5 Installing a Switch

5.1 (Optional) Adjusting Mounting Brackets

Context

The procedures and methods for adjusting mounting brackets on the CloudEngine 16800 are the same. This section uses the mounting brackets on the CloudEngine 16808 as an example.

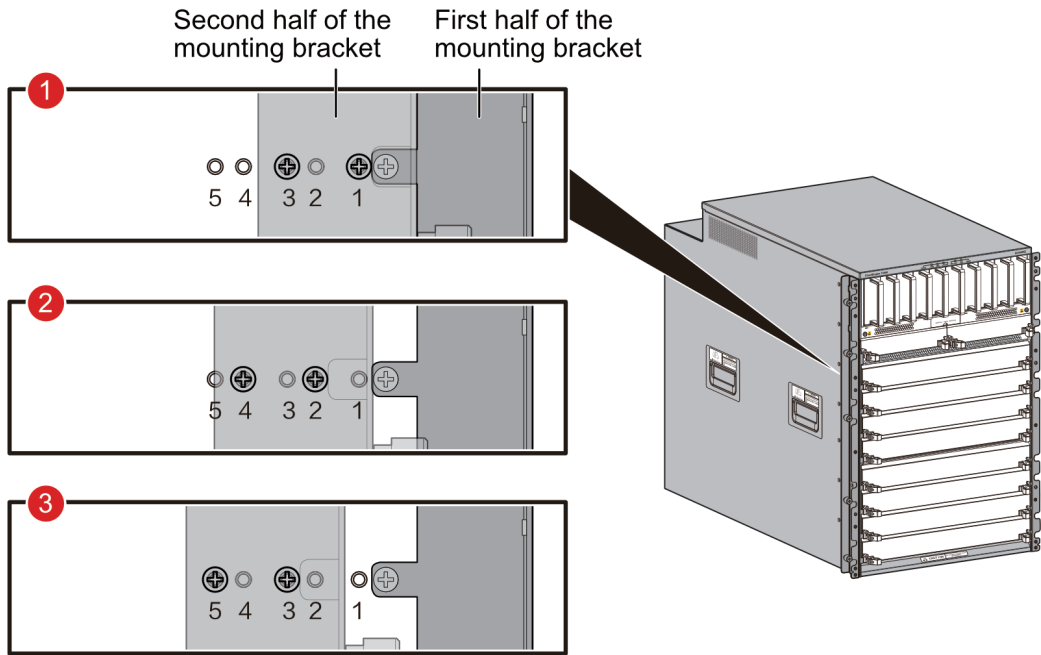### Tools

- Phillips screwdriver

Procedure

1. Measure the distance (A) between the front mounting rail and the outer side of the front door, and adjust the mounting brackets to proper positions according to the mapping between distance A and mounting bracket installation positions. (The first half of the mounting bracket is connected to a cable management frame and cannot be adjusted.)

Table 5-1 Mapping between distance A and mounting bracket installation positions

Distance A (1000 mm deep cabinet)	Distance A (1100 mm to 1200 mm deep cabinet)	Mounting Bracket Installation Position
150 mm	165 mm to 175 mm	Default position (callout 1 in the figure)
165 mm	180 mm to 190 mm	Position shown in callout 2 in the figure
175 mm (recommended)	190 mm to 200 mm	Position shown in callout 3 in the figure

Figure 5-1 Mapping between distance A and mounting bracket installation positions

5.2 Installing the CloudEngine 16804

Context

⚲ **NOTE**

- Move the device near the cabinet or rack before the installation.
- For convenient maintenance, leave at least 1000 mm of clearance at the front and rear of the device. Do not install the device against a wall.
- Keep the tweezers and wrenches delivered with the device for future use.
- If the device is delivered with main control boards, interface boards, SFUs, and power modules installed, you are advised to remove them before installing the device into a cabinet or rack.
- For the CloudEngine 16804, reserve sufficient space on the top of the CloudEngine 16804 for power cable routing.
  - CloudEngine 16804 DC chassis: reserved space ≥ 2U
  - CloudEngine 16804 AC & high-voltage DC chassis: reserved space ≥ 1U
- A maximum of three CloudEngine 16804 devices can be installed in each cabinet.

Tools and Accessories

- Scissors
- Flat-head screwdriver
- Phillips screwdriver
- Marker
- CloudEngine 16804 installation template (*CloudEngine 16804 and 16808 Quick Installation Guide*)
- Floating nuts and matching screws
- Floating nut mounting bar
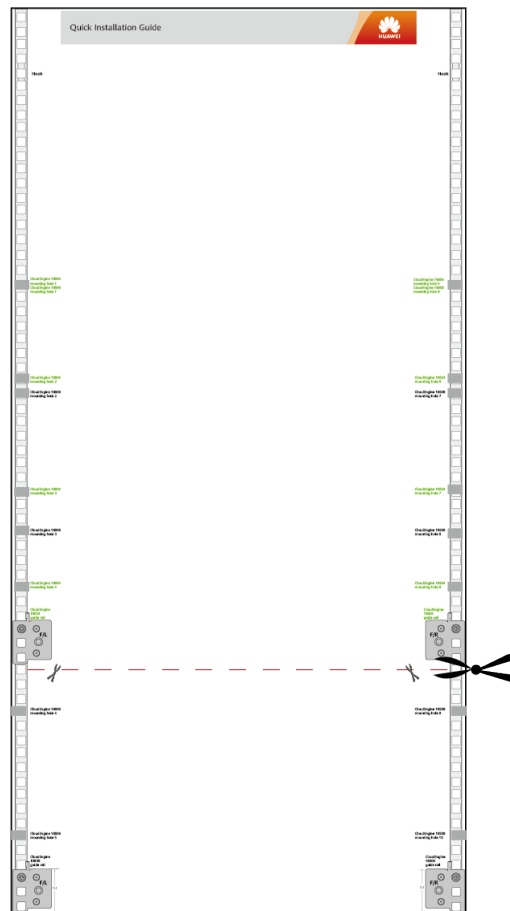- Expandable guide rails and matching screws

Procedure

Step 1 Mark the mounting holes for the expandable guide rails and mounting brackets on the guide rails.

