Hewlett Packard Enterprise

HPE StoreOnce 3660, 5260 and 5660 System Capacity Upgrade Guide

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HPE StoreOnce 3660, 5260 and 5660 System Capacity Upgrade Guide

Abstract

This document explains how to install the HPE StoreOnce 3660, 5260 and 5660 System Capacity Upgrade Kits, apply the new license, and add the new storage to the existing system. It is intended for system administrators familiar with HPE StoreOnce systems. For the latest version of this document, see http://www.hpe.com/info/storeonce/docs.

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HPE StoreOnce 3660 system capacity upgrade

The HPE StoreOnce 3660 System consists of a server with preconfigured storage on ten 8TB hard disks. Use the following to expand your storage.

- **R7M22A: HPE StoreOnce 3660 96TB Capacity Upgrade Kit**

  The HPE StoreOnce 3660 System 96TB Capacity Upgrade Kit (R7M22A) includes one HPE Primera 600 LFF storage enclosure containing twelve 8TB hard disks.

  Up to two capacity upgrade kits can be added to the HPE StoreOnce 3660 System. A license is required for each additional capacity upgrade kit. A license entitlement certificate is included with the kit, which describes how to obtain the License To Use.

  NOTE:

  The StoreOnce 3660 96TB Capacity Upgrade Kit requires StoreOnce software version 4.3.0 or higher and may only be used with the HPE StoreOnce 3660 System.

IMPORTANT: The StoreOnce 3660 96TB Capacity Upgrades are supported only in OFFLINE mode. Please ensure that the server and enclosure power is OFF before performing capacity upgrades

HPE StoreOnce 5260 and 5660 system capacity upgrade

The HPE StoreOnce 5260 and 5660 Systems consists of a node purchased with a minimum of one storage expansion containing twelve 16TB hard disks. Use the following to expand your storage:

- **R7M23A: HPE StoreOnce 5260/5660 192 TB Capacity Upgrade Kit**

  The HPE StoreOnce 5260/5660 System (192 TB) Capacity Upgrade Kit (R7M23A) includes one Primera 600 LFF storage enclosure containing twelve 16TB disks. One of the twelve disks is used as a hot spare.

  Up to three capacity upgrade kits may be added to the HPE StoreOnce 5260 System. Up to seven capacity upgrade kits may be added to the HPE StoreOnce 5660 System. A license is required for each additional capacity upgrade kit. A license entitlement certificate is included with the kit, which describes how to obtain the License to Use.

  NOTE: The StoreOnce 5260 and 5660 Capacity Upgrade Kit (R7M23A) requires StoreOnce software version 4.3.0 or higher and may only be used with the HPE StoreOnce 5260 and 5660 System.

IMPORTANT: The StoreOnce 5260/5660 192TB Capacity Upgrades are supported only in OFFLINE mode. Please ensure that the server and enclosure power is OFF before performing capacity upgrades.

Installing the capacity upgrade kits

The capacity upgrade kit enclosures can be installed into most standard server racks. To verify that your rack is supported for use with the disk enclosure, see the QuickSpecs for the disk enclosure at the HPE website: **www.hpe.com/support/StoreOnceQuickSpecs**.

For detailed safety information, see the safety guide at **www.hpe.com/support/Safety-Compliance-EnterpriseProducts**.

CAUTION:

Use extreme caution when installing and pulling units from the rack; they can slip and fall, causing injury or damage to the StoreOnce system. Hewlett Packard Enterprise is not responsible for any injury or damage caused by the mishandling of the StoreOnce system. Always use at least two people to lift and locate an enclosure into the rack.

Subtopics

Important considerations when installing capacity upgrade kits

Prerequisites

- StoreOnce 3660, 5260 and 5660 systems support only **OFFLINE** expansion. The server node and enclosures must be powered off **before** connecting the new enclosure for offline expansion.
- Cable installation and cable movements **must** follow the numbered sequence.
- When additional shelves are added to a system, the Smart Array must initialize parity of the new logical volume.
- Parity initialization on newly connected enclosures can take up to 24 hours.
- If multiple shelves are added, parity is initialized in parallel.

About this task

HPE StoreOnce capacity upgrade enclosures must only be installed while the system is in an offline state. Please ensure the following steps are taken when installing a new enclosure:

Procedure

1. Cleanly shut down the server node and all existing enclosures.
2. Disconnect all power cables from the server and enclosures.
3. Perform the storage expansion, remembering the numbered sequence required to connect the enclosures. Ensure that only necessary changes are made to complete the expansion.

   WARNING: Incorrect connections can lead to Data Loss.
4. Connect back all of the SAS cables correctly the same order, following the configuration diagrams.
5. Connect back the **enclosure** power cables only and wait for a few minutes until the enclosures are powered up.
6. When the enclosures are powered up, connect the **server** power cables and power on the server.

HPE StoreOnce 3660 system capacity upgrade

Subtopics

Adding expansion drive enclosures to the HPE StoreOnce 3660

Adding expansion drive enclosures to the HPE StoreOnce 3660

About this task

To add drive enclosures to the system, the components in the capacity upgrade kits are required. The drive enclosures can be installed into most standard server racks. To verify that your rack is supported, see the QuickSpecs at: http://www.hpe.com/support/StoreOnceQuickSpecs.

For detailed safety information, see the safety guide at: http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts.

NOTE: Use extreme caution when installing and pulling units from the rack; they can slip and fall, causing injury or damage to the StoreOnce system. Hewlett Packard Enterprise is not responsible for any injury or damage caused by the mishandling of the StoreOnce system. Always use at least two people to lift and locate an enclosure into the rack.

Procedure

1. Prepare for drive enclosure addition.
2. Enable maintenance mode.

3. Plan the rack layout for the HPE StoreOnce 3660.
4. Install the 2U rail kit.
5. Install the drive enclosure(s).
6. Check the drive enclosure number on the pull out tab or Label the drive enclosures.
7. Follow the guidelines for connecting cables to the capacity upgrade drive enclosures.
8. Add power cables to power on the system.
9. Complete the upgrade process, see Completing the storage expansion.

Subtopics

Preparing for drive enclosure installation

Prerequisites

Review Capacity upgrade planning considerations, Redundant hardware connectivity guidelines and Rack warnings.

Procedure

1. Gather the required tools, see Required tools.
2. Unpack the capacity upgrade kit and verify the contents.

   See Capacity upgrade kit contents.
3. Unpack the rail kit. Install the rail kit following the instructions supplied with the rail kit.

   IMPORTANT:

   Read the installation guidelines carefully before installing the rails and the expansion enclosure. The instructions provide important safety information.

   NOTE:

   Adjust the back bracket on the standard rail kit after installing the rails. For ease of installation with the Capacity Upgrade Kit, Hewlett Packard Enterprise recommends making the adjustment prior to mounting the rail kit.
4. Identify the rack location for the 2U drive enclosure, see Planning the rack layout for the HPE StoreOnce 3660, Planning the rack layout for the HPE StoreOnce 5260 enclosure or Planning the rack layout for the HPE StoreOnce 5660 enclosure to plan where to rack the drive enclosures in relation to the controller node in the system.

Enabling maintenance mode when using StoreOnce Remote Support

About this task

If StoreOnce Remote Support is configured, put the StoreOnce System into maintenance mode before installing the upgrade. Enabling maintenance mode prevents the system from generating unwanted support calls during the installation process.

Procedure

1. Navigate to the StoreOnce System and log in to the StoreOnce Management Console.
2. On the main menu, select Settings.
3. In the System section, select the Maintenance mode panel.
4. On the Maintenance mode screen, set the Maintenance mode switch to the on position ( ), and then click OK.

Planning the rack layout for the HPE StoreOnce 3660

Installing the HPE StoreOnce 3660 R7M22A capacity upgrade kit

Install the first capacity upgrade enclosure below the server node.

Install a second capacity upgrade enclosure below the first capacity upgrade enclosure.

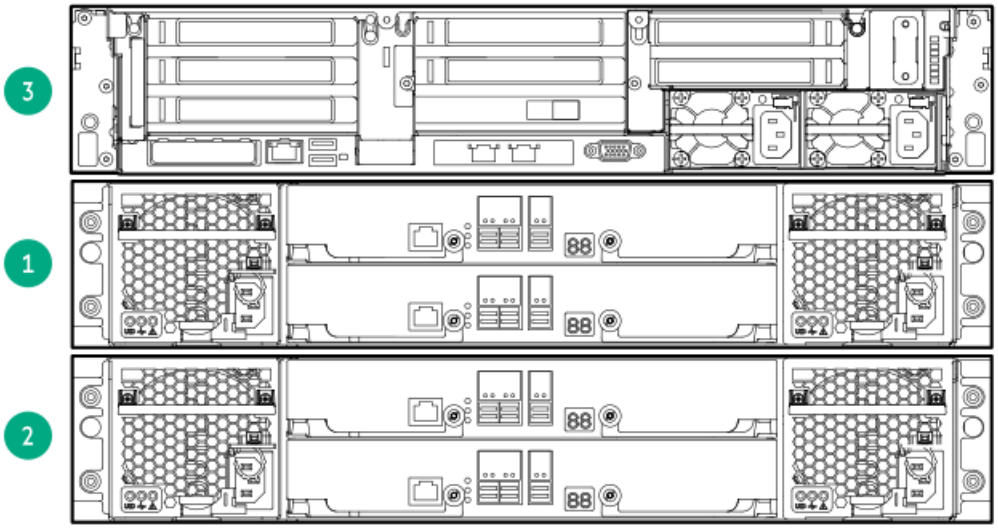


Table 1.

Item	Component
3	Server node.
1	JBOD 1: First capacity upgrade kit. Install directly below the server node.
2	JBOD 2: Second capacity upgrade kit. Install directly below JBOD 1.

Installing a 2U rail kit for the HPE StoreOnce 3660 system

Prerequisites

- Determine the correct location for installing a rail kit and drive enclosure, see the Planning the rack layout for the HPE StoreOnce 3660, Planning the rack layout for the HPE StoreOnce 5260 enclosure or Planning the rack layout for the HPE StoreOnce 5660 enclosure.

- Gather the required tools.
- Ensure you have the 2U enclosure kit parts.
- Observe safety precautions when installing a rail kit.
- Verify that you are using a 2U rail kit with a 2U enclosure. The 2U rails are labeled "USE FOR 2U CHASSIS".
- Review Guidelines for the rail kit installation in a rack.

About this task

A 2U rail kit is used with the 2U drive enclosure.

Procedure

1. Determine the rack "U" position for installing a 2U enclosure in the rack.

   The 2U enclosure rail kit requires two units of vertical space in the rack. To prevent the rack from tipping, install the initial drive enclosures after installing the controller node enclosure. Align the bottom of the rail with the bottom of the "U" position.

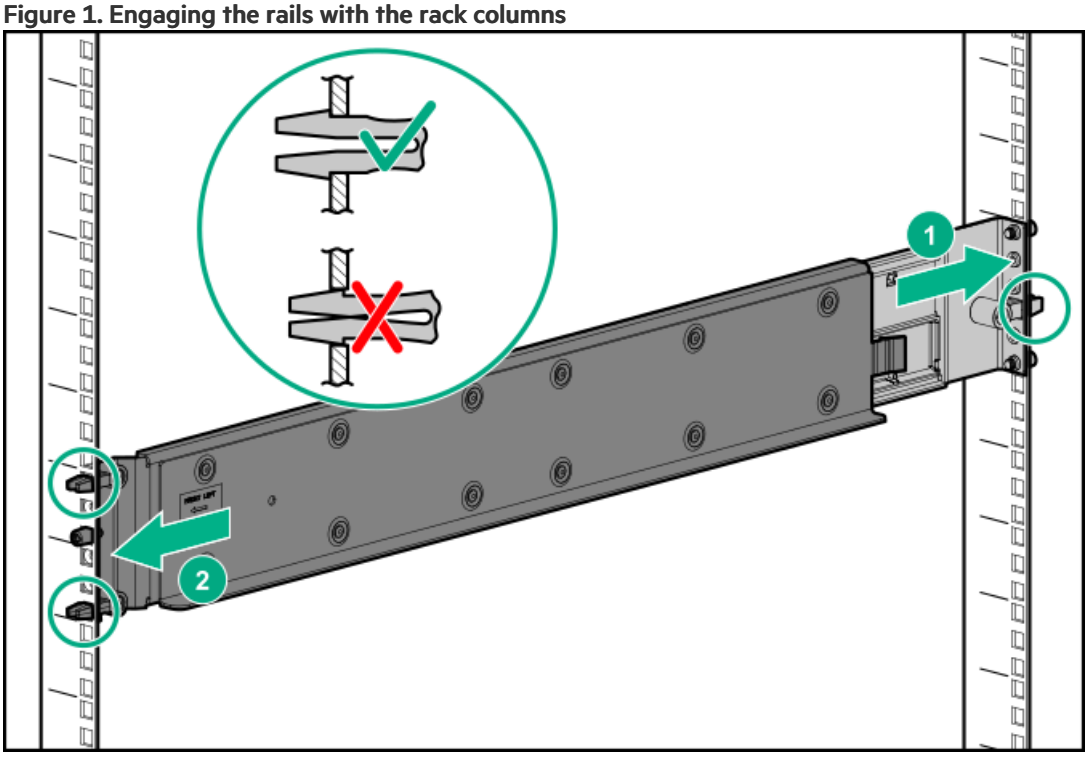
2. From the front of the rack, position the rail inside the rack and engage the rail with the rear rack column.
   a. To ensure a proper fit between the front and rear rack columns, compress or extend the length of the rail.
   b. Position the rail inside the rack with the rail label facing the inside of the rack.

      Labels on the rails denote Front Right and Front Left to assist with orientation.

   c. Engage the rail with the rear rack column. Insert the rear end of the rail through the chosen "U" position, until the clip snaps into place and the pins extend through the rack holes (1).

   NOTE: To reposition the rail, pinch the rail locking clips to remove it.

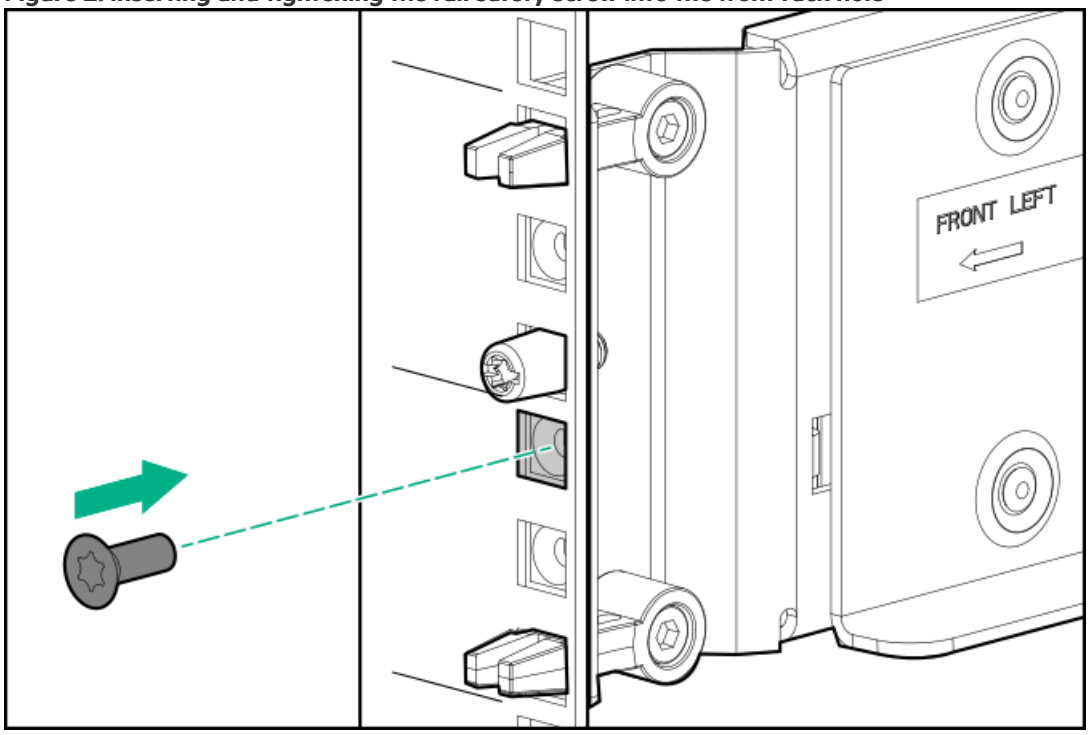
Figure 1. Engaging the rails with the rack columns



3. Engage the rail with the front rack column.
   a. Pull the front of the rail to connect it to the front RETMA rail.
   b. Engage the rail with the front rack column. Insert the front end of the rail through the chosen "U" position, until the clip snaps into place and the pins extend through the rack holes (2).
4. Repeat steps 2 and 3 for the other rail.
5. Insert and tighten the rail safety screw into the front rack holes.

a. Insert and tighten the safety screw into the front rack hole as indicated in the following image. The safety screw is provided with the rail kit package.

Figure 2. Inserting and tightening the rail safety screw into the front rack hole



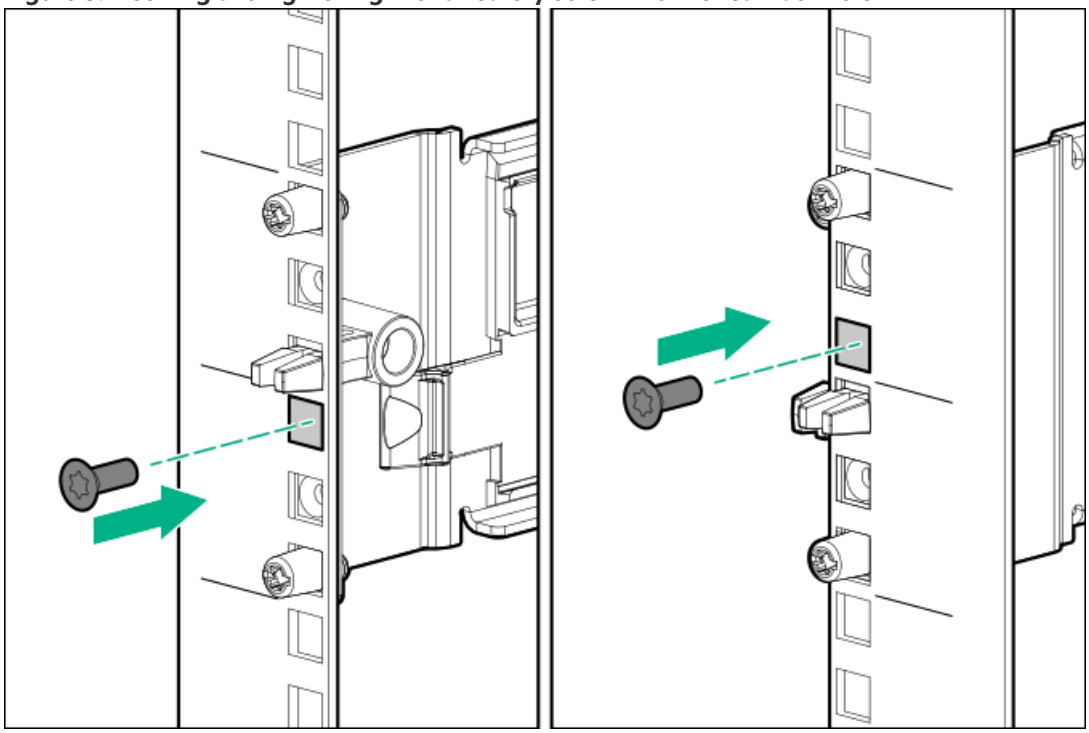
b. Repeat for the other rail.

