



Installation and Setup Instructions for E-Series 60-Drive Trays

E2760 and E5660 controller-drive trays
DE6600 expansion drive trays

 **Unpack & Prepare**

 **Install Hardware**

 **Connect Drive Trays**

 **Apply Power**

 **Connect Data Hosts**

 **Choose Management Method**

 **Install & Use SANtricity® Software**



210-06665+A0

Before you begin

Before installing the hardware

- Confirm that your location provides 240-volt AC power.
- Obtain a standard 19-inch (48.3-cm) rack to fit 4U trays with these dimensions:

Tray	Height	Width	Depth	Max Weight
60-drive	7.00 in. (17.78 cm)	17.75 in. (45.08 cm)	32.50 in. (82.55 cm)	236.2 lb (107.1 kg)

- Install any required host bus adapters (HBAs) in the data hosts as well as any required switches. Refer to the NetApp Interoperability Matrix at <http://mysupport.netapp.com/matrix> for compatibility information.

For additional instructions

- 1 Go to the E-Series and EF-Series Systems Documentation Center: <http://mysupport.netapp.com/eseries>.
- 2 Download these documents from the **Getting Started** and **Installing & Configuring** sections of the page.

Task	Document
Preparing your site	<i>Site Preparation Guide</i>
Installing a NetApp cabinet	<i>3040-40U Cabinet Installation Guide</i>
Installing the rails, trays, and drives	<i>Controller-Drive Tray and Related Drive Tray Installation Guide</i>
Cabling the hardware	<i>E-Series and EF-Series Hardware Cabling Guide</i>
Choosing a management method	<i>SANtricity Storage Manager Express Guides</i> <i>SANtricity Power Guides for Advanced Users</i>
Installing and using SANtricity software	<i>SANtricity Storage Manager Express Guides</i> <i>SANtricity Power Guides for Advanced Users</i>

For additional help

NetApp Support: <http://mysupport.netapp.com/>

NetApp Training: <http://www.netapp.com/us/services-support/university/learning.aspx>

NetApp Videos: <https://www.brainshark.com/go/netapp-sell/library.html>

For your safety

Review the Safety Notices document included in the box, and pay close attention to the precautions for moving and installing hardware.

✓ Unpack the boxes

Unpack all boxes and compare the contents to the items on the packing slip. You will find these items in the boxes.



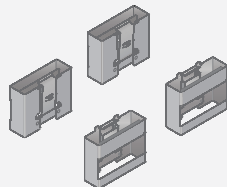
Controller-drive tray
Drive trays, if ordered



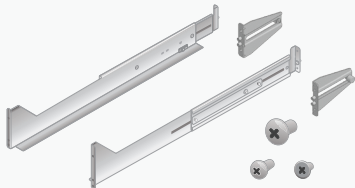
Drives (HDD or SSD)
(20 to 60 for each tray)



Front bezel



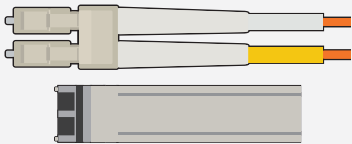
4 handles to lift and move the tray
(or you can use a lift)



Cabinet rails and mounting hardware



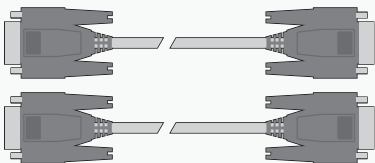
Power cords for your country
(two for each tray)



I/O cables and transceivers, if ordered



Ethernet cables, if ordered
(as needed to connect to the management station)



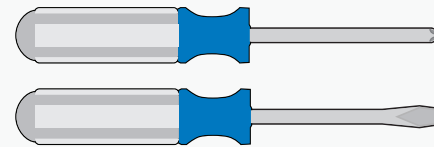
Serial cables
(as needed for diagnostics or installation)



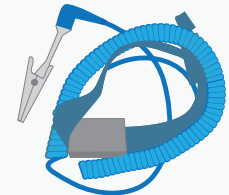
SAS cables
(included only with the drive trays)

✓ Obtain tools and other equipment

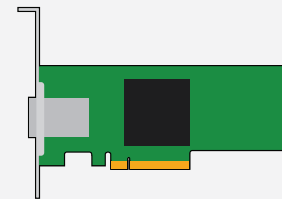
You need additional tools and equipment to complete the installation tasks.



