System x3850 X6 and x3950 X6
Types 3837 and 3839

Rack Installation Instructions

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Types 3837 and 3839

Rack Installation Instructions

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Chapter 1. Safety information

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 a rack with adjustable depth EIA rails, set the distance between the rails to no more than 719 mm (28.3 inches) outside to outside in order to allow space to install the cable management brackets onto the rear of the system.
- 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.
- 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

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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

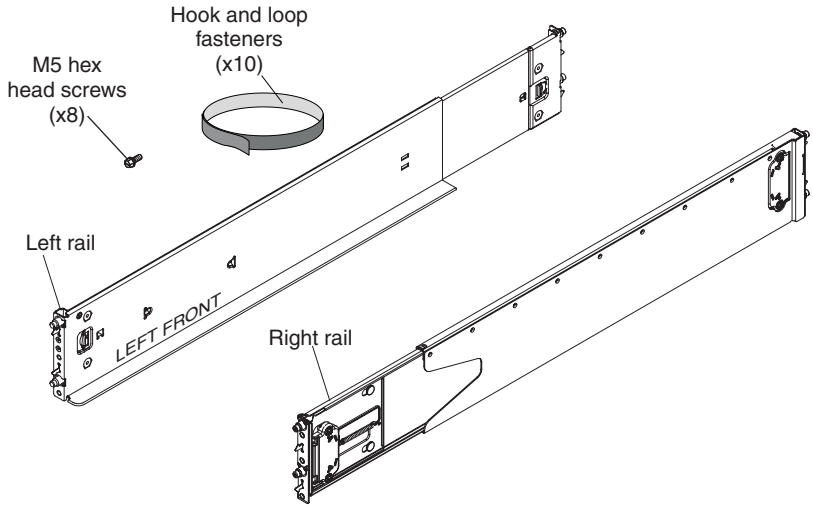
This topic provides information about the items in the rail kit and rack installation kit.

The information and instructions in this document apply to both the System x3850 X6 and the System x3950 X6 servers.

A rail kit comes with the items that you need to install the server in a rack. Open the rail kit and the rack installation kit. If items are missing or damaged, contact your place of purchase.

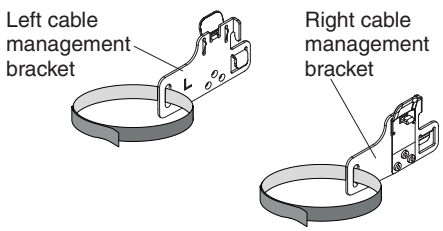
The rail kit box includes the following hardware. This kit ships with the server.

- One right server support rail
- One left server support rail
- Eight M5 hex head screws
- Ten hook and loop straps



The cable management bracket kit includes the following hardware. This kit ships with the server.

- One right cable management bracket (two for 8U system)
- One left cable management bracket (two for 8U system)



The optional shipping bracket kit includes the following hardware. You can purchase this kit separately.

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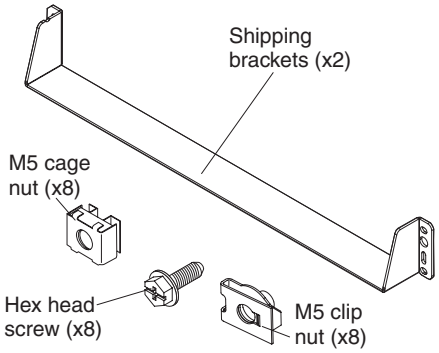
- Eight M5 cage nuts (use on EIA flanges with square holes)
- Eight M5 clip nuts (use on EIA flanges with round holes)
- Eight M5 hex head screws
- Two shipping brackets



The server might also come with an additional bag with M5 screws, cage nuts, and clip nuts.

Chapter 3. Rack installation

Use this information to install the IBM System x3850 X6 and x3950 X6 server in a rack cabinet.

The server comes with all of the hardware that is necessary for you to install the server in a rack. The instructions in this document apply to both the 4U and the 8U server models.

Identifying the rack space for the server

This topic provides information on identifying the space needed to install the server in the rack.

About this task

Note: These instructions apply to both the 4U and 8U server models.

When you install a 4U or 8U server, be sure to install the rails in the bottom U of the 4U or 8U area in the rack. To identify the space for the server, complete the following steps:

1. Select an available 4U or 8U (depending on your server) 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. For the 8U system, locate the template at the bottom of the 8U space where the system will be installed.

   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.