6. Insert and tighten the rail safety screw into the rear rack holes.

The rail kit package contains five safety screws. One screw is an extra.

a. Insert and tighten the safety screw into the rear rack hole. Refer to the gray square in the following image for the screw location.

Figure 3. Inserting and tightening the rail safety screw into the rear rack hole



b. Repeat for the other rail.

WARNING:

Before installing any hardware on the rails, verify that both ends of each rail are secured with the included safety screws and, if applicable, hold-down brackets.

Securely tighten the safety screws before you insert an enclosure to prevent the rails from disengaging, damaging the equipment or causing personal physical harm.

7. To secure the enclosures for shipping, install rear hold-down brackets to the rail rear columns.

   Perform this step only when the front and rear RETMA rails are exactly 29 inches apart, such as in an HPE factory-integrated rack.

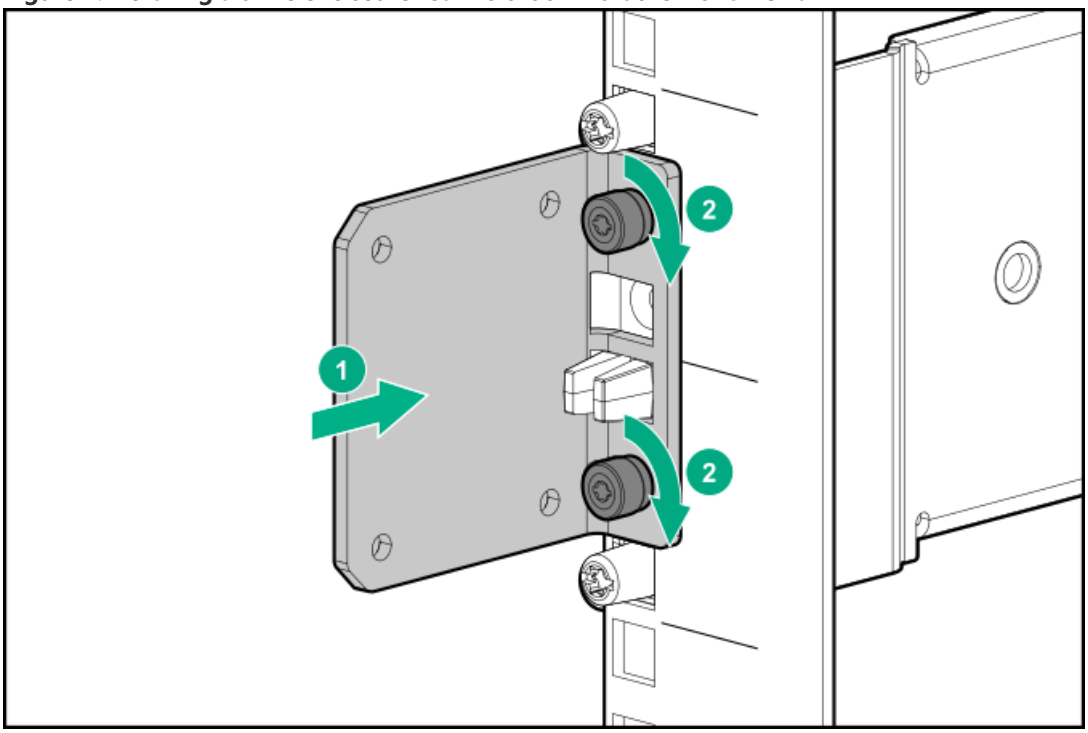
   The brackets secure the enclosure after it is installed.

   TIP: Use a long shank tool or tool extension to reach the bracket screws.

   a. Install two rear hold-down brackets, one per rack column (1).

   b. For each bracket, tighten the captive screws to the rack columns through the rail kit (2). (Torque specification is 20 In-Lb.)

Figure 4. Installing a drive enclosure rear hold-down bracket for a 2U rail



8. Verify that the rails are secured by pushing on the front and back of each rail ledge.

Installing a drive enclosure

Prerequisites

The 2U rail kit has been installed.

About this task

IMPORTANT:

Do not power on drive enclosures during installation. See Capacity upgrade planning considerations for more information.

This procedure applies to 2U drive enclosures that provide expanded capacity for the storage system.

CAUTION:

Use extreme caution when installing and pulling units from the rack. Unattached units can slip and fall, damaging the StoreOnce System or causing personal injury. Hewlett Packard Enterprise is not responsible for any damage or injury caused by mishandling the StoreOnce System.

Component	Rack space	Weight

Component	Rack space	Weight
HPE Primera 600 LFF storage enclosure (R7M22A)	2U	33kg (74 lbs)

Always use at least two people to lift and locate a capacity upgrade enclosure into the rack.

TIP:

Hard disks are preconfigured and must remain installed or returned to the same disk slots they arrived in.

You can remove the hard disks to make the storage enclosures lighter and easier to install. All hard disks must be returned to their original slots before the system is powered on. Failure to return each disk to its proper location will result in the system failing to start.

Label the disks with the provided label kits before removing them from the storage enclosure for ease of installation and maintenance.

Procedure

1. Verify that the drive enclosure is right-side up.

   The enclosure top has caution and regulatory labels, and the bottom has no labels.

2. If plastic ear caps are installed on the drive enclosure front, temporarily remove them to expose the thumbscrews. To remove, pull the ear caps away from the drive enclosure.

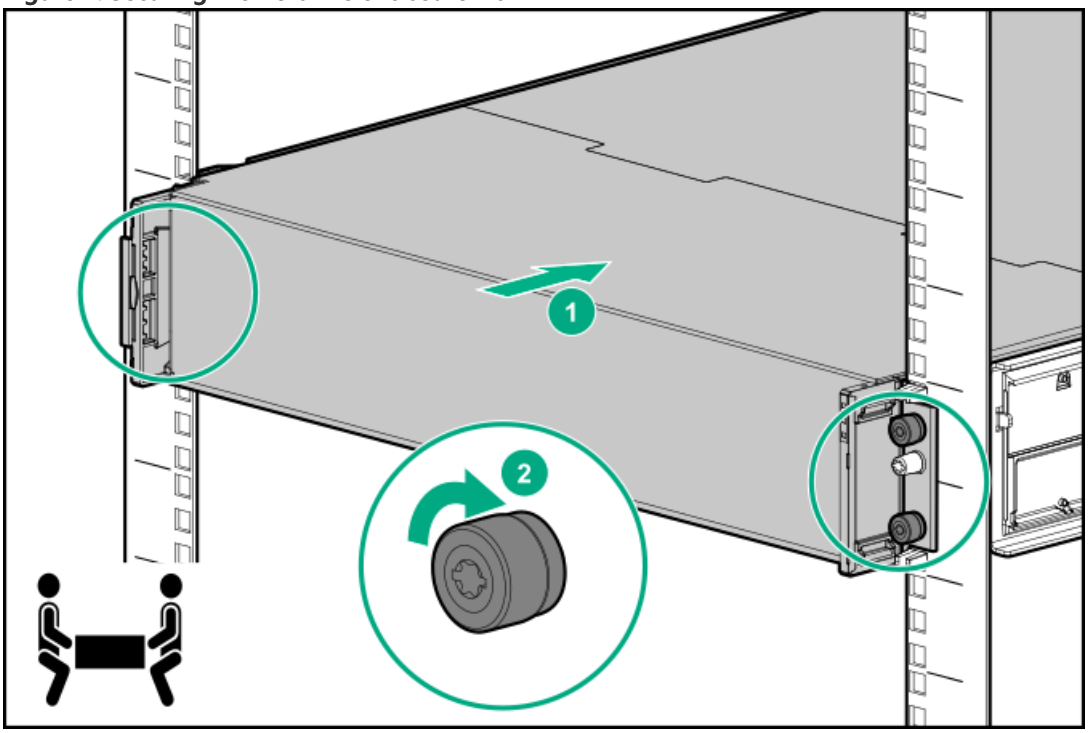
3. If available, place the drive enclosure onto a mechanical or electrical lift and move it in front of the rack. If a lift is not available, use at least 2 people to lift a 2U drive enclosure.

4. At the rack front, align the drive enclosure just above the rail ledges and slide it all the way into the rack.

5. Secure the drive enclosure to the front of the rack:

   Secure with the four captive T25 Torx thumbscrews, two on each side of the drive enclosure. Torque to 20-in-Lbs.

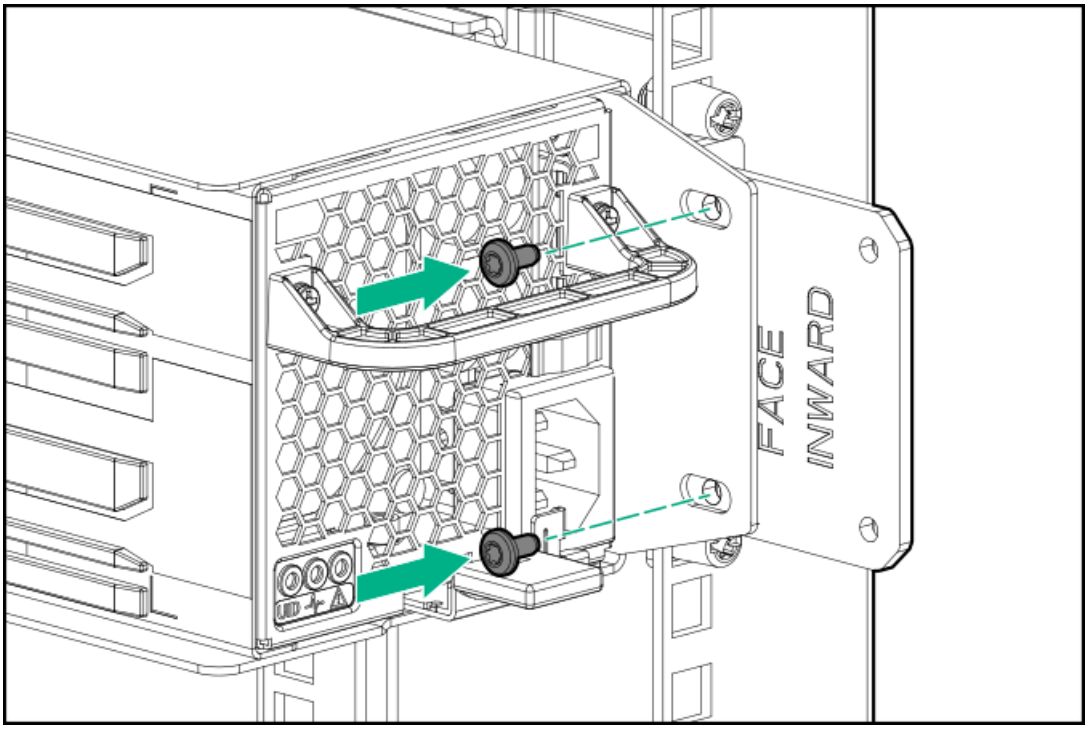
Figure 1. Securing the 2U drive enclosure front



6. At the drive enclosure front, install the plastic ear caps on each side. Ensure that the ear cap is in the correct orientation and snap it into place.

7. At the rack rear, if rear hold-down brackets are installed and the front and rear RETMA rails are exactly 29 inches apart, secure the drive enclosure with two pan head T15 Torx screws (on each side of the enclosure). Torque to 20-in-Lbs.

Figure 2. Installing rear hold-down screws, drive enclosure rear view



Checking the drive enclosure number on the pull out tab

Prerequisites

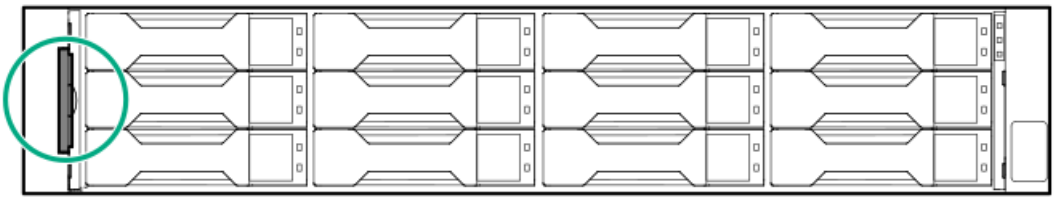
Checking the drive enclosure number on the pull out tab is only required if your system has arrived pre-configured on the rack. Follow the steps at Labeling drive enclosures if your system has arrived in separate components and not pre-configured in the rack. The pullout tab also contains the component's serial number.

Procedure

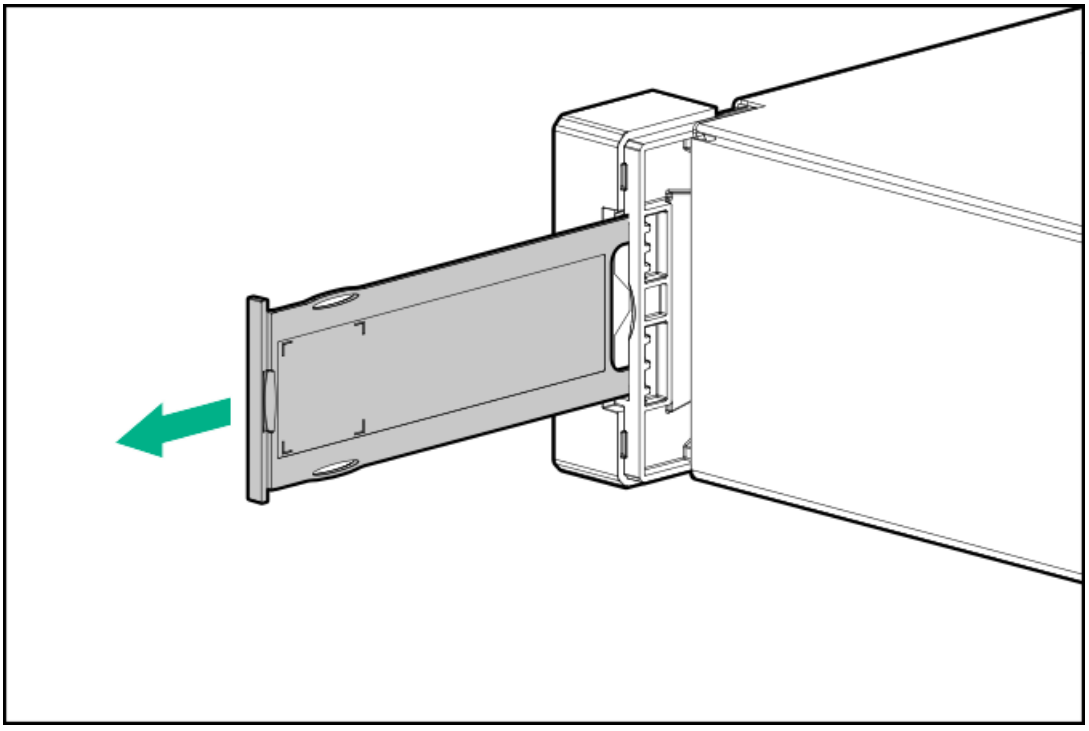
1. Locate the pull out tab.

Figure 1. HPE Primera 600 LFF storage enclosure (capacity upgrade R7M22A/R7M23A)

The pull out tab is located on the front left corner of the drive enclosure.



2. Pull out the system information tab.



3. Verify the drive enclosure number on the pull out tab.

Subtopics

Labeling drive enclosures

Labeling drive enclosures

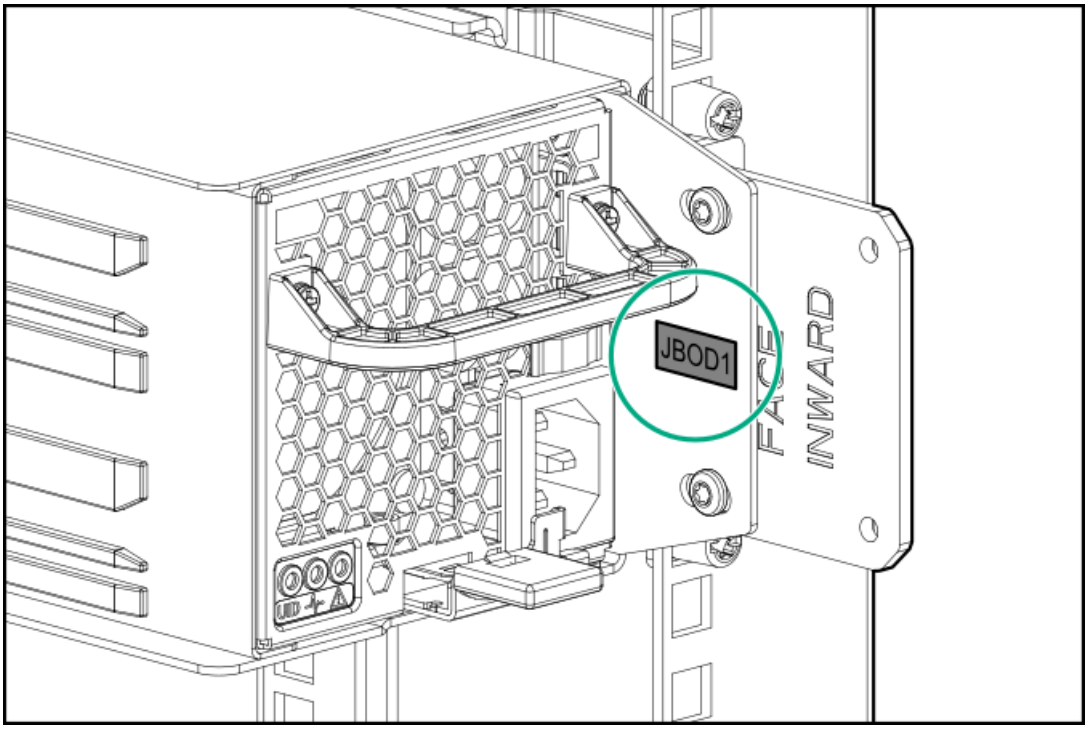
Prerequisites

Review Drive enclosure labels.

Procedure

1. Locate the first drive enclosure beneath the controller node enclosure and label it **JBOD1**.
2. Apply the label on the left or right side of the enclosure, adjacent to the PCBMs.
3. Apply the matching label to the front side of the enclosure.

