IBM

Rack Installation Instructions for x3850 X6

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Contents

Chapter 1. Safety

Review the documentation that comes with the rack cabinet for safety and cabling information. Before you install the server in a rack cabinet, review the following guidelines.

Note: Use the M5 screws that come with the rails to install the server in a rack cabinet if you plan to transport the rack cabinet to another location with the server installed or if the rack is in a vibration-prone area.

- Make sure that the room air temperature is below 40°C (104°F).
- Do not block any air vents; usually, 15 cm (6 in.) of air space in the rear and 5 cm (2 in.) in the front provides proper airflow.
- Two or more people are required to install the device in a rack.
- Do not leave any unused space within a rack open. Fillers must be used to prevent recirculation of warm air.
- Install your server only in a rack that has perforated front and rear doors or in a rack that is equipped with an IBM® Rear Door Heat eXchanger.
- Do not extend more than one device out of the rack at the same time.
- Remove the rack doors and side panels to provide easier access during installation.
- The EIA flanges must have holes and clearances per EIA-310-D.
- If you have an adjustable rack, set the distance between the front and rear EIA flanges to 719 mm (28.3 inches) outside to outside.
- Make sure that there is sufficient room in front of the front EIA flange to provide minimum bezel clearance of 50 mm (1.97 inches).
- Make sure that there is sufficient room behind the rear of the rear EIA flanges to provide for cable management and routing.
- Leave 1U of empty space at the top of the rack, if the cables exit at the top, or leave 1U of empty space at the bottom of the rack, if the cables exit at the bottom. This will ensure that the cables don't block service assess to replaceable components.
- Rack weight-handling capacity must be sufficient for the aggregate weight of the server, power distribution units, and power cables.
- The rack must be stabilized with stabilization brackets and leveling pads so that it does not become unstable when it is fully populated.

Rack Safety Information, Statement 2

DANGER

> - **Always lower the leveling pads on the rack cabinet.**
> - **Always install stabilizer brackets on the rack cabinet.**
> - **Always install servers and optional devices starting from the bottom of the rack cabinet.**
> - **Always install the heaviest devices in the bottom of the rack cabinet.**

Statement 4

CAUTION:
Use safe practices when lifting.

≥ 18 kg (39.7 lb)   ≥ 32 kg (70.5 lb)   ≥ 55 kg (121.2 lb)

Statement 26

CAUTION:
Do not place any object on top of rack-mounted devices.

Chapter 2. Rack kit parts inventory

A rail kit and a rack installation kit come with the server. Open the rail kit and the rack installation kit.

The rail kit box includes the following hardware:
- One right server support rail
- One left server support rail
- Eight M5 combi-head screws (black)
- Ten hook and loop straps

The cable management bracket kit includes the following hardware:
- One right cable management bracket
- One left cable management bracket

The optional shipping bracket kit includes the following hardware (purchased separately):
- Eight M5 cage nuts (use on EIA flanges with square holes)
- Eight M5 clip nuts (use on EIA flanges with round holes)
- Eight M5 combi-head screws (black)
- Two shipping brackets

