Install and setup

Install and maintain

NetApp
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Install and setup

Installation and setup workflow - FAS50

To install and set up your FAS50 storage system, you must review the installation requirements, prepare your site, install and cable the hardware components, power on the storage system, and set up the ONTAP cluster.

Review the installation requirements

Before installing your storage system, it must meet the installation requirements.

Prepare for installation

To prepare for installation, get the site ready, check environmental and electrical requirements, and ensure there's enough rack space. Then, unpack the equipment, compare contents to the packing slip, and register the hardware to access support benefits.

Install the hardware

To install the hardware, install the rail kits for your storage system and shelves, and then install and secure your storage system and shelves in the cabinet or telco rack.

Cable the hardware

To cable the hardware, connect the controllers to your network and then to your shelves.

Power on the storage system

To power on your storage system, power on each shelf and assign a unique shelf ID as needed, and then power on the controllers.

Set up your cluster

After you've powered on your storage system, you set up your cluster.

Installation requirements - FAS50

Review the requirements for your FAS50 storage system.

Equipment needed for install

To install your storage system, you need the following equipment and tools.

- Access to a Web browser to configure your storage system

- Electrostatic discharge (ESD) strap
- Flashlight
- Laptop or console with a USB/serial connection
- Phillips #2 screwdriver

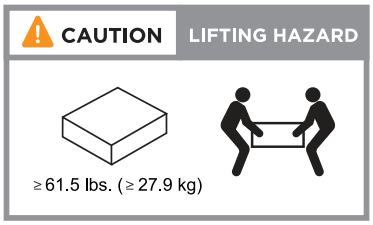
Lifting precautions

Storage systems and shelves are heavy. Exercise caution when lifting and moving these items.

Storage system weight

Take the necessary precautions when moving or lifting your storage system.

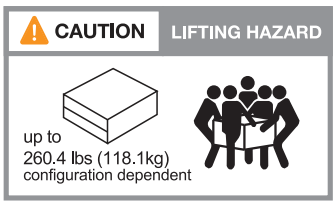
The storage system can weigh up to 53.8 lbs (24.4 kg). To lift the storage system, use two people or a hydraulic lift.



Shelf weight

Take the necessary precautions when moving or lifting your shelf.

A DS460C shelf can weigh up to 260.4 lbs (181.1 kg). To lift the shelf, you might need up to five people or a hydraulic lift. Keep all components in the shelf (both front and rear) to prevent unbalancing the shelf weight.



Related information

- Safety information and regulatory notices

What's next?

After you've reviewed the installation requirements and considerations for your storage system, you prepare for installation.

Prepare to install - FAS50

Prepare to install your FAS50 storage system by getting the site ready, unpacking the boxes and comparing the contents of the boxes to the packing slip, and registering the storage system to access support benefits.

Step 1: Prepare the site

To install your storage system, ensure that the site and the cabinet or rack that you plan to use meet specifications for your configuration.

Steps

1. Use NetApp Hardware Universe to confirm that your site meets the environmental and electrical requirements for your storage system.
2. Make sure you have adequate cabinet or rack space for your storage system, shelves, and any switches:
3. Install any required network switches.

   See the Switch documentation for installation instructions and NetApp Hardware Universe for compatibility information.

Step 2: Unpack the boxes

After you've ensured that the site and the cabinet or rack that you plan to use for your storage system meet the required specifications, unpack all boxes and compare the contents to the items on the packing slip.

Steps

1. Carefully open all the boxes and lay out the contents in an organized manner.
2. Compare the contents you've unpacked with the list on the packing slip.

   You can get your packing list by scanning the QR code on the side of the shipping carton.

   The following items are some of the contents you might see in the boxes.

   Ensure that everything in the boxes matches the list on the packing slip. If there are any discrepancies, note them down for further action.

Hardware

- Bezel
- Storage system
- Rail kits with instructions (optional)
- Storage shelf (if you ordered additional storage)

Cables

- Management Ethernet cables (RJ-45 cables)
- Network cables
- Power cords
- Storage cables (if you ordered additional storage)
- USB-C serial console cable

Step 3: Register your storage system

After you've ensured that your site meets the requirements for your storage system specifications, and you've verified that you have all the parts you ordered, you should register your storage system.

Steps

1. Locate the System Serial Numbers (SSN) for every controller being installed.

You can find the serial numbers in the following locations:

- On the packing slip
- In your confirmation email

2. Go to the NetApp Support Site.
3. Determine whether you need to register your storage system:

If you are a…	Follow these steps…
Existing NetApp customer	a. Sign in with your username and password. b. Select **Systems** > **My Systems**. c. Confirm that the new serial numbers are listed. d. If it is not, follow the instructions for new NetApp customers.
New NetApp customer	a. Click **Register Now**, and create an account. b. Select **Systems** > **Register Systems**. c. Enter the storage system's serial numbers and requested details. After your registration is approved, you can download any required software. The approval process might take up to 24 hours.