Figure 1. Enclosure label adjacent to a PCM



4. Repeat steps 2 and 3 for labeling the other drive enclosures in your rack. See Planning the rack layout for the HPE StoreOnce 3660, Planning the rack layout for the HPE StoreOnce 5260 enclosure or Planning the rack layout for the HPE StoreOnce 5660 enclosure.

Cable guidelines for the HPE Storeonce 3660 capacity upgrade kits

Subtopics

Cabling the base enclosure (JBOD 1)

Cabling the second capacity upgrade kit (JBOD 2)

Cabling the base enclosure (JBOD 1)

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

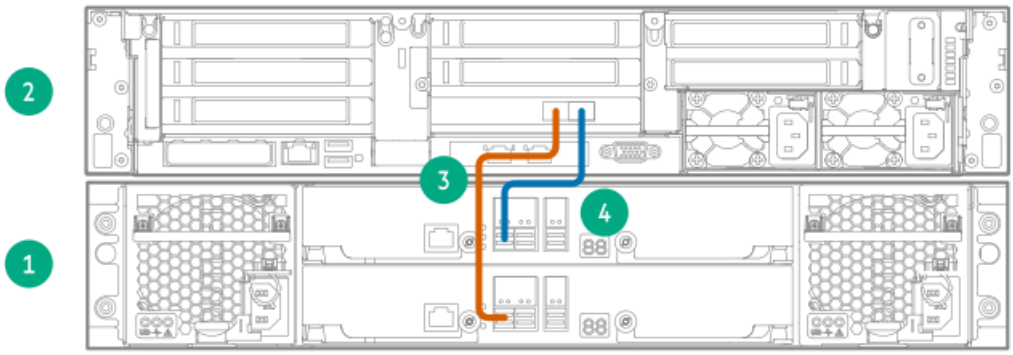
Procedure

1. Apply the JBOD1 label to the top-left pull-out tab at the rear of the enclosure.
2. Apply the cable label to the new SAS cable.

SAS cable	Label color	Cable label
New 2m cable	Red	N:S6:P1 - JF:I0:P1
	White	F=1
New 1m cable	Green	N:S6:P2–J1:I1:P1

3. Cable the enclosure as shown.

Figure 1. Cabling the base enclosure (JBOD 1)



Item	Component
2	Server node
1	JBOD 1: Base enclosure

Item	SAS cable	Label color	Cable from	To
3	New 2m cable	Red and White	Node Slot 6 Port 1	JBOD 1 IOM 0 Port 1
4	New 1m cable	Green	Node Slot 6 Port 2	JBOD 1 IOM 1 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the second capacity upgrade kit (JBOD 2)

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

About this task

The second capacity upgrade kit is located directly below the base enclosure (JBOD 1). This is the maximum configuration for the HPE StoreOnce 3660.

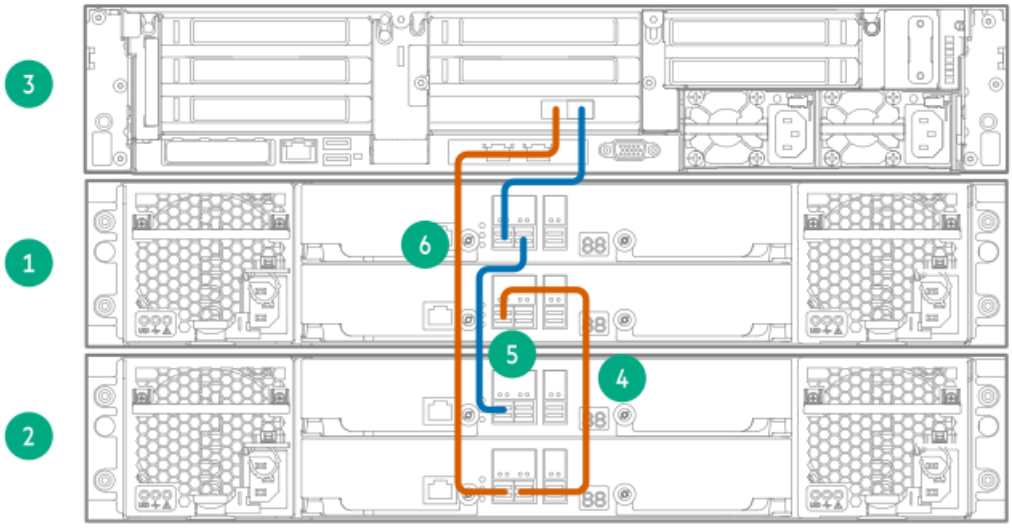
Procedure

1. Apply the "JBOD2" label to the top-left pull-out tab at the rear of the enclosure.
2. Apply the cable labels to the new SAS cables. On the moving SAS cable, replace the “F=1” label with the “F=2” label.

SAS cable	Label color	New label
New 2m cable	Red	J1:I0:P1 - J2:I0:P2
New 1m cable	Green	J1:I1:P2 - J2:I1:P1
Moving 2m cable	Red and White	(F=2)

3. Cable the enclosure as shown.

Figure 1. Cabling the second capacity upgrade kit (JBOD 2)



Item	Description
3	Server node
1	JBOD 1: Base enclosure
2	JBOD 2: Second capacity upgrade enclosure

Item	SAS cable	Label color	Cable from	To
4	New 2m cable	Red	JBOD 1 IOM 0 Port 1	JBOD 2 IOM 0 Port 2
5	New 1m cable	Green	JBOD 1 IOM 1 Port 2	JBOD 2 IOM 1 Port 1
6	Moving 2m cable	Red and White	Node Slot 6 Port 1	JBOD 2 IOM 0 Port 1

Adding power cables and powering on the system

Procedure

1. Use the supplied power cables to connect the capacity upgrade enclosure to the main power supply.

   IMPORTANT:

   Ensure that each power supply is connected to a separate PDU.

   The enclosure powers on automatically when plugged in. Wait for a minute for the power on process to complete. The System Power and Status LEDs will be solid green.

2. Power on the StoreOnce System (the power button is on the front of the server).

   The power button LED flashes green at the start of the power-on sequence and then turns solid green, along with the system health LED. If LAN port 1 is connected to an active link, the NIC status LED will also begin to flash green when the StoreOnce System is powering up.

   While accessing the system using iLO, the UID LED flashes blue.

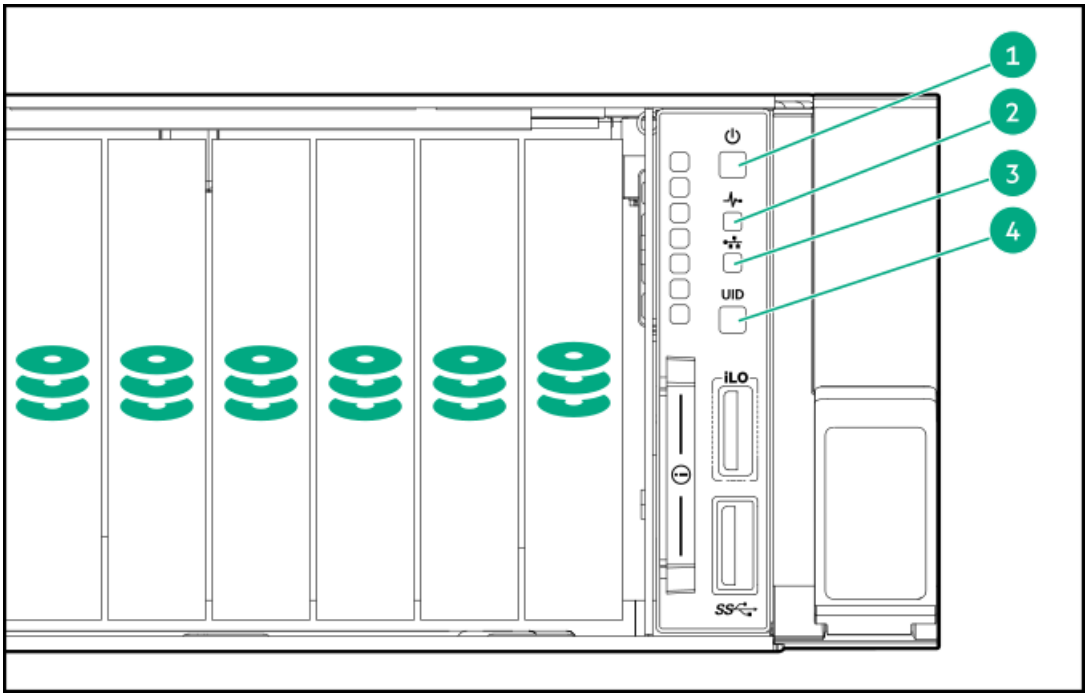


Table 1.

Item	LED
1	Power LED and on/off button
2	System Health LED
3	NIC Status LED
4	UID LED

HPE StoreOnce 5260 and 5660 system capacity upgrade

Subtopics

Adding expansion drive enclosures to the StoreOnce 5260 and 5660

Adding expansion drive enclosures to the StoreOnce 5260 and 5660

About this task

To add drive enclosures to the system, the components in the capacity upgrade kits are required. The drive enclosures can be installed into most standard server racks. To verify that your rack is supported, see the QuickSpecs at: http://www.hpe.com/support/StoreOnceQuickSpecs.

For detailed safety information, see the safety guide at: http://www.hpe.com/support/Safety-Compliance-EnterpriseProducts.

NOTE: Use extreme caution when installing and pulling units from the rack; they can slip and fall, causing injury or damage to the StoreOnce system. Hewlett Packard Enterprise is not responsible for any injury or damage caused by the mishandling of the StoreOnce system. Always use at least two people to lift and locate an enclosure into the rack.

Procedure

1. Prepare for drive enclosure addition.
2. Enable maintenance mode.
3. Plan the rack layout for the HPE StoreOnce 5260 or the HPE StoreOnce 5660.

4. Install the 2U rail kit.
5. Installing a drive enclosure.
6. Check the drive enclosure number on the pull out tab or Label the drive enclosures.
7. Follow the guidelines for connecting cables to the capacity upgrade drive enclosures.
8. Add power cables to power on the system.
9. Complete the upgrade process, see Completing the storage expansion.

Subtopics

Preparing for drive enclosure installation

Enabling maintenance mode when using StoreOnce Remote Support

Planning the rack layout for the HPE StoreOnce 5260 enclosure

Planning the rack layout for the HPE StoreOnce 5660 enclosure

Installing a 2U rail kit for the HPE StoreOnce 5260 and 5660 systems

Installing a drive enclosure

Checking the drive enclosure number on the pull out tab

Cable guidelines for the HPE StoreOnce 5260 and 5660 capacity upgrade kits

Adding power cables and powering on the system

Preparing for drive enclosure installation

Prerequisites

Review Capacity upgrade planning considerations, Redundant hardware connectivity guidelines and Rack warnings.

Procedure

1. Gather the required tools, see Required tools.
2. Unpack the capacity upgrade kit and verify the contents.

   See Capacity upgrade kit contents.
3. Unpack the rail kit. Install the rail kit following the instructions supplied with the rail kit.

   IMPORTANT:

   Read the installation guidelines carefully before installing the rails and the expansion enclosure. The instructions provide important safety information.

   NOTE:

   Adjust the back bracket on the standard rail kit after installing the rails. For ease of installation with the Capacity Upgrade Kit, Hewlett Packard Enterprise recommends making the adjustment prior to mounting the rail kit.
4. Identify the rack location for the 2U drive enclosure, see Planning the rack layout for the HPE StoreOnce 3660, Planning the rack layout for the HPE StoreOnce 5260 enclosure or Planning the rack layout for the HPE StoreOnce 5660 enclosure to plan where to rack the drive enclosures in relation to the controller node in the system.

Enabling maintenance mode when using StoreOnce Remote Support

About this task

If StoreOnce Remote Support is configured, put the StoreOnce System into maintenance mode before installing the upgrade. Enabling maintenance mode prevents the system from generating unwanted support calls during the installation process.

Procedure

1. Navigate to the StoreOnce System and log in to the StoreOnce Management Console.
2. On the main menu, select Settings.
3. In the System section, select the Maintenance mode panel.
4. On the Maintenance mode screen, set the Maintenance mode switch to the on position ( ), and then click OK.

Planning the rack layout for the HPE StoreOnce 5260 enclosure

Installing the HPE StoreOnce 5260/5660 R7M23A capacity upgrade kit

Install the first capacity upgrade enclosure immediately above the server node. Add capacity upgrade enclosures to the system by alternating them preceding and following the server node. A maximum configuration for a 5260 system has two storage enclosures directly above the server and two following the server.

Figure 1. StoreOnce 5260 system rack layout

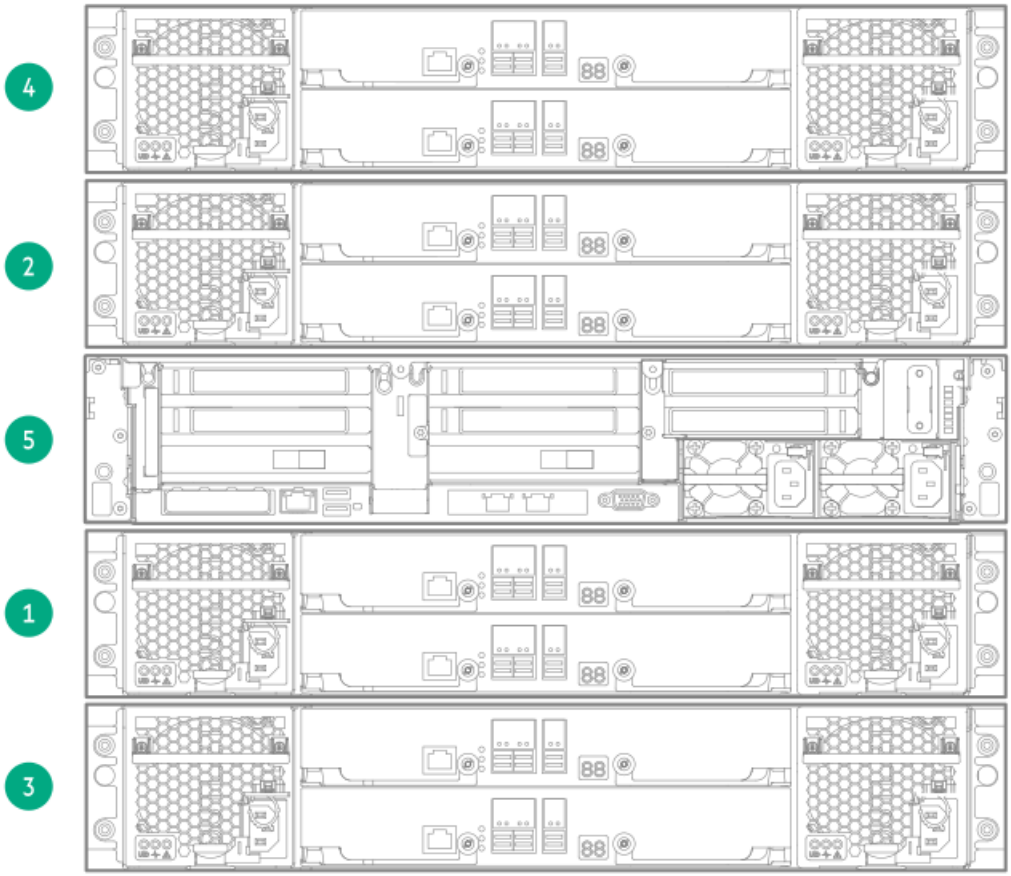


Table 1.

Item	Component
4	JBOD 4: Fourth capacity upgrade kit. Install this component above JBOD 2.
2	Server node JBOD 2: Second capacity upgrade kit. Install this component above the server node.
5	Server node
1	JBOD 1: Base Enclosure. Install this below the server node.

Item	Component
3	JBOD 3: Third capacity upgrade kit. Install the following JBOD.

Planning the rack layout for the HPE StoreOnce 5660 enclosure

Installing the HPE StoreOnce 5260/5660 R7M23A capacity upgrade kit

Install the first capacity upgrade enclosure immediately above the server node. Add capacity upgrade enclosures to the system by alternating them preceding and following the server node. A 5660 system at maximum configuration has four storage enclosures above and four below the server.

Figure 1. StoreOnce 5660 rack layout

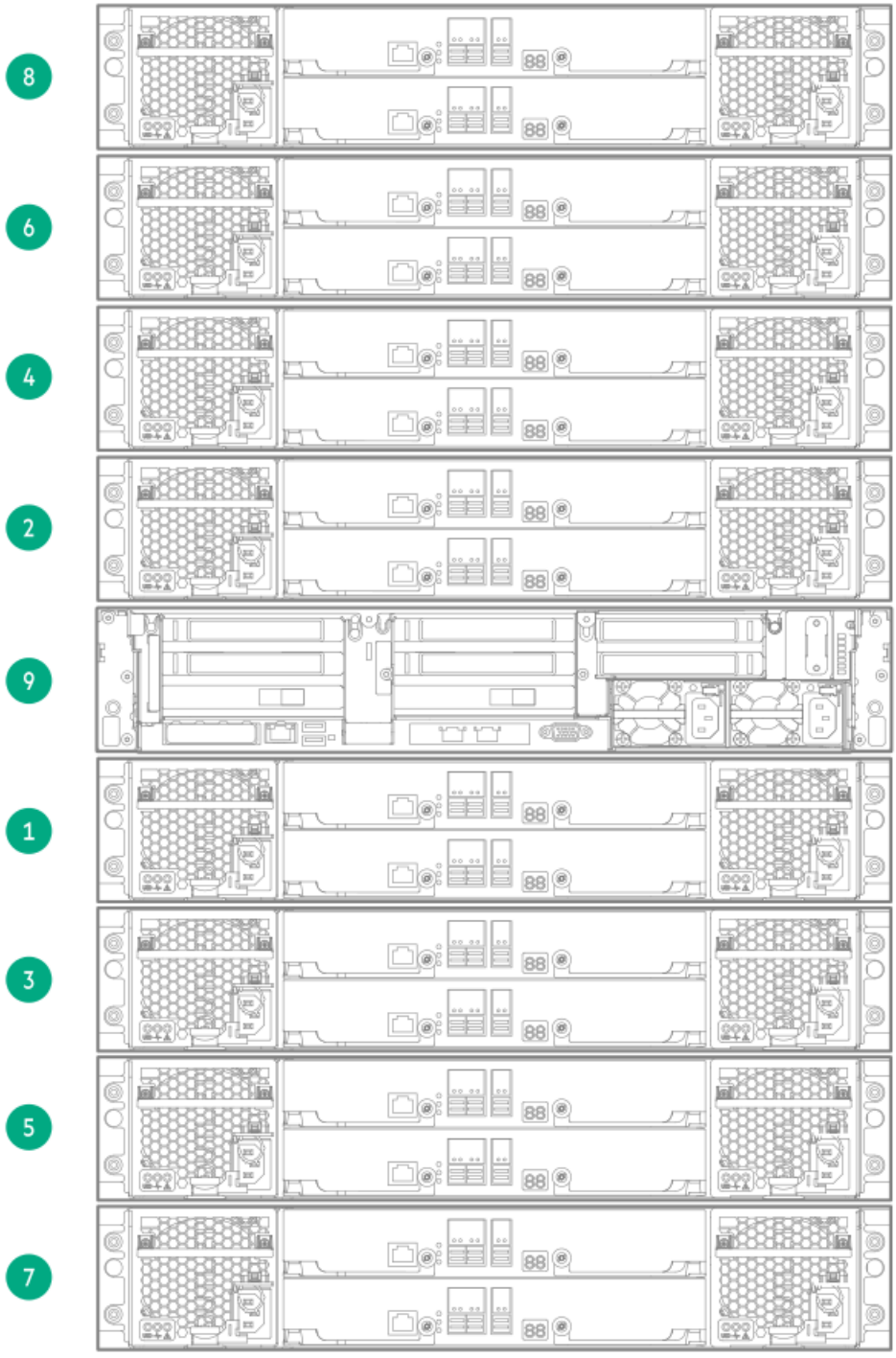


Table 1.