Chapter 3. Rack installation

Use the information in this chapter to install the server in a rack cabinet.
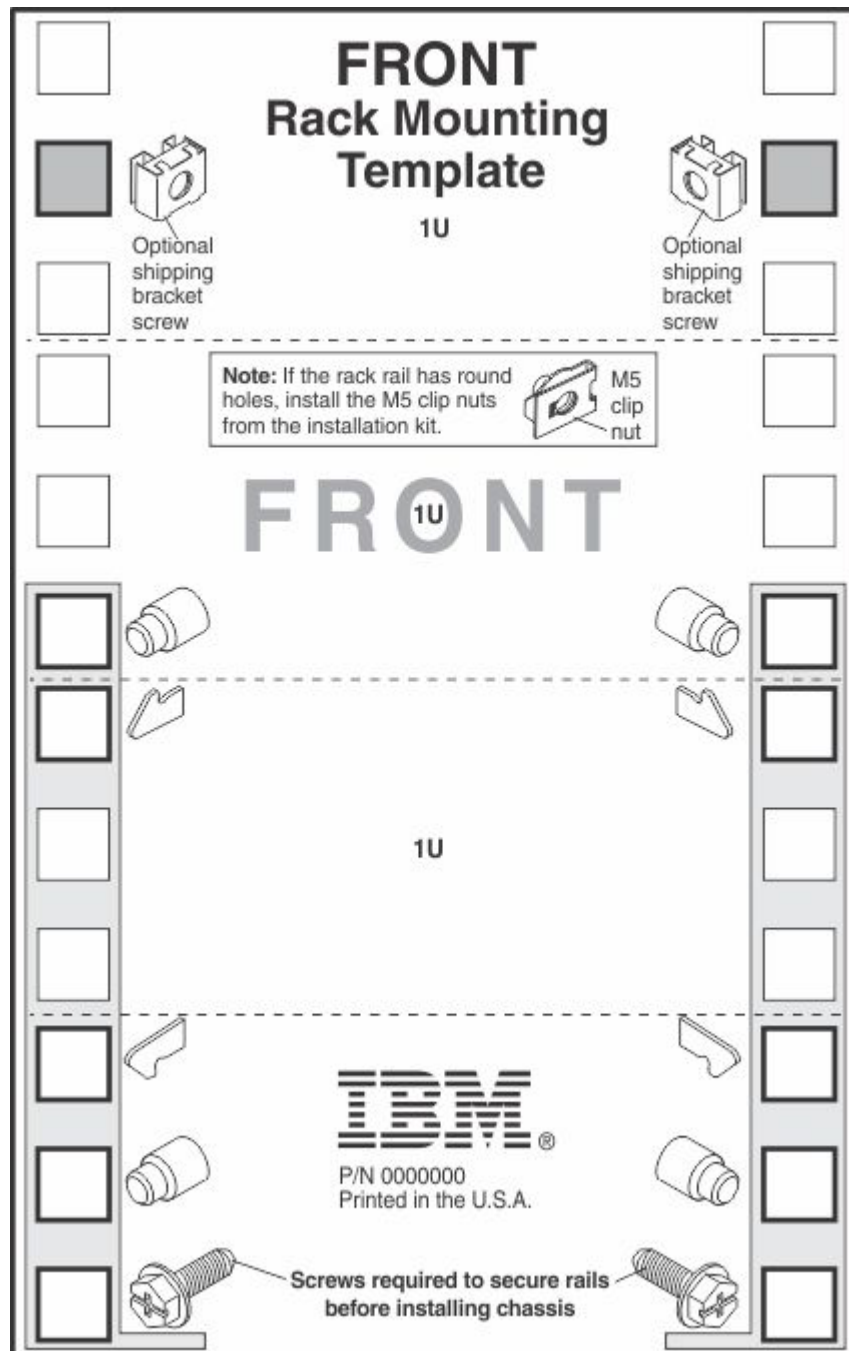
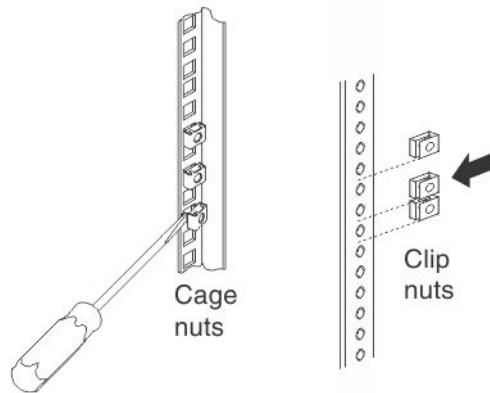## Identifying the rack space for the server

When you install a 4U server, be sure to install the rails in the bottom U of the 4U area in the rack. To identify the space for the server, complete the following steps:

1. Select an available 4U space in the rack to install your server.
2. Position the rack template that comes with the server on the front of the rack at the location where you want to install the server.