What's next?

After you've prepared to install your storage system, you install the hardware for your storage system.

Install the hardware - FAS50

After you prepare to install your FAS50 storage system, install the hardware for the storage system. First, install the rail kits. Then install and secure your storage system in a cabinet or telco rack.

Skip this step if your storage system came in a cabinet.

Before you begin

- Make sure you have the instructions packaged with the rail kit.
- Be aware of the safety concerns associated with the weight of the storage system and shelf.
- Understand that the airflow through the storage system enters from the front where the bezel or end caps are installed and exhausts out the rear where the ports are located.

Steps

1. Install the rail kits for your storage system and shelves as needed, using the instructions included with the kits.
2. Install and secure your storage system in the cabinet or telco rack:

a. Position the storage system onto the rails in the middle of the cabinet or telco rack, and then support the storage system from the bottom and slide it into place.

b. Make sure that the guiding pins of the cabinet or telco rack are securley in the chassis guide slots.

c. Secure the storage system to the cabinet or telco rack using the included mounting screws.

3. Attach the bezel to the front of the storage system.
4. Install and secure the shelf as needed.

a. Position the back of the shelf onto the rails, and then support the shelf from the bottom and slide it into the cabinet or telco rack.

If you are installing multiple shelves, place the first shelf directly above the controllers. Place the second shelf directly under the controllers. Repeat this pattern for any additional shelves.

b. Secure the shelf to the cabinet or telco rack using the included mounting screws.

What's next?

After you've installed the hardware for your storage system, you cable the hardware.

Cable the hardware - FAS50

After you install your FAS50 storage system hardware, cable the controllers to the network and shelves.

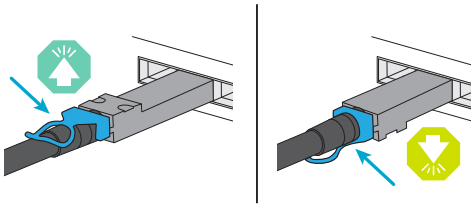
Before you begin

Contact your network administrator for information about connecting the storage system to your network switches.

About this task

- The cabling graphics have arrow icons showing the proper orientation (up or down) of the cable connector pull-tab when inserting a connector into a port.

  As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it over and try again.



- If cabling to an optical switch, insert the optical transceiver into the controller port before cabling to the switch port.

Step 1: Cable the cluster/HA connections

Create the ONTAP cluster connections. For switchless clusters, connect the controllers to each other. For switched clusters, connect the controllers to the cluster network switches.

The cluster/HA cabling examples show common configurations.

If you do not see your configuration here, go to NetApp Hardware Universe for comprehensive configuration and slot priority information to cable your storage system.

Switchless cluster cabling

FAS50 with one 2-port 40/100 GbE I/O module

Steps

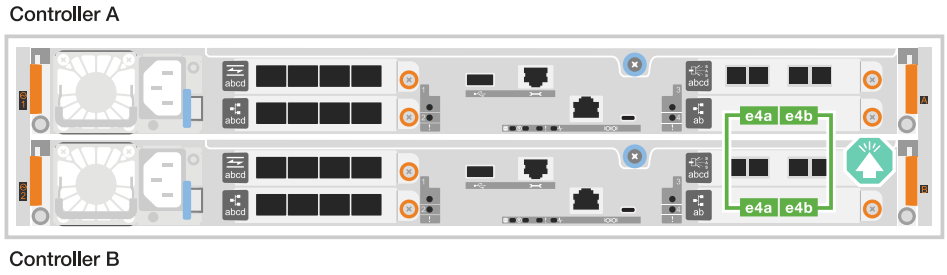
1. Cable the Cluster/HA interconnect connections:

   The cluster interconnect traffic and the HA traffic share the same physical ports (on the I/O module in slot 4). The ports are 40/100 GbE.

   a. Cable controller A port e4a to controller B port e4a.

   b. Cable controller A port e4b to controller B port e4b.

