SAN Storage Unit Cabling Guide

BCD212X-SAN

BCD584X-SAN

Enterprise 2U & 5U Storage Units

Notes, cautions, and warnings

NOTE: Indicates important information that helps you make better use of your product.

CAUTION: Indicates potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: Indicates a potential for property damage, personal injury, or death.

1 Before you begin

⚠ **WARNING: Before you set up and operate your BCD storage system,review the safety instructions that came with it.**

Unpack storage system equipment

A BCD X-SAN storage system includes:

- Documentation
- 2U or 5U enclosure
- Power cables (2)
- Separately packaged disk drives (5Uenclosure only)
- Fibre Channel or iSCSI SFP+ transceivers orcables (1 per host port)
- Host cables (1 per controller module host port)
- Expansion cables (1 per expansion module)
- Optional enclosure bezel with key (1 per 2U enclosure)
- I/O module blank (2U single-controllerstorage system only)
- Disk drive blank (if 2U storage system isnot fully populated)
- Appropriate rackmount kit for 2U or 5Uenclosure

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.
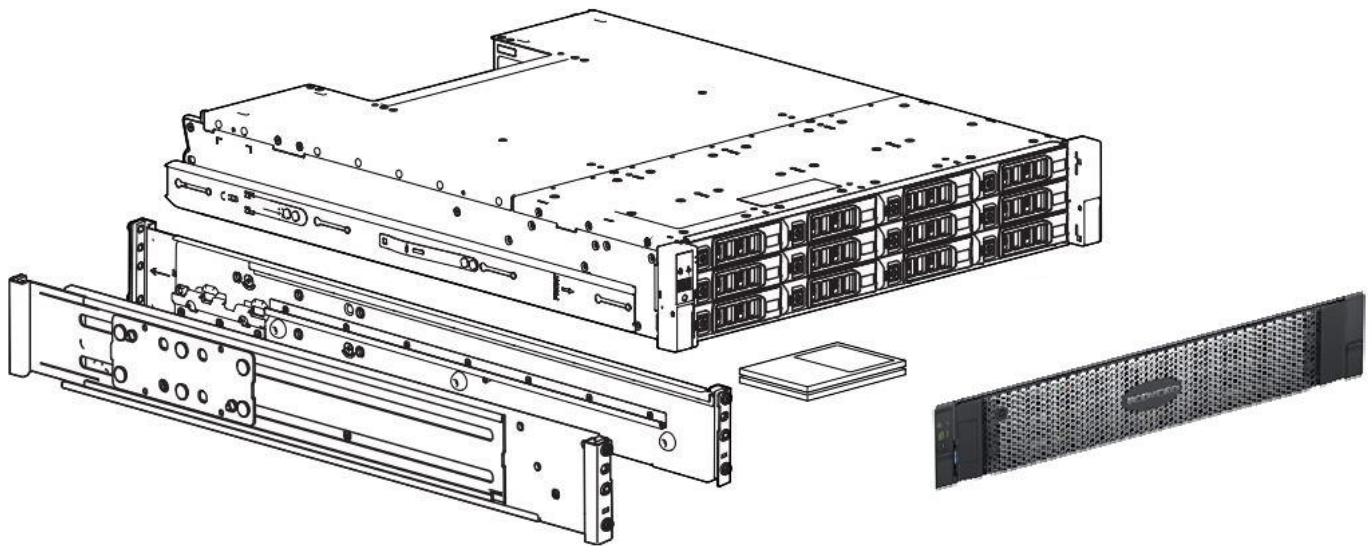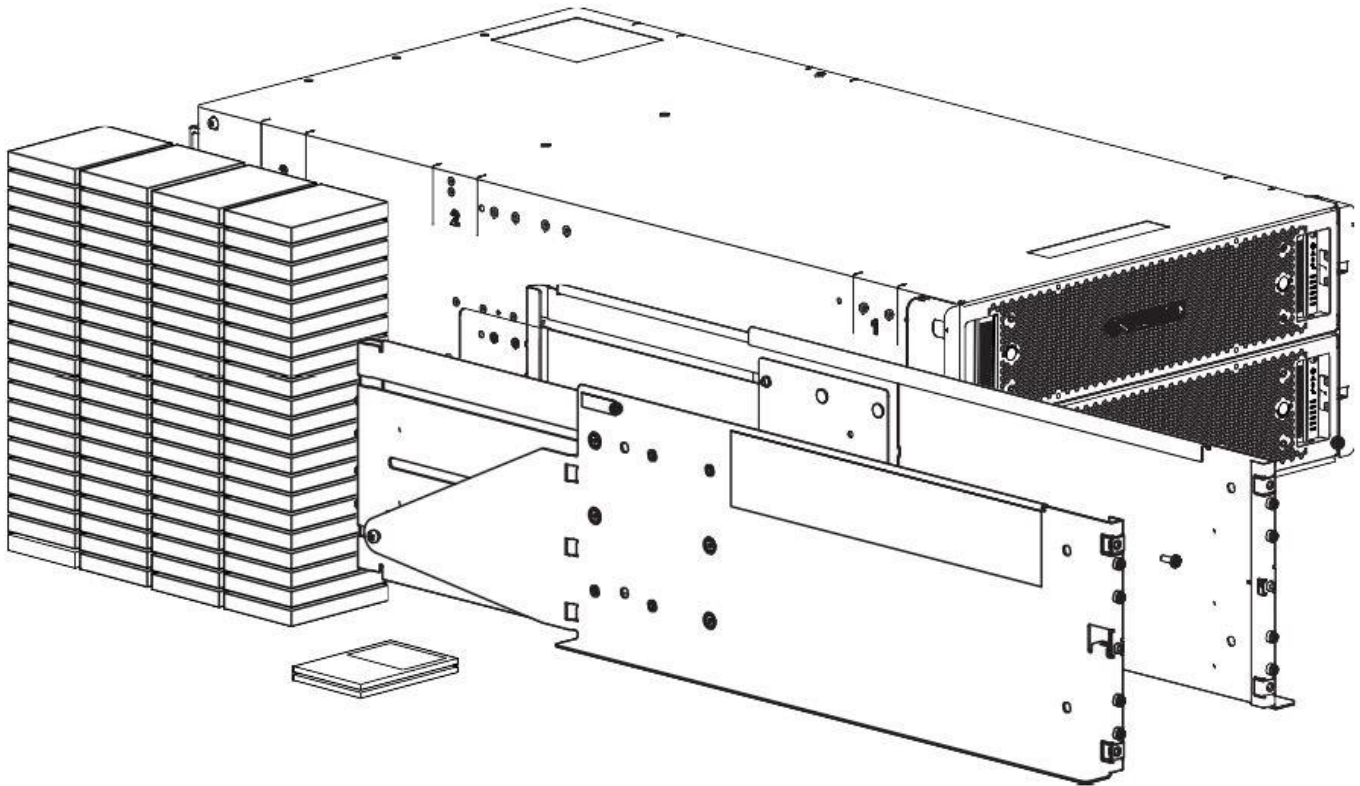

