



CHAPTER 4

Rack Mounting

This chapter provides procedures for installing rail hardware on the mobility services engine and for mounting the product on a four-post rack.

This chapter contains the following sections:

- [Before You Begin, page 4-1](#)
- [Unpacking the Mobility Services Engine, page 4-2](#)
- [Installation Precautions, page 4-2](#)
- [Removing and Reinstalling the Rack Handles, page 4-3](#)
- [Mounting the Mobility Services Engine in a Four-Post Rack, page 4-4](#)

Before You Begin

Before you begin the installation, read the *Regulatory Safety and Compliance Information for the Cisco 3310 Mobility Services Engine* document that shipped with your device.

Tools Needed

You need to have the following tools to complete the rack mounting procedure:

- A Phillips screwdriver (#1 bit and #2 bit)
- Four (4) rack screws

Unpacking the Mobility Services Engine

Follow these steps to unpack the mobility services engine.

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- Step 1** Open the shipping container and carefully remove the contents.
 - Step 2** Return all packing materials to the shipping container and save it.
 - Step 3** Ensure that all items listed in the “[Package Contents](#)” section are included in the shipment.
 - Step 4** Examine each item for damage. If any item is damaged or missing, notify your authorized Cisco sales representative.
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Package Contents

Each mobility services engine package contains the following items:

- One Cisco 3310 Mobility Services Engine
- AC power cord
- DB-9 serial cable for console connection with an RJ-45 to DB-9 adapter
- This guide, the *Cisco 3310 Mobility Services Engine Getting Started Guide*
- Four-post installation kit (optional)

**Note**

A two-post installation kit is not offered for this product.

Installation Precautions

Before you begin the installation, review the warnings and cautions in this section.

**Caution**

There are no user-serviceable parts inside the power supply; contact Cisco when servicing is required.

**Caution**

The operating temperature of the mobility services engine, when installed in an equipment rack, must not go below 50°F (10°C) or rise above 95°F (30°C). Extreme fluctuations in temperature can cause a variety of problems in your mobility services engine.

**Caution**

The equipment rack must provide sufficient airflow to the front of the mobility services engine to maintain proper cooling.

Removing and Reinstalling the Rack Handles

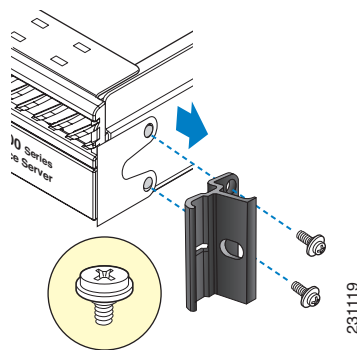
The mobility services engine is shipped with rack handles already installed, so the product can be easily affixed to an equipment rack. This section includes procedures for removing and reinstalling the rack handles.

Removing the Rack Handles

To remove rack handles from a mobility services engine:

- Step 1** Review the information in the [“Safety Warnings” section on page 2-1](#) and the [“Safety Guidelines” section on page 2-3](#).
- Step 2** Power off the mobility services engine and unplug all peripheral devices and the AC power cable.
- Step 3** Remove the two screws that hold the rack handle and the bezel in place, and remove the rack handle from the mobility services engine as shown in [Figure 4-1](#).
- Step 4** Reattach the bezel with the screws.

Figure 4-1 Removing the Rack Handle



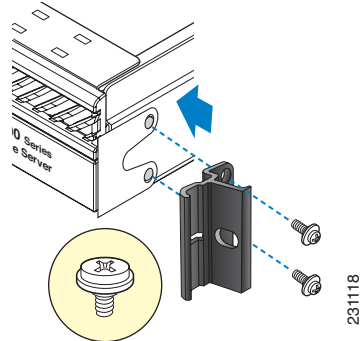
- Step 5** Repeat [Step 3](#) and [Step 4](#) on the opposite side of the system.
- Step 6** Plug all peripheral devices and the AC power cable into the mobility services engine.

Reinstalling the Rack Handles

To reinstall the rack handles on a mobility services engine:

- Step 1** Review the information in the [“Safety Warnings” section on page 2-1](#) and the [“Safety Guidelines” section on page 2-3](#).
- Step 2** Power off the device and all attached devices. Disconnect the power cord and all external cables.
- Step 3** Remove the two screws that attach the bezel to the chassis.
- Step 4** Attach the rack handle to the mobility services engine with the two screws as shown in [Figure 4-2](#).

Figure 4-2 Installing the Rack Handle



- Step 5** Repeat [Step 3](#) and [Step 4](#) on the opposite side of the mobility services engine.
- Step 6** Plug all peripheral devices and the AC power cable into the mobility services engine.