⚲ **NOTE**

Positions of mounting brackets only need to be marked on the front mounting rails, whereas positions of expandable guide rails must be marked on both the front and rear mounting rails. Keep the mounting holes on the front and rear mounting rails on the same horizontal plane.
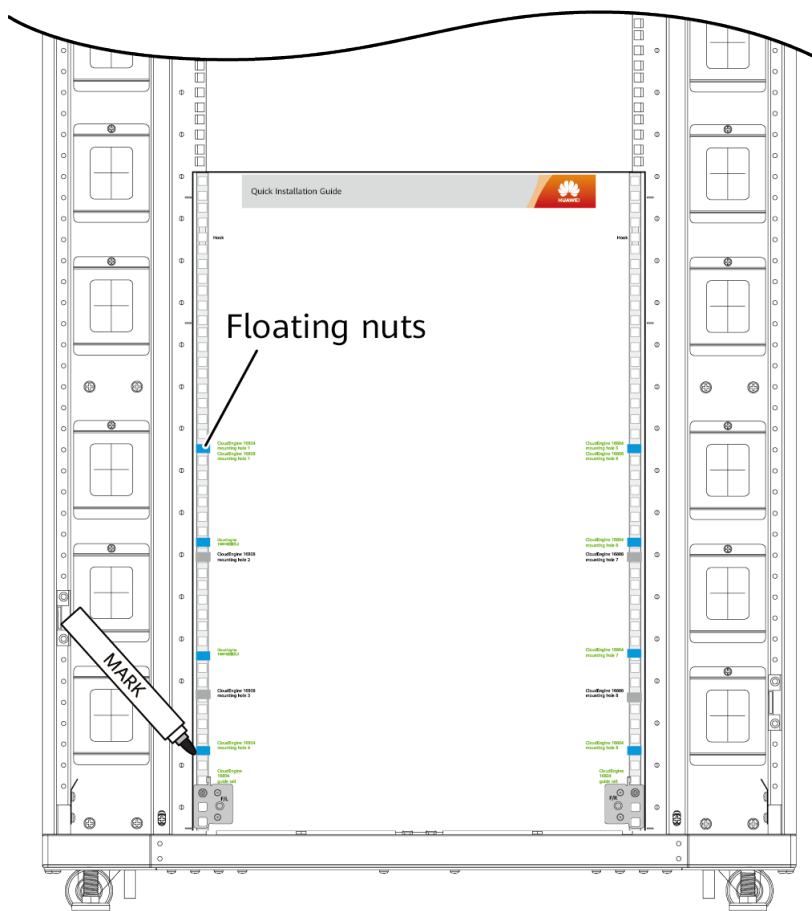
1. Use a pair of scissors to cut the installation template along the CloudEngine 16804 cutting line.

Figure 5-2 Cutting the installation template

2. Determine the device installation position in the cabinet or rack. Two persons hold the installation template, align the mounting holes on the installation template with those on the mounting rails of the cabinet or rack, and fix the installation template on the mounting rails. Mark the mounting holes for the mounting brackets and expandable guide rails, and then remove the installation template.

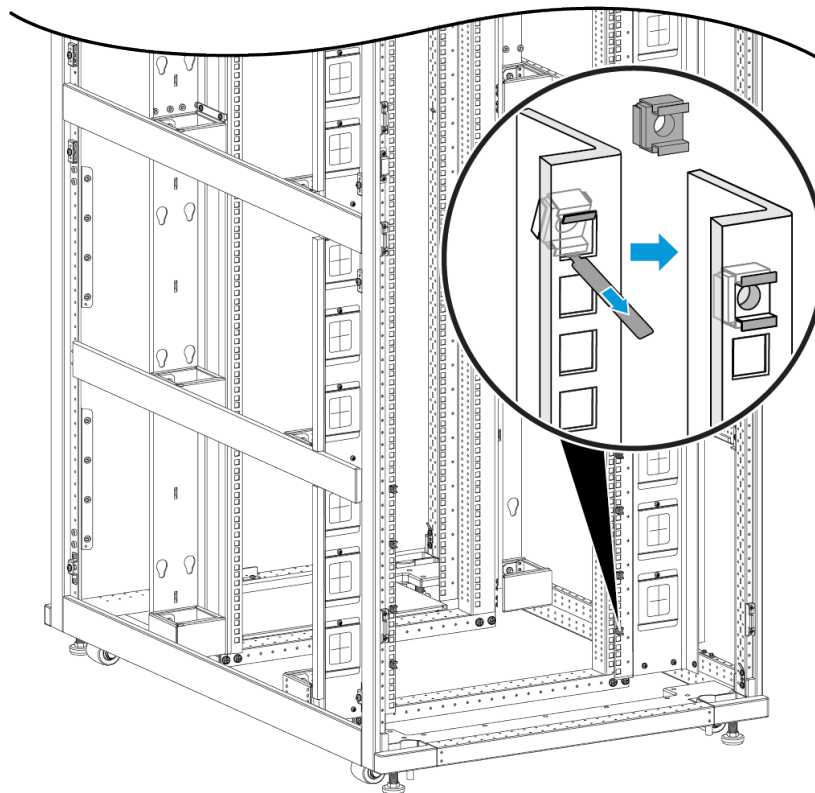**Figure 5-3** Marking the mounting holes for floating nuts

Step 2 Install floating nuts in the marked mounting holes.

