Replace an internal M.2 boot module

Take the following actions to remove the faulted internal M.2 boot module and install the replacement internal M.2 boot module into the system.

The internal M.2 boot module are located within the node. You can access the internal M.2 boot module by removing the node from the chassis and opening the top cover.

Before you begin

CAUTION: Before starting this procedure, use the PowerStore Manager Hardware view and Alerts view to verify that the appliance and peer node are healthy with no outstanding alerts. If multiple nodes need to be removed while performing this procedure, repeat this verification for each affected node before proceeding to remove the next node. If necessary, contact your service provider before starting the replacement procedure.

Identify a faulted internal M.2 boot module from PowerStore Manager

Before you replace an internal M.2 boot module, ensure that you have identified its location within the system. Using PowerStore Manager, you can identify and locate a faulted part.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that includes the internal M.2 boot module that you need to replace.
3. On the **Components** card, under **Internal View**, expand the node that includes the internal M.2 boot module, and then select the relevant **InternalM.2BootModule**.

   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.

Power down the node

Power down the node as described in Power control procedures.

Remove the node

This procedure describes how to remove a node from the chassis. There are two nodes. The top node is considered to be upside-down and mirrors the bottom node. The procedure for removing the top node and the bottom node is the same.

Prerequisites

If the I/O modules and network cables are not already labeled, label them clearly for reconnecting later.

About this task

WARNING: Do not remove the node within five minutes of system power down to ensure that the system has had time to complete caching.

CAUTION: Do not remove a node while the "Unsafe to remove" LED is lit. If the LED is lit, the peer node has been powered down or is offline and this node should not be removed.

CAUTION: Because nodes include cooling fans, they should be removed for as short a time as possible. Do not remove nodes from a live system unless replacement parts are available.

Steps

1. Rotate the power cable retention bail to the left (right for top power supply). Disconnect the power cable from the power supply.

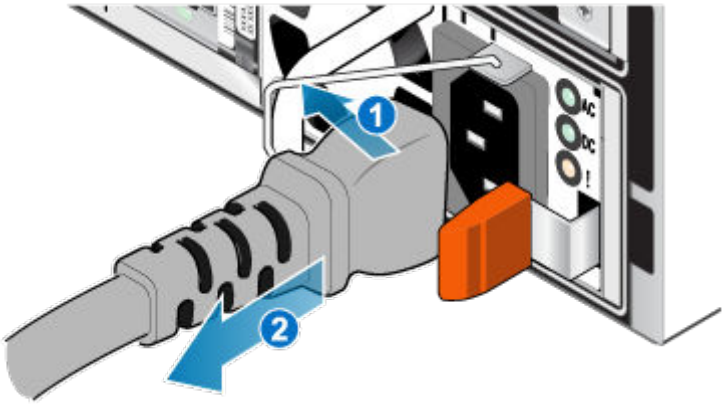

Figure 115. Removing the power cable

2. Disconnect the network and all other cables from the back of the I/O modules and network ports on the node.

   NOTE: Label the cables before you remove them.

   NOTE: Do not remove any cables from the other node.

3. Remove the node ID plugs from the node handles.
4. Pull the orange release trigger while gently pushing in on the node.

   The hook disengages from the locking mechanism, and the release tab slides out.

   NOTE: The node comes completely out of the chassis. Be prepared to support the node to avoid dropping it.

   NOTE: The release trigger and handle for node B is on the top left. The release trigger and handle for node A is on the bottom right.

   CAUTION: Removing the incorrect node will lead to loss of system power and cached data will be lost.

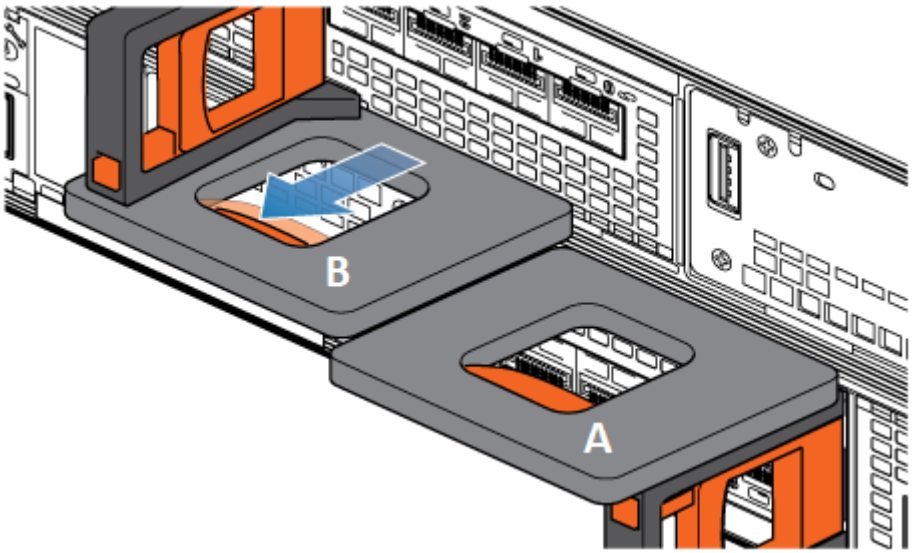

Figure 116. Disengaging the locking mechanism for node B

5. Before removing the node, ensure that the wire bail is properly secured to the power supply cable of the other node to prevent accidental loss of power and cache.

6. Use the release handle to pull the node outward enough to grasp the sides with both hands. Then, with both hands supporting the node, pull the node fully out of the enclosure.

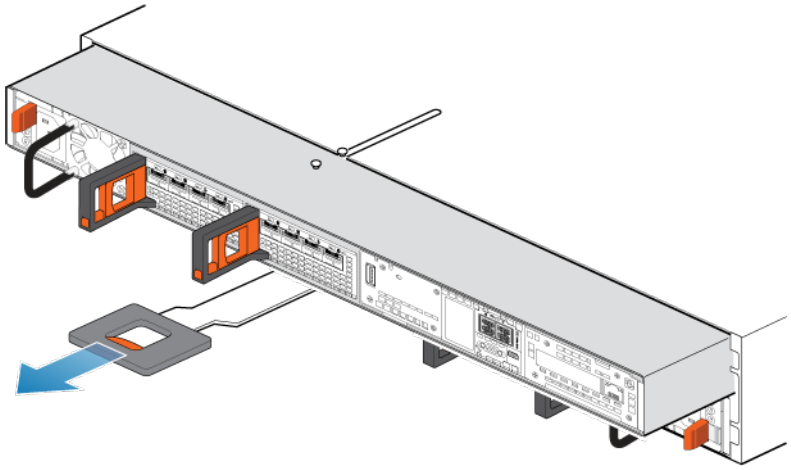

Figure 117. Removing the node

7. Place the node on a clean, flat, static-free work surface.

Remove the top cover from the node

Steps

1. While pushing down the two blue release buttons, slide the top cover towards the rear of the system, until it stops.

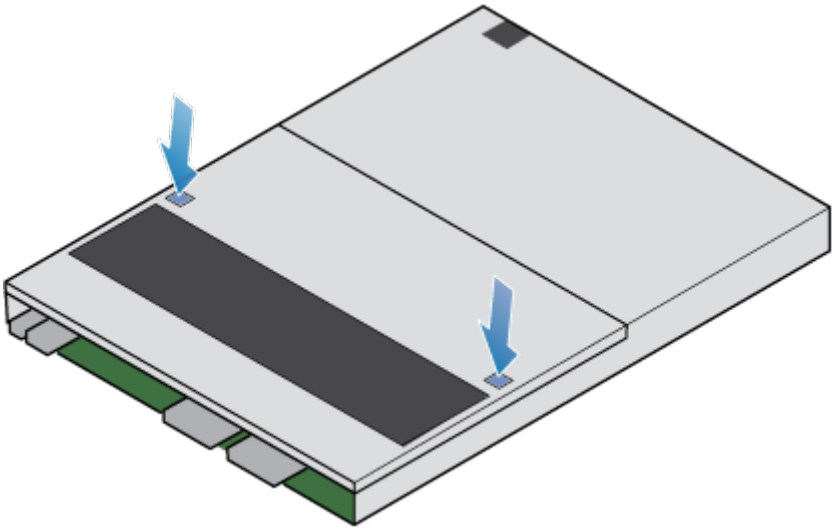

Figure 118. Releasing the top cover

2. Lift the top cover upward, and remove it from the node.

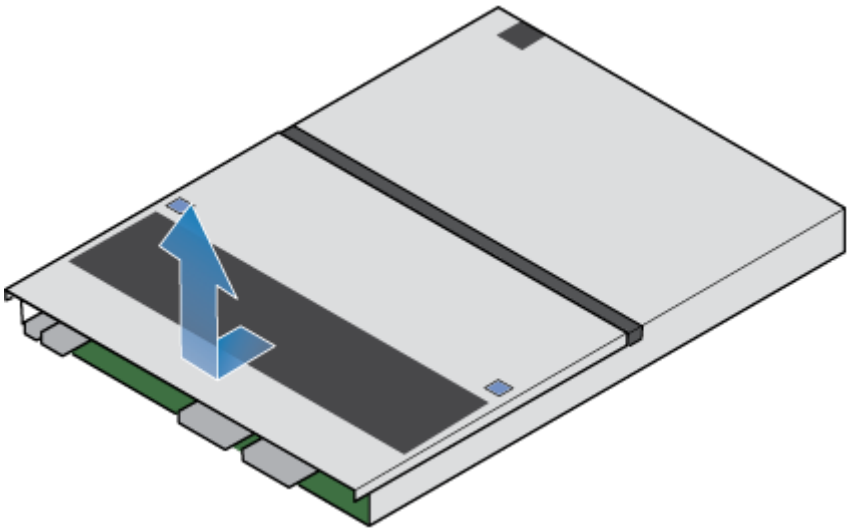

Figure 119. Removing the top cover

Remove the faulted internal M.2 boot module

Steps

1. Locate the M.2 boot module adaptor in the node.
   You can identify the M.2 boot module adaptor by the blue retaining tabs.
2. Press the blue retaining tabs downward to free the M.2 boot module adaptor from its slot.
3. Touching only the outside edges of the M.2 boot module adaptor, remove the M.2 boot module adaptor.

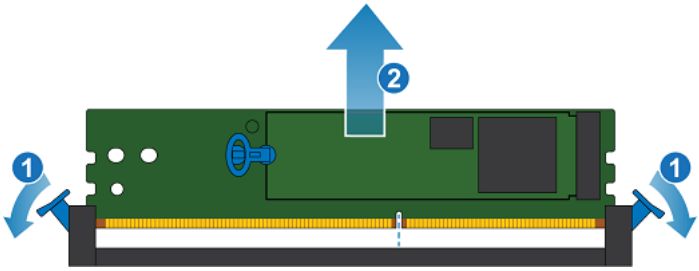

Figure 120. Removing the M.2 boot module adaptor

4. Identify the faulted internal M.2 boot module. One internal M.2 boot module is labeled DRIVE 0 and the other is labeled DRIVE 1. In PowerStore Manager, DRIVE 0 is identified as InternalM.2BootModule0 and DRIVE 1 is identified as InternalM.2BootModule1.
5. On the faulted internal M.2 boot module, gently pull the handle on the release tab to separate it from the tab holding it in place.
6. Gently pull straight up on the pull tab to free it from the M.2 boot module adaptor.
7. Remove the internal M.2 boot module from the M.2 boot module adaptor.

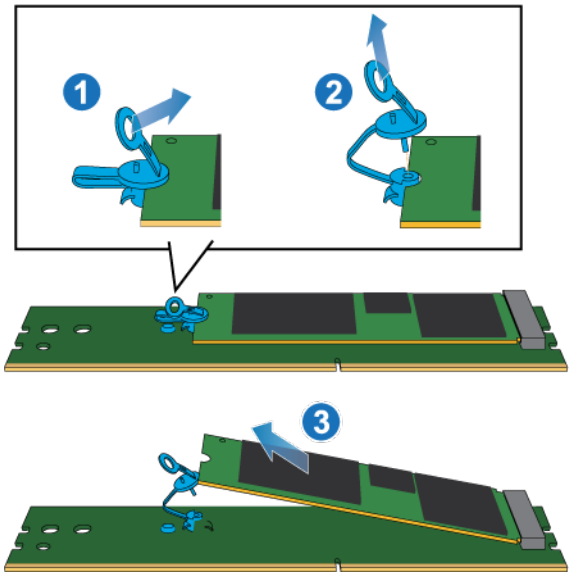

Figure 121. Removing the internal M.2 boot module from the M.2 boot module adaptor

Install the internal M.2 boot module

Steps

1. Place the internal M.2 boot module into the M.2 boot module adaptor.

   NOTE: The side of the internal M.2 boot module with the barcodes should be facing up.

2. Align the blue tab on the replacement internal M.2 boot module with the slot on the M.2 boot module adaptor and gently push it into place.
3. Connect the pull tab to the blue adapter.

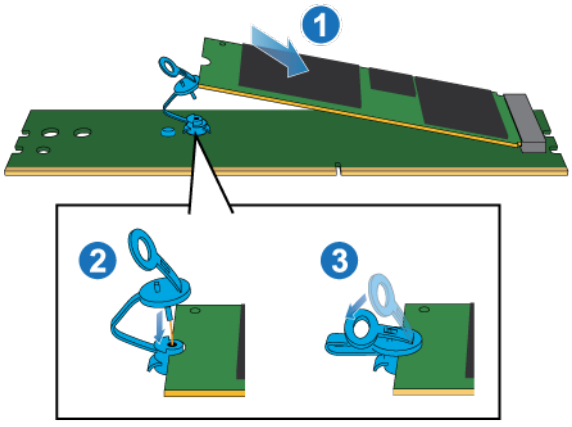

Figure 122. Installing the internal M.2 boot module into the M.2 boot module adaptor

4. Touching only the outside edges of the M.2 boot module adaptor, align the M.2 boot module adaptor with the connector.
5. Firmly push the M.2 boot module adaptor straight down into the connector.

   When the M.2 boot module adaptor is fully seated, you will hear a snap, and feel the connector latches click into place.

