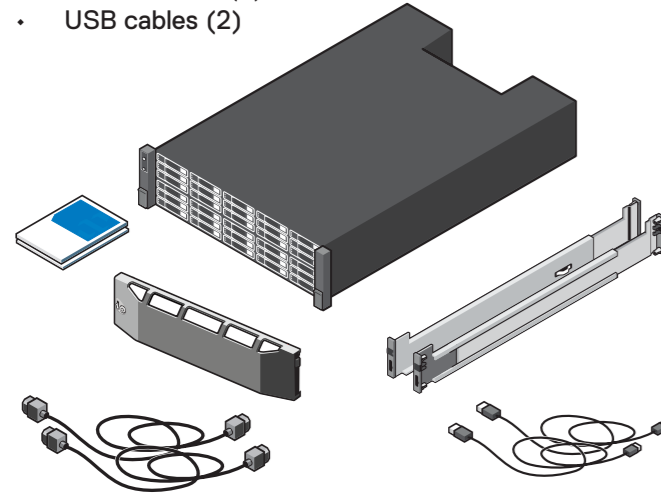## 1 | Before You Begin

⚠ **Warning!** **Before you set up and operate your Dell EMC storage system, review the safety instructions that came with your storage system.**

Unpack Storage Center Equipment

A Dell EMC SCv3000 series storage system includes:
- Documentation
- Storage system
- Front bezel
- Rack rails
- Power cables (2)
- USB cables (2)

Develop a Configuration Plan

Before installing the storage hardware, develop a configuration plan where you can record host server information, switch information, and network information.

Record System Information
- System management IPv4 address for Storage Center
- IPv4 address of the MGMT port on each storage controller
- Domain name
- DNS server address

Consider Plans for Multipath/Failover
Redundancy is provided by fault domains, which allow alternate paths if a path fails. Dell EMC recommends using multipathing, so that volumes are mapped to ports in more than one fault domain.

More Information
For operating system, host bus adapter (HBA), and switch requirements, refer to the *Dell Storage Compatibility Matrix* located in the Knowledge Base at www.dell.com/support.

2 | Mount the Chassis and Optional Enclosures

⚠ **Warning!** **The chassis is heavy. Do not attempt to lift the chassis without assistance.**
Use the racking instructions included with your package to mount the chassis.

Mount the storage system chassis and expansion enclosures in a manner that allows for expansion in the rack and prevents the rack from becoming top-heavy. Secure the storage system chassis to the rack using the mounting screws that are located behind the latches on each chassis ear. Dell EMC recommends mounting the storage system chassis in the bottom of the rack.
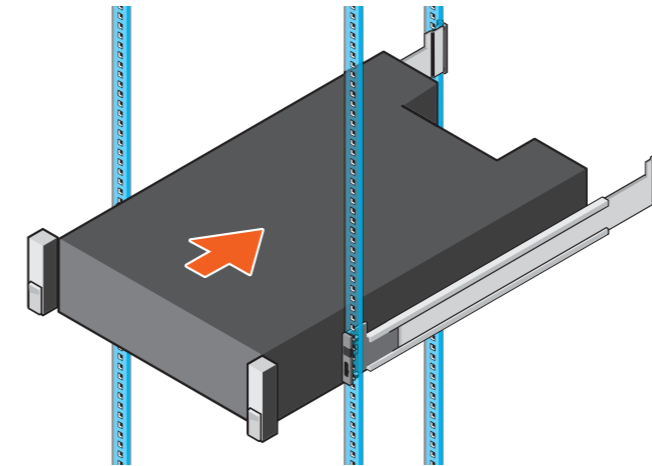
3 | Install the Bezel

