

<http://www.lenovo.com/safety>

Read these guidelines first

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

- Two or more people are required to install devices 2U or larger in a rack.
- See the server *Maintenance Manual* or *Setup Guide* for the maximum room air temperature.
- Install the server only in a rack that has perforated doors.
- Do not block any air vents, usually 15 cm (6 inches) of air space provides proper airflow.
- Plan the device installation starting from the bottom of the rack.
- Install the heaviest device in the bottom of the rack.
- Do not leave open space above or below an installed server in your rack. To help prevent damage to server components, always install a filler panel to cover the open space and to help ensure proper air circulation.
- Do not extend more than one device out of the rack at the same time.
- Connect all power cords to properly wired and grounded electrical outlets.
- Do not overload the power outlet when installing multiple devices in the rack.
- Remove the rack doors and side panels to provide easier access during installation.
- Install the server in a rack that meets the following requirements:
 - Minimum depth of 70 mm (2.76 inches) between the front mounting flange and inside of the front door.
 - Minimum depth of 190 mm (7.48 inches) between the rear mounting flange and inside of the rear door.
 - The maximum distance between the front and the rear EIA flange of the rack is 810 mm (31.9 inches).
 - If you want to install the rails and a 0U PDU into the same rack, the rack must meet the following height and depth requirements:
 - 42U or higher
 - For ThinkSystem Screw-In Slide Rail: at least 1100-mm (43.31-inch) deep if a CMA and parallel 0U PDUs are to be installed; at least 1200-mm (47.24-inch) deep if a CMA and vertical 0U PDU are to be installed
 - For ThinkSystem Toolless Friction Rail: at least 1000-mm (39.37-inch) deep

Note: The following table lists the rail length. The rail length refers to the distance measured when the rail is not extended.

Rail name	ThinkSystem Screw-In Slide Rail	ThinkSystem Toolless Friction Rail
Rail length	836.8 mm (32.94 inches)	728.1 mm (28.6 inches)



CAUTION:

Use safe practices when lifting.



≥ 18 kg (39.7 lb)

< 32 kg (70.5 lb)



≥ 32 kg (70.5 lb)

< 55 kg (121.2 lb)



≥ 55 kg (121.2 lb)

< 100 kg (220.5 lb)



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



Important information about the slides

This document provides important information about the following slides:

- ThinkSystem Screw-In Slide Rail
- ThinkSystem Toolless Friction Rail

About the package items

This section shows the items that you need to install the server in a rack. If any items are missing or damaged, contact your place of purchase.

ThinkSystem Screw-In Slide Rail package items:

- One left rail and one right rail
- Four clip nuts
- Two clip nut bars
- Four M6 screws
- Four #12-24 screws
- Four #10-32 screws
- Four universal M4 screws

ThinkSystem Toolless Friction Rail package items:

- One left rail and one right rail
- Two M5 screws

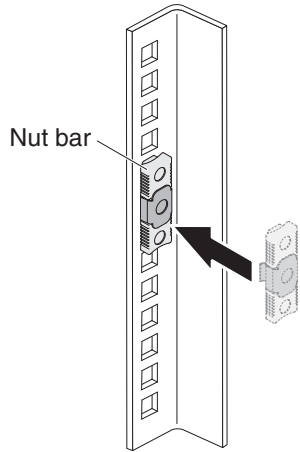
ThinkSystem Screw-In Slide Rail

To install a server into a rack using the ThinkSystem Screw-In Slide Rail, do the following:

1. Install the slides kit onto racks with different mounting holes.

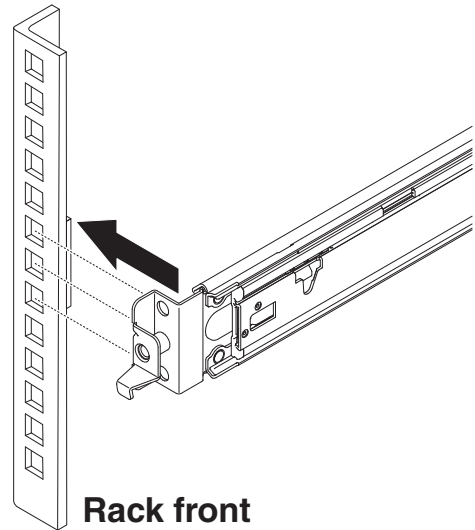
• Rack with 9.5-mm square holes:

a. Select an available space (depending on the server you are installing) in the rack to install your server. Place the nut bar on the selected space of the rack.