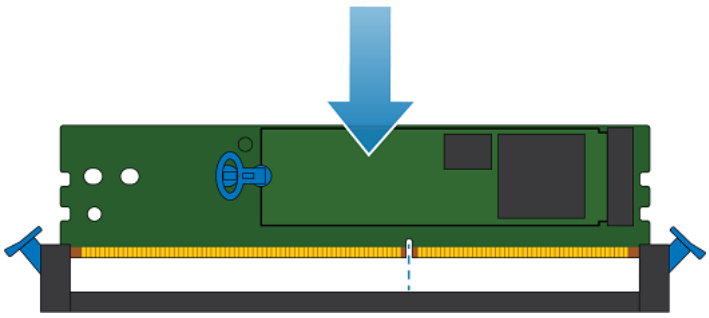

Figure 123. Installing the M.2 boot module adaptor

Install the top cover on the node

Steps

1. Position the top cover over the node and align it with the slots in the sides at the rear of the node.

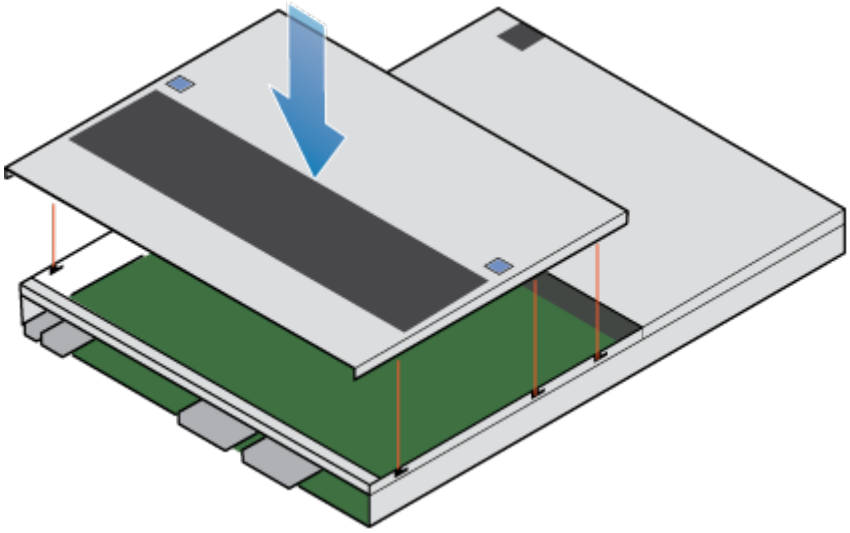

Figure 124. Aligning the top cover

2. Pull the top cover forward to secure it in place.

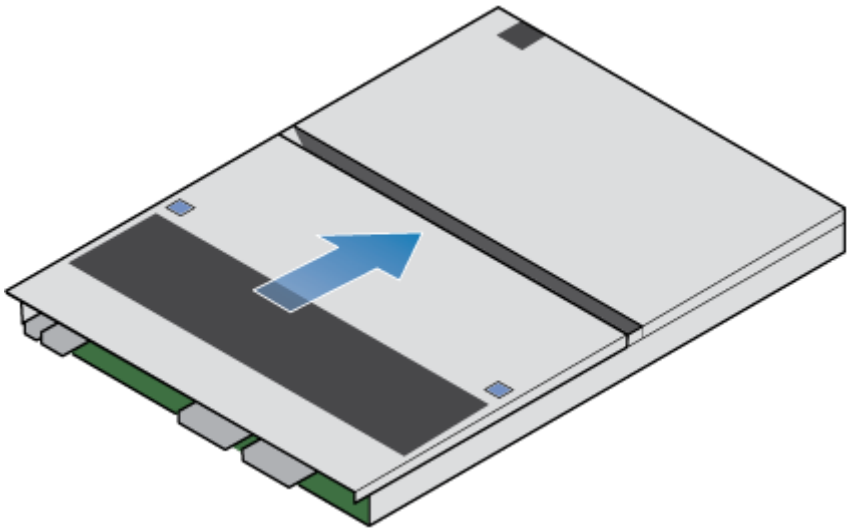

Figure 125. Securing the top cover

Install the node

Steps

1. Align the pins on the top of the node with the grooves on the top of the chassis.
2. Slide the node into the chassis until it stops, about halfway in.

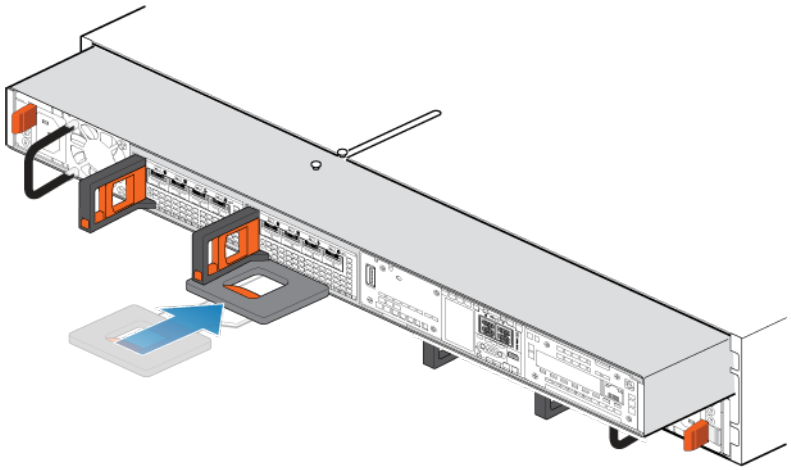

Figure 126. Sliding the node halfway into the chassis

3. Pull the black release tab out completely, and slide the rest of the node back into the chassis.
   The black release tab slides back into the system as it is inserted.

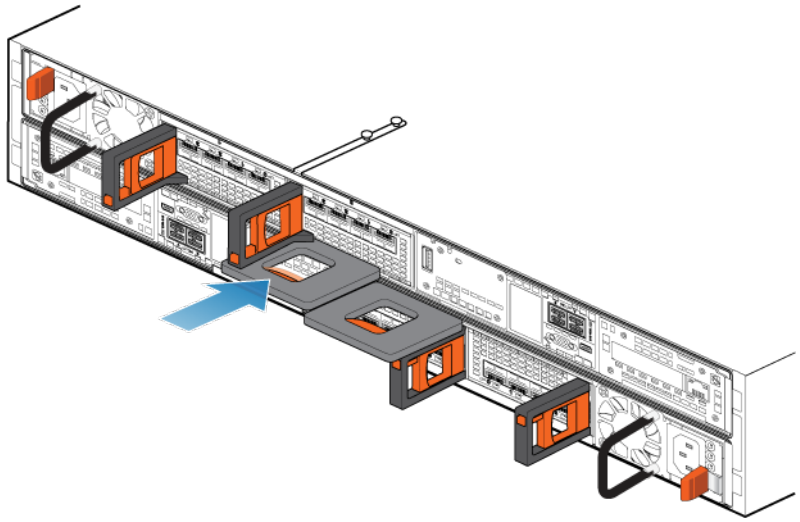

Figure 127. Installing the node

4. Reconnect the back-end cables and the cables to the I/O modules and network ports.
5. Pull the orange release trigger and push in gently to re-engage the locking mechanism.
   If the black release tab comes out when pulled, the locking mechanism is not engaged.
6. Plug in the power cable.

Verify the operation of a replacement internal M.2 boot module

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the internal M.2 boot module.
3. On the **Components** card, under **Internal View**, expand the node that includes the internal M.2 boot module, and then select the relevant **InternalM.2BootModule**.
   The status of the replacement internal M.2 boot module should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the internal M.2 boot module is correctly seated, or contact your service provider.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.
   e. If your screen does not show the Return Part link, contact your service provider for instructions.

Replace an M.2 boot module adaptor

Take the following actions to remove the faulted M.2 boot module adaptor and install the replacement M.2 boot module adaptor into the system.

The M.2 boot module adaptor is located within the node. You can access the M.2 boot module adaptor by removing the node from the chassis and opening the top cover.

Before you begin

CAUTION: Before starting this procedure, use the PowerStore Manager Hardware view and Alerts view to verify that the appliance and peer node are healthy with no outstanding alerts. If multiple nodes need to be removed while performing this procedure, repeat this verification for each affected node before proceeding to remove the next node. If necessary, contact your service provider before starting the replacement procedure.

Identify a faulted M.2 boot module adaptor from PowerStore Manager

Before you replace an M.2 boot module adaptor, ensure that you have identified its location within the system. The M.2 boot module adaptor is not visible in PowerStore Manager, but you can identify and locate the associated internal M.2 boot module.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that includes the M.2 boot module adaptor that you need to replace.
3. On the **Components** card, under **Internal View**, expand the node that includes the M.2 boot module adaptor, and then select the relevant **InternalM.2BootModule**.

   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.

Power down the node

Power down the node as described in Power control procedures.

Remove the node

This procedure describes how to remove a node from the chassis. There are two nodes. The top node is considered to be upside-down and mirrors the bottom node. The procedure for removing the top node and the bottom node is the same.

Prerequisites

If the I/O modules and network cables are not already labeled, label them clearly for reconnecting later.

About this task

WARNING: Do not remove the node within five minutes of system power down to ensure that the system has had time to complete caching.

CAUTION: Do not remove a node while the "Unsafe to remove" LED is lit. If the LED is lit, the peer node has been powered down or is offline and this node should not be removed.

CAUTION: Because nodes include cooling fans, they should be removed for as short a time as possible. Do not remove nodes from a live system unless replacement parts are available.

Steps

1. Rotate the power cable retention bail to the left (right for top power supply). Disconnect the power cable from the power supply.

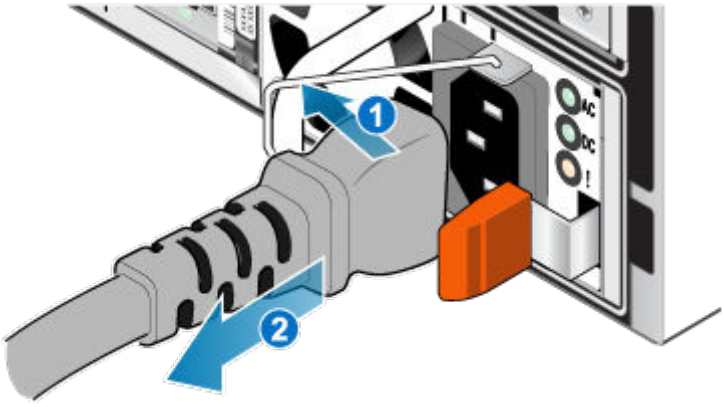

Figure 128. Removing the power cable

2. Disconnect the network and all other cables from the back of the I/O modules and network ports on the node.

   NOTE: Label the cables before you remove them.

   NOTE: Do not remove any cables from the other node.

3. Remove the node ID plugs from the node handles.
4. Pull the orange release trigger while gently pushing in on the node.

   The hook disengages from the locking mechanism, and the release tab slides out.

   NOTE: The node comes completely out of the chassis. Be prepared to support the node to avoid dropping it.

   NOTE: The release trigger and handle for node B is on the top left. The release trigger and handle for node A is on the bottom right.

   CAUTION: Removing the incorrect node will lead to loss of system power and cached data will be lost.

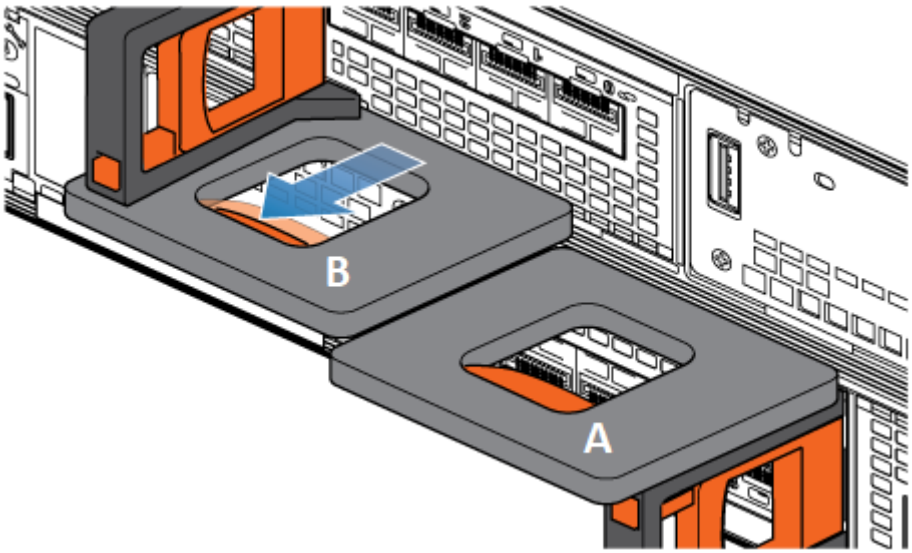

Figure 129. Disengaging the locking mechanism for node B

5. Before removing the node, ensure that the wire bail is properly secured to the power supply cable of the other node to prevent accidental loss of power and cache.

6. Use the release handle to pull the node outward enough to grasp the sides with both hands. Then, with both hands supporting the node, pull the node fully out of the enclosure.

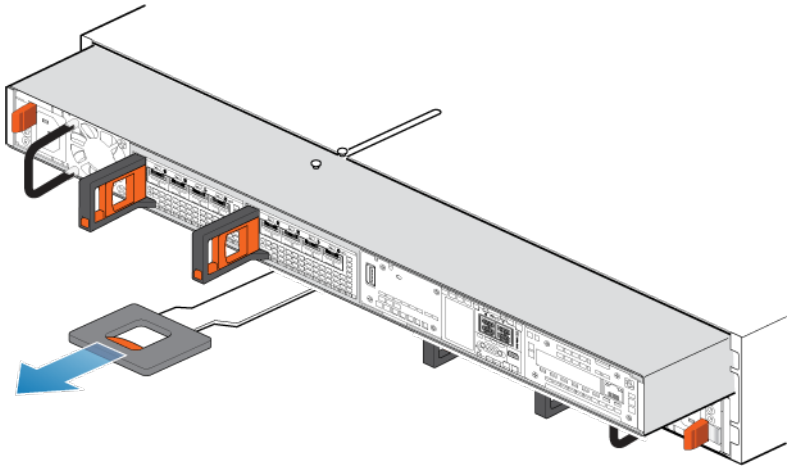

Figure 130. Removing the node

7. Place the node on a clean, flat, static-free work surface.

Remove the top cover from the node

Steps

1. While pushing down the two blue release buttons, slide the top cover towards the rear of the system, until it stops.

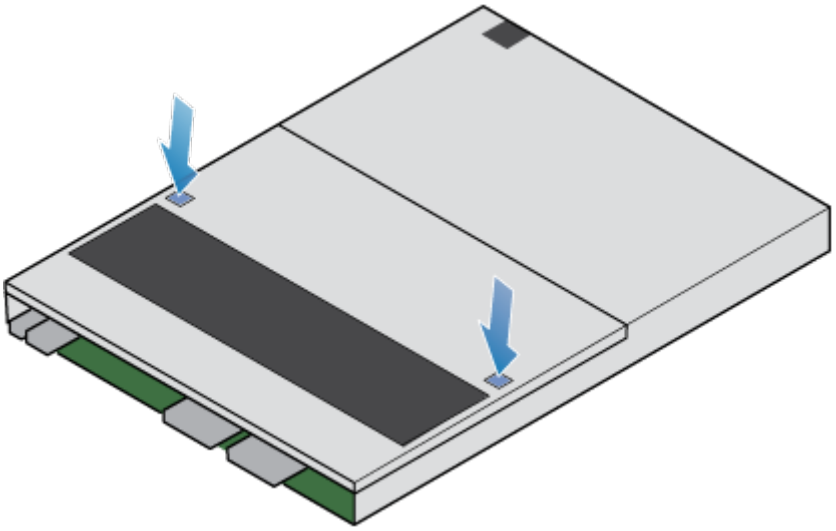

Figure 131. Releasing the top cover

2. Lift the top cover upward, and remove it from the node.

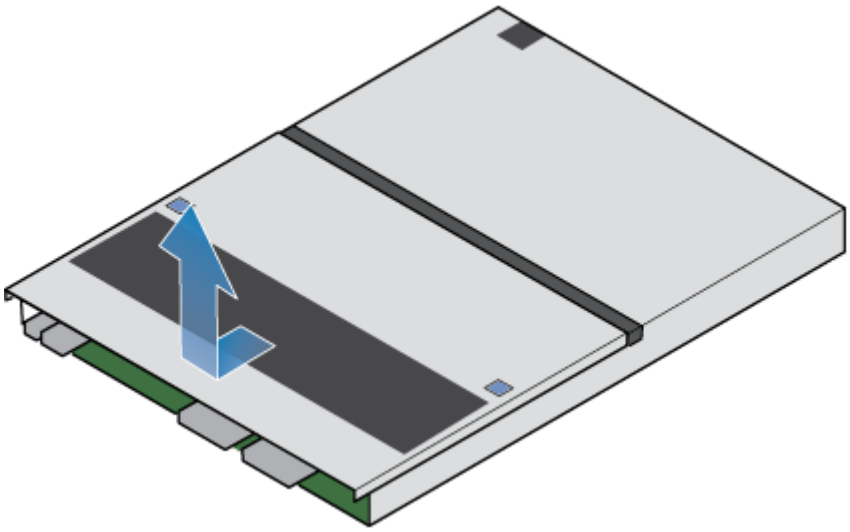

Figure 132. Removing the top cover

Remove the faulted M.2 boot module adaptor

Steps

1. Locate the M.2 boot module adaptor in the node.
   You can identify the M.2 boot module adaptor by the blue retaining tabs.
2. Press the blue retaining tabs downward to free the M.2 boot module adaptor from its slot.
3. Touching only the outside edges of the M.2 boot module adaptor, remove the M.2 boot module adaptor.