1. Hold the bezel with the logo upright.
2. Hook the right end of the bezel into the right side of the chassis.
3. Swing the left end of the bezel toward the left side of the chassis.
4. Press the bezel into place until the release latch closes.
5. Use the key to lock the front bezel.
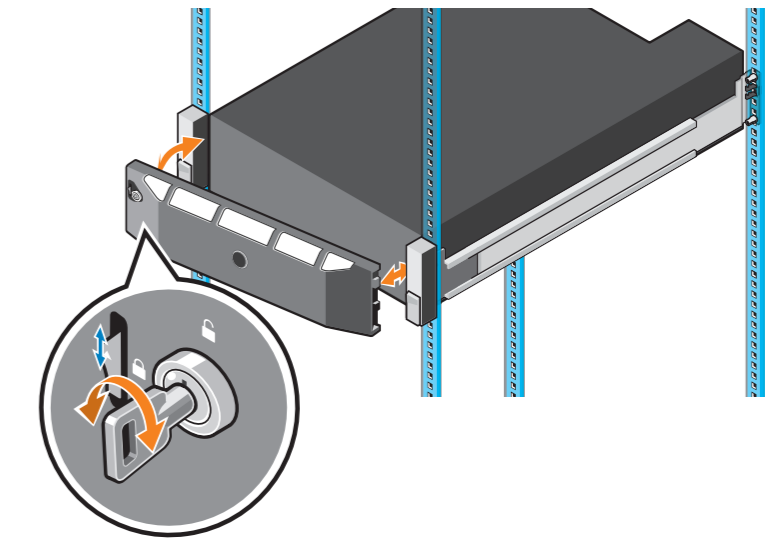
4 | Cable the Host Servers to the Storage System

Fault domains provide fault tolerance at the storage controller level. Dell recommends using redundant cabling to avoid a single point of failure.
1. Identify the protocol being used to connect the host servers to the disk array.
2. Refer to the diagram below for cabling guidelines that ensure the configuration has redundancy and failover capability.

SAS IO Card Cabling
Directly connect the host servers to the storage system.

SAS 4 Port Configuration

1. Connect SAS fault domain 1 (in orange) to server 1.
   – Top storage controller: port 1 to port on server 1
   – Bottom storage controller: port 1 to port on server 1

2. Connect SASfault domain 2 (in blue) to server 2.
   – Top storage controller: port 2 to port on server 2
   – Bottom storage controller: port 2 to port on server 2

3. Connect SAS fault domain 3 (in gray) to server 3.
   – Top storage controller: port 3 to port on server 3
   – Bottom storage controller: port 3 to port on server 3

4. Connect SAS fault domain 4 (in red) to server 4.
   – Top storage controller: port 4 to port on server 4
   – Bottom storage controller: port 4 to port on server 4
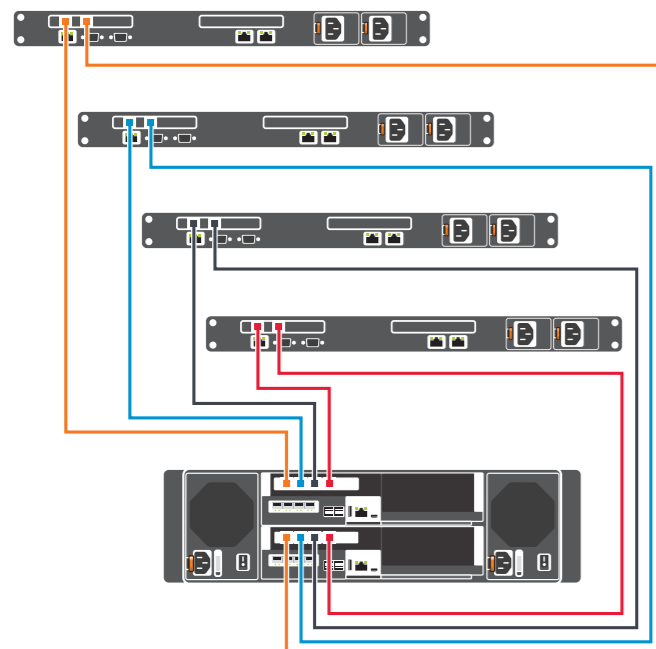
iSCSI Mezzanine Card Cabling
If the storage system includes an iSCSI mezzanine card, connect the host servers and storage system to Ethernet switches.