   Notes:
   - Make sure that the template does not overlap any installed devices.
   - Align the template with the holes in the rack as shown in the following illustrations.
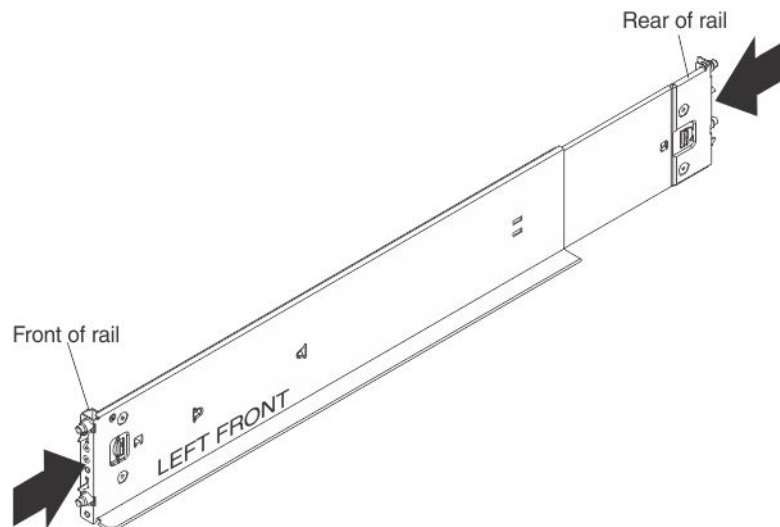
FRONT
Rack Mounting Template
1U

Optional shipping bracket screw

Optional shipping bracket screw

Note: If the rack rail has round holes, install the M5 clip nuts from the installation kit.

M5 clip nut

FRONT 1U

1U

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Screws required to secure rails before installing chassis

BACK
Rack Mounting Template
1U

Optional shipping bracket screws

Optional shipping bracket screws

Note: If the rack rail has round holes, install the M5 clip nuts from the installation kit.

M5 clip nut

BACK 1U

Screws required to secure rails before installing chassis

1U

Optional shipping bracket screw

Optional shipping bracket screw

1U

Optional shipping bracket screw

Optional shipping bracket screw

3. Install the M5 cage nuts (for square holes) or M5 clip nuts (for round holes) from the shipping bracket kit in the holes that are indicated on the template, if shipping the server in a pre-installed rack.

4. Repeat steps 2 on page 5 and 3 on page 7 for the rear of the rack. Make sure that a cage nut or clip nut is installed in every hole indicated on the template.

Opening the rails

To open the rails, complete the following steps:

1. Retract both rails, if they are not already retracted. Grasp the rails on both ends and push the rails in until they are fully retracted.
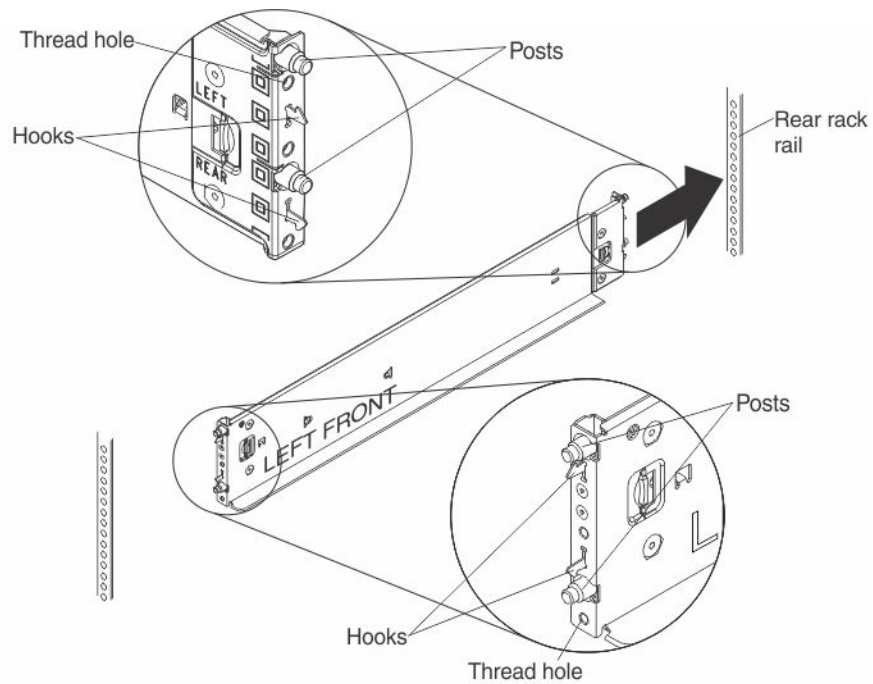
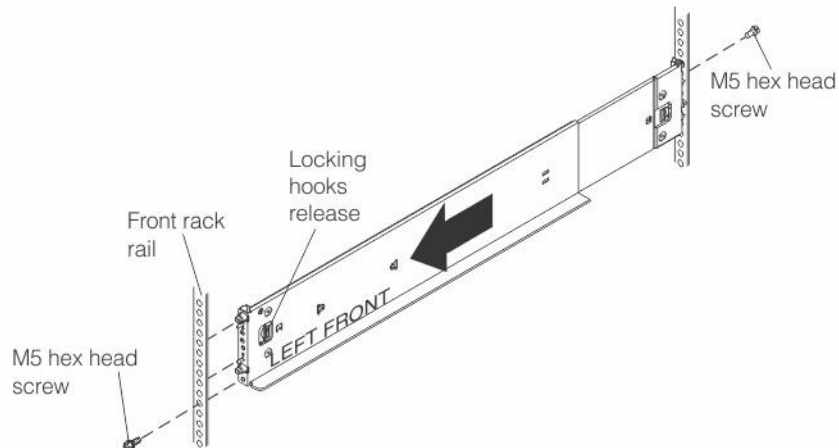   **Note:** Rail posts and locking hooks are on each end of each rail.

Installing the rails in the rack

To install the rails, compete the following steps:

1. Position the left rail in the selected location on the rear of the rack and align the posts on the rail with the holes on the rack back EIA flange.
2. Insert the posts on the rear of the rail through the holes on the rack rear EIA flange until the hooks snap into place. Insert the bottom post through the top hole of the bottom U.

Notes:

- Be sure to align the bottom edge of the rail with the bottom U that you want the server to rest on.
- If you misalign the rail when you insert it into the holes in the EIA flange, press the *locking hooks release* on the rail to disengage the hooks and slide the posts out of the holes on the EIA flange. Reinsert the rail into the correct holes on the EIA flange.
- Make sure that the rail posts protrude through the holes on the EIA flanges.

3. Pull the rail forward and insert the posts on the front of the rail into the corresponding holes on the front EIA flange until it snaps into place.
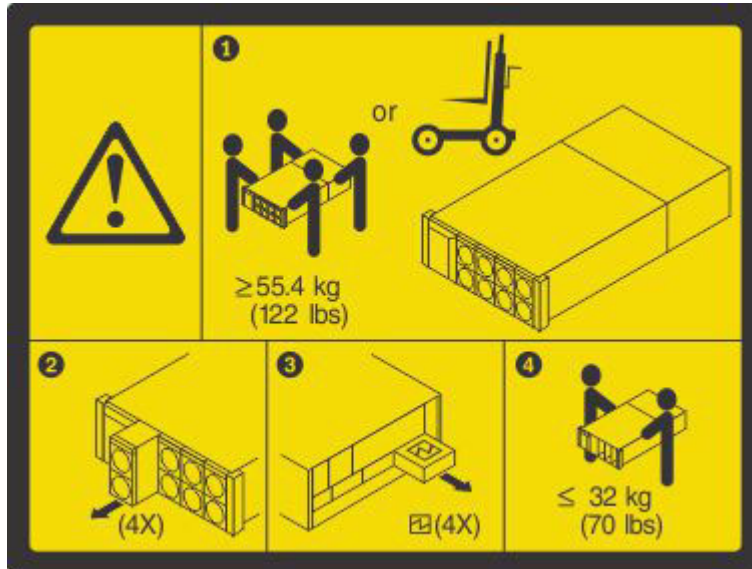

