# Installing a Cisco RP-Series PDU (Optional)

The Cisco PDUs are engineered to be conveniently installed in a Cisco R-Series Rack, though other racks may be used with the provided they are square-hole racks. All illustrations assume an installation in the Cisco R-Series Rack.

## Preparing to Install an RP-Series PDU

Before you install a PDU, plan how to route the power cable, which can be routed through the bottom of the Cisco R-Series Rack (refer to "Using the Rear Cable Access Bar"), or through the four knockout cabling portholes on the top of the Cisco R-Series Rack enclosure (refer to "Using the Cabling Portholes").

# Installing a Cisco RP230-32-1P-U-2 or RP208-30-1P-U-2 PDU

The Cisco RP230-32-U-2 Single Phase PDU (EUR) and the Cisco RP208-30-U-2 Single Phase PDU (US) has 20 C13 connectors and 4 C19 connectors (see Figure 5-1). They differ in the cord used to plug into facility power and in voltage and amperage specification (see Figure 5-2 and Figure 5-3). These PDUs are intended to be installed on the plates to the rear of the Cisco R-Series Rack without requiring any RU spaces, so they are also referred to as zero-RU PDUs.
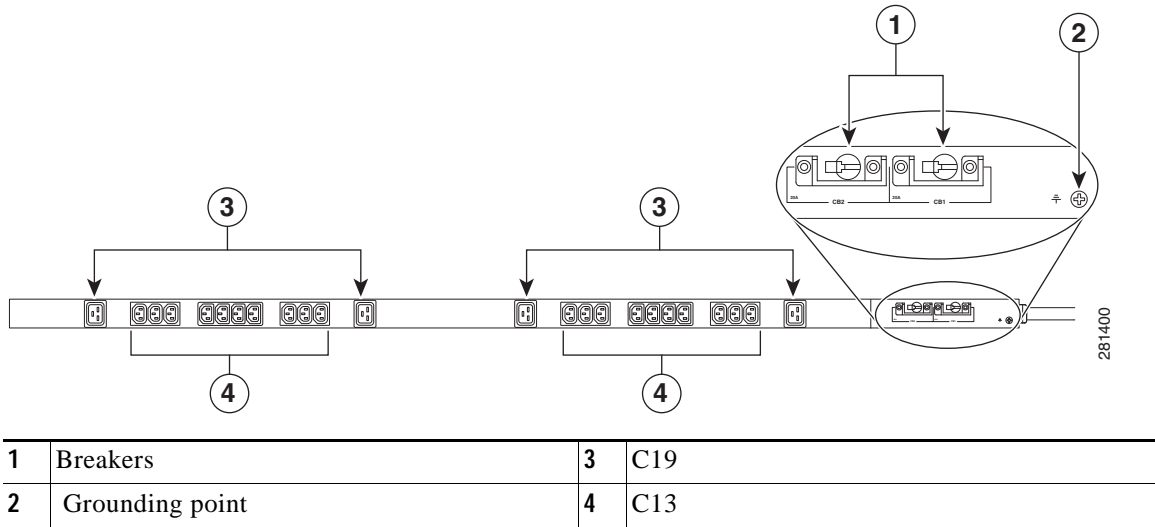
*Figure 5-1      Zero-RU PDUs*



| 1 | Breakers | 3 | C19 |
|---|----------|---|-----|
| 2 | Grounding point | 4 | C13 |

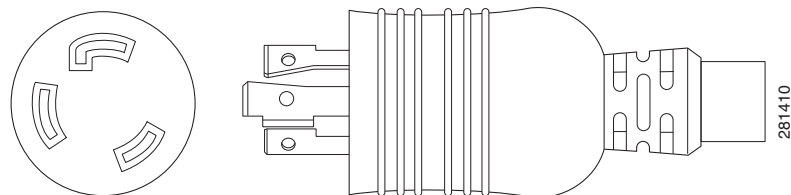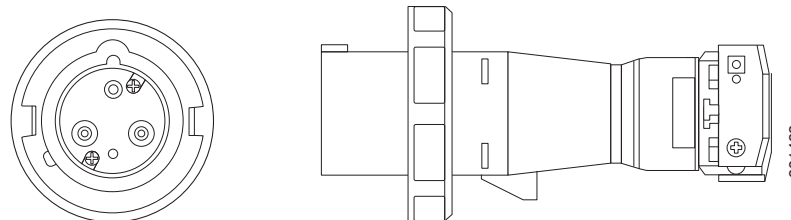*Figure 5-2      US Plug (NEMA L6-30P)*



