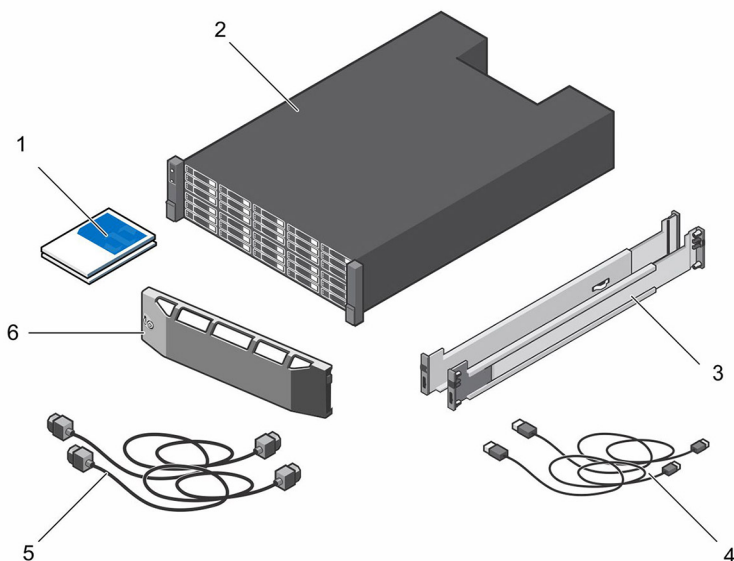


Figure 1. SC5020 Series Storage System Components

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 SC5020 series storage system ships with a ReadyRails II kit. The rails come in two different styles: tool-less and tool-ed. 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.

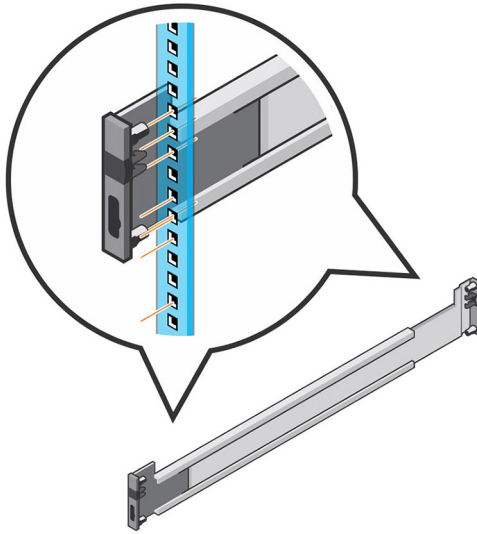


Figure 2. Attach the Rails to the Rack

- 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.

