

Install the Expansion Shelf

Use this procedure to install and activate up to two HPE Alletra 2140 expansion shelves, depending on the model of your HPE Storage array.

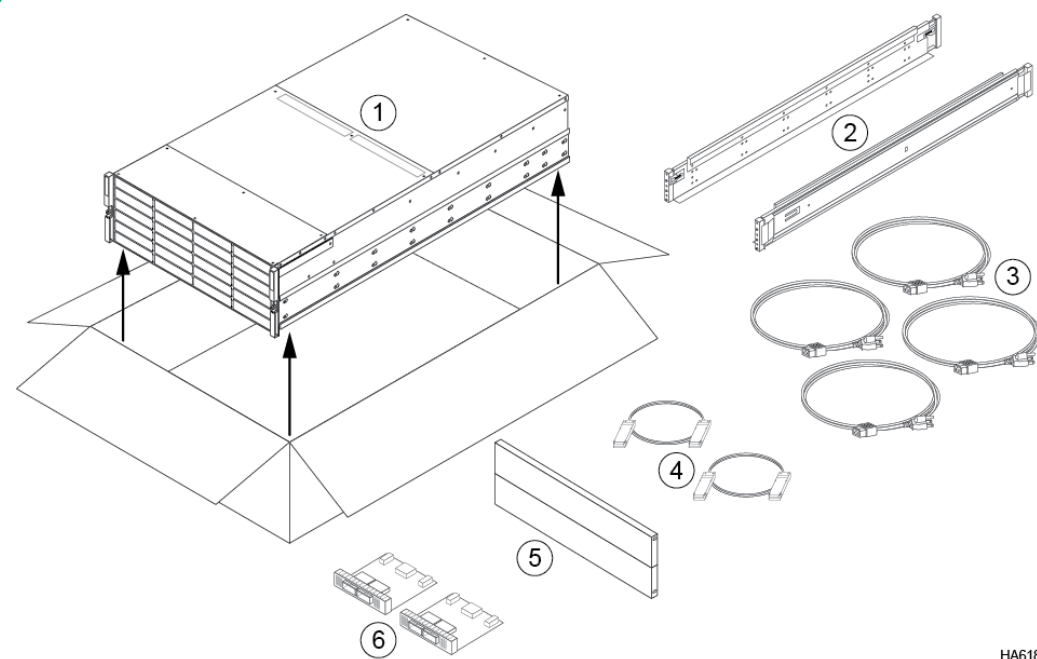
Caution!

- When you activate the expansion shelf, there is a momentary pause in data services from the array. You might need to activate the expansion shelf during a maintenance window.
- The chassis weighs over 38 kg (84 lb). Always use at least two people or a server lift when lifting the chassis.

What you need for each expansion shelf:

- 19-inch four-post rack. The provided rails fit both round-hole and square-hole racks.
- 4U space available in the 19-inch rack
- At least two DAC cables, 1 m or 3 m (two 1 m cables are included with the expansion shelf)
- OCP cards, ordered separately, if your array does not already have adapters installed in the OCP expansion slots

1 Unpack and inspect the hardware.



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|-------------------|--------------------------|
| 1 Expansion shelf | 4 DAC cables |
| 2 Outer rails | 5 Bezel |
| 3 Power cables | 6 OCP cards (if ordered) |

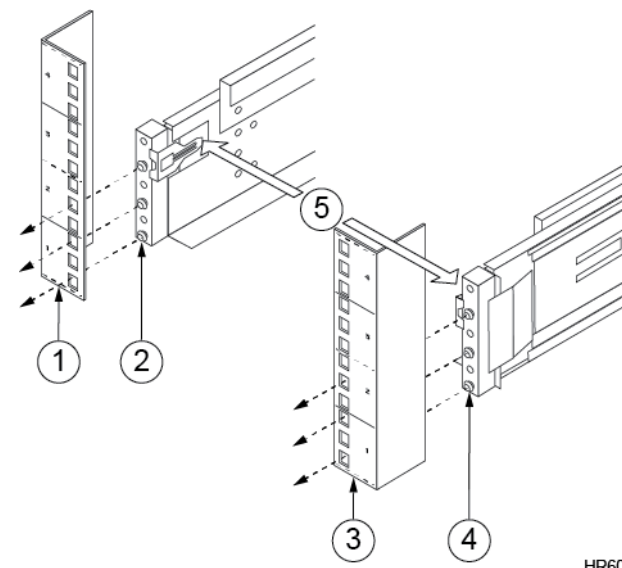
OCP cards, if ordered, are shipped separately. Save all original packaging.