Phillips No. 2 screwdriver
Medium flat-blade screwdriver



ESD wrist strap



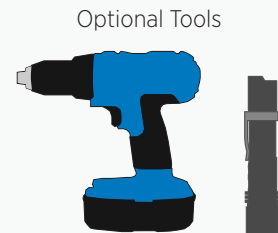
Host bus adapter (HBA)
(installed in each data host)



SAN switch
(optional, depending on host topology)



Management station
(for SANtricity software)



Optional Tools
Power drill with Phillips head bit
Flashlight
Mechanized lift

✓ Register the hardware

- 1 Locate the chassis serial number. You can find the number on the packing slip, in your confirmation email, or on the controller-drive tray after you unpack it.



- 2 Go to the NetApp Support Site: <http://mysupport.netapp.com>
- 3 Sign into the site:
 - If you do not already have a NetApp account, click **Register Now** to create an account.
 - If you already have a NetApp account, click **Sign In**, and enter your username and password.
- 4 Determine whether you need to register the hardware, as follows:

If you are a...	Follow these steps...
NetApp customer who has registered hardware before	<ol style="list-style-type: none">1 From the top menu, select Products > My Products.2 Confirm that the new serial number is listed.3 If it is, go to "Install the rails." If it is not, follow the instructions below to register the hardware.
A reseller customer or a new NetApp customer	<ol style="list-style-type: none">1 From the top menu, select Products > Register Products.2 Enter the product serial number, and click Submit.3 Enter the requested details, and click Submit. <p>After your registration is approved, you can download SANtricity software. The approval process might take up to 24 hours.</p>

🔧 Install the rails

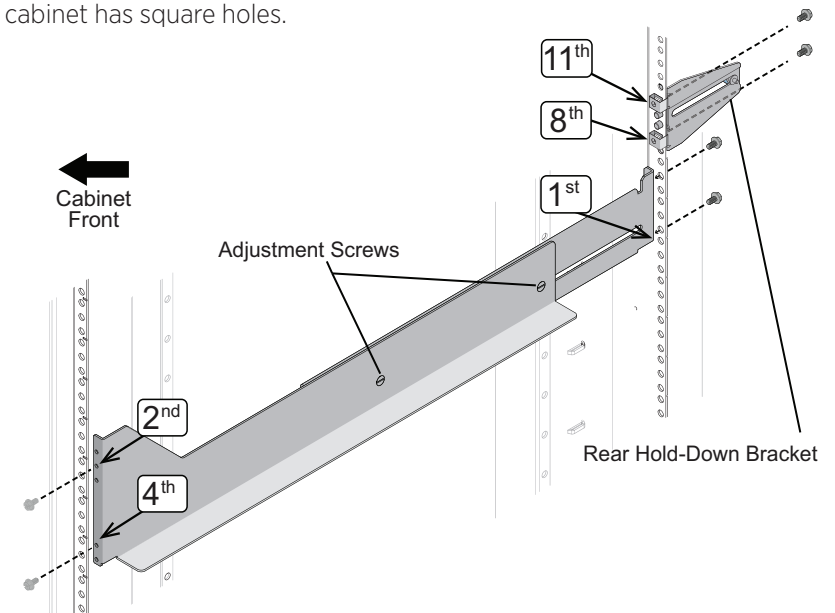


WARNING: Install hardware from the bottom of the cabinet up to the top to prevent the equipment from toppling over.

