

Dell Storage Center




SC100 and SC120 Expansion Enclosure

Getting Started Guide

Regulatory Model: E03J, E04J
Regulatory Type: E03J001, E04J001



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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Rev. A01

Before You Begin

Consider the following best practices before setting up your SC100/SC120 expansion enclosure.

- Before connecting any cables between the storage system and 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.

Other Information You May Need

Additional information you may need to install the expansion enclosure.

 **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 SCv2000/SCv2020 Storage System Deployment Guide* provides information about cabling Storage Center hardware components and configuring a new Storage Center using the Dell Storage Client.
- The *Dell Storage Center Dell Storage Client Administrator's Guide* describes how to use the Dell Storage Client to manage a Storage Center.

Installation and Configuration

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

Unpacking Storage Center Equipment

Unpack the expansion enclosure and identify the items in your shipment.

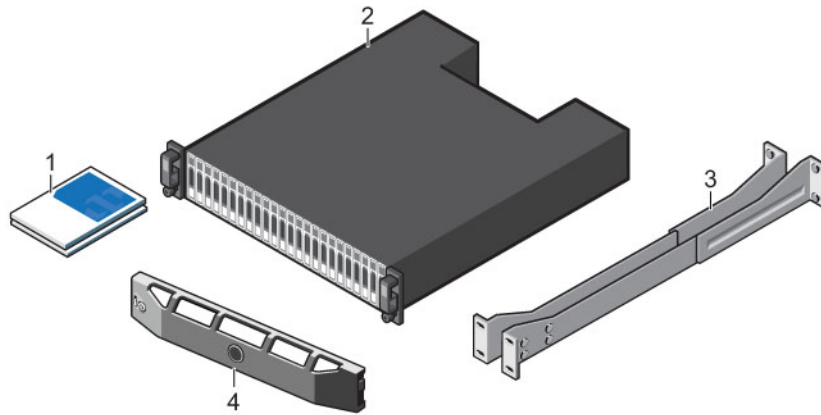


Figure 1. SC100/SC120 Expansion Enclosure Components

- | | |
|------------------|------------------------|
| 1. Documentation | 2. Expansion enclosure |
| 3. Rack rails | 4. Front bezel |

Installing the Expansion Enclosure in a Rack

Install the SC100/SC120 expansion enclosure in a rack.

NOTE: Mount the expansion enclosure in a manner that allows for expansion in the rack and prevents the rack from becoming top-heavy.

1. Assemble the rails following the safety instructions and the rack installation instructions provided with your expansion enclosure.
2. Determine where to mount the expansion enclosure in the rack and mark the location.
3. Install the rack rails at the marked location using the top mounting holes of the bottom U.
 - a. Insert the top locking pin in the middle mounting hole of the top U.
 - b. Insert the bottom locking pin in the bottom mounting hole of the bottom U.
4. Mount the expansion enclosure chassis on the rails.

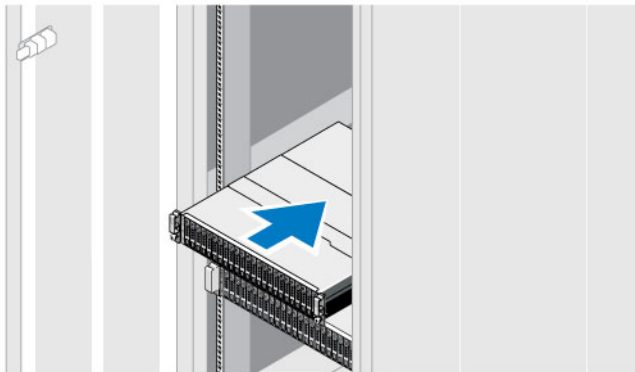


Figure 2. Mount the Expansion Enclosure Chassis in the Rack

- | | |
|------------------------------------|-------------------|
| 1. SC100/SC120 expansion enclosure | 2. Storage system |
|------------------------------------|-------------------|
5. Secure the expansion enclosure chassis to the rack using the mounting bolts.

For more information about installing the expansion enclosure, see the *Dell Storage Center SCv2000/SCv2020 Storage System Deployment Guide*.

Installing the Front Bezel

Install the bezel on the front of the expansion enclosure.

1. Hook the right end of the bezel onto the expansion enclosure.

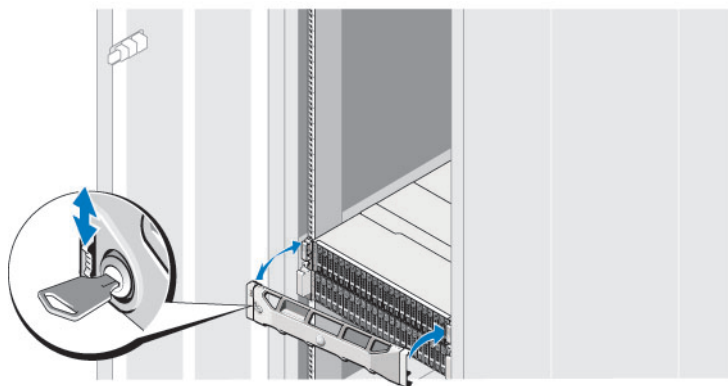


Figure 3. Front Bezel

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.