2 Install the outer rail assemblies onto the rack.

Note: To ensure that the array thumbscrews align correctly, align the rail assembly in exactly 4U of rack space. The bottom stud on the rail assembly inserts into the bottom hole of the bottom unit of the 4U rack space allotted for the array.

- Align the bottom stud of the rail at the position you want. Note the orientations embossed on the outer rail.
- Press the keeper latch and position the front studs in the rack. When the studs are engaged, release the keeper latch to secure the front of the rail in the rack.
- Align the back of the rail at the same rack position as the front.
- Position the back studs in the rack and press the keeper latch. When the studs are engaged, release the keeper latch to secure the back of the rail in the rack.
- Repeat steps a through d on the other side.

The following diagram shows where the rail assemblies should be correctly installed in a rack.



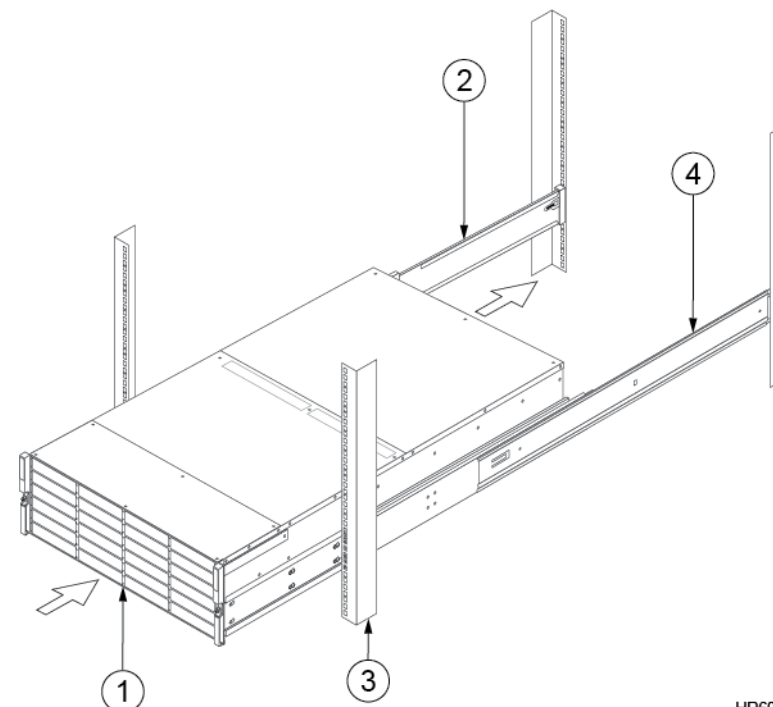
HR601

3 Slide the chassis into the rack.

Caution!

The chassis weighs over 38 kg (84 lb). Always use at least two people or a server lift when lifting the chassis.

