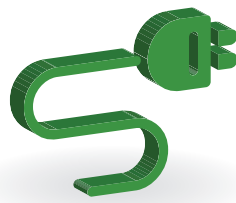
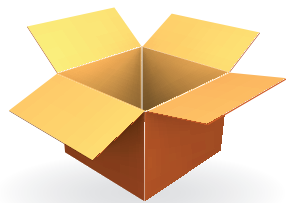


EMC[®] VNX[™] VNXe3300[™]

Installation Guide

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REV 05



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Unpack your system

Unpack the shipping boxes

Verify that you have received all of the system components, including cables, bezels, rails, and screws (shown below).

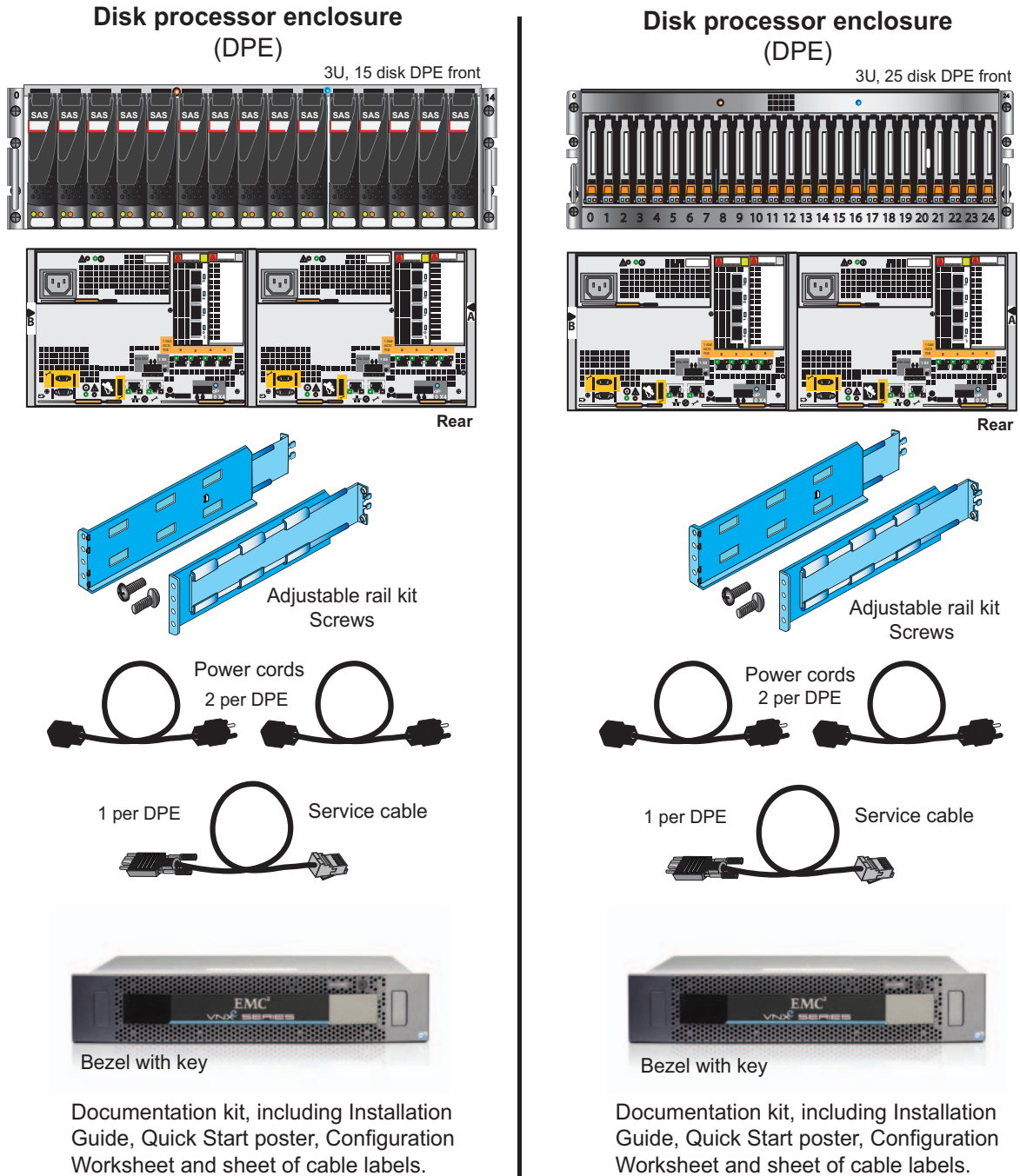


Figure 1 VNXe3300 DPE Shipping Contents



The VNXe3300 DPE is a 3U component with either fifteen 3.5” drives or twenty-five 2.5” drives as shown in [Figure 1 on page 4](#). The VNXe3300 can use either one of the two DAEs shown in [Figure 2](#). One is a 3U fifteen disk 3.5” drive DAE. The other is a 2U twenty-five disk 2.5” drive DAE. All DAEs are optional.

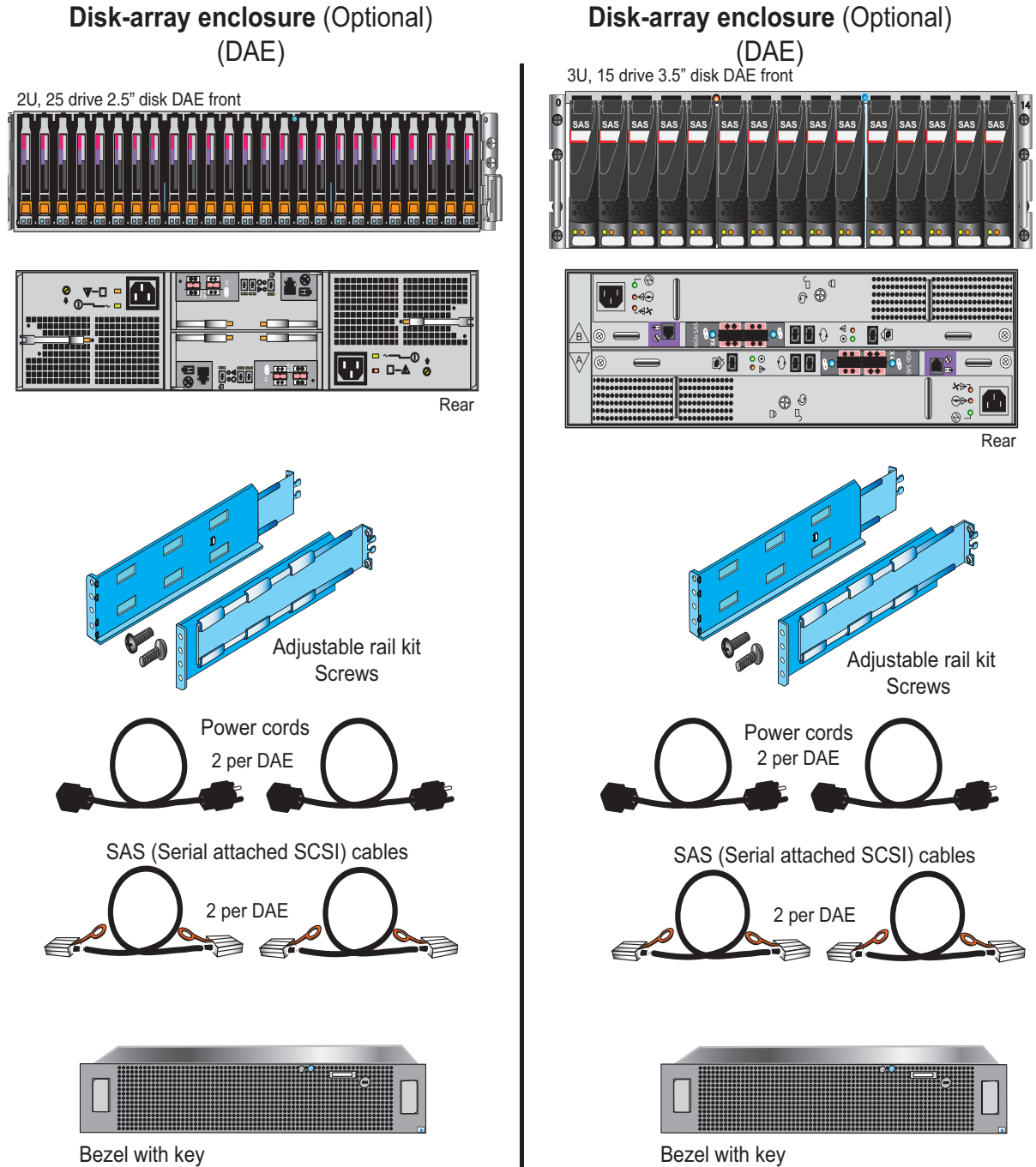


Figure 2 VNXe3300 DAE shipping contents



Detaching the DPE from the shipping material

The DPE is attached with 4 screws, two on each side, to the shipping container. Unscrew the shipping screws to remove the DPE from the container.