NOTE

- You can use a floating nut mounting bar to facilitate installation of floating nuts.
- When installing the CloudEngine 16804, eight floating nuts are used to secure the mounting brackets, and 10 floating nuts are used to secure the guide rails (two for the front end and three for the rear end of each guide rail).
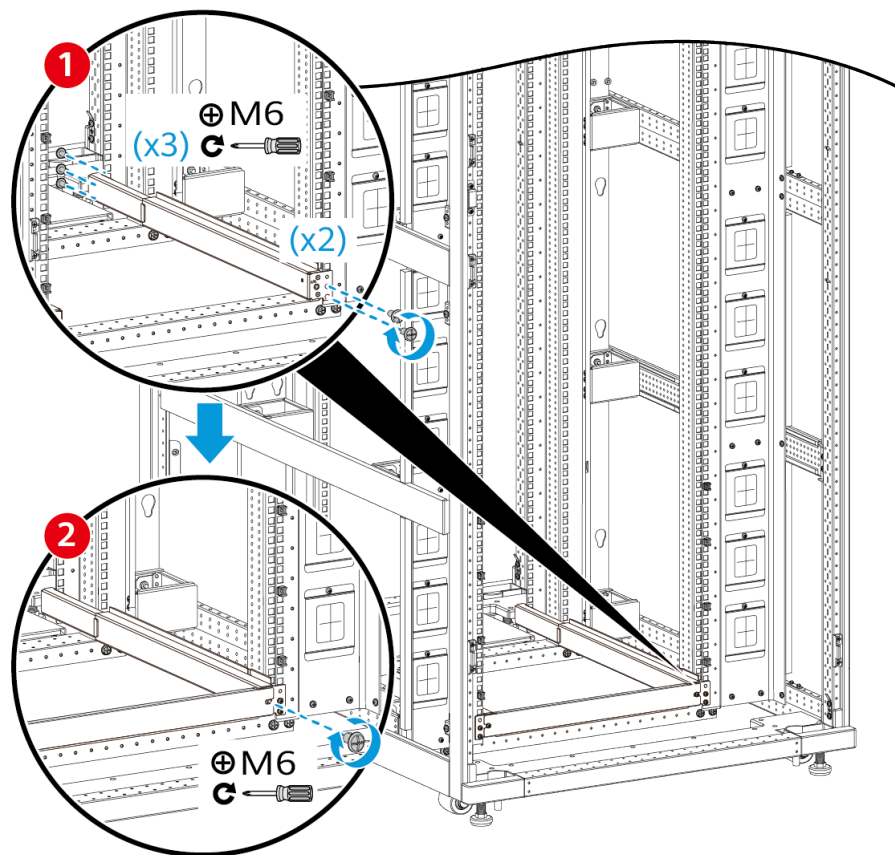
Figure 5-4 Installing floating nuts

Step 3 Install expandable guide rails.

> **NOTE**
>
> - When installing expandable guide rails, ensure that the front and rear ends of each guide rail are on the same horizontal plane.
> - For a third-party cabinet or rack, if you do not use the expandable guide rails delivered with the device, use a tray (with a minimum load bearing capacity of 324 kg) instead.

1. Adjust the length of the guide rails and place them in marked positions on the mounting rails by the plate at the front end and hook at the rear end. The bottom edges of the guide rails must be aligned with scale lines on the mounting rails. Then secure the guide rails with M6 screws. See callout 1 in **Figure 5-5**. Tighten the M6 screws with a torque of 1.96 N m.

2. Use M6 screws to secure the air baffle to the guide rails. See callout 2 in **Figure 5-5**. Tighten the M6 screws with a torque of 1.96 N m.

Figure 5-5 Installing expandable guide rails

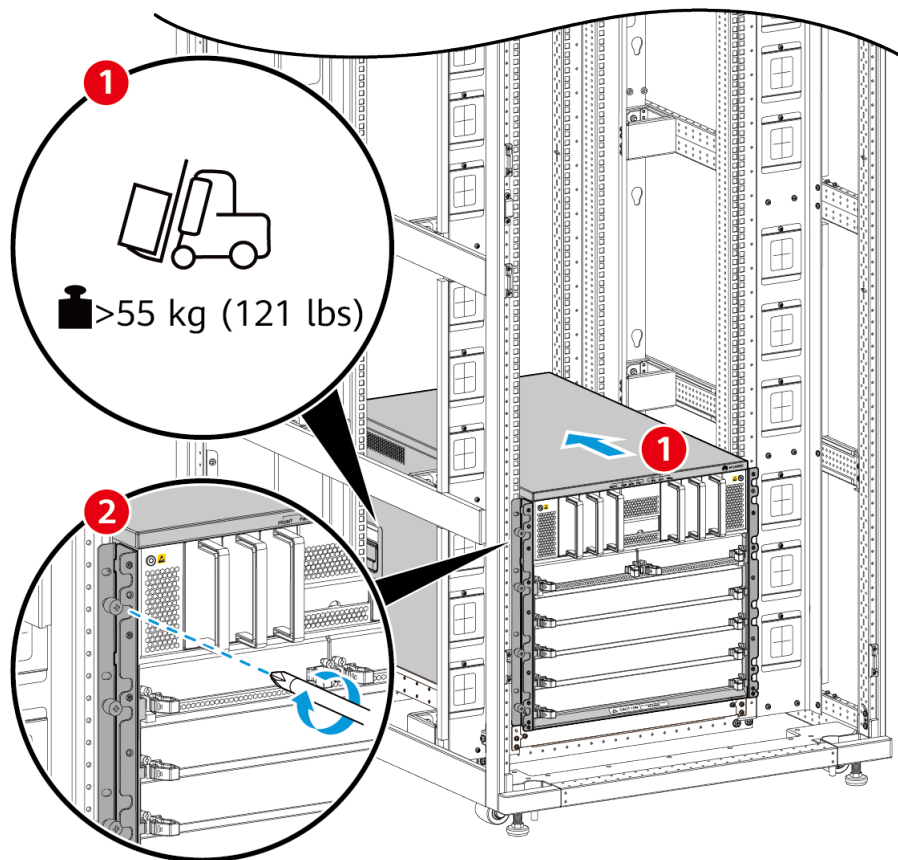
Step 4 Install the device in the cabinet or rack.