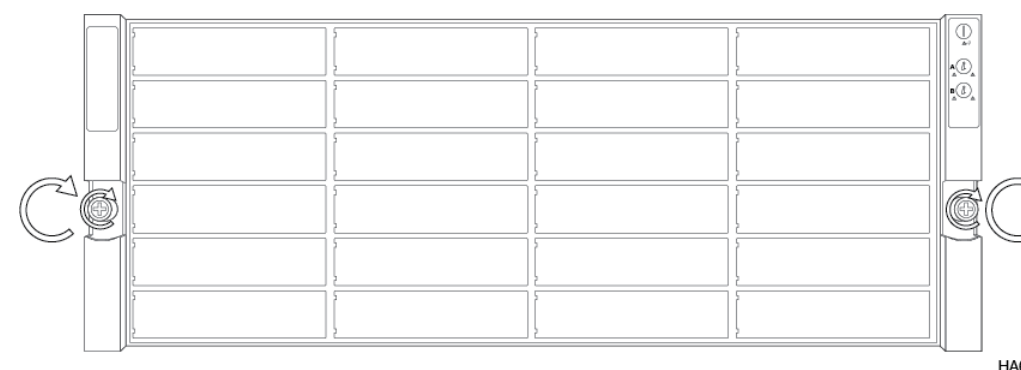
- Insert the chassis into the rack, back side first. Be sure the inner rails insert into the outer rails.
- Gently slide the chassis into position. When you hear a click, the inner rails have locked into the rail assembly.



HR602a

4 Secure the chassis to the rack.

The chassis has two handles. Each handle has a thumbscrew that holds the chassis to the rails so it does not slide out of the rack. Tighten the thumbscrew in each handle until secure.



HA607

Connect Power to the Expansion Shelf

Before you perform this task, you must have already installed the HPE expansion shelf in a rack.

- Plug the power cables into the power supplies on the back of the expansion shelf.**
- Plug the other end of the power cables into the power circuit.**
To minimize the risk of both power supplies in an expander losing power simultaneously, connect each power cable to a different circuit.
- After no more than 2 minutes, verify that the power supply LEDs are green.**
If the expansion shelf does not power on automatically, check the power cable connections and power source. If the expansion shelf still does not power on, contact HPE Support.

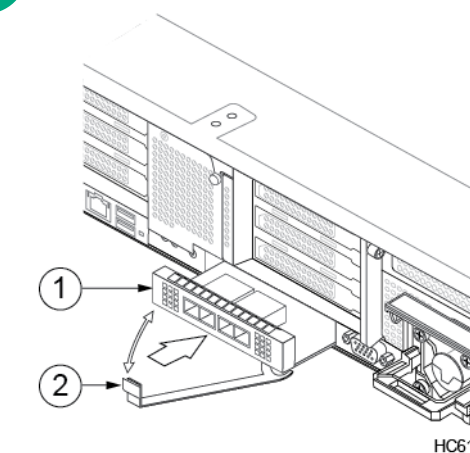
Install OCP Cards in the Controllers

Note: If your array does not have adapters installed in the OCP expansion slot of the controllers, you must install OCP cards in the array before connecting an expansion shelf.

1 Identify and halt the controller that is in Standby mode.

- Log in to the array using the CLI.
- Determine which controller is in Standby mode.
`ctrlr --list --array array_name`
- Halt the standby controller.
`halt --array array_name --controller {A | B}`

2 Install the OCP card in the standby controller.



HC614

- OCP card
- OCP card latch

 - Remove the slot cover from the OCP expansion slot on the back of the controller.
 - Gently insert the OCP card into the expansion slot. Be sure the OCP card is properly seated.
 - Engage the OCP card latch to secure the card in the slot.

Note: LEDs on the OCP card do not light until cables are connected and establish a link.

3 Disconnect both power cables from the power supplies of the standby controller, and then reconnect the power.

The controller powers on automatically.

4 Verify the array is in Active/Standby state.

`ctrlr --list --array array_name`

5 Fail over to reverse the controller roles.

`failover --array array_name`

6 When failover is complete, repeat steps 1-4 on the new standby controller.

7 Verify that the array recognizes the new OCP cards.

In the GUI, click **Hardware**, and verify that the OCP port icons are green.



Connect and Activate the Expansion Shelf

Fully configure the array before you connect the expansion shelf to it.

Important!