Cabling the Expansion Enclosure to a Storage System

Connect an SC100/SC120 expansion enclosure to the back-end SAS ports on an SCv2000/SCv2020 storage system.

NOTE: In an SC100/SC120 expansion enclosure, the top storage controller is storage controller 1 and the bottom storage controller is storage controller 2.

1. If you are installing more than one expansion enclosure, cable the expansion enclosures in series by connecting a SAS cable from the top EMM, port B of one expansion enclosure to the top EMM, port A of the next expansion enclosure. Continue cabling the expansion enclosures in series until all of the expansion enclosures are connected together.
2. Connect a SAS cable from storage controller 1: port A to the first expansion enclosure in the SAS chain: top EMM, port A.
3. Connect a SAS cable from storage controller 2: port B to the last expansion enclosure in the SAS chain: top EMM, port B.
4. Connect a SAS cable from storage controller 1: port B to the last expansion enclosure in the SAS chain: bottom EMM, port B.
5. Connect a SAS cable from storage controller 2: port A to the first expansion enclosure in the SAS chain: bottom EMM, port A.

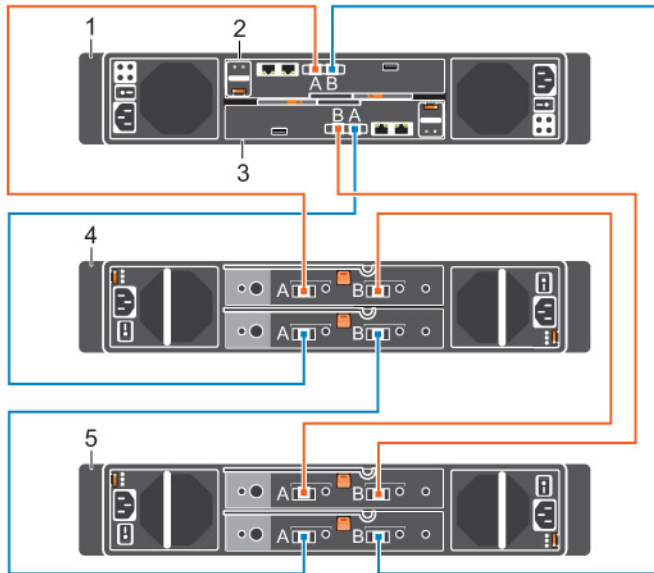


Figure 4. Cabling an SC100/SC120 Expansion Enclosure to an SCv2000/SCv2020 Storage System

- | | |
|--------------------------------------|--------------------------------------|
| 1. Storage system | 2. Storage controller 1 |
| 3. Storage controller 2 | 4. SC100/SC120 expansion enclosure 1 |
| 5. SC100/SC120 expansion enclosure 2 | |

Connecting the Power Cables

Connect power cables to the expansion enclosure.

1. Make sure that the power switches on the expansion enclosure are in the OFF position before connecting the power cables.
2. Connect the power cables to the power supplies in the expansion enclosure chassis.

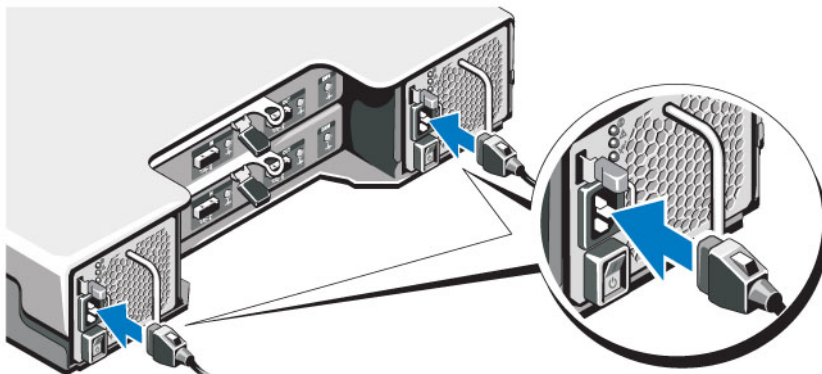


Figure 5. Power Cables

3. Secure each power cable to the expansion enclosure chassis using the strain relief fasteners.
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).

Turning on the Expansion Enclosure

Turn on the SC100/SC120 expansion enclosure after racking and cabling all of the Storage Center components.

Turn on the expansion enclosure by pressing both power switches at the same time.

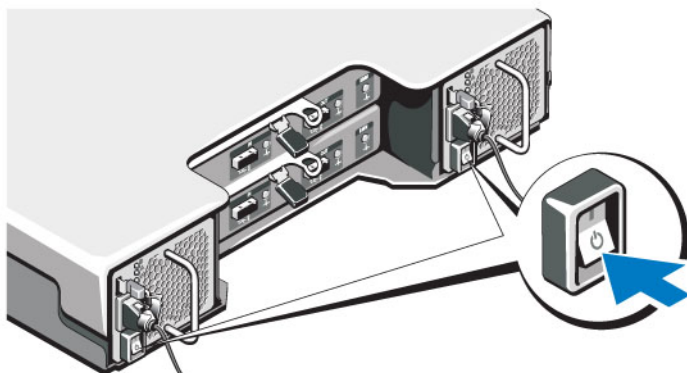


Figure 6. Location of the SC100/SC120 Expansion Enclosure Power Switches

The status indicator on the front of the expansion enclosure turns blue when the expansion enclosure is powered up and operational.