4. Repeat step 1 on page 8 through step 3 for the right rail.
5. Install the M5 combi-head screws (black) from the rail kit to secure the rails to the rack EIA flange:
   a. At the front of the rack, install an M5 combi-head screw (black) in the lower threaded hole on the front of each rail (two screws required, one in the right rail and one in the left rail).
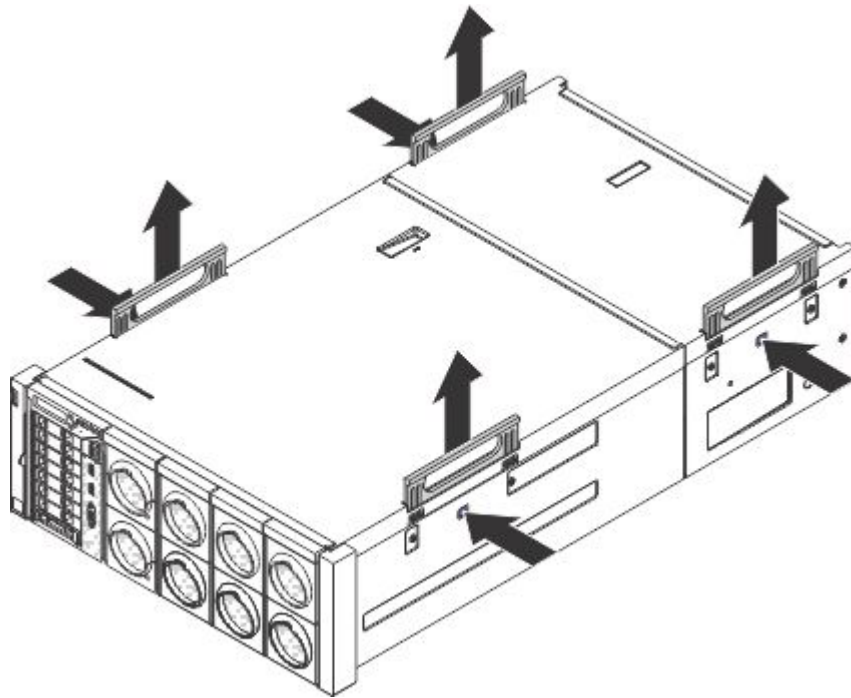
b. At the rear of the rack, install an M5 combi-head screw (black) in the upper threaded hole on the rear of each rail (two screws required, one in the right rail and one in the left rail).

c. Tighten the front and rear rail screws to 30 in-lbs.

Installing the server in a rack

To install the server in the rack, complete the following steps:
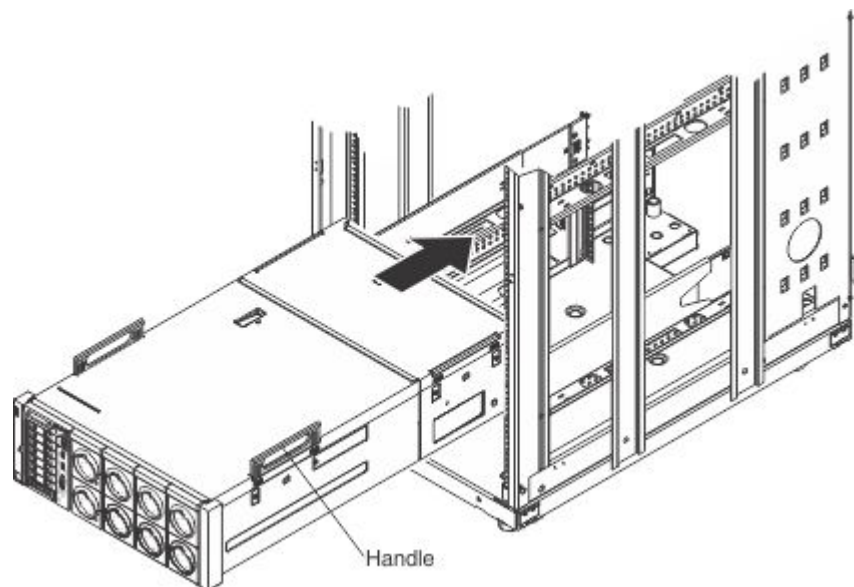

1. Remove the server components for example, the compute books and power supplies from the front and rear of the server. This will reduce the weight of the server and allow the server to be easily installed in the rack. See the server documentation for instructions on removing the individual components from the server.