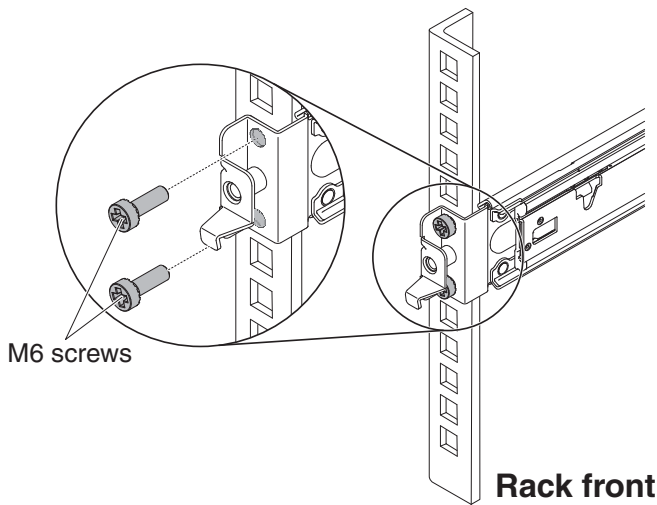
Rack front

b. Line up the pin hole of the front slide to the nut bar you just placed on the rack.



Rack front

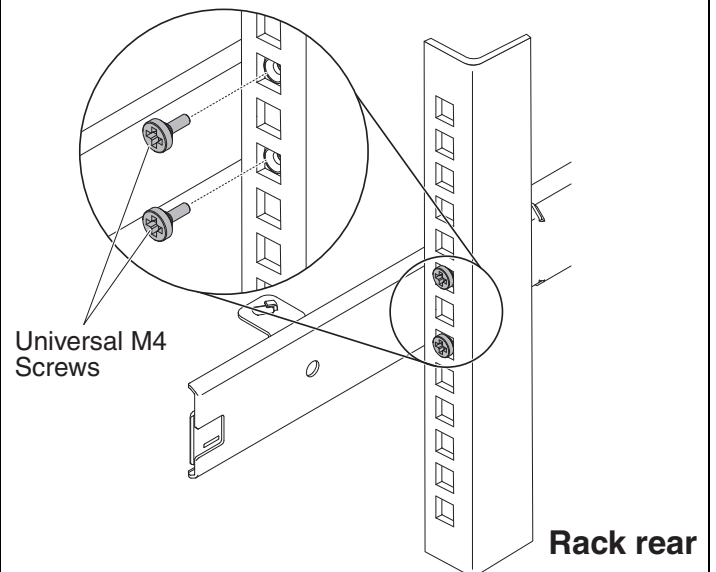
c. Insert the M6 screws to the front of the rack to secure the front of the slide you just attached.



M6 screws

Rack front

d. Insert the universal M4 screws to the rear of the rack to secure the rear of the slide.

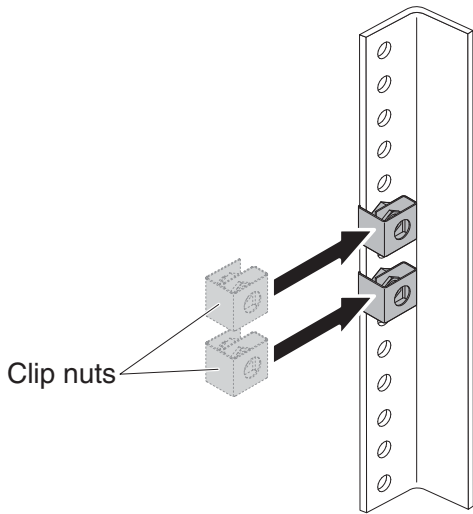


Universal M4
Screws

Rack rear

• **Rack with 7.1-mm round holes**

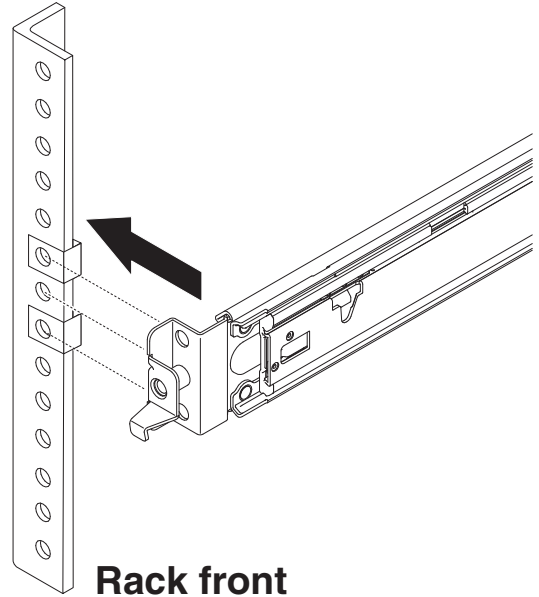
a. Select an available space (depending on the server you are installing) in the rack to install your server. Place the clip nuts on the selected space of the rack.



