

Dell Storage Center

SCv2000 and SCv2020 Storage System

Getting Started Guide

Regulatory Model: E09J, E10J
Regulatory Type: E09J001, E10J001



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 when setting up an SCv2000/SCv2020 storage system.

- Dell recommends that you use a dedicated SAN network for data transmission when using a Fibre Channel or iSCSI storage system.
- Complete the Worksheet to Record System Information in this guide before configuring the 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



Battery pack warning

Remove the battery pack before removing a storage controller from the storage system.





WARNING: Installing an incompatible battery may increase the risk of fire or explosion. Observe the following precautions:

- The battery should only be replaced with a battery that is the same or equivalent as the factory installed battery.
- Do not attempt to open or service the battery. Do not dispose of the battery in a fire or with household waste. Contact the local waste disposal agency for the location of the nearest battery deposit site.

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.

Worksheet to Record System Information

Use the following worksheet to record the information that is needed to install the SCv2000/SCv2020 storage system.

Storage Center Information

Gather and record the following information about the Storage Center network and the administrator user.

Table 1. Storage Center Network

Service Tag	_____
Management IPv4 address (Storage Center management address)	____ . ____ . ____ . ____
Top Controller IPv4 address (Controller 1 MGMT port)	____ . ____ . ____ . ____
Bottom Controller IPv4 address (Controller 2 MGMT port)	____ . ____ . ____ . ____
Subnet mask	____ . ____ . ____ . ____
Gateway IPv4 address	____ . ____ . ____ . ____
Domain name	_____
DNS server address	____ . ____ . ____ . ____
Secondary DNS server address	____ . ____ . ____ . ____

Table 2. Storage Center Administrator

Password for the default Storage Center “Admin” user	_____
Email address of the default Storage Center “Admin” user	_____



iSCSI Fault Domain Information

For a storage system with iSCSI front-end ports, gather and record network information for the iSCSI fault domains. This information is needed to complete the **Discover and Configure Uninitialized SCv2000 Series Storage Centers** wizard.

 **NOTE: For a storage system deployed with two Ethernet switches, Dell recommends setting up each fault domain on separate subnets.**

See the *Dell Storage Center SCv2000/SCv2020 Storage System Deployment Guide* for information about setting up iSCSI fault domains.

Table 3. iSCSI Fault Domain 1

Target IPv4 address	___ . ___ . ___ . ___
Subnet mask	___ . ___ . ___ . ___
Gateway IPv4 address	___ . ___ . ___ . ___
IPv4 address for storage controller module 1: port 1	___ . ___ . ___ . ___
IPv4 address for storage controller module 2: port 1	___ . ___ . ___ . ___
(Four port I/O card only) IPv4 address for storage controller module 1: port 3	___ . ___ . ___ . ___
(Four port I/O card only) IPv4 address for storage controller module 2: port 3	___ . ___ . ___ . ___

Table 4. iSCSI Fault Domain 2

Target IPv4 address	___ . ___ . ___ . ___
Subnet mask	___ . ___ . ___ . ___
Gateway IPv4 address	___ . ___ . ___ . ___
IPv4 address for storage controller module 1: port 2	___ . ___ . ___ . ___
IPv4 address for storage controller module 2: port 2	___ . ___ . ___ . ___
(4-port I/O card only) IPv4 address for storage controller module 1: port 4	___ . ___ . ___ . ___



(4-port I/O card only) IPv4 address for storage controller ____ . ____ . ____ . ____
module 2: port 4

Additional Storage Center Information

The Network Time Protocol (NTP) and Simple Mail Transfer Protocol (SMTP) server information is optional. The proxy server information is also optional, but it may be required to complete the **Discover and Configure Uninitialized SCv2000 Series Storage Centers** wizard.

Table 5. NTP, SMTP, and Proxy Servers

NTP server IPv4 address	____ . ____ . ____ . ____
SMTP server IPv4 address	____ . ____ . ____ . ____
Backup SMTP server IPv4 address	____ . ____ . ____ . ____
SMTP server login ID	_____
SMTP server password	_____
Proxy server IPv4 address	____ . ____ . ____ . ____

Fibre Channel Zoning Information

For a storage system with Fibre Channel front-end ports, record the physical and virtual WWNs of the Fibre Channel ports in Fault Domain 1 and Fault Domain 2. This information is displayed on the **Review Front-End** page of the **Discover and Configure Uninitialized SCv2000 Series Storage Centers** wizard. Use this information to configure zoning on each Fibre Channel switch.

See the *Dell Storage Center SCv2000/SCv2020 Storage System Deployment Guide* for information about setting up Fibre Channel zoning.