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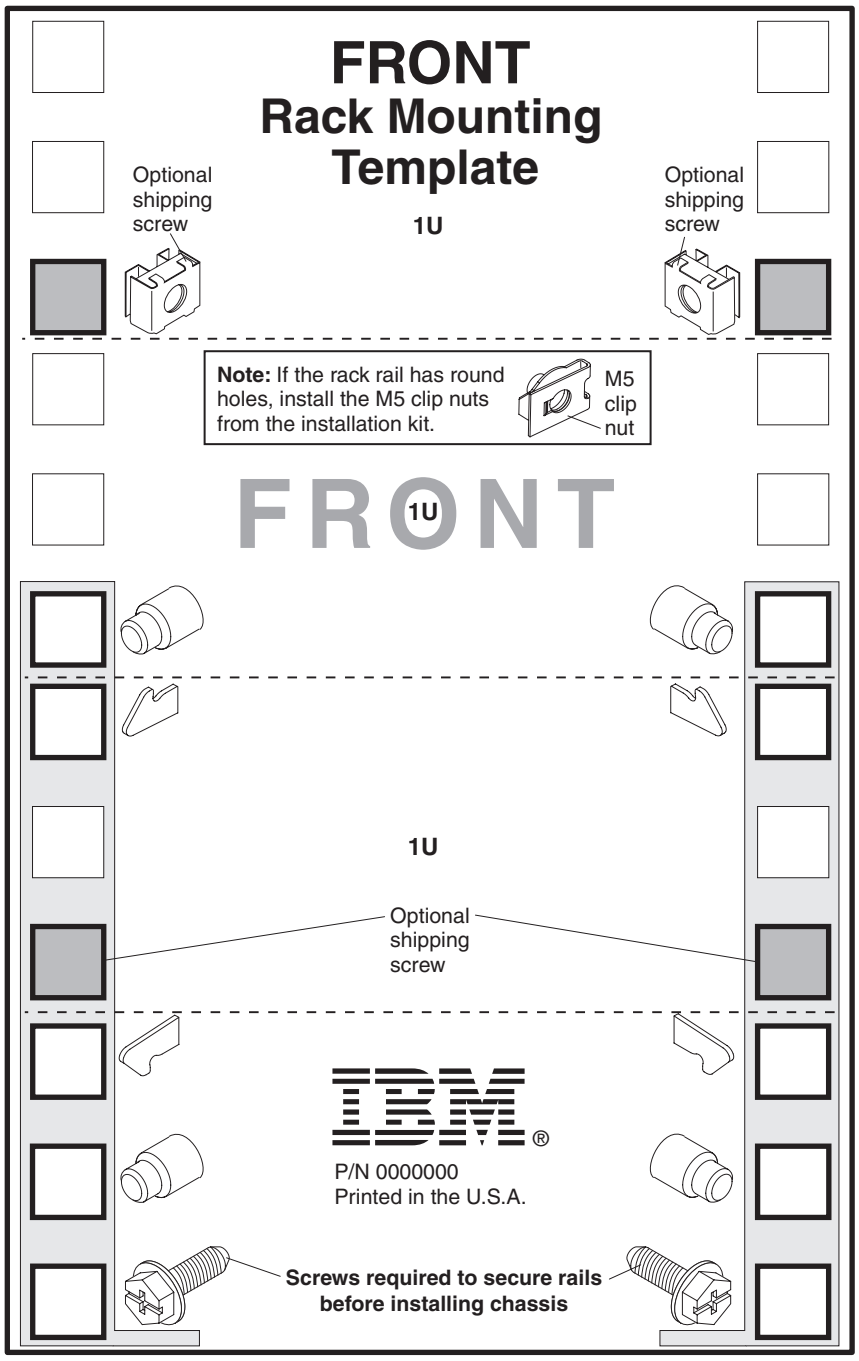