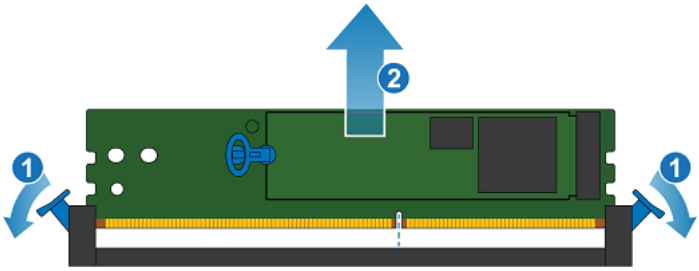

Figure 133. Removing the M.2 boot module adaptor

4. Remove the internal M.2 boot modules:
   a. Gently pull the handle on the release tab to separate it from the tab holding it in place.
   b. Gently pull straight up on the pull tab to free it from the M.2 boot module adaptor.
   c. Remove the internal M.2 boot module from the M.2 boot module adaptor.

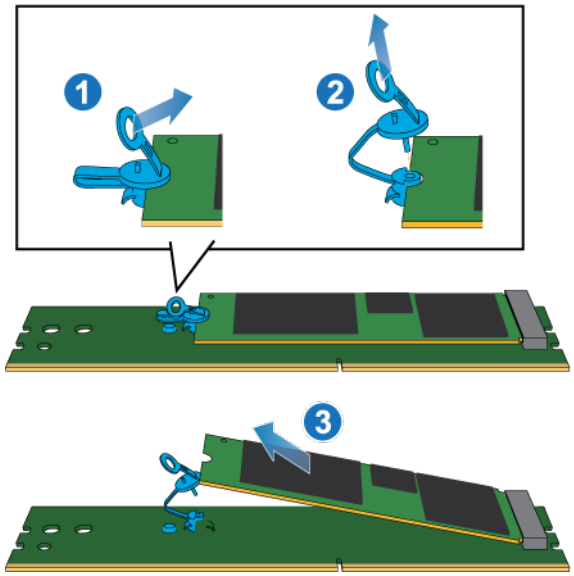

Figure 134. Removing the internal M.2 boot modules from the M.2 boot module adaptor

Install the M.2 boot module adaptor

Steps

1. Place the internal M.2 boot modules that you removed from the faulted M.2 boot module adaptor into the new M.2 boot module adaptor.

   NOTE: The side of the internal M.2 boot module with the barcodes should be facing up.

2. Align the blue tab on the replacement internal M.2 boot module with the slot on the M.2 boot module adaptor and gently push it into place.
3. Connect the pull tab to the blue adapter.

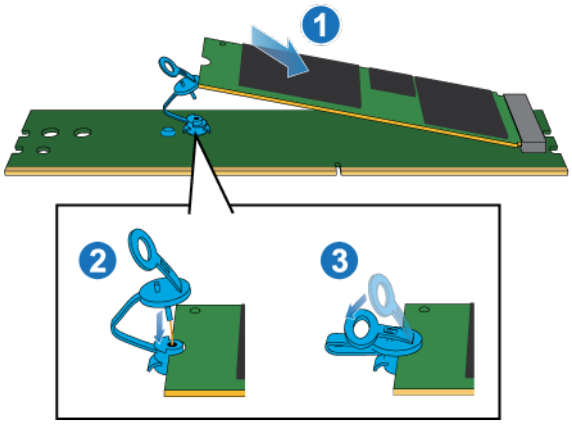

Figure 135. Installing the internal M.2 boot modules into the M.2 boot module adaptor

4. Touching only the outside edges of the M.2 boot module adaptor, align the M.2 boot module adaptor with the connector.
5. Firmly push the M.2 boot module adaptor straight down into the connector.

   When the M.2 boot module adaptor is fully seated, you will hear a snap, and feel the connector latches click into place.

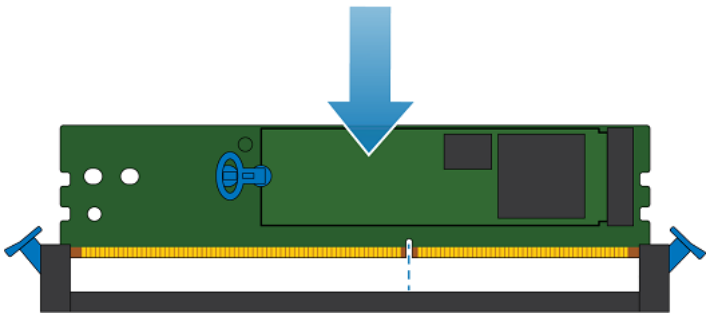

Figure 136. Installing the M.2 boot module adaptor

Install the top cover on the node

Steps

1. Position the top cover over the node and align it with the slots in the sides at the rear of the node.

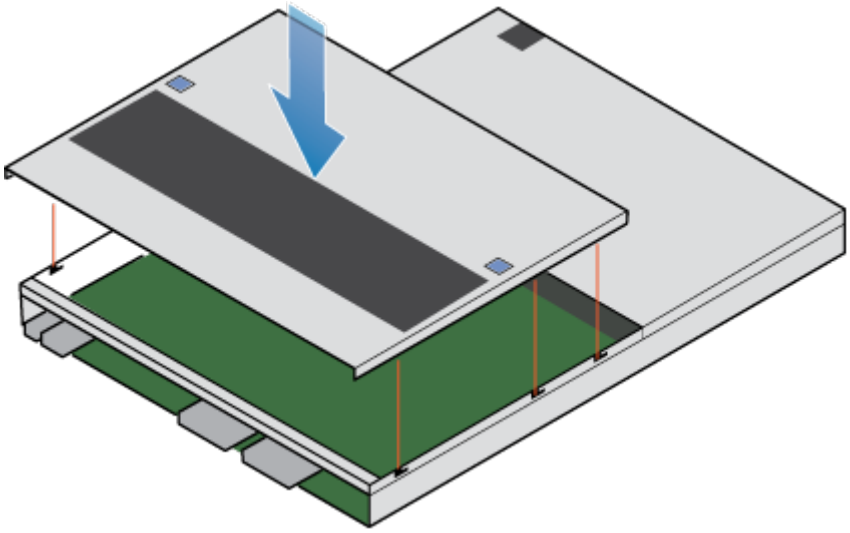

Figure 137. Aligning the top cover

2. Pull the top cover forward to secure it in place.

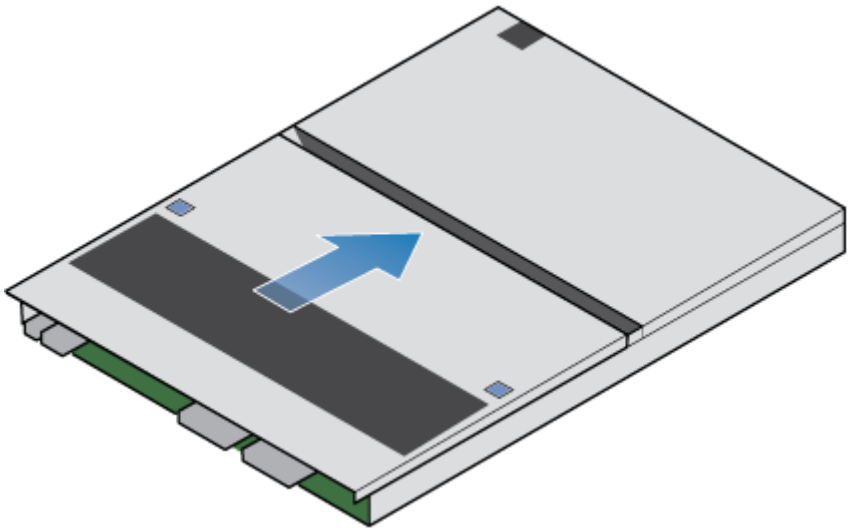

Figure 138. Securing the top cover

Install the node

Steps

1. Align the pins on the top of the node with the grooves on the top of the chassis.
2. Slide the node into the chassis until it stops, about halfway in.

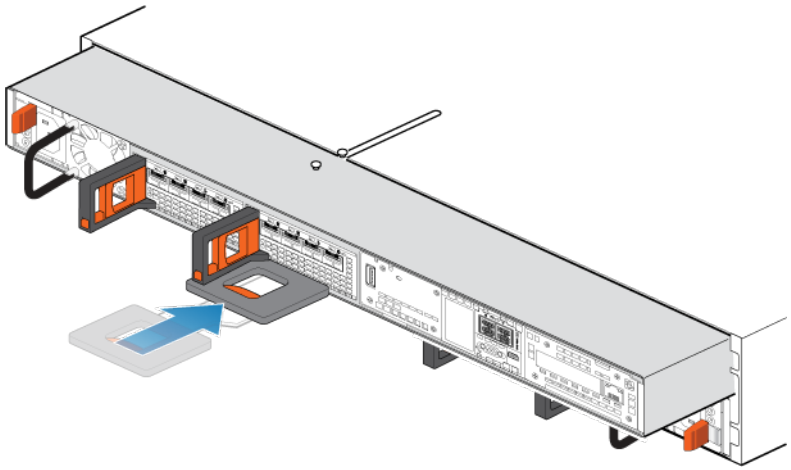

Figure 139. Sliding the node halfway into the chassis

3. Pull the black release tab out completely, and slide the rest of the node back into the chassis.
   The black release tab slides back into the system as it is inserted.

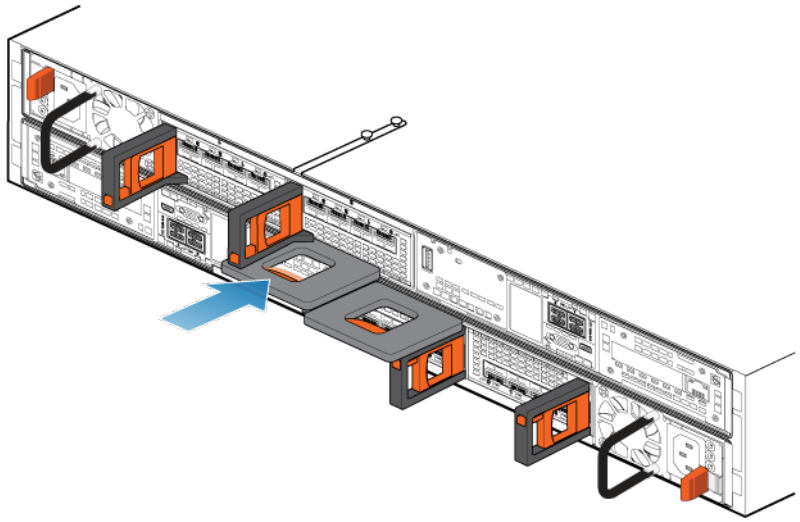

Figure 140. Installing the node

4. Reconnect the back-end cables and the cables to the I/O modules and network ports.
5. Pull the orange release trigger and push in gently to re-engage the locking mechanism.
   If the black release tab comes out when pulled, the locking mechanism is not engaged.
6. Plug in the power cable.

Verify the operation of a replacement M.2 boot module adaptor

About this task

The M.2 boot module adaptor is not visible in PowerStore Manager, but you can view the associated internal M.2 boot module.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the M.2 boot module adaptor.
3. On the **Components** card, under **Internal View**, expand the node that includes the internal M.2 boot module, and then select the relevant **InternalM.2BootModule**.
   The status of the replacement internal M.2 boot module should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the M.2 boot module adaptor is correctly seated, or contact your service provider.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.
   e. If your screen does not show the Return Part link, contact your service provider for instructions.

Replace a node

Take the following actions to remove the faulted node from the enclosure and install the replacement node.

Before you begin

CAUTION: Before starting this procedure, use the PowerStore Manager Hardware view and Alerts view to verify that the appliance and peer node are healthy with no outstanding alerts. If multiple nodes need to be removed while performing this procedure, repeat this verification for each affected node before proceeding to remove the next node. If necessary, contact your service provider before starting the replacement procedure.

Identify a faulted node from PowerStore Manager

Before you replace a node, ensure that you have identified its location within the system. Using PowerStore Manager, you can identify and locate a faulted node.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that includes the node that you need to replace.
3. On the **Components** card, under **Rear View**, expand **BaseEnclosure**.
4. Select the relevant **Node**.
   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.

Power down the node

Power down the node as described in Power control procedures.

Remove the node

This procedure describes how to remove a node from the chassis. There are two nodes. The top node is considered to be upside-down and mirrors the bottom node. The procedure for removing the top node and the bottom node is the same.

Prerequisites

If the I/O modules and network cables are not already labeled, label them clearly for reconnecting later.

About this task

WARNING: Do not remove the node within five minutes of system power down to ensure that the system has had time to complete caching.

CAUTION: Do not remove a node while the "Unsafe to remove" LED is lit. If the LED is lit, the peer node has been powered down or is offline and this node should not be removed.

CAUTION: Because nodes include cooling fans, they should be removed for as short a time as possible. Do not remove nodes from a live system unless replacement parts are available.

Steps

1. Rotate the power cable retention bail to the left (right for top power supply). Disconnect the power cable from the power supply.

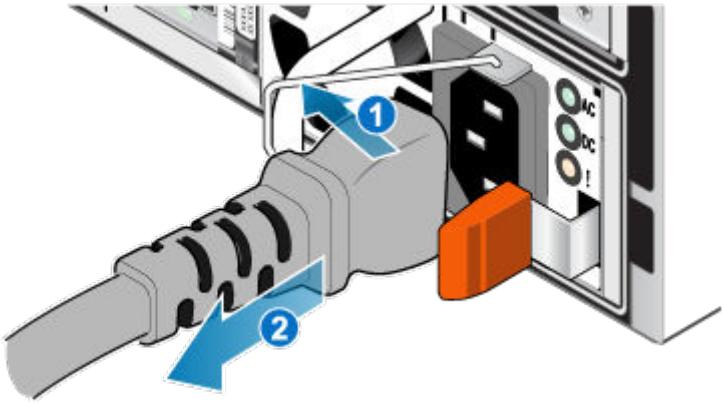

Figure 141. Removing the power cable

2. Disconnect the network and all other cables from the back of the I/O modules and network ports on the node.

   NOTE: Label the cables before you remove them.

   NOTE: Do not remove any cables from the other node.

3. Remove the node ID plugs from the node handles.
4. Pull the orange release trigger while gently pushing in on the node.

   The hook disengages from the locking mechanism, and the release tab slides out.

   NOTE: The node comes completely out of the chassis. Be prepared to support the node to avoid dropping it.

   NOTE: The release trigger and handle for node B is on the top left. The release trigger and handle for node A is on the bottom right.

   CAUTION: Removing the incorrect node will lead to loss of system power and cached data will be lost.