Before you connect and activate the expansion shelf:

- For HPE Alletra 6000 arrays with one 24-drive RAID set, ensure that the array is updated to OS 6.1.1.0 or later
- For HPE Alletra 6000 arrays with one 12-drive RAID set, upgrade the array to two 12-drive RAID sets, and ensure that the array is updated to OS 6.1.2.0 or later
- Ensure that OCP cards are installed in the OCP expansion slot of the array controllers
- Do not shut down the array while connecting and activating the expansion shelf

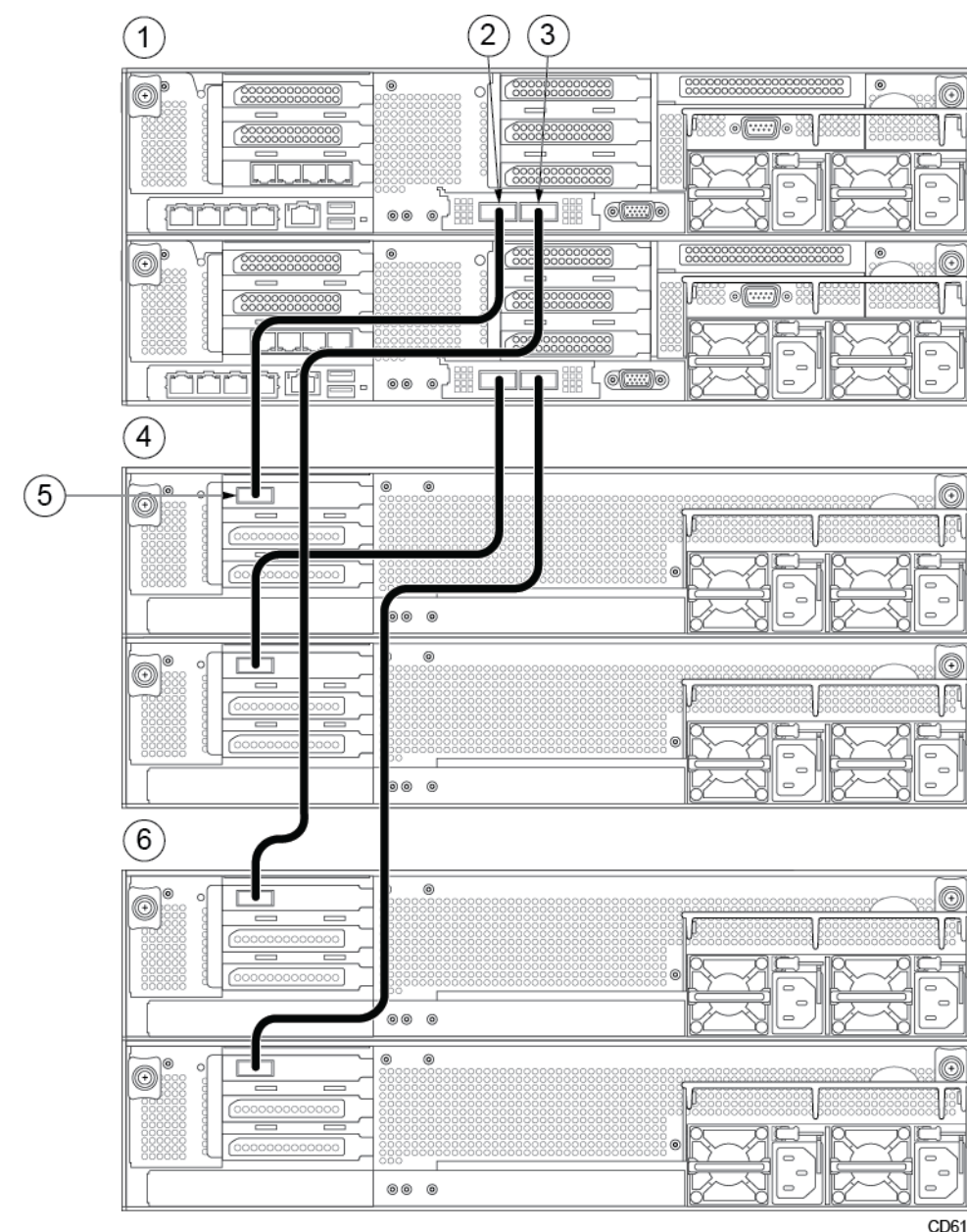
1 Before you start cabling, verify that all SSDs are fully inserted into their drive bays and that the power is on.