   100 GbE Cluster/HA interconnect cables



Switched cluster cabling

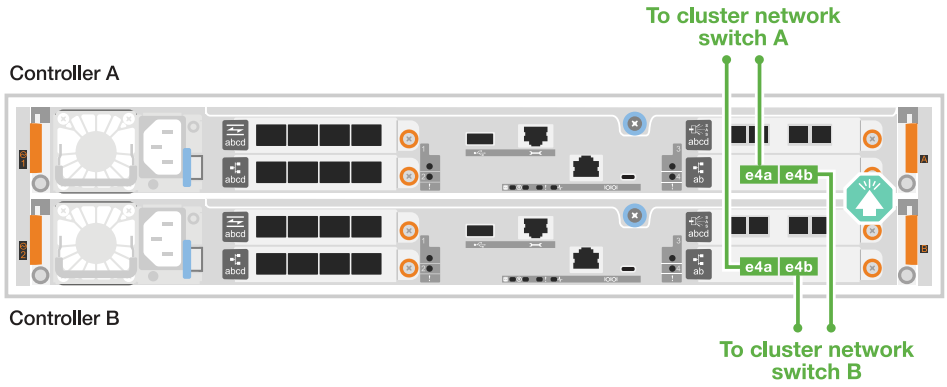
FAS50 with one 2-port 40/100 GbE I/O module

1. Cable the controllers to the cluster network switches:

   The cluster interconnect traffic and the HA traffic share the same physical ports(on the I/O module in slot 4). The ports are 40/100 GbE.

   a. Cable controller A port e4a to cluster network switch A.
   b. Cable controller A port e4b to cluster network switch B.
   c. Cable controller B port e4a to cluster network switch A.
   d. Cable controller B port e4b to cluster network switch B.

40/100 GbE Cluster/HA interconnect cables



Step 2: Cable the host network connections

Cable the controllers to your Ethernet or FC host network.

The host network cabling examples show common configurations.

If you do not see your configuration here, go to NetApp Hardware Universe for comprehensive configuration and slot priority information to cable your storage system.

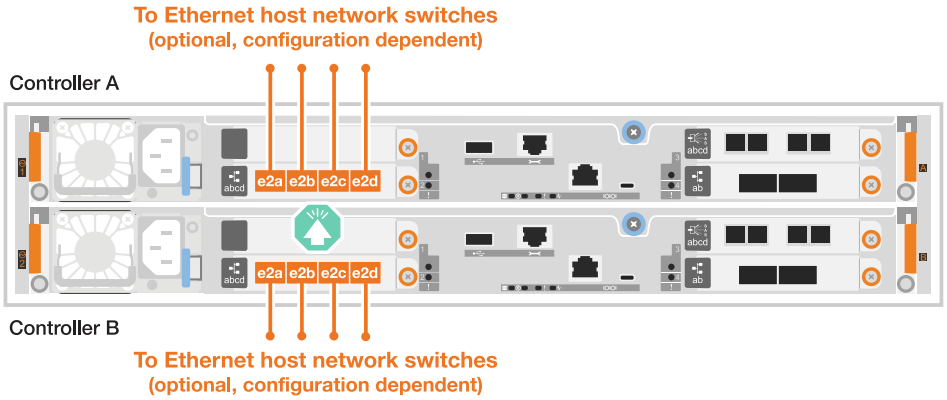
Ethernet host cabling

FAS50 with one 4-port 10/25 GbE I/O module

Steps

1. On each controller, cable ports e2a, e2b, e2c and e2d to the Ethernet host network switches.

10/25 GbE cables



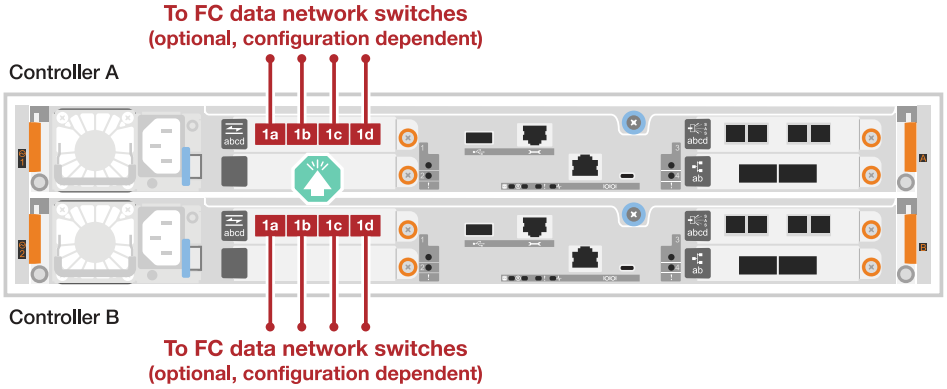
FC host cabling

FAS50 with one 4-port 64 Gb/s FC I/O module

Steps

1. On each controller, cable ports 1a, 1b, 1c and 1d to the FC host network switches.

64 Gb/s FC cables

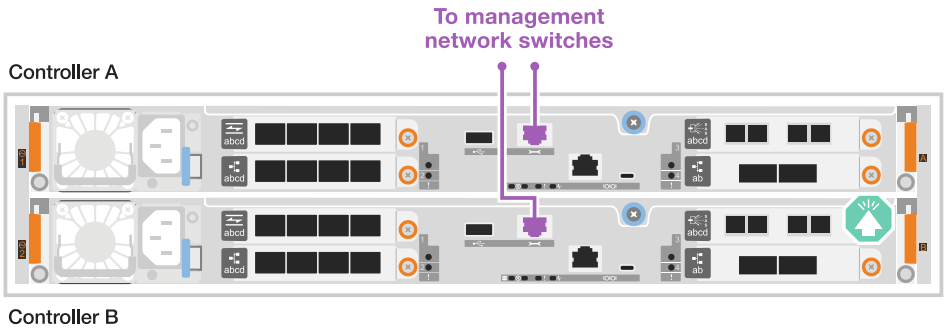


Step 3: Cable the management network connections

Cable the controllers to your management network.