Clip nuts

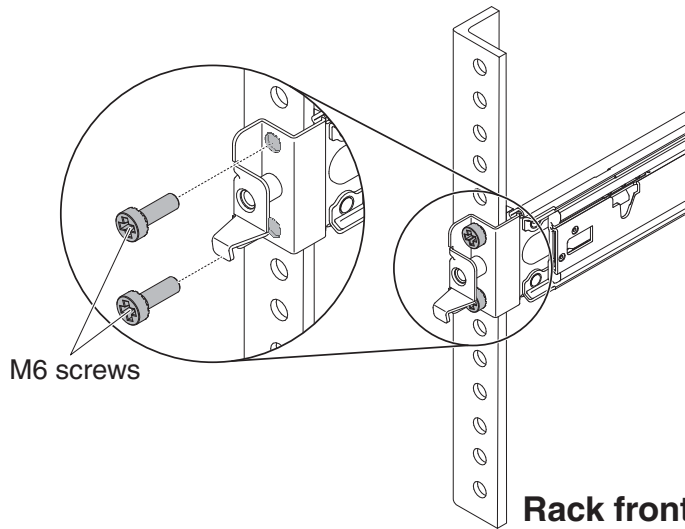
Rack front

b. Line up the pin hole of the front slide to the clip nuts you just placed on the rack.



Rack front

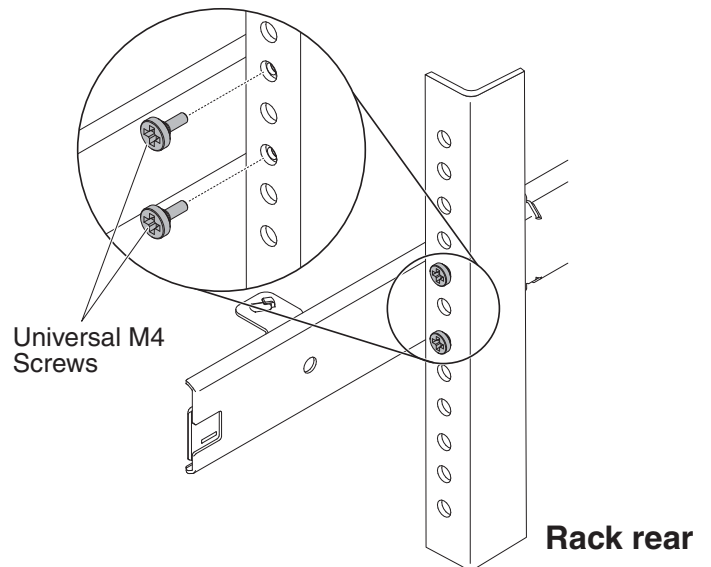
c. Insert the M6 screws to the front of the rack to secure the front of the slide you just attached.



M6 screws

Rack front

d. Insert the universal M4 screws to the rear of the rack to secure the rear of the slide.