Expansion shelf power must be on before connecting the DAC cables.

2 Cable the expansion shelf to the OCP expansion ports on the array.

Use the provided DAC cables to cable the array to the expansion shelf. The system information label extends out from the rear of the chassis and includes information such as port mappings and serial number.

- Connect OCP port P1 of controller A on the array to the DAC port on expander A of the expansion shelf.
- Connect OCP port P1 of controller B on the array to the DAC port on expander B of the expansion shelf.



- | | |
|--------------|---------------------|
| 1 Array | 4 Expansion shelf 1 |
| 2 OCP port 1 | 5 DAC port |
| 3 OCP port 2 | 6 Expansion shelf 2 |

3 (Optional) Cable another expansion shelf to the array:

- **For HPE Alletra 6010:** You can connect only one expansion shelf.
 - **For HPE Alletra 6030, 6050, 6070, 6090:** You can connect up to two expansion shelves.
- Connect OCP port P2 of controller A on the array to the DAC port on expander A of the second expansion shelf.
 - Connect OCP port P2 of controller B on the array to the DAC port on expander B of the second expansion shelf.

Note: Wait at least 3 (three) minutes between each additional expansion shelf connection to ensure the firmware update is complete.

4 Activate the expansion shelf.

Note: Ensure that all drives are detected and all drive LEDs are green before activating the expansion shelf. Activation will fail if any drives are missing or have failed.

- In the array GUI, click **Hardware**, then select the array that contains the new drives.
- In the array list, click the array that manages the expansion shelf.
- On the expansion shelf graphic, click **Activate**.

When the activation completes, the expansion shelf appears on the Array Management page.

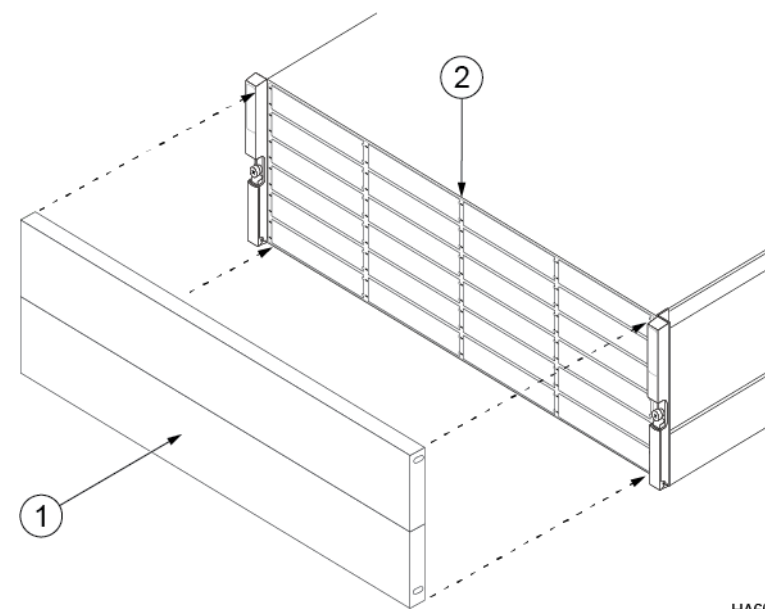
Caution!

When you activate the expansion shelf, there is a momentary pause in data services from the array. You might need to activate the expansion shelf during a maintenance window.

5 Snap the bezel to the front of expansion shelf.

The bezel is the front plate that attaches to the front of the array to control airflow. The bezel includes retention pins on both sides.

- Align the four retention pins on the bezel with the four mounting holes on the front of the chassis.
- Press gently but firmly until the bezel snaps into place.



- Bezel
- Chassis