1. Cable the management (wrench) ports on each controller to the management network switches.

   1000BASE-T RJ-45 cables

   Do not plug in the power cords yet.

Step 4: Cable the shelf connections

The following procedures show how to cable the controllers to one or two DS460C shelves.

About this task

- The cabling examples show DS460C shelves; however, additional SAS shelves are supported, see NetApp Hardware Universe.

  Cabling for other supported SAS shelves is similar. See Install and cable shelves for a new system installation. You can also refer to SAS cabling rues, worksheets, and examples overview.

- For the maximum number of shelves supported for your storage system and all of your cabling options, such as optical and switch-attached, see NetApp Hardware Universe.
- The graphics show controller A cabling in blue and controller B cabling in yellow.
- You use the storage cables that came with your storage system, which could be the following cable type:

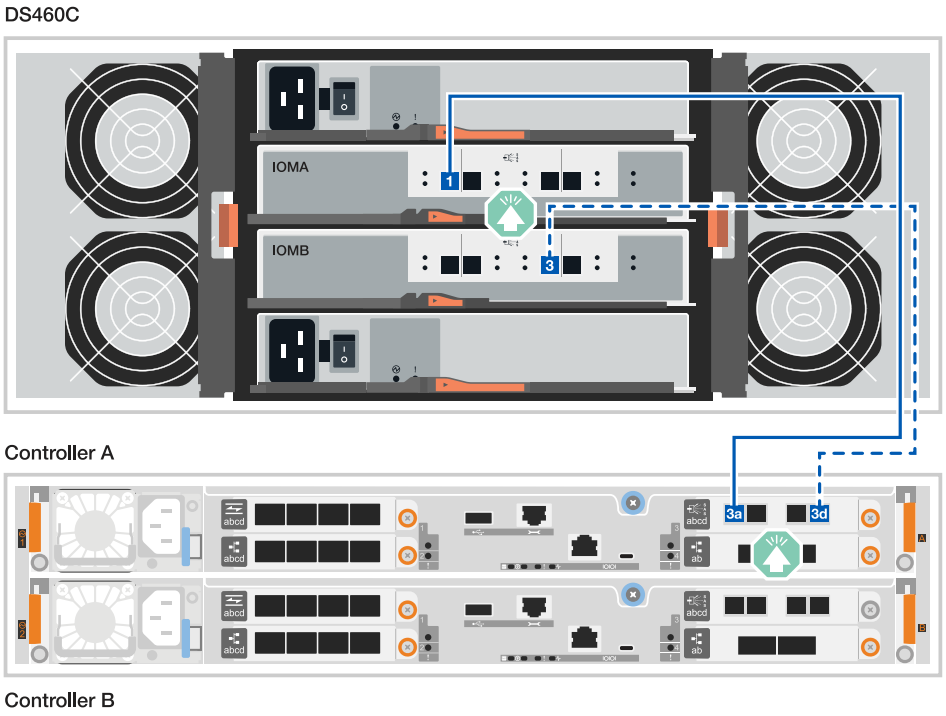
  mini-SAS HD cable

Option 1: One DS460C shelf

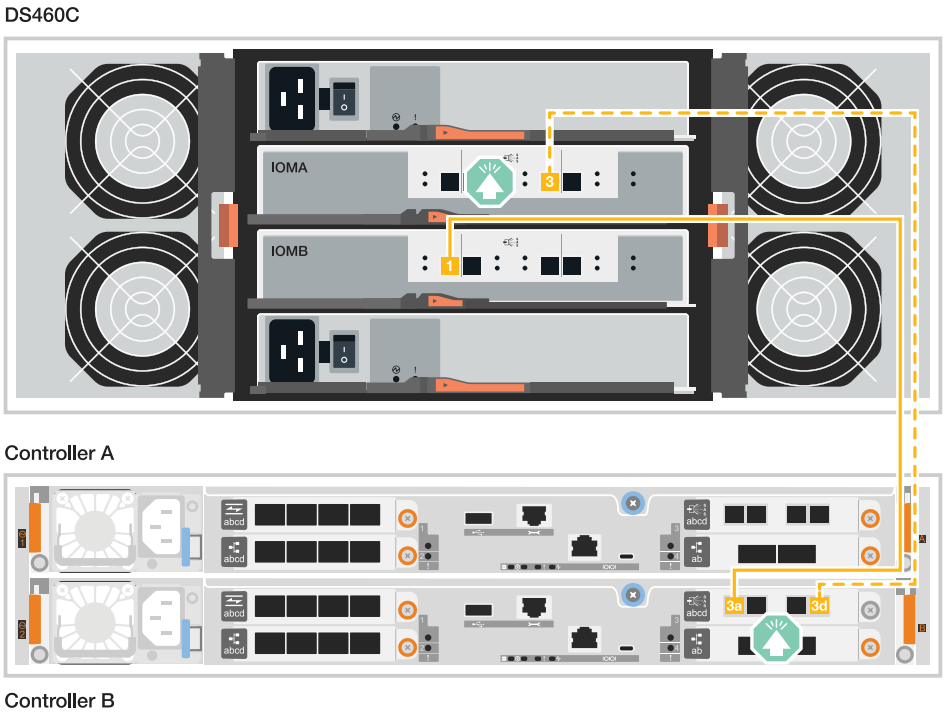
Cable each controller to each IOM12 module on the DS460C shelf.

Steps

1. Cable controller A to the shelf:
   a. Cable controller A port 3a to IOMA port 1.
   b. Cable controller A port 3d to IOMB port 3.



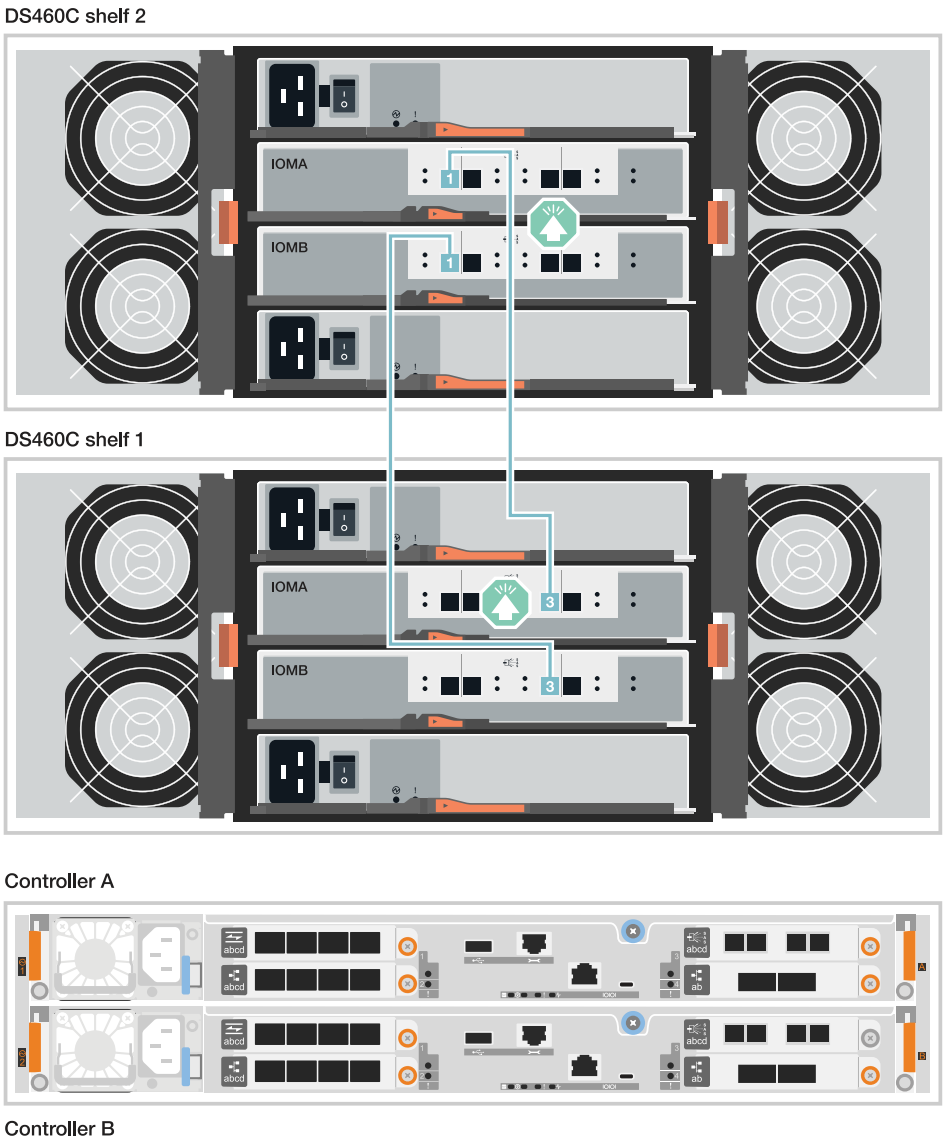
2. Cable controller B to the shelf:
   a. Cable controller B port 3a to IOMB port 1.
   b. Cable controller B port 3d to IOMA port 3.