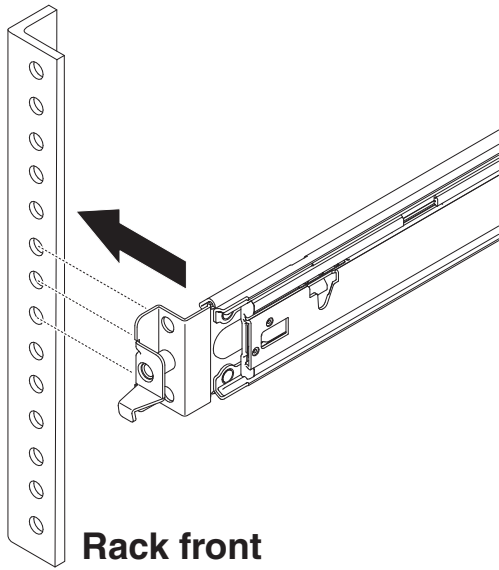


Universal M4
Screws

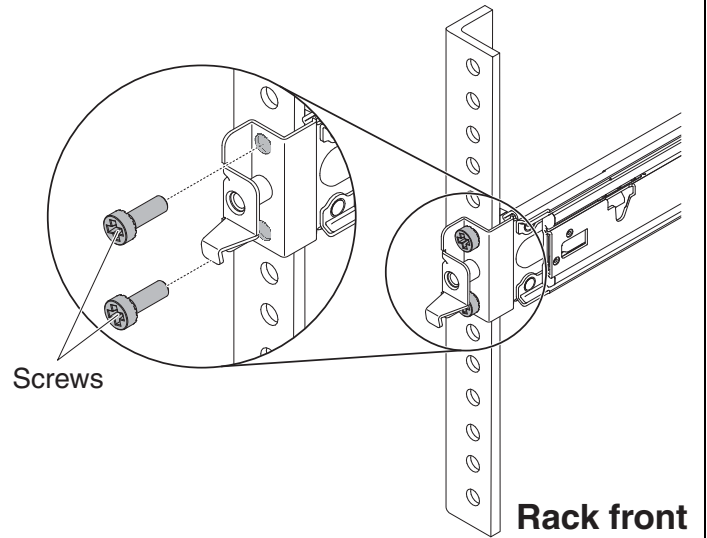
Rack rear

• **Rack with #10-32 thread holes**

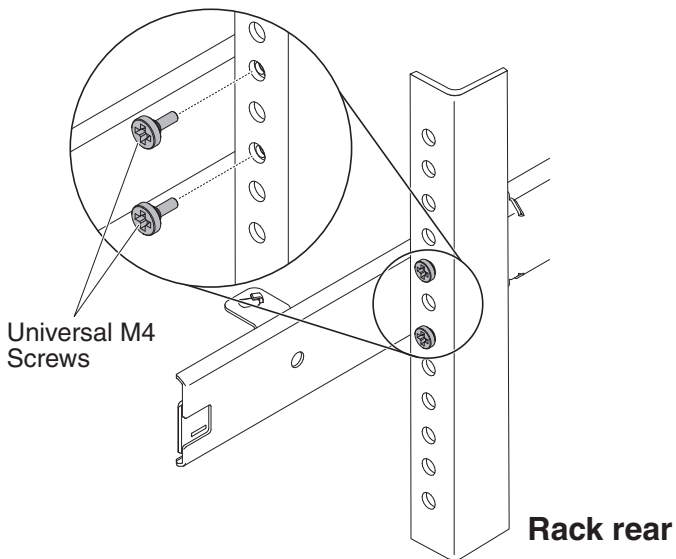
a. Select an available space (depending on the server you are installing) in the rack to install your server. Line up the pin hole of the front slide to the selected space on the rack.



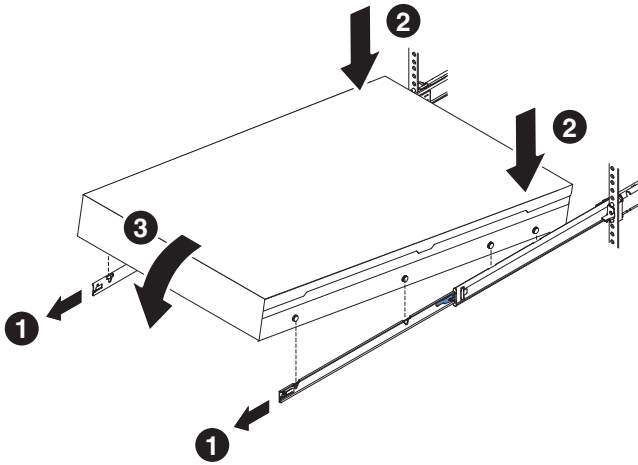
b. Insert the M6 or #12-24 screws to the front of the slide you just attached and secure it on the front of the rack.



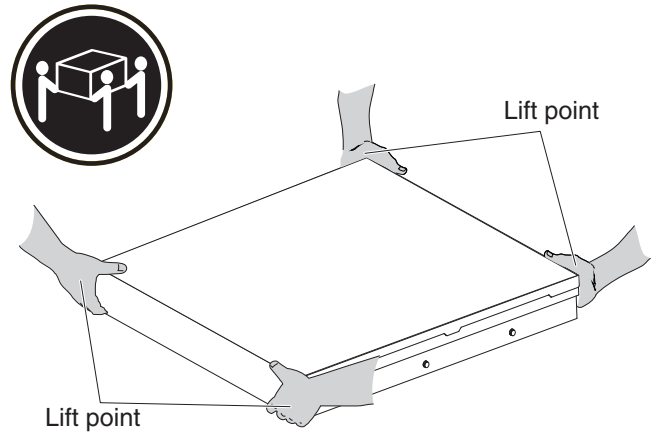
c. Insert the universal M4 screws to the rear of the rack to secure the rear of the slide.



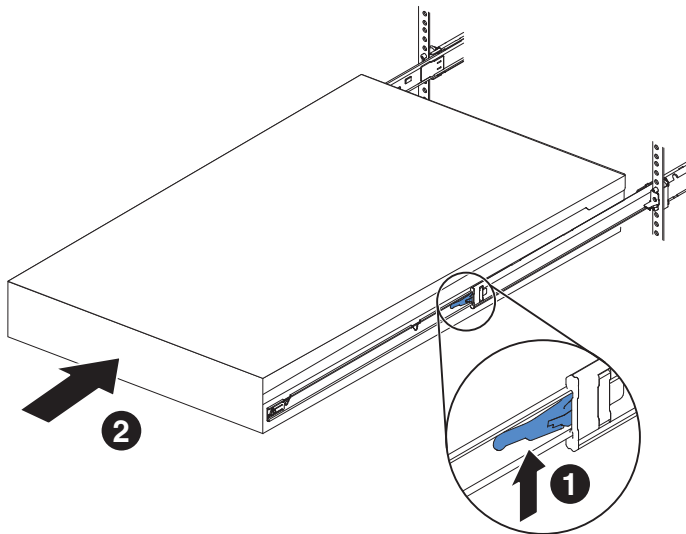
- 2.** Pull the slides forward until the inner slide members click two times into place **1**.
Carefully lift the server and tilt it into position over the slides so that the rear nailheads on the server line up with the slots in the slides **2**.
Lower the server down until the rear nailheads slide into the two rear slots, and then slowly lower the front of the server until the other nailheads go into the other slots on the slides **3**. Make sure that the front latch covers the front nailhead so the server is secured to the slides.