#### iSCSI 4 Port Mezzanine Card Configuration

1. Connect each host server to both Ethernet switches.
   – Connections shown in orange belong to fault domain 1.
   – Connections shown in blue belong to fault domain 2.

2. Connect iSCSI fault domain 1 (in orange) to switch 1.
   – Top storage controller: port 1 to switch 1
   – Top storage controller: port 3 to switch 1
   – Bottom storage controller: port 1 to switch 1
   – Bottom storage controller: port 3 to switch 1

3. Connect iSCSI fault domain 2 (in blue) to switch 2.
   – Top storage controller: port 2 to switch 2
   – Top storage controller: port 4 to switch 2
   – Bottom storage controller: port 2 to switch 2
   – Bottom storage controller: port 4 to switch 2
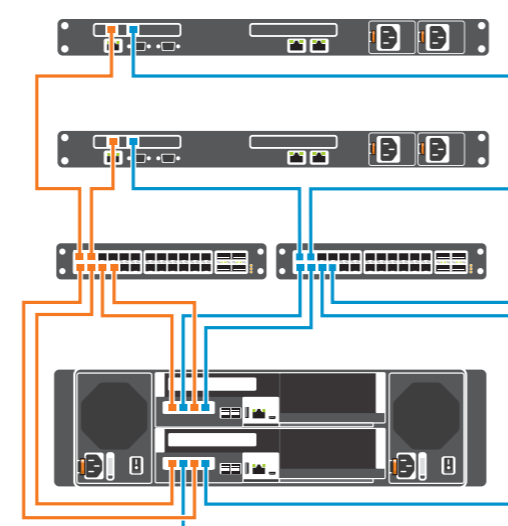
5 | Connect to Management Network

The Ethernet management interface of each storage controller must be connected to a management network. The Ethernet management port provides access to the Storage Center and is used to send emails, alerts, SNMP traps, and support data.

1. Connect the Ethernet management port on the top storage controller to the Ethernet switch.
2. Connect the Ethernet management port on bottom storage controller to the Ethernet switch.
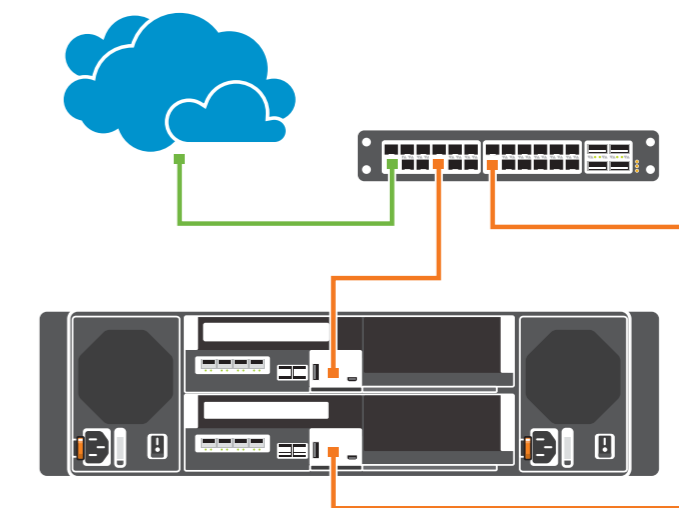
6 | Cable the Backend

To add capacity to your storage system, you can connect SCv300, SCv320, or SCv360 expansion enclosures to an SCv3000 series storage system.

Each expansion enclosure includes two Enclosure Management Modules (EMM) in two interface slots.