Figure 1. 2U enclosure

Figure 2. 5U enclosure

2 Mount the enclosures

⚠**WARNING: Potential injury: chassis is heavy.**

- Use at least two people to mount a 2U chassis. Use a mechanical lift to mount a 5U chassis.
- The rack may fall over if allowed to become top-heavy. Load the rack from the bottom up with the heaviest chassis at the bottom.

Secure the controller enclosure to the rack using the mounting screws located in the plastic bag.

2U enclosure

1. Remove the rack mounting rail kit from the box and inspect for damage:

    a. Set each location pin at the rear of the rail into a rear rack post hole. Attach the bracket to the rear rack post: use the washers and screws supplied. Leave the screws loose.

    b. Extend the rail to fit between the front and rear rack posts and attach the bracket to the front rack post using the washers and screws supplied.

    c. Tighten the two clamping screws located along the inside of the rear section of the rack bracket.

    d. Repeat the above sequence of steps for the companion rail.

2. Install the enclosure into the rack:

   a. Keeping the enclosure level, carefully insert the chassis slides into the rack rails and push fully in.

   b. Tighten the mounting screws in the rear kit brackets.

   c. Remove the enclosure until it reaches the end and hard stops approximately 400 mm (15.75 inches). Tighten the mounting screws on the front of the rail kit bracket.