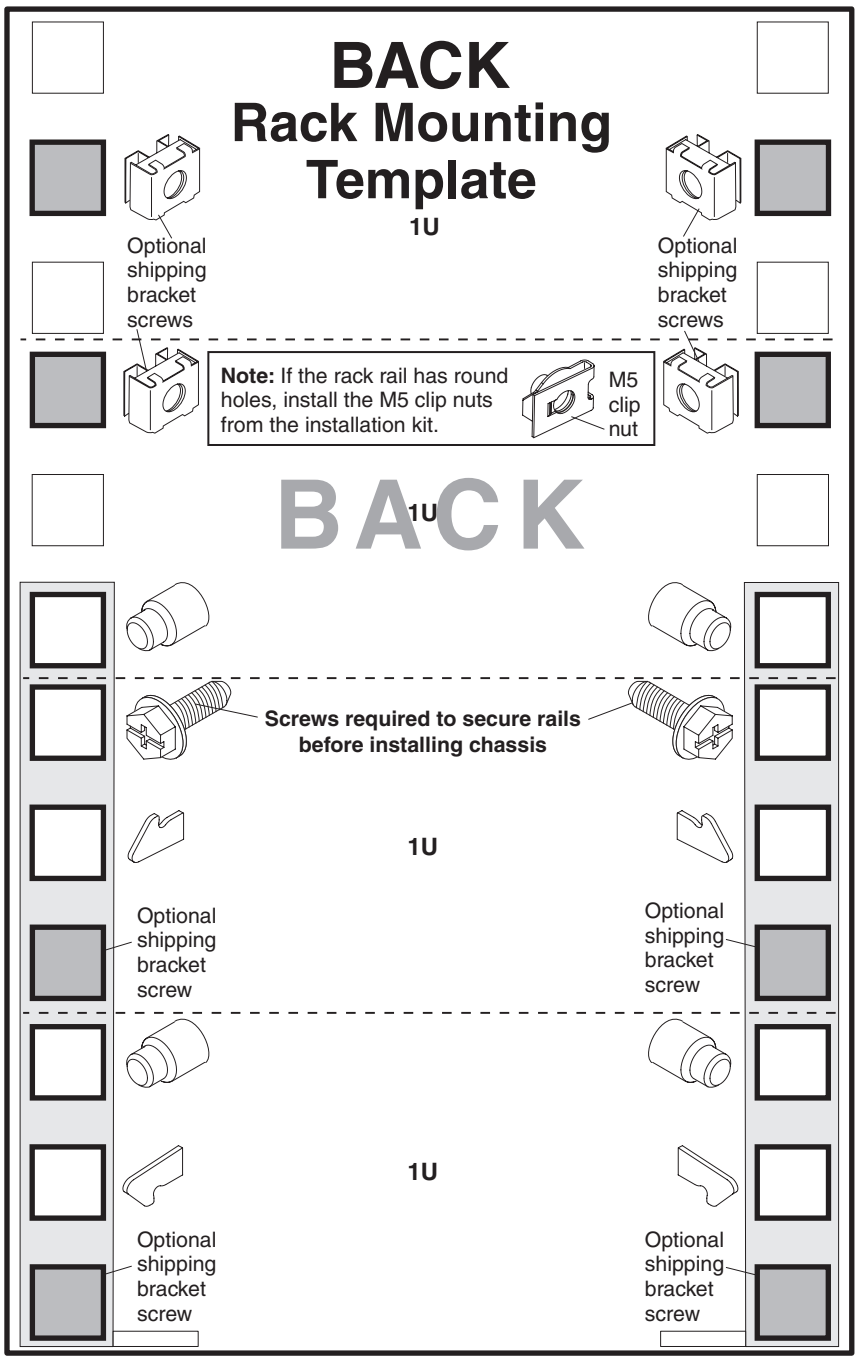
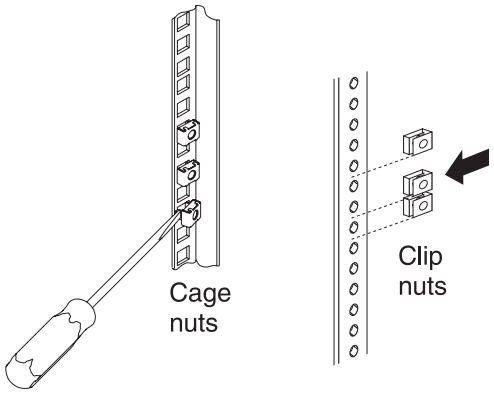