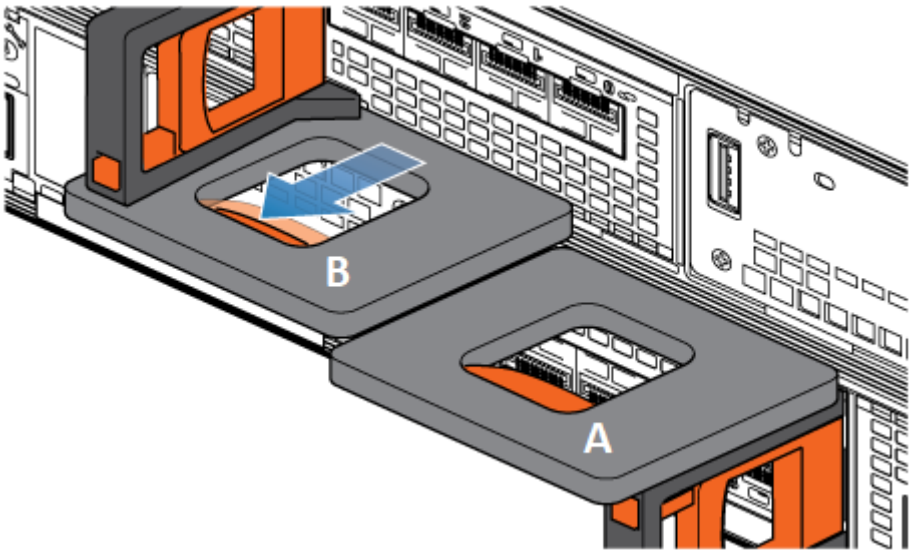

Figure 142. Disengaging the locking mechanism for node B

5. Before removing the node, ensure that the wire bail is properly secured to the power supply cable of the other node to prevent accidental loss of power and cache.
6. Use the release handle to pull the node outward enough to grasp the sides with both hands. Then, with both hands supporting the node, pull the node fully out of the enclosure.

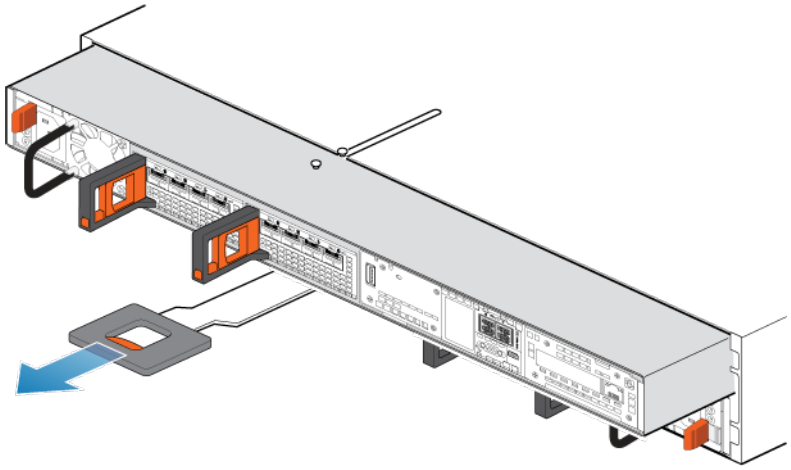

Figure 143. Removing the node

7. Place the node on a clean, flat, static-free work surface.

Remove the top cover from the node

Steps

1. While pushing down the two blue release buttons, slide the top cover towards the rear of the system, until it stops.

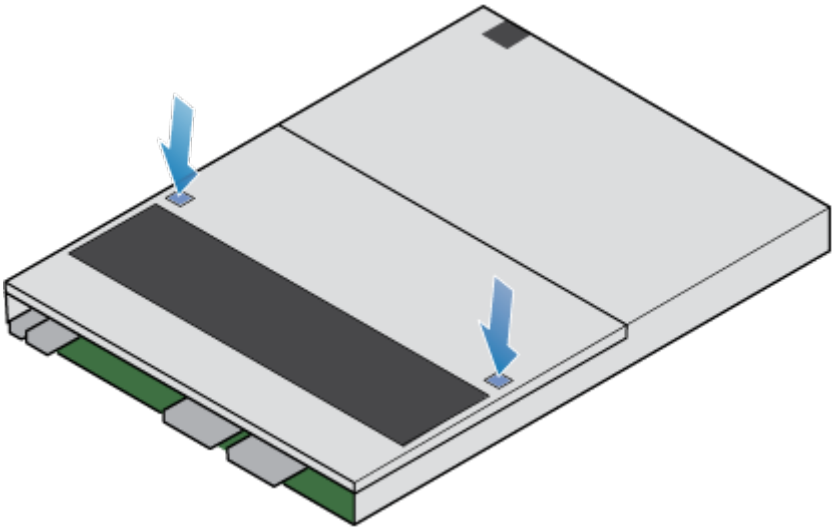

Figure 144. Releasing the top cover

2. Lift the top cover upward, and remove it from the node.

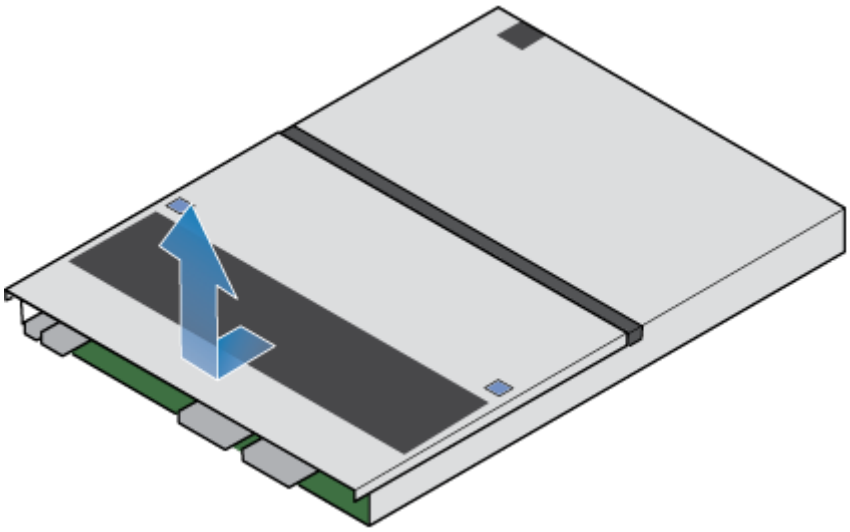

Figure 145. Removing the top cover

Transfer parts from the faulted node to the replacement node

Transfer the following components from the faulted node to the corresponding locations in the replacement node.

To help ensure the correct placement in the enclosure, transfer only one component at a time.

NOTE: Confirm that all parts are fully seated before inserting the node into the base enclosure.

NOTE: Do not add any components while the node is powering on.

- Transfer the power supply.
- Transfer the I/O modules and fillers.
- Transfer the embedded module without removing the 4-port card.
- Transfer the internal M.2 boot modules without removing them from the adapters.
- Transfer DIMMs.

  NOTE: Move DIMMs one at a time from the faulted node to the same slot on the replacement node.
- Transfer internal fans.
- Transfer the internal battery backup module.

Install the top cover on the node

Steps

1. Position the top cover over the node and align it with the slots in the sides at the rear of the node.

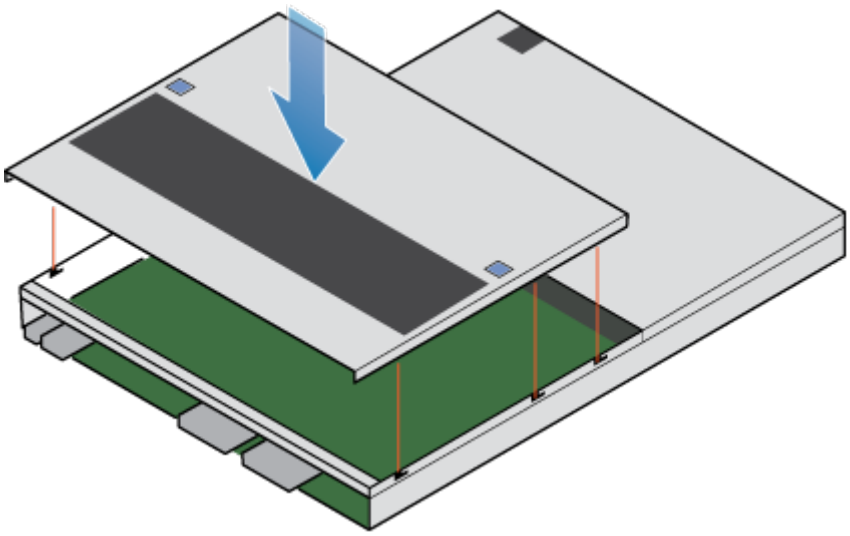

Figure 146. Aligning the top cover

2. Pull the top cover forward to secure it in place.

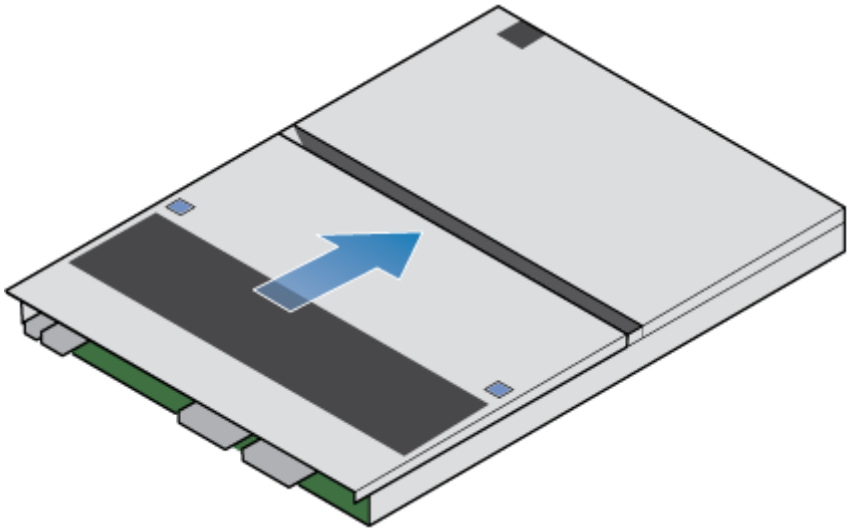

Figure 147. Securing the top cover

Install the node

Steps

1. Align the pins on the top of the node with the grooves on the top of the chassis.
2. Slide the node into the chassis until it stops, about halfway in.

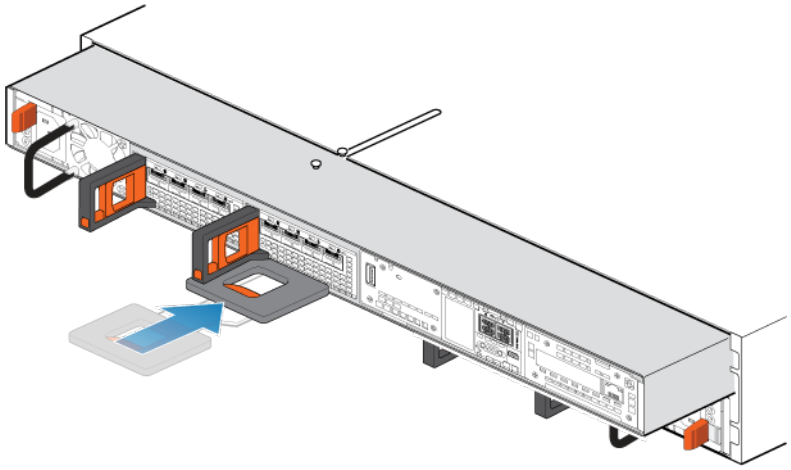

Figure 148. Sliding the node halfway into the chassis

3. Pull the black release tab out completely, and slide the rest of the node back into the chassis.
   The black release tab slides back into the system as it is inserted.

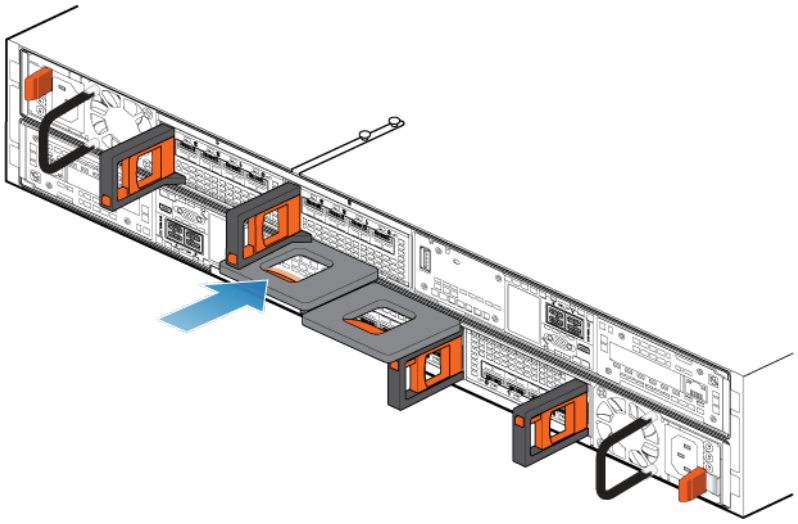

Figure 149. Installing the node

4. Reconnect the back-end cables and the cables to the I/O modules and network ports.
5. Pull the orange release trigger and push in gently to re-engage the locking mechanism.
   If the black release tab comes out when pulled, the locking mechanism is not engaged.
6. Plug in the power cable.

Verify the operation of a replacement node

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the node.
3. On the **Components** card, under **Rear View**, expand **BaseEnclosure**.
4. Select the relevant **Node**.
   The status of the replacement node should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the node is correctly seated, or contact your service provider.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.
   e. If your screen does not show the Return Part link, contact your service provider for instructions.

3

SAS expansion enclosure service procedures

The SAS expansion enclosure contains customer-replaceable components. Follow these procedures to safely replace a failed component.

NOTE: Review the information in Safety precautions for handling replaceable units before handling replaceable parts.

Topics:

Add a drive in a SAS expansion enclosure

Take the following actions to add a new drive to a SAS expansion enclosure.

Removing the front bezel

About this task

NOTE: Remove the front bezel of the expansion enclosure to gain access to the drives. The bezel is required for EMI compliance when the enclosure is powered up. Remove it only to replace or add a drive.

Steps

1. If the bezel has a lock, insert the key that shipped with your enclosure into the lock, and turn the key to unlock the bezel.
2. Press the two latch buttons on the bezel surface to release the bezel from the cabinet.
3. Pull the bezel off the cabinet, and put it on a clean, static-free surface.