*Figure 5-3      European Plug (IEC309-32)*



**Warning**    **No user-serviceable parts inside. Do not open.** Statement 1073

**Warning**    **Do not work on the system or connect or disconnect cables during periods of lightning activity.** Statement 1001

**Warning**    **Read the installation instructions before connecting the system to the power source.** Statement 1004

**Warning**    **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 30 A** Statement 1005

**Warning**    **This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

**Warning**    **For Nordic countries (Norway, Finland, Sweden and Denmark) this system must be installed in a Restricted Access Location, where the voltage of the main ground connection of all equipment is the same (equipotential earth) and the system is connected to a grounded electrical outlet.** Statement 328
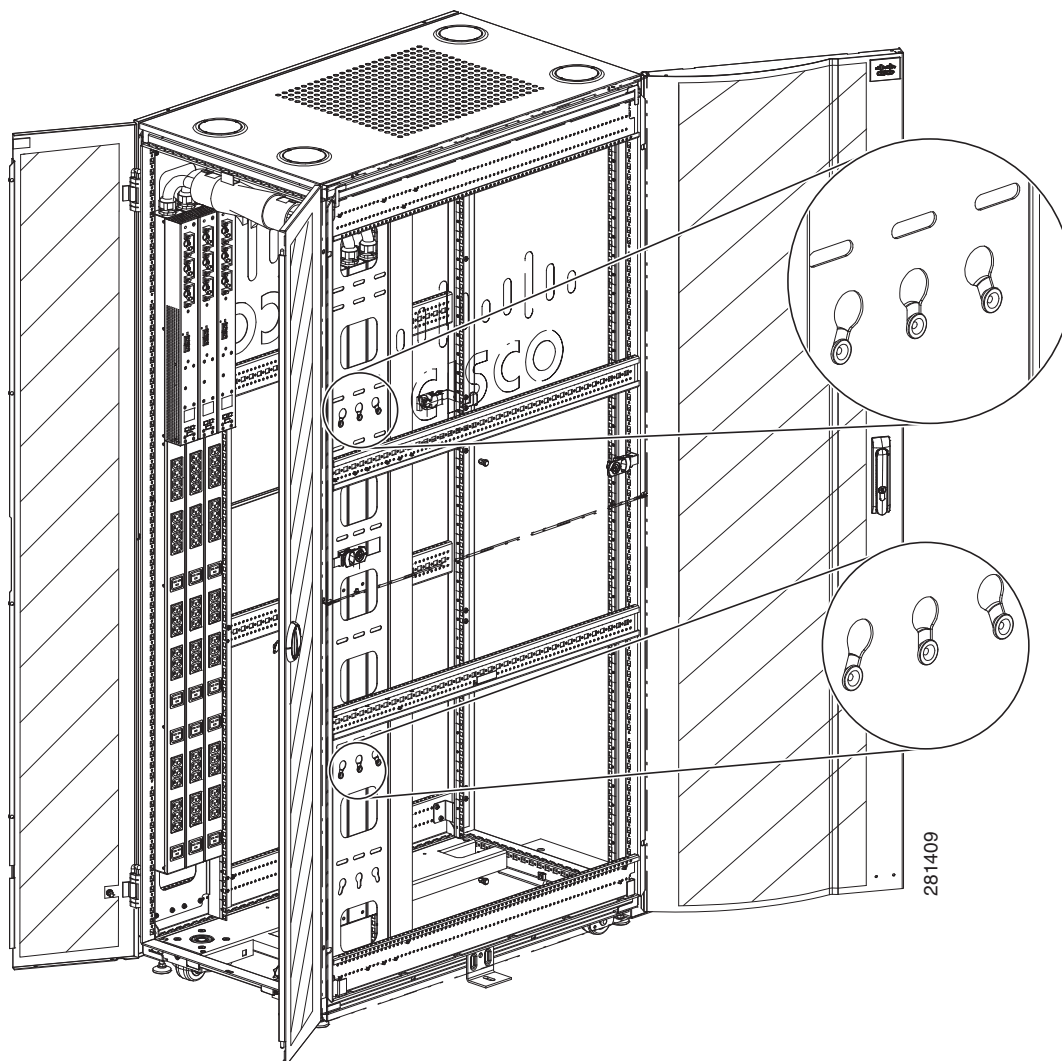
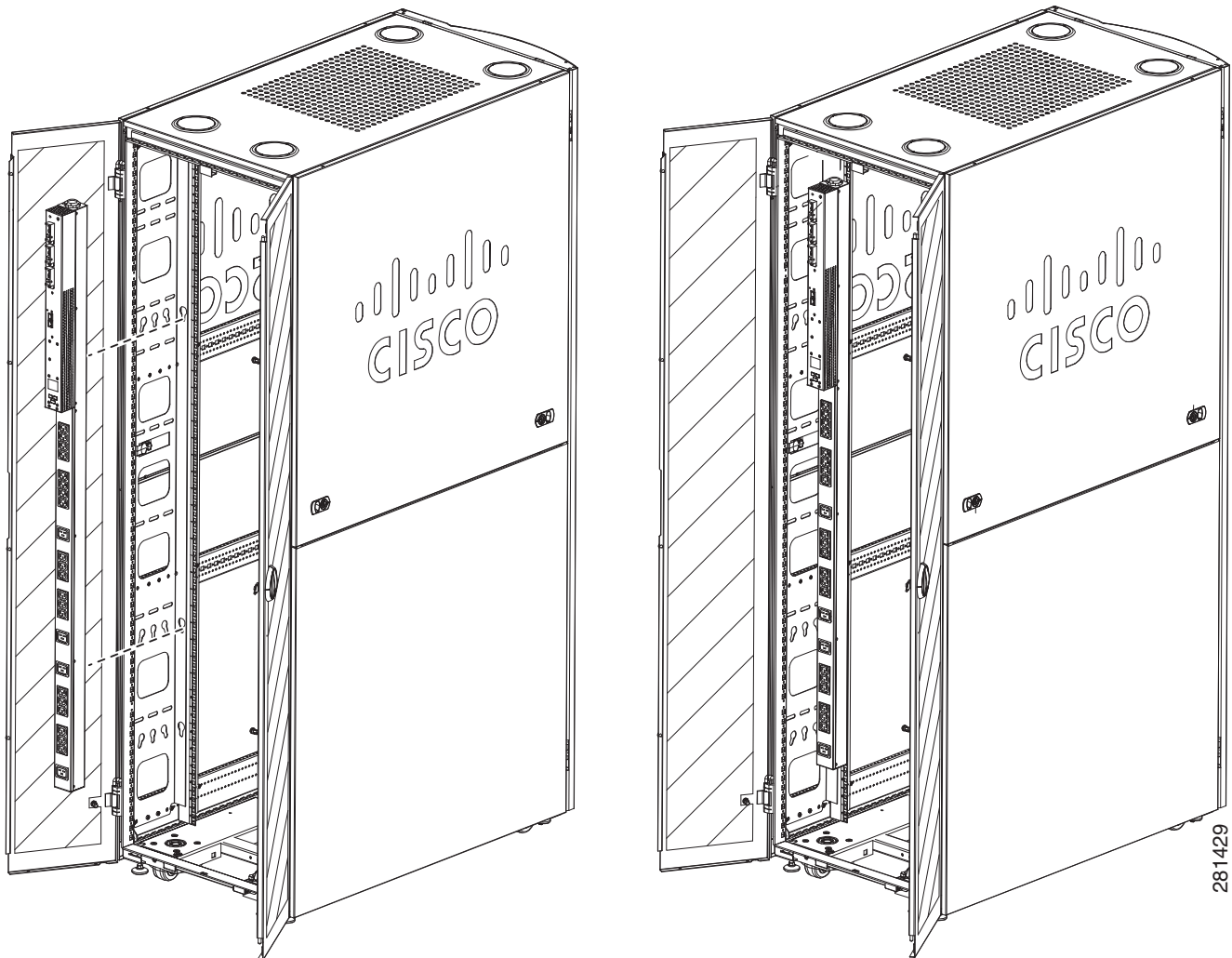**Warning**    **Connect the device to a grounded power outlet.** Statement 25

You can install up to six zero-RU PDUs in the Cisco R-Series Rack. No tools are required. To install a zero-RU PDU, follow these steps:

**Step 1**    Open the rear of the rack, and as appropriate for your situation, route the PDU power cable either through the top porthole or the bottom utilizing the cable access bar.