Mounting the Mobility Services Engine in a Four-Post Rack



Warning

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048



Warning

The chassis should be mounted on a rack that is permanently affixed to the building. Statement 1049

This section contains the following topics:

- [Contents of the Four-Post Installation Kit, page 4-4](#)
- [Attaching Chassis Brackets to the Chassis, page 4-6](#)
- [Attaching the Rail Hardware to the Rack, page 4-6](#)
- [Installing the Chassis into the Rack, page 4-7](#)

Contents of the Four-Post Installation Kit

The four-post installation kit includes individual left and right slide rail assemblies and chassis brackets. [Figure 4-3](#) shows the details of the four-post hardware kit.



Note

Each slide rail assembly consists of three pieces that slide to extend the rail to its full length. To reach the features of the innermost piece, such as the release buttons, you must grasp the end of the innermost piece and pull it firmly out of the piece that contains it (the slide rail assembly is the top item displayed in [Figure 4-3](#)).

Figure 4-3 Four-Post Hardware Kit

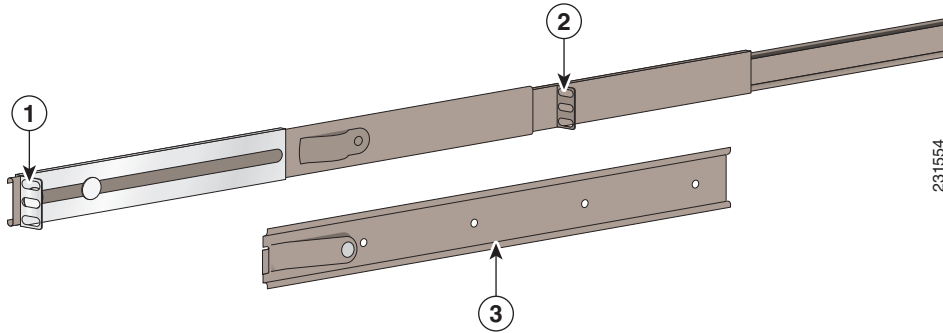
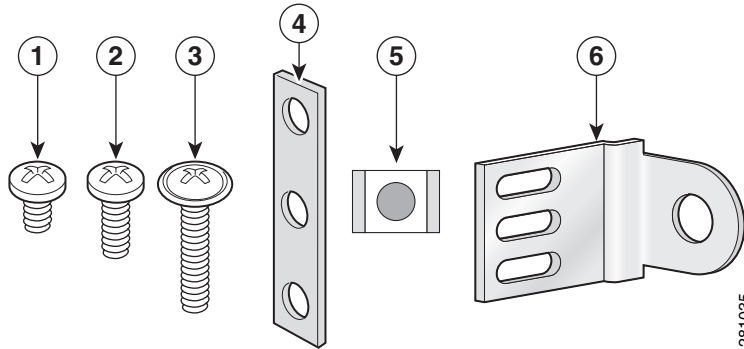


Table 4-1 Four-Post Hardware Kit

1	Rear bracket portion of the slide rail assembly	3	Chassis bracket
2	Front bracket portion of the slide rail assembly		

Figure 4-4 illustrates the fasteners for the four-post rack installation.

Figure 4-4 Fasteners for Four-Post Rack Installations



Item	Description	Quantity
1	Screw, #10-32 x 1/4-inch	8
2	Screw, #10-32 x 1/2-inch (rack screws)	10
3	Screw, #10-32 x 7/8-inch	8
4	Nut bar (not used)	4
5	Cage nut ¹	12
6	Ear bracket	2

1. Cage nuts are only required when you must accommodate square holes in a rack.

Attaching Chassis Brackets to the Chassis

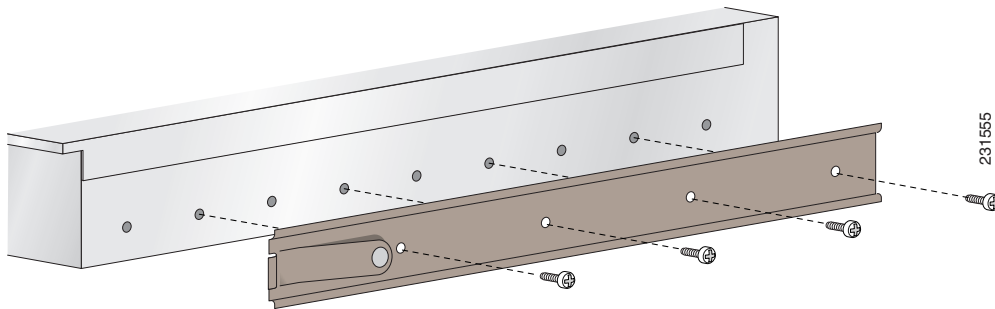
You need the following components in order to attach the chassis brackets to the chassis:

- Chassis brackets
- Screws, 1/4-inch

To attach the hardware to the chassis, follow these steps:

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- Step 1** Align the chassis bracket holes with the horizontal holes on the side of the chassis, beginning with the second hole. The release spring on the chassis bracket must point toward the rear of the mobility services engine and face away from the chassis (see [Figure 4-5](#)).