1. Move the device into the cabinet. See callout 1 in **Figure 5-6**.

NOTICE

When moving the device into the cabinet, move the device by the load bearing handles at both sides of the device. Do not lift or drag the chassis by the handles of any modules in the chassis; otherwise, the device and modules will be damaged. Place the rear bottom of the device on the guide rails, and then horizontally push the chassis in a gentle and smooth manner until the mounting brackets on the chassis are completely attached to the front mounting rails. When pushing the chassis, prevent the chassis from colliding with the captive screws on the mounting brackets.

---

2. Tighten the captive screws on mounting brackets. See callout 2 in **Figure 5-6**. Tighten the captive screws with a torque of 1.76 N·m.

Figure 5-6 Installing the device in the cabinet or rack

----End

5.3 Installing the CloudEngine 16808

Context

📖 **NOTE**

- Move the device near the cabinet or rack before the installation.

- For convenient maintenance, leave at least 1000 mm of clearance at the front and rear of the device. Do not install the device against a wall.

- Keep the tweezers and wrenches delivered with the device for future use.

- If the device is delivered with main control boards, interface boards, SFUs, and power modules installed, you are advised to remove them before installing the device into a cabinet or rack.

- For the CloudEngine 16808, reserve sufficient space on the top of the CloudEngine 16808 for power cable routing.

  - CloudEngine 16808 DC chassis: reserved space ≥ 3U

  - CloudEngine 16808 AC & high-voltage DC chassis: reserved space ≥ 1U

- A maximum of two CloudEngine 16808 devices can be installed in each cabinet.

Tools and Accessories

- Flat-head screwdriver
- Phillips screwdriver
- Marker
- CloudEngine 16808 installation template (*CloudEngine 16804 and 16808 Quick Installation Guide*)
- Floating nuts and matching screws
- Floating nut mounting bar
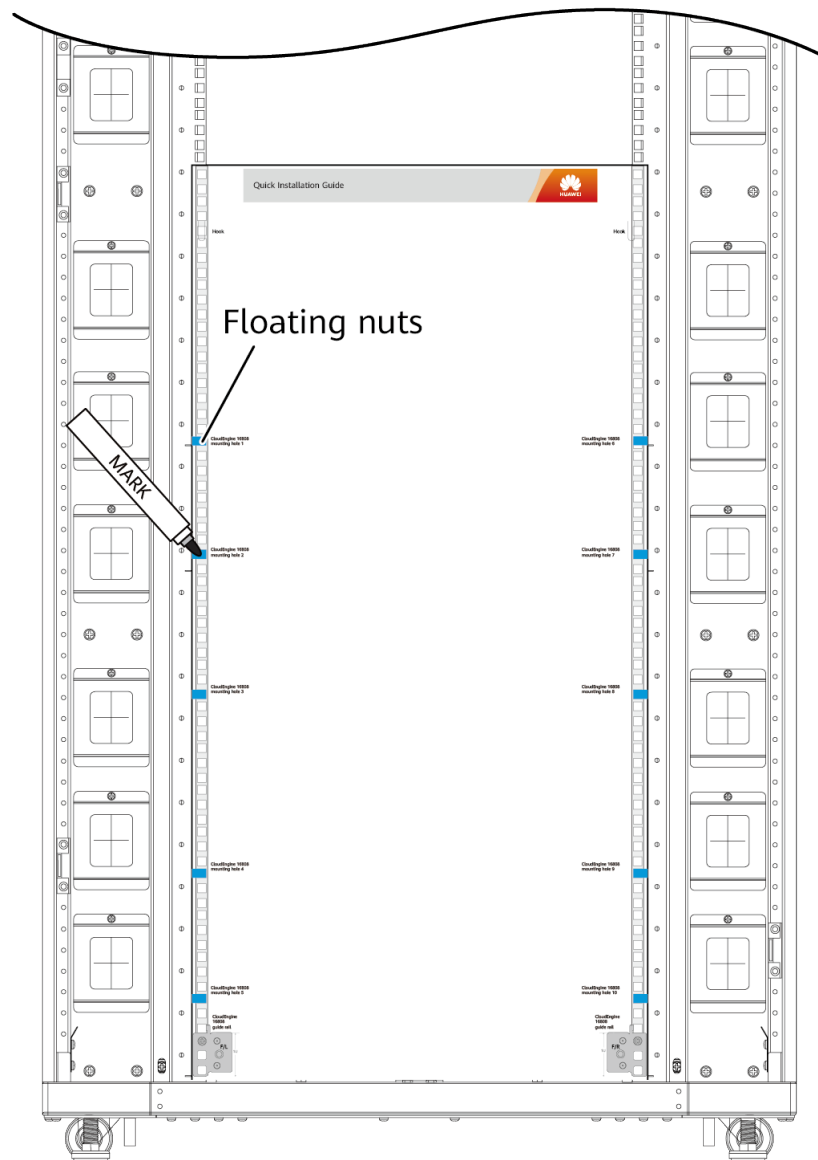- Expandable guide rails and matching screws

Procedure

Step 1 Determine the device installation position in the cabinet or rack. Two persons hold the installation template, align the mounting holes on the installation template with those on the mounting rails of the cabinet or rack, and fix the installation template on the mounting rails. Mark the mounting holes for the mounting brackets and expandable guide rails, and then remove the installation template.

> 📖 **NOTE**
>
> Positions of mounting brackets only need to be marked on the front mounting rails, whereas positions of expandable guide rails must be marked on both the front and rear mounting rails. Keep the mounting holes on the front and rear mounting rails on the same horizontal plane.