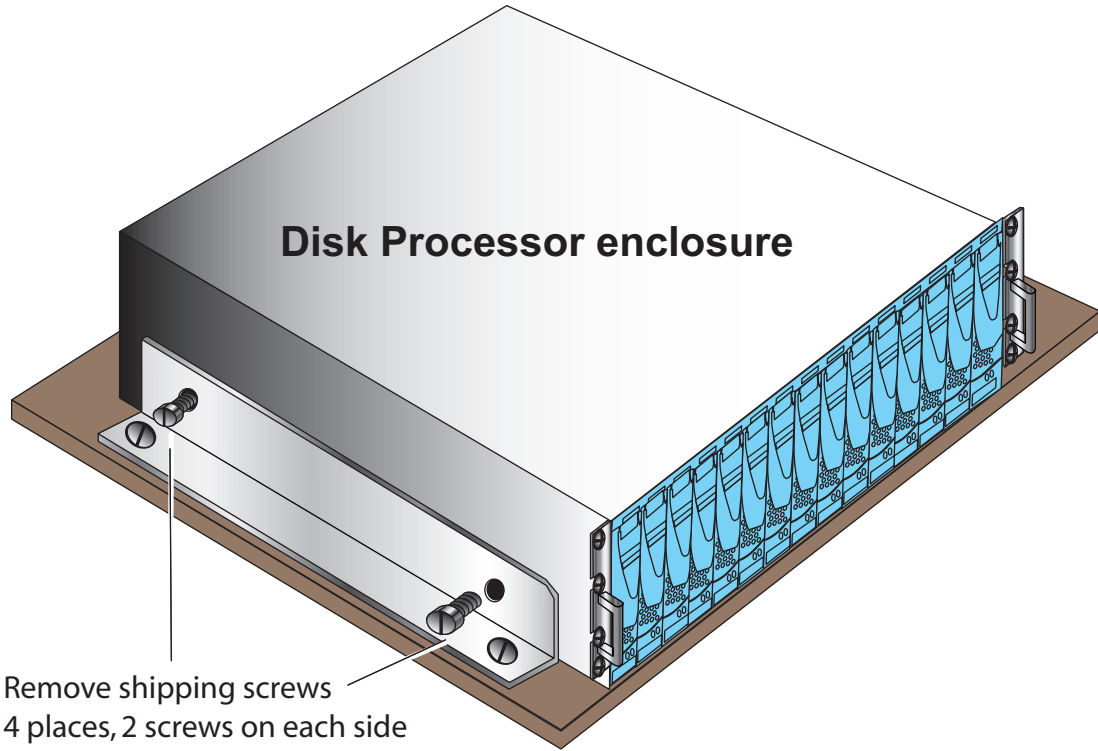


Figure 3 Removing the DPE from the shipping container



Prepare your system

Use the “Before you begin” checklist to help you determine what you need to install for your system.

Before you begin

Completed	Task	Comments
<input type="checkbox"/>	1. Setup a product support account.	If you do not already have a Product Support account, go to Emc.com/vnxesupport to set one up. You will need a support account for access to the latest documentation and troubleshooting information, online chat, installation and maintenance videos, utilities and wizards.
<input type="checkbox"/>	2. Complete the VNXe Series Configuration Worksheet.	The VNXe Series Configuration Worksheet is provided in the documentation package with the system. It is also available for download from the VNXe Product page.

Installation requirements

Requirement	Description
Power	For high availability: At least two 110 or 240 V AC circuits are required. Types of plugs: C13 and C14 Or two -48 or -60 volt DC circuits for DC power installations. For more information about using DC power, refer to <i>DC-powered VNXe3300 Enclosures Installation and Operation Guide</i> on the VNXe Product page at Emc.com/vnxesupport .
Network	<ul style="list-style-type: none">• Two 1-Gigabit Ethernet management connections• Two to four 1-Gigabit Ethernet data connections for CIFS, NFS, and iSCSI connectivity• CAT5e or better cables for each connection to network• DNS and NTP servers accessible from the VNXe system (recommended)• Windows Domain Controller (recommended)• SMTP server network connection to the VNXe3300 and the management host (optional)
Network information	If you are using the VNXe Connection Utility, the management port and login information required include: <ul style="list-style-type: none">• A static IP address for the system• The subnet mask of the LAN to which the system is connected• The default gateway address of the LAN to which the system is connected• System usernames and passwords If you are setting up the system on a network with DHCP servers, DNS servers, and Dynamic DNS services, you need: <ul style="list-style-type: none">• system serial number• domain information



Requirement	Description
Space	Cabinet vertical space of 3U (5.25 inches, 13.33 cm) for the disk processor enclosure (DPE) Cabinet vertical space for each optional DAE, either 2U or 3U each
Tools	Slotted or Phillips screwdriver
Management Console	A Windows-based computer to run the initialization, maintenance, and management tools with: <ul data-bbox="358 428 1174 562" style="list-style-type: none">• At least 100 MB of free space• Connection on same LAN subnet as your VNXe system (recommended)• Web browser* (Internet Explorer, Mozilla Firefox, Google Chrome)• Adobe Flash Player* *Supported versions are listed in the release notes.



Rack & Install

Install the disk processor enclosure (DPE)

Install the DPE rails

Install the DPE rails first, at the bottom of the space reserved for the VNXe system in your cabinet. Any DAEs should be installed above the DPE.

1. Locate the 3U adjustable rail kit for the DPE, and identify the left rail, (marked with an L on the front) and the right rail (marked with an R on the front).
2. Insert the alignment pins at the end of the left rail into the rear channel of your cabinet.
3. Extend the adjustable rail so that it reaches the front channel of the cabinet and check the alignment of the rail to ensure that the front of the rail is level with the back. Once you are satisfied with the alignment, insert two screws from the front of the cabinet into the rail's two middle threaded screw holes.
4. Insert two retention screws through the back of the cabinet to attach the rail.

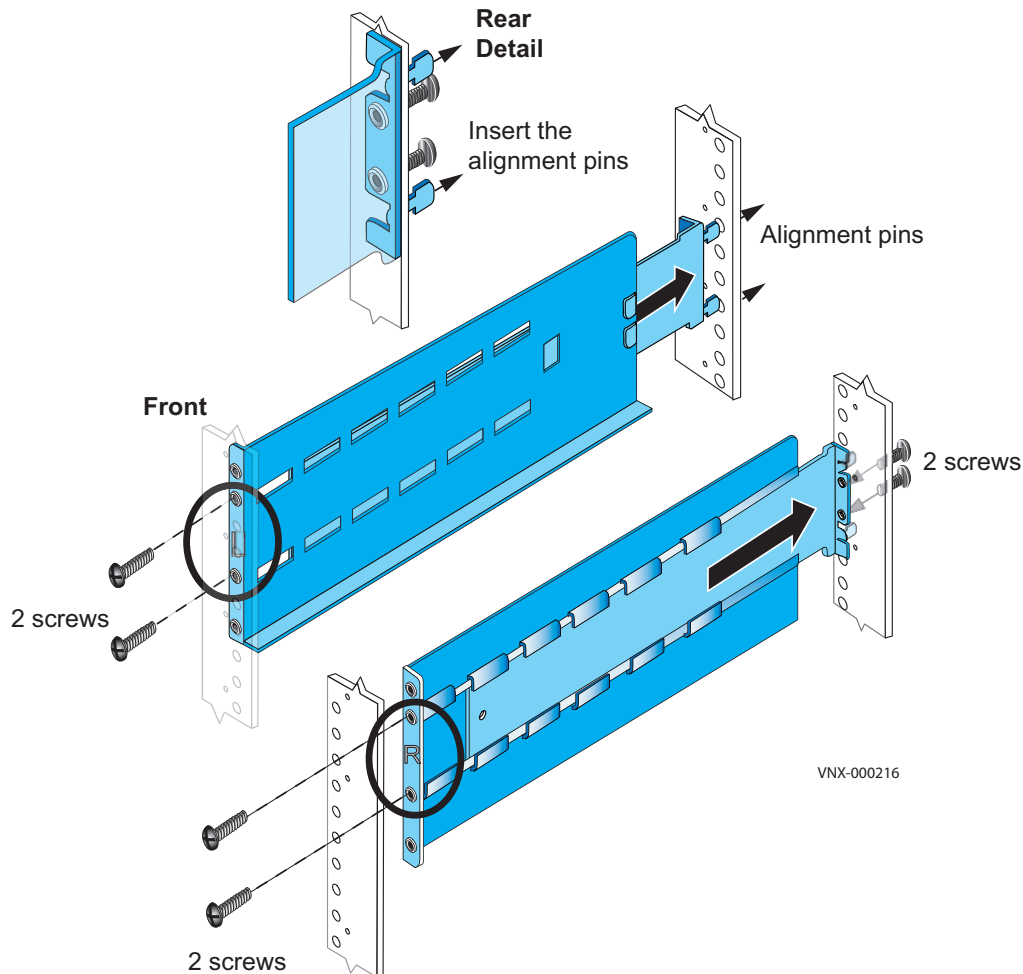
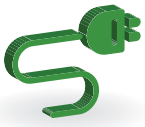


Figure 4 Installing the DPE rails



5. Repeat steps 2-4 to attach the right DPE rail, making sure that the right rail is level with the left rail.
6. Tighten the rail screws at both the front and back of the cabinet.

Install the disk processor enclosure

There are two types of DPE(s). Each is 3U. One utilizes 3.5” disks, while the other utilizes 2.5” disks. The installation procedure is identical, no matter which one you have in your system.

CAUTION

Two people are required to install the components. Do not attempt to lift and install the enclosure into a rack without help from another person.

1. Locate the Product ID/SN from the product serial number tag (PSNT) located at the back of the DPE. Record this number on the VNXe Series Configuration Worksheet to use during post installation steps.

Note: Do not remove the PSNT tag from the enclosure.