   d. Return the enclosure to the fully home position.
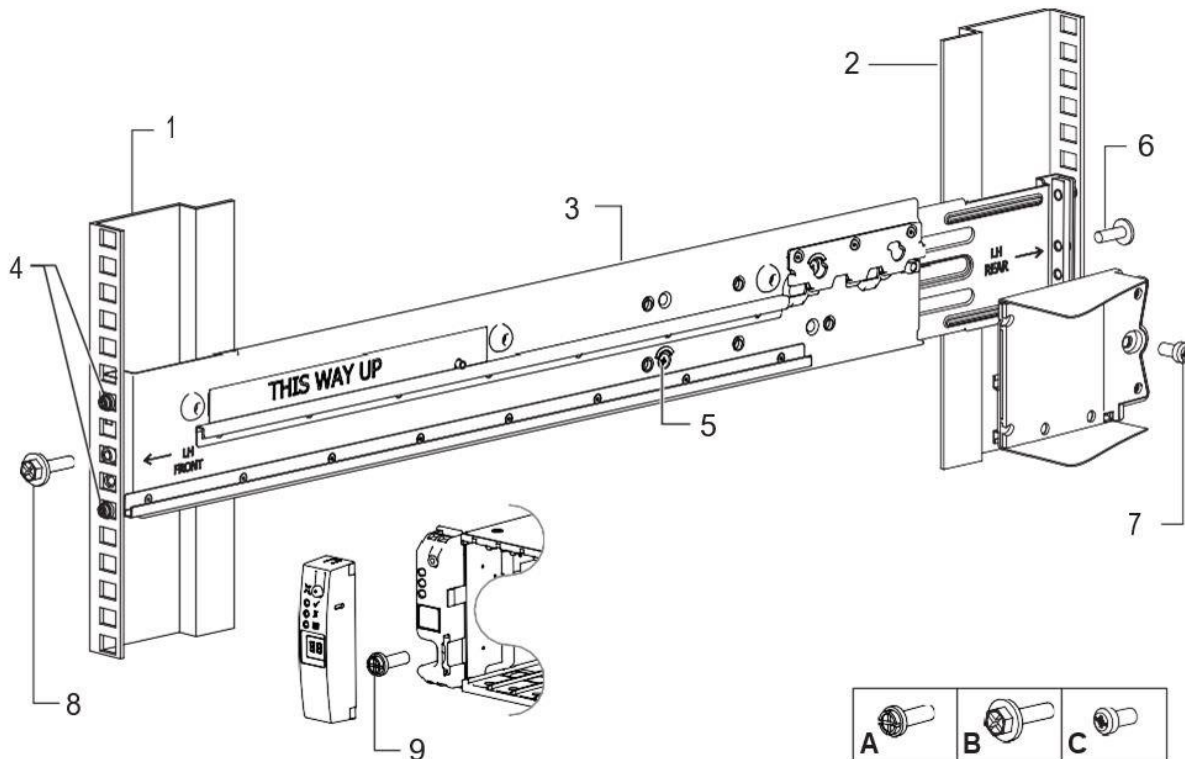
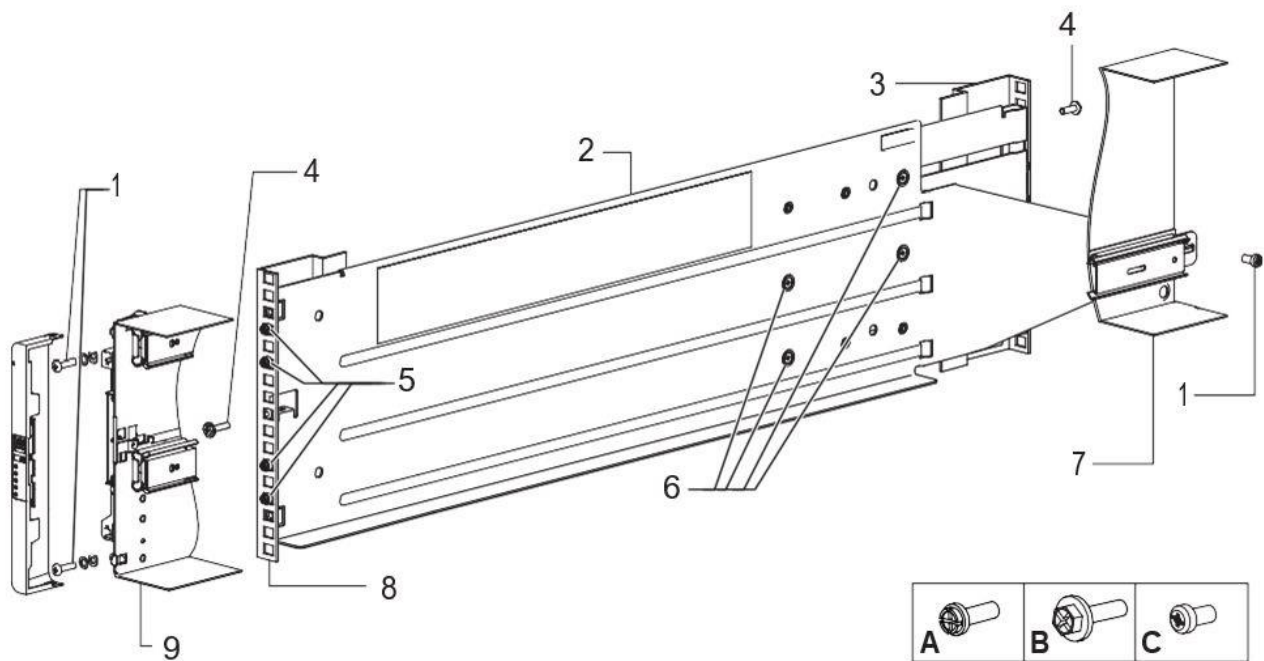| Item	Description	Item	Description
1	Front rack post - square hole	6	Clamping screw (B)
2	Rear rack post - square hole	7	2U enclosure fastening screw (C)
3	Left rail	8	Clamping screw (B)
4	Rail location pins	9	Exploded view of Ops panel cover, to show left ear flange fastening screw (A)
5	Locking screw		

Figure 3. 2U rack mount

5U enclosure

The 5U enclosure is shipped without the disks installed. Before mounting, also remove the rear panel modules to reduce the enclosure weight.

1.   With the preassembled rails at their shortest length, locate the rail location pins inside the front of the rack, and extend the length of the rail assembly to position the rear location pins. Ensure the pins are fully inserted in the square or round holes in the rack posts.

2.   Fully tighten all clamping screws and middle slide locking screws.

3.   Ensure the four rear space clips (not shown) are fitted to the edge of the rack post.

4.   Slide the enclosure until it is fully seated on its rails.

5.   Fasten the front and rear of the enclosure using the enclosure fastening screws.

⚠ **CAUTION: Once the enclosure is mounted, dispose of the lifting straps. The straps are not suitable for reuse.**

Reinsert the rear panel modules and install the disks into the drawers accessed from the front panel.

Item	Description	Item	Description
1	Fastening screws (A)	6	Middle slide locking screws
2	Left rail	7	Rear left portion of 5U chassis
3	Rear rack post - square hole	8	Front rack post - square hole
4	Clamping screw (B)	9	Front left portion of 5U chassis shown for reference
5	Rail location pins		

Figure 4. 5U rack mount

Connect optional expansion enclosures

You can connect a maximum of nine 2U expansion enclosures or three 5U expansion enclosures to a 2U or a 5U controller enclosure. A 2U controller enclosure can be connected to a mixture of 2U12 and 2U24 expansion enclosures, or 5U84 only. A 5U controller enclosure can only be attached to 5U expansion enclosures. Each expansion enclosure includes two expansion modules.