You need this hardware to install the rails (the kit also includes extra screws):

- Left and right rails
- Left and right rear hold-down brackets for additional bracing, if needed
- 16 screws (8 for the rails, 4 for the brackets, 4 for securing the tray)
- 8 washers (used only for cabinets with square holes)

- 1 Extend the rail by loosening the two adjustment screws.
- 2 Starting at the lowest available position in the cabinet, align the holes on the ends of the rail with the holes on the cabinet. Confirm that the rail is level.
- 3 Secure the front of the rail to the cabinet by counting down from the top of the rail and inserting two screws into the 2nd and 4th rail holes. Use the washers if the cabinet has square holes.



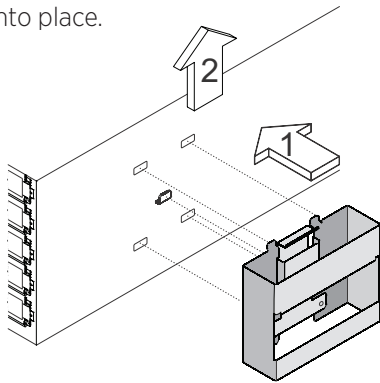
- 4 Secure the rear of the rail to the cabinet with two screws (and washers if the cabinet has square holes). Use the same set of holes as in the front.
- 5 If you plan to ship an empty tray in the cabinet, secure the hold-down brackets to the back of the cabinet by counting up from the bottom of the rail and inserting screws into the 8th and 11th cabinet holes. The tray must be empty when shipped.

Install the trays

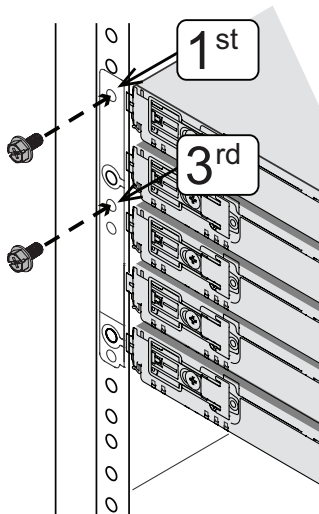


WARNING: An empty tray weighs approximately 132 lb (60 kg). Four persons are required to safely move an empty tray. If drives are installed, a mechanized lift is required.

- 1 To access the tray, remove the outer packing box. Then, fold down the flaps on the inner box.
- 2 If you are using a mechanized lift, you do not need the tray handles. If you are lifting and moving the tray by hand, attach the four handles. Push up on each handle until it clicks into place.



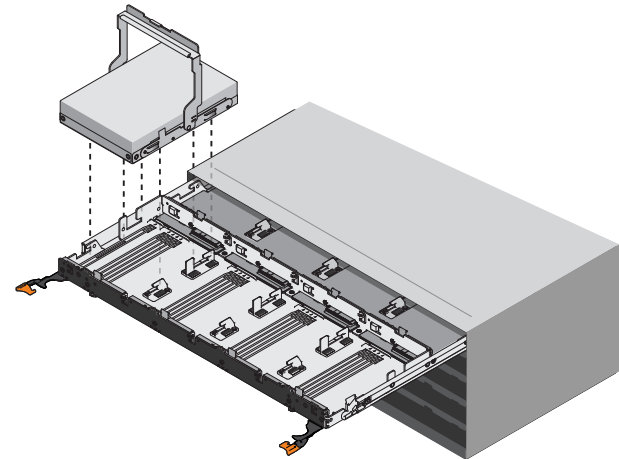
- 3 Place the back of the tray (the end with the connectors) on the rails.
- 4 Supporting the tray from the bottom, slide it into the cabinet. If you are using the handles, use the thumb latches to detach the handles as you slide the tray in.
- 5 Secure the tray to the front of the cabinet by inserting two screws in the 1st and 3rd holes (counting down from the top) on each side.



Install the drives

CAUTION: To avoid damaging the hardware, never move a 60-drive tray if drives are installed. You must remove all drives before moving the tray.

- 1 Put on the ESD wristband to protect the drives from static electricity.
- 2 Release the levers on the top drive drawer. Then, slide the drawer out by using the levers.
- 3 Raise the handle on the drive to vertical.