☑ **NOTE: If the storage system is installed without expansion enclosures, do not interconnect the back-end SAS ports on the storage controllers.**
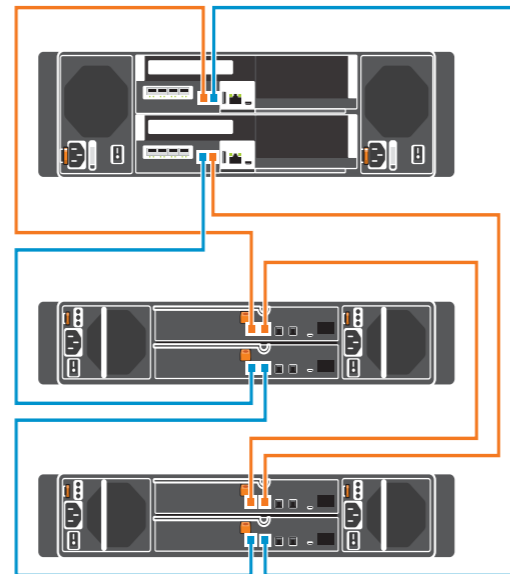
Cable SCv300 or SCv320 Expansion Enclosures

To connect SCv300 or SCv320 expansion enclosures to the storage system:

Chain 1: A Side (Orange)
1. Connect port 1 on the top storage controller to port 1 on the top EMM of the first expansion enclosure.
2. Connect the remaining expansion enclosures in series from port 2 to port 1 using the top EMMs.
3. Connect port 2 on the top EMM of the last expansion enclosure to port 2 on the bottom storage controller.

Chain 1: B Side (Blue)
1. Connect port 1 on bottom storage controller to port 1 on the bottom EMM of the first expansion enclosure.
2. Connect the remaining expansion enclosures in series from port 2 to port 1 using the bottom EMM.
3. Connect port 2 on the bottom EMM of the last expansion enclosure to port 2 on the top storage controller.

Cable SCv360 Expansion Enclosures

To connect SCv360 expansion enclosures to the storage system:

Chain 1: A Side (Orange)
1. Connect port 1 on the top storage controller to port 1 on the left EMM of the first expansion enclosure.
2. Connect the remaining expansion enclosures in series from port 3 to port 1 using the left EMMs.
3. Connect port 3 on the left EMM of the last expansion enclosure to port 2 on the bottom storage controller.

Chain 1: B Side (Blue)
1. Connect port 1 on bottom storage controller to port 1 on the right EMM of the first expansion enclosure.
2. Connect the remaining expansion enclosures in series from port 3 to port 1 using the right EMM.
3. Connect port 3 on the right EMM of the last expansion enclosure to port 2 on the top storage controller.
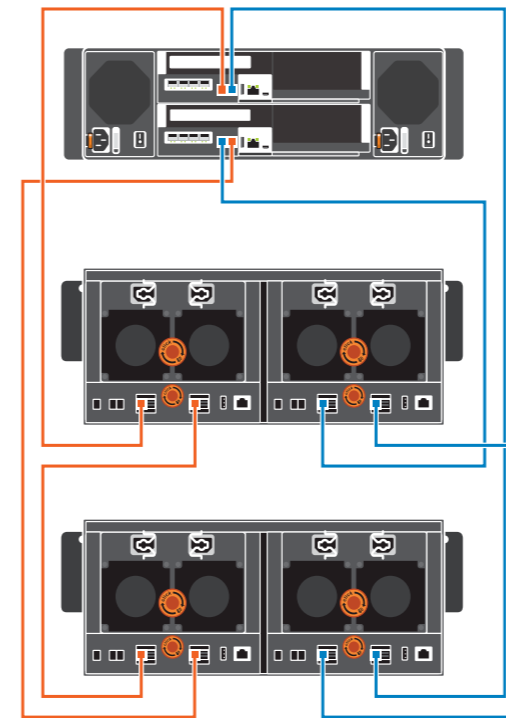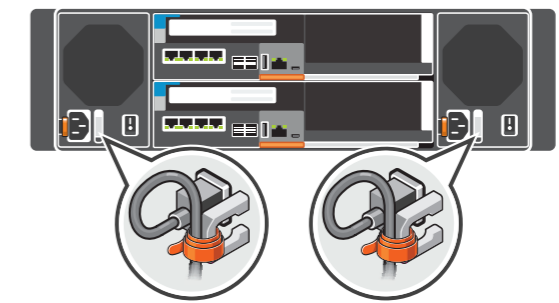
7 | Connect the Power Cables