Figure 5 shows reverse cabling of a dual-controller 2U enclosure and supported 2U expansion enclosures configured with dual expansion modules. Figure 6 shows reverse cabling of a dual-controller 5U enclosure and supported 5U expansion enclosures configured with dual expansion modules. Reverse cabling allows any expansion enclosure to fail—or be removed—while maintaining access to other enclosures. The middle SAS ports on expansion modules are not used.
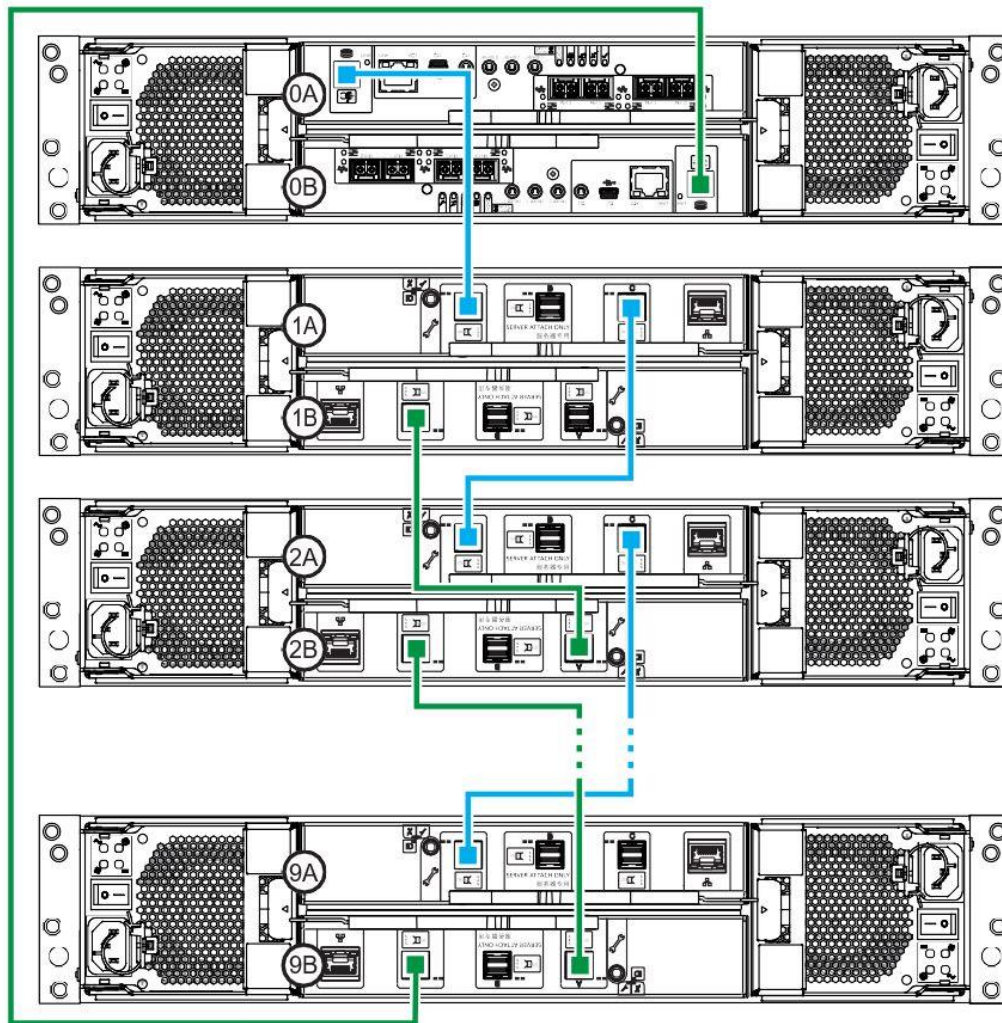

Figure 5. 2U dual–controller cabling: maximum 10 enclosures (reverse method)
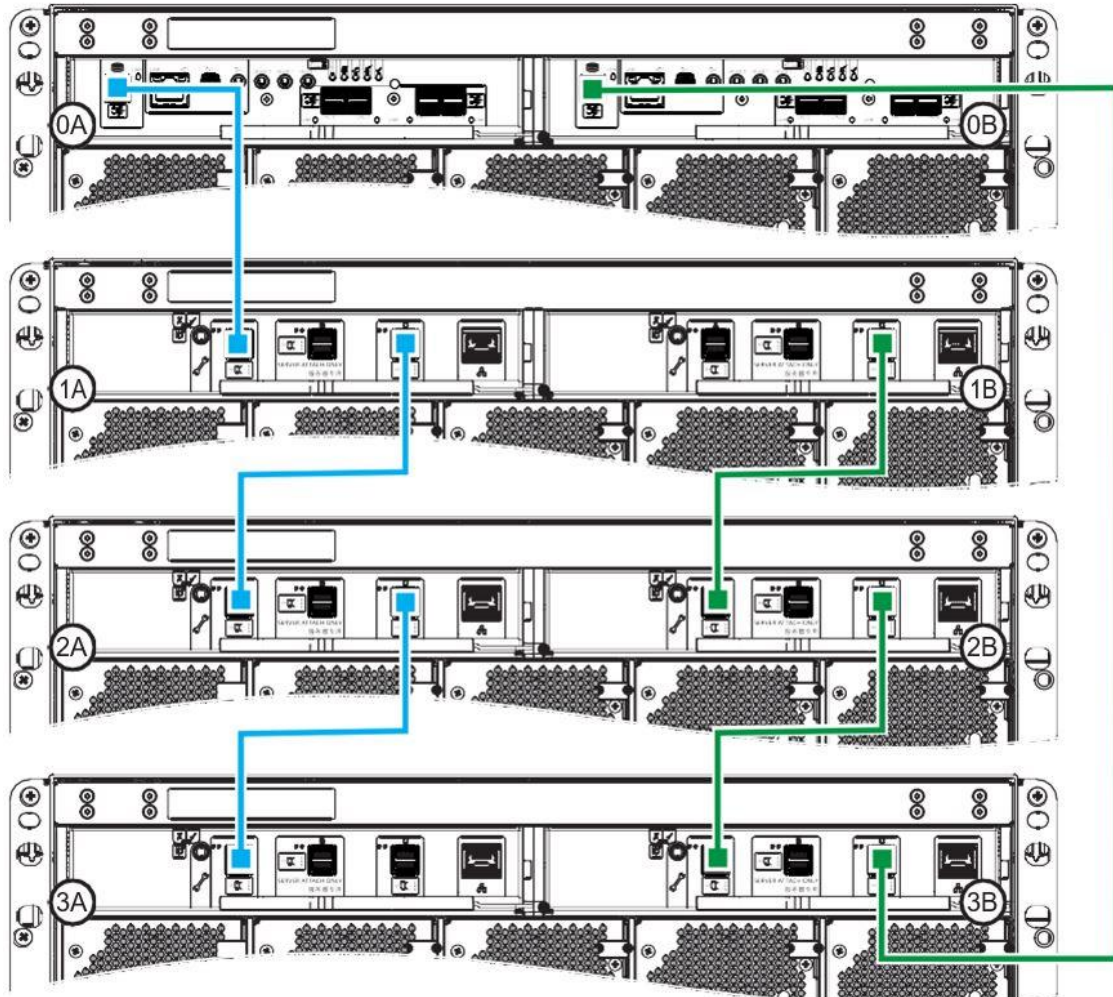
Figure 6. 5U dual–controller cabling (reverse method)