- 4 Starting with the leftmost slot at the front, align the two raised buttons on the drive with the notches on the drawer. Then, pressing gently on the top of the drive, rotate the drive handle down until the drive snaps into place.
- 5 Install the remaining drives. If you are installing fewer than 60 drives, if you have solid state drives (SSDs), or if your drives have different capacities:
 - Install drives in the front four slots of each drawer (a minimum of 20 drives in each tray) to maintain 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.
 - Do not install more than five SSDs in each drawer (no more than 25 SSDs in each tray) or the power source in the drawer could fail.
- 6 Slide the drawer back in by pushing it from the center and closing both levers.
- 7 Attach the bezel to the front of the tray.



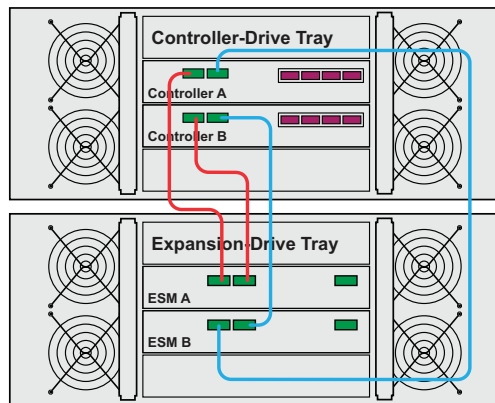
Connect to the drive trays (if installed)

Skip this section if you did not install expansion drive trays. Refer to the *Hardware Cabling Guide* if you have more than two expansion drive trays or you are using another configuration than what is shown.

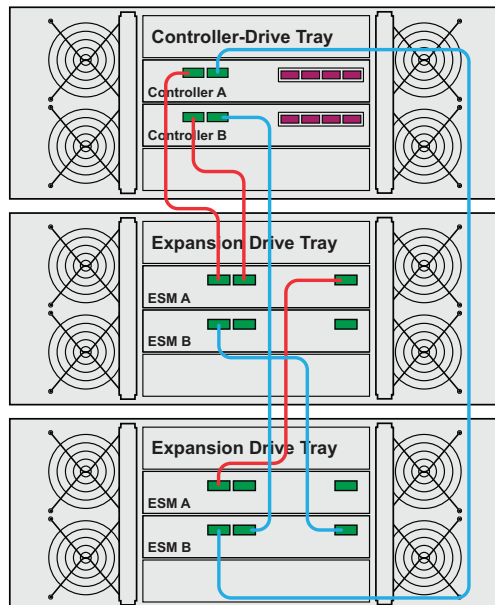
Recommended cabling for E5660

Refer to the figures to connect SAS cables between the controllers in the controller-drive tray and the environmental service modules (ESMs) in the expansion drive trays. Confirm that the blue tabs on the SAS cables face the bottom of the cabinet, and make sure each connector clicks into place.

*One expansion drive tray
(60-drive tray shown, but you
can connect to 12-drive or
24-drive trays)*



*Two expansion drive trays
(shown below the
controller-drive tray)*



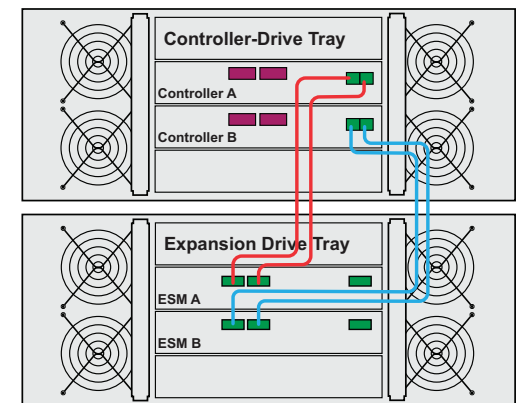
Connect to the drive trays (continued)