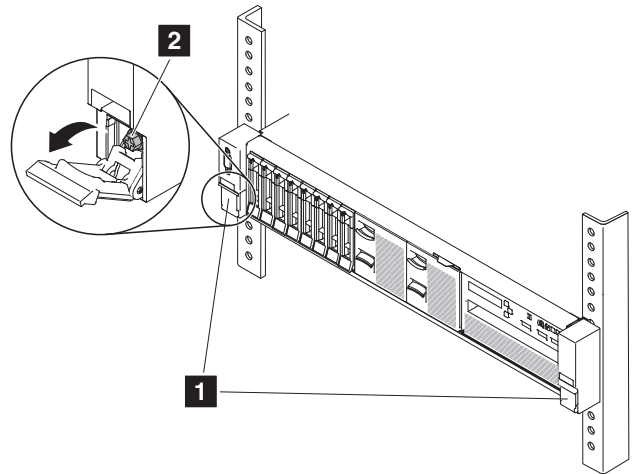
Note: Make sure that you have two people when lifting the server. Their hands should be positioned as illustrated.



- 3.** Lift the locking levers on the slides **1**. Then, push the server all the way into the rack until it clicks into place **2**.



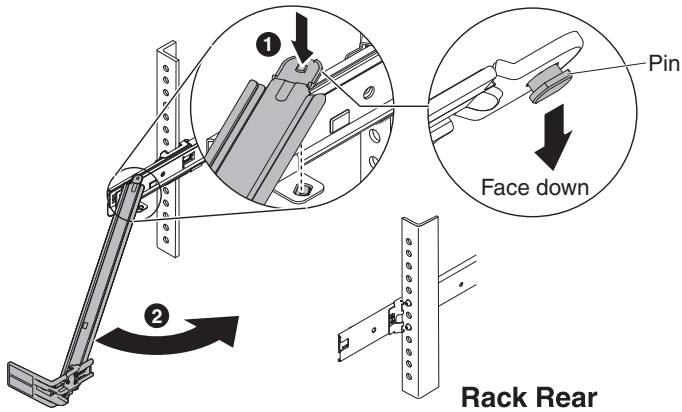
- 4.** Secure the server before you move the rack, or if you place the rack in a vibration-prone area. Open the latches **1** in the front of the server, and then tighten the screws **2**.



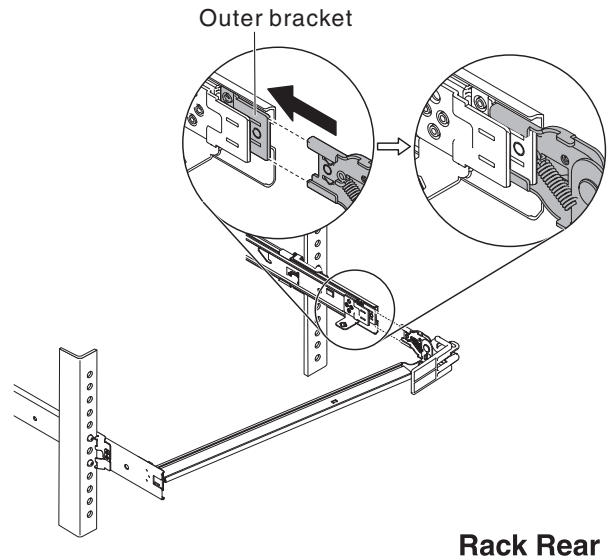
Cable Management Arm for the ThinkSystem Screw-In Slide Rail

To install the cable management arm (CMA) for the ThinkSystem Screw-In Slide Rail, do the following:

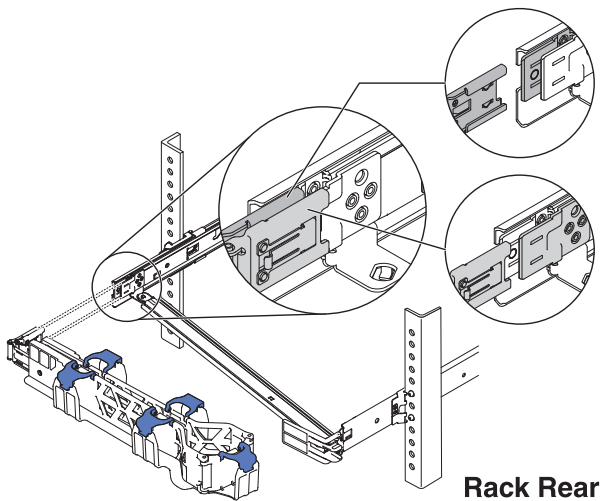
1. Place the pin on the CMA support bar down into the horizontal slot on the rear of the rail **1**. Then, rotate the other end of the bar toward the rack **2**.
Note: The CMA can be installed on either side of the server. It is recommended that you connect the CMA mounting brackets on the side opposite the power supplies (the left side of the rack when viewed from the rear of the rack). In this way, you can access the rear cables and power supplies more easily.



