

Install the Array

Use this procedure to install the following HPE Nimble Storage array models: HF20, HF20H, HF20C, HF40, HF40C, HF60, and HF60C.

- ! Attention!**
If you are installing more than one HPE Nimble Storage array, refer to the *Hardware Guide* available on HPE InfoSight for information about your model.
Go to **InfoSight > Resources > Documentation > Hardware Guide**.

What you need for each array:

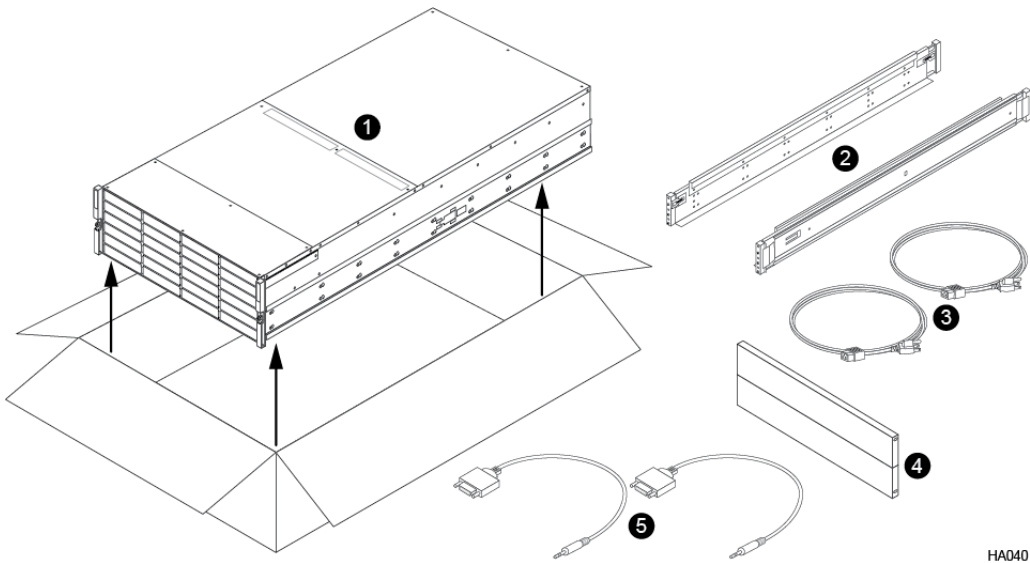
- 19-inch four-post rack. The provided rails fit both round-hole and square-hole racks. Racks with a depth of 1200 mm best accommodate the length of the HPE Nimble Storage chassis, providing ample space for cabling and ease of service. Racks with a depth of 1075 mm can be used but may provide limited space for cables and component access.
- 4U space available in the 19-inch rack
- At least two Ethernet cables for management, one cable per controller
- At least two cables, Ethernet or Fibre Channel, for data
- One or two switches, depending on your array and network topology. Two 10GbE or Fibre Channel switches are recommended for high availability and redundancy.
- Two power outlets on separate circuits
1200 W power supply with C14 connector:
 - Steady state current: 2.5A @ 240V; 5A @ 120V
 - Startup current: 3A @ 240V; 6A @ 120V3000 W power supply with C20 connector:
 - Steady state current: 4.5A @ 240V; 9A @ 120V
 - Startup current: 5.5A @ 240V; 11A @ 120V

Before beginning, download and read the Release Notes, available on HPE InfoSight (<https://infosight.hpe.com/>). HPE InfoSight is a password-protected web portal, so you must have an account to access Release Notes and documentation. If you do not have an HPE InfoSight account, click **Create Account** and provide the required information. If you already have an account, type your email address and password, then click **Login**. Visit the Welcome Center (<https://infosight.hpe.com/welcomecenter>) for help setting up your HPE Nimble Storage array.

- Note:**
- Install this product in restricted-access locations only, such as a dedicated equipment room or an electrical closet.
 - Position the rack in a location with at least 800 mm rear clearance and 1000 mm front clearance for maintenance access.
 - Cold air comes into the front of the array (drive side) and is exhausted out the back of the array (controller side) by the fans. Install the array with the front facing the cold aisle and the back facing the hot aisle in your environment.

- ! Caution!**
The chassis weighs over 61 kg (135 lb). Always use at least two people or a server lift when lifting the chassis.