Item	Component

Item	Component
8	JBOD 8: Eighth capacity upgrade kit. Install above JBOD 6.
6	JBOD 6: Sixth capacity upgrade kit. Install above JBOD 4.
4	JBOD 4: Fourth capacity upgrade kit. Install above JBOD 2.
2	JBOD 2: Second capacity upgrade kit. Install directly above server node.
9	Server node.
1	JBOD 1: Base Enclosure. Install below the server node.
3	JBOD 3: Third capacity upgrade kit. Install below JBOD 1.
5	JBOD 5: Fifth capacity upgrade kit. Install below JBOD 3.
7	JBOD 7: Seventh capacity upgrade kit. Install below JBOD 5.

Installing a 2U rail kit for the HPE StoreOnce 5260 and 5660 systems

Prerequisites

- Determine the correct location for installing a rail kit and drive enclosure, see the Planning the rack layout for the HPE StoreOnce 3660, Planning the rack layout for the HPE StoreOnce 5260 enclosure or Planning the rack layout for the HPE StoreOnce 5660 enclosure.
- Gather the required tools.
- Ensure you have the 2U enclosure kit parts.
- Observe safety precautions when installing a rail kit.
- Verify that you are using a 2U rail kit with a 2U enclosure. The 2U rails are labeled "USE FOR 2U CHASSIS".
- Review Guidelines for the rail kit installation in a rack.

About this task

A 2U rail kit is used with the 2U drive enclosure.

Procedure

1. Determine the rack "U" position for installing a 2U enclosure in the rack.

   The 2U enclosure rail kit requires two units of vertical space in the rack. To prevent the rack from tipping, install the initial drive enclosures after installing the controller node enclosure. Align the bottom of the rail with the bottom of the "U" position.

2. From the front of the rack, position the rail inside the rack and engage the rail with the rear rack column.

   a. To ensure a proper fit between the front and rear rack columns, compress or extend the length of the rail.

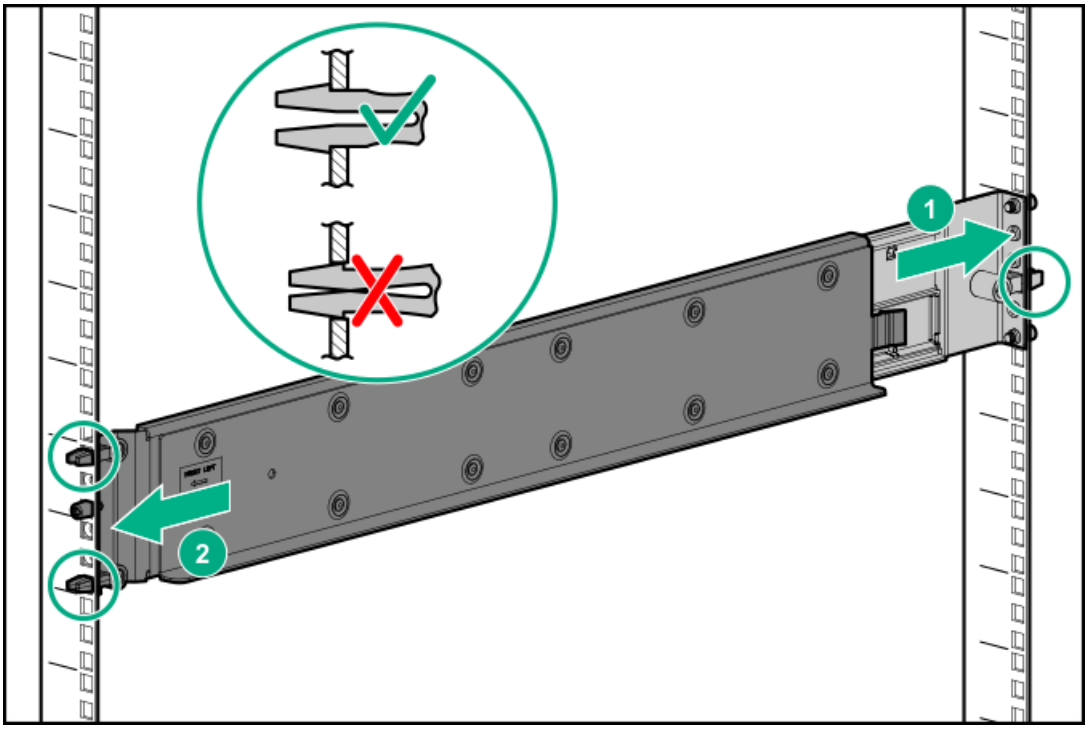
   b. Position the rail inside the rack with the rail label facing the inside of the rack.

      Labels on the rails denote Front Right and Front Left to assist with orientation.

   c. Engage the rail with the rear rack column. Insert the rear end of the rail through the chosen "U" position, until the clip snaps into place and the pins extend through the rack holes (1).

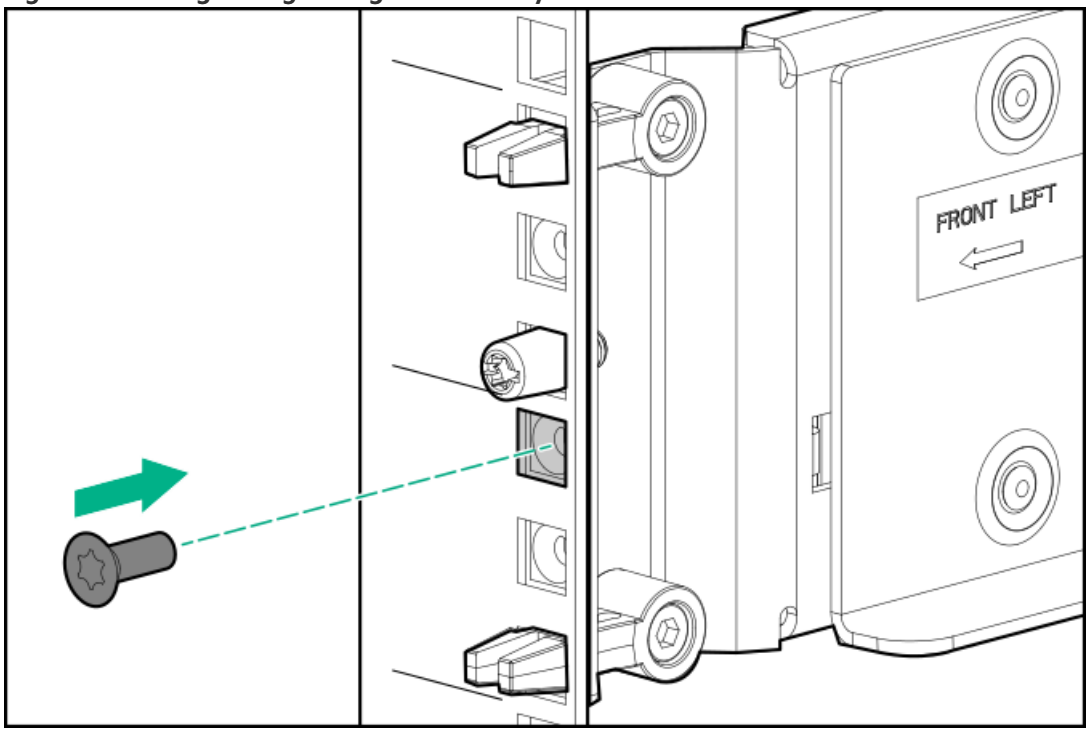
      NOTE: To reposition the rail, pinch the rail locking clips to remove it.

Figure 1. Engaging the rails with the rack columns



3. Engage the rail with the front rack column.
   a. Pull the front of the rail to connect it to the front RETMA rail.
   b. Engage the rail with the front rack column. Insert the front end of the rail through the chosen "U" position, until the clip snaps into place and the pins extend through the rack holes (2).
4. Repeat steps 2 and 3 for the other rail.
5. Insert and tighten the rail safety screw into the front rack holes.
   a. Insert and tighten the safety screw into the front rack hole as indicated in the following image. The safety screw is provided with the rail kit package.

Figure 2. Inserting and tightening the rail safety screw into the front rack hole

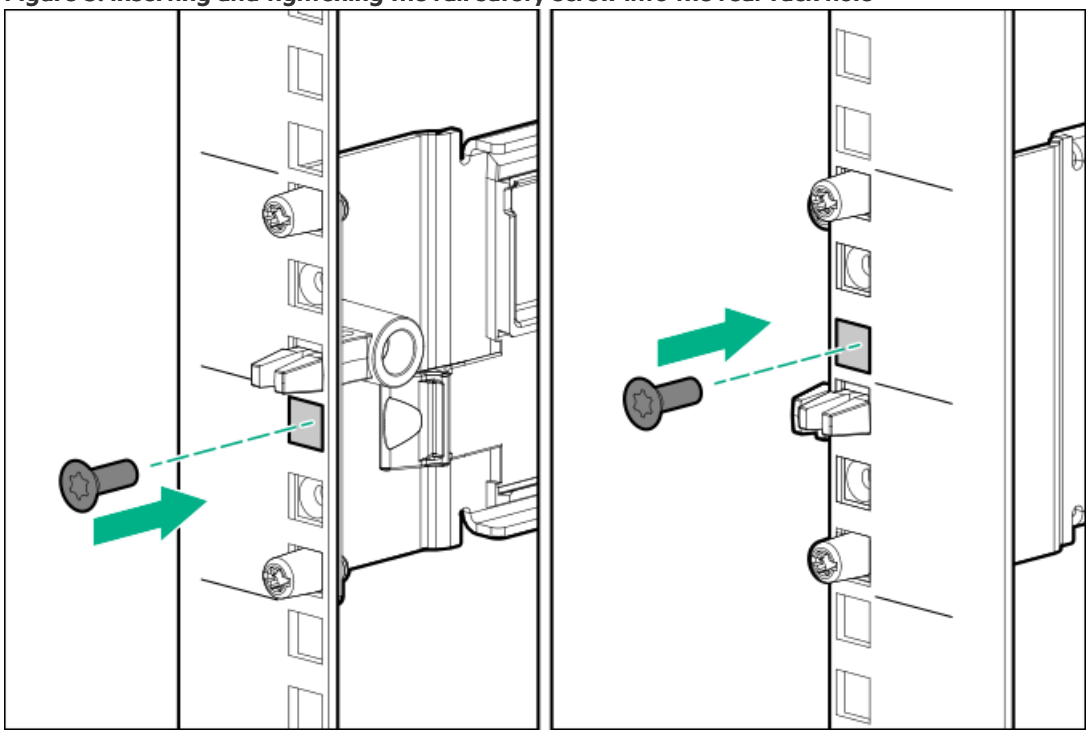


   b. Repeat for the other rail.
6. Insert and tighten the rail safety screw into the rear rack holes.

   The rail kit package contains five safety screws. One screw is an extra.

a. Insert and tighten the safety screw into the rear rack hole. Refer to the gray square in the following image for the screw location.

Figure 3. Inserting and tightening the rail safety screw into the rear rack hole



b. Repeat for the other rail.

> **WARNING:**
>
> Before installing any hardware on the rails, verify that both ends of each rail are secured with the included safety screws and, if applicable, hold-down brackets.
>
> Securely tighten the safety screws before you insert an enclosure to prevent the rails from disengaging, damaging the equipment or causing personal physical harm.

7. To secure the enclosures for shipping, install rear hold-down brackets to the rail rear columns.

   Perform this step only when the front and rear RETMA rails are exactly 29 inches apart, such as in an HPE factory-integrated rack.

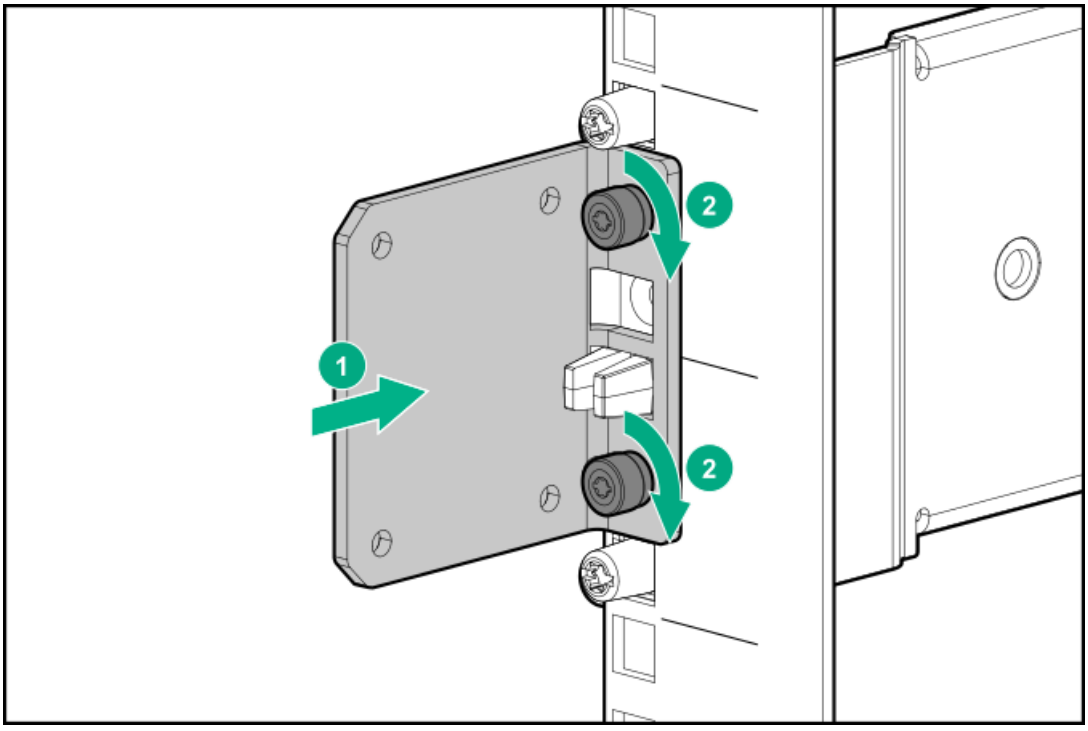
   The brackets secure the enclosure after it is installed.

> **TIP:** Use a long shank tool or tool extension to reach the bracket screws.

a. Install two rear hold-down brackets, one per rack column (1).

b. For each bracket, tighten the captive screws to the rack columns through the rail kit (2). (Torque specification is 20 In-Lb.)

Figure 4. Installing a drive enclosure rear hold-down bracket for a 2U rail



8. Verify that the rails are secured by pushing on the front and back of each rail ledge.

Installing a drive enclosure

Prerequisites

The 2U rail kit has been installed.

About this task

IMPORTANT:

Do not power on drive enclosures during installation. See Capacity upgrade planning considerations for more information.

This procedure applies to 2U drive enclosures that provide expanded capacity for the storage system.

CAUTION:

Use extreme caution when installing and pulling units from the rack. Unattached units can slip and fall, damaging the StoreOnce System or causing personal injury. Hewlett Packard Enterprise is not responsible for any damage or injury caused by mishandling the StoreOnce System.

Component	Rack space	Weight
5260/5660 Capacity upgrade enclosure (R7M23A)	2U	33kg (74 lbs)

Always use at least two people to lift and locate a capacity upgrade enclosure into the rack.

TIP:

Hard disks are preconfigured and must remain installed or returned to the same disk slots they arrived in.

You can remove the hard disks to make the storage enclosures lighter and easier to install. All hard disks must be returned to their original slots before the system is powered on. Failure to return each disk to its proper location will result in the system failing to start.

Label the disks with the provided label kits before removing them from the storage enclosure for ease of installation and maintenance.

Procedure

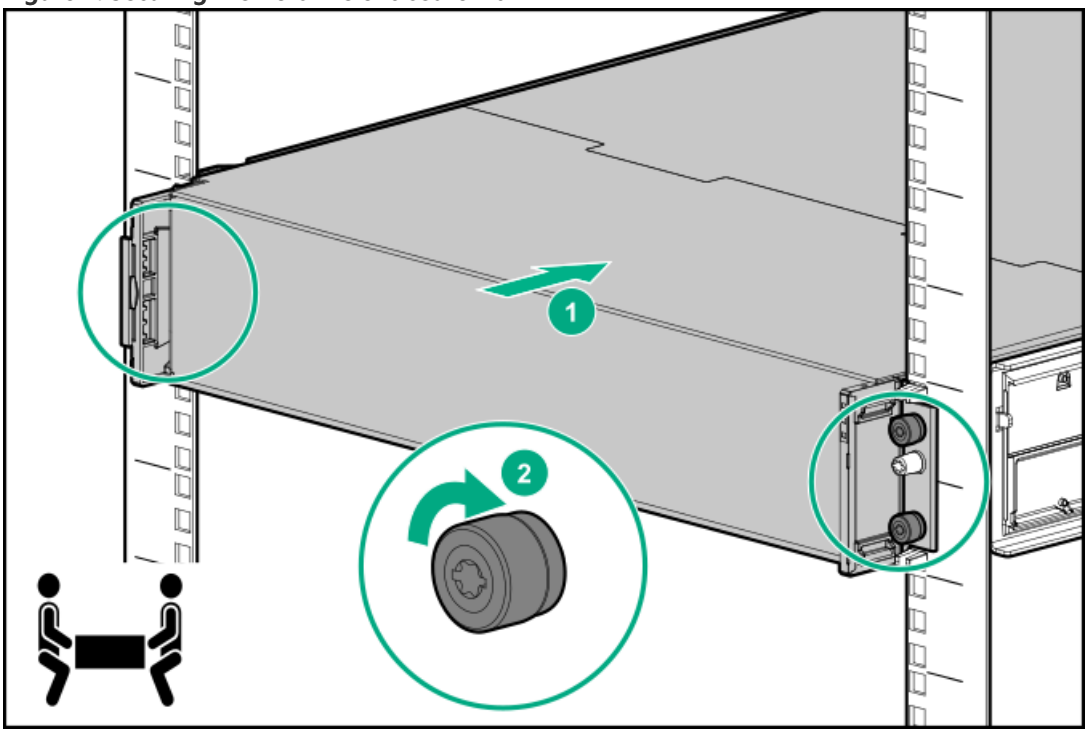
1. Verify that the drive enclosure is right-side up.