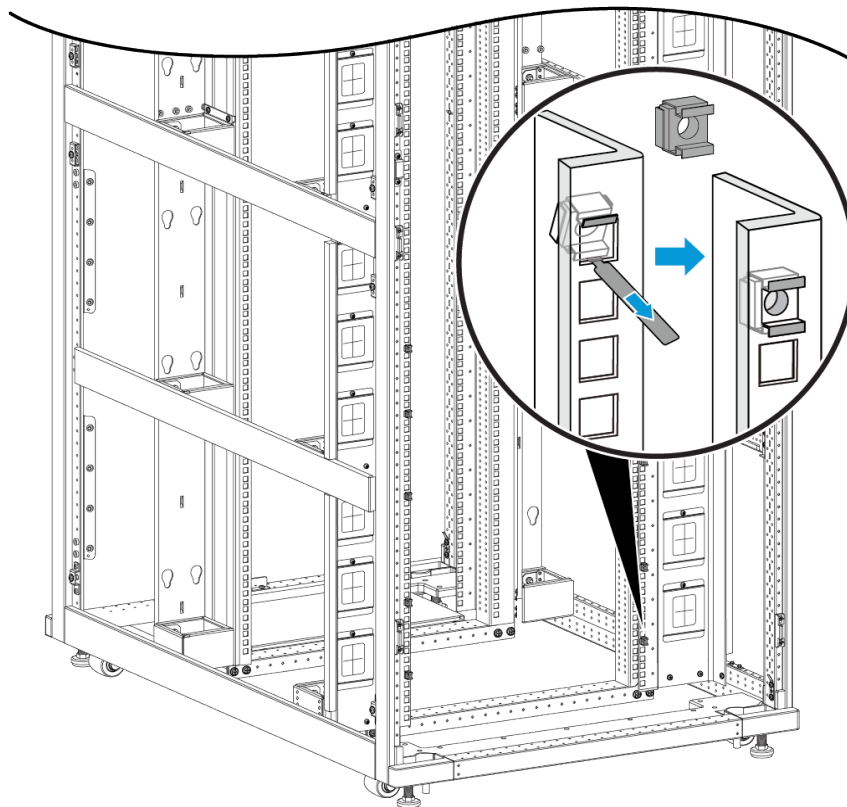**Figure 5-7** Marking the mounting holes for floating nuts

Step 2 Install floating nuts in the marked mounting holes.

NOTE

- You can use a floating nut mounting bar to facilitate installation of floating nuts.
- When installing the CloudEngine 16808, 10 floating nuts are used to secure the mounting brackets, and 10 floating nuts are used to secure the guide rails (two for the front end and three for the rear end of each guide rail).
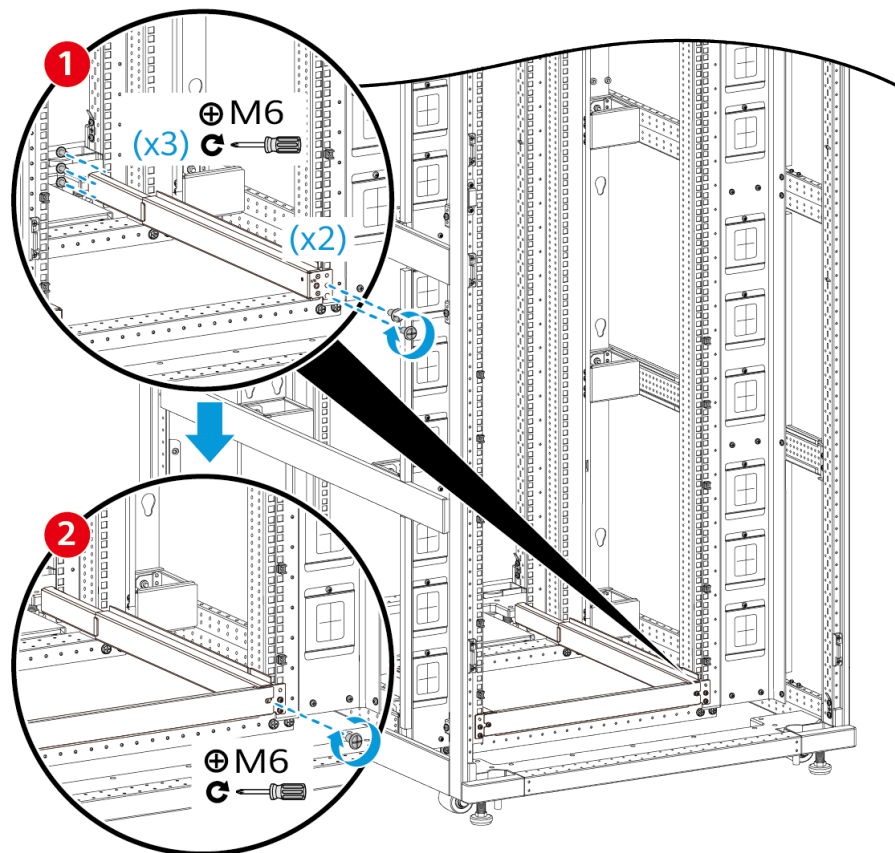
Figure 5-8 Installing floating nuts

Step 3 Install expandable guide rails.

> ☐ NOTE
>
> - When installing expandable guide rails, ensure that the front and rear ends of each guide rail are on the same horizontal plane.
> - For a third-party cabinet or rack, if you do not use the expandable guide rails delivered with the device, use a tray (with a minimum load bearing capacity of 504 kg) instead.

1. Adjust the length of the guide rails and place them in marked positions on the mounting rails by the plate at the front end and hook at the rear end. The bottom edges of the guide rails must be aligned with scale lines on the mounting rails. Then secure the guide rails with M6 screws. See callout 1 in **Figure 5-9**. Tighten the M6 screws with a torque of 1.96 N m.

2. Use M6 screws to secure the air baffle to the guide rails. See callout 2 in **Figure 5-9**. Tighten the M6 screws with a torque of 1.96 N m.