1 Unpack and inspect the hardware.
Save the original packaging.



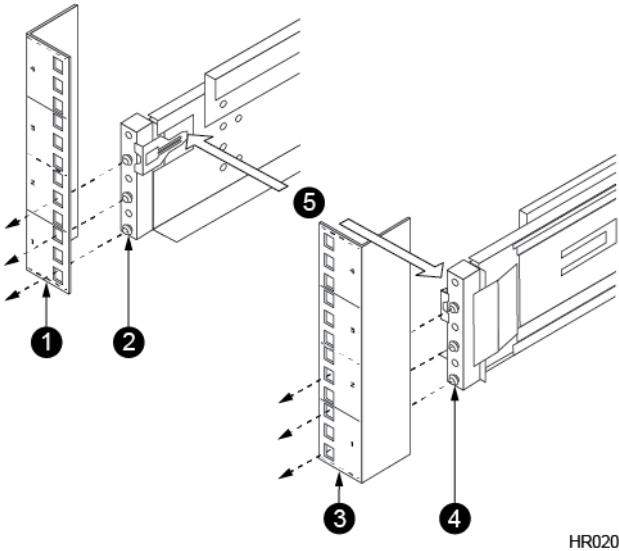
- | | |
|---------------|-------------------------|
| 1 Array | 4 Bezel |
| 2 Outer rails | 5 Serial console cables |
| 3 Power cords | |

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.

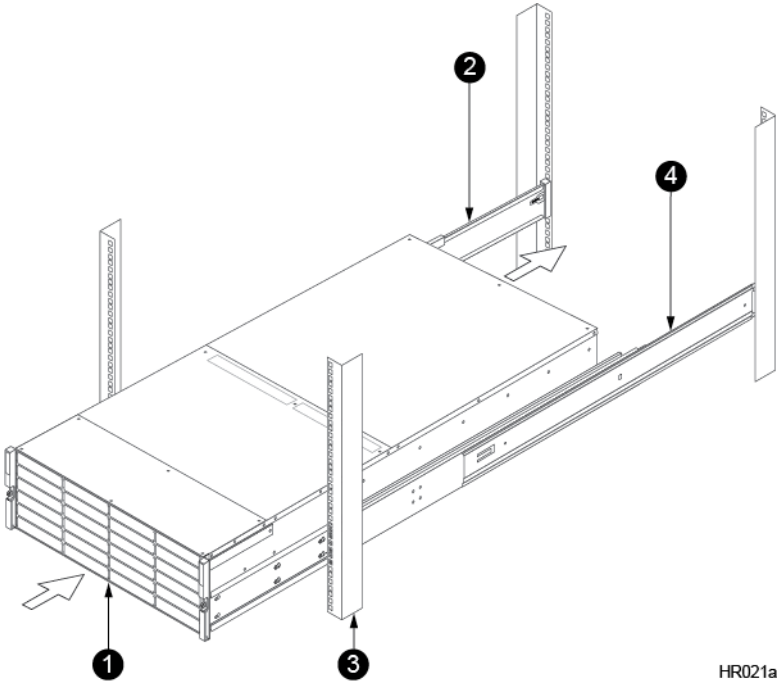


- | | |
|-------------------------|-----------------------|
| 1 Left front rack post | 4 Right rail assembly |
| 2 Left rail assembly | 5 Keeper latch |
| 3 Right front rack post | |

3 Slide the chassis into the rack.

- ! Caution!**
The chassis weighs over 61 kg (135 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.



- | | |
|----------------------|-------------------------|
| 1 Chassis | 3 Right front rack post |
| 2 Left rail assembly | 4 Right rail assembly |

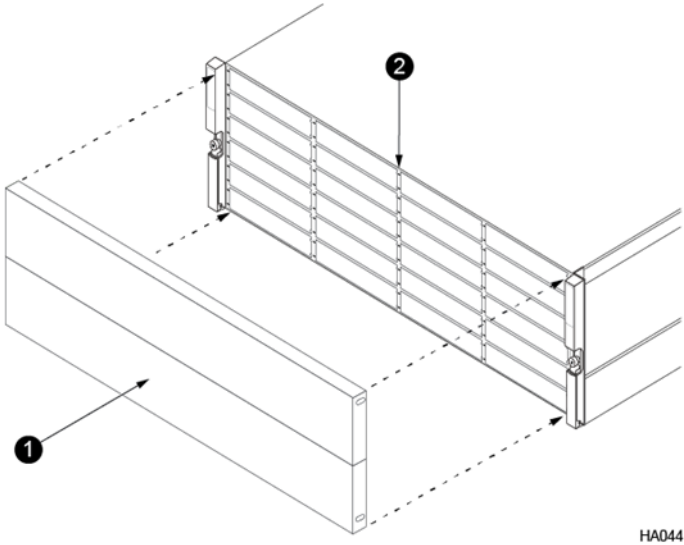
4 Secure the chassis to the rack.