2. To release the handles on the server, press the blue buttons on each side of the server.

3. **Attention:** To ensure proper installation of the server, do not push the rear lift handles into the rack until the server is securely on the rails in the rack. When removing the server from the rack while sliding the server forward, eject the lift handles as soon as they are clear from any server immediately above the one you are removing.

   Lift the server up, place the rear of the server onto the rails, and slide the server into the rack until the rear handles are near the front EIA flanges. While supporting the front of the server, press down on the rear handles on the server (both sides) to close them and lock them in place.

Handle

4. Slide the server farther into the rack until the front handles are near the front EIA flanges; then, press the front handles down to lock them in place.
5. Slide the server all the way into the rack.

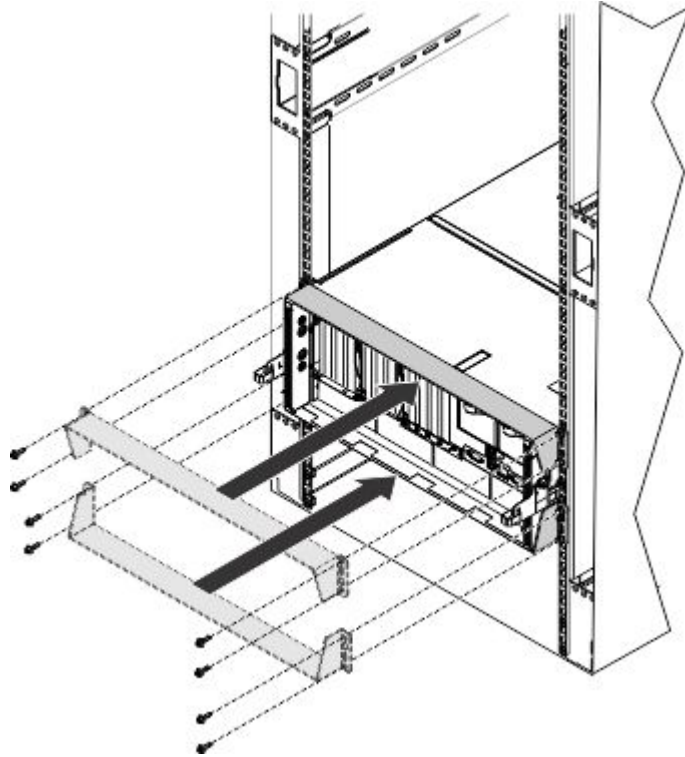## Installing the shipping brackets

If you plan to transport the rack to another location with the server installed, you must install the shipping brackets that come with the server. The shipping brackets and mounting screws are provided in the shipping bracket kit.

To install the shipping brackets to secure the server in the rack, complete the following steps:

1. Facing the rear of the server, align the top rear shipping bracket to the top of the server; then, slide the shipping bracket forward against the rack.
2. Install four M5 combi-head screws (black) from the shipping bracket kit in the top rear shipping bracket, two screws on the right side and two screws on the left side.

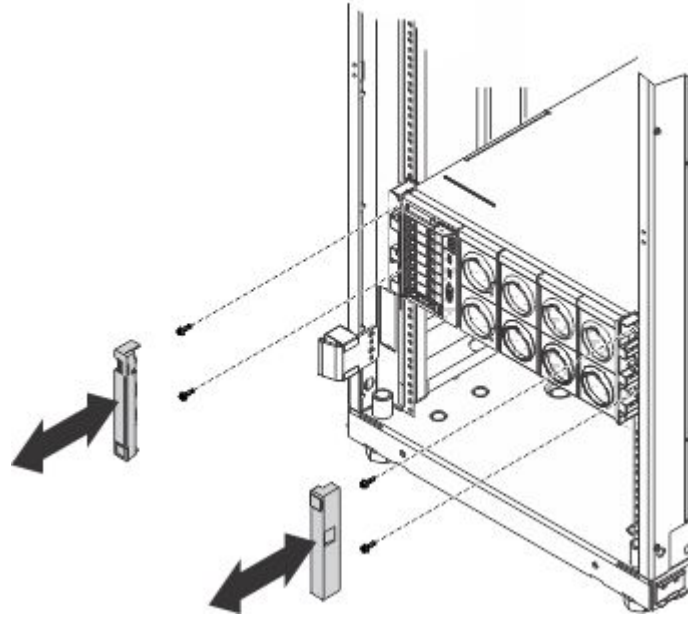   **Note:** Do not tighten the M5 combi-head (black) screws yet.
3. Align the bottom rear shipping bracket to the bottom of the server; then, slide the shipping bracket forward against the rack.