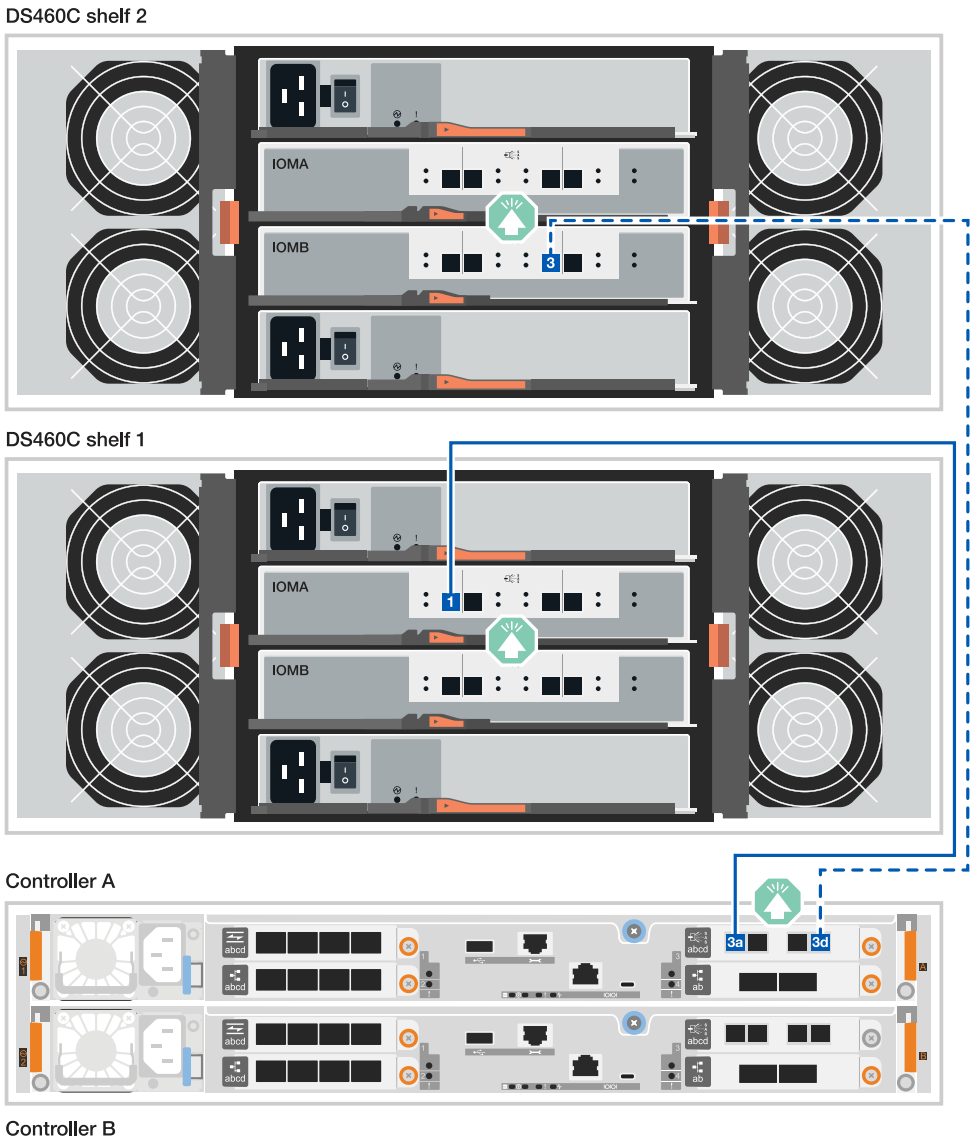
Option 2: Two DS460C shelves

Connect each controller to the IOM12 modules on both DS460C shelves.