FRONT
Rack Mounting
Template
1U
Optional
shipping
screw
Optional
shipping
screw
Note: If the rack rail has round holes, install the M5 clip nuts from the installation kit.
M5
clip
nut
FRONT
1U
1U
Optional
shipping
screw
IBM
P/N 0000000
Printed in the U.S.A.
Screws required to secure rails
before installing chassis



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

This topic provides information about how to open the rails to install them in the rack.

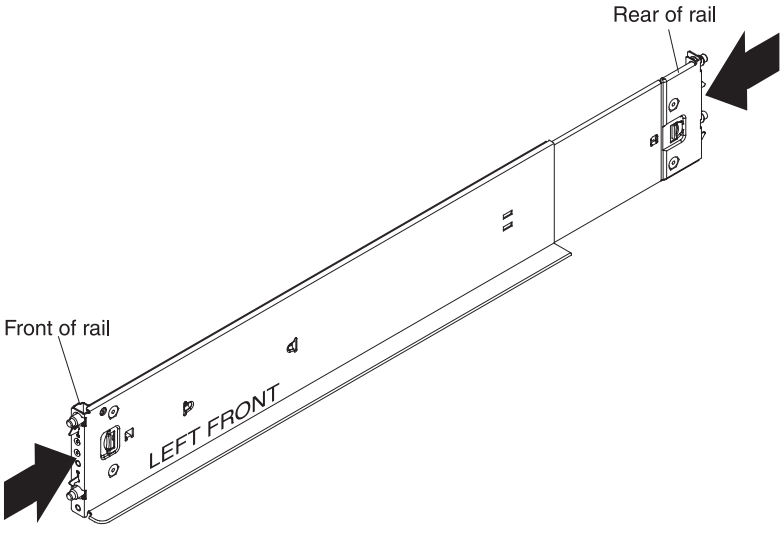
About this task

Note: These instructions apply to both the 4U and the 8U server models. Only the 4U is shown in the illustrations.

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 the ends of each rail.



Installing the rails in the rack

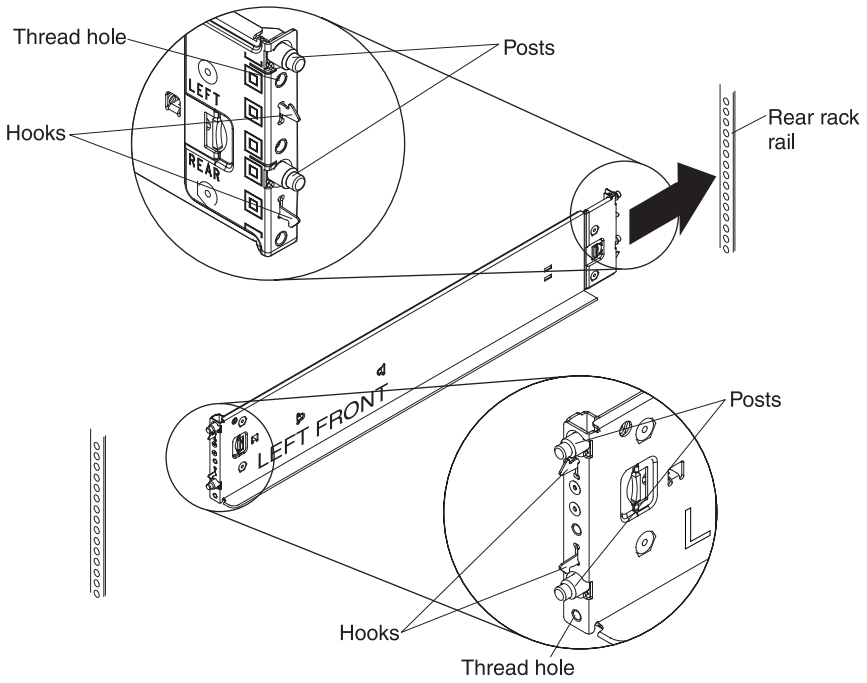
This topic provides information on how to install the rails in the rack cabinet.

About this task

Note: These instructions apply to both the 4U and the 8U server models. Only the 4U is shown in the illustrations.

To install the rails in the rack cabinet, compete the following steps:

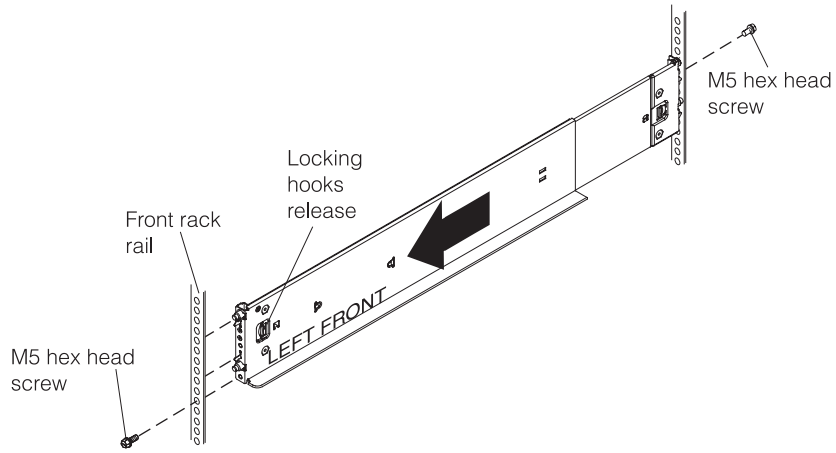
1. Position the left rail in the selected location on the rear of the rack and align the posts on the rail with the holes on the rack back EIA flange.
2. Insert the posts on the rear of the rail through the holes on the rack rear EIA flange until the hooks snap into place. Insert the bottom post through 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 incorrectly align 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 9 through step 3 on page 9 for the right rail.
5. Install the M5 hex head screws from the rail kit to secure the rails to the rack EIA flange:
   a. At the front of the rack, install an M5 hex head screw 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 hex head screw 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.