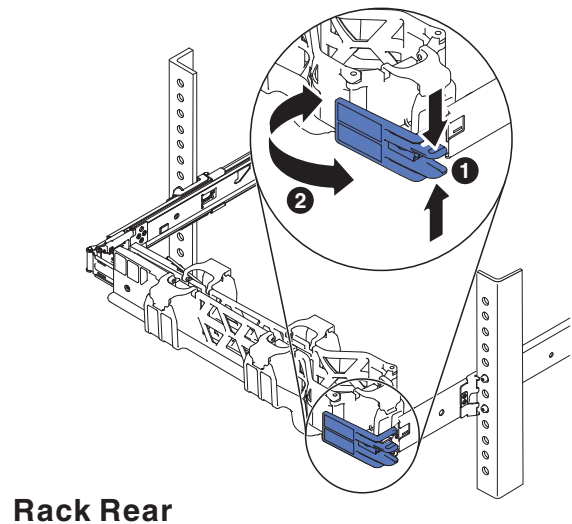
2. Connect the mounting bracket on the support bar to the outer bracket on the rear of the rail.



3. Connect the inner tab on the CMA to the inner bracket on the rear of the rail.
Connect the outer tab on the CMA to the outer bracket on the rear of the rail.



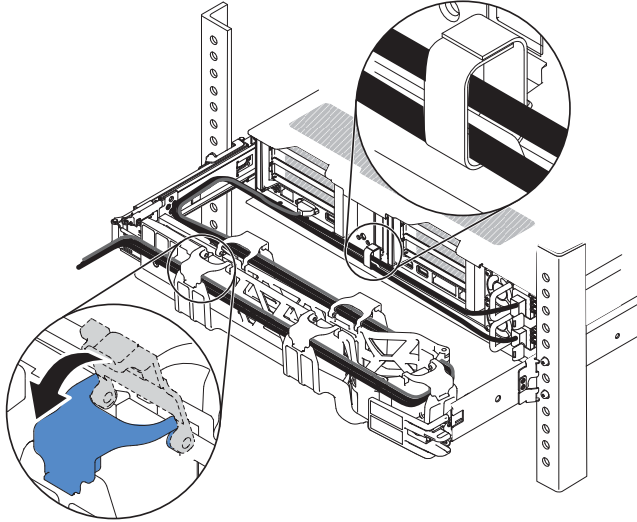
4. Pinch the tabs of the stop bracket and rotate it to the open position. Place the CMA onto the support bar and then rotate the stop bracket back into the closed position.



5. Attach the power cords and other cables to the rear of the server. Route the cables and power cords on the CMA and secure them with cable ties or hook-and-loop fasteners.

Notes:

- The location of the cable straps may be slightly different in different systems.
- Use the cable straps provided on the rear of the system to retain the cables and prevent them from sagging.

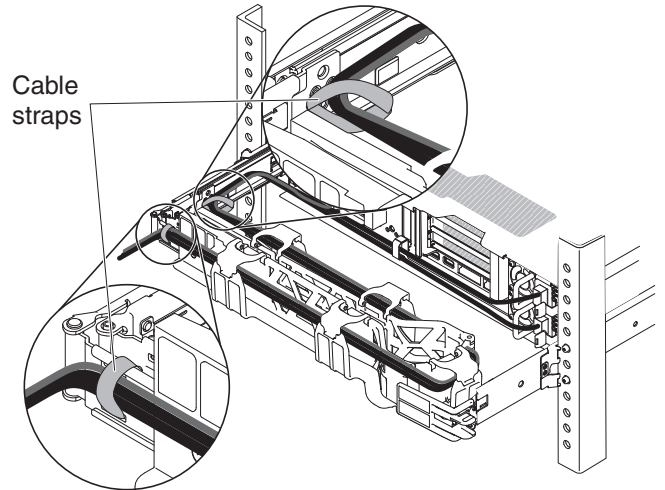


Rack Rear

6. Secure the cables with the cable straps. Cables must be bundled with the cable strap for proper movement.

Notes:

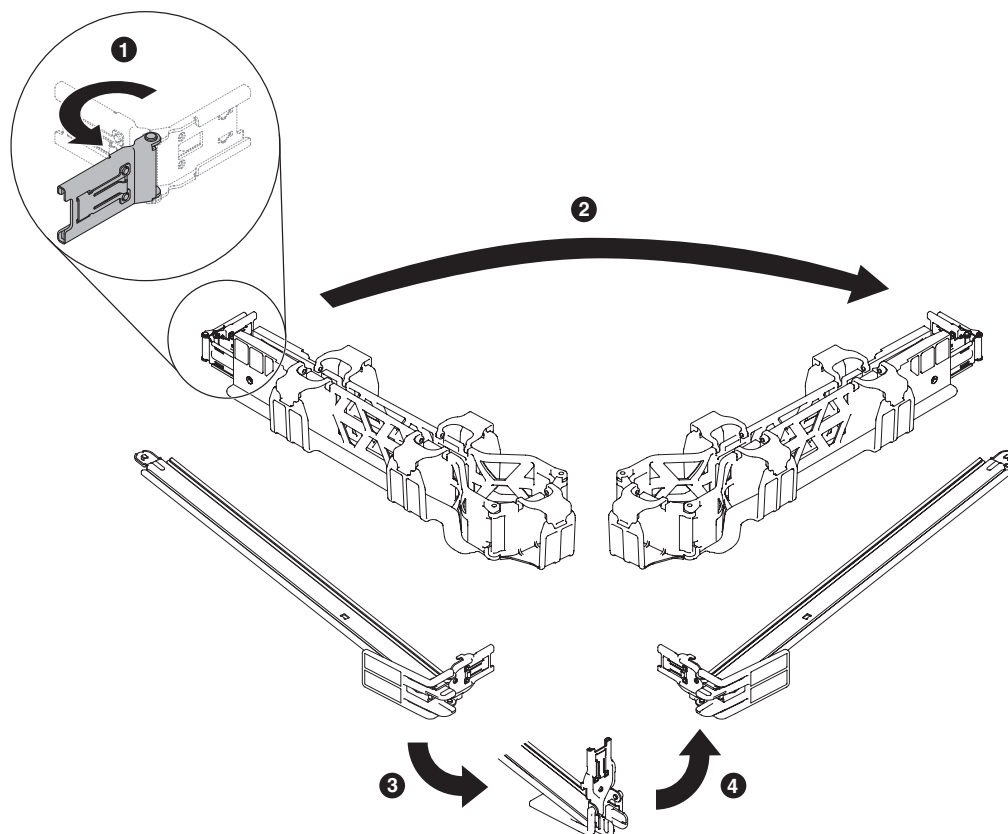
- Make sure that the cables do not sag below the U space so they will not get caught on the lower systems.
- Allow a little slack in all cables to avoid tension in the cables as the cable management arm moves.



Rack Rear

How to change the CMA support bar to install the CMA on the right side of the rack

To install the CMA on the right side of the rack, rotate the stop bracket on the end of the support bar to allow the part to be installed on the right side.

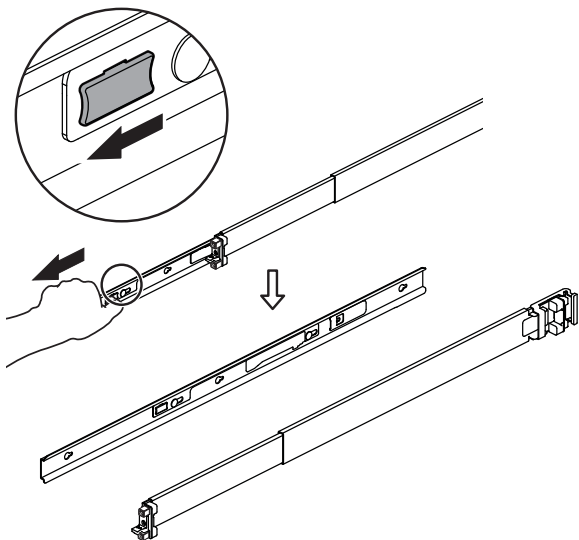


ThinkSystem Toolless Friction Rail

To install a server into a rack using the ThinkSystem Toolless Friction Rail, do the following:

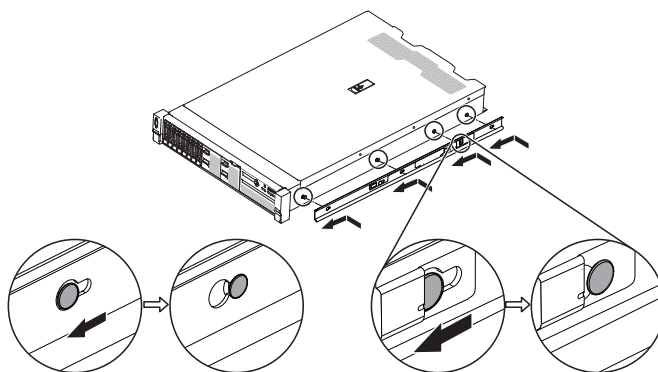
1. Remove the inner slide member of each rail by doing the following:

Release the latch to pull out or separate the inner slide member from the slide-rail assembly.



2. Insert the inner slide members onto both sides of the chassis by doing the following:

Align the four mounting holes in the inner slide member with the corresponding rail mounting studs on the side of the server. Then, push the inner slide member as shown until the mounting studs on the server lock into place with the inner slide member.