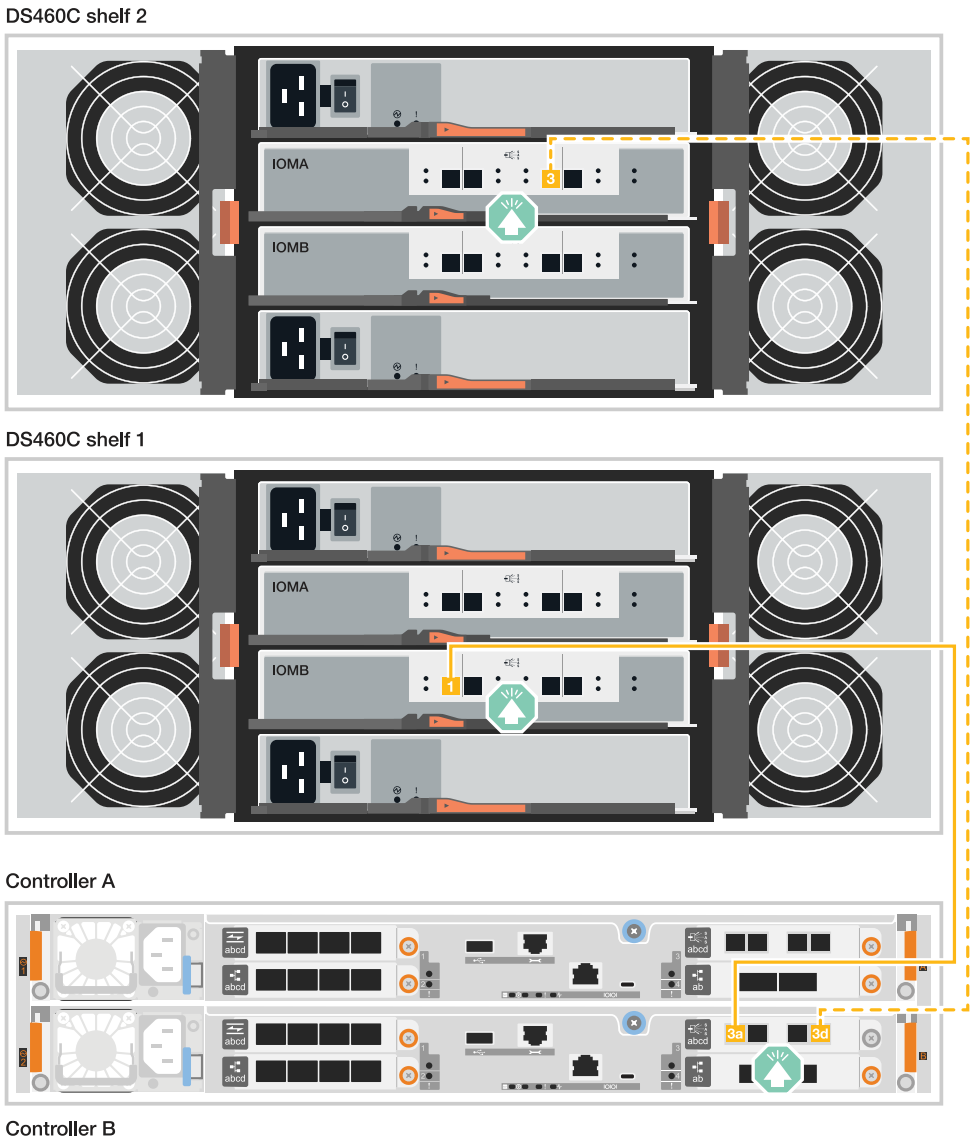
1. Cable the shelf-to-shelf connections:
   a. Cable Shelf 1 IOMA port 3 to Shelf 2 IOMA port 1.
   b. Cable Shelf 1 IOMB port 3 to Shelf 2 IOMB port 1.



2. Cable controller A to the shelves:
   a. Cable controller A port 3a to shelf 1 IOMA port 1.
   b. Cable controller A port 3d to shelf 2 IOMB port 3.



3. Cable controller B to the shelves:
   a. Cable controller B port 3a to shelf 1 IOMB port 1.
   b. Cable controller B port 3d to shelf 2 IOMA port 3.



What's next?

After you've cabled the hardware for your storage system, you power on the storage system.

Power on the storage system - FAS50

After you cable the controllers to the network and shelves in your FAS50 storage system, you power on your shelves and controllers.

Step 1: Power on the shelf and assign shelf ID

Each shelf is distinguished by a unique shelf ID. This ID ensures that the shelf is distinct within your storage system setup.

About this task

- A valid shelf ID is 01 through 99.

If you have internal shelves (storage), which are integrated within the controllers, they are assigned a fixed shelf ID of 00.

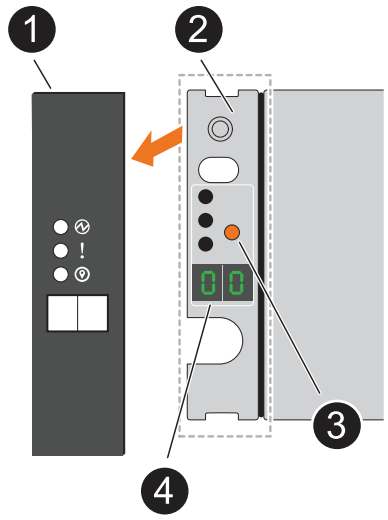
- You must power cycle a shelf (turn off the power switch on each of the power supplies of the SAS shelf, wait the appropriate amount of time, and then switch the power back on) for the shelf ID to take effect.