3 Connect to the management network

Each controller's network port must be connected to a management network. The network port provides access to management interfaces and is used to send notifications, SNMP traps, and support data. See figures 7 and 8.

1. Connect an RJ45 Ethernet cable to the network port on each controller.
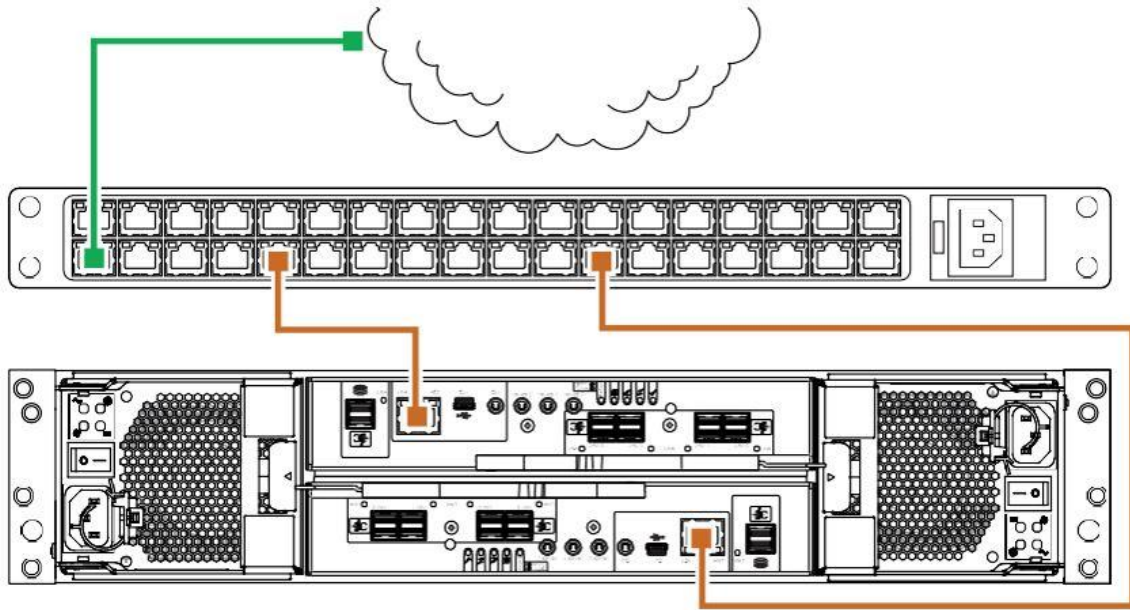2. Connect the other end of each Ethernet cable to a network that your management host can access.

Figure 7. 2U SAN connections
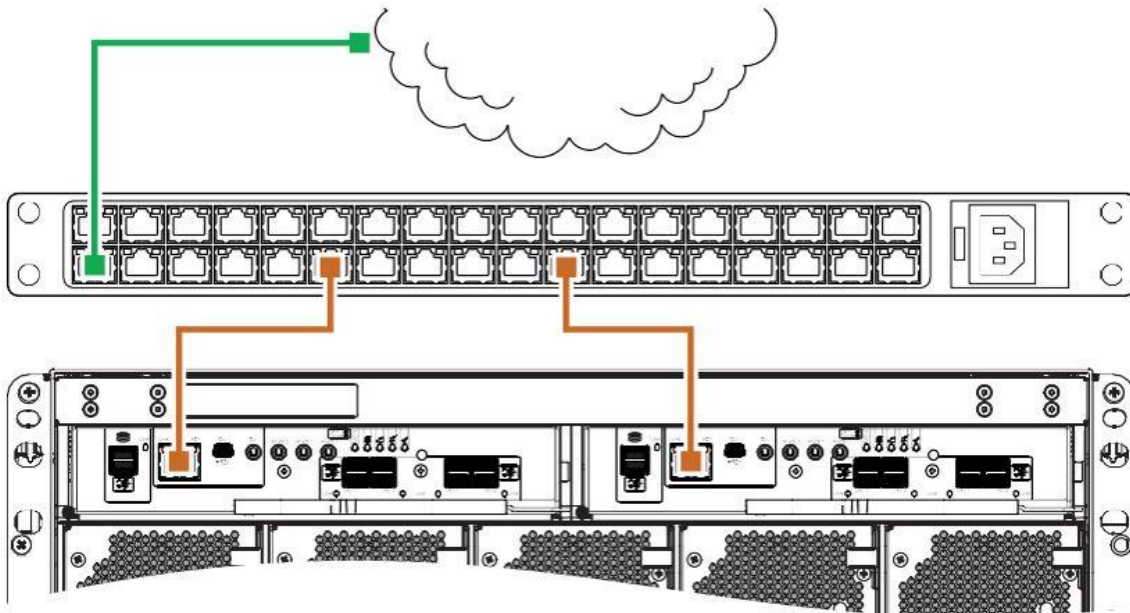
Figure 8. 5U SAN connections

4 Cable host servers to the storage system

The storage system can connect to host servers via Fibre Channel or iSCSI.