Recommended cabling for E2760

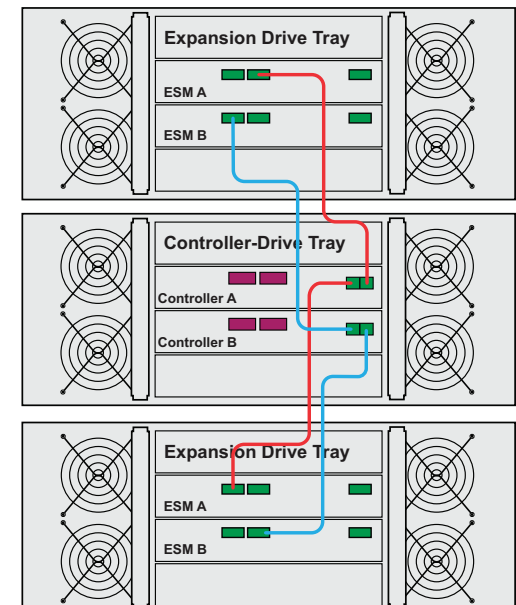
Refer to the figures to connect SAS cables between the controllers in the controller-drive tray and the environmental service modules (ESMs) in the expansion drive trays.

Confirm that the blue tabs on the SAS cables face the bottom of the cabinet, and make sure each connector clicks into place.

*One expansion drive tray
(60-drive tray shown, but you
can connect to 12-drive or
24-drive trays)*



*Two expansion drive trays
(installed above and below
the controller-drive tray)*



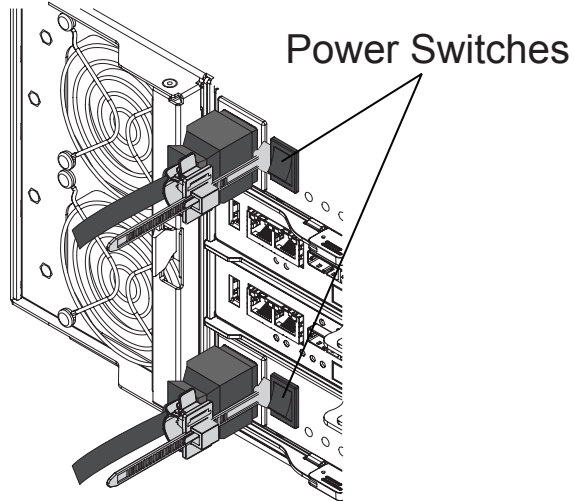


Connect power cords and apply power



WARNING: Risk of electrical shock — Before connecting the power cords, make sure that both power switches on each tray are off.

- 1 Confirm that the two power switches on each tray are off.



- 2 Connect the two power supplies in each tray to separate power distribution units (PDUs) in the cabinet.
- 3 If you have expansion drive trays, turn on their two power switches first. Then, wait 2 minutes before applying power to the controller-drive tray.
- 4 Turn on the two power switches on the controller-drive tray.
 - Do not turn off the power switches during the power-on process.
 - The fans in each tray are very loud when they first start up. The loud noise during start-up is normal.
- 5 Check the LEDs and the seven-segment display on the back of each controller.

The seven-segment display shows the repeating sequence **OS, Sd, blank** to indicate that the controller is performing start-of-day processing. After the controller has booted up, the display shows the tray ID.
- 6 If any of the amber LEDs are on, confirm you completed the installation steps correctly. If you are unable to resolve the problem, contact technical support.

Connect to the data hosts

Before connecting the host cables, confirm that host bus adapters (HBAs) are installed in the data hosts. If you are using AIX, wait to connect the data hosts until after you have installed and configured the NetApp multipath driver. Refer to the *SANtricity Storage Manager Express Guide*.

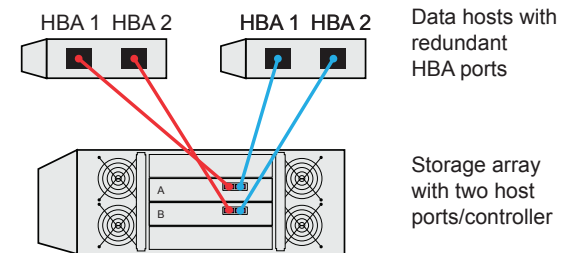
Refer to the *Hardware Cabling Guide* for lists of supported cables and transceivers, the best practices for cabling, and detailed views of the host ports for your controller. Refer to the NetApp Interoperability Matrix (<http://mysupport.netapp.com/matrix>) for the supported host topologies.