**Step 2**    Insert the two studs on the rear of the PDU into a pair of slots on the sides of the rack. See Figure 5-4. The PDU breakers can either be on the top or bottom of the rack, as appropriate for how you route the power cable. If necessary for equipment clearances, use the alternate 90 degree mounting position shown in Figure 5-4 for one of the PDUs.

*Figure 5-4*        *Zero-RU PDUs Mounted (Top Installation Shown)*



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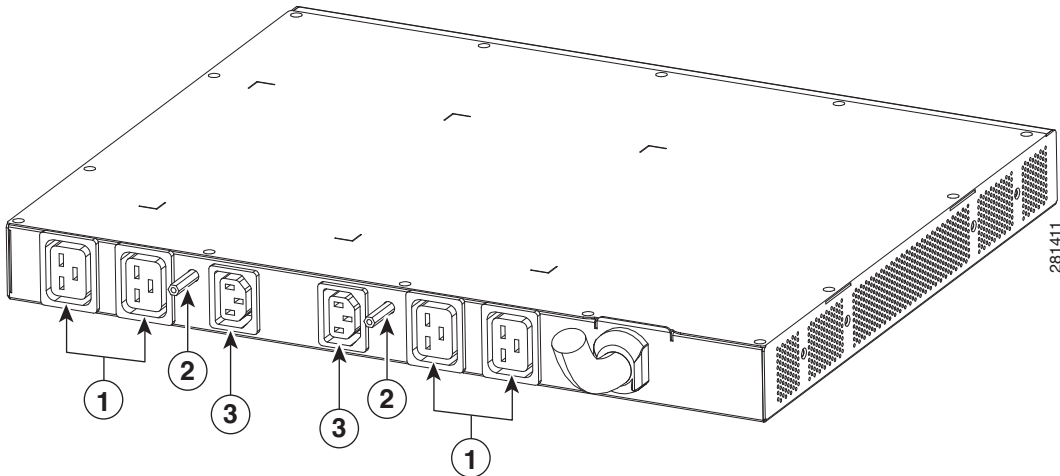*Figure 5-5        Alternate 90 Degree Mounting Position*



**Step 3**    Slide the PDU down slightly so that the PDU can hang in place within the Cisco R-Series Rack.

**Step 4**    Secure the PDU to the Cisco R-Series Rack using one of the provided cable ties. If necessary, remove the side panels to make access easier.

**Step 5**    Loosen the ground connector and either wrap around it the end of a a 10 AWG wire with 1" of the end stripped, or attach a wire that has a ring connector attached.

**Step 6**    Connect the other end of the grounding wire to the Cisco R-Series Rack.

**Step 7**    Connect the PDU power cord to the AC source.

# Installing an Cisco RP230-32-U-1 or RP208-30-U-1 PDU

The Cisco RP230-32-U-1 Single Phase PDU (Eur) and the Cisco RP208-30-U-1 Single Phase PDU (US) both have 2 C13 connectors and 4 C19 connectors (see Figure 5-6). They differ in the cord used to plug into facility power (see Figure 5-2 and Figure 5-3). These PDUs can be installed inside the side walls of the Cisco R-Series Rack in a tower configuration without requiring any RU spaces, or in one of the available RU spaces.

*Figure 5-6*        *1-RU PDU Front Panel*



| **1** | C19 (4) | **3** | C13 (2) |
|---|---|---|---|
| **2** | Breaker reset (2) | | |

⚠ **Warning**    **No user-serviceable parts inside. Do not open. Statement 1073**

⚠ **Warning**    **Do not work on the system or connect or disconnect cables during periods of lightning activity.** Statement 1001

⚠ **Warning**    **Read the installation instructions before connecting the system to the power source.** Statement 1004

⚠ **Warning**    **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 30 A** Statement 1005

⚠ **Warning**    **This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

**Warning**    **For Nordic countries (Norway, Finland, Sweden and Denmark) this system must be installed in a Restricted Access Location, where the voltage of the main ground connection of all equipment is the same (equipotential earth) and the system is connected to a grounded electrical outlet.** Statement 328