The enclosure top has caution and regulatory labels, and the bottom has no labels.

2. If plastic ear caps are installed on the drive enclosure front, temporarily remove them to expose the thumbscrews. To remove, pull the ear caps away from the drive enclosure.
3. If available, place the drive enclosure onto a mechanical or electrical lift and move it in front of the rack. If a lift is not available, use at least 2 people to lift a 2U drive enclosure.
4. At the rack front, align the drive enclosure just above the rail ledges and slide it all the way into the rack.
5. Secure the drive enclosure to the front of the rack:

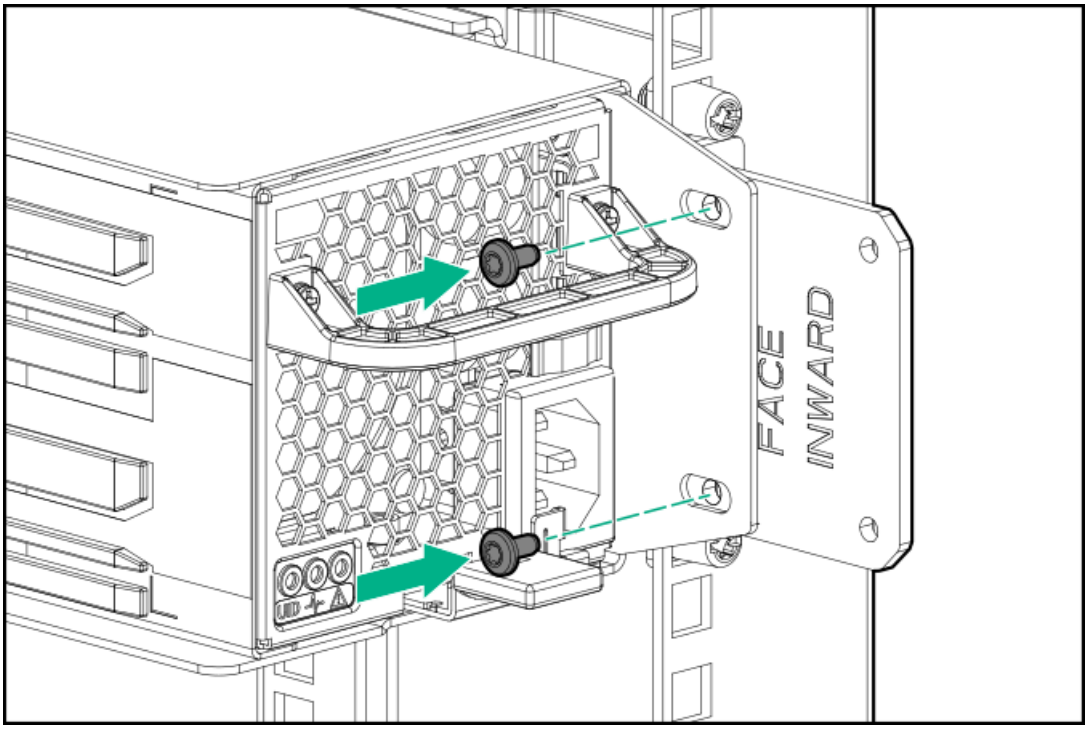
   Secure with the four captive T25 Torx thumbscrews, two on each side of the drive enclosure. Torque to 20-in-Lbs.

Figure 1. Securing the 2U drive enclosure front



6. At the drive enclosure front, install the plastic ear caps on each side. Ensure that the ear cap is in the correct orientation and snap it into place.
7. At the rack rear, if rear hold-down brackets are installed and the front and rear RETMA rails are exactly 29 inches apart, secure the drive enclosure with two pan head T15 Torx screws (on each side of the enclosure). Torque to 20-in-Lbs.

Figure 2. Installing rear hold-down screws, drive enclosure rear view



Checking the drive enclosure number on the pull out tab

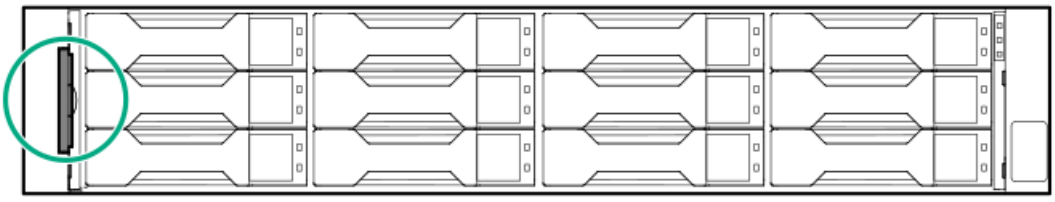
Prerequisites

Checking the drive enclosure number on the pull out tab is only required if your system has arrived pre-configured on the rack. Follow the steps at Labeling drive enclosures if your system has arrived in separate components and not pre-configured in the rack. The pullout tab also contains the component's serial number.

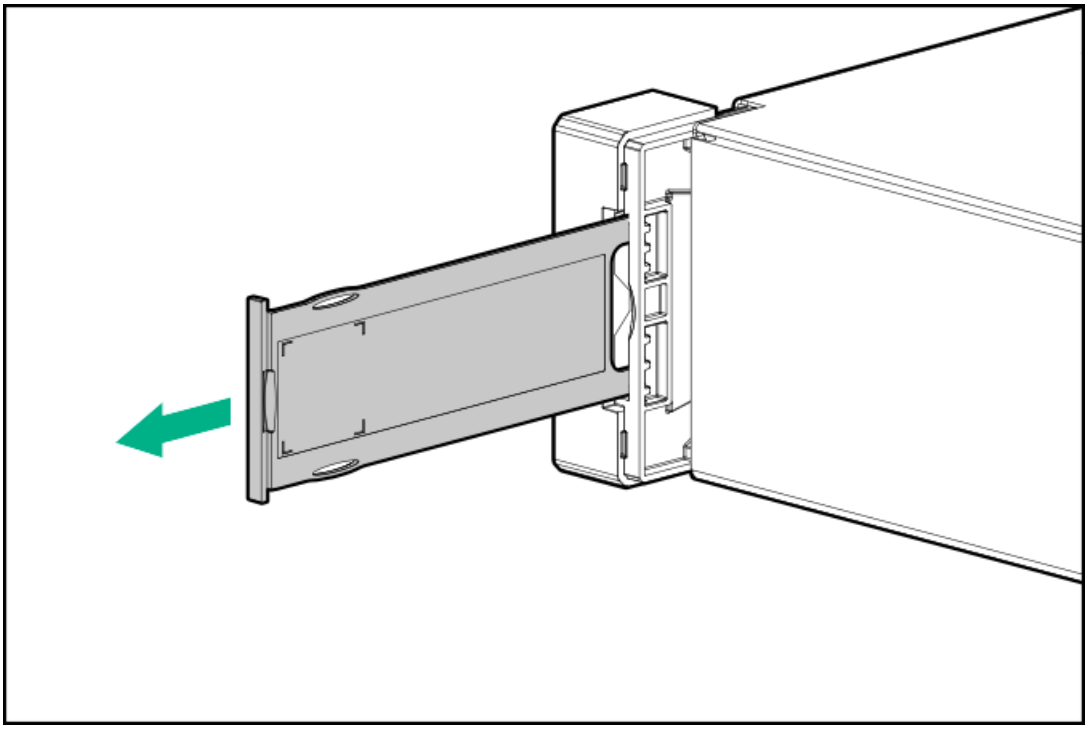
Procedure

1. Locate the pull out tab on the front left corner of the drive enclosure.

Figure 1. HPE Primera 600 LFF storage enclosure (capacity upgrade R7M22A/R7M23A)
The pull out tab is located on the front left corner of the drive enclosure.



2. Pull out the system information tab.



3. Verify the drive enclosure number on the pull out tab.

Subtopics

Labeling drive enclosures

Labeling drive enclosures

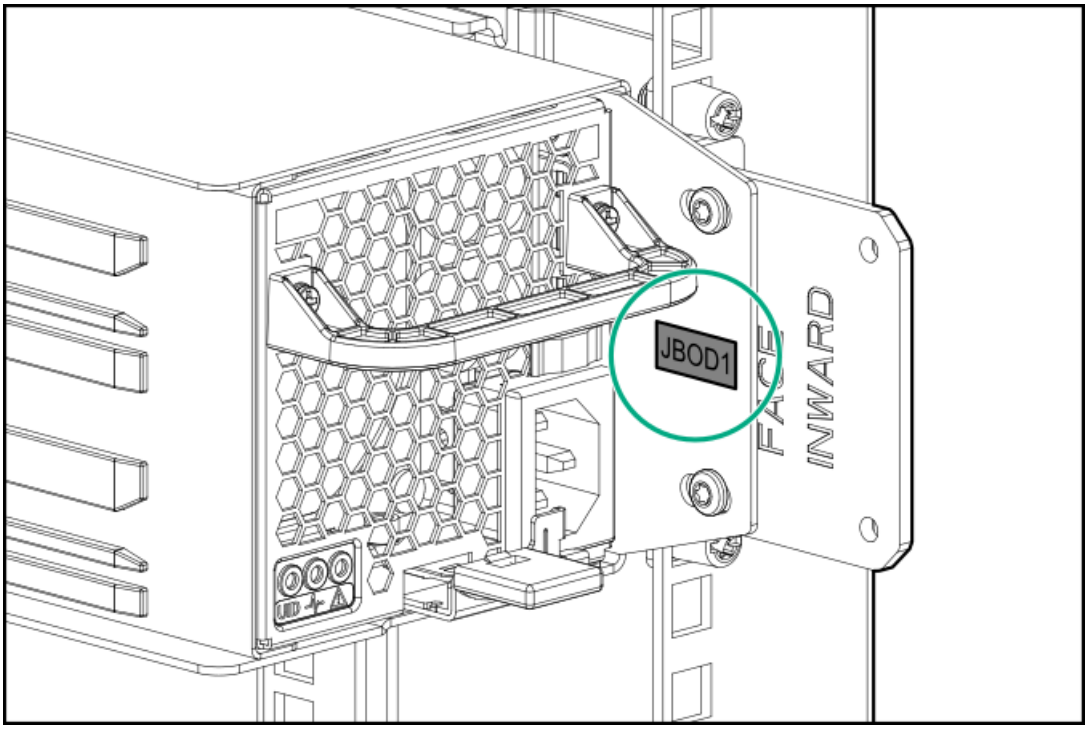
Prerequisites

Review Drive enclosure labels.

Procedure

1. Locate the first drive enclosure beneath the controller node enclosure and label it **JBOD1**.
2. Apply the label on the left or right side of the enclosure, adjacent to the PCBMs.
3. Apply the matching label to the front side of the enclosure.

Figure 1. Enclosure label adjacent to a PCM



4. Repeat steps 2 and 3 for labeling the other drive enclosures in your rack. See Planning the rack layout for the HPE StoreOnce 3660, Planning the rack layout for the HPE StoreOnce 5260 enclosure or Planning the rack layout for the HPE StoreOnce 5660 enclosure.

Cable guidelines for the HPE StoreOnce 5260 and 5660 capacity upgrade kits

Subtopics

Cabling the base enclosure

Cabling the second capacity upgrade kit

Cabling the third capacity upgrade kit

Cabling the fourth capacity upgrade kit

Cabling the fifth capacity upgrade kit

Cabling the sixth capacity upgrade kit

Cabling the seventh capacity upgrade kit

Cabling the eighth capacity upgrade kit

Cabling the base enclosure

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

Procedure

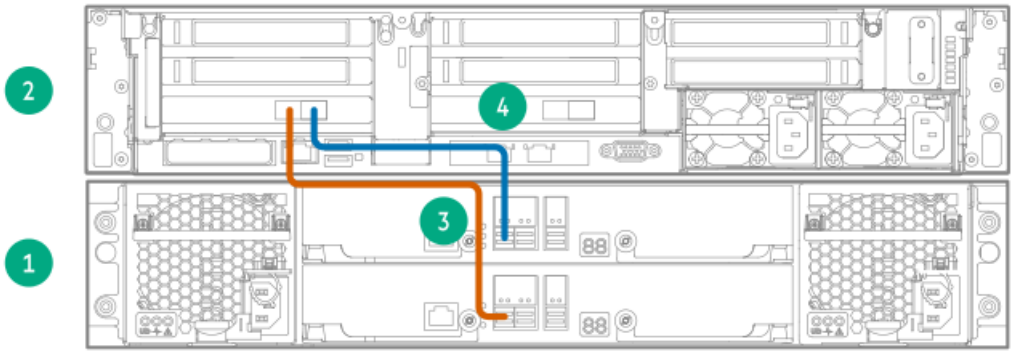
1. Apply the JBOD1 label to the top-left pull-out tab at the front of the enclosure.
2. Apply the cable label to the new SAS cable.

Table 1.

SAS cable	Label color	Cable label

SAS cable	Label color	Cable label
New 2m cable	Red	N:S3:P1–JF:I0:P1
	White	F = 1
New 1m cable	Green	N:S3:P2–J1:I1:P1

3. Cable the enclosure.



Item	Description
2	Server node.
1	JBOD 1: First Capacity upgrade kit.

Item	SAS cable	Label color	Cable from	To
3	New 2m cable	Red and White	Node Slot 3 Port 1	JBOD 1 IOM 0 Port 1
4	New 1m cable	Green	Node Slot 3 Port 2	JBOD 1 IOM 1 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the second capacity upgrade kit

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

About this task

The second capacity upgrade kit is located directly above the server node.

Procedure

1. Apply the JBOD2 label to the top-left pull-out tab at the front of the enclosure.
2. Label the cables that connect the second capacity upgrade kit to the system.

Table 1.

SAS Cable	Label color	Cable label
New 2m cable	Red	N:S6:P1–JF:I0:P1

SAS Cable	Label color	Cable label
	White	F=2
New 1m cable	Green	N:S6:P2–J2:I1:P1

3. Cable the enclosure as shown.

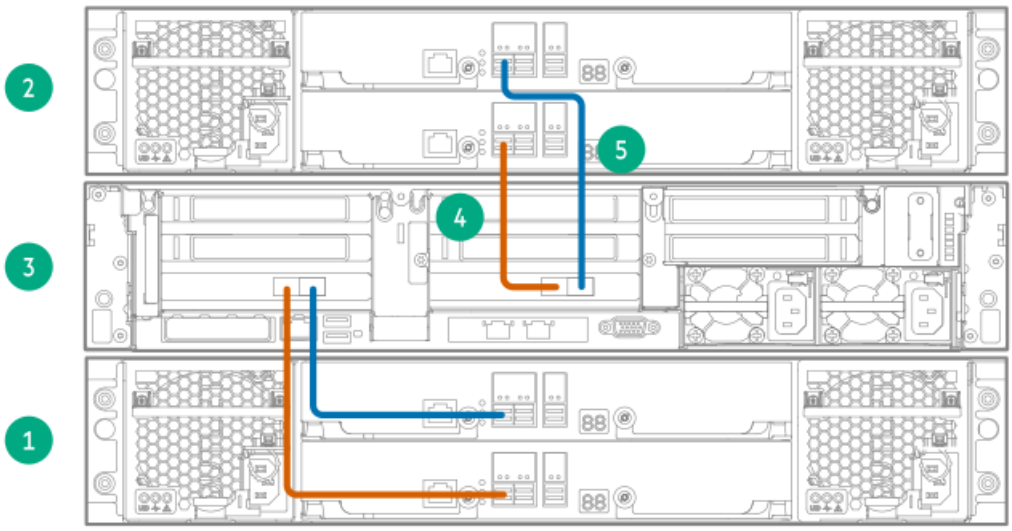


Table 2.

Item	Description
2	JBOD 2: Second Capacity upgrade kit
3	Server node
1	JBOD 1: Base enclosure

Item	SAS cable	Label color	Cable from	To
4	New 2m cable	Red and White	Node Slot 6 Port 1	JBOD 2 IOM 0 Port 1
5	New 1m cable	Green	Node Slot 6 Port 2	JBOD 2 IOM 1 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the third capacity upgrade kit

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

NOTE: Ensure that the server node and all enclosures are powered off before moving and adding SAS cabling. Move only one SAS cable at a time. Multiple cable changes at the same time are not supported.

Procedure

1. Apply the JBOD3 label to the top-left pull-out tab at the front of the enclosure.
2. Apply the cable labels to the new SAS cables. On the moving SAS cable, replace the “F=1” label with the “F=3” label.

Table 1.

SAS cable	Label color	New label

SAS cable	Label color	New label
New 1m cable	Red	J3:I0:P2–J1:I0:P1
New 1m cable	Green	J1:I1:P2–J3:I1:P1
Moving 2m cable (N:S3:P1–JF:I0:P1)	White	(F = 3)

3. Cable the enclosure.

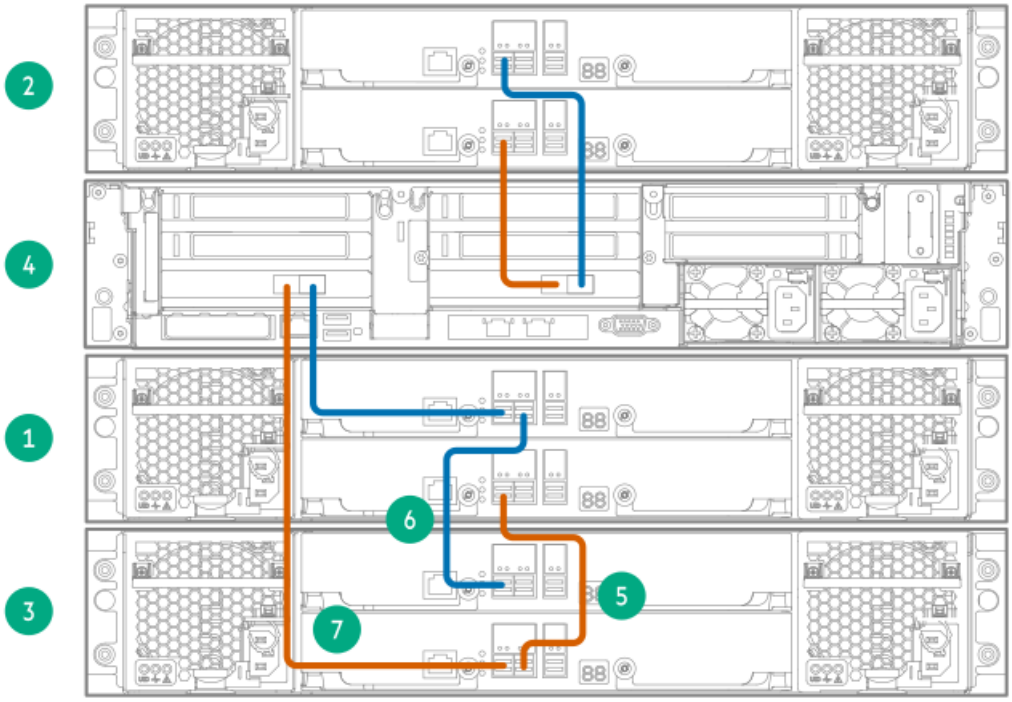


Table 2.