- 1 Insert the appropriate transceiver into each controller port that you plan to use, based on the host protocol and the host topology. Start with the lowest numbered controller port.

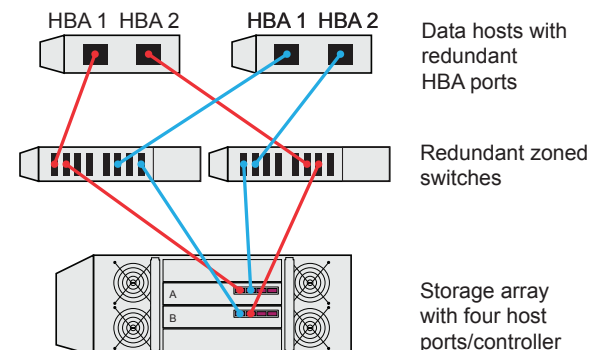
You do not need transceivers for copper iSCSI.

- 2 Connect to the data hosts as follows:

- **To use direct attach topology**, connect each HBA directly to the host ports on controllers A and B, as in this example:



- **To use fabric topology**, connect each HBA to a switch that is connected to the host ports on controllers A and B, as in this example. To zone a switch, follow the instructions in the appropriate *SANtricity Express Guide*.



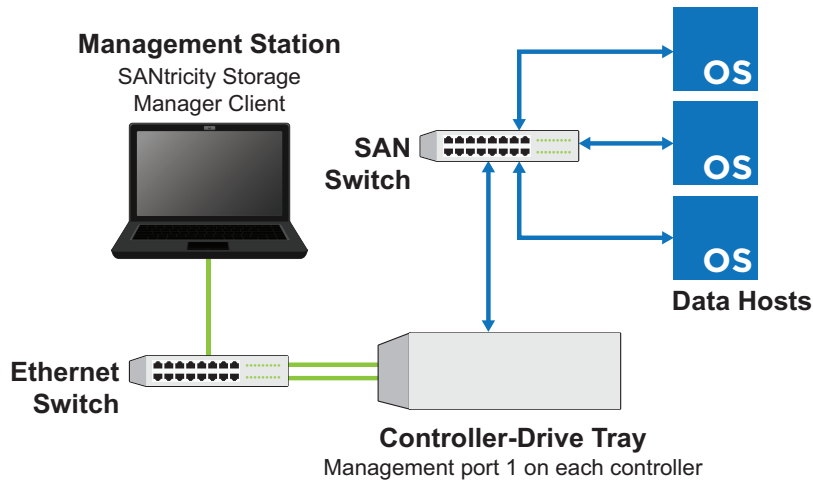
<...> Choose the management method

Before installing SANtricity Storage Manager (the management software), decide how you want to connect the storage array to the management station.

This section provides an overview to help you understand the two primary management methods: Ethernet connection (out-of-band) and host I/O connection (in-band).

Ethernet connection (out-of-band) management method

You manage the storage array using Ethernet connections between a storage management station and the controllers' management ports.



If you choose out-of-band management, you can use one of these options to set IP addresses and add the storage array to SANtricity Storage Manager.

Option 1: Automatically set IP addresses using DHCP

This is the recommended option, and it is described in the *SANtricity Express Guides*. If the network includes a DHCP server, the controllers obtain dynamic IP addresses automatically.

- 1 Connect an Ethernet cable between management port 1 (labeled P1) on each controller and the network. Do not use management port 2.
- 2 Locate the MAC address on the label on the back of each controller. The network administrator needs this value to determine the dynamically assigned IP address and to configure a static IP.
- 3 After installing the software, use the IP addresses to connect the management station to the controllers.