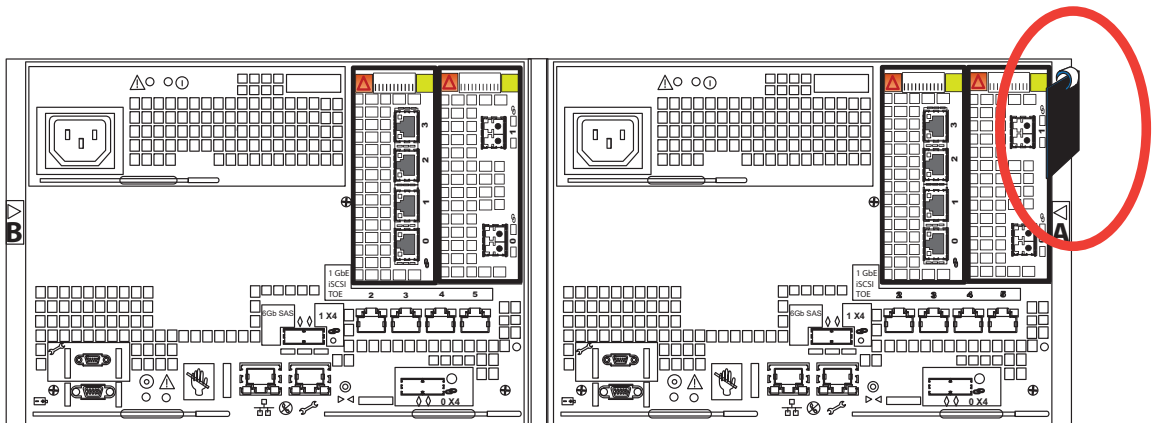


Figure 5 Location of the PSNT tag on the back of the DPE

2. Slide the DPE into the 3U DPE rails in the cabinet until the rear of the enclosure is seated in the tabs on the rails.

IMPORTANT

Be careful when inserting the DPE onto the rails. The PSNT tag is attached to the back corner, and it can become caught in the rail or prevent the enclosure from sliding all the way to the end of the rails.

3. Insert four screws into the DPE bracket screw holes and into the cabinet as shown in [Figure 6 on page 11](#). It may be easier to install the screws working in a diagonal pattern, such as bottom left and top right, bottom right and top left.



4. When the DPE is in place, tighten all of the screws.

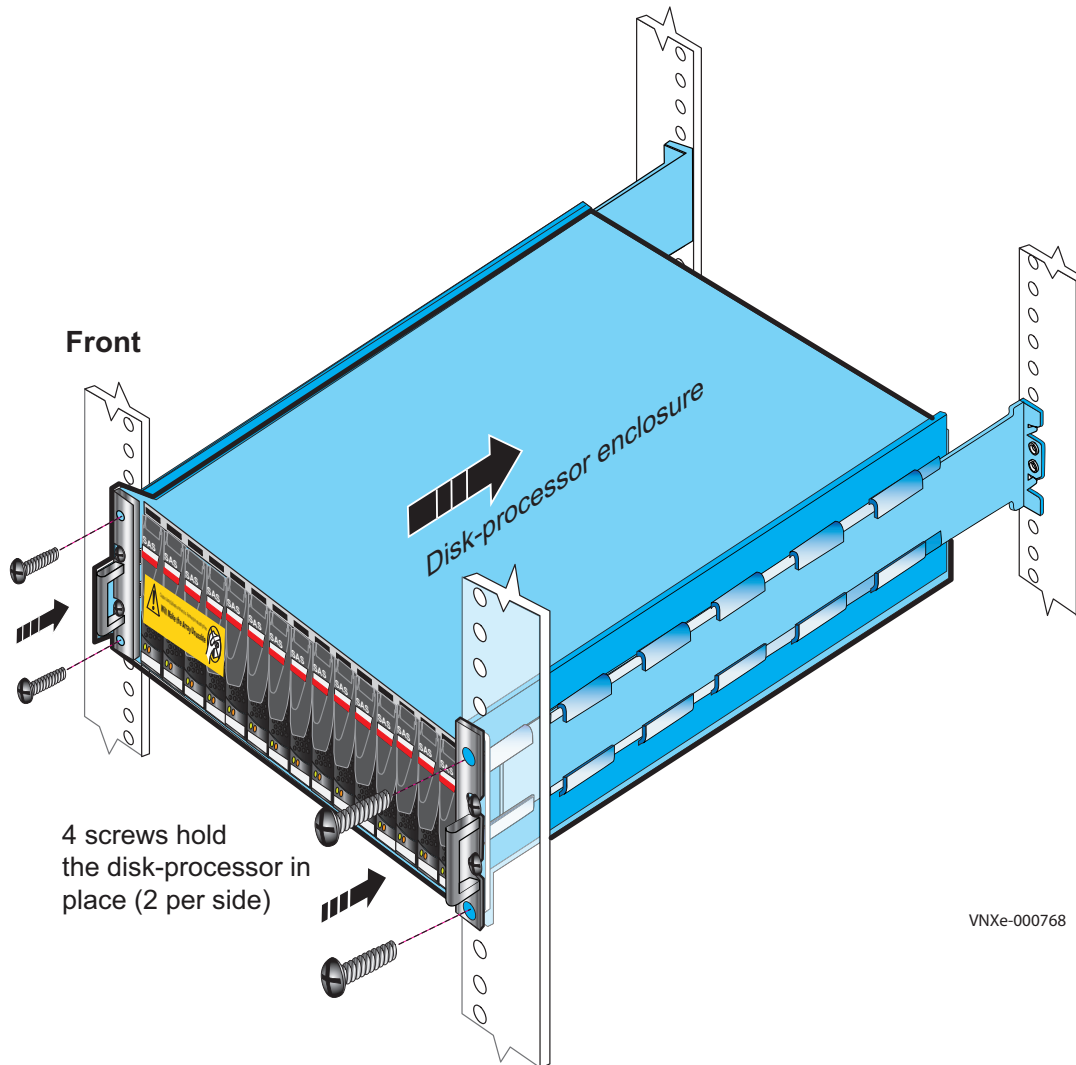
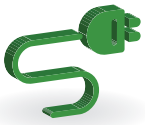


Figure 6 Installing the DPE

Note: Figure 6 shows a DPE with 3.5” disks. The installation of a DPE with 2.5” disks is identical.



Install Disk Array Enclosures (DAEs)

All DAEs are optional. Any DAEs should be installed immediately above the DPE. Both types of DAEs (twelve 3.5" disks and twenty-five 2.5" disks) can be installed in whatever order you wish.

Install the DAE rails

1. Locate the adjustable rail kit for the DAE, and identify the left rail (marked with an L on the front), and the right rail (marked with an R on the front).
2. Insert the alignment pins at the back of the left rail into the rear channel of your cabinet.
3. Extend the adjustable rail so that it reaches the front channel of the cabinet and check the alignment of the rail to ensure that the front of the rail is level with the back. Once you are satisfied with the alignment, insert screws from the front of the cabinet. For the 3U rails shown in [Figure 7](#), insert two screws into the rail's two middle threaded screw holes. For the 2U rails shown in [Figure 8](#), insert one screw into the rail's bottom threaded screw hole.