⚠ **CAUTION: Make sure that the power switches are in the OFF position before connecting the power cables.**

1. Connect the power cables to both power supply/cooling fan modules in the storage system chassis.
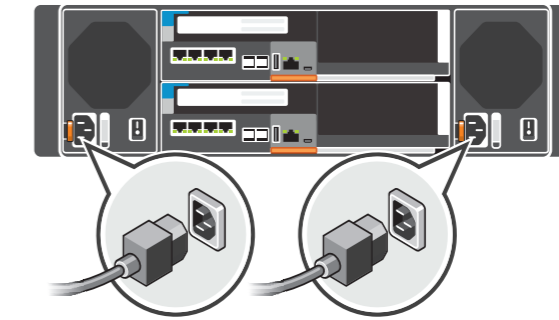
2. Use the velcro straps to secure the power cables to the storage system chassis.

3. 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).

8 | Power on System Components

1. Power on any network switches, routers, or other standalone components.
2. Power on any expansion enclosures that might be a part of the system.
3. Power on the storage system by turning on both power supply/cooling fan modules.

⚠ **CAUTION:** Do not power off the storage system until it can be discovered with the Storage Manager Client. During the initial power up, the storage system might take up to twenty minutes to boot completely.

9 | Discover and Configure the Storage Center

The Unisphere web interface provides access to the initial setup wizards. The wizards help you remotely discover and configure storage systems.

To access the Initialize Storage Center wizard from the Data Collector
1. Open a web browser.
2. Type the address of the Data Collector in the browser using the following format:
   `https://Data Collector host name or IP address:3033/`
3. Type the user name and password of a Data Collector user in the User Name and Password fields.
4. Click **Log In**.
   The web broser connects to the Data Collector and displays the Unisphere Central Home page.
5. From the Unisphere Central Home page, click ✚▾ (New), and select **Initalize Storage Center**.
   The Initialize Storage Center wizard opens and the Introduction page is displayed.
6. Follow the prompts in the Initialize Storage Center wizard to proceed.

To access the Initialize Storage Center wizard by connecting directly to a Storage Center
☑ **NOTE:** The Storage Center must be installed on a DHCP-enabled network.
1. Open a web browser.
2. Type the service tag or IP address of the Storage Center in the browser using the following format: `https://Storage Center service tag or IP address/`
3. Type **Admin** in the User Name field.
4. Type **mmm** in the Password field.
5. Click **Log In**.
   The web browser connects to the Storage Center and the Change Password dialog box is displayed in the Unisphere interface.
6. Type **mmm** in the Current Password field.
7. Type a new password for the Admin user in the New Password and Confirm New Password fields.
8. Click **OK**.
   The Initialize Storage Center wizard opens and the Welcome page is displayed.
9. Follow the prompts in the Initialize Storage Center wizard to proceed.

If you do not have access to a Data Collector and you are unable to connect directly to a Storage Center, use the Unisphere Discovery Utility to discover and initialize a Storage Center.

10 | Attach the Host Servers (SAS)

Refer to the *Dell EMC Storage Compatibility Matrix* for a list of supported SAS network adapters.

Windows and Linux Hosts
Install the HBAs or network adapters, install the drivers, and make sure that the latest supported BIOS is installed.
1. Install SAS HBAs in the host servers.
2. Install supported HBA drivers and make sure that HBAs have the latest supported firmware.
3. Use the SAS cabling diagram to cable the host servers directly to the storage controllers.
4. Using Storage Manager, click **Configure this host to access a Storage Center** and log in to the Storage Center. The Setup localhost for Storage Center wizard opens.