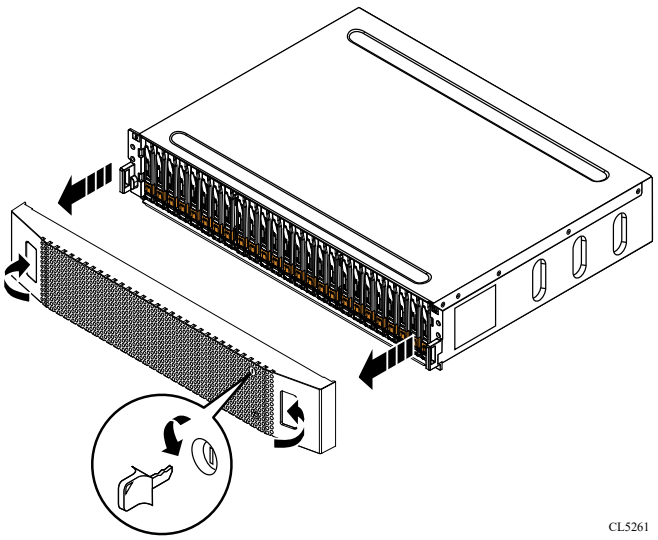

Figure 150. Removing the front bezel

Remove a drive filler module

Steps

1. Insert your finger into the cutout on the drive filler module.
2. Pull the filler module out of the slot.

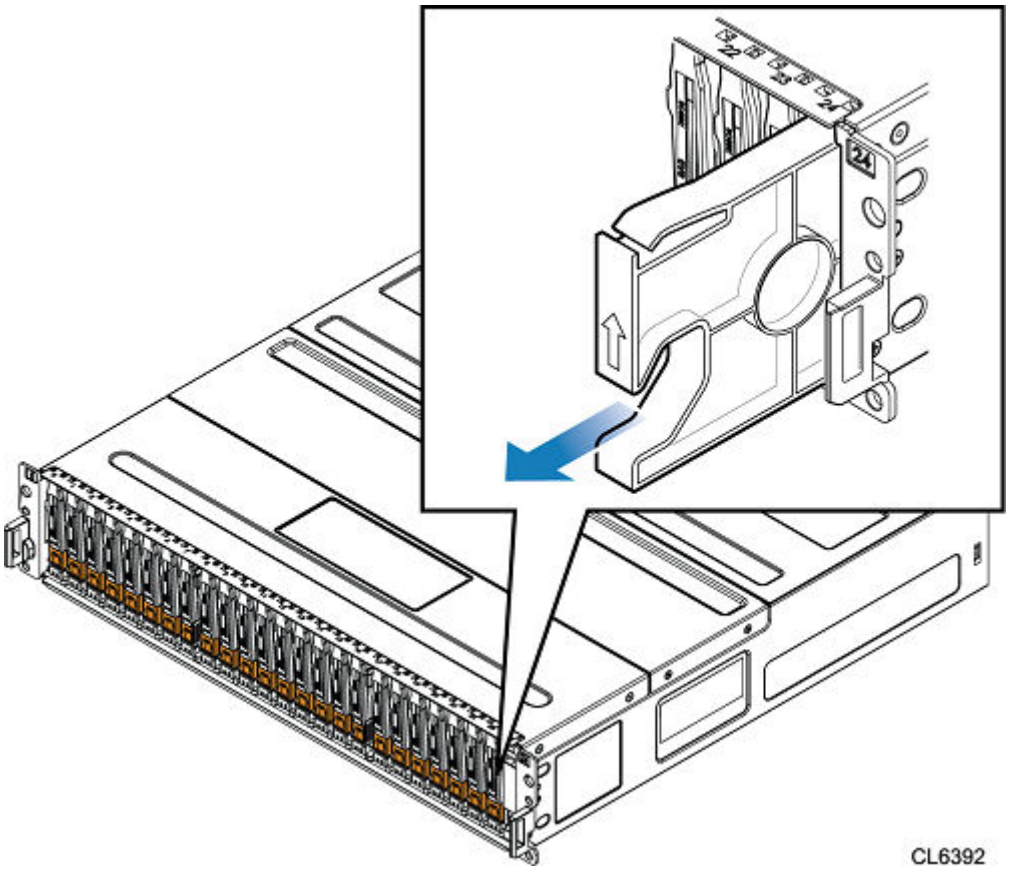

Figure 151. Removing a drive filler module

Installing a drive

About this task

NOTE: If you are installing multiple drives in a system that is powered up, wait at least 10 seconds before sliding the next drive into position.

NOTE: Drives must be installed from left-to-right starting with the first available slot.

Steps

1. Align the drive with the guides in the slot.
2. With the latch fully opened, gently push the drive into the slot.
   The latch begins to rotate downward when it meets the enclosure.
3. Push the orange button until the drive is fully seated in the slot.
4. Push the latch down until it locks into place.

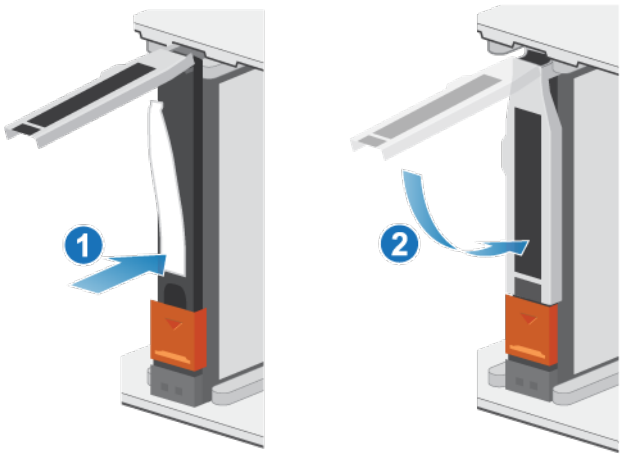

Figure 152. Installing a drive

The activity light flashes to indicate that the spin-up sequence has begun.

Installing the front bezel

Steps

1. Align the bezel with the enclosure.
2. Gently push the bezel into place on the cabinet until it latches.
3. If the bezel has a key lock, lock the bezel with the provided key.

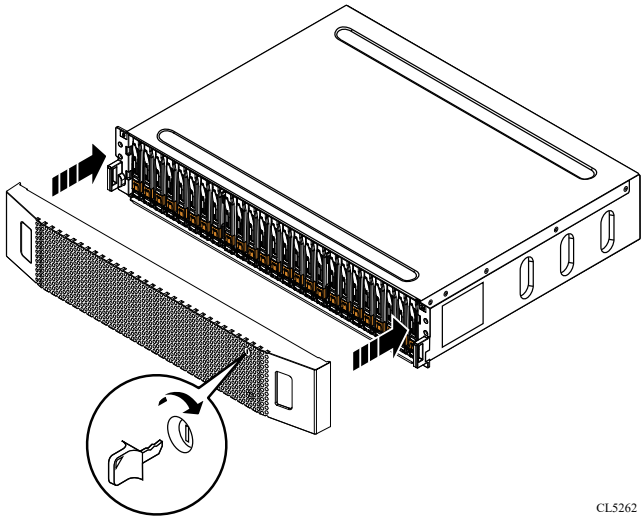

Figure 153. Installing the bezel

Verify the operation of an added drive

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you added the drive.
3. On the **Components** card, under **Drives**, expand **ExpansionEnclosure** and select the drive.

   The status of the drive should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the drive is correctly seated, or contact your service provider.

Replace a faulted drive in a SAS expansion enclosure

Take the following actions to remove a faulted drive from a SAS expansion enclosure and install a replacement drive.

Identify a faulted drive from PowerStore Manager

Before you replace a drive, ensure that you have identified its location within the system. Using PowerStore Manager, you can identify and locate a faulted drive.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that includes the drive that you need to replace.
3. On the **Components** card, under **Drives**, expand **ExpansionEnclosure** and select the faulted drive.
   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.
4. Click **Blink LED**.
   The amber fault light on the drive starts blinking.

Removing the front bezel

About this task

NOTE: Remove the front bezel of the expansion enclosure to gain access to the drives. The bezel is required for EMI compliance when the enclosure is powered up. Remove it only to replace or add a drive.

Steps

1. If the bezel has a lock, insert the key that shipped with your enclosure into the lock, and turn the key to unlock the bezel.
2. Press the two latch buttons on the bezel surface to release the bezel from the cabinet.
3. Pull the bezel off the cabinet, and put it on a clean, static-free surface.

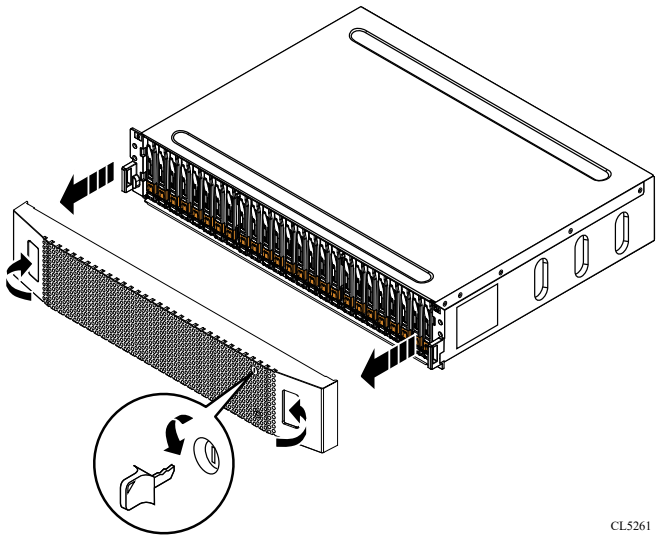

Figure 154. Removing the front bezel

Remove a faulted drive

Steps

1. Locate the drive with the blinking amber LED fault light.
2. Push down the orange button to release the latch.
3. Remove the drive from the slot.

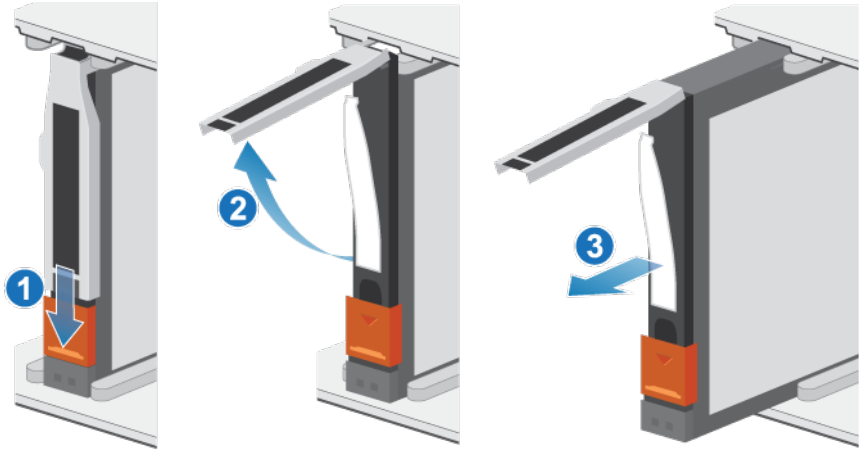

Figure 155. Removing a drive

4. Place the drive on a static-free surface.

Installing a drive

About this task

NOTE: If you are installing multiple drives in a system that is powered up, wait at least 10 seconds before sliding the next drive into position.

NOTE: Drives must be installed from left-to-right starting with the first available slot.

Steps

1. Align the drive with the guides in the slot.
2. With the latch fully opened, gently push the drive into the slot.
   The latch begins to rotate downward when it meets the enclosure.
3. Push the orange button until the drive is fully seated in the slot.
4. Push the latch down until it locks into place.

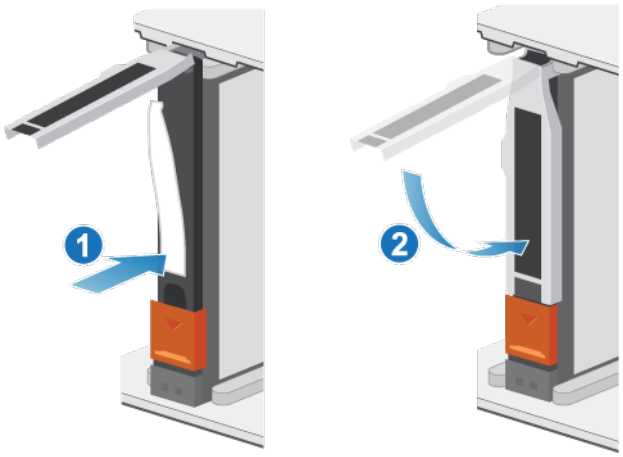

Figure 156. Installing a drive

The activity light flashes to indicate that the spin-up sequence has begun.

Installing the front bezel

Steps

1. Align the bezel with the enclosure.
2. Gently push the bezel into place on the cabinet until it latches.
3. If the bezel has a key lock, lock the bezel with the provided key.

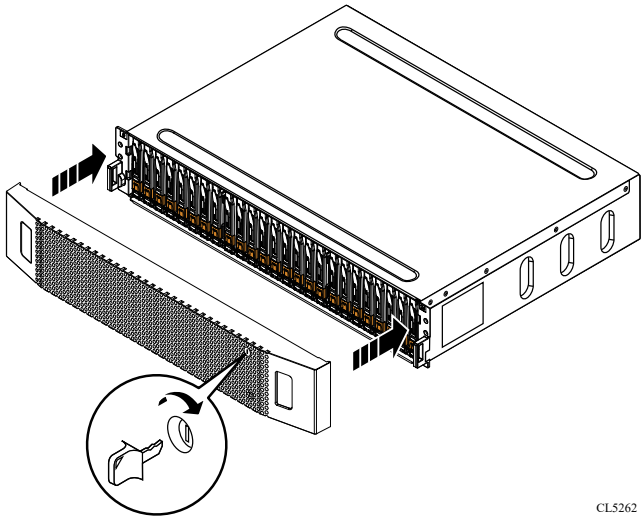

Figure 157. Installing the bezel

Verify the operation of a replacement drive

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the drive.
3. On the **Components** card, under **Drives**, expand **ExpansionEnclosure** and select the drive.

The status of the replacement drive should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the drive is correctly seated, or contact your service provider.

4. Click **Stop Blink LED**.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.
   e. If your screen does not show the Return Part link, contact your service provider for instructions.

Replace a link control card in a SAS expansion enclosure

Take the following actions to remove a faulted link control card (LCC) from a SAS expansion enclosure and install a replacement LCC.

Identify a faulted LCC from PowerStore Manager

Before you replace an LCC, ensure that you have identified its location within the system. Using PowerStore Manager, you can identify and locate a faulted LCC.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that contains the LCC that you need to replace.
3. On the **Components** card, under **Rear View**, expand **ExpansionEnclosure**.
4. Select the relevant **LCC**.
   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.

Removing a faulted LCC

Prerequisites

Identify the faulted LCC by it amber fault LED.

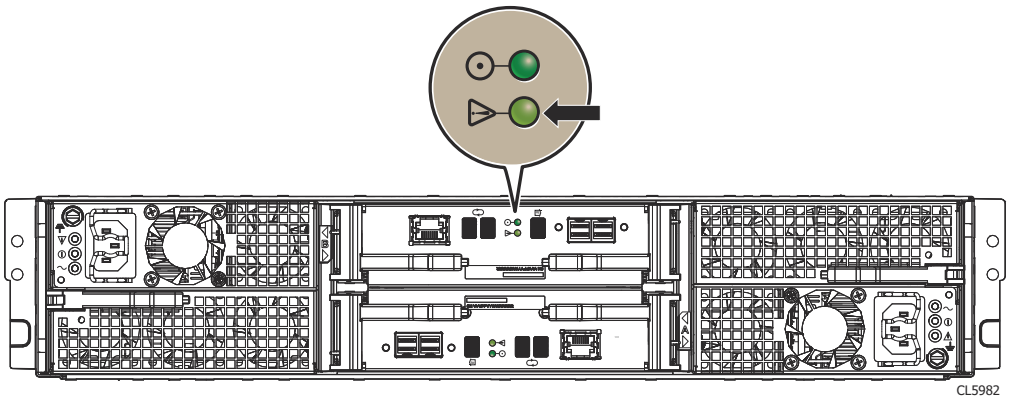

Figure 158. LCC fault LED

About this task

CAUTION: The DAE must have at least one LCC installed while the enclosure is powered up; do not remove both LCCs while AC power is on.

Steps

1. Attach an ESD wristband to your wrist and the enclosure.
2. Remove each cable connected to the LCC by gently pulling the connector latches to release the cable from the connector.

   Note where the cables connect to the LCC because you will reconnect them later.