<...> Choose the management method (continued)

Option 2: Manually set static IP addresses using a private network

After connecting an Ethernet cable to management port 1 on each controller and waiting 3 minutes for DHCP to time out, you can initially set up a private network using these default IP addresses. You then change the IP addresses to match your network's. This option is described in the *SANtricity Power Guides for Advanced Users*.

Controller A, port 1: 192.168.128.101

Controller B, port 1: 192.168.128.102

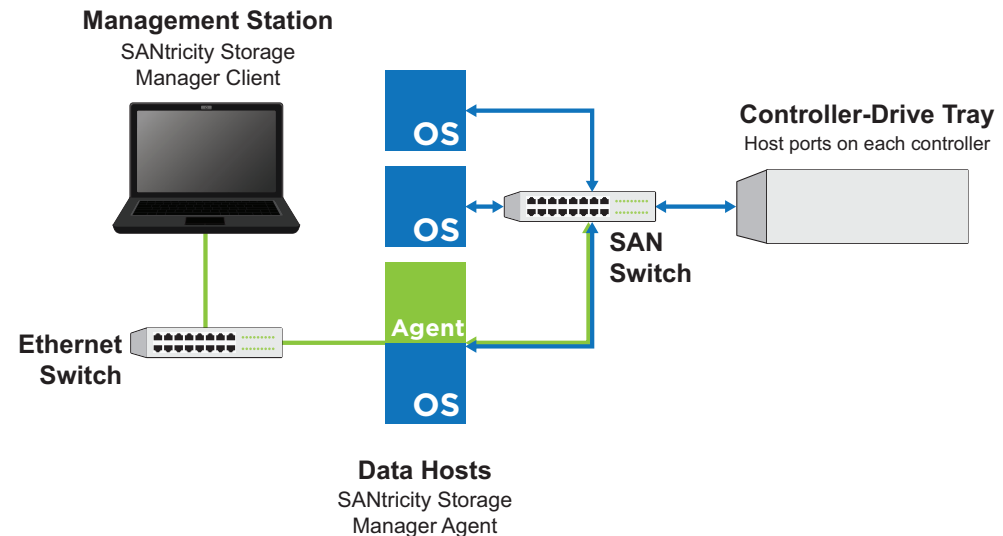
Default subnet mask: 255.255.255.0

Option 3: Manually set static IP addresses using the Serial Interface

This option is described in the *SANtricity Power Guides for Advanced Users*.

Host I/O (in-band) management method

You manage the storage array using an Ethernet connection between a storage management station and a data host. Host-agent software installed on the host passes communications to and from the storage array over an existing I/O connection. The Ethernet ports on the controllers are not used. This method is not supported for all operating systems.



To use the in-band management method, refer to the *SANtricity Power Guides for Advanced Users*.

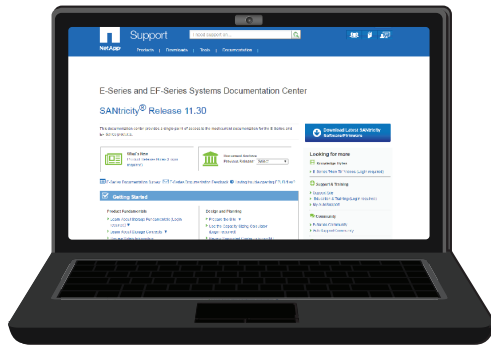


Install and use SANtricity Storage Manager

The *SANtricity Storage Manager Express Guides* and the *SANtricity Power Guides for Advanced Users* include step-by-step instructions for downloading, installing, and using SANtricity Storage Manager.

To download the instructions for your operating system:

- 1 Go to <http://mysupport.netapp.com/eseries>, and locate the **Installing & Configuring** section of the page.



- 2 Select the *SANtricity Storage Manager Express Guide* for your host operating system if you need instructions for DHCP and for installing and using SANtricity Storage Manager to configure your array.
- 3 Select the *SANtricity Power Guide for Advanced Users* for your host operating system if you need instructions for setting static IP addresses or for installing the NetApp multipath drivers and host agent.



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