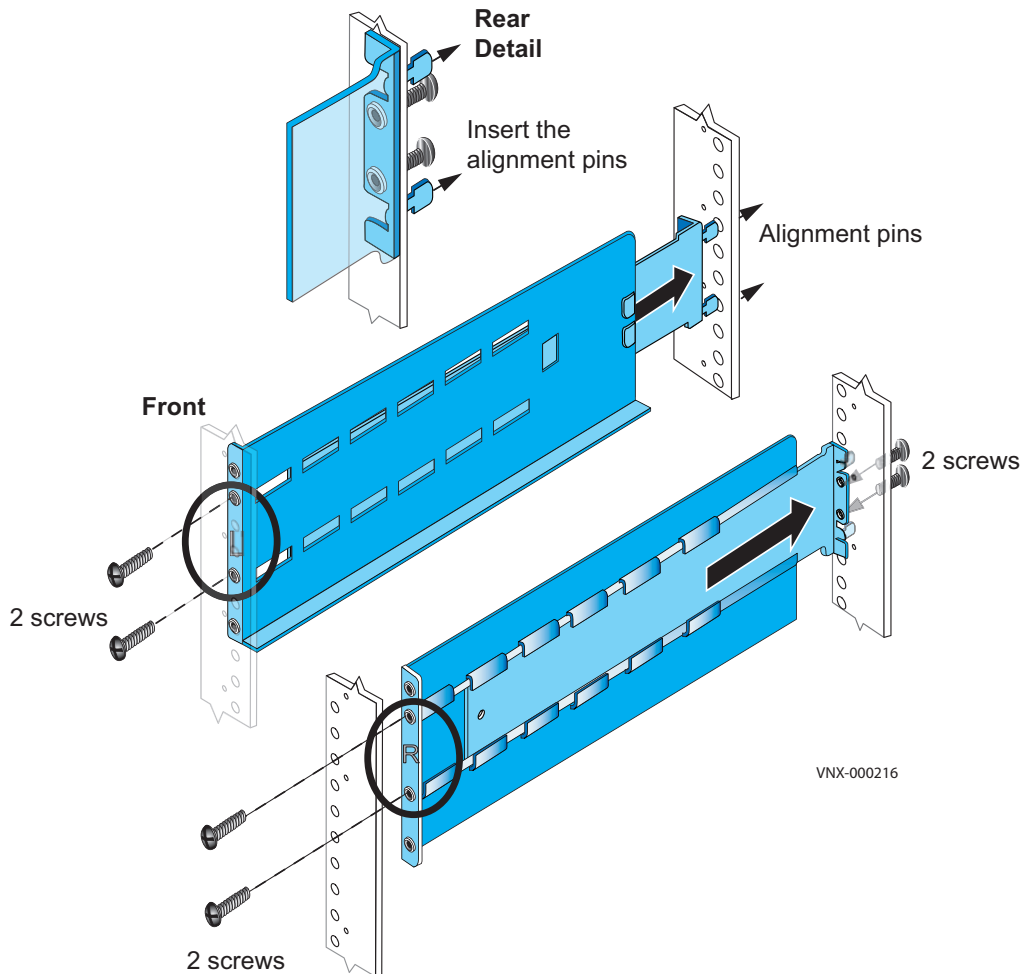


Figure 7 Installing the 3U DAE rails

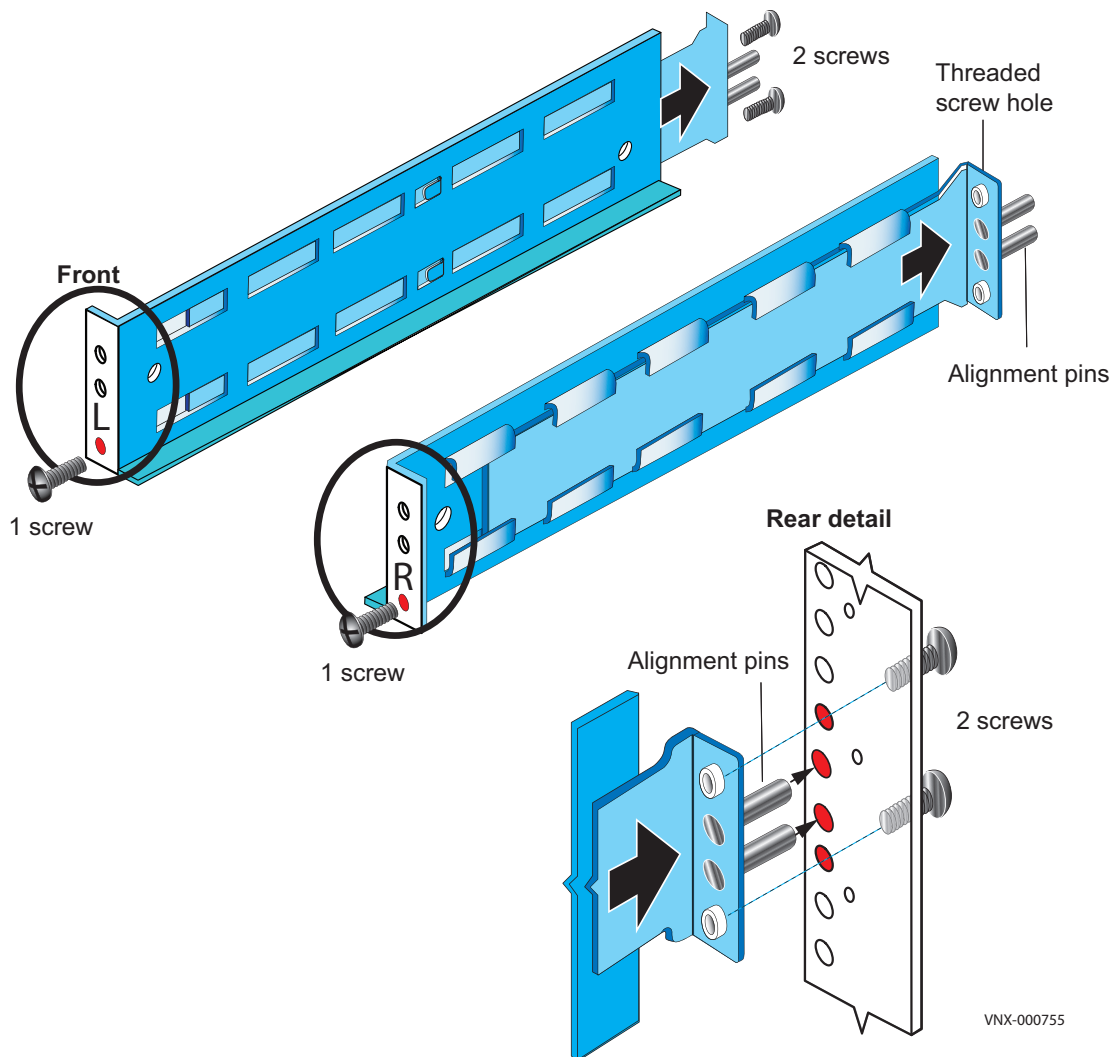
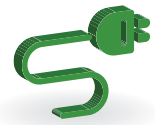
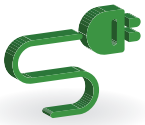


Figure 8 Installing the 2U DAE rails

4. Insert two retention screws from the back of the cabinet to attach the rail.
5. Repeat steps 2-4 to attach the right DAE rail, making sure that the right rail is level with the left rail
6. Tighten the rail screws at both the front and back of the cabinet.

Install the disk array enclosures

1. Slide the disk array enclosure (DAE) into the DAE rails in the cabinet as shown in [Figure 9 on page 14 \(3U\)](#) or [Figure 10 on page 15 \(2U\)](#).
2. Insert the four screws through the DAE front bracket screw holes and into the cabinet. It may be easier to install the screws working in a diagonal pattern, such as bottom left and top right, bottom right and top left.