Table 6. Physical WWNs in Fault Domain 1

Physical WWN of storage controller 1: port 1	_____
Physical WWN of storage controller 2: port 1	_____



(4-port I/O card only) Physical WWN of storage controller 1: port 3 -----
(4-port I/O card only) Physical WWN of storage controller 2: port 3 -----

Table 7. Virtual WWNs in Fault Domain 1

Virtual WWN of storage controller 1: port 1 -----
Virtual WWN of storage controller 2: port 1 -----
(4-port I/O card only) Virtual WWN of storage controller 1: port 3 -----
(4-port I/O card only) Virtual WWN of storage controller 2: port 3 -----

Table 8. Physical WWNs in Fault Domain 2

Physical WWN of storage controller 1: port 2 -----
Physical WWN of storage controller 2: port 2 -----
(4-port I/O card only) Physical WWN of storage controller 1: port 4 -----
(4-port I/O card only) Physical WWN of storage controller 2: port 4 -----

Table 9. Virtual WWNs in Fault Domain 2

Virtual WWN of storage controller 1: port 2 -----
Virtual WWN of storage controller 2: port 2 -----
(4-port I/O card only) Virtual WWN of storage controller 1: port 4 -----
(4-port I/O card only) Virtual WWN of storage controller 2: port 4 -----



Locating Your Service Tag

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

You can find the service tag and Express Service Code on the service luggage tag located next to the front panel display. Alternatively, the information may be on a sticker on the back of the storage system chassis. Dell uses this information to route support calls to the appropriate personnel.

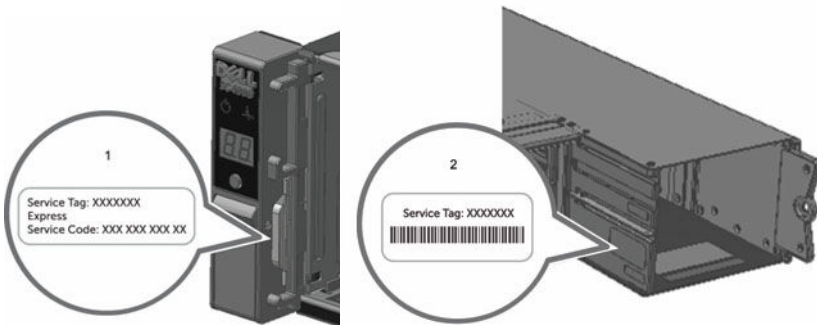


Figure 1. Service Tag Locations

1. Service luggage tag
2. Service tag label

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



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.

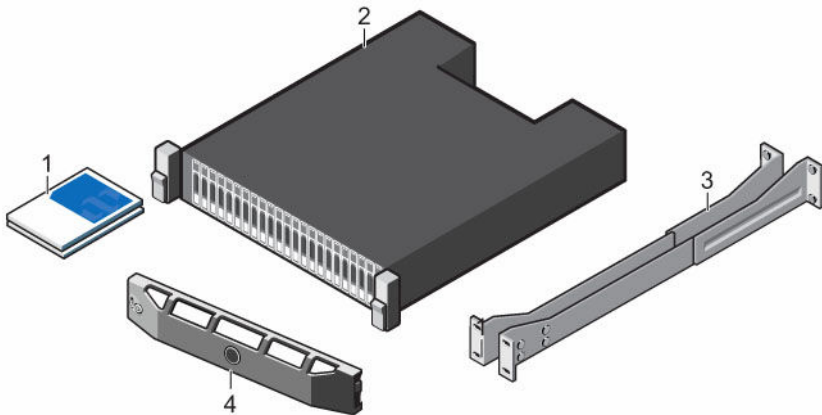


Figure 2. SCv2000/SCv2020 Storage System Components

- | | | | |
|----|----------------|----|----------------|
| 1. | Documentation | 2. | Storage system |
| 3. | Rack rails (2) | 4. | Front bezel |

Installing the Storage System in a Rack

Install the SCv2000/SCv2020 storage system and other Storage Center system components in a rack.



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

1. Secure the rails that are pre-attached to both sides of the storage system chassis.

- a. Lift the locking tab on the rail.
 - b. Push the rail towards the back of the chassis until it locks in place.
2. Determine where to mount the storage system in the rack and mark the location at the front and rear of the rack.



NOTE: The storage system and expansion enclosures each require 2U of rack space for installation.

3. Position the rails at the marked locations and extend the rails to fit the rack.
4. Insert the top rail pin in the middle hole of the top 1U and insert the bottom rail pin in bottom hole of the bottom 1U.
5. Insert a screw into the top hole of the bottom 1U and tighten the screw to secure the rail to the rack.