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: E03J and E04J

Supply voltage: 100–240 VAC

Frequency: 50/60 Hz

Current consumption: 8.6–4.3 A

Technical Specifications

The technical specifications of the SC100/SC120 expansion enclosures are displayed in the following tables.

Drives

SAS hard drives	SC100: Up to 12 3.5-inch SAS hot-swappable hard drives (6.0 Gbps) SC120: Up to 24 2.5-inch SAS hot-swappable hard drives (6.0 Gbps)
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Enclosure Management Modules (EMMs)

EMMs Two hot-swappable IO modules

Connectivity

Configurations Storage Center supports up to 168 drives in one redundant-path SAS chain

- An SCv2000 supports up to 13 SC100 expansion enclosures or 6 SC120 expansion enclosures
- An SCv2020 supports up to 12 SC100 expansion enclosures or 6 SC120 expansion enclosures

Redundant Array of Independent Disks (RAID)

Storage System SCv2000/SCv2020

Management RAID management using Dell Storage Client2015 R1

Back-Plane Board


Connectors **SC100**: 12 SAS hard-drive connectors
SC120: 24 SAS hard-drive connectors

- Two power supply/cooling fan module connectors
- Two sets of EMM connectors
- One control panel connector for front LEDs


Sensors Two temperature sensors

Back-Panel Connectors (per EMM)

SAS connectors SAS A and B connectors for connecting an expansion enclosure to a storage system.

 **NOTE:** SAS connectors are SFF-8086/SFF-8088 compliant

Serial connector One 6-pin UART mini-DIN connector

 **NOTE:** Not for customer use.

LED Indicators

Front panel

- One two-color LED indicator for system status
- One single-color LED indicators for power status

Hard-drive carrier

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

EMM Three two-color LED status indicators, one each for the two EMM SAS ports and one for the EMM status

Power supply/cooling fan Three LED status indicators for power supply status, power supply/cooling fan fault status, and AC status

Power Supplies

AC power supply (per power supply)

Wattage	700 W
Voltage	100–240 VAC (8.6–4.3 A)
Heat dissipation	SC100: 191–147 W SC120: 133–114 W

Maximum inrush current Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 55 A per power supply for 10 ms or less

Available Hard Drive Power (per Slot)

Supported hard drive power consumption (continuous)	SC100: Up to 1.16 A at +5 V, up to 1.6 A at +12 V SC120: Up to 1.2 A at +5 V, up to 0.5 A at +12 V
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EMM Power (per Slot)

Maximum power consumed by EMM	SC100: 11 W at +12 V SC120: 14 W at +12 V
Maximum available power	100 W at +12 V
Maximum available power	1 W at +5 V (standby)

Physical

Height	8.68 cm (3.41 in.)
Width	44.63 cm (17.57 in.)
Depth	SC100: 59.4 cm (23.4 in.) SC120: 54.1 cm (21.3 in.)
Weight (maximum configuration)	SC100: 29.2 kg (64 lb) SC120: 24.1 kg (53 lb)
Weight without drives	SC100: 8.84 kg (19.5 lb) SC120: 8.61 kg (19 lb)

Environmental



NOTE: For additional information about environmental measurements for specific configurations, see dell.com/environmental_datasheets.

Temperature

Environmental

Operating 5° to 40°C (41° to 104°F) with a maximum temperature gradation of 10°C per hour



NOTE: For altitudes above 2950 feet, the maximum operating temperature is derated 1°F per 550 ft.

Storage -40° to 65°C (-40° to 149°F) with a maximum temperature gradation of 20°C per hour

Relative humidity

Operating 20% to 80% (noncondensing) with a maximum humidity gradation of 10% per hour

Storage 5% to 95% (noncondensing)

Maximum vibration

Operating 0.26 G at 5–350 Hz for 15 min

Storage 1.88 G at 10–500 Hz for 15 min

Maximum shock

Operating Half-sine shock 31 G +/- 5% with a pulse duration of 2.6 ms +/- 10% (in operational orientations only)

Storage

- Half-sine shock 71 G +/- 5% with a pulse duration of 2 ms +/- 10% (all sides)
- Square wave shock 27 G with a velocity change of 235 in. per sec (all sides)

Altitude

Operating -16 to 3048 m (-50 to 10,000 ft)



NOTE: For altitudes above 2950 feet, the maximum operating temperature is derated 1°F per 550 ft.

Storage -16 to 10,600 m (-50 to 35,000 ft)

Airborne Contaminant Level

Class G2 or lower as defined by ISA-S71.04- 1985

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