3. When the DAE is in place, tighten all of the screws.

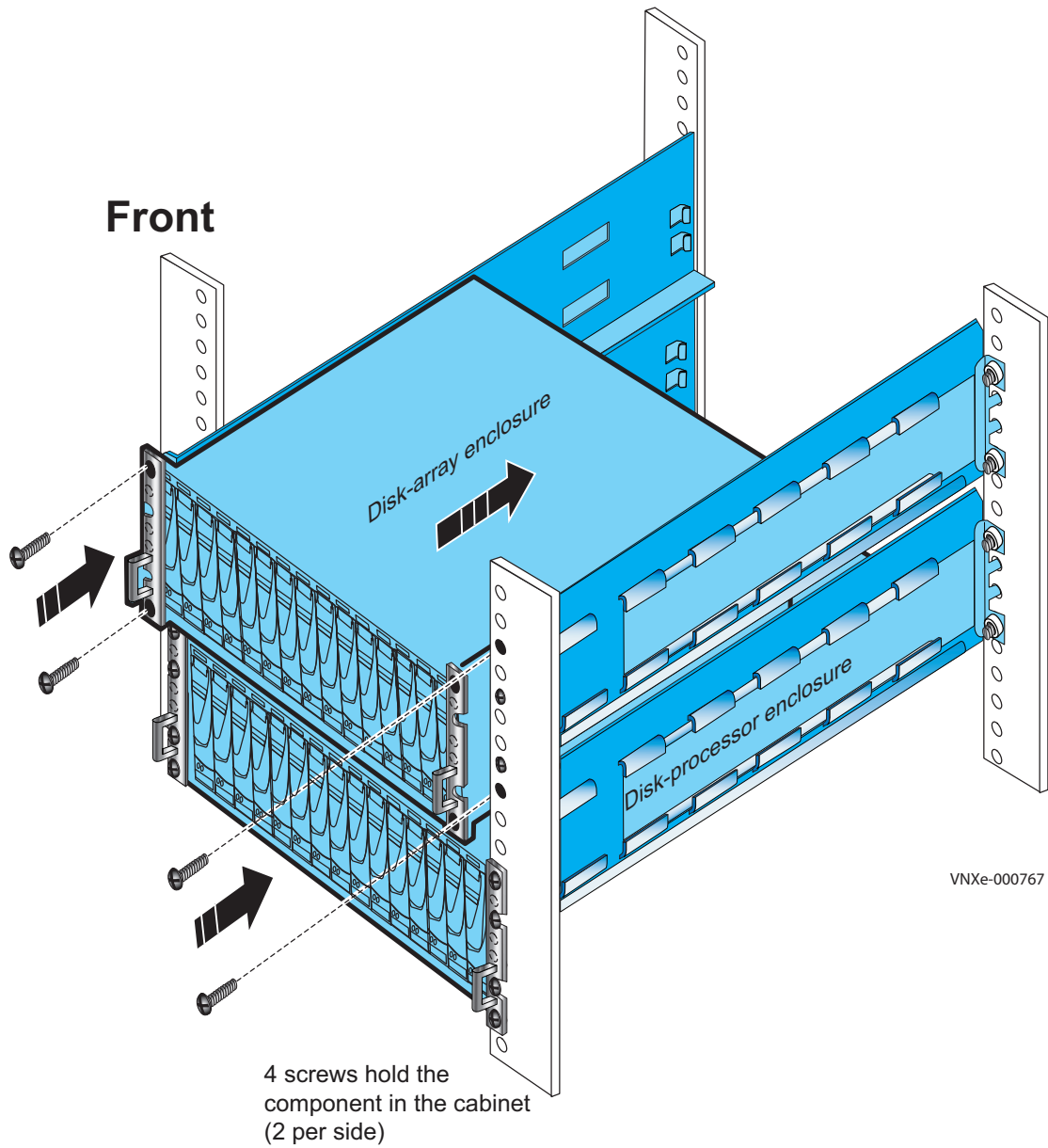


Figure 9 Installing a 3U DAE

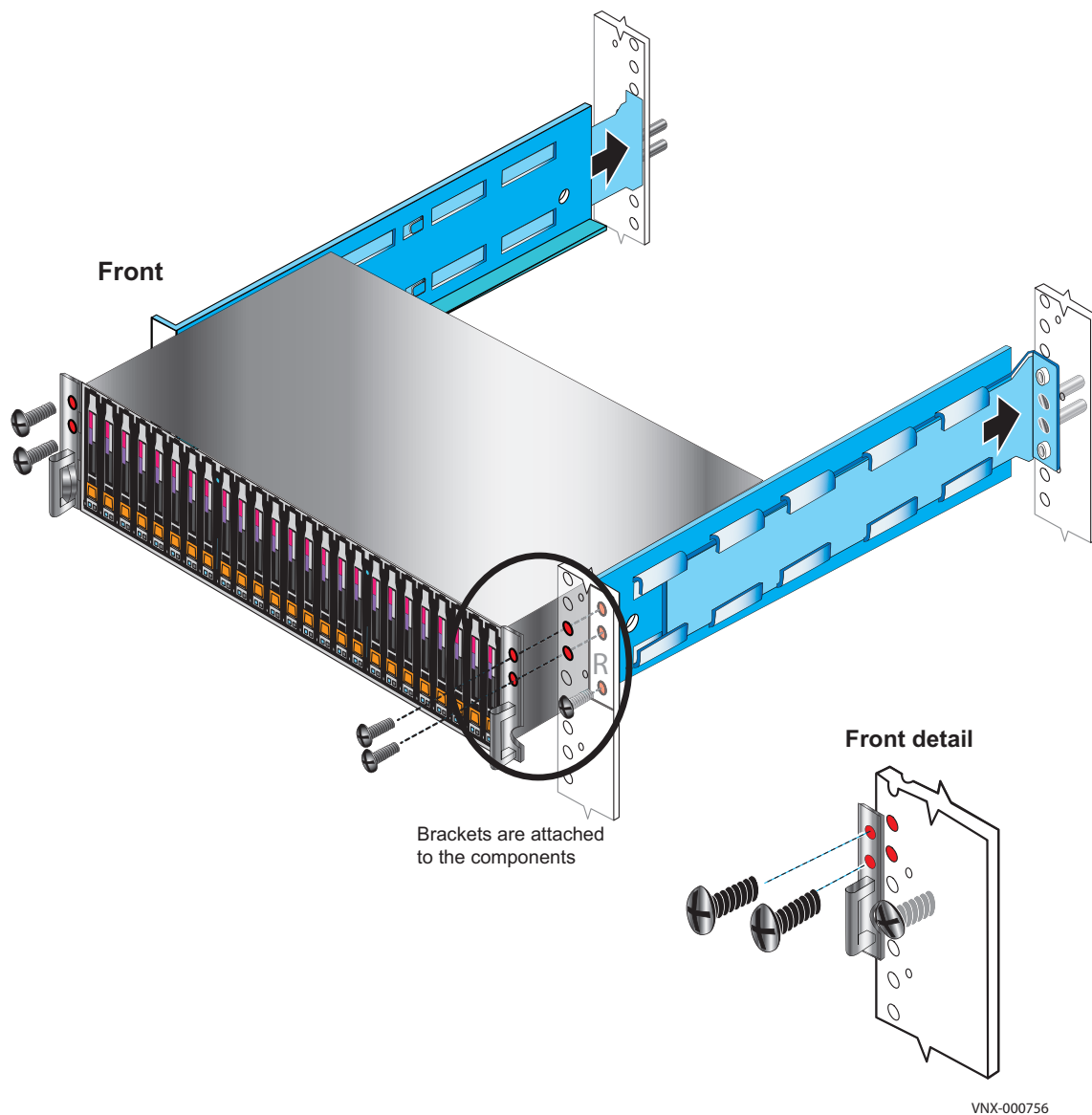
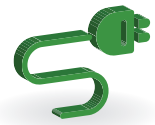
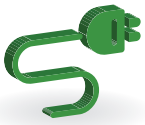


Figure 10 Installing a 2U DAE

4. Repeat as necessary for additional DAEs.

Cable the DPE to DAE

Cabling between the DPE and DAEs uses Serial Attached SCSI (SAS) cables. The connectors on SAS cables have icons indicating the port for each end. The cables connect from ports marked by diamonds ◆◆ to ports marked by circles ●●. Make sure the cables are installed properly and



connected securely. Cable labels are included in a cable label kit should you wish to attach the labels to the cables as you install them. Labeling the cables may assist in troubleshooting if a problem arises in the future.

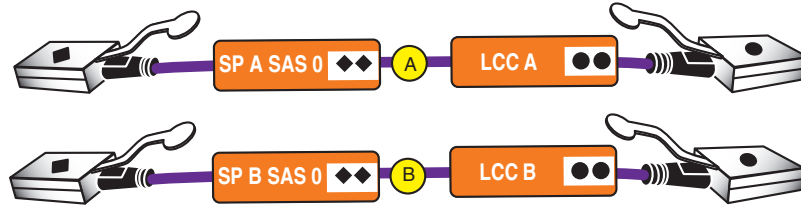


Figure 11 SAS cables

1. Locate the SAS cables.
2. Connect SP A SAS Port 0 to DAE 1 Link Controller Card (LCC) A. **A**
3. Connect SP B SAS Port 0 to DAE 1 LCC B. **B** For connection to a 3U DAE, see [Figure 12](#). For connection to a 2U DAE, see [Figure 13 on page 17](#).

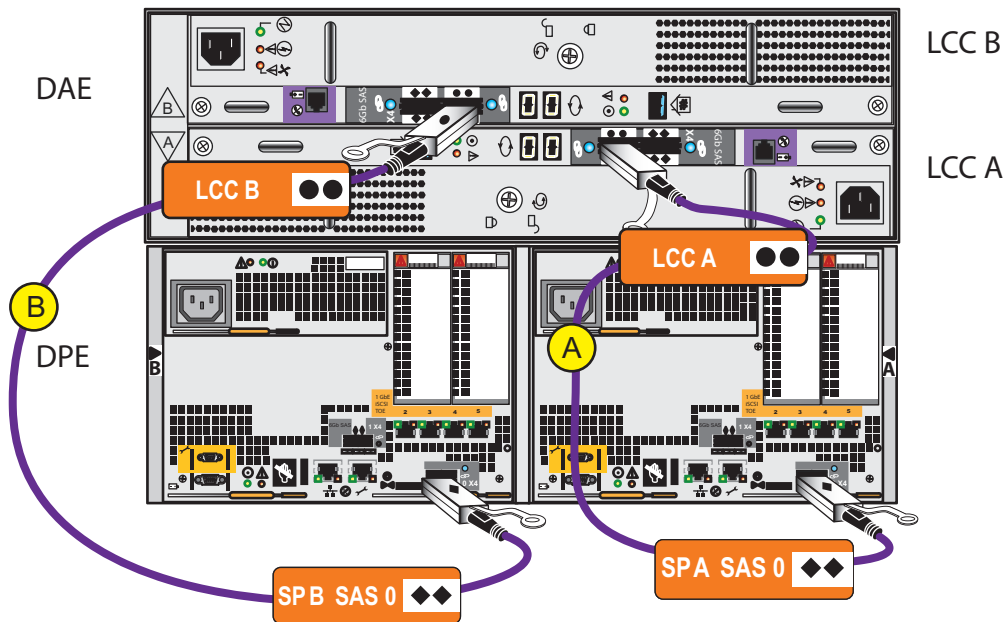
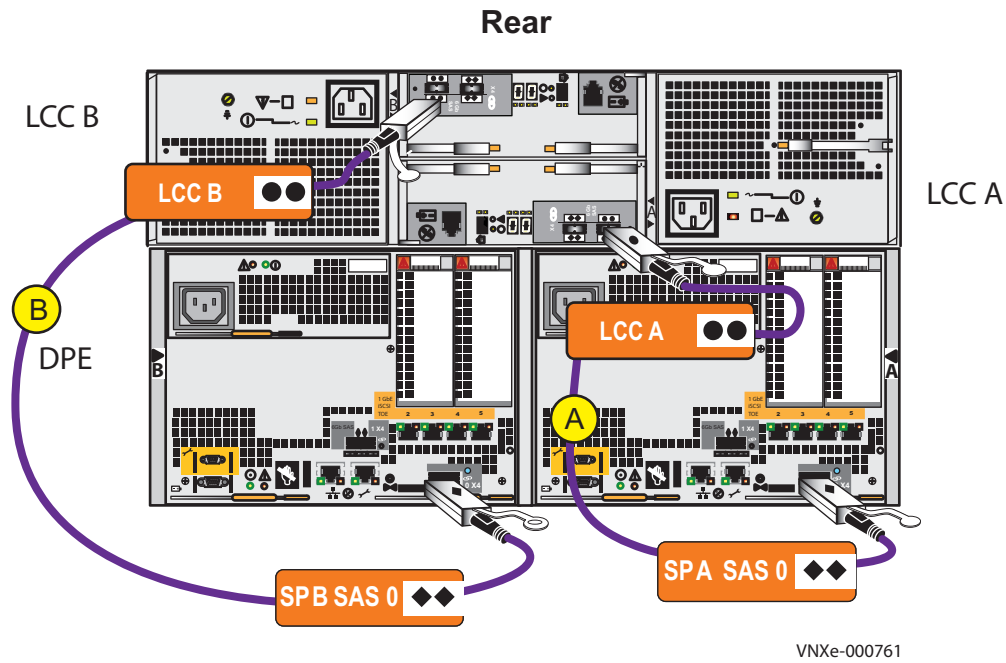
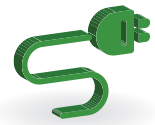


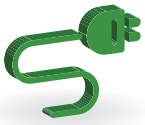
Figure 12 SAS cabling between the DPE and the first DAE (3U)




VNXe-000761

Figure 13 SAS cabling between the DPE and the first DAE (2U)

All DAEs in the system are connected to the same bus. As a result, to connect additional DAEs, connect cables from the LCC SAS port on a DAE (marked with ♦♦ diamonds) to the LCC SAS ports on the next DAE (marked with ●● circles). Continue this pattern up to the maximum number of DAEs and disks.