Figure 4-5 Attaching the Chassis Bracket to the Mobility Services Engine Chassis



- Step 2** Attach the chassis bracket to the chassis with the 1/4-inch screws.
- Step 3** Attach a chassis bracket to the other side of the chassis in the same manner.
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Attaching the Rail Hardware to the Rack

You need the following components in order to attach the rail hardware to a four-post rack:

- Slide rail assembly
- Rack screws



Note

This procedure describes the installation of slide rail assembly in a four-post threaded-hole rack. If your four-post rack uses rectangular holes, ensure that you have the proper adapters in place to securely attach the slide rail assembly to the posts.

To attach the hardware to the chassis, follow these steps:

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- Step 1** Determine the position on the rack where you will mount the chassis.
- Step 2** Position the rear (adjustable) bracket on the outer side of the rear post. Attach the bracket to the post with rack screws.

- Step 3** Align the other end of the slide rail assembly to the corresponding hole on the front post. Attach the front bracket to the front side of the front post with rack screws.
- Step 4** Install the other slide rail assembly on the opposite side of the rack in the same manner. Ensure that the two rails are aligned and that the ends of the rails are level.

Installing the Chassis into the Rack



Caution

If you mount the slide rail in holes that are not vertically aligned from front to back, you can damage the slide rail.



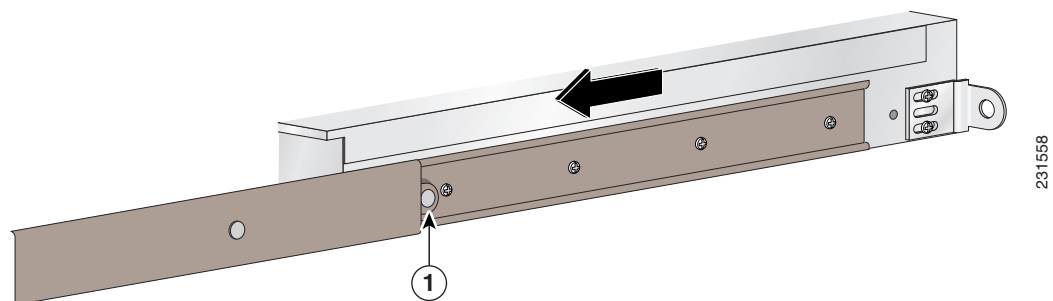
Note

Lifting the chassis and attaching it to the rack is a two-person job. One person must be able to lift and support the mobility services engine, which weighs approximately 20.0 lbs. (9 kg).

To install the chassis into the rack, follow these steps:

- Step 1** Extend the inner rail portion of the rack-mounted slide rail assembly until it locks into place.
- Step 2** Position the chassis so that the rear ends of the chassis bracket align with the front ends of the rail hardware.
- Step 3** Slide the chassis brackets into the slide rail assembly. (You may need to press on the release spring (item 1 in [Figure 4-6](#)).

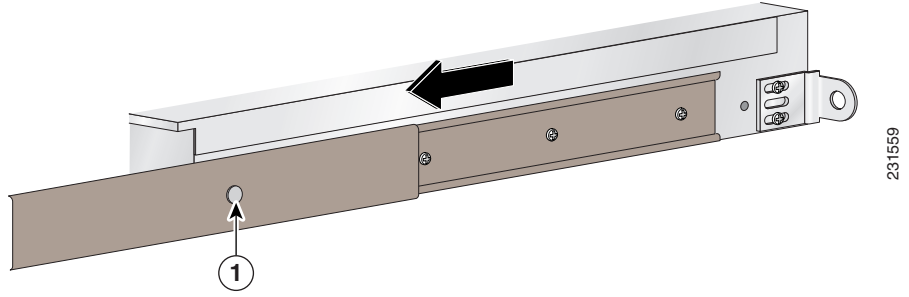
Figure 4-6 Sliding the Chassis Bracket into the Slide Rail Assembly



1	Spring release
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- Step 4** Slide the chassis bracket until the release spring clicks into place. The slide rail assembly should now support the weight of the chassis.
- Step 5** To push the chassis into the rack, press the spring release buttons on the extended slide rail assembly (item 1 in [Figure 4-7](#)). Then, slide the chassis in until the brackets on the chassis meet the front posts of the rack.

Figure 4-7 Sliding the Chassis into the Rack



1	Spring release	
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