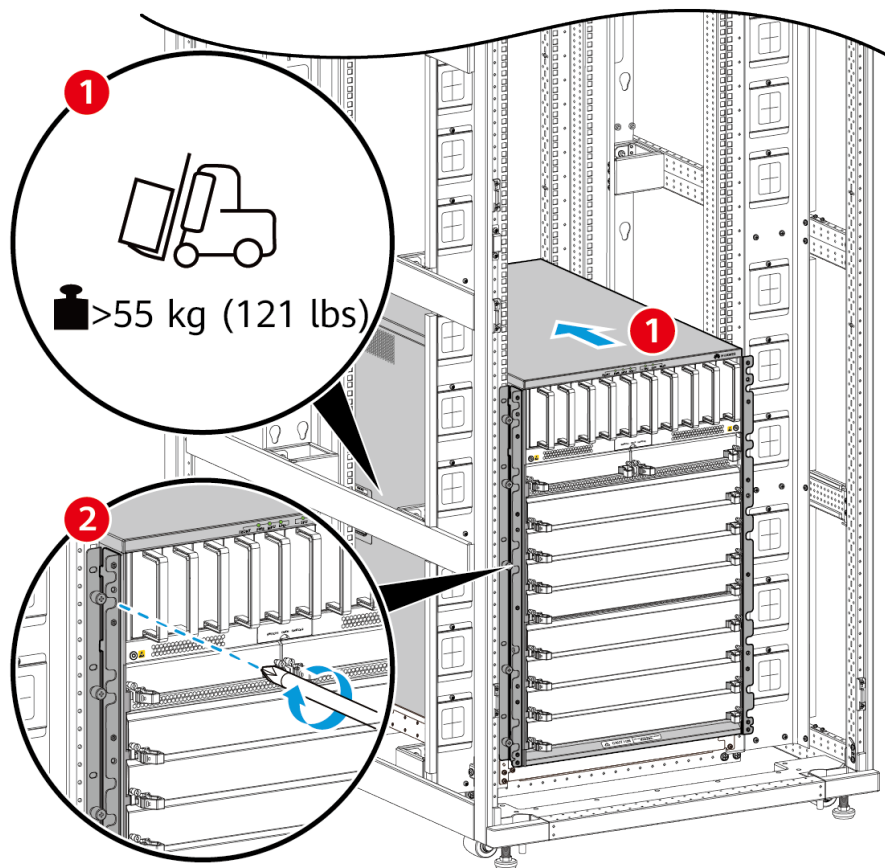**Figure 5-9** Installing expandable guide rails

Step 4 Install the device in the cabinet or rack.

1. Use a pallet truck or lifter to move the device into the cabinet or rack. See callout 1 in **Figure 5-10**.

NOTICE

–   The CloudEngine 16808 chassis is heavy, so lifting it manually is not recommended.

–   If no pallet truck or lifter is available and the chassis has to be moved into the cabinet or rack manually, move the chassis by the load bearing handles at both sides of it. Do not lift or drag the chassis by the handles of any modules in the chassis; otherwise, the chassis and modules will be damaged. Place the rear bottom of the chassis on the guide rails, and then push the chassis horizontally and gently until the mounting brackets on the chassis are completely attached to the front mounting rails. When pushing the chassis, prevent it from colliding with the captive screws on the mounting brackets.

---

2. Tighten the captive screws on mounting brackets. See callout 2 in **Figure 5-10**. Tighten the captive screws with a torque of 1.76 N·m.

Figure 5-10 Installing the device in the cabinet or rack

----End

5.4 Installing the CloudEngine 16816

Context

📖 **NOTE**

- Move the device near the cabinet or rack before the installation.

- For convenient maintenance, leave at least 1000 mm of clearance at the front and rear of the device. Do not install the device against a wall.

- If the device is delivered with MPUs, LPUs, SFUs, and power modules installed, you are advised to remove them before installing the device into a cabinet or rack.

- When installing the CloudEngine 16816, reserve sufficient space for power cabling routing above the CloudEngine 16816.

  - CloudEngine 16816 DC chassis: reserved space ≥ 3U

  - CloudEngine 16816 AC & high-voltage DC chassis: reserved space ≥ 1U

Tools and Accessories

- Flat-head screwdriver
- Phillips screwdriver

- Adjustable wrench

- Floating nut mounting bar

- Marker

- CloudEngine 16816 installation template (*CloudEngine 16816 Switch Quick Installation Guide*, delivered with the chassis)

- Floating nuts and matching screws

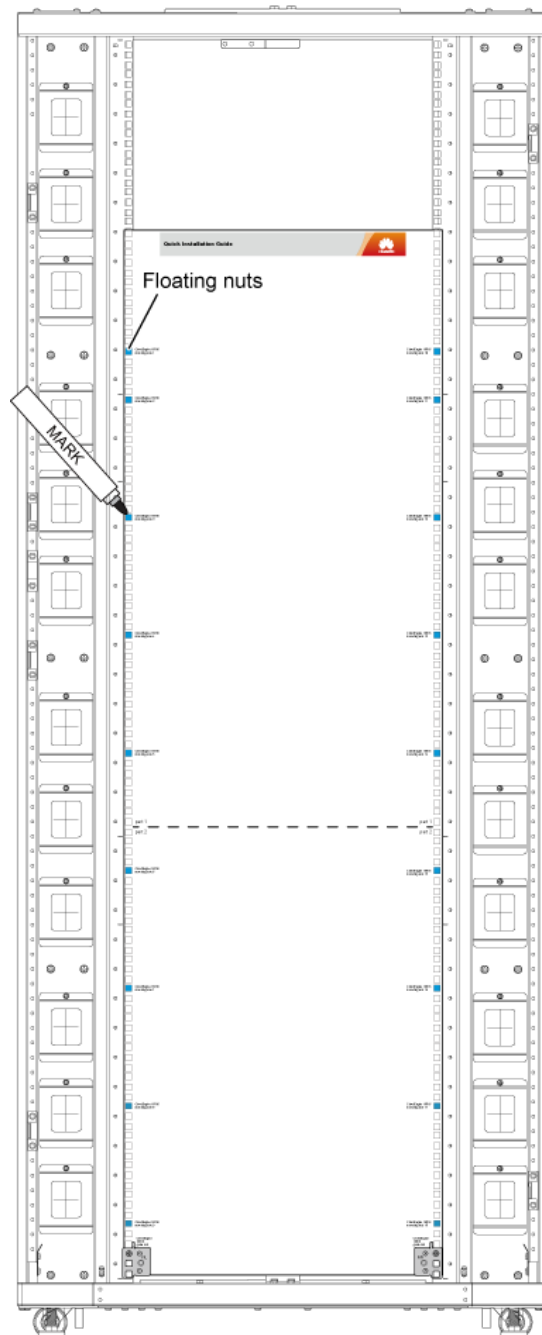- Expandable guide rails and matching screws

Procedure

Step 1 Determine the device installation position in the cabinet or rack. Two persons hold the installation template, align the mounting holes on the installation template with those on the mounting rails of the cabinet or rack, and fix the installation template on the mounting rails (with the bottom edge of the template at the bottom of the cabinet or rack). Mark the mounting holes for the mounting brackets and expandable guide rails, and then remove the installation template.