**Warning**    **Connect the device to a grounded power outlet.** Statement 25

# Installing in a Tower Configuration

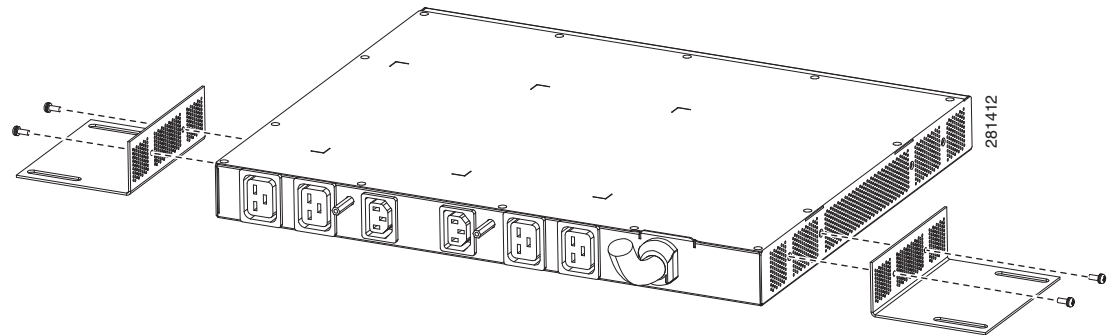To install the Cisco PDU in a Cisco R-Series Rack in a tower configuration. follow these steps:

**Step 1**    Prepare for installation:

  **a.**   Place the PDU on the floor or on a sturdy table as close as possible to the Cisco R-Series Rack. Leave enough clearance to allow you to move around the chassis.

  **b.**   Open the rack-mount kit, and refer to the component checklist  to verify that all parts are included.

*Table 5-1    Rack-Mount Kit Checklist*

| Quantity | Part Description | Received |
|---|---|---|
| 2 | Front L brackets (I RU install) | |
| 4 | Rear L brackets (static and sliding for 1 RU install) | |
| 2 | Tower brackets (tower install) | |
| 8 | M4 Phillips pan-head screws | |
| 4 | 12-24 x 3/4-inch Phillips binder-head screws | |
| 4 | 10-32 x 3/4-inch Phillips binder-head screws | |

**Step 2**    Attach the left and right L brackets using four of the M4 Phillips pan-head screws provided in the rack-mount kit. (See Figure 5-7.)
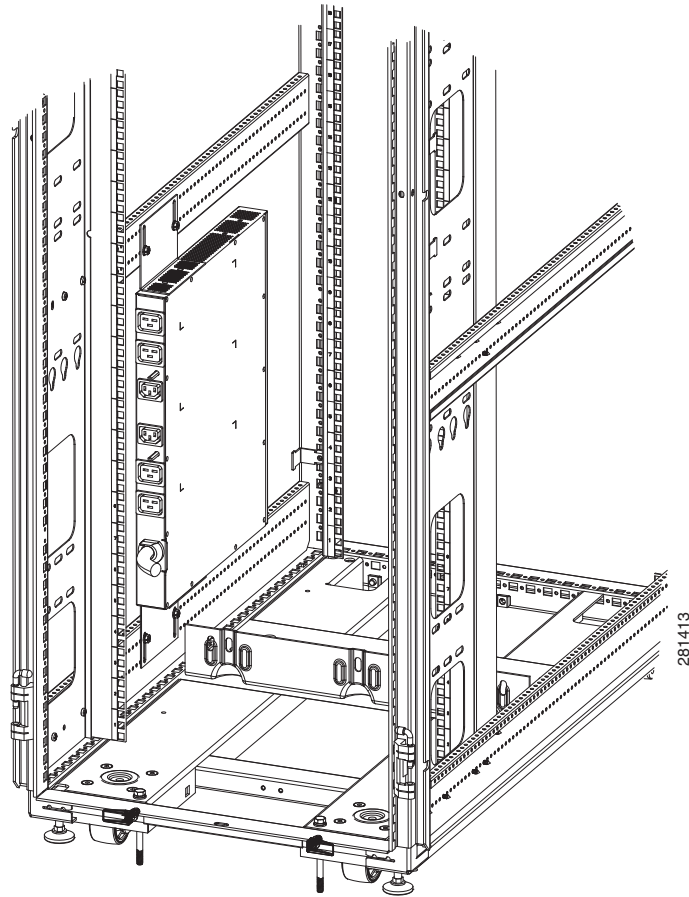