Attach storage processors to the network

1. Locate four CAT5e or better Ethernet cables.
2. Connect two Ethernet cables from the RJ45 ports labeled  management to the LAN from which you will configure the VNXe3300 system.
3. Connect two Ethernet cables from Ethernet port 2 to the LAN from which you will access your data on the VNXe system.

Note: The SP A and SP B network data ports must be connected on the same subnet. In general, both SPs should have mirrored configurations in order to provide Failover.

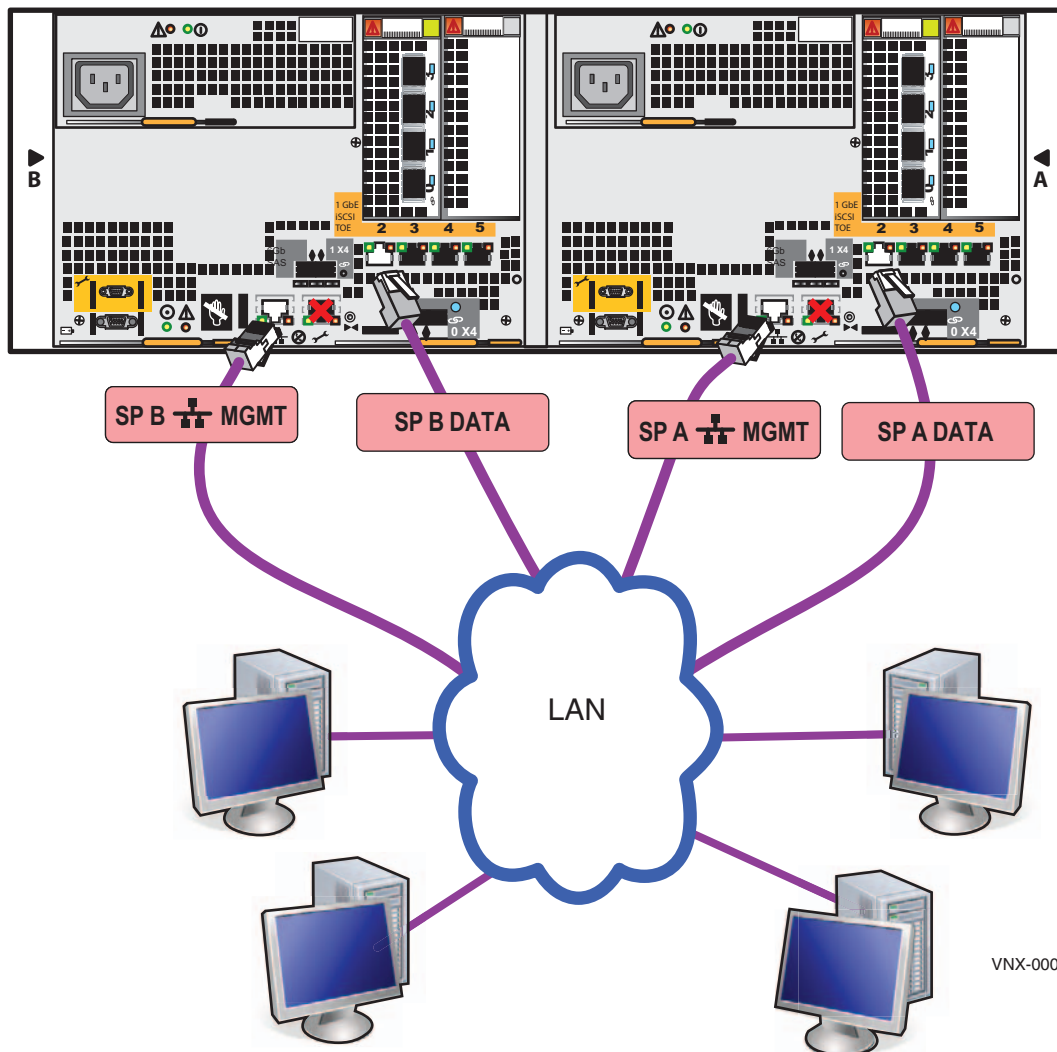


Figure 14 Cabling the storage processors to the network

Note: Additional information about the ports and cabling is available in the *VNXe3300 Hardware Information Guide*.



Power up

Note: AC powered installation is shown here. For DC power, refer to the *DC-powered VNXe3300 Enclosures Installation and Operation Guide*.

1. Verify that the cabinet circuit breakers are in the On position and power is connected to the cabinet.
2. For each power cable, plug the cable into the system component, secure it with the clip as shown in [Figure 15](#), and then plug the other end of the cable into the PDU.
 - a. Connect the power supply for SP A to Power Distribution Unit (PDU) A as shown in [Figure 16](#) on page 20. **A**

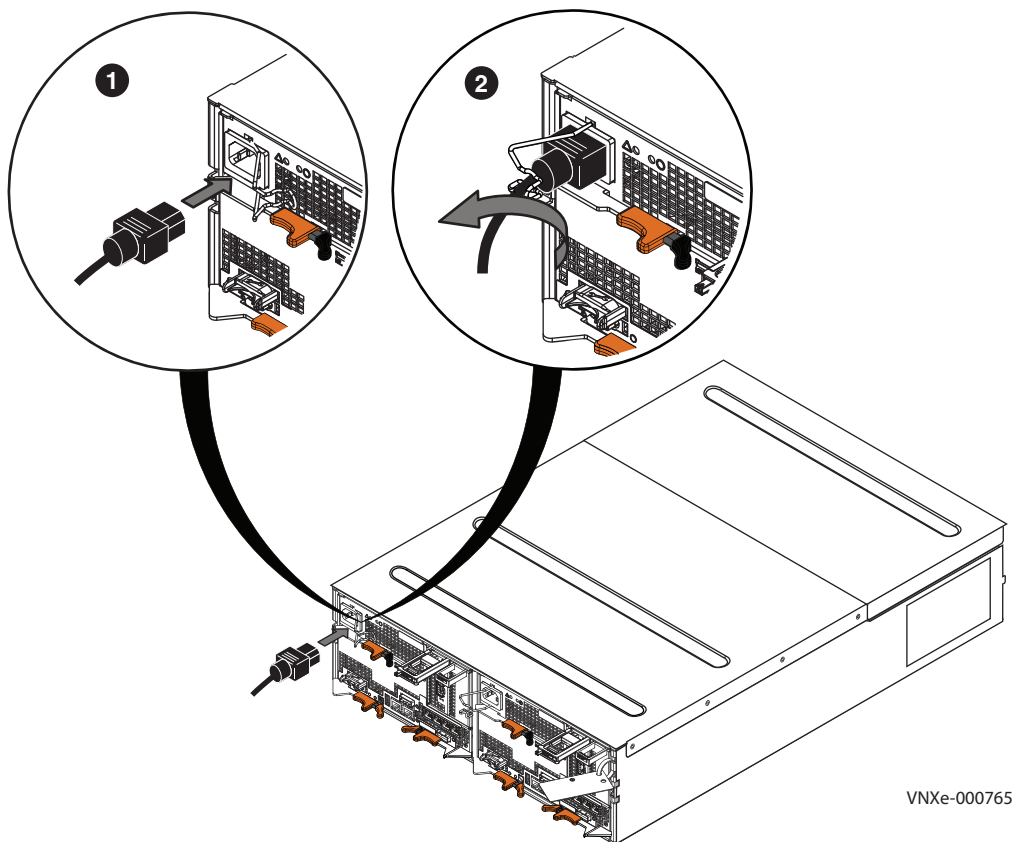
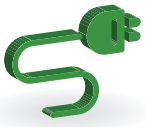


Figure 15 Power cable clips

- b. Connect the power supply for SP B to PDU B. **B**
 - c. Connect the power cable for LCC A to PDU A. **C**
 - d. Connect the power cable for LCC B to PDU B. **D**
3. Repeat steps C and D as appropriate for all other DAEs.



Note: DAE power cables are normally longer than the power cables for the DPE.