Fibre Channel

Install and connect each HBA to a switch that is connected to the host ports on the two controllers shown in figures 9-12. In hybrid examples, one server and switch manages FC traffic, and another server and switch manages iSCSI traffic.

For FC, each initiator must be zoned with a single or multiple host ports only (single initiator/single target or single initiator/multiple target of the same device).

iSCSI

Install and connect each HBA to a switch that is connected to the host ports on the two controllers shown in figures 9-12.
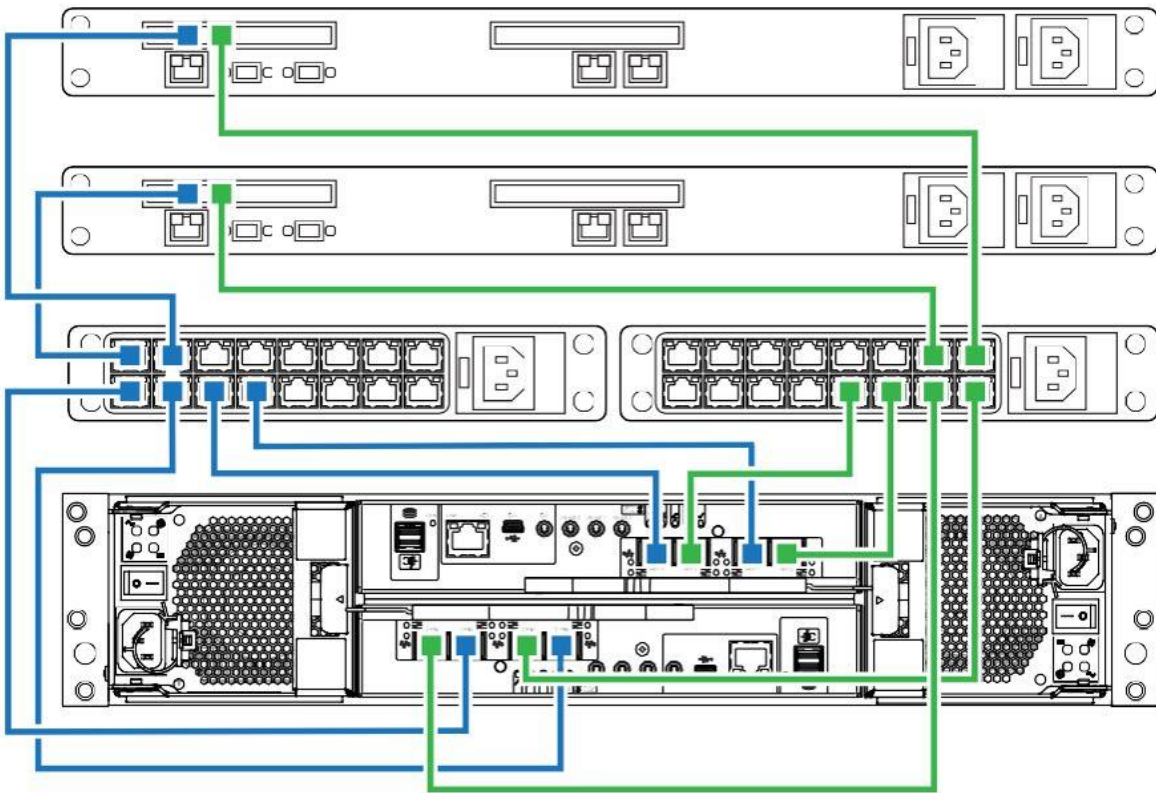

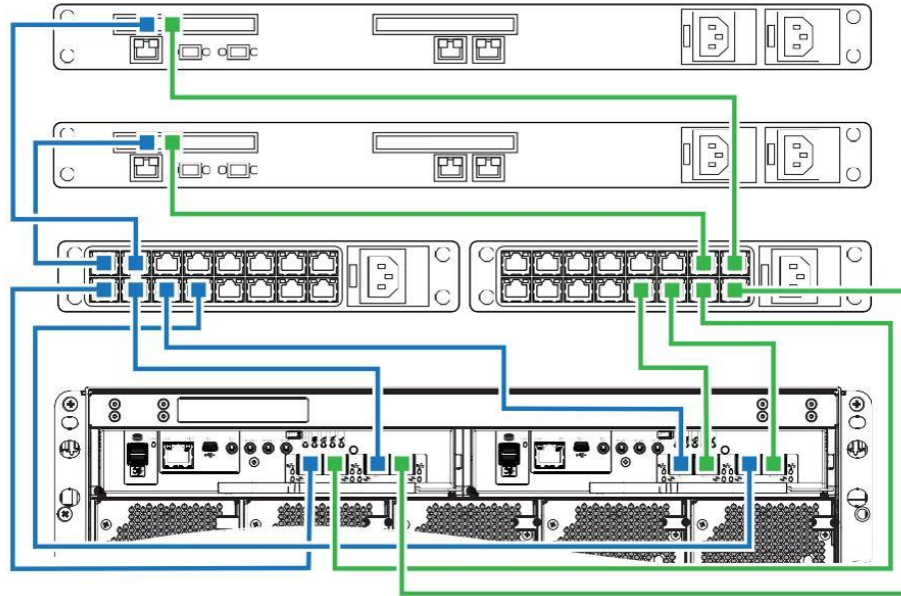**Figure 9.** 2U switch attached FC or iSCSI host server connections