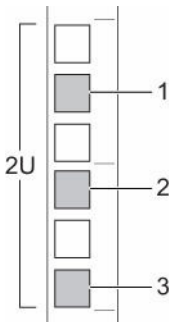


Figure 3. Hole Locations in Rack

1. Middle hole of top 1U
 2. Top hole of bottom 1U
 3. Bottom hole of bottom 1U
6. Slide the storage system chassis onto the rails.



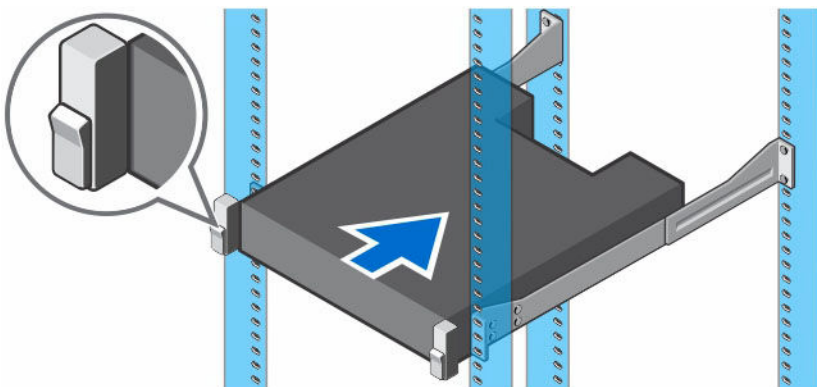


Figure 4. Mount the SCv2000/SCv2020 Storage System Chassis

7. Secure the storage system chassis to the rack using the mounting screws within each chassis ear.
 - a. Lift the latch on each chassis ear to access the screws.
 - b. Tighten the screws to secure the chassis into the rack.
 - c. Close the latch on each chassis ear.

For more information about installing the storage system, see the *Dell Storage Center SCv2000/SCv2020 Storage System Deployment Guide*

8. If the Storage Center system includes expansion enclosures, mount the expansion enclosures in the rack. For more information about installing an expansion enclosure, see the Getting Started Guide included with the expansion enclosure.

Installing 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.

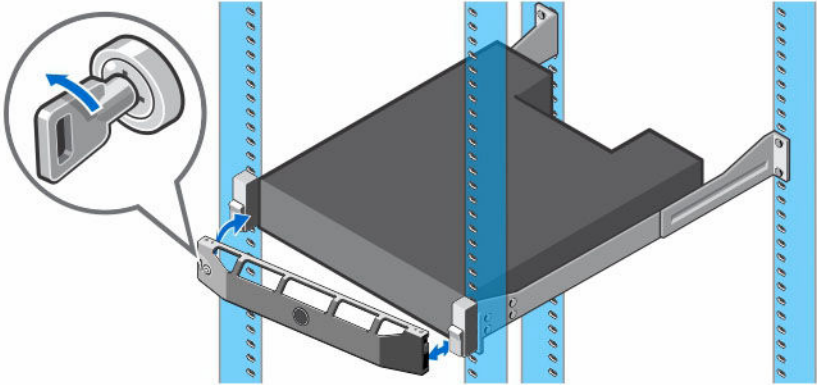


Figure 5. Front Bezel

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.

Connecting the Power Cables

Connect the power cables to the storage system.

1. Before connecting the power cables, make sure that the power switches on the storage system are in the OFF position.
2. Connect the power cables to the power supplies in the storage system chassis.

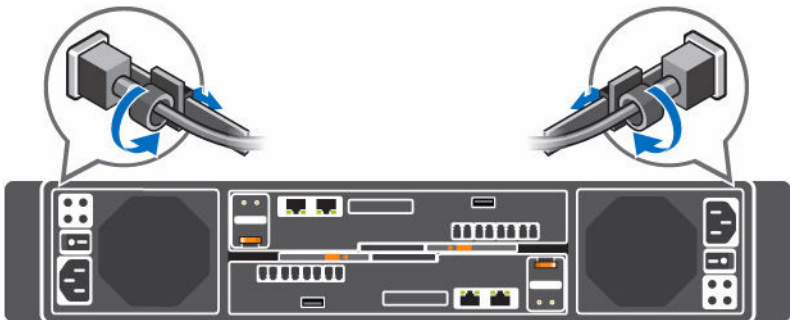


Figure 6. Power Cables

3. Secure each power cable to the storage system 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).

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	E09J and E10J
Supply voltage	100–240 VAC
Frequency	50/60 Hz
Current consumption	7.6–3.0 A

Technical Specifications

The technical specifications for the SCv2000/SCv2020 storage systems are shown in the following tables.

