NetApp

Install and set up 60-drives

E-Series Systems

NetApp
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Prepare for installation

Learn how to prepare to install your E2860, E5760, or DE460 series storage system.

Steps

1. Create an account and register your hardware at mysupport.netapp.com.
2. Ensure that the following items are in the box that you received.

	Shelf, bezel, and rackmount hardware
	Shelf handles x4

The following table identifies the types of cables you might receive. If you receive a cable not listed in the table, see Hardware Universe to locate the cable and identify its use.

Connector type	Cable type	Use
	Ethernet cables (if ordered)	Management connection
	I/O cables (if ordered)	Cabling the data hosts

Connector type	Cable type	Use
	Power cables x2 per shelf (if ordered)	Powering up the storage system
	SAS cables (Included only with the drive shelves)	Cabling the shelves

3. Ensure that you provide the following items.

	Phillips #2 screwdriver
	Flashlight
	ESD strap

	4U rack space: A standard 19 in. (48.30 cm) rack to fit 4U shelves of the following dimensions. **Depth**: 38.25 in. (97.16 cm) **Width**: 17.66 in. (44.86 cm) **Height**: 6.87 in. (17.46 cm) **Max Weight**: 250 lb (113 kg)
	A supported browser for the management software: • Google Chrome (version 47 and later) • Microsoft Internet Explorer (version 11 and later) • Microsoft Edge (EdgeHTML 12 and later) • Mozilla Firefox (version 31 and later) • Safari (version 9 and later)

Install the hardware

Learn how to install a E2860, E5760, or DE460 storage system in a two-post rack or a NetApp system cabinet.

Before you begin

- Register your hardware at mysupport.netapp.com.
- Prepare a flat, static-free work area.
- Obtain an ESD wristband and take anti-static precautions.

Read through all the instructions before proceeding with the steps below.

Steps

1. Unpack the hardware contents, and then inventory the contained hardware against the packing slip.
2. Install the rails.

   If instructions were included with your rack-mounting hardware, refer to them to learn how to install the rails. For additional rack-mounting instructions, see Rack-mount hardware.

   > ⓘ For square hole cabinets, you must first install the provided cage nuts to secure the front and rear of the shelf with screws.

3. Install the shelf.

> ⚠️ An empty shelf weighs approximately 132 lb (60 kg). A mechanized lift or four people using lift handles are required to safely move an empty shelf.

   a. If lifting the shelf by hand, attach the four lift handles. Push up on each handle until it clicks into place.

   b. Supporting the shelf from the bottom, slide it into the cabinet. If the lift handles are used, remove them one set at a time as the shelf slides into the cabinet. To remove the handles, pull back on the release latch, push down, then pull away from the shelf.

4. Secure the shelf.

    a. Insert screws into the first and third holes from the top of the shelf on both sides to secure it to the front of the cabinet.

    b. Place two back brackets on each side of the upper rear section of the shelf. Insert screws into the first and third holes of each bracket to secure the back of the cabinet.

5. Install the drives.

   a. Wrap the strap end of the ESD wristband around your wrist, and secure the clip end to a metal ground to prevent static discharges.

   b. Starting at the front left slot of the top drawer, install each drive by gently positioning into the drive slot and lowering the raised drive handle until it clicks into place.

- If you are installing fewer than 60 drives, if you have solid-state drives (SSDs), or if your drives have different capacities:

  - Maintain a minimum of 20 drives per shelf. Install drives in the front four slots in each drawer first, for adequate airflow for cooling.

  - Distribute any remaining drives across the drawers. If possible, install an equal number of each type of drive in each drawer to allow for the creation of Drawer Loss Protected volume groups or disk pools.

  - Distribute any SSDs evenly across the drawers.

   c. Carefully slide the drawer back in by pushing the center and gently closing both latches.

- Do not force the drawer into place.

- Use the connector tool, disconnect the connector of the snake cable and reconnect it, make sure you hear a click to determine the reconnection is properly done.

- Disconnection and reconnection should only be required during initial setup or if the tray is shipped to a different location.

   d. Attach the front bezel.

| ⚠ | Risk of equipment damage — Stop pushing the drawer if you feel binding. Use the release levers at the front of the drawer to slide the drawer back out. Then, carefully reinsert the drawer into the slot. |

Cable the shelves

Learn how to attach the power cables and power on the drive shelves.

Before you begin

- Install your hardware.
- Take anti-static precautions.

This procedure applies to IOM12 and IOM12B drive shelves.

| ⓘ | IOM12B modules are only supported on SANtricity OS 11.07.2 onward. Ensure your controller's firmware has been updated before installing or upgrading to an IOM12B. |

| ⓘ | This procedure is for like-for-like shelf IOM hot-swaps or replacements. This means you can only replace an IOM12 module with another IOM12 module or replace an IOM12B module with another IOM12B module. (Your shelf can have two IOM12 modules or have two IOM12B modules.) |

Steps

1. Cable the shelves.

   Cable the system according to your configuration. If you need more cabling options than the examples shown in this section, see Cabling.