☐ **NOTE**

Positions of mounting brackets only need to be marked on the front mounting rails, whereas positions of expandable guide rails must be marked on both the front and rear mounting rails. Keep the mounting holes on the front and rear mounting rails on the same horizontal plane.

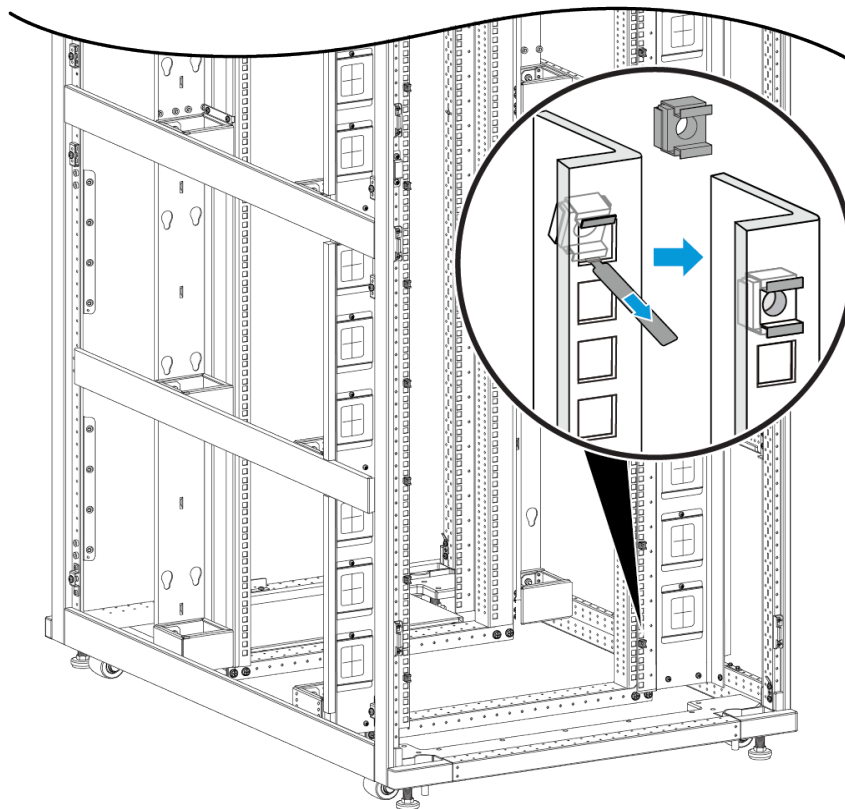**Figure 5-11** Marking the mounting holes for floating nuts

Step 2 Install floating nuts in the marked mounting holes.

NOTE

- You can use a floating nut mounting bar to facilitate installation of floating nuts.
- When installing the CloudEngine 16816, 18 floating nuts are used to secure the mounting brackets, and 10 floating nuts are used to secure the guide rails (two for the front end and three for the rear end of each guide rail).
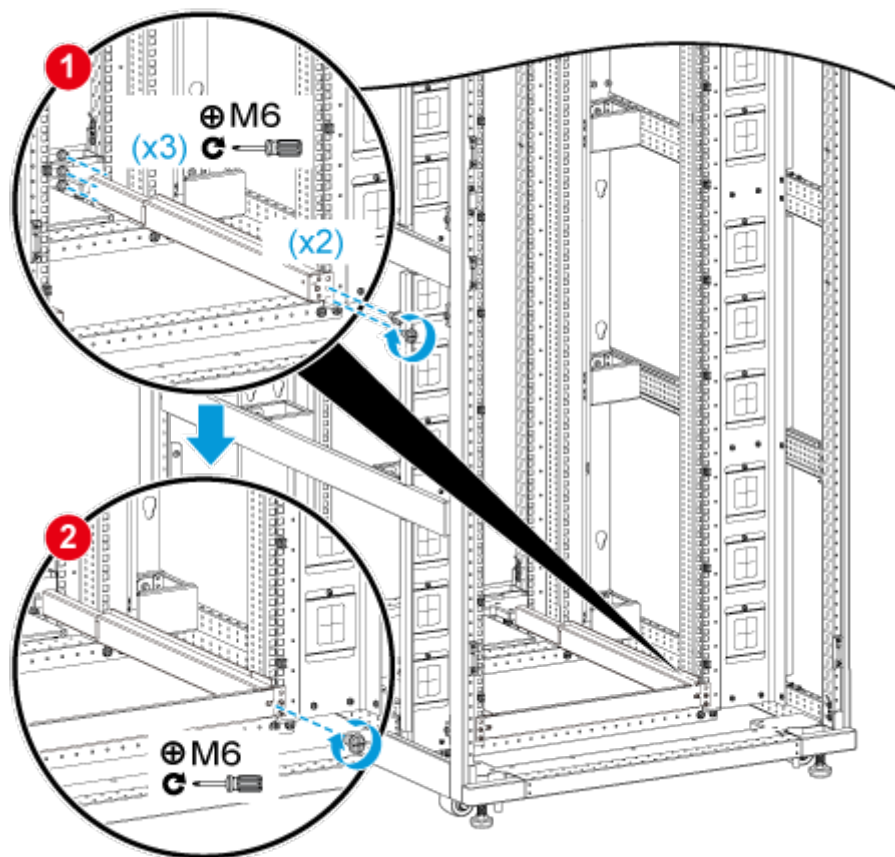
Figure 5-12 Installing floating nuts

Step 3 Install expandable guide rails.