Figure 10. 5U switch attached FC or iSCSI host server connections
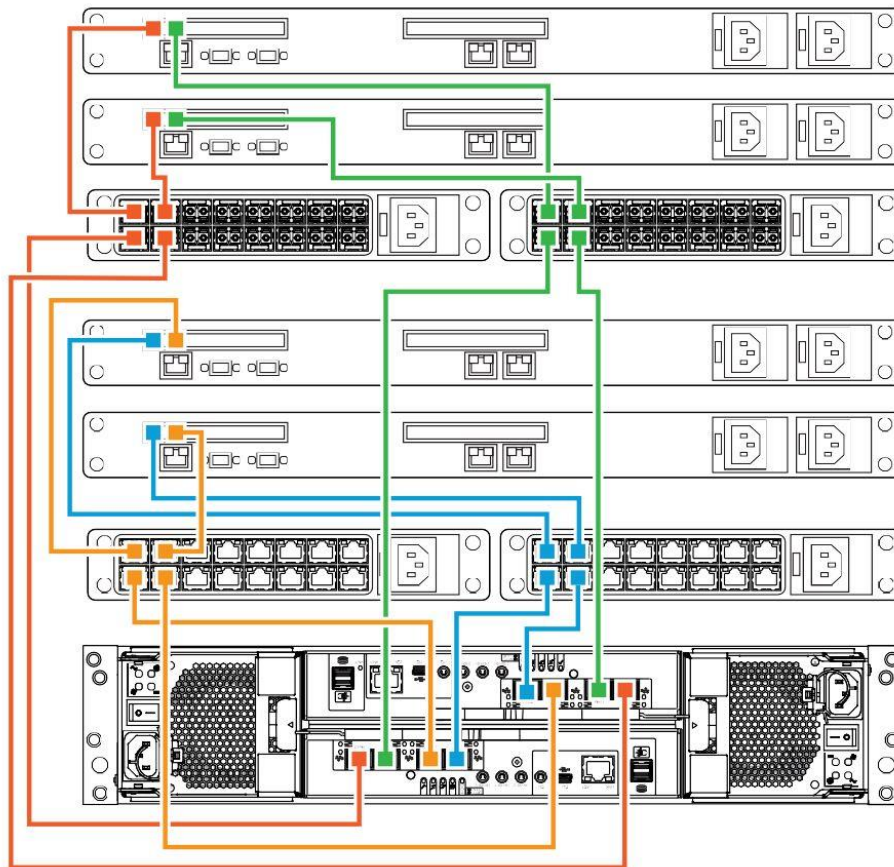

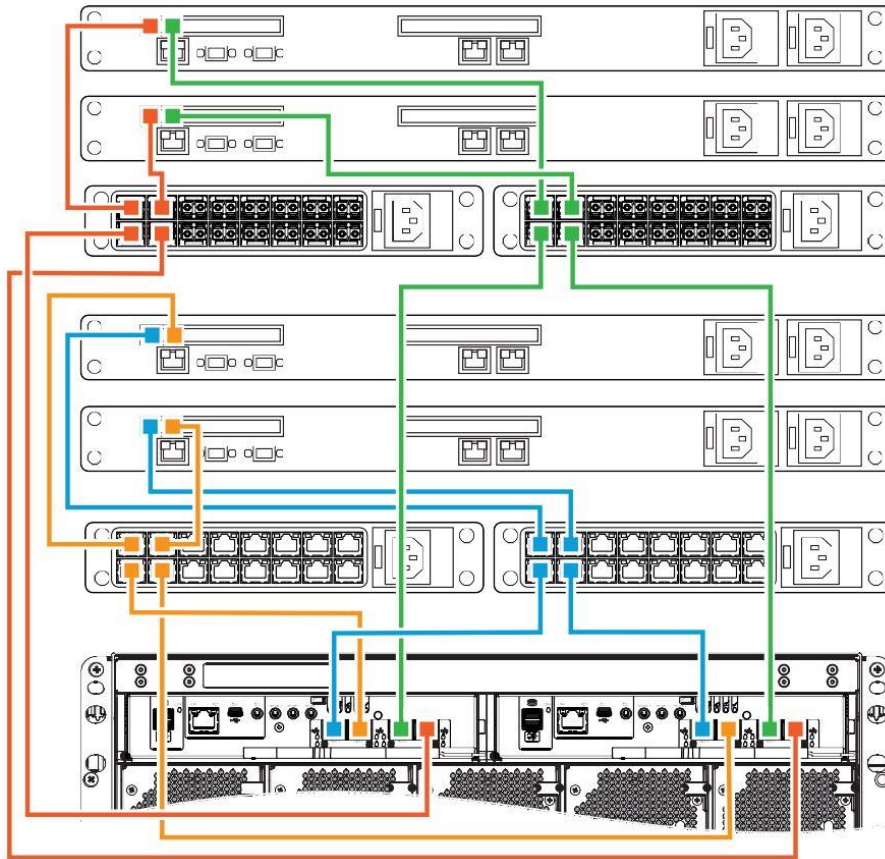**Figure 11.** 2U switch attached FC/iSCSI hybrid host server connections