Item	Description
2	JBOD 2: Second Capacity upgrade kit
4	Server node
1	JBOD 1: Base Enclosure
3	JBOD 3: Third Capacity upgrade kit

Table 3.

Item	SAS cable	Label color	Cable from	To
5	New 1m cable	Red	JBOD 3 IOM 0 Port 2	JBOD 1 IOM 0 Port 1
6	New 1m cable	Green	JBOD 1 IOM 1 Port 2	JBOD 3 IOM 1 Port 1
7	Moving 2m cable	Red and White	Node Slot 3 Port 1	JBOD 3 IOM 0 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the fourth capacity upgrade kit

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

NOTE: Ensure that the server node and all enclosures are powered off before moving and adding SAS cabling. Move

only one SAS cable at a time. Multiple cable changes at the same time are not supported.

About this task

This is the maximum number of enclosures for a StoreOnce 5260 configuration.

Procedure

1. Apply the JBOD4 label to the top-left pull-out tab at the front of the enclosure.
2. Apply the cable labels to the new SAS cables. On the moving SAS cable, replace the F=2 label with the F=4 label.

Table 1.

SAS cable	Label color	New label
New 1m cable	Red	J4:I0:P2–J2:I0:P1
New 1m cable	Green	J2:I1:P2–J4:I1:P1
Moving 2 m cable (N:S6:P1–JF:I0:P1)	Red and White	F=4

3. Cable the enclosure.

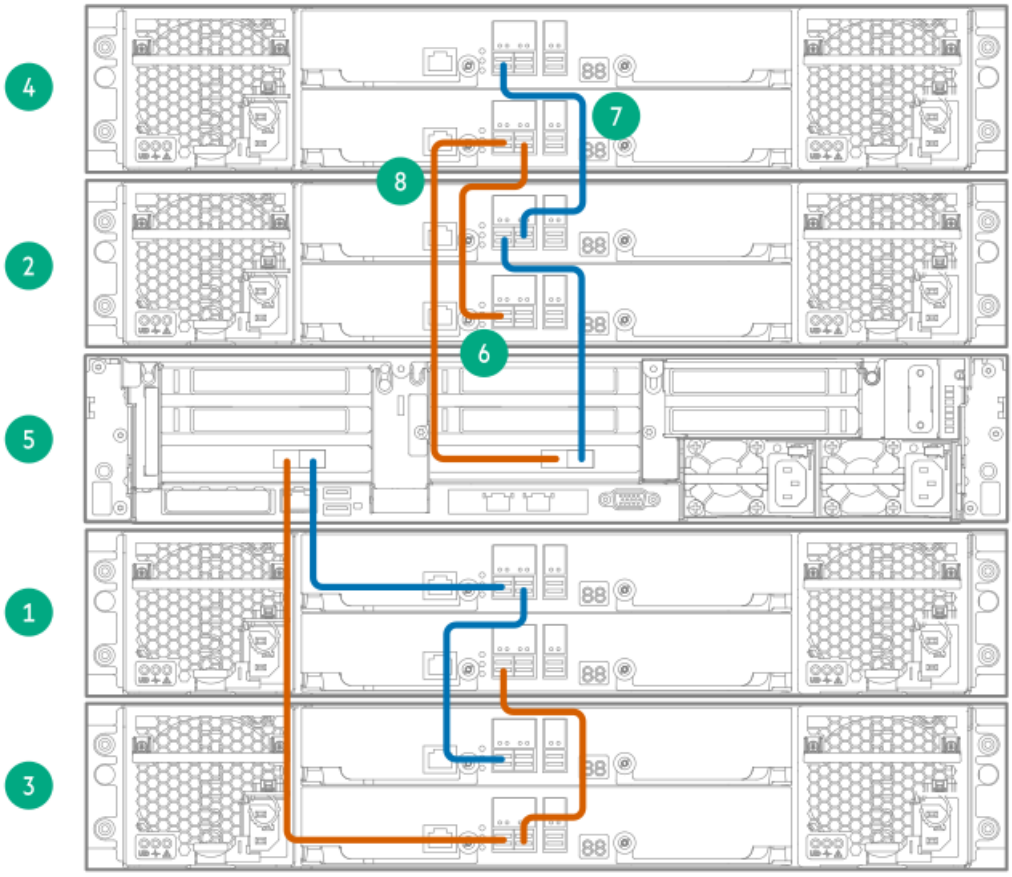


Table 2.

Item	Description
4	JBOD 4: Fourth Capacity upgrade kit
2	JBOD 2: Second Capacity upgrade kit
5	Server node
1	JBOD 1: Base Enclosure
3	JBOD 3: Third Capacity upgrade it

Item	SAS cable	Label color	Cable from	Cable to
6	New 1m cable	Red	JBOD 4 IOM 0 Port 2	JBOD 2 IOM 0 Port 1
7	New 1m cable	Green	JBOD 2 IOM 1 Port 2	JBOD 4 IOM 1 Port 1
8	Moving 2m cable	Red and White	Node Slot 6 Port 1	JBOD 4 IOM 0 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the fifth capacity upgrade kit

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

NOTE: Ensure that the server node and all enclosures are powered off before moving and adding SAS cabling. Move only one SAS cable at a time. Multiple cable changes at the same time are not supported.

About this task

NOTE: The following cabling instructions apply to StoreOnce 5660 System Capacity Upgrade only.

Procedure

1. Apply the JBOD5 label to the top-left pull-out tab at the front of the enclosure.
2. Apply the cable labels to the new SAS cables. On the moving SAS cable, replace the F=3 label with the F=5 label.

Table 1.

SAS cable	Label color	New label
New 1m cable	Red	J5:I0:P2–J3:I0:P1
New 1m cable	Green	J3:I1:P2–J5:I1:P1
Moving 2m cable (N:S3:P1–JF:I0:P1)	White	(F = 5)

3. Cable the enclosure.

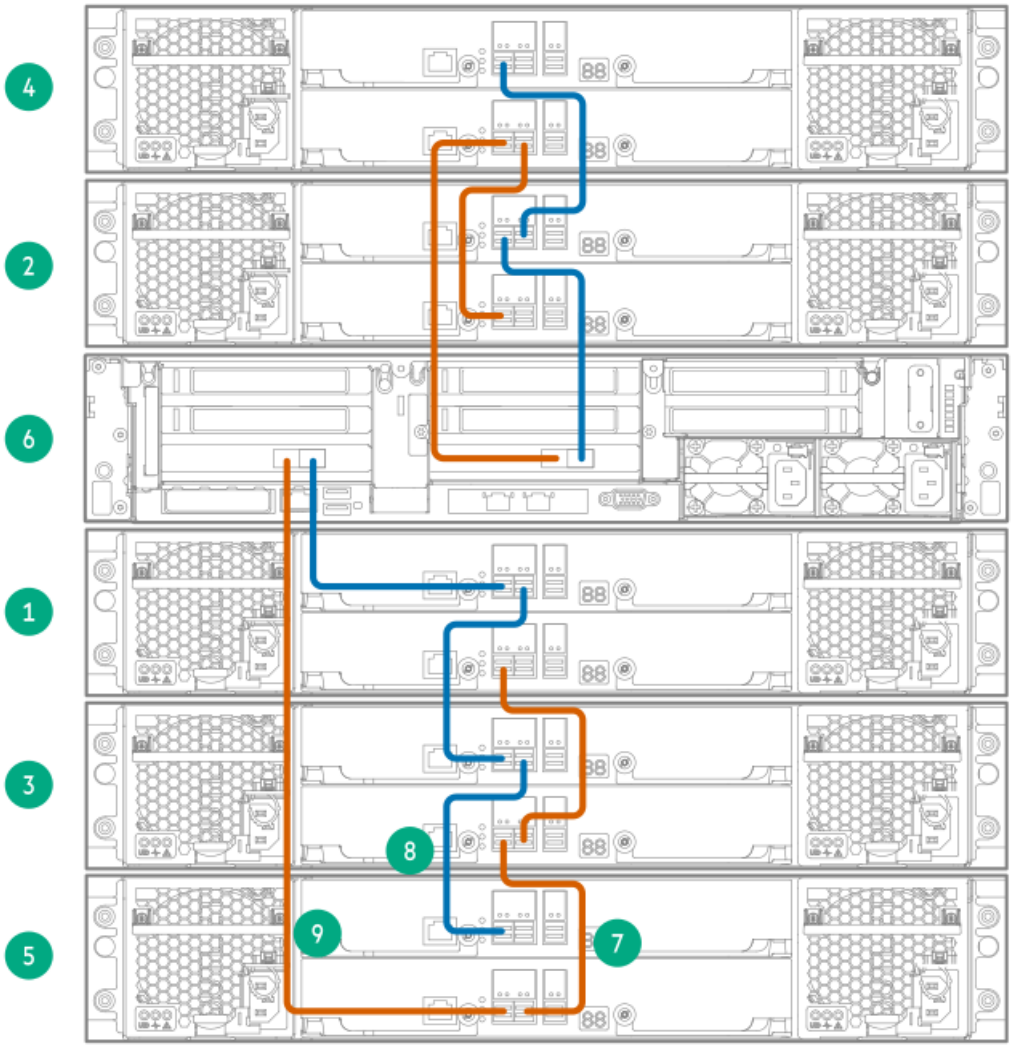


Table 2.

Item	Description
4	JBOD 4: Fourth Capacity upgrade kit
2	JBOD 2: Second Capacity upgrade kit
6	Server node
1	JBOD 1: Base Enclosure
3	JBOD 3: Third Capacity upgrade kit
5	JBOD 5: Fifth Capacity upgrade kit

Table 3.

Item	SAS cable	Label color	Cable from	To
7	New 1m cable	Red	JBOD 5 IOM 0 Port 2	JBOD 3 IOM 0 Port 1
8	New 1m cable	Green	JBOD 3 IOM 1 Port 2	JBOD 5 IOM 1 Port 1
9	Moving 2m cable	Red and White	Node Slot 3 Port 1	JBOD 5 IOM 0 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the sixth capacity upgrade kit

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

NOTE: Ensure that the server node and all enclosures are powered off before moving and adding SAS cabling. Move only one SAS cable at a time. Multiple cable changes at the same time are not supported.

About this task

NOTE: The following cabling instructions apply to StoreOnce 5660 System Capacity Upgrade only.

Procedure

1. Apply the JBOD6 label to the top-left pull-out tab at the front of the enclosure.
2. Apply the cable labels to the new SAS cables. On the moving SAS cable, replace the F=4 label with the F=6 label.

Table 1.

SAS cable	Label color	New label
New 1m cable	Red	J6:I0:P2–J4:I0:P1
New 1m cable	Green	J4:I1:P2–J6:I1:P1
Moving 2m cable (N:S6:P1–JF:I0:P1)	White	(F = 6)

3. Cable the enclosure.

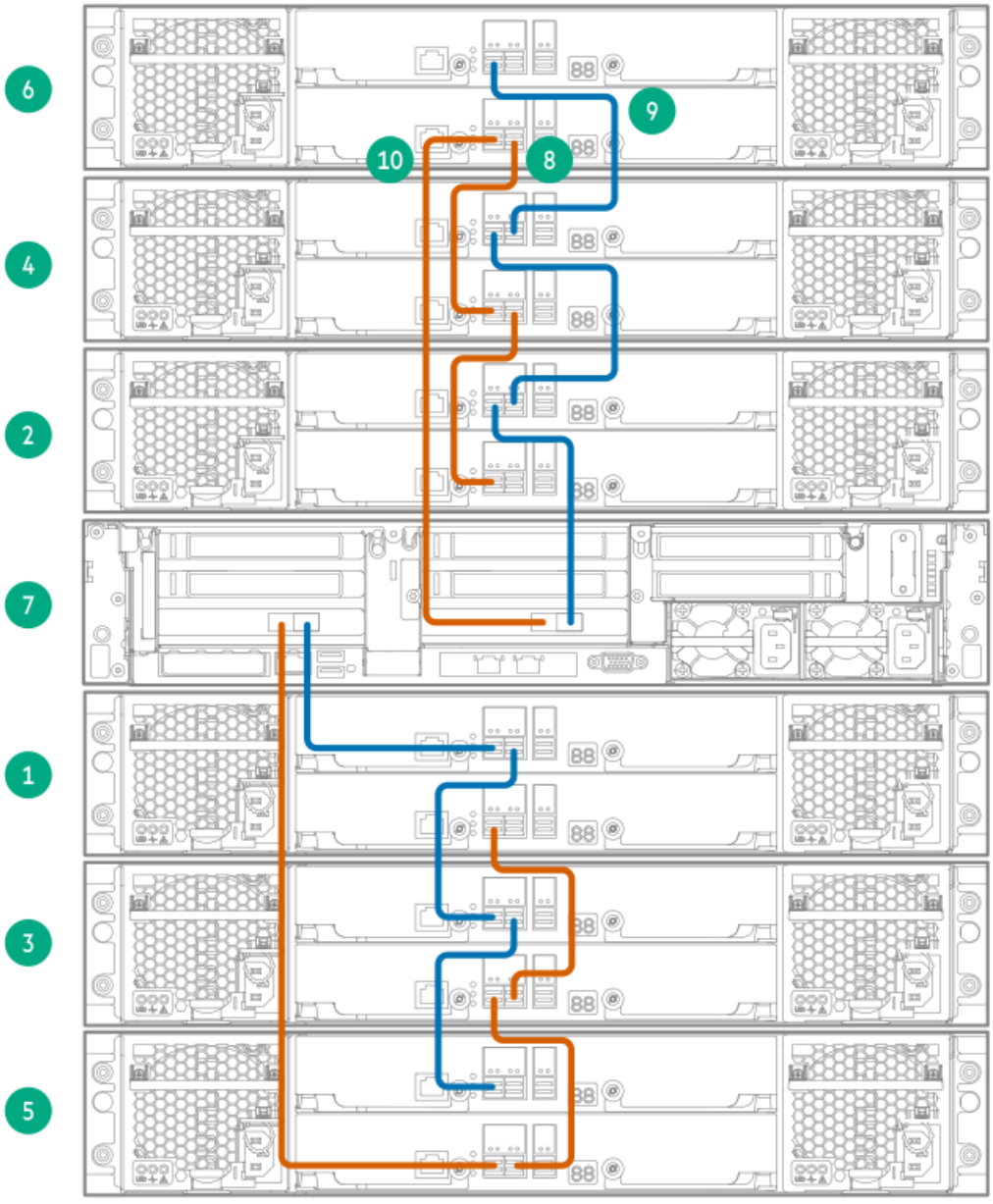


Table 2.

Item	Description
6	JBOD 6: Sixth Capacity upgrade kit
4	JBOD 4: Fourth Capacity upgrade kit
2	JBOD 2: Second Capacity upgrade kit
7	Server node
1	JBOD 1: Base Enclosure
3	JBOD 3: Third Capacity upgrade kit
5	JBOD 5: Fifth Capacity upgrade kit

Table 3.

Item	SAS cable	Label color	Cable from	To
7	New 1m cable	Red	JBOD 6 IOM 0 Port 2	JBOD 4 IOM 0 Port 1
8	New 1m cable	Green	JBOD 4 IOM 1 Port 2	JBOD 6 IOM 1 Port 1
9	Moving 2m cable	Red and White	Node Slot 6 Port 1	JBOD 6 IOM 0 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the seventh capacity upgrade kit

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

NOTE: Ensure that the server node and all enclosures are powered off before moving and adding SAS cabling. Move only one SAS cable at a time. Multiple cable changes at the same time are not supported.

About this task

NOTE: The following cabling instructions apply to StoreOnce 5660 System Capacity Upgrade only.

Procedure

1. Apply the JBOD7 label to the top-left pull-out tab at the front of the enclosure.
2. Apply the cable labels to the new SAS cables. On the moving SAS cable, replace the F=5 label with the F=7 label.

Table 1.

SAS cable	Label color	New label
New 1m cable	Red	J7:I0:P2–J5:I0:P1
New 1m cable	Green	J5:I1:P2–J7:I1:P1
Moving 2m cable (N:S3:P1–JF:I0:P1)	White	(F = 7)

3. Cable the enclosure.

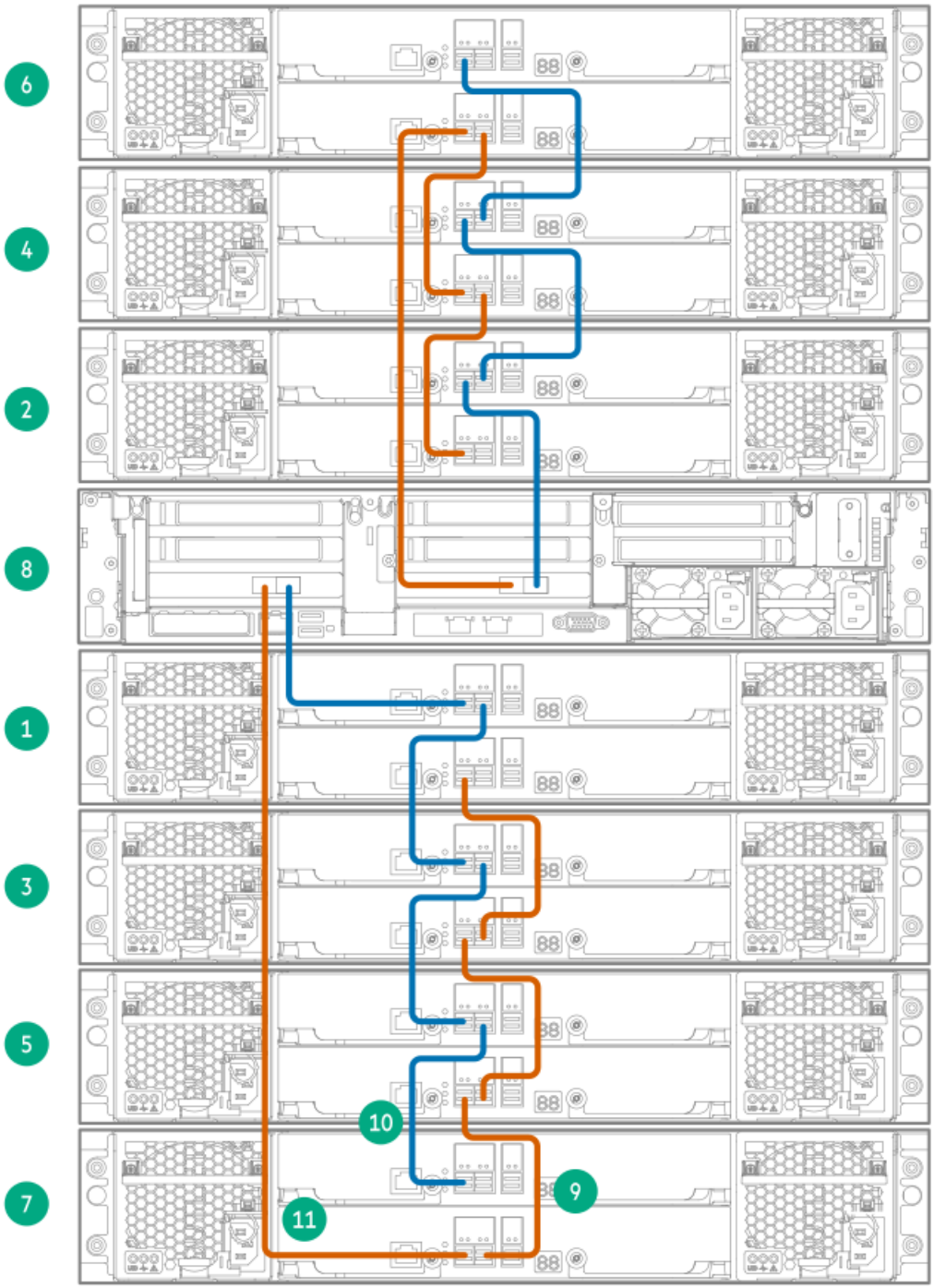


Table 2.