VMware ESXi Hosts
The Configure VMware vSphere to access a Storage Center wizard is not supported with SAS HBAs.
1. Refer to the following Dell Support page for required procedures to configure hosts:
   http://www.dell.com/support/article/how11081
2. Within Storage Manager, use the **Create Server** option to manually create the server object.

Configure Host Access to a Storage Center
1. Open the Storage Manager Client Welcome Screen.
2. Click the **Configure this host to access a Storage Center** link and log in to the Storage Center.
3. Follow the steps in the wizard to configure the host to access the Storage Center and configure best practices for performing I/O.

When the host configuration is complete, use the Storage Manager Client to create and map volumes.

11 | Attach the Host Servers (iSCSI)

Refer to the *Dell EMC Storage Compatibility Matrix* for a list of supported iSCSI network adapters.

Windows and Linux Hosts
Install the iSCSI HBAs or network adapters, install the drivers, and make sure that the latest supported BIOS is installed.
1. Install the iSCSI HBAs or network adapters dedicated for iSCSI traffic in the host servers.
2. Install supported iSCSI HBA drivers and make sure that iSCSI HBAs have the latest supported firmware.
3. Use the iSCSI cabling diagrams to cable the host servers to switches. Connecting host servers directly to the storage system without using Ethernet switches is not supported.
4. Assign IP addresses to each iSCSI port to match the subnets for each fault domain.
⚠ **CAUTION:** Make sure to assign the correct IP addresses to the HBAs or network adapters. Assigning IPs to the wrong ports can cause connectivity issues.
☑ **NOTE:** If using jumbo frames, enable and configure jumbo frames on all devices in the data path.

VMware ESXi Hosts
Install the iSCSI HBAs or network adapters (NICs) and make sure that the latest supported BIOS is installed.
1. Install the iSCSI HBAs or NICs dedicated for iSCSI traffic in the ESXi hosts.
2. Use the iSCSI cabling diagrams to cable the ESXi hosts to switches. Connecting ESXi hosts directly to the storage system without using Ethernet switches is not supported.
3. Create a VMkernel port for each iSCSI HBA or NIC to be used for iSCSI.
4. Assign IP addresses for each adapter port to match the subnets for each fault domain.
⚠ **CAUTION:** Make sure to assign the correct IP addresses to the HBAs or network adapters. Assigning IPs to the wrong ports can cause connectivity issues.
☑ **NOTE:** If using jumbo frames, enable and configure jumbo frames on all devices in the data path: adapter ports, switches, and storage system.
5. If using the software iSCSI initiator and the server has iSCSI offload, the iSCSI hardware initiator must be disabled.
6. If using iSCSI HBAs, configure Network Port Binding to add the VMkernel ports to the iSCSI Storage Adapter. Do not bind NICs to the software initiator.
7. If using software iSCSI initiator, add the Storage Center's iSCSI target IPs to the Dynamic Discovery.

Configure Host Access to a Storage Center
1. For Windows and Linux servers, click the **Configure this host to access a Storage Center** link and log in to the Storage Center.
   For VMware ESXi servers, click **Configure VMware vSphere to access a Storage Center**.
2. Follow the steps in the wizard to configure the host to access the Storage Center and configure best practices for performing I/O.

When the host configuration is complete, use the Storage Manager Client to create and map volumes.

Scan to see how-to videos, documentation, and troubleshooting solutions

Quick Resource Locator
Dell.com/QRL/Storage/SCv3000series

Notes, Cautions, and Warnings
☑ A **NOTE** indicates important information that helps you make better use of your product.
⚠ A **CAUTION** indicates potential damage to hardware or loss of data and tells you how to avoid the problem.
⚠ A **WARNING** indicates a potential for property damage, personal injury, or death.

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