Setting Up Your Dell EMC SCv3000 and SCv3020 Storage System (iSCSI Front End)

1. Before You Begin
   - Identify the protocol being used to connect the host servers to the disk array.
   - Refer to the diagram below that corresponds to the proper protocol. These cabling guidelines ensure the configuration has redundancy and failover capability.

2. Mount the Chassis and Optional Enclosures
   - 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
   - Press the bezel into place until the release latch closes.
   - Hold the bezel with the logo upright.
   - Use the key to lock the front bezel.

4. Cable the Host Servers to the Storage System
   - Connect the host servers and storage system to the corresponding Ethernet switches.

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.

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### 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)

### Before Installing the Storage Hardware
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. Fault domains are determined by the number of independent fabrics. Each switch carries a separate fabric. Redundancy is provided by fault domains, which allow alternate paths if a path fails. Fault domains are determined by the number of independent fabrics. Each switch carries a separate fabric. Fault domains provide fault tolerance at the storage controller level. Dell EMC recommends using redundant cabling to avoid a single point of failure.

### More Information
For operating system, NIC or iSCSI host bus adapter (HBA), and switch requirements, refer to the Dell EMC Storage Compatibility Matrix on the Dell Tech Center at [http://en.community.dell.com/techcenter/storage/](http://en.community.dell.com/techcenter/storage/)

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### iSCSI 10 Card Cabling
Connect the host servers and storage system to the corresponding Ethernet switches.

### iSCSI 4 Port Configuration
1. Install the NIC or iSCSI HBAs in the host servers.
2. Connect each host server to both switches.
   - Connections shown in orange belong to fault domain 1.
   - Connections shown in blue belong to fault domain 2.
3. Connect 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
4. Connect 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

### iSCSI 2 Port Configuration
1. Install the NIC or iSCSI HBAs in the host servers.
2. Connect each host server to both switches.
   - Connections shown in orange belong to fault domain 1.
   - Connections shown in blue belong to fault domain 2.
3. Connect 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
4. Connect 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

### 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

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### Warning!
Do not attempt to lift the chassis without assistance.
To add capacity to your storage system, you can connect up to sixteen SCv300, eight SCv320, or three SCv360 expansion enclosures to an SCv3000 series storage system. A maximum of 222 physical disks are supported in 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:

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

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

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

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

### Power on Storage 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.

### Download, Install, and Run the Storage Manager Client

The Storage Manager Client provides access to the initial setup wizards. The wizards help you remotely discover and configure storage systems and configure connected host servers.

**NOTE:** The initial setup wizards are only supported on 64-bit operating systems.

#### Install and Start the Storage Manager Client

1. Log in to the Dell Digital Locker at [www.dell.com/support/software](http://www.dell.com/support/software) and register your storage system, and download the Windows or Linux version of the Storage Manager Client.
2. Install the Storage Manager Client on the host server. To discover and configure a Storage Center, the software must be installed on a host server that is located on the same subnet as the storage system. For host setup, the client does not have to be on the same subnet as the storage system.
3. To start the software on a Windows computer, right-click on the Dell Storage Manager Client shortcut and select Run as administrator. To start the software on a Linux computer, execute the command `./Client` from the `/var/lib/dell/bin` directory. The Storage Manager Client welcome screen opens.

#### Discover and Configure Storage Center Wizard

1. Click the Discover and Configure Uninitialised Storage Centers link. The Discover and Configure Storage Center wizard opens.
2. Follow the steps in the wizard to discover and configure uninitialised Storage Centers.

**NOTE:** If the wizard does not discover the Storage Center, refer to the SCv3000 and SCv3020 Storage System Deployment Guide for additional methods to deploy the Storage Center.

### Related Publications

The following documentation is available on the Dell support site for the Dell EMC SCv3000 Series Storage Systems:

- SCv3000 and SCv3020 Storage System Getting Started Guide
- SCv3000 and SCv3020 Storage System Owner’s Manual
- Storage Center Release Notes
- DellEMC Data Sheet: SCv3000, SCv3020, SCv3600
- DellEMC SCv3000, SCv3020, SCv3600 Series

### 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).

### Attach the Host Servers

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 (ISC) HBA drivers and make sure that 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 (ISC) 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 (ISC) HBA or NIC 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 (ISC) 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 (ISC) Initiator and the server has iSCSI offload, the (ISC) hardware initiator must be disabled.
6. If using the 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 the software (ISC) 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 that is located on the Storage Center.
2. Follow the steps in the wizard to configure the host to access the Storage Center and configure best practices for performance.

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