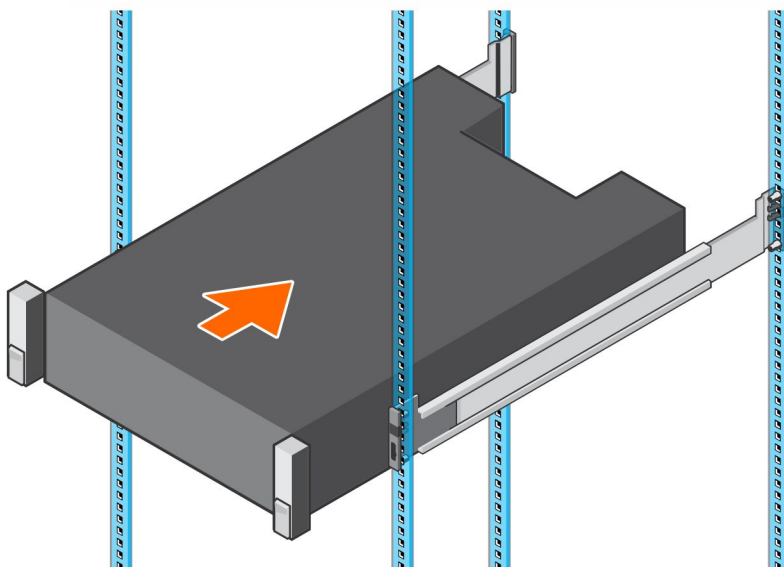


Figure 3. Slide the Storage System Onto the Rails

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

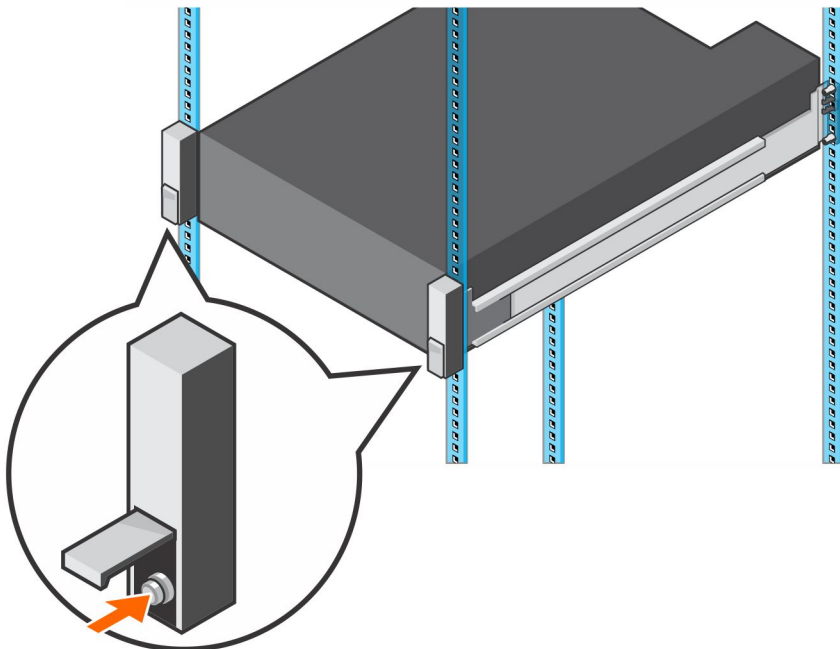


Figure 4. Tighten the Screws

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.

Steps

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

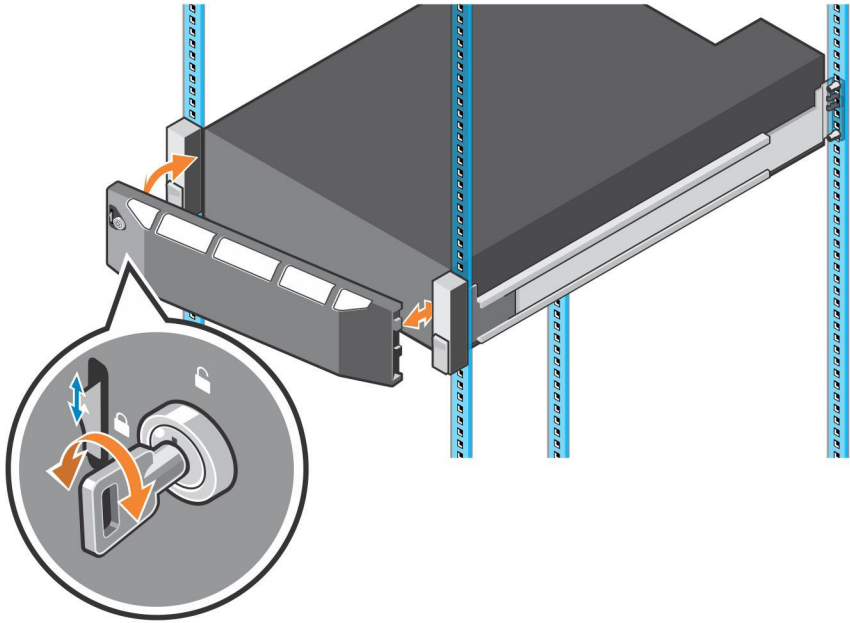


Figure 5. Front Bezel

- 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.

Next step

Install the expansion enclosures in the rack. See the instructions included with the expansion enclosure or in the expansion enclosure Service Guide 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.