Drives	
SAS hard drives	SCv2000: Up to 12 3.5-inch SAS hot-swappable hard drives (6.0 Gbps), six drive minimum SCv2020: Up to 24 2.5-inch SAS hot-swappable hard drives (6.0 Gbps), six drive minimum
Storage Controllers	
Storage controllers	Up to two hot-swappable storage controllers with the following IO options: <ul style="list-style-type: none">• Two 16 Gbps Fibre Channel ports• Four 8 Gbps Fibre Channel ports



Storage Controllers

- Two 10 Gbps iSCSI ports
- Four 1 Gbps iSCSI ports
- Four 12 Gbps SAS ports


Storage Connectivity

Configurations	Storage Center supports up to 168 drives in one redundant-path SAS chain
	<ul style="list-style-type: none">• The SCv2000 supports up to 13 SC100 expansion enclosures or 6 SC120 expansion enclosures.• The SCv2020 supports up to 12 SC100 expansion enclosures or 6 SC120 expansion enclosures.

Redundant Array of Independent Disks (RAID)

Controller	Two hot-swappable storage controllers
Management	RAID management using Dell Storage Manager Client 2016 R2

Back-Panel Port Connectors (per Storage Controller)

Fibre Channel, iSCSI, or SAS connectors	Connection to a Fibre Channel fabric, iSCSI network, or a direct connection to servers with SAS HBAs
Ethernet connectors	MGMT: 1 Gbps or 10 Gbps embedded Ethernet/iSCSI port used for Storage Center management REPL: 1 Gbps or 10 Gbps embedded iSCSI port used for replication to another Storage Center
SAS connectors	6 Gbps SAS connectors for SAS port redundancy and additional expansion enclosures  NOTE: SAS connectors are SFF-8086/SFF-8088 compliant.
USB connector	One USB 3.0 connector used for Storage Center updates



Back-Panel Port Connectors (per Storage Controller)

Serial connector



NOTE: Not for customer use.

LED Indicators

Front panel	<ul style="list-style-type: none">• One two-color LED indicator for system status• One single-color LED indicator for power status• Two-digit, seven-segment display indicating the storage system ID number• ID button with a single-color LED indicating startup and pressed states
Hard drive carrier	<ul style="list-style-type: none">• One single-color activity LED• One single-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• Four 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• Eight single-color LEDs for diagnostics
Power supply/ cooling fan	Four 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 580 W (maximum wattage: 584 W)

Voltage 100–240 VAC (7.6–3.0 A)

Heat dissipation **SCv2000:** 65 W at 230 VAC and 99 W at 115 VAC
 SCv2020: 65 W at 230 VAC and 99 W at 115 VAC



Power Supplies

Maximum inrush current	Under typical line conditions and over the entire system ambient operating range, the inrush current could reach 45 A per power supply for 40 ms or less
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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
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Physical

Height	8.79 cm (3.46 in.)
Width	48.2 cm (18.98 in.)
Depth	SCv2000: 57.6 cm (22.67 in.) SCv2020: 52.3 cm (20.59 in.)
Weight (maximum configuration)	SCv2000: 28.9 kg (63.9 lb) SCv2020: 24 kg (53 lb)
Weight without drives	SCv2000: 20.6 kg (45.4 lb) SCv2020: 18.7 kg (41 lb)

Environmental

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

Temperature

Operating	10°C to 35°C (50°F to 95°F) with a maximum temperature gradation of 20°C per hour
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NOTE: Maximum temperature of 35°C is reduced by 1°C per 300 meter (1°F per 547 feet) above 950 meters (3,117 feet)



Environmental

Storage	–40°C to 65°C (–40°F to 149°F) at a maximum altitude of 12,000 m (39,370 ft)
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Relative humidity

Operating	10% to 80% (noncondensing) with 29°C (84.2°F) maximum dew point
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Storage	5% to 95% (noncondensing) with 33°C (91°F) maximum dew point
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Maximum vibration

Operating	0.21 G at 5–500 Hz for 15 min
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Storage	1.04 G at 2–200 Hz for 15 min
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Maximum shock

Operating	Half-sine shock 5 G +/- 5% with a pulse duration of 10 ms +/- 10% (in operational orientations only)
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Storage	Half-sine shock 30 G +/- 5% with a pulse duration of 10 ms +/- 10% (all sides)
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Altitude

Operating	0 m to 3,048 m (0 ft to 10,000 ft)
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Storage	–300 m to 12,000 m (–1000 ft to 39,370ft)
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Airborne Contaminant Level

Class	G1 or lower as defined by ISA-S71.04-1985
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