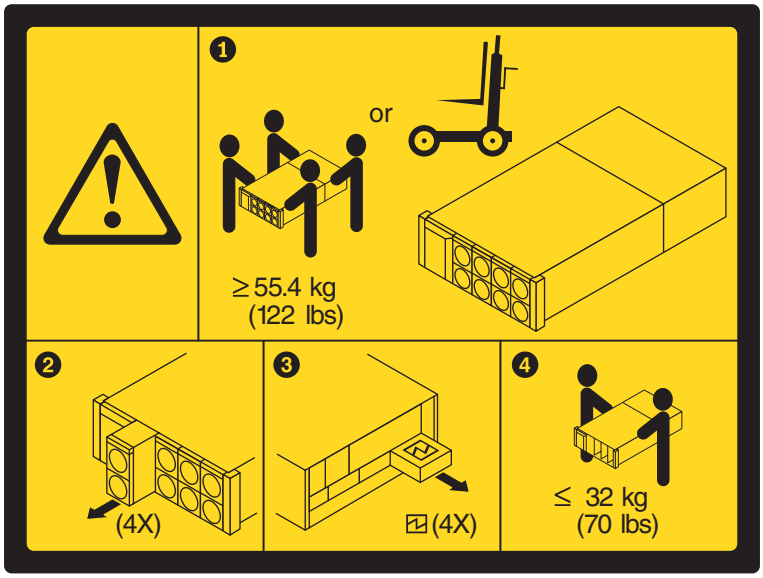
Installing the server in the rack

This topic provides information on how to install the server in the rack cabinet.

About this task

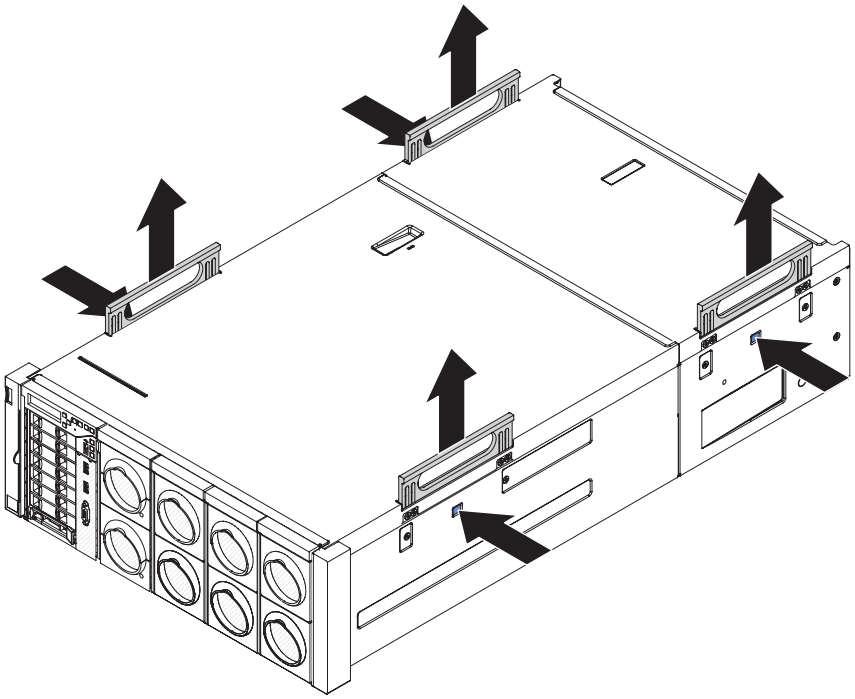
Note: These instructions apply to both the 4U and the 8U server models. Only the 4U is shown in the illustrations.