   For the examples shown in this section, you need the following cables:

| | **SAS cables** |

Example A: An E2860 controller shelf with two DE460C disk shelves in a standard SAS configuration.
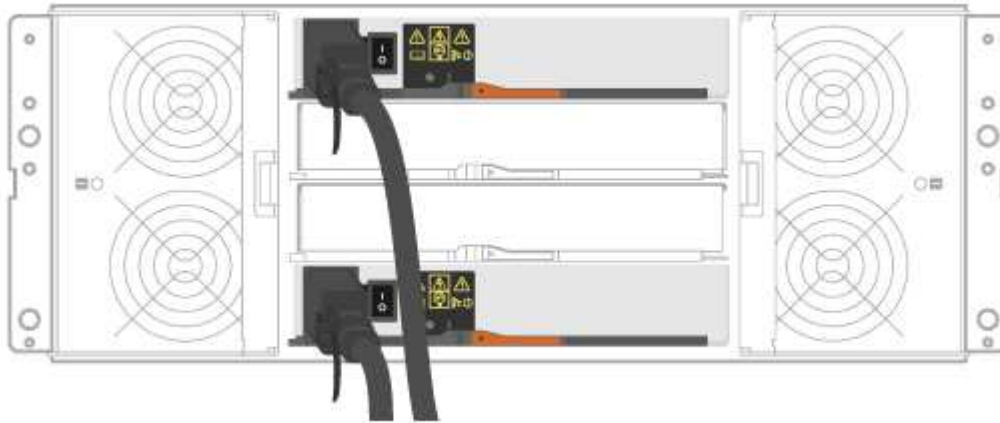
a. Cable controller A to IOM A of the first drive shelf.

b. Cable IOM A of the first drive shelf to IOM A of the second drive shelf.

c. Cable IOM B of the first drive shelf to IOM B of the second drive shelf.

d. Cable controller B to IOM B of the second drive shelf.

Example B: An E2860 controller shelf with one DE460C disk shelf in a standard SAS configuration.

a. Cable controller A to IOM A.

b. Cable controller B to IOM B.

2. Power the drive shelves.

You need the following cables:

	Power cables

⚠ Confirm the drive shelf power switches are off.

a. Connect the two power cables for each shelf to different power distribution units (PDUs) in the cabinet or rack.

b. If you have drive shelves, turn on their two power switches first. Wait 2 minutes before applying power to the controller shelf.

c. Turn on the two power switches on the controller shelf.

d. Check the LEDs and seven-segment display on each controller.

During boot, the seven-segment display shows the repeating sequence of OS, Sd, blank to indicate the controller is performing start-of-day processing. After the controller has booted up, the shelf ID is displayed.

Example: Power connections are on the rear of the shelf.

Complete storage system setup and configuration

Learn how to cable the controllers to your network and complete storage system setup and configuration.

Step 1: Cable the data hosts

Cable the system according to your network topology.

> ⓘ If you are using AIX®, you must install the E-Series multipath driver on the host before connecting it to the array.

Option 1: Direct-attach topology

The following example shows cabling to the data hosts using a direct-attach topology.

Table 1. Example A: Direct-attach topology

| | 1. Connect each host adapter directly to the host ports on the controllers. |

Option 2: Fabric topology

The following example shows cabling to the data hosts using a fabric topology.

Table 2. Example B: Fabric topology

| | 1. Connect each host adapter directly to the switch. |
| | 2. Connect each switch directly to the host ports on the controllers. |

Step 2: Connect and configure the management connection

You can configure the controller management ports using a DHCP server or a static IP address.

Option 1: DHCP server

Learn how to configure the management ports with a DHCP server.

Before you begin

- Configure your DHCP server to associate an IP address, subnet mask, and gateway address as a permanent lease for each controller.
- Obtain the assigned IP addresses to connect to the storage system from your network administrator.

Steps

1. Connect an Ethernet cable to each controller's management port, and connect the other end to your network.

	Ethernet cables (if ordered)

The following figures show examples of the controller's management port location:

E2800 controller P1 Management Port	E5700 controller P1 Management Port

2. Open a browser and connect to the storage system using one of the controller IP addresses provided to you by your network administrator.

Option 2: Static IP address

Learn how to configure the management ports manually by entering the IP address and the subnet mask.

Before you begin

- Obtain the controllers' IP address, subnet mask, gateway address, and DNS and NTP server information from your network administrator.
- Make sure the laptop you are using is not receiving network configuration from a DHCP server.

Steps

1. Using an Ethernet cable, connect controller A's management port to the Ethernet port on a laptop.

	Ethernet cables (if ordered)

The following figures show examples of the controller's management port location:

| E2800 controller P1 Management Port | E5700 controller P1 Management Port |

2. Open a browser and use the default IP address (169.254.128.101) to establish a connection to the controller. The controller sends back a self-signed certificate. The browser informs you that the connection is not secure.

3. Follow the browser's instructions to proceed and launch SANtricity System Manager.

   (i) If you are unable to establish a connection, verify that you are not receiving network configuration from a DHCP server.

4. Set the storage system's password to login.

5. Use the network settings provided by your network administrator in the **Configure Network Settings** wizard to configure controller A's network settings, and then select **Finish**.

   (i) Because you reset the IP address, System Manager loses connection to the controller.

6. Disconnect your laptop from the storage system, and connect the management port on controller A to your network.

7. Open a browser on a computer connected to your network, and enter controller A's newly configured IP address.

   (i) If you lose the connection to controller A, you can connect an ethernet cable to controller B to reestablish connection to controller A through controller B (169.254.128.102).

8. Log in using the password you set previously.

   The Configure Network Settings wizard will appear.

9. Use the network settings provided by your network administrator in the **Configure Network Settings** wizard to configure controller B's network settings, and then select **Finish**.

10. Connect controller B to your network.

11. Validate controller B's network settings by entering controller B's newly configured IP address in a browser.

> ⓘ If you lose the connection to controller B, you can use your previously validated connection to controller A to reestablish connection to controller B through controller A.

Step 3: Configure and manage your storage system

After you have installed your hardware, use the SANtricity software to configure and manage your storage system.

Before you begin

- Configure your management ports.
- Verify and record your password and IP addresses.

Steps

1. Use the SANtricity software to configure and manage your storage arrays.
2. In the simplest network configuration, connect your controller to a web browser and use SANtricity System Manager for managing a single E2800 or E5700 series storage array.

	For accessing System Manager, use the same IP addresses that you used to configure your management ports.