Item	Description
6	JBOD 6: Sixth Capacity upgrade kit
4	JBOD 4: Fourth Capacity upgrade kit
2	JBOD 2: Second Capacity upgrade kit
8	Server node
1	JBOD 1: Base Enclosure
3	JBOD 3: Third Capacity upgrade kit
5	JBOD 5: Fifth Capacity upgrade kit
7	JBOD 7: Seventh Capacity upgrade kit

Table 3.

Item	SAS cable	Label color	Cable from	To
9	New 1m cable	Red	JBOD 7 IOM 0 Port 2	JBOD 5 IOM 0 Port 1
10	New 1m cable	Green	JBOD 5 IOM 1 Port 2	JBOD 7 IOM 1 Port 1
11	Moving 2m cable	Red and White	Node Slot 3 Port 1	JBOD 7 IOM 0 Port 1

4. Skip to Adding power cables and powering on the system if you are complete with adding capacity upgrade kits.

Cabling the eighth capacity upgrade kit

Prerequisites

See Cable labels for guidelines on how to correctly label the cables before cabling the enclosures.

NOTE: Ensure that the server node and all enclosures are powered off before moving and adding SAS cabling. Move only one SAS cable at a time. Multiple cable changes at the same time are not supported.

About this task

NOTE: The following cabling instructions apply to StoreOnce 5660 System Capacity Upgrade only.

Procedure

1. Apply the JBOD8 label to the top-left pull-out tab at the front of the enclosure.
2. Apply the cable labels to the new SAS cables. On the moving SAS cable, replace the F=6 label with the F=8 label.

Table 1.

SAS cable	Label color	New label
New 1m cable	Red	J8:I0:P2–J6:I0:P1
New 1m cable	Green	J6:I1:P2–J8:I1:P1
Moving 2m cable (N:S6:P1–JF:I0:P1)	White	(F = 8)

3. Cable the enclosure.

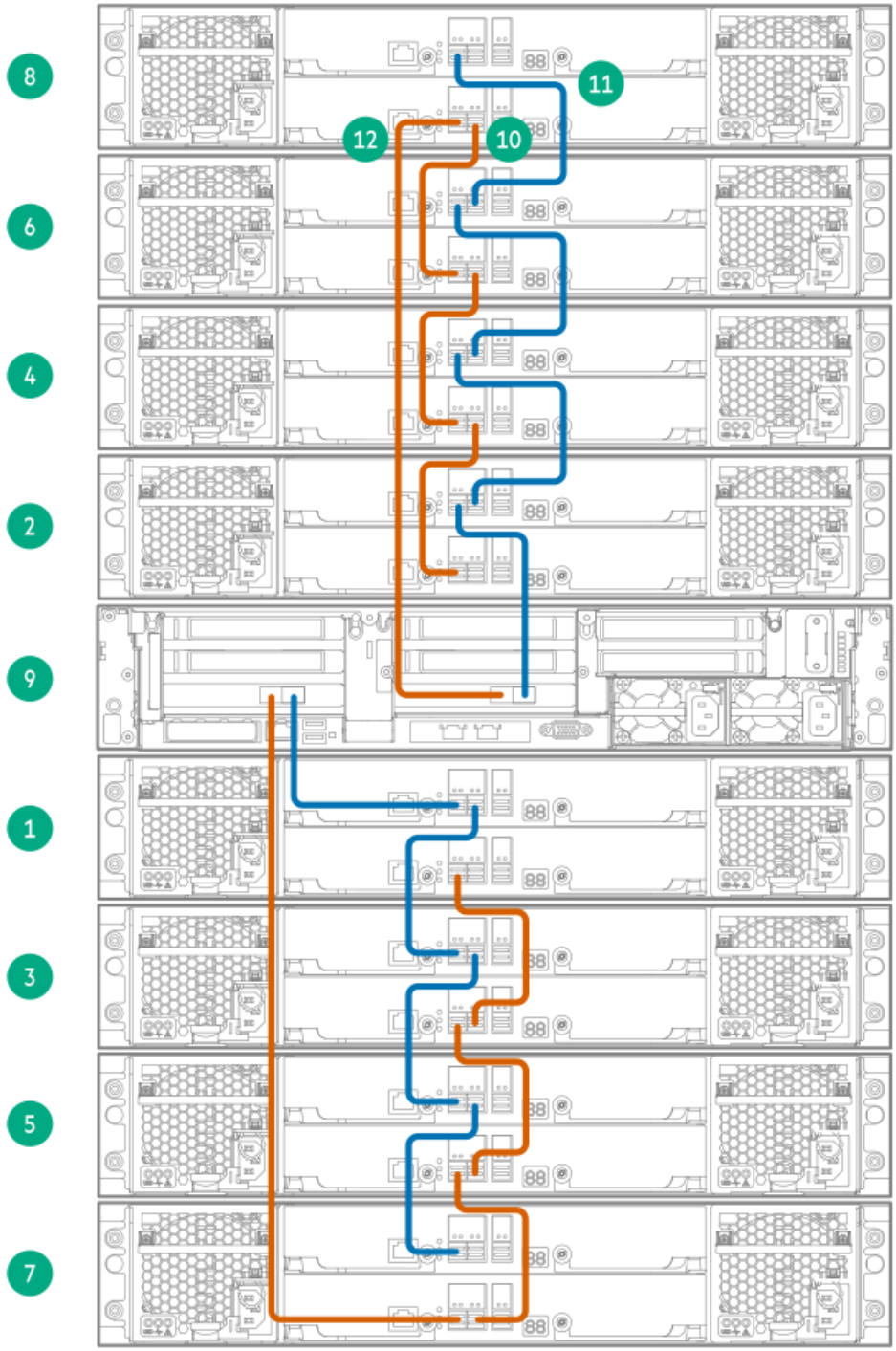


Table 2.

Item	Description
8	JBOD 8: Eighth Capacity upgrade kit
6	JBOD 6: Sixth Capacity upgrade kit
4	JBOD 4: Fourth Capacity upgrade kit
2	JBOD 2: Second Capacity upgrade kit
9	Server node
1	JBOD 1: Base Enclosure
3	JBOD 3: Third Capacity upgrade kit
5	JBOD 5: Fifth Capacity upgrade kit
7	JBOD 7: Seventh Capacity upgrade kit

Table 3.

Item	SAS cable	Label color	Cable from	To
10	New 1m cable	Red	JBOD 8 IOM 0 Port 2	JBOD 6 IOM 0 Port 1
11	New 1m cable	Green	JBOD 6 IOM 1 Port 2	JBOD 8 IOM 1 Port 1
12	Moving 2m cable	Red and White	Node Slot 6 Port 1	JBOD 8 IOM 0 Port 1

Adding power cables and powering on the system

Procedure

1. Use the supplied power cables to connect the capacity upgrade enclosure to the main power supply.

   IMPORTANT:

   Ensure that each power supply is connected to a separate PDU.

   The enclosure powers on automatically when plugged in. Wait for a minute for the power on process to complete. The System Power and Status LEDs will be solid green.

2. Power on the StoreOnce System (the power button is on the front of the server).

   The power button LED flashes green at the start of the power-on sequence and then turns solid green, along with the system health LED. If LAN port 1 is connected to an active link, the NIC status LED will also begin to flash green when the StoreOnce System is powering up.

   While accessing the system using iLO, the UID LED flashes blue.

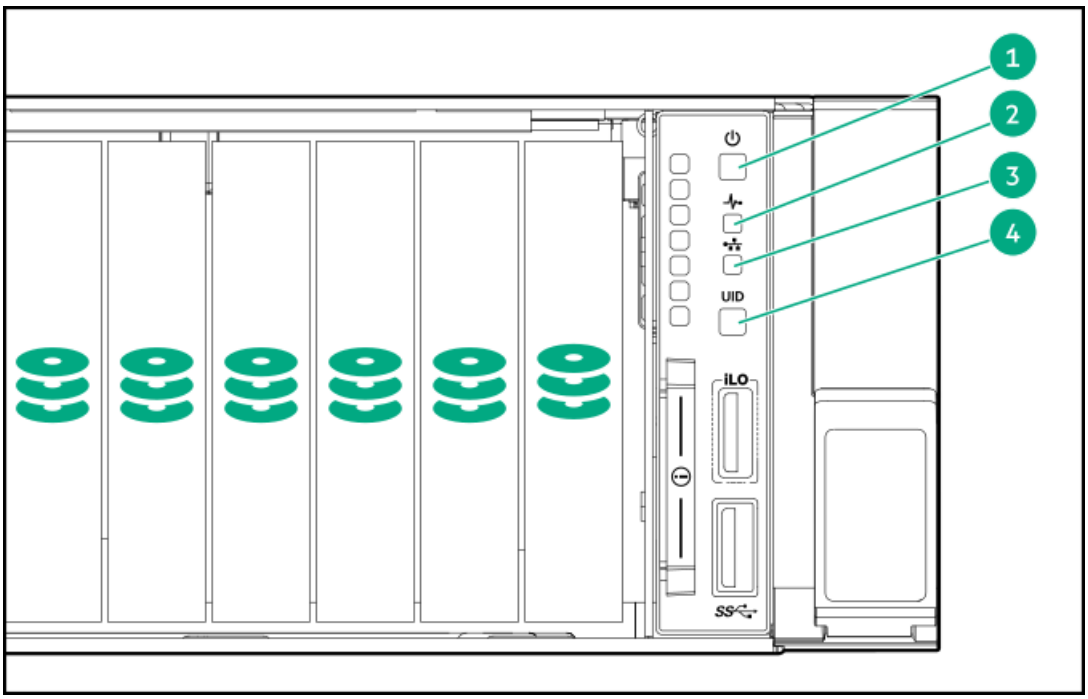


Table 1.

Item	LED
1	Power LED and on/off button
2	System Health LED
3	NIC Status LED
4	UID LED

Completing the storage expansion

Subtopics

Redeeming and adding the licenses

About this task

The capacity upgrade kit includes a license entitlement certificate. The certificate is a paper document containing the information necessary to obtain your unique LTU (License to Use) key file from My License Portal at **https://myenterpriselicense.hpe.com/cwp-ui/auth/login**.

Procedure

1. On the main menu, select Settings..
2. From the System panel, select License Management.
3. On the Overview tab, make a note of the Locking ID (Serial Number).

   If you are managing the system through the federation lead, ensure that you are viewing the correct system.
4. Go to My License Portal, as directed in the License Entitlement Certificate.
5. Log in using your HPE Passport user ID and password.
6. Enter your Entitlement Order Number to search for your license.
7. Follow the steps to activate and obtain your license.

   You can obtain the license file by downloading it directly from the portal or from an email with a .zip attachment.
8. Return to the License Management screen in the StoreOnce Management Console.
9. Expand the Actions menu (▪▪▪), click the add license icon (+), and then follow the onscreen instructions.

Scanning and configuring storage

About this task

After storage is added to a StoreOnce System, you must scan and configure the storage to make it usable.

Procedure

1. On the main menu, select Settings.
2. In the Hardware section, click the Storage panel.
3. On the Storage screen, click the Local Storage tab, and then expand the Actions (▪▪▪) menu and select Rescan.

   Newly detected storage is added to the storage list with a status of *Unconfigured*.
4. To configure the new storage for use, expand the Actions (▪▪▪) menu and select Configure.

Checking hardware and firmware

Procedure

1. Navigate to the StoreOnce System and log in to the StoreOnce Management Console.
2. On the main menu, select Settings.
3. In the Hardware section, select the Hardware Monitoring panel.
4. Review the Requires Attention and Storage tabs for any events requiring attention.
5. Expand the Actions (▪▪▪) menu and then select the Update firmware icon () to check and update firmware.

Disabling maintenance mode

Procedure

1. From the StoreOnce Management Console main menu, select Settings.
2. In the System section, select the Maintenance mode panel.
3. On the Maintenance mode screen, set the Maintenance mode switch to the Off position (), and then click OK.

Reference

Subtopics

Storage enclosure components and LEDs

I/O module error codes

Safety considerations

Capacity upgrade kit contents

Capacity upgrade planning considerations

Redundant hardware connectivity guidelines

3-2-1 strategy

Racks for StoreOnce storage enclosures

Rack warnings

Cable labels

Guidelines for the rail kit installation in a rack

Drive enclosure labels

Required tools

2U enclosure kit parts

Storage enclosure components and LEDs

Subtopics

Primera 600 LFF Storage enclosure front view

Figure 1. Disk enclosure pull-out tab

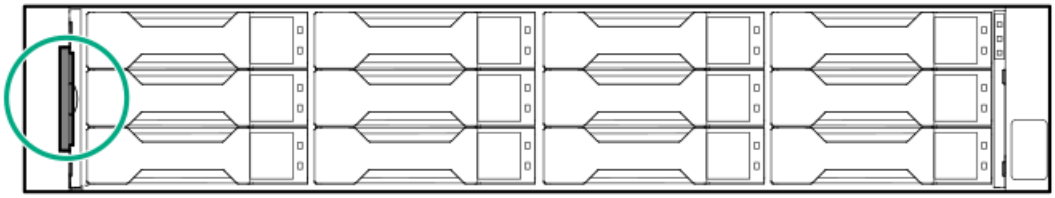
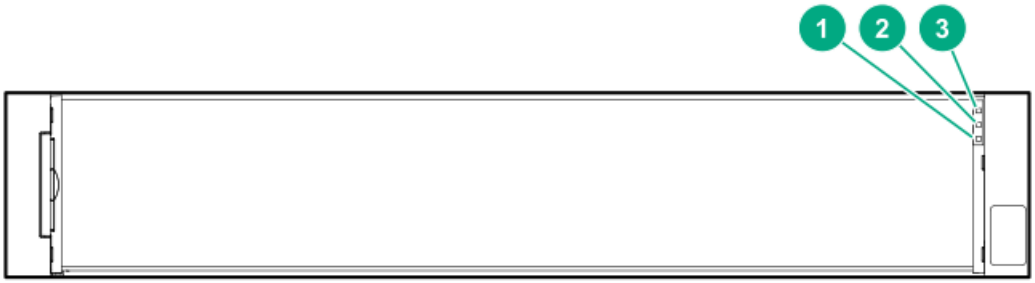
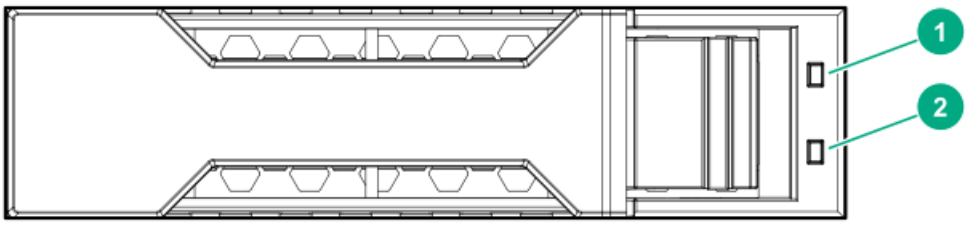


Figure 2. Disk enclosure LEDs



Item	Description
1	Fault
2	Health/Status
3	UID/Services

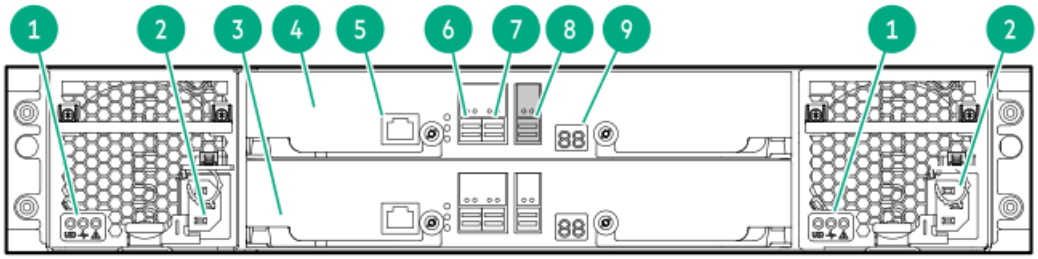
Figure 3. LFF drive LEDs



Item	Description
1	Fault/Location LED
2	Online/Activity LED

Primera 600 LFF Storage enclosure rear view

Figure 1. Primera 600 LFF Storage enclosure rear view



Item	Description
1	System Locate UID button
2	Power supply
3	I/O Module 0
4	I/O Module 1
5	Service port
6	12GB SAS Data Port 1
7	12GB SAS Data Port 2
8	12GB SAS Data Port 3 (NOT USED)
9	Enclosure number LED