Figure 12. 5U switch attached FC/iSCSI hybrid host server connections

SAS

Install and connect each HBA directly to the host ports on the two controllers shown in figures 13 and 14.
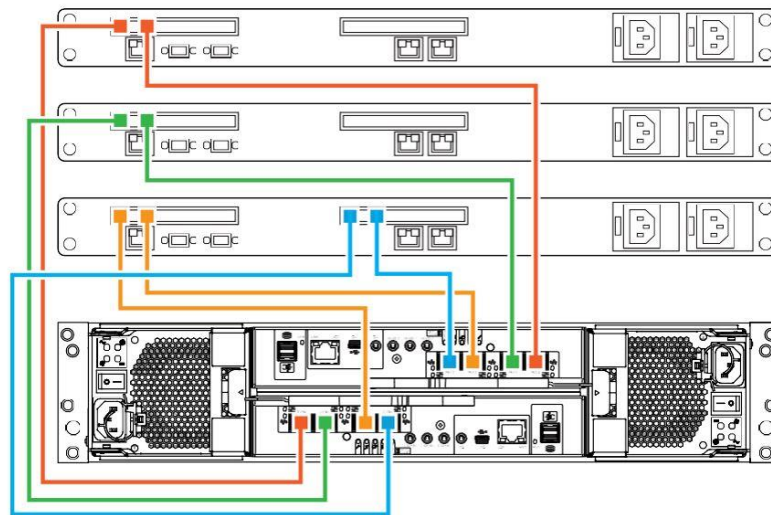

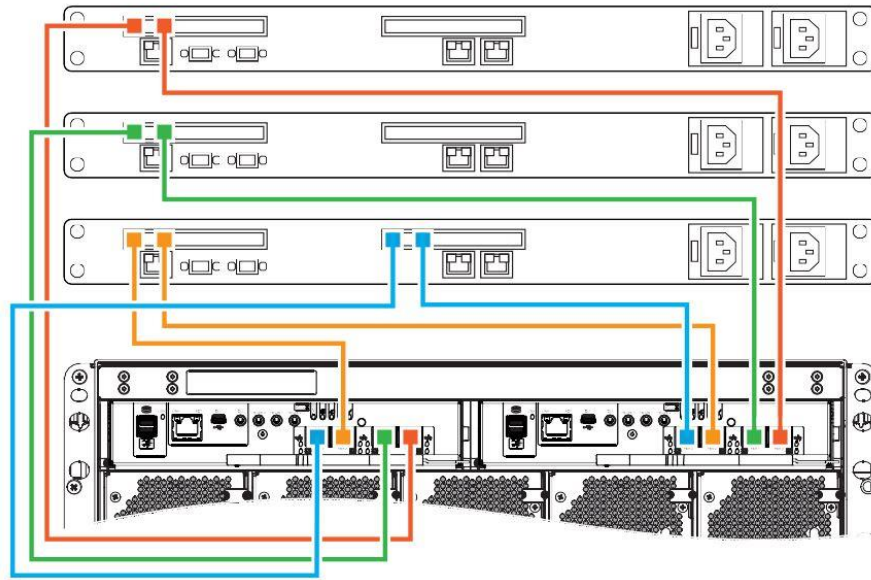**Figure 13.** 2U direct attached SAS host server connections

Figure 14. 5U direct attached SAS host server connections

5 Connect power cables and power on the storage system

When powering on, ensure the enclosures are powered on and associated with data hosts, in the following order (see figures 15 and 16):

1. Power on any network switches, routers, or other standalone components.
2. Power on any expansion enclosures. Wait until the expansion enclosures arecompletely powered up before powering on the controller enclosure.
3. Power on the controller enclosure.
4. Power on the host servers (if powered down for maintenance purposes).

Once powered on, the System Power LED on the 2U Ops panel or the Power on/Standby LED on the 5U Ops panel turns green.
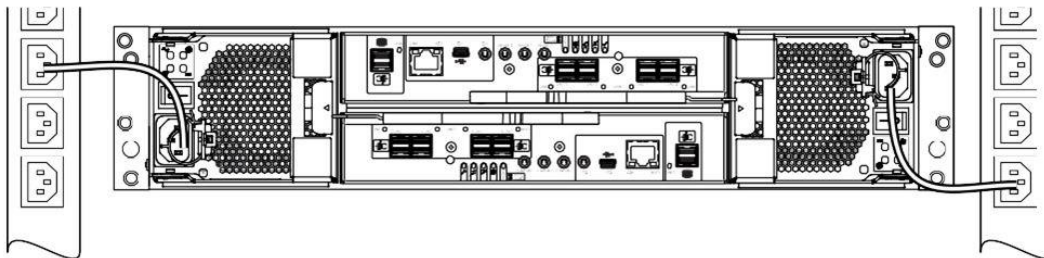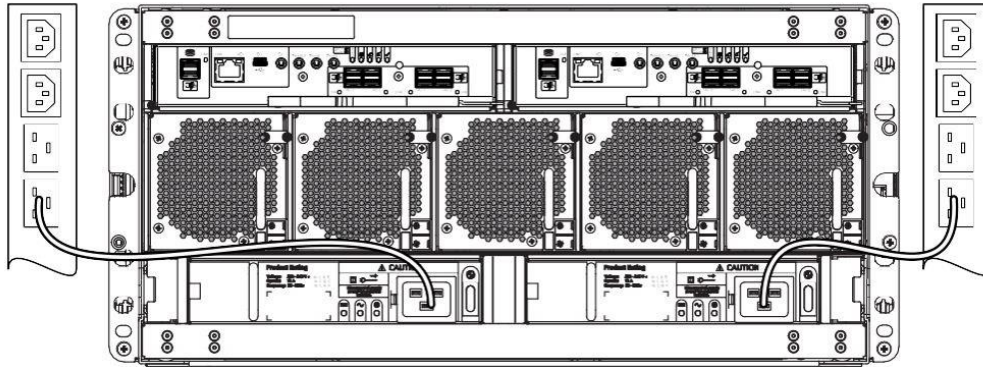

Figure 15. 2U AC connections

Figure 16. 5U AC connections