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



5 Secure the bezel to the front of the chassis.

- 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.

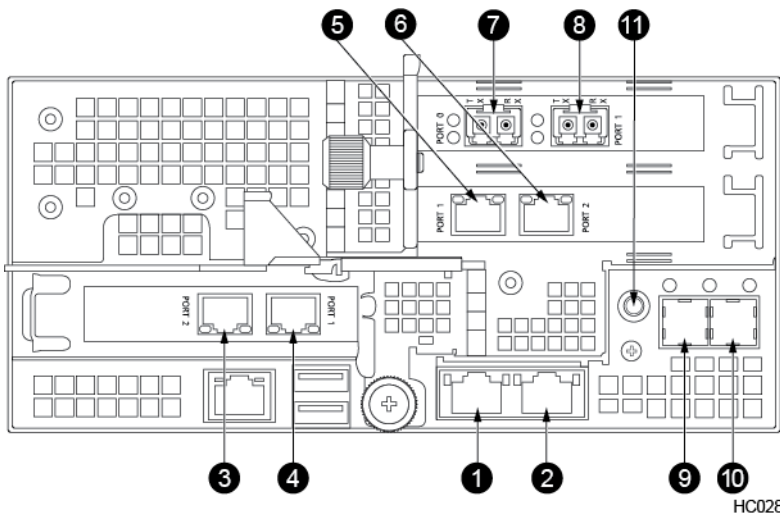


- | |
|-----------|
| 1 Bezel |
| 2 Chassis |

6 Cable the array for your desired network topology.

- Connect ports for management (commonly the onboard ports eth0a and eth0b).
- Connect ports for data according to your network topology and protocol (eth or fc).
 - For Ethernet, cable the same port on each controller to the same network switch and subnet. The two ports form an interface par, and iSCSI initiators have a network path to both controllers. If your switches have multiple VLANs configured, make sure that each interface pair is connected to switch ports on the same VLAN.
 - For Fibre Channel, cable the same port on each controller to the same FC switch. See the *Hardware Guide* on HPE InfoSight for detailed network configuration examples.

Figure 1: Array interface example (Ethernet and Fibre Channel ports)



- | | |
|---------|----------------|
| 1 eth0a | 7 fc3a |
| 2 eth0b | 8 fc3b |
| 3 eth1b | 9 SAS Out |
| 4 eth1a | 10 SAS Out |
| 5 eth2a | 11 Serial port |
| 6 eth2b | |

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
See *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at www.hpe.com/support/Safety-Compliance-EnterpriseProducts for important safety, environmental, and regulatory information.



Connect the Power to the Array


The HPE Nimble Storage array must be installed in a rack or enclosure and the array must be connected to a network.

1 Plug the power cables into both power supplies.


2 Verify that the connection is secure.

3 Plug the other end of the power cables into the power circuit.

To minimize the risk of both power supplies losing power simultaneously, connect each power cable to a different circuit.

If the array does not come online automatically, press the power button  on the front of the chassis.

Configure the Array

 **Important!** There are multiple ways to initially set up an array. This procedure describes setting up an array using HPE Nimble Storage Setup Manager (NSM), which is a component in the HPE Nimble Storage Windows Toolkit (NWT). If you perform these steps from a laptop running Windows 7 or later, no other NWT component besides NSM can be installed on the laptop.

Note: If you want to use the NimbleOS CLI to perform the initial setup, refer to the *Hardware Guide* for the HF20, HF20H, HF20C, HF40, HF40C, HF60, and HF60C models.


What you need on the Windows host:

- Internet connection to HPE InfoSight
- .NET Framework 4.5.2

1 Install the HPE Nimble Storage Windows Toolkit on the Windows host.

- Download the Nimble Windows Toolkit (NWT) from HPE InfoSight at <https://infosight.hpe.com/>.
Type your email address and password, and click **Login**. If you do not have a password, click **Create Account**.
- Choose **Resources > Software**.
- From the **Software** page, select **Windows Toolkit** and choose the latest version of the NWT.

Note: The Windows host used to initially configure the array must be on the same physical subnet as the array.