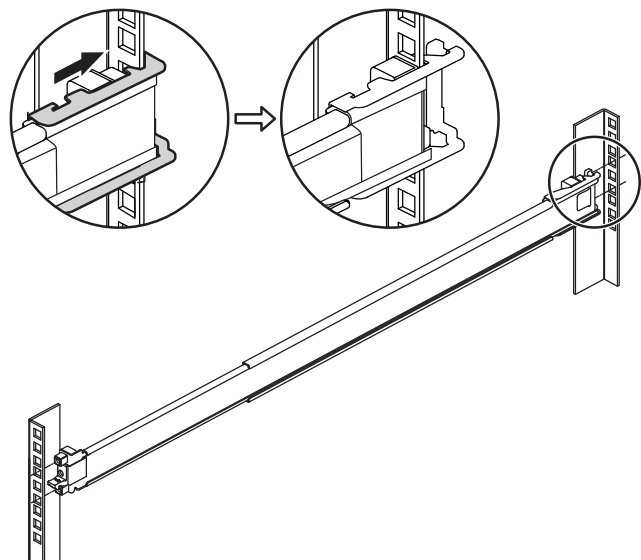


3. Install the outer slide members to the frame by doing the following:

- a. Rear mounting bracket

Align the pins on the rear end of the outer slide member against the holes in the rear of the rack.

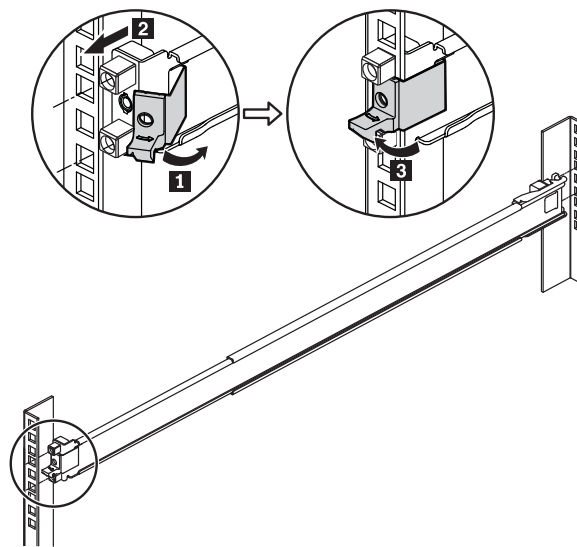
Attach the rear mounting bracket to the frame, and then push the outer slide member as shown until the tabs are inserted into the corresponding holes.



- b. Front mounting bracket

Open the front latch on the front mounting bracket and align the front end of the outer slide member against the holes in the front of the rack. Ensure that the front end and rear end of the rail are at the same horizontal level.

Push the slide rail in the direction as shown until the tabs are inserted into the corresponding holes. Close the front latch to lock the rail in position.

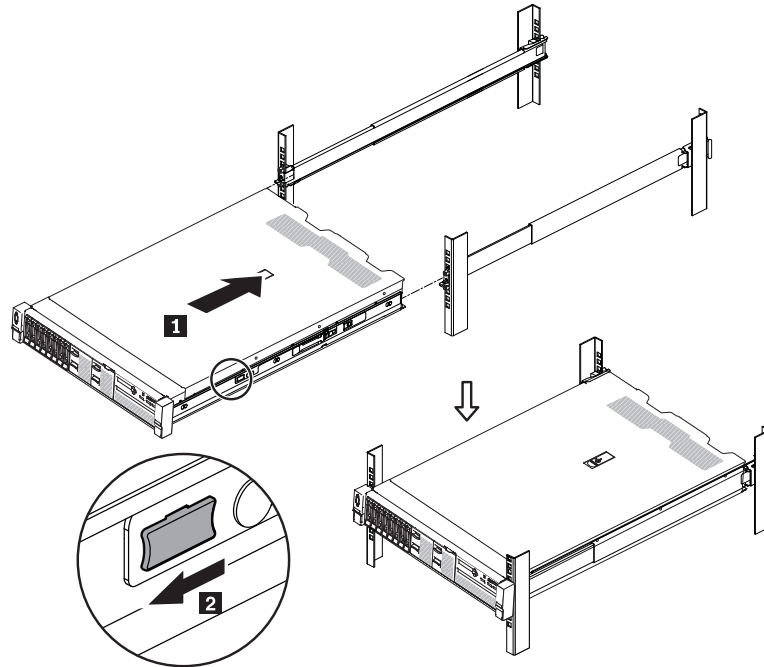


4. Install the server into the rack.

Carefully lift the server and align the server with the slide rails. Position the server as shown and push the server into the rack. Pull the release latch forward and push the server all the way into the rack until the server locks into place with an audible click.

Notes:

- Make sure that the inner slide members are inserted into the outer slide members firmly and the server sits on the rails securely.
- When you ship the rack with the server installed, secure the server before shipping. Install the two screws (included in your rail kit package) to the rear of the rack.



First Edition (November 2017)

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Printed in China

(1P) P/N: SP47A12458