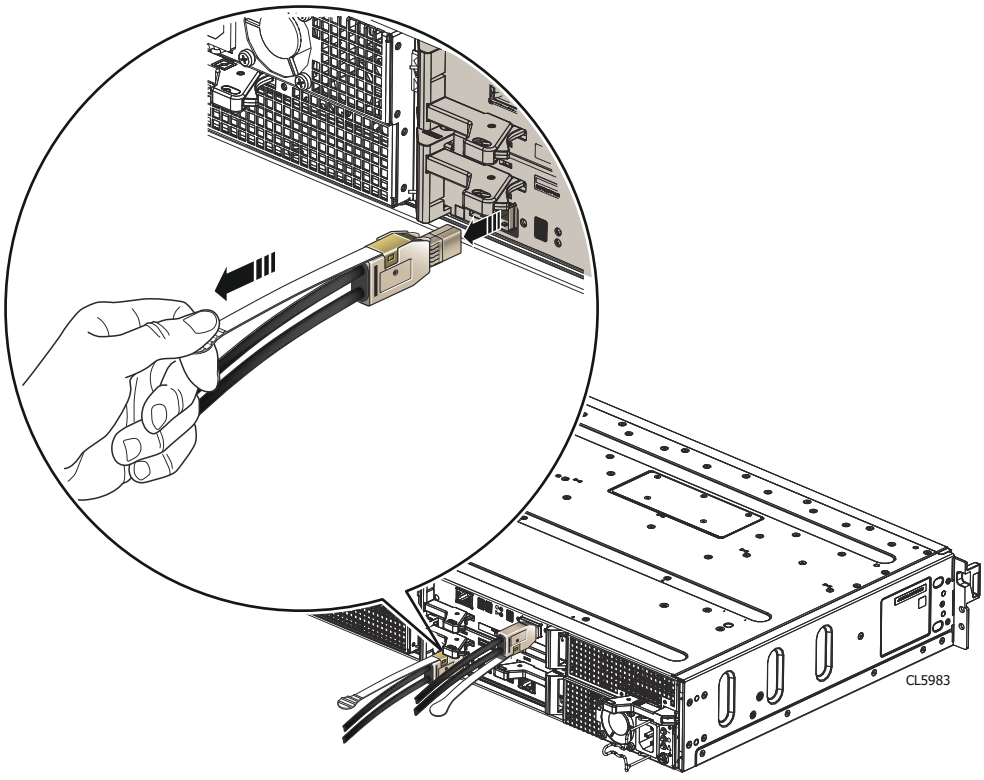

Figure 159. Disconnecting an LCC cable

3. Remove the LCC:

   CAUTION: The LCC comes completely out of the DAE chassis. In addition to holding the latches, be prepared to support the LCC to avoid dropping it.

   a. Locate the orange handle buttons on the LCC handles.

b. Press the orange handle buttons to release the LCC, pull the latches outward, and remove the LCC from its slot.

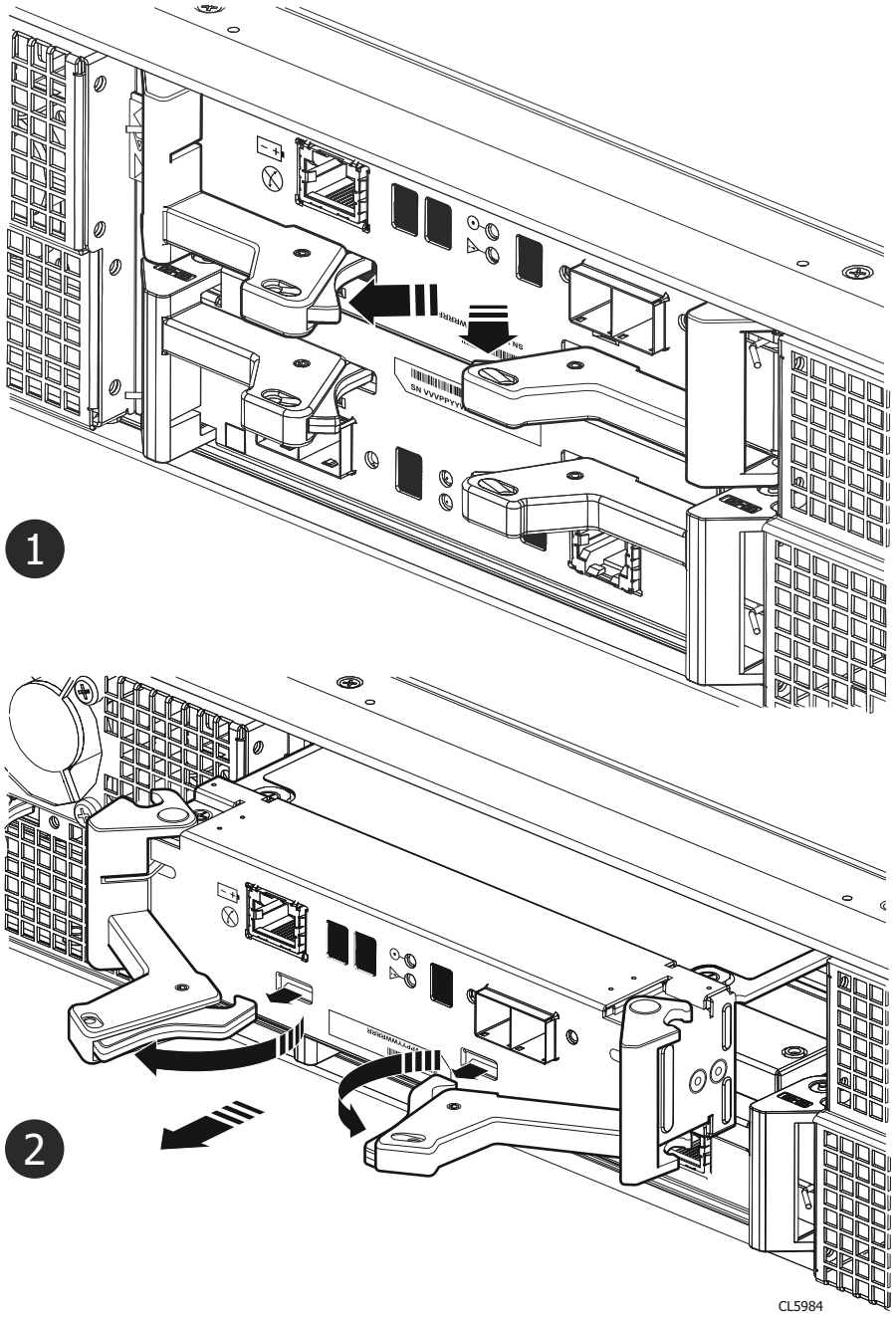

Figure 160. Removing an LCC

4. Place the LCC on a clean, static-free surface.

Installing a replacement LCC

Steps

1. Attach an ESD wristband to your wrist and the enclosure.
2. Pull out the latches on the LCC and make sure they stay in the open position.
3. Align the LCC with the enclosure opening and gently push the LCC straight into the enclosure, being sure the LCC is completely seated in the enclosure.

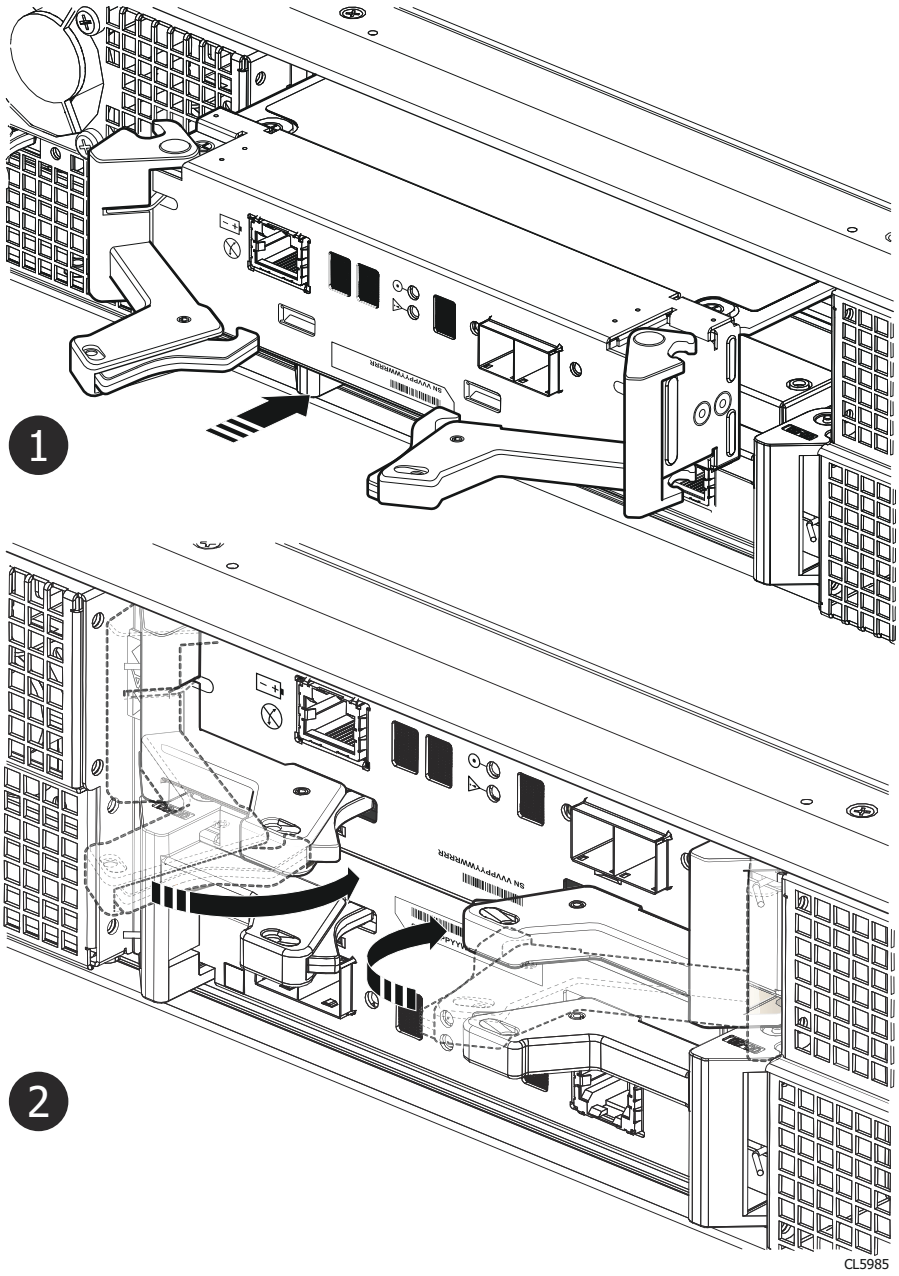

Figure 161. Installing an LCC

4. Press the latches to secure the LCC.
5. Reconnect each cable to the port from which it was removed.

Results

The LCC power LED turns on.

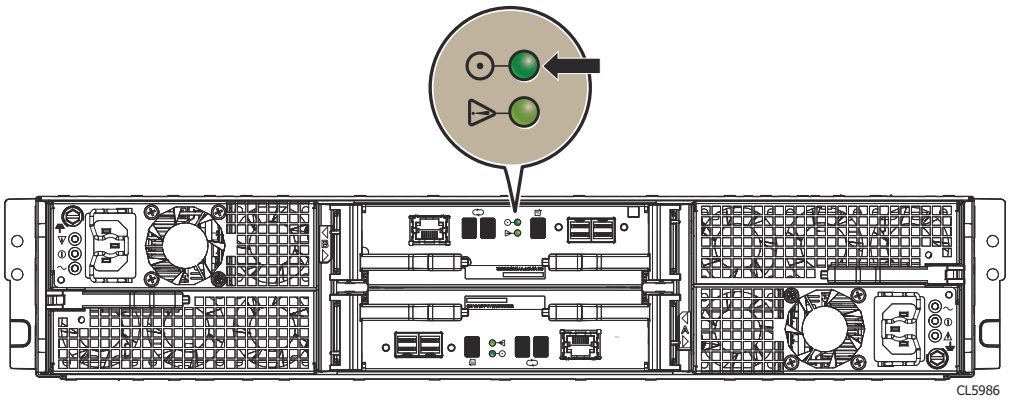

Figure 162. LCC power LED

Verify the operation of a replacement LCC

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the LCC.
3. On the **Components** card, under **Rear View**, expand **ExpansionEnclosure**.
4. Select the relevant **LCC**.

   The status of the replacement LCC should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the LCC is correctly seated, or contact your service provider.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.
   e. If your screen does not show the Return Part link, contact your service provider for instructions.

Replace a power/cooling module in a SAS expansion enclosure

Take the following actions to remove the faulted power/cooling module from the SAS expansion enclosure and install a replacement power/cooling module.

Identify a faulted power/cooling module from PowerStore Manager

Before you replace a power/cooling module, ensure that you have identified its location within the system. Using PowerStore Manager, you can identify and locate a faulted power/cooling module.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that contains the power/cooling module that you need to replace.
3. On the **Components** card, under **Rear View**, expand **ExpansionEnclosure**.
4. Select the relevant **PSU**.
   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.

Removing a faulted power/cooling module

Prerequisites

Identify the faulted power/cooling module by the amber fault LED.

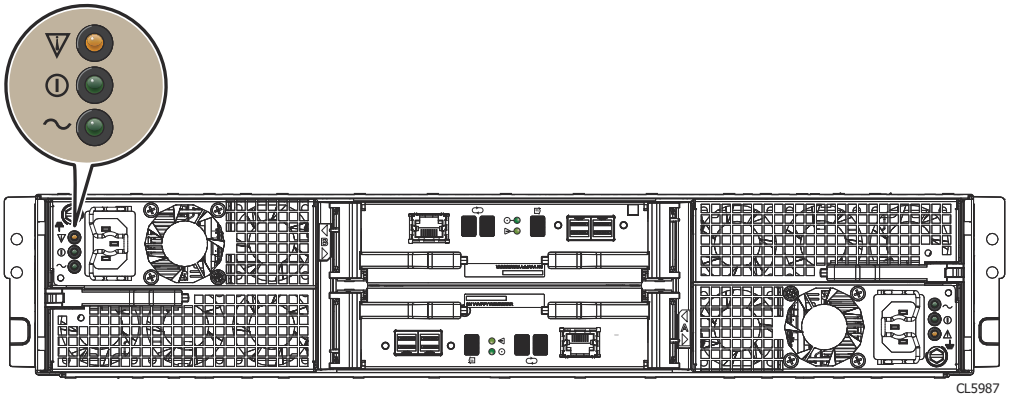

Figure 163. Fault LED on an AC power/cooling module

About this task

CAUTION: Access to the drives in your enclosure will time out and the drives will spin down two minutes after a power cooling module is removed from the enclosure. While the system can continue operating on a single power supply, the loss of two blowers causes the DAE to power down unless you replace the module within two minutes. When replacing both cooling modules, ensure that the green light on one module has been steadily on for at least 5 seconds before removing power from the second module.

Steps

1. Attach an ESD wristband to your wrist and the enclosure.
2. On an AC power/cooling module, release the cable retention bail, and unplug the power cord.

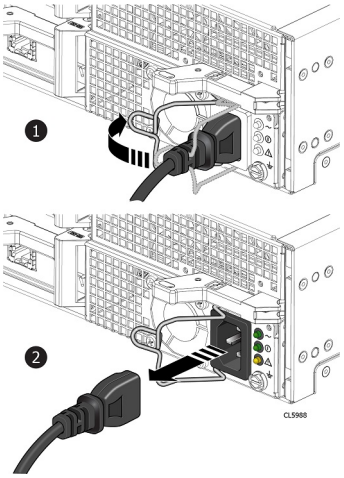

Figure 164. Unplugging the power cord from an AC power supply/cooling module

3. On a DC power/cooling module, pinch the spring releases on each side of the power cord plug and pull the plug out of the connector.

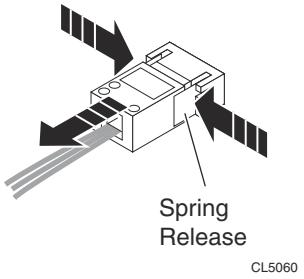

Figure 165. Unplugging the power cord from a DC power supply/cooling module

4. Remove the power/cooling module as follows:
   a. Press the orange handle button to release the module.
   b. Pull the latch outward, and remove the power/cooling module from its slot.

   CAUTION: To protect a running system from overheating, the enclosure powers down unless you replace the power cooling module within two minutes.