Primera 600 LFF Storage enclosure LEDs

Figure 1. Power cooling supply (PCM) LEDs

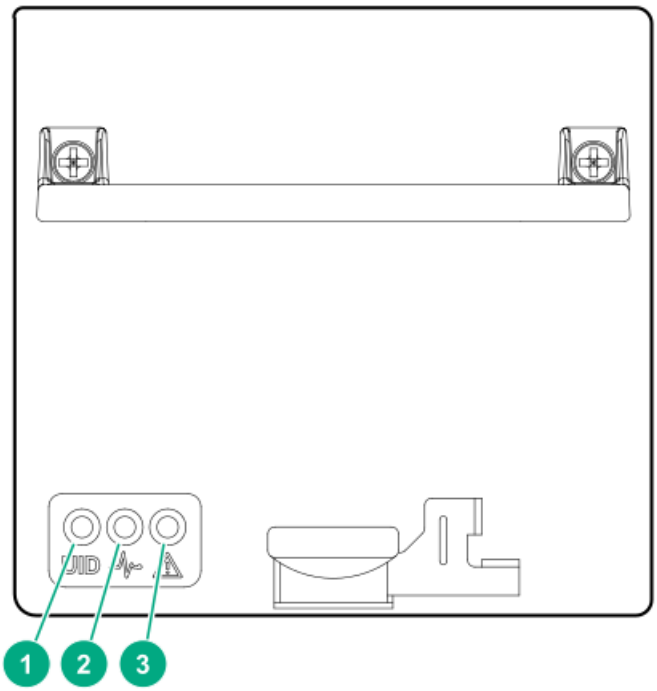
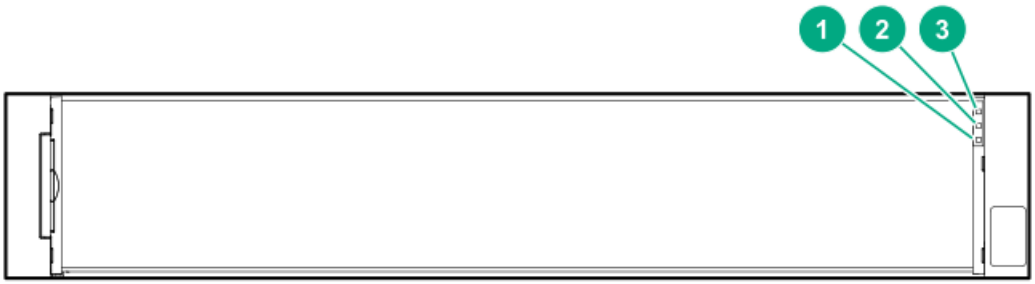


Table 1. PCM LED statuses

Item	LED	Statuses

Item	LED	Statuses
1	UID	Blue solid = Locate active and/or safe to remove. Blue flashing = Locate active; **do not remove component.**
2	Health	Green solid = Power on, normal operation Green off= Power off
3	Fault	Amber solid= Power supply or Fan Fault Amber off = No fault, Normal operation

Figure 2. Drive enclosure LEDs

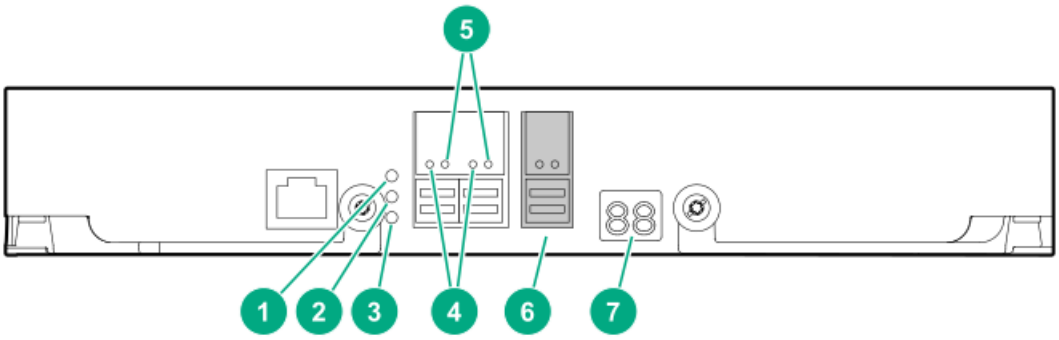


Item	Description	Status
1	Fault	Amber solid = Fault
2	Health/Status	Green solid = Normal operation, no fault
3	UID/Services	Blue solid= Locate active

Disk enclosure (rear) and I/O module LEDs

The following LEDs and indicators are used to verify disk enclosure and I/O module operation.

Figure 3. Rear side of disk enclosure and I/O module LEDs



NOTE: LEDs 4 and 5 show the SAS ports on the disk enclosure. The right-most port (SAS port 3) is not used by any HPE StoreOnce Systems.

Item	LED symbol	Function	Status	State
1	UID	UID/Service	Blue solid	Locate active; safe to remove.
			Blue flashing	Locate active; **do not remove.**

Item	LED symbol	Function	Status	State
2		Health	Green flashing	Normal operation
3		Fault	Amber solid	Fault
			Amber flashing	Fault
			Amber off	No fault
4	N/A	SAS port Fault	Amber solid	Fault
			Amber off	No fault
5	N/A	SAS Port Link	Green solid	N/A
			Green off	Port not linked
6	Do not use			
7	N/A	Cage number/ Error code	See I/O module error codes.	

I/O module error codes

Cage number/Error code	State
A4	Redundant IOM turned off.
AF	Redundant I/O Module Absent
B0	Generic expander error
B1	Expander bootstrap task has failed.
B3	Using default SAS address
B5	Communication error with the partner expander
B6	Expander firmware mismatch between the two I/O modules
B7	Failed on ESP configuration
B8	Expander composite image error
B9	SAS cable hardware error
BA	SAS cable unsupported by HPE
BD	ESP communication error
BE	Incompatible firmware in local ESP
BF	Incomplete system identification
C0	Temperature sensor generic error
C2	Failure on getting data from temperature sensor
C3	Warning temperature reached in temperature sensor
C4	Critical temperature reached in temperature sensor
D2	Module Absent - Power Supply A
D5	Communication error - Power Supply A
DA	Power Loss - Power Supply A
DB	Power Loss - Power Supply B
E2	Module Absent - Fan A

Cage number/Error code	State
E3	Module Absent - Fan B
E7	Voltage Error - Power Supply 0
E8	Voltage Error - Power Supply 1
E9	Rotor failure - Fan A
EA	Rotor failure - Fan B
F4	NVRAM backup failure on Top I/O module
F5	NVRAM backup failure on Bottom I/O module
F7	The zoning configuration between expanders do not match, example: multipath daisy chain
F8	Drive inserted into incompatible bay

Safety considerations

For detailed safety information, see the rack documentation and the Safety Guide provided with the rack product.

WARNING:

Use extreme caution when installing and pulling units from the rack. They can slip and fall, damaging the StoreOnce System or causing personal injury.

Hewlett Packard Enterprise is not responsible for any injury or damage caused by the mishandling of the StoreOnce System. Always use at least two people to lift and install a storage enclosure into the rack.

To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- The stabilizing feet are attached to the rack of a single-rack installation.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

Capacity upgrade kit contents

HPE StoreOnce 3660 capacity upgrade kit contains:

- 2U storage enclosure containing one dual integrated SAS I/O module and twelve 8TB HDD disks
- Rail kit
- One 1m SAS cable
- One 2m SAS cable
- Two power cables
- Capacity upgrade LTU (license)
- One front bezel

HPE StoreOnce 5260/5660 capacity upgrade kit contains:

- 2U storage enclosure containing one dual integrated SAS IO module and twelve 16TB disks
- Rail kit
- One 1 m SAS cable

- One 2 m SAS cable
- Two power cords
- Capacity upgrade LTU (license)
- Read This First and Important cards

Capacity upgrade planning considerations

The StoreOnce System remains available and the existing storage remains accessible during the capacity upgrade process. However, Hewlett Packard Enterprise recommends the following:

- Schedule the capacity upgrade as a maintenance activity during a quiet period.
- Notify administrators of the upgrade plan.
- Check to see how any scheduled jobs, such as replication, might be affected by decreased performance.
- Check the status of the existing storage and resolve any issues before proceeding with the capacity upgrade.

The length of the upgrade process, including installing, cabling, licensing, and configuring the new storage, depends on the size of the upgrade. The entire upgrade process takes from 8 -24 hours depending on the system.

- StoreOnce 3660, 5260 and 5660 systems support only **OFFLINE** expansion. The server node and enclosures must be powered off **before** connecting the new enclosure for offline expansion.
- Cable installation and cable movements **must** follow the numbered sequence.
- When additional shelves are added to a system, the Smart Array must initialize parity of the new logical volume.
- Parity initialization on newly connected enclosures can take up to 24 hours.
- If multiple shelves are added, parity is initialized in parallel.

Please ensure the following steps are taken when installing a new enclosure:

1. Cleanly shut down the server node and all existing enclosures.
2. Disconnect all power cables from the server and enclosures.
3. Perform the storage expansion, remembering the numbered sequence required to connect the enclosures. Ensure that only necessary changes are made to complete the expansion.

   WARNING: Incorrect connections can lead to Data Loss.
4. Connect back all of the SAS cables correctly the same order, following the configuration diagrams.
5. Connect back the **enclosure** power cables only and wait for a few minutes until the enclosures are powered up.
6. When the enclosures are powered up, connect the **server** power cables and power on the server.

Redundant hardware connectivity guidelines

For the hardware appliances:

- Use dual Power Distribution Units (PDUs) to provide AC power to the controller node and the disk enclosures. Connect one PDU to the first Power Supply Units (PSUs) in the controller node and the disk enclosures. Connect the other PDU to the second PSUs in the controller node and disk enclosure. Provide an AC phase to each PDU.
- To maintain the redundant hardware design of the system, correctly install the dual SAS cabling following the user instructions and SAS cabling diagrams.

3-2-1 strategy

For hardware and software appliances:

- Save three copies of your data.
- Keep two copies of data on different media (example: StoreOnce Catalyst copy of a backup).
- Keep one copy of your data off site.

Racks for StoreOnce storage enclosures

The storage enclosures can be installed into most standard server racks.

For detailed safety information, see the rack documentation and the safety guide at **www.hpe.com/support/Safety-Compliance-EnterpriseProducts**.

Rack warnings

For detailed safety information, refer to the rack documentation and the Safety Guide provided with the rack product.

WARNING:

To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- The stabilizing feet are attached to the rack of a single-rack installation.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

CAUTION:

Use extreme caution when installing and pulling units from the rack. They can slip and fall, damaging the StoreOnce system or causing personal injury.

Hewlett Packard Enterprise is not responsible for any injury or damage caused by the mishandling of the StoreOnce system. Always use at least two people to lift and install an enclosure into the rack.

Cable labels

The StoreOnce capacity upgrade kit (enclosure) includes a sheet of preprinted cable label pairs. Each pair contains two identical labels, one for each end of the SAS cable.

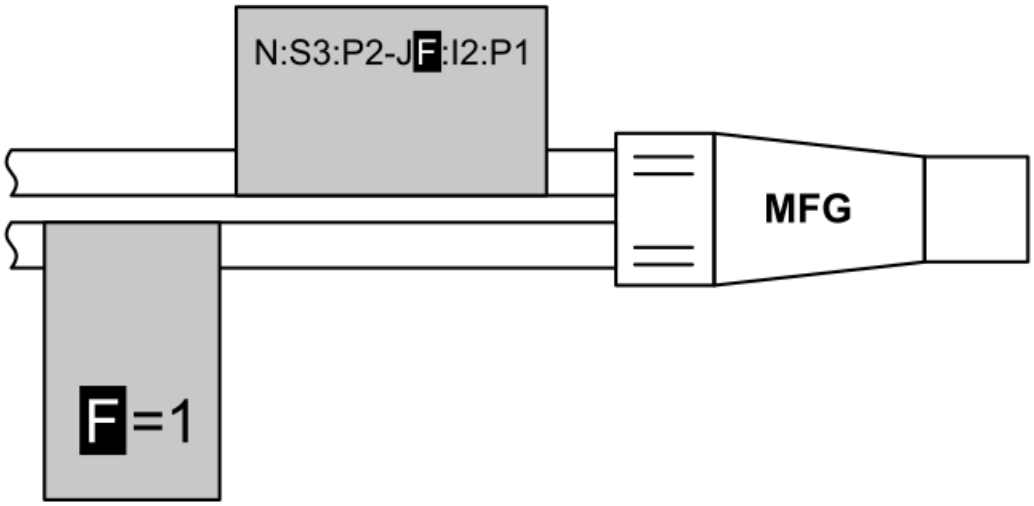
These labels use this convention: N:S6:P1 - J1:I1:P1, where:

- N = Node (server node)
- S = Slot
- P = Port
- J = JBOD
- I = I/O module
- F = Floating number (for moving cables)

Apply the correct pair of labels to each SAS cable as you cable the storage enclosure.

When labeling moving cables that require the additional " F=" label:

- Wrap each label around one cable only.
- Apply the labels so the orientation of the lettering matches the orientation of the manufacturer's mark.
- Place the "F=" label farthest from the connector.

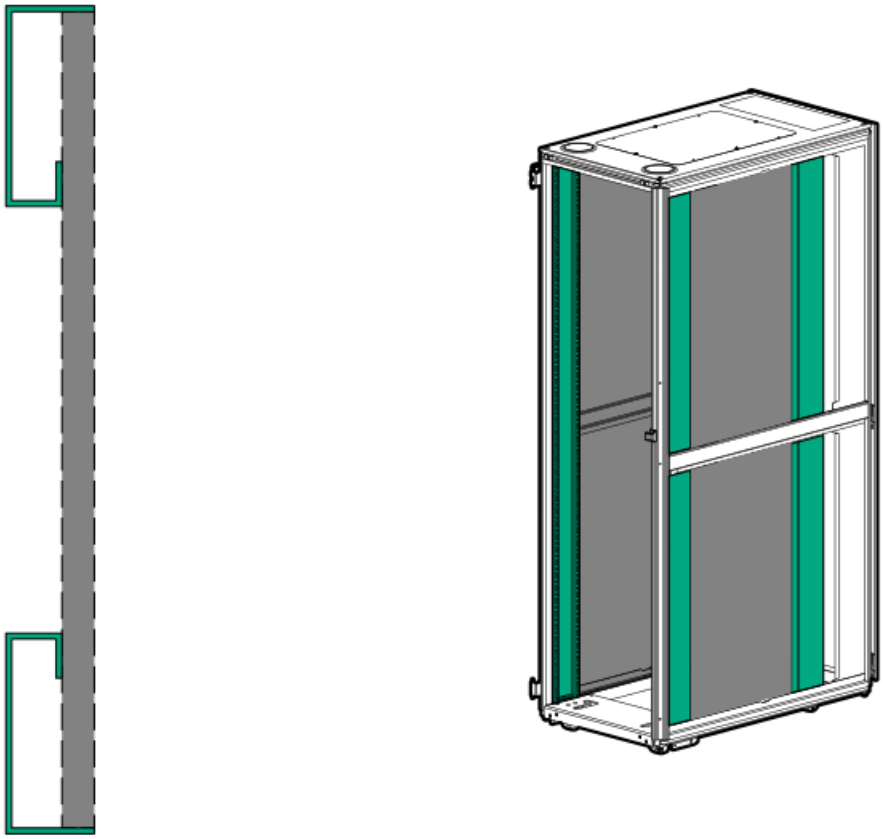


Guidelines for the rail kit installation in a rack

- Ensure that the rack is compatible with the storage system.

  The storage system is compatible with most industry standard, four-post, EIA-310, 48.3 cm (19 in) racks with square mounting holes. The rail kit supports rack post depths of 26.5 inches to 32.5 inches.

- The rail kits require a minimum width of 18.38mm between the inner RETMA column edge and any rack component between the columns. In the following image, the gray indicates a rail, which takes up the full space between the front and rear RETMA rails.



- Install a rail kit in the rack for each enclosure in your storage system.

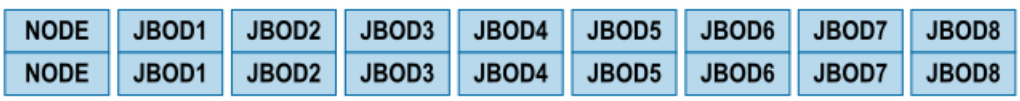
Drive enclosure labels

The storage system is shipped with labels for each drive enclosure in a rack.

IMPORTANT:
Only label the drive enclosures that are installed. Do not label any rack units reserved for future use.

The drive enclosure labels come as stickers ranging from **JBOD1 - JBOD8**. The following figure illustrates a drive enclosure label packet.

Figure 1. Drive enclosure labels



Use the labels to identify a drive enclosure when cabling it.

Required tools

About this task

Gather the following tools before you begin the unpacking and installation process.

Purpose	Tools

Purpose	Tools
Preventing ESD	• ESD mat • ESD grounding strap
Opening shipping boxes	• Scissors or snips • Box cutter
Installing rail kits in a rack and installing storage system components	• P2 Phillips screwdrivers • T25 Torx bit and driver • T15 Torx bit and driver • Long shank extension for Torx bits (10-12 inches long)
Lifting storage system enclosures into a rack	• Mechanical lift

2U enclosure kit parts

2U shipping kit part numbers

Description	Part number
Node shipping kit	P12610-002
Drive shipping kit	P12610-001

Description	Part number
2U rail kit	870033-001

Quantity	Description
2	Rear support bracket
4	Screw, T15 pan head
1	Left rail
1	Right rail
5 (1 for the front and rear of each rail, and 1 extra)	Rail safety screw

StoreOnce websites

HPE Support Center Knowledge Base for StoreOnce products

www.hpe.com/info/storeonce/docs

HPE StoreOnce Support Matrix

www.hpe.com/storage/StoreOnceSupportMatrix

HPE StoreOnce Systems QuickSpecs

www.hpe.com/support/StoreOnceQuickSpecs

HPE StoreOnce Data Protection Backup Appliances information page

www.hpe.com/storage/storeonce

General websites

Storage white papers and analyst reports

www.hpe.com/storage/whitepapers
Enter "StoreOnce" into the keyword search box.

Support and other resources

Subtopics

Accessing Hewlett Packard Enterprise Support

Accessing updates

Remote support

Customer self repair

Warranty information

Regulatory information

Documentation feedback

Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

  https://www.hpe.com/info/assistance

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  https://www.hpe.com/support/hpesc

Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components

Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

  Hewlett Packard Enterprise Support Center

https://www.hpe.com/support/hpesc

Hewlett Packard Enterprise Support Center: Software downloads

https://www.hpe.com/support/downloads

My HPE Software Center

https://www.hpe.com/software/hpesoftwarecenter

- To subscribe to eNewsletters and alerts:

  https://www.hpe.com/support/e-updates

- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center More Information on Access to Support Materials page:

  https://www.hpe.com/support/AccessToSupportMaterials

IMPORTANT:

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Onepass set up with relevant entitlements.

Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which initiates a fast and accurate resolution based on the service level of your product. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

HPE Get Connected

https://www.hpe.com/services/getconnected

HPE Pointnext Tech Care

https://www.hpe.com/services/techcare

HPE Complete Care

https://www.hpe.com/services/completecare

Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider.

Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

https://www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline Servers

https://www.hpe.com/support/EnterpriseServers-Warranties

HPE Storage Products

https://www.hpe.com/support/Storage-Warranties

HPE Networking Products

https://www.hpe.com/support/Networking-Warranties

Regulatory information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

https://www.hpe.com/support/Safety-Compliance-EnterpriseProducts

Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

https://www.hpe.com/info/reach

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

https://www.hpe.com/info/ecodata

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

https://www.hpe.com/info/environment

Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, use the Feedback button and icons (located at the bottom of an opened document) on the Hewlett Packard Enterprise Support Center portal (https://www.hpe.com/support/hpesc) to send any errors, suggestions, or comments. All document information is captured by the process.