4. Install four M5 combi-head screws (black) from the shipping bracket kit in the bottom shipping bracket, two screws on the right side and two screws on the left side.

   Note: Do not tighten the M5 combi-head (black) screws yet.
5. After the bottom shipping bracket and screws are installed, tighten all of the screws.
6. Remove the plastic trim bezels from the left and right sides of the server.

7. Install four M5 combi-head screws (black) through the front of the server (two screws on each side).

   Notes:
   - The four M5 combi-head screws (black) that are installed through the front of the server are in the rail kit box.
   - Do not tighten the M5 combi-head screws (black) yet.

8. After all of the screws are installed, tighten all of the screws.

9. Reinstall the plastic trim bezels on both sides of the server.

10. Reinstall all components. See the server documentation for instructions on installing the individual components for the server.
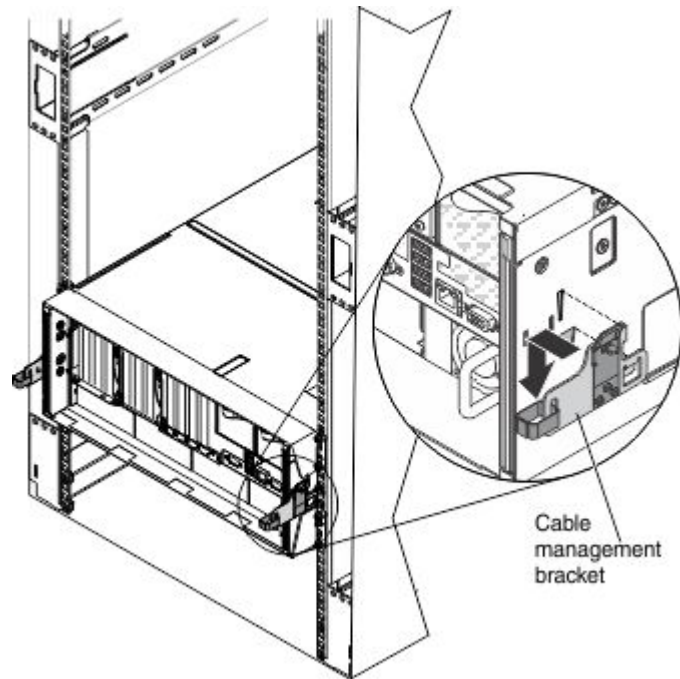
Connecting and routing the cables

The server comes with cable management brackets to hold the cables in place and prevent them from sagging or getting pinched and damaged. The cable management bracket provides strain relief for the cables and assists in providing the correct bend radius and routing for the cables. The cable management brackets snap on both sides of the server and contain an opening (slot) for a hook and loop strap. The hook and loop strap is used to hold the cables in place.

To connect and route the server cables, complete the following steps:

1. Align the cable management brackets with the server and snap them in place.

   The following illustration shows the rear of the server with the cable management brackets installed.

Cable
management
bracket

2. Attach the power cords and other cables to the rear of the server (including keyboard, monitor, and mouse cables (if required).

3. Route the cables and power cord through the cable management bracket and secure them in place with the hook and loop strap.

Notes:

- Make sure the cables do not sag below the U space so they will not get pinched and damaged.
- Allow slack in the cables to avoid tension in the cables.

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