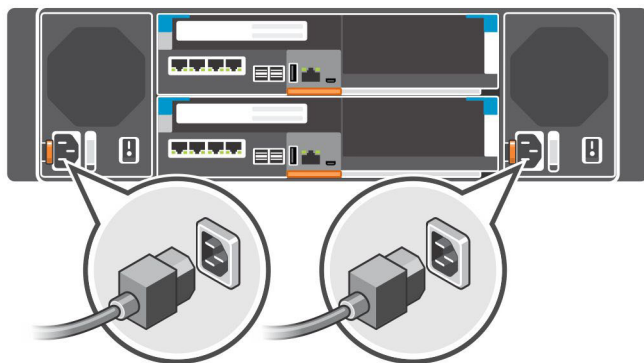


Figure 6. Connect the Power Cables

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

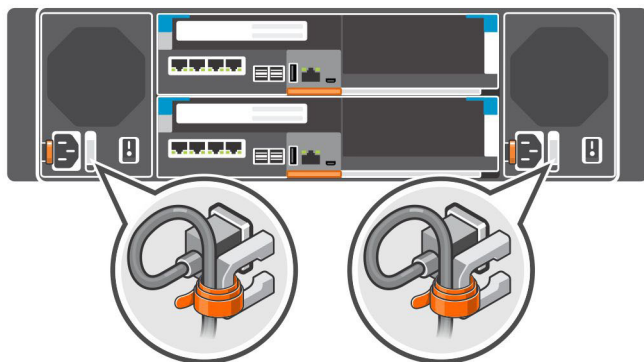


Figure 7. Secure the Power Cables

- 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	100–240 VAC (1378 W) 200–240 VAC (1485 W)
Frequency	50/60 Hz
Current consumption	16A-8.25A (1378 W) 8.8 A (1485 W)

Technical Specifications

The following tables provide technical specifications for the SC5020 series storage systems.

Drives

SC5020: SAS hard drives	Up to 30 2.5-in. SAS hot-swappable HDDs (12 Gb SAS)
SC5020F: SAS SSDs	Up to 30 2.5-in. SAS hot-swappable SSDs (12 Gb SAS)

Storage Controllers

Storage controllers	Two hot-swappable storage controllers with one I/O card slot and one optional mezzanine card per storage controller. Each storage controller has an internal battery backup unit. Write cache is mirrored between the two storage
---------------------	--

Storage Controllers

controllers. If a power failure occurs, 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>SC5020: Supports a total of 222 drives and up to 192 drives on a single SAS chain. The SAS chain supports up to sixteen SC400 expansion enclosures, eight SC420 expansion enclosures, or three SC460 expansion enclosures.</p> <p>SC5020F: Supports a total of 222 SSDs and up to 192 SSDs on a single SAS chain. The SAS chain supports up to eight SC420F expansion enclosures.</p>
----------------	--

Redundant Array of Independent Disks (RAID)

Controller	Two hot-swappable storage controllers
Management	RAID management using the Dell Storage Manager

Back-Panel Ports Connectors (per Storage Controller)

Fibre Channel, iSCSI, or SAS front-end connectors	Connection to a Fiber Channel fabric, iSCSI network, or a direct connection to servers with SAS HBAs
Ethernet connectors	MGMT – 1 Gbps or 10 Gbps embedded Ethernet port used for Storage Center management
SAS back-end connectors	12 Gb SAS ports for connections to expansion enclosures
	 NOTE: SAS connectors are SFF-8644 compliant.
Serial connector (micro USB)	Used for initial configuration and support-only functions

LED Indicators

Front panel

- 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

- One single-color activity LED
- One dual-color LED status indicator per drive

Storage controller

- 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)	PSU Type 3
Maximum output power	1485 W	1485 W	1378 W
Maximum input power	1688 W	1707 W	1584 W
Maximum input current	8.8 A	17.5 A	16 A
Maximum inrush current	55 A for 10 ms or less	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	100–240 VAC
Nominal input frequency	50/60 Hz	50/60 Hz	50/60 Hz
Thermal output/heat dissipation	693 BTU per hour	757 BTU per hour	703 BTU per hour

Power Supply Units (PSU)

Inlet Type	C14	C20	C20
------------	-----	-----	-----

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)	43 kg (95 lb)
Approximate weight without drives	32.5 kg (72 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

Environmental

Maximum vibration

Operating	0.26 G _{rms} at 5–350 Hz for 15 min
Storage	1.88 G _{rms} at 10–500 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
-------	---