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



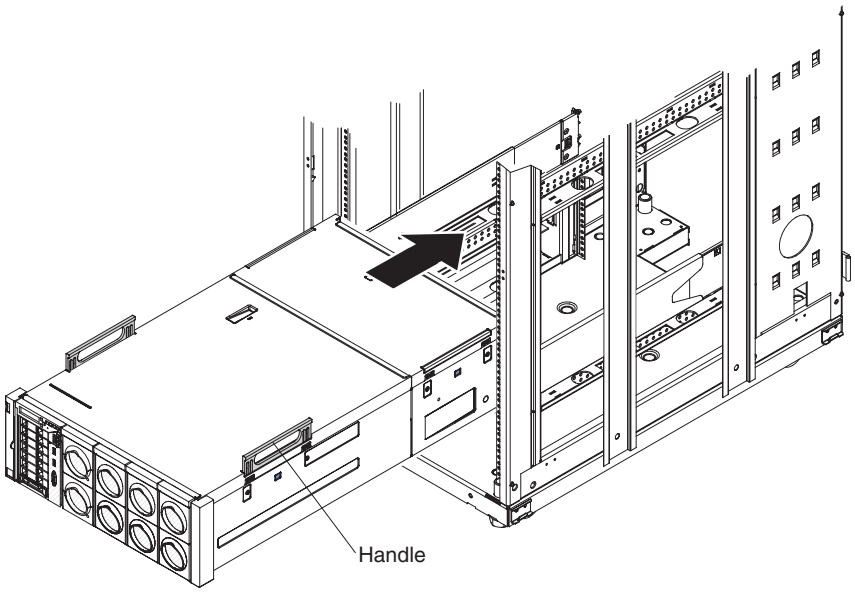
1. Remove the server components (for example, the compute books and power supplies from the front and rear of the server). This reduces the weight of the server and allow the server to be easily installed in the rack. See the server documentation for instructions on removing the individual components from the server.
2. Press the blue buttons on each side of the server to release the server handles (as shown in the illustration).

   Note: The server handles are released the same way for both the 4U and the 8U.



Attention: To ensure proper installation of the server, do not push the rear lift handles down into the server until the server is secure on the rails in the rack. When removing the server from the rack (while sliding the server out), release the lift handles after the handles are beyond the server that is in the rack above the server you are removing.

3. 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.



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.
6. To fasten the server into the rack, see “Fastening the server in the rack” on page 13 for more information.

7. Reinstall all components. See the server documentation for instructions on installing the individual components for the server. After installation of all components, see “Installing the shipping brackets” on page 14 for instructions on how to install the shipping brackets if you plan to transport the rack to another location with the server installed.

Fastening the server in the rack

This topic provides information about how to fasten the server in the rack to keep it secure in a vibration-prone area.

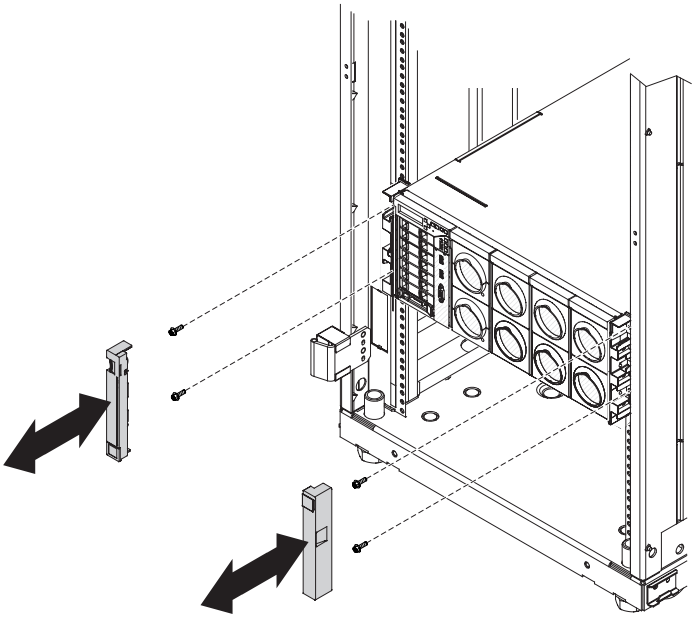
About this task

Note: These instructions apply to both the 4U and the 8U server models. Only the 4U is shown in the illustrations.

If the server is installed in a vibration prone area, you can optionally fasten the server to the rack to keep it secure after the server is installed in the rack.

To fasten the server to the rack, complete the following steps:

1. Remove the plastic trim bezels from the left and right sides of the server.



2. Install four M5 hex head screws through the front of the server (two screws on each side).

   Notes:

   - The four M5 hex head screws that are installed through the front of the server are in the rail kit box.
   - Do not tighten the M5 hex head screws completely.

3. After all of the screws are installed, tighten all of the screws.
4. Reinstall the plastic trim bezels on both sides of the server.
5. Reinstall all components. See the server documentation for instructions on installing the individual components for the server. After installation of all

components, see “Installing the shipping brackets” for instructions on installing the shipping brackets if you plan to relocate the rack with the server installed.

Installing the shipping brackets

This topic provides information on how to install the shipping bracket to keep the server secure when transporting the server to a new location.