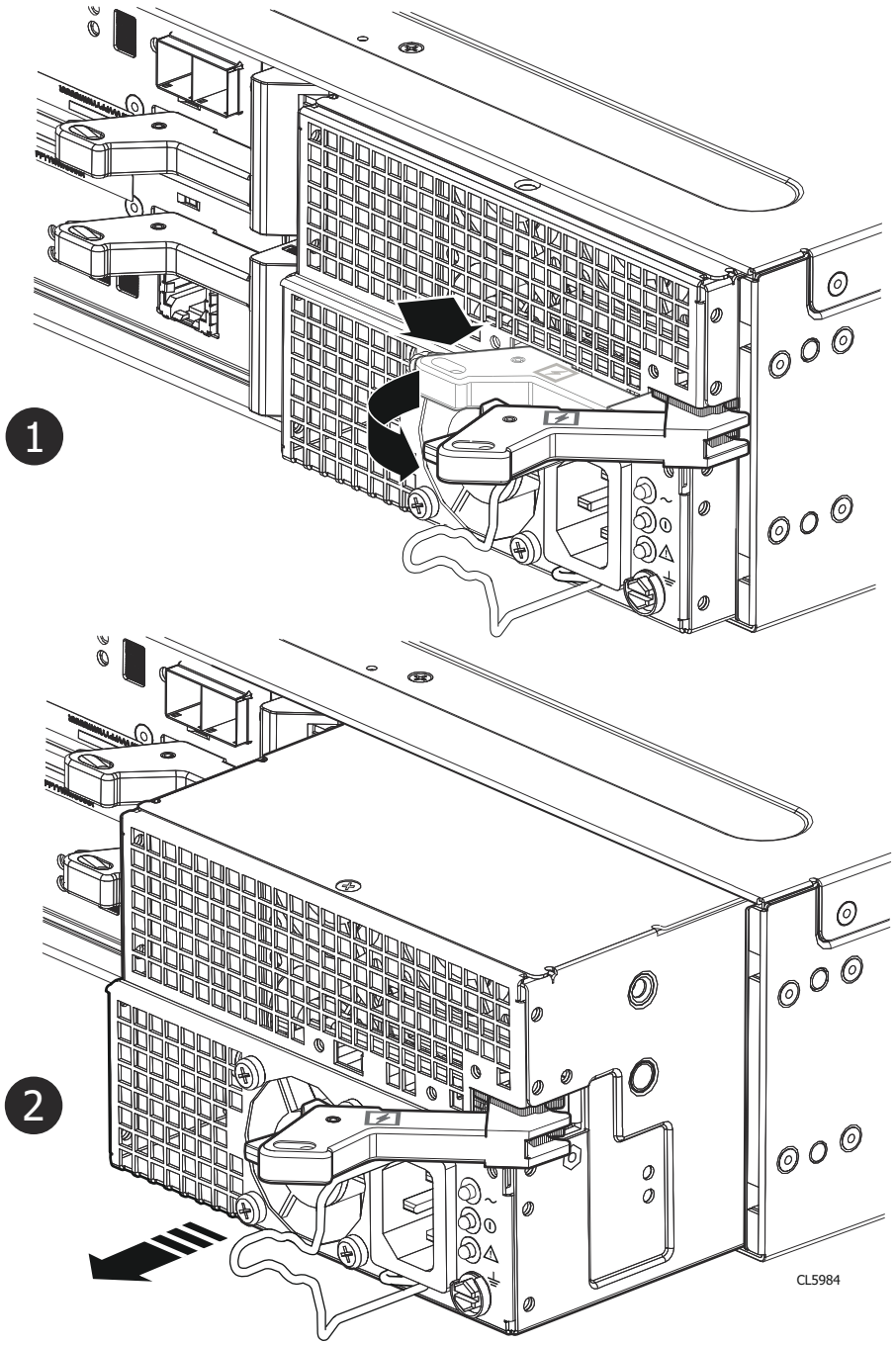

Figure 166. Removing an AC power/cooling module

Installing a replacement power/cooling module

Steps

1. Install the power/cooling module in the enclosure within two minutes:
   a. Gently insert the power/cooling module into the enclosure, being sure that the module is completely seated.
   b. Press the latch in to secure the power/cooling module.

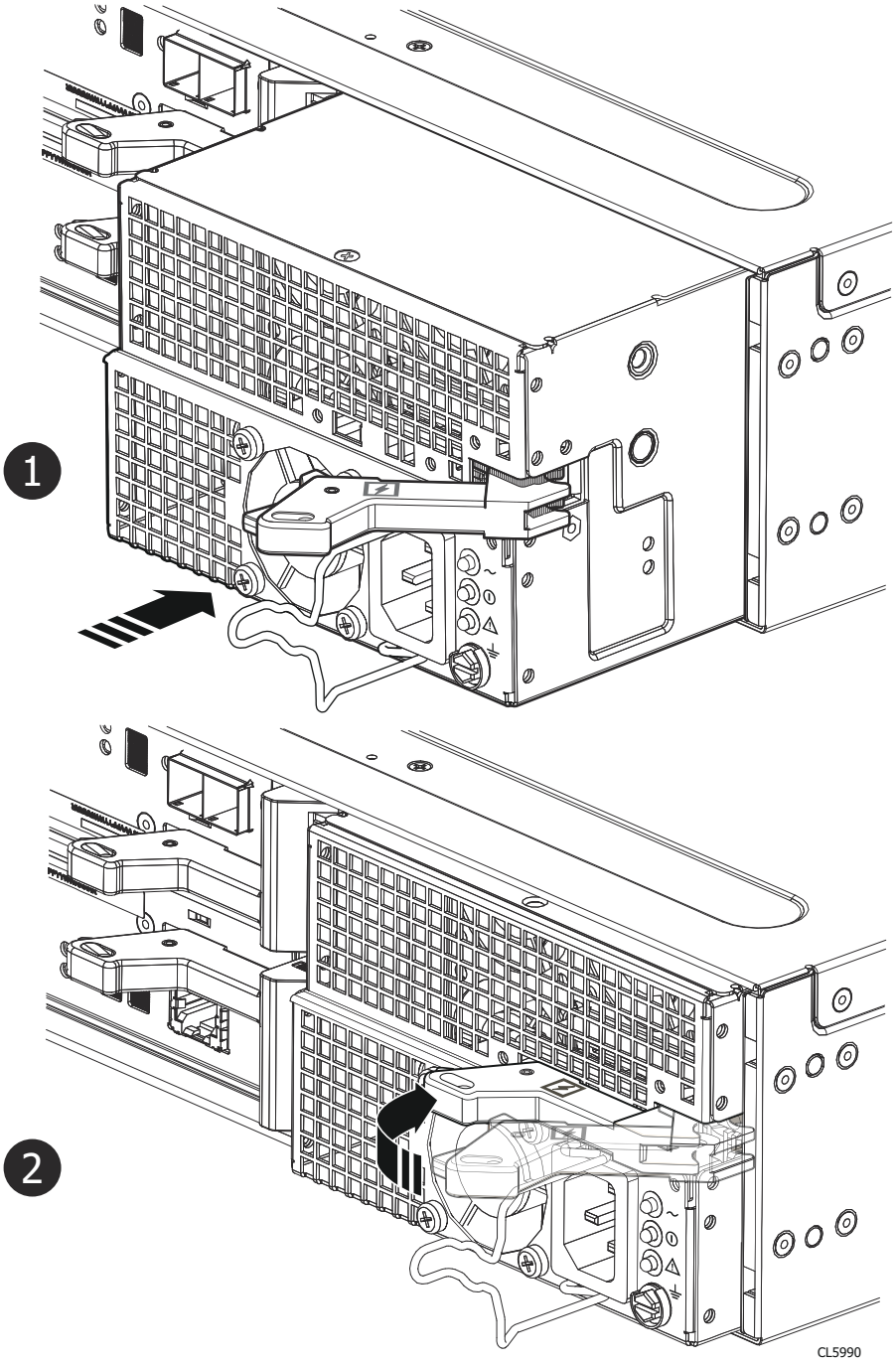

Figure 167. Installing a power/cooling module

2. For an AC power/cooling module:
   a. Plug the power cord into the power/cooling module.
   b. Secure the cord with the retention bail at the connector

      The bail prevents the power cord from pulling out of the connector.

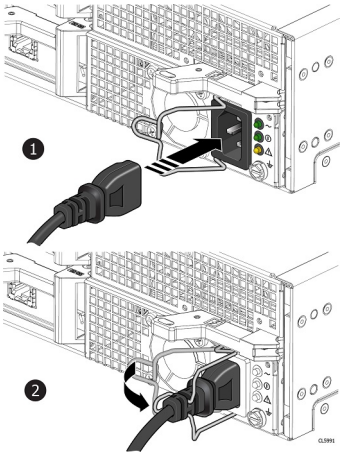

Figure 168. Plug in the power cord

3. For a DC power/cooling module, push the power cord plug into the connector until it snaps in place.

Verify the operation of a replacement power/cooling module

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the faulted power/cooling module.
3. On the **Components** card, under **Rear View**, expand **ExpansionEnclosure**.
4. Select the relevant **PSU**.

   The status of the replacement power/cooling module should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the power/cooling module is correctly seated, or contact your service provider.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.
   e. If your screen does not show the Return Part link, contact your service provider for instructions.

4

NVMe expansion enclosure service procedures

The NVMe expansion enclosure contains customer-replaceable components. Follow these procedures to safely replace a failed component.

NOTE: Review the information in Safety precautions for handling replaceable units before handling replaceable parts.

Topics:

Add a drive in an NVMe expansion enclosure

Take the following actions to add a new drive to an NVMe expansion enclosure.

Removing the front bezel

About this task

NOTE: Remove the front bezel of the expansion enclosure to gain access to the drives. The bezel is required for EMI compliance when the enclosure is powered up. Remove it only to replace or add a drive.

Steps

1. If the bezel has a lock, insert the key that shipped with your enclosure into the lock, and turn the key to unlock the bezel.
2. Press the two latch buttons on the bezel surface to release the bezel from the cabinet.
3. Pull the bezel off the cabinet, and put it on a clean, static-free surface.

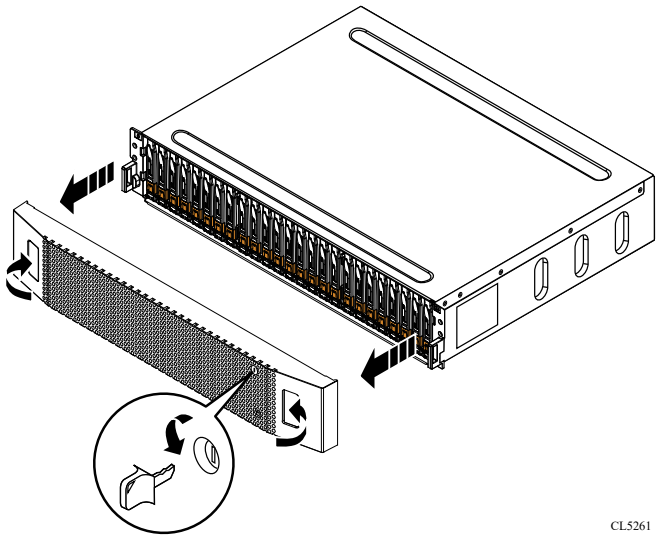

Figure 169. Removing the front bezel

Remove a drive filler module

Steps

1. Insert your finger into the cutout on the drive filler module.
2. Pull the filler module out of the slot.

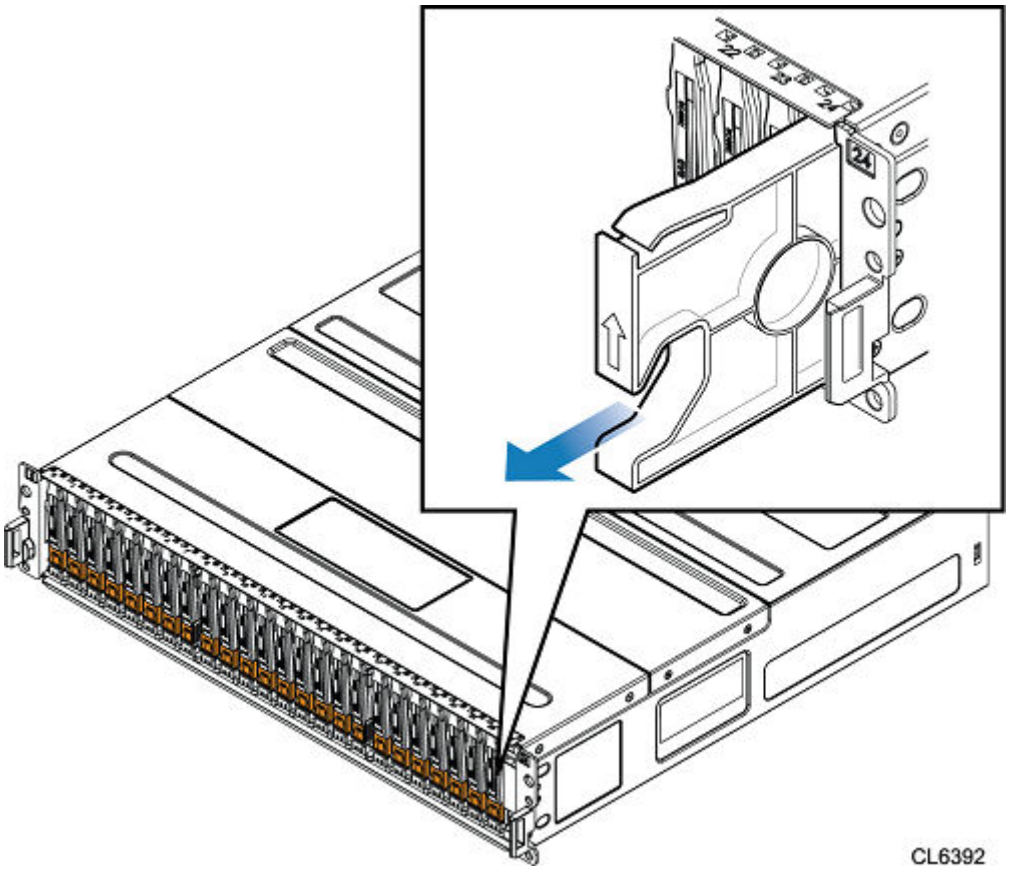

Figure 170. Removing a drive filler module

Installing a drive

About this task

NOTE: If you are installing multiple drives in a system that is powered up, wait at least 10 seconds before sliding the next drive into position.

NOTE: Drives must be installed from left-to-right starting with the first available slot.

Steps

1. Align the drive with the guides in the slot.
2. With the latch fully opened, gently push the drive into the slot.
   The latch begins to rotate downward when it meets the enclosure.
3. Push the orange button until the drive is fully seated in the slot.
4. Push the latch down until it locks into place.

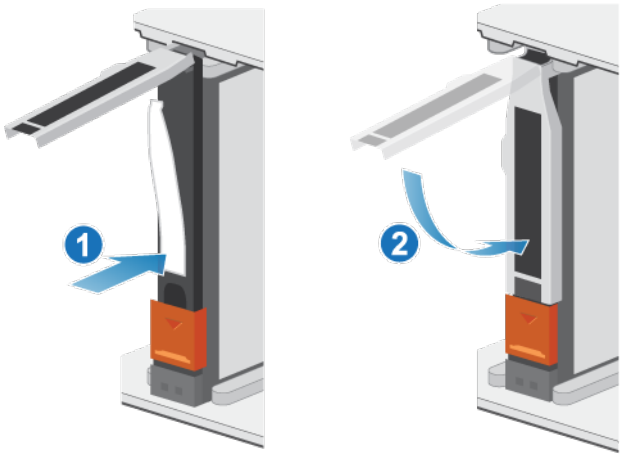

Figure 171. Installing a drive

The activity light flashes to indicate that the spin-up sequence has begun.

Installing the front bezel

Steps

1. Align the bezel with the enclosure.
2. Gently push the bezel into place on the cabinet until it latches.
3. If the bezel has a key lock, lock the bezel with the provided key.