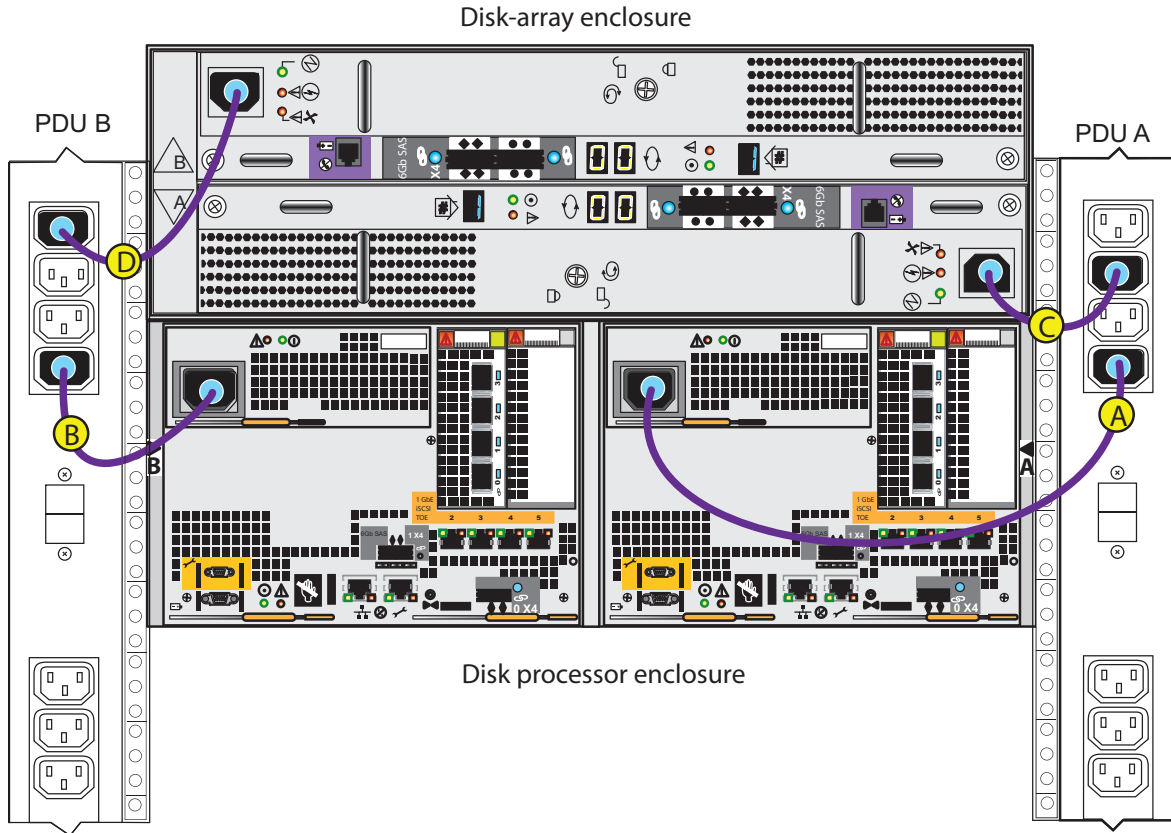


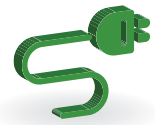
Figure 16 Power up sequence

The enclosures start powering up immediately once they are connected to AC power.

4. Dress the cables as necessary.

It takes approximately 10-15 minutes for the system to power up. Monitor the system as it powers up. The LEDs will show the progression of the power. Green, blue, and amber activity lights blink during the power-on period. The SP Power LEDs will then become steady ON.

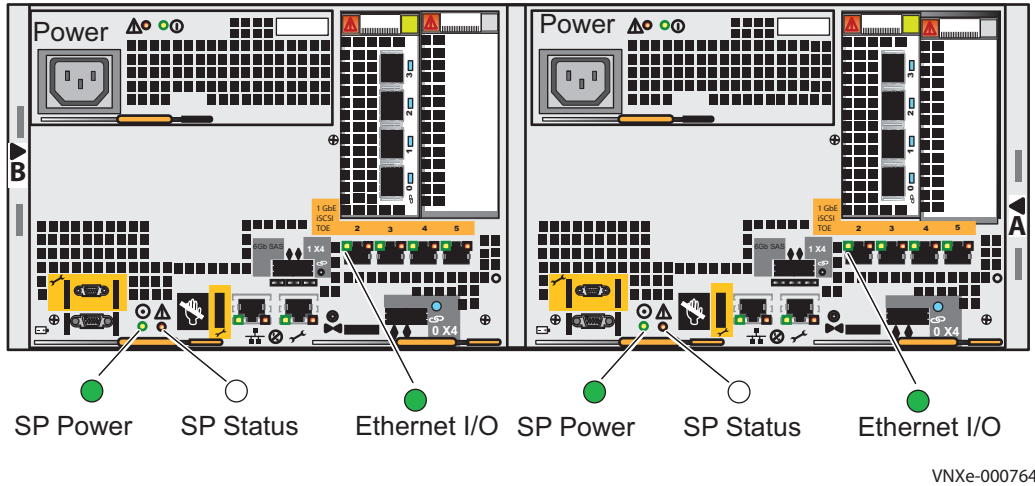
Note: For information about powering down the system, see “Shut down the system” in the Unisphere online help system.



Verify status LEDs

The illustrations and table below call out only the LEDs that you need to verify to ensure that the system powered up correctly.

DPE Rear View



VNXe-000764

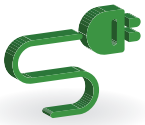
Figure 17 DPE Rear LEDs

Physical indications that the storage system is up and running without error are listed in [Table 1](#) and are shown in [Figure 17](#) and [Figure 18](#).

Table 1 LEDs to verify

Light Emitting Diodes	Location	Status	Color
SP A/B Power	DPE Rear	<ul style="list-style-type: none"> On 	<ul style="list-style-type: none"> Green
SP Fault/Status	DPE Rear	<ul style="list-style-type: none"> On 	<ul style="list-style-type: none"> Blue or flashing¹
Ethernet I/O	DPE Rear	<ul style="list-style-type: none"> On 	<ul style="list-style-type: none"> Green
DPE Power	DPE Front	<ul style="list-style-type: none"> On 	<ul style="list-style-type: none"> Blue
Vault drives (disks 0-3)	DPE Front	<ul style="list-style-type: none"> On 	<ul style="list-style-type: none"> Green

1. The SP Fault/Status LED will be solid blue after power on if a management IP address has been assigned. It will be blue with a flashing amber every three seconds after power on when the system has no management IP address assigned.



The *VNXe3300 Hardware Information Guide* provides more details on all system LEDs.

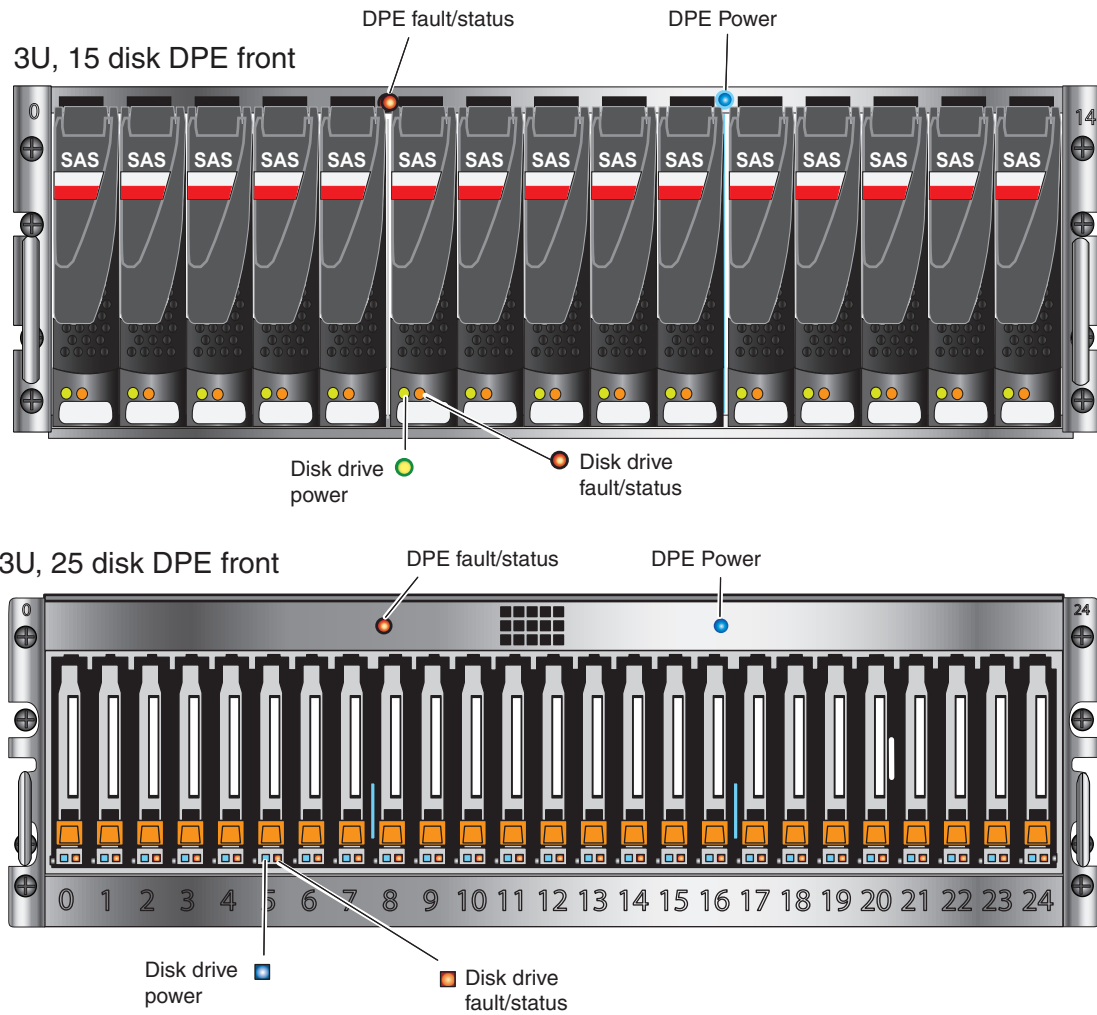
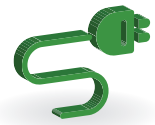


Figure 18 DPE Front LEDs

IMPORTANT

Ensure the power-up is complete and that the system is ready before you continue.