About this task

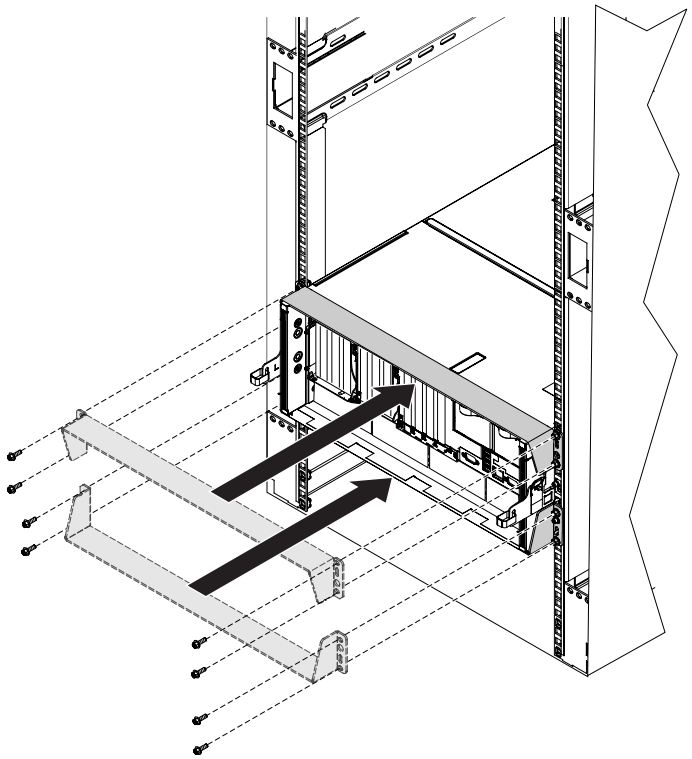
Note: These instructions apply to both the 4U and the 8U server models. Only the 4U is shown in the illustrations.

If you plan to transport the rack to another location with the server installed, you must install the shipping brackets that are provided in the shipping bracket kit. The shipping brackets secure the server into the rack. Mounting screws are also provided in the shipping bracket kit.

To install the shipping brackets on 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 hex head screws 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 hex head screws. You will be instructed later to tighten the screws.
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 hex head screws 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 hex head screws complete.

5. After the bottom shipping bracket and screws are installed, tighten all of the screws.

Attaching the cable management brackets and routing the cables

This topic provides information about how to attach the cable management brackets to the server and route the cables.

About this task

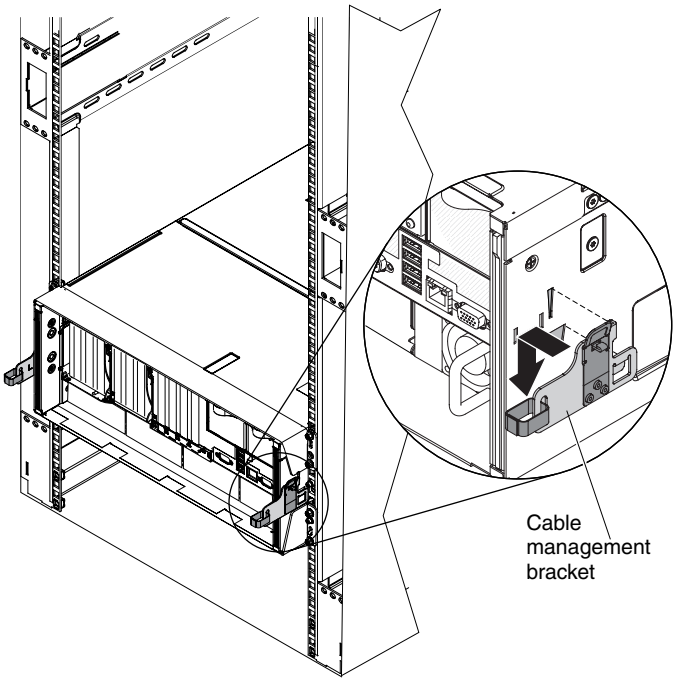
Note: These instructions apply to both the 4U and 8U server models. Only the 4U is shown in the illustrations.

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 prevents the cables from being pulled to tight and assists in providing the correct tension on the cable and routing of 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 attached the cable management brackets and route the 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.



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 hook and loop straps on the cable management brackets.

Notes:

- Make sure that you connect the systems-management Ethernet cables to both nodes' IMM ports to enable communication with the IMM in both nodes.
- Make sure that the cables are pull tight enough so the they are not too loose and hang below the U space to prevent them from getting pinched or damaged.
- Allow some slack in the cables to avoid strain on the cables.