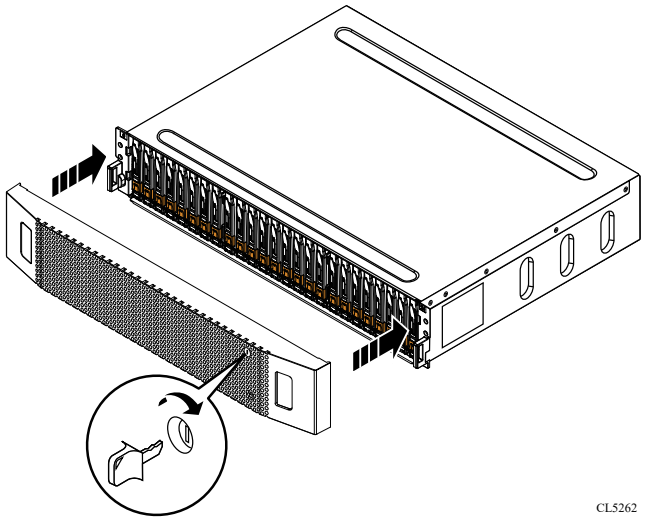

Figure 172. Installing the bezel

Verify the operation of an added drive

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you added the drive.
3. On the **Components** card, under **Drives**, expand **ExpansionEnclosure** and select the drive.
   The status of the drive should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the drive is correctly seated, or contact your service provider.

Replace a faulted drive in an NVMe expansion enclosure

Take the following actions to remove a faulted drive from an NVMe expansion enclosure and install a replacement drive.

Identify a faulted drive from PowerStore Manager

Before you replace a drive, ensure that you have identified its location within the system. Using PowerStore Manager, you can identify and locate a faulted drive.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that includes the drive that you need to replace.
3. On the **Components** card, under **Drives**, expand **ExpansionEnclosure** and select the faulted drive.
   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.
4. Click **Blink LED**.
   The amber fault light on the drive starts blinking.

Removing the front bezel

About this task

NOTE: Remove the front bezel of the expansion enclosure to gain access to the drives. The bezel is required for EMI compliance when the enclosure is powered up. Remove it only to replace or add a drive.

Steps

1. If the bezel has a lock, insert the key that shipped with your enclosure into the lock, and turn the key to unlock the bezel.
2. Press the two latch buttons on the bezel surface to release the bezel from the cabinet.
3. Pull the bezel off the cabinet, and put it on a clean, static-free surface.

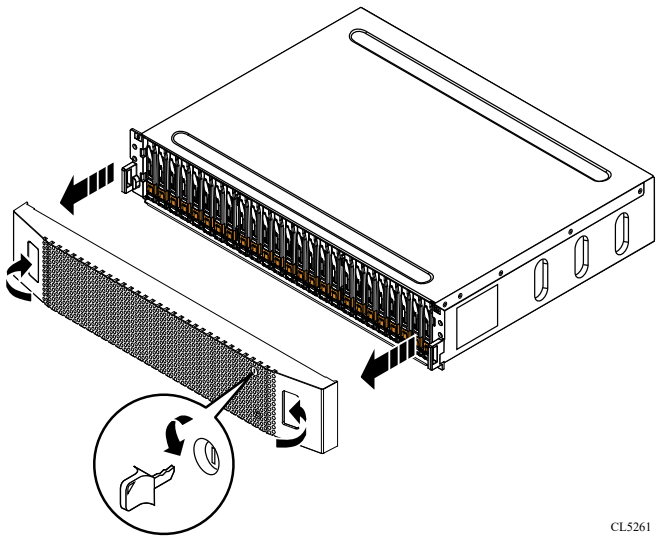

Figure 173. Removing the front bezel

Remove a faulted drive

Steps

1. Locate the drive with the blinking amber LED fault light.
2. Push down the orange button to release the latch.
3. Remove the drive from the slot.

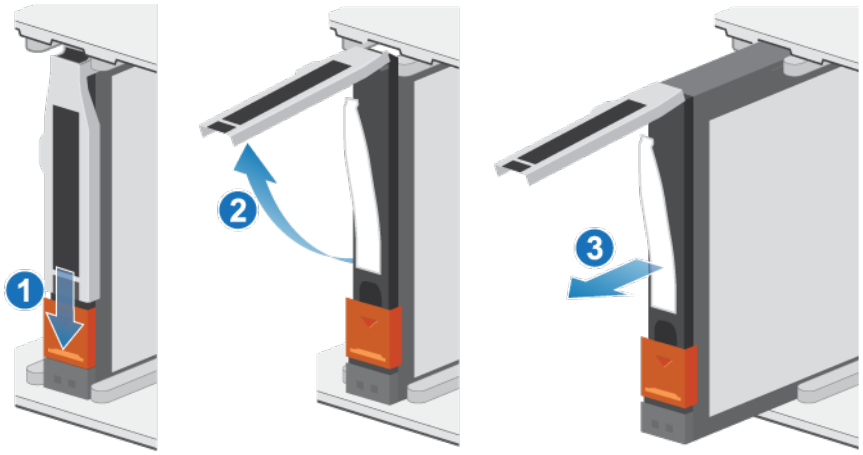

Figure 174. Removing a drive

4. Place the drive on a static-free surface.

Installing a drive

About this task

NOTE: If you are installing multiple drives in a system that is powered up, wait at least 10 seconds before sliding the next drive into position.

NOTE: Drives must be installed from left-to-right starting with the first available slot.

Steps

1. Align the drive with the guides in the slot.
2. With the latch fully opened, gently push the drive into the slot.
   The latch begins to rotate downward when it meets the enclosure.
3. Push the orange button until the drive is fully seated in the slot.
4. Push the latch down until it locks into place.

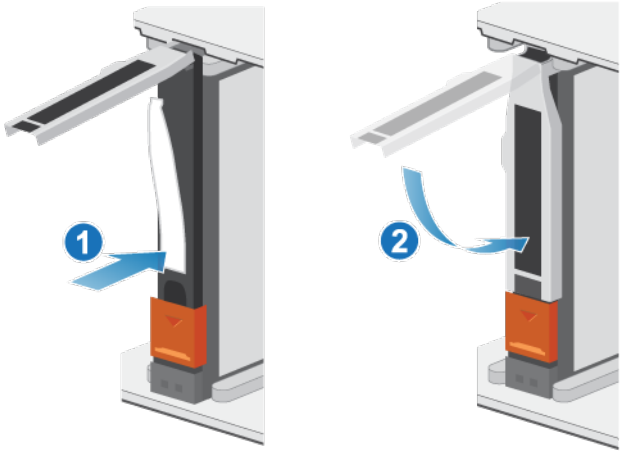

Figure 175. Installing a drive

The activity light flashes to indicate that the spin-up sequence has begun.

Installing the front bezel

Steps

1. Align the bezel with the enclosure.
2. Gently push the bezel into place on the cabinet until it latches.
3. If the bezel has a key lock, lock the bezel with the provided key.

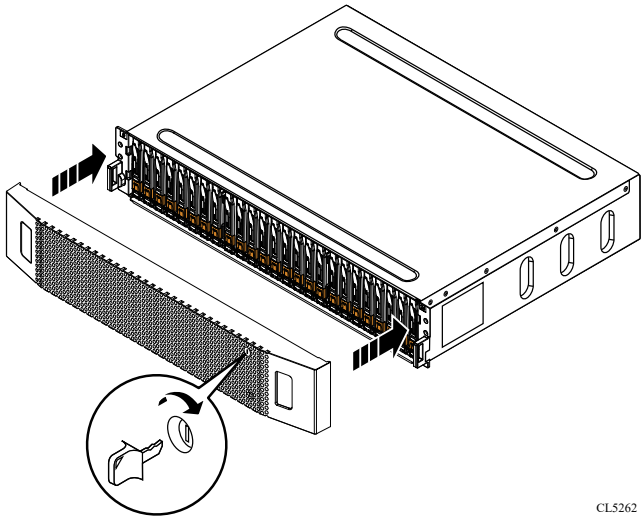

Figure 176. Installing the bezel

Verify the operation of a replacement drive

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the drive.
3. On the **Components** card, under **Drives**, expand **ExpansionEnclosure** and select the drive.

   The status of the replacement drive should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the drive is correctly seated, or contact your service provider.
4. Click **Stop Blink LED**.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.

e. If your screen does not show the Return Part link, contact your service provider for instructions.

Replace a power supply module in an NVMe expansion enclosure

Take the following actions to remove the faulted power supply module from the NVMe expansion enclosure and install a replacement power supply.

Identify a faulted power supply from PowerStore Manager

Before you replace a power supply, use PowerStore Manager to identify its location within the system.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that includes the power supply that you need to replace.
3. On the **Components** card, under **Rear View**, expand **ExpansionEnclosure**.
4. Expand the node that includes the power supply, and then select **PSU0**.
   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.

NVMe expansion enclosure power supply LEDs

Use the fault LEDs to identify the faulted part.

NOTE: The power supplies in the NVMe expansion enclosure are installed upside down.

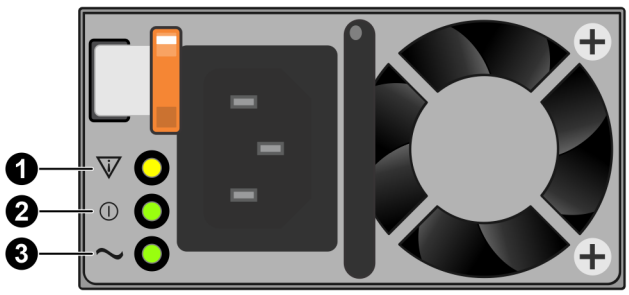

Figure 177. NVMe expansion enclosure power supply LEDs

Table 8. NVMe expansion enclosure power supply LEDs

LED	Location	State	Description
Fault	1	Solid amber	Power supply or backup fault. Check cable connection.
		Off	No fault.
DC power (output)	2	Green	DC power is on.
		Off	DC power is off. Verify source power.
AC power (input)	3	Green	AC power is on.
		Off	AC power is off. Verify source power

Remove a power supply

About this task

The power supplies in the NVMe expansion enclosure are installed upside down.

NOTE: You do not need to power down the system to remove a power supply.

Steps

1. Rotate the power cable retention bail to the left. Remove the power cable from the power supply.

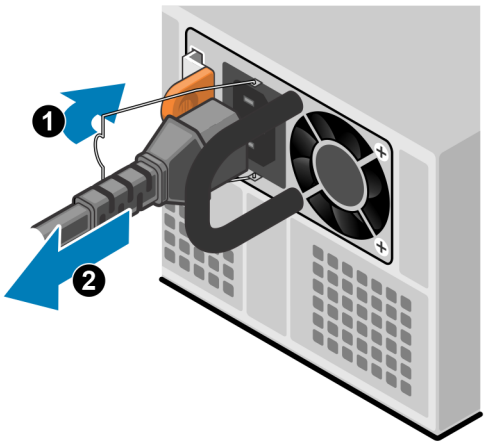

Figure 178. Removing the power cable

2. Push and hold the orange release tab to the left and grasp the power supply by its handle. Remove the power supply by pulling it from the node.

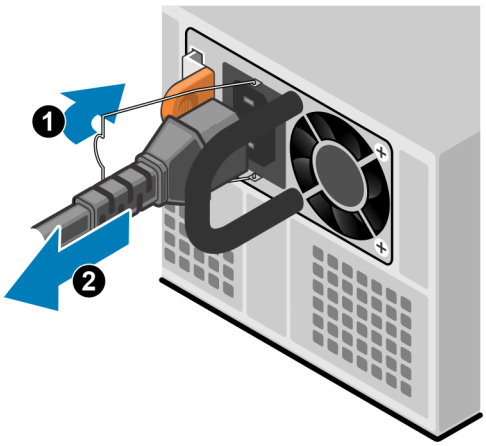

Figure 179. Removing a power supply

Install a power supply

About this task

The power supplies in the NVMe expansion enclosure are installed upside down.

Steps

1. Align the power supply with the slot in the node. The power cable retention bail will be on the left.

2. Push the power supply into the node until it clicks into place.

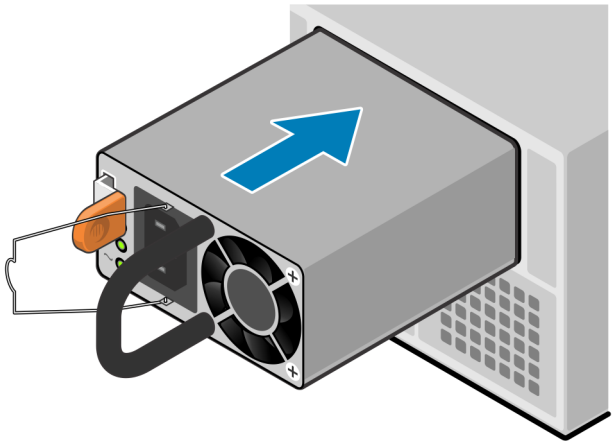

Figure 180. Installing a power supply

3. Connect the power cable to the power supply and secure the cord with the retention bail at the connector.

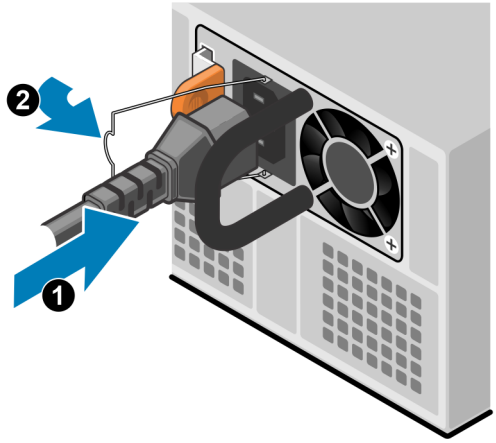

Figure 181. Inserting the power cable

Verify the operation of a replacement power supply

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance where you replaced the power supply.
3. On the **Components** card, under **Rear View**, expand **ExpansionEnclosure**.
4. Expand the node that includes the power supply, and then select **PSU0**.

   The status of the replacement power supply should read `Healthy`. If the status is still `Faulted`, wait a few minutes and refresh PowerStore Manager. If the status does not change, ensure that the power supply is correctly seated, or contact your service provider.

Return a faulted part

About this task

For US customers, return defective material within five business days. For International customers, return defective material within 10 business days. The materials required to return your defective part are supplied with the good part shipment.

Steps

1. Package the faulted part in the shipping box that contained the replacement part.
2. Ship the failed part to your service provider as described in the instructions that were included with the replacement part.
3. For more information about returning customer-replaceable parts:
   a. Open PowerStore Manager.
   b. Click **Settings** on the upper right of the screen.
   c. Click **General Support**.
   d. Under **Drives, Power Supplies, and Other Parts**, click **Return Part**.
   e. If your screen does not show the Return Part link, contact your service provider for instructions.

Replace a fan module in an NVMe expansion enclosure

Take the following actions to remove the faulted fan module from the NVMe expansion enclosure and install a replacement fan.

Identify a faulted fan module from PowerStore Manager

Before you replace a fan module, ensure that you have identified its location within the system. Using PowerStore Manager, you can identify and locate a faulted fan module.

Steps

1. From PowerStore Manager, select **Hardware**.
2. Select the appliance that includes the fan module that you need to replace.
3. On the **Components** card, under **Internal View**, expand the node that includes the fan module, and then select the relevant **FanModule**.

   Faulted parts appear in red in the image of the system, and report a status of `Faulted` in the **State** field.

Remove a fan module

Steps

1. Pull the expansion enclosure from the rack until the system cover is accessible.
2. Lift open the system cover.

   CAUTION: Do not leave the system cover open for more than two minutes. If you need more time, close the cover and allow the system temperature to stabilize before proceeding.