☐ NOTE

- When installing expandable guide rails, ensure that the front and rear ends of each guide rail are on the same horizontal plane.
- For a third-party cabinet or rack, if you do not use the expandable guide rails delivered with the device, use a tray (with a minimum load bearing capacity of 1177 kg) instead.

1. Adjust the length of the guide rails and place them in marked positions on the mounting rails by the plate at the front end and hook at the rear end. The bottom edges of the guide rails must be aligned with scale lines on the mounting rails. Then secure the guide rails with M6 screws. See callout 1 in **Figure 5-13**. Tighten the M6 screws with a torque of 1.96 N m.

2. Use M6 screws to secure the air baffle to the guide rails. See callout 2 in **Figure 5-13**. Tighten the M6 screws with a torque of 1.96 N m.
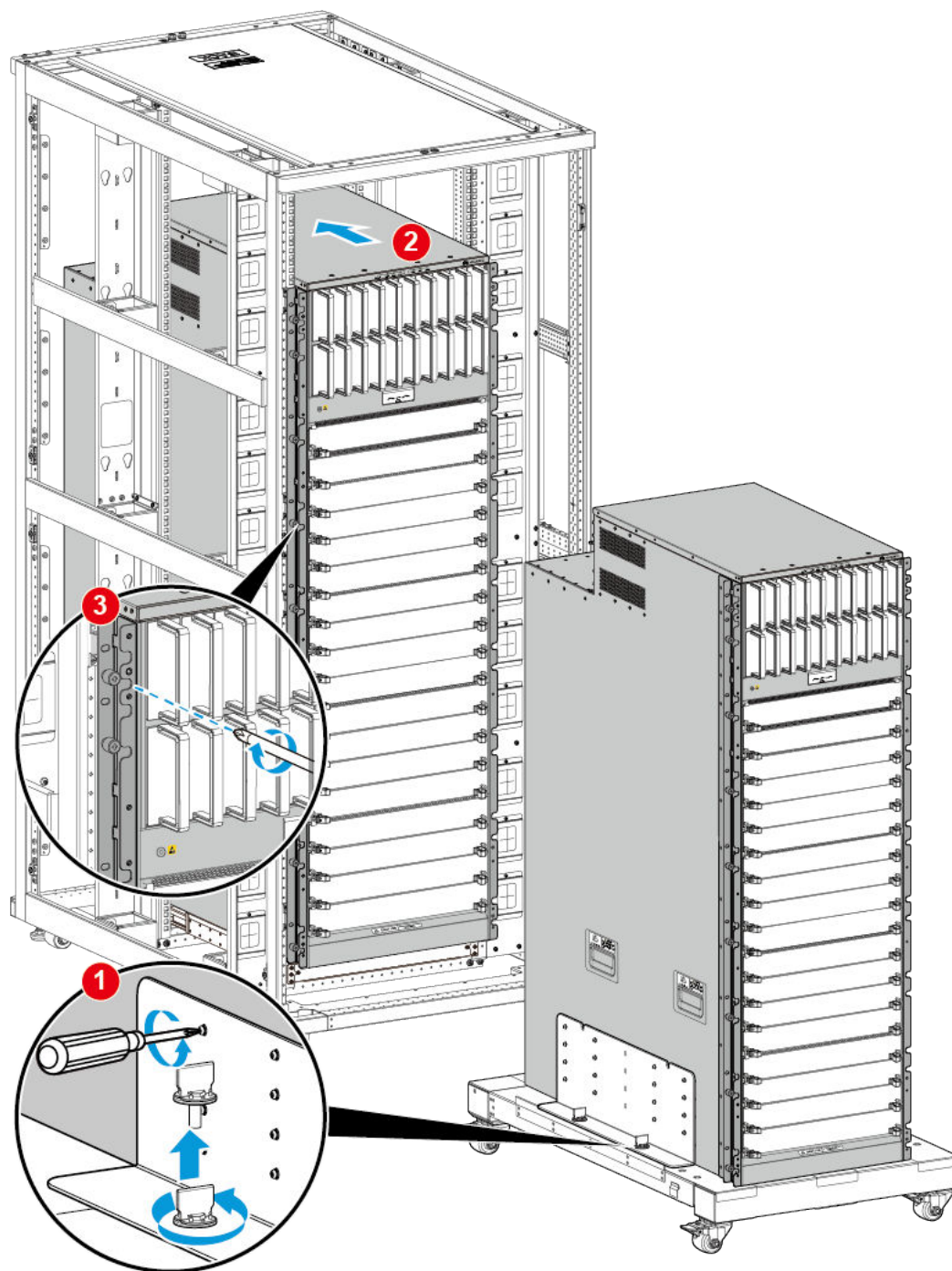
Figure 5-13 Installing expandable guide rails

Step 4 Install the device in the cabinet or rack.

1. Push the flat cart with the device to the front of the cabinet or rack (with the rear of the device facing the cabinet or rack). Remove the screws and bolts that fix the device on the flat cart. See callout 1 in **Figure 5-14**.

2. Place the bottom edge of the device on the guide rails. One person pulls the metal handles at the rear of the device to pull the device and adjust the device direction, and at least two persons push the device horizontally and gently in the front of the device, until the mounting brackets on the device are completely attached to the front mounting rails. When pushing the device, prevent the device from colliding with the captive screws on mounting brackets. See callout 2 in **Figure 5-14**.

3. Tighten the captive screws on mounting brackets. See callout 3 in **Figure 5-14**. Tighten the captive screws with a torque of 1.76 N·m.

Figure 5-14 Installing the device in the cabinet or rack

⚠ CAUTION

Be careful to ensure personal safety when you are pulling the metal handles at the rear of the device.

----End