Steps

1. Power on the shelf by connecting the power cords first to the shelf, securing them in place with the power cord retainer, connecting the power cords to power sources on different circuits, and then turning on the power switch on each of the power supplies (at the rear of the shelf).

   The shelf powers on and boots automatically when powered on.

2. Remove the left end cap to access the orange shelf ID button on the faceplate.



1	Shelf end cap
2	Shelf faceplate
3	Shelf ID button
4	Shelf ID number

3. Change the first number of the shelf ID:
   a. Press and hold the shelf ID button until the first number on the digital display blinks, and then release the button.

      It can take up to 15 seconds for the number to blink. This activates the shelf ID programming mode.

      If the ID takes longer than 15 seconds to blink, press and hold the shelf ID button again, making sure to press it in all the way.

   b. Press and release the shelf ID button to advance the number until you reach the desired number from

0 to 9.

Each press and release duration can be as short as one second.

The first number continues to blink.

4. Change the second number of the shelf ID:
   a. Press and hold the button until the second number on the digital display blinks.

      It can take up to three seconds for the number to blink.

      The first number on the digital display stops blinking.

   b. Press and release the shelf ID button to advance the number until you reach the desired number from 0 to 9.

      The second number continues to blink.

5. Lock in the desired number and exit the programming mode by pressing and holding the shelf ID button until the second number stops blinking.

   It can take up to three seconds for the number to stop blinking.

   Both numbers on the digital display start blinking and the amber LED illuminates after about five seconds, alerting you that the pending shelf ID has not yet taken effect.

6. Power-cycle the shelf for at least 10 seconds to make the shelf ID take effect.
   a. Turn off the power switch on each of the power supplies.
   b. Wait 10 seconds.
   c. Turn on the power switch on each of the power supplies to complete the power cycle.

      When a power supply is powered on, the bicolored LED should illuminate green.

7. Replace the left end cap.

Step 2: Power on the controllers

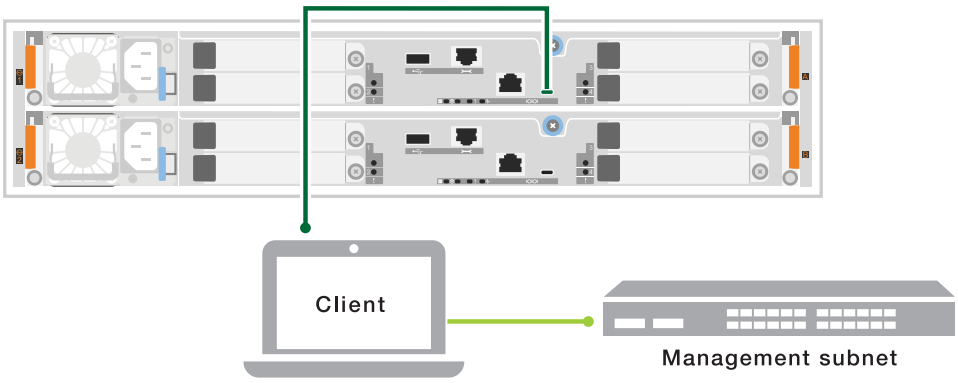
After you've powered on your shelves and assigned them unique IDs, power on the storage controllers.

Steps

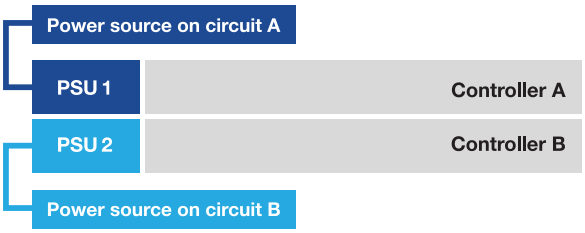
1. Connect your laptop to the serial console port. This will allow you to monitor the boot sequence when the controllers are powered on.
   a. Set the serial console port on the laptop to 115,200 baud with N-8-1.

      See your laptop's online help for instructions on how to configure the serial console port.

   b. Using the console cable provided with your storage system, connect one end of the console cable to your laptop and the other end to the serial console port on controller A.
   c. Connect the laptop to the switch on the management subnet.



2. Assign a TCP/IP address to the laptop, using one that is on the management subnet.
3. Plug the two power cords into the controller power supplies, and then connect them to power sources on different circuits.



   - The system begins to boot. Initial booting might take up to eight minutes.
   - The LEDs flash on and the fans start, which indicates that the controllers are powering on.
   - The fans might be very noisy when they first start up. The fan noise during start-up is normal.
   - The shelf ID display on the front of the system chassis does not illuminate.
4. Secure the power cords using the securing device on each power supply.

What's next?

After you've powered on your storage system, you set up your cluster.

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