 **Important!** Make sure that the NWT version is compatible with the NimbleOS version on your array.

- Click the appropriate software link and save the NWT installation package to a convenient place on your Windows host.
The installation package has a name similar to **Setup-NimbleNWT-x64-x.x.x.x.exe**. Where **x64** is the supported microprocessor and x.x.x.x is the version number.
- Download the *Nimble Windows Toolkit Release Notes*, available at <https://infosight.hpe.com/>.
Review the list of Windows Server hotfixes.
- On the Windows host, right-click the installer file and choose **Run as administrator**.
- Follow the prompts.
You must accept the end user license agreement to install the NWT.
Choose **Complete Installation** and **Yes** to modify the Registry Keys.
- Click **Yes** to restart the Windows host.

For information on which ports to open, see the *GUI Administration Guide*, the *CLI Administration Guide*, or the online help. The guides are available on HPE InfoSight.

2 Set up the array.

- In the Windows Start menu, choose **Nimble Storage > Nimble Setup Manager**.
- Open the browser and select the array from the HPE Nimble Storage Setup Manager (NSM) list.
Note: If the array is not visible in NSM, verify that the array is on the same subnet as the Windows host.
- In the Information dialog box, click **OK**.
Note: Clicking OK closes the Nimble Setup Manager, and continues the setup on the array through your web browser.
- You may see a warning similar to "There is a problem with this website's security certificate." It is safe to ignore this warning and click **Continue**.
If prompted, you can also download and accept the security certificate. Or create your own. See the cert command in the *Command Reference*, available on HPE InfoSight.

- In the Nimble Storage License Agreement, read the agreement, scroll to the bottom, check the acknowledgment box, and then click **Proceed**.
- In the **Array Setup** screen, choose the appropriate group option and click **Next**.
 - If you create a new group, you must provide additional information. Later, you can add other arrays to this group.
 - If you join an existing group, choose its Group Name.
When you chose to join an existing group, your browser automatically redirects to the login screen of the group leader array.
- Provide or change initial management settings and click **Finish**. Optional: Type the Group password and click **Log In**. The **Add Array to Group** dialog box opens.
- In the **Successfully Initialized** dialog box, click **Continue**. Your browser automatically redirects to the Management IP address of the array.
Note: If the array does not initialize, check the cabling to the network switch and check the subnet mask.
- In the login screen, type the password you set and click **Log In**.
From this point forward, you are in the NimbleOS GUI.

3 Type the Network Addresses settings and click Next.

For Management and Discovery (Management only for Fibre Channel):

- Management IP address and subnet mask
- For iSCSI: Discovery IP address and subnet mask
- For FC: Data IP address and subnet mask (for group and replication traffic)
- Default gateway IP address

Note: If you chose two dedicated networks as your network topology, the GUI requires you to specify different subnets for management and data.

For Data:

- Port type – Not configured, Data only, or Management + Data
- Data IP address and subnet mask
- Maximum Transmission Unit (MTU) – Standard, Jumbo, or Other
- Frame size in bytes – User specified value

Ensure that your network switches support the selected MTU or frame size. The data port IP addresses are assigned to interface pairs, such as eth2a on controller A and eth2a on controller B. If one controller fails, the corresponding port on the remaining controller still has data access. At least one interface pair must be configured. However, a minimum of two is recommended.

4 Type the domain and DNS information and click Next.

- Domain name - Enables the network to resolve IP addresses.
- DNS servers - One per line, up to five.

5 Specify the time zone, type the NTP (time) server details, and click Next.

- Select the time zone from the drop-down menu.
- Type the hostname or IP address of the NTP server.

6 Type the support information and click Finish.

- GUI Administration Guide From Address - Identifies the array as the sender of email notification messages.From Address - Identifies the array as the sender of email notification messages.
- To Address - Recipients of the email notification messages.
- Send data – The array automatically periodically sends a health and performance report to HPE Nimble Storage Support. *Strongly recommended*.
- Diagnostics for Nimble Analytics (DNA) and Usage Analytics - You might see one or both of these features. They are both enabled by default. To disable these features, uncheck the box.
- HTTP Proxy Server - If the network uses an HTTP proxy server for secure Internet connections, type the appropriate information.

7 Read the Setup Complete message and click Continue.

Make sure you have the necessary ports open. The NimbleOS GUI home screen appears.

8 Configure the array with the GUI.

See the *GUI Administration Guide*.

Where to go next: See the *GUI Administration Guide*, the *CLI Administration Guide*, or the online help to learn more about managing the array. For the latest release notes, go to HPE InfoSight.