Removing the server from the rack

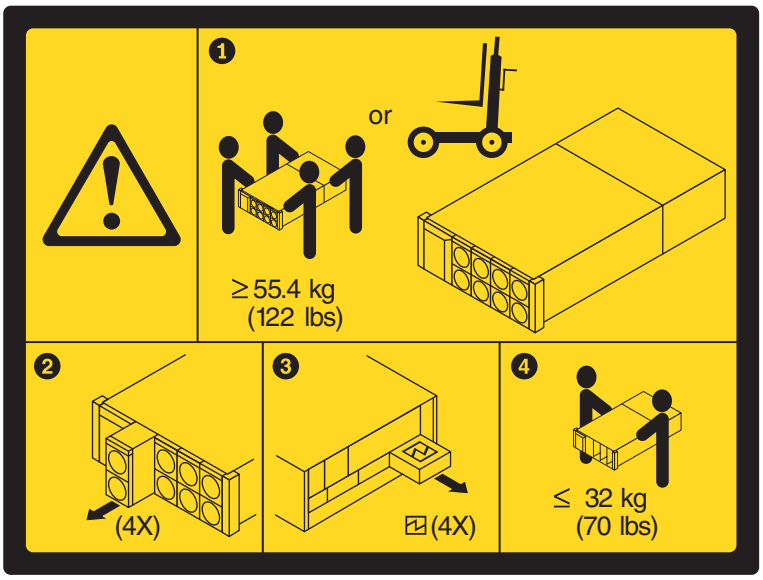
This topic provides information on how to remove the server from the rack cabinet.

About this task

Note: These instructions apply to both the 4U and the 8U server models. Only the 4U is shown in the illustrations.

To remove the server from the rack cabinet, complete the following steps:

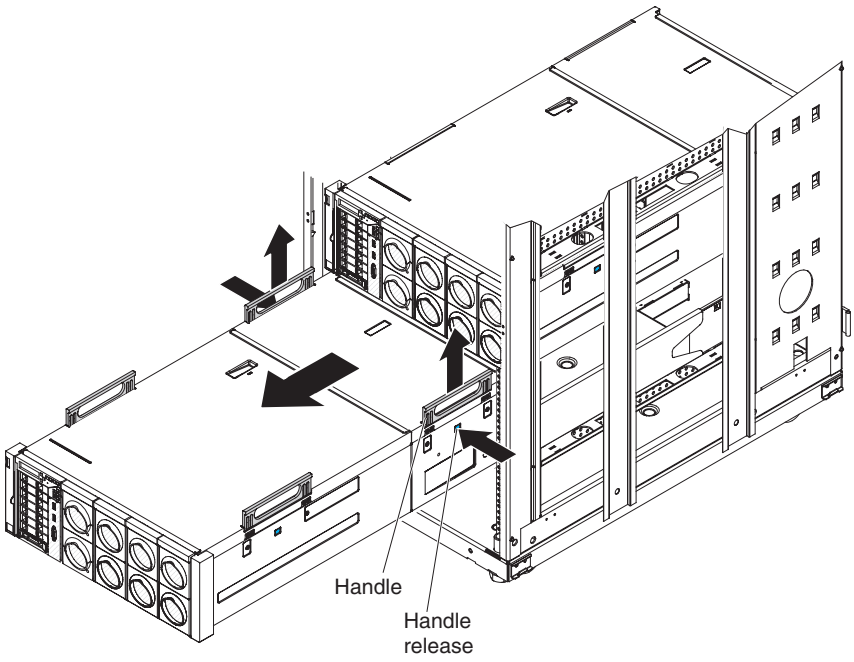
1. Turn the server off.
2. Disconnect the external cables.
3. Release the cables from the cable management brackets on the server.
4. Remove the cable management bracket from the left side of the server. Press the latch outward and slide the bracket up until it is released from the server. Remove the cable management bracket from the right side of the server.
5. Remove the shipping brackets and shipping screws from the server, if installed.
6. Remove the server components (for example, the compute books and power supplies from the front and rear of the server). This reduces the weight of the server and allow the server to be easily removed from the rack. See the server documentation for instructions on removing the individual components from the server.



7. Slide the server out of the rack; as soon as the handles are beyond the server that is in the rack above the server you are removing, press the blue buttons on the sides of the server to release the lift handles (as shown in the illustration).

   Attention: This is critical for the rear of the server because as soon as the handles are beyond any system above it, the server does not have much rail space to sit on and becomes unstable.

   Note: The server handles are released the same way for both the 4U and the 8U.



8. Remove the screws from the rails (two screws per rail, one in front and one in the rear).
9. Remove the rails from the rack.

Part Number: 00FH439

Printed in USA

(1P) P/N: 00FH439