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. Fault domains are determined by the number of independent Fibre Channel fabrics. Each fabric carries a separate fault domain. If a port fails, any port within the same fault domain takes over for the failed port. 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 EMC Storage Compatibility Matrix on the Dell Tech Center at http://en.community.dell.com/techcenter/storage.

Cable the Host Servers to the Storage System
Fault domains provide fault tolerance at the storage controller level. If you are using Fibre Channel, incorporate your switch zoning strategy with the fault domains. Dell EMC 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 that corresponds to the proper protocol. These cabling guidelines ensure the configuration has redundancy and failover capability.
3. Clean the Fibre Channel cables using the recommended process.

Fibre Channel IO Card Cabling
Connect the host servers and storage system to the corresponding Ethernet switches.

Fibre Channel 4 Port Configuration
1. Install the Fibre Channel HBAs in the host servers.
   - Connections shown in orange belong to fault domain 1.
   - Connections shown in blue belong to fault domain 2.
2. Connect each host server to both switches.
   - Top storage controller: port 1 to switch 1
   - Top storage controller: port 2 to switch 2
   - Bottom storage controller: port 1 to switch 1
   - Bottom storage controller: port 2 to switch 2
3. Connect Fibre Channel fault domain 1 (in orange) to switch 1.
   - Top storage controller: port 1 to switch 1
   - Bottom storage controller: port 1 to switch 1
4. Connect Fibre Channel fault domain 2 (in blue) to switch 2.
   - Top storage controller: port 2 to switch 2
   - Bottom storage controller: port 2 to switch 2

Fibre Channel 2 Port Configuration
1. Install the Fibre Channel 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 Fibre Channel fault domain 1 (in orange) to switch 1.
   - Top storage controller: port 1 to switch 1
   - Bottom storage controller: port 1 to switch 1
4. Connect Fibre Channel fault domain 2 (in blue) to switch 2.
   - Top storage controller: port 2 to switch 2
   - Bottom storage controller: port 2 to switch 2

ISO-1 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
   - Bottom storage controller: port 3 to switch 1
   - Bottom storage controller: port 1 to switch 1
3. Connect (ISCSI) fault domain 2 (in blue) to switch 2.
   - Top storage controller: port 2 to switch 2
   - Bottom storage controller: port 2 to switch 2
   - Bottom storage controller: port 4 to switch 2

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.

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.

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 latches close.
5. Use the key to lock the front bezel.
To add capacity to your storage system, you can connect up to sixteen SCV300, eight SCV320, or two SCV360 expansion enclosures to an SCV3000 series storage system. A maximum of 222 physical disks are supported in 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 any SCV300 or SCV320 expansion enclosure 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 1 to port 2 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.

**Power on any expansion enclosures that are installed.**

**NOTICE:** Do not power off the storage system until it can be discovered with the Storage Manager Client.

**Storage Manager Client**

The Storage Manager provides access to the initial setup wizards. The wizards help you set up and discover uninitialized Storage Centers.

**Configure Host Access to a Storage Center**

Follow the steps in the wizard to configure the host to access the Storage Center.

**Windows and Linux Hosts**

1. Install the HBAs, install the drivers, and make sure that the latest supported BIOS is installed.
2. Install the Fibre Channel HBAs in the host servers.
3. Connect supported HBAs and make sure that HBAs have the latest supported firmware.
4. Use the Fibre Channel cable diagrams to add the host servers to the Storage Center.
5. Connect the host to the Storage Center without using Fibre Channel switches.

**VMware ESXi Hosts**

1. Install the HBAs.
2. Make sure that the latest supported BIOS is installed.
3. Install the Fibre Channel HBAs or network adapters dedicated for Fibre Channel traffic in the ESXi hosts.
4. Use the Fibre Channel cable diagrams to cable the ESXi hosts to the Storage Center.
5. Connect supported HBAs directly to the storage system without using Fibre Channel switches.

**NOTE:** Do not use the iSCSI HBAs or NICs in the data path.

**VMware ESKX Hosts**

1. Install the HBAs or network adapters (NICs) and make sure that the latest supported BIOS is installed.
2. Install the iSCSI HBAs or NICs dedicated for iSCSI traffic in the ESX hosts.
3. Use the iSCSI library on the ESXi hosts.
4. Install supported HBAs and make sure that HBAs have the latest supported firmware.
5. Connect the ESXi hosts to the Storage Center.
6. Assign IP addresses to each iSCSI port to match the subnets for each fault domain.

**WARNING:** 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.

**Installing iSCSI HBAs or NICs**

1. Install the iSCSI HBAs or NICs.
2. Use the iSCSI library on the ESXi hosts.
3. Assign IP addresses to each iSCSI port to match the subnets for each fault domain.
4. Make sure to assign the correct IP addresses to the HBAs or network adapters. Assigning IP addresses to the wrong ports can cause connectivity issues.

**ATTENTION:** Make sure to assign the correct IP addresses to the HBAs or network adapters. Assigning IP addresses 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.

**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.
2. For VMware ESXi servers, click **Configure VMware vSphere to access a Storage Center**.
3. Follow the steps in the wizard to configure the host to access the Storage Center.
4. Configure Host Access to a Storage Center

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**NOTE:** If using jumbo frames, enable and configure jumbo frames on all devices in the data path.

**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.
2. For VMware ESXi servers, click **Configure VMware vSphere to access a Storage Center**.
3. Follow the steps in the wizard to configure the host to access the Storage Center and configure best practice for I/O.

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