Attach the bezels

1. Locate the bezels for each installed component.
2. Attach the bezel that corresponds to each component. Each bezel can be locked in place by turning the key one quarter-turn clockwise.

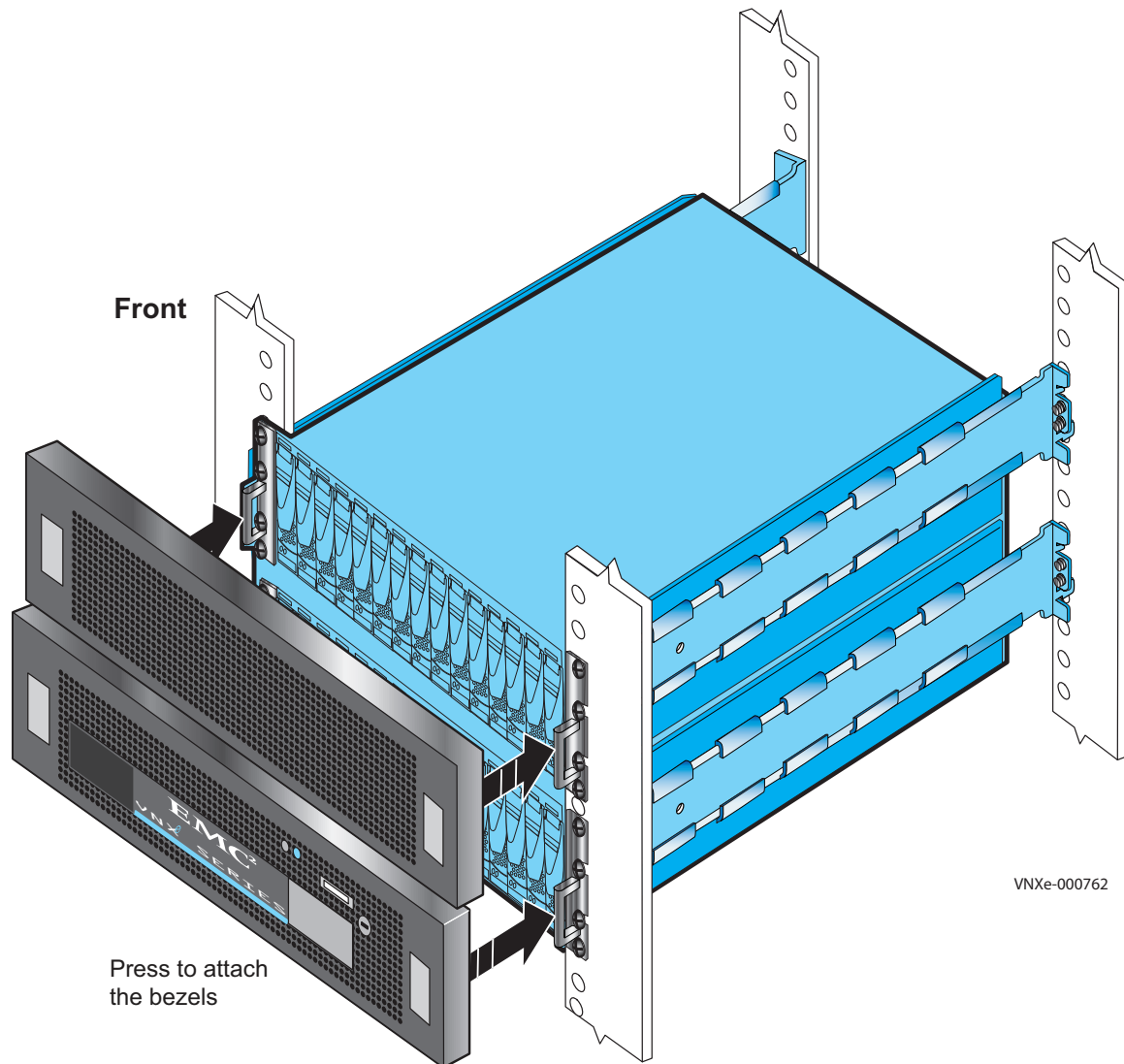


Figure 19 Attaching the bezels

Note: 2U bezels attach in the same way as the 3U bezels shown in [Figure 19](#).



Connect

After you finish installing, cabling, and powering up the system, the system must acquire an IP address for its management interface before you can register, license, or configure it. You can assign an IP address to a VNXe system in the following ways:

- ◆ If you are running VNXe on a dynamic network that includes DHCP servers, DNS servers, and Dynamic DNS services, the management IP address can be assigned automatically as explained in [“Automatically Assigning a Dynamic VNXe Management Port IP Address”](#).
- ◆ If you are not running the VNXe in a network that supports DHCP or you would rather manually assign a static IP address, you must install and run the VNXe Connection Utility as explained in [“Manually Assigning a Static VNXe Management Port IP Address”](#).

Automatically Assigning a Dynamic VNXe Management Port IP Address

Assigning an IP address to a VNXe system management port dynamically requires the following:

- ◆ Network DNS server (with dynamic DNS services enabled)
- ◆ Network DHCP server
- ◆ Connectivity between the VNXe system, the DHCP server, and the DNS server

The DHCP server must be configured to automatically register DHCP clients with Dynamic DNS services. By default, the VNXe system management port is configured to use DHCP for IP assignment and will accept an IP address offered by a network DHCP server.

Perform the following steps to automatically assign an IP address to your VNXe system management port:

1. After you power up the VNXe system check the status of the SP fault/status LEDs. If the SP fault/status LEDs are solid blue, a management IP address has been assigned. If the fault/status LEDs are blue and flash amber every three seconds, no management IP address has been assigned. If the SP Fault/Status LEDs are blue and flashing, check the connectivity between the system, the DNS server, and the DHCP server. You can also manually assign an IP address to the management port as described in [“Manually Assigning a Static VNXe Management Port IP Address”](#) on page 25.
2. Open a web browser and access the VNXe management interface specifying the following as a URL in the browser's address bar:

serial_number.domain



Where:

URL string	Description
<i>serial_number</i>	Serial number of your VNXe. You can find this in the packing materials that came with your VNXe (for example, FM100000000017). It is also on the PSNT tag on the back of the DPE.
domain	Network domain on which the VNXe system is located (for example, mylab.emc.com)

Based on the examples provided in the table, the URL to the VNXe system would be: FM100000000017.mylab.emc.com.

Note: If a certificate error appears, follow the instructions in your browser to bypass the error.

3. Continue with the steps outlined in the VNXe Quick Start poster. The VNXe Quick Start poster provides an overview of the steps remaining to configure, register, license, and update the software on your system.

Manually Assigning a Static VNXe Management Port IP Address

If you want to manually assign a static IP address for the VNXe system management port, you must install and run the VNXe Connection Utility. The VNXe Connection Utility assigns a network address to the VNXe system.

1. Download and run the VNXe Connection Utility software.
 - a. Download the VNXe Connection Utility installation program from EMC.com/vnxesupport (under **Downloads**).
 - b. Install the VNXe Connection Utility software on a Windows computer. To use the Auto Discover method discussed below, install on a computer in the same subnet as the VNXe management port.
 - c. Launch the VNXe Connection Utility (under Windows, **Start > Programs > EMC > ConnectionUtility**).

Note: If the Windows system where you install the Connection utility is not on the same subnet as the VNXe system, you must use the Manual Configuration method in Step 2.

2. Use the Connection Utility to assign a Management IP address to your VNXe system.

After running the VNXe Connection Utility, select one of the following options:

- ◆ Select **Auto Discover** (recommended) and click **Next** to assign a Management IP address to a VNXe system on the local subnet.
 - a. View VNXe systems on the subnet, select the Product ID/SN of an active VNXe system, and click **Next**. If you do not see your VNXe system, click **Discover** to scan the subnet again.



- b. Specify a name, an IP address, subnet mask, and default gateway for the VNXe system, and click **Next**.
 - c. The Configuration Summary screen appears. When all entries are complete, click **Finish**. The Configuring the VNXe Device screen appears while the settings are implemented. The setup can take up to 10 minutes.
 - d. Click the **Start Unisphere** button to log in to Unisphere on the selected system.
 - ◆ Or Select **Manual Configuration** and click **Next** to assign a Management IP address to a VNXe system on another subnet.
 - a. Specify a name, an IP address, subnet mask, and default gateway for the VNXe system and then click **Save file to flash drive**.
 - b. Connect the flash drive to the USB port on either storage processor of the VNXe system to assign the IP address to the system.
 - c. Open a web browser to the IP address assigned to the VNXe system.
3. Continue with the steps in the VNXe Quick Start poster. The VNXe Quick Start poster provides an overview of the steps remaining to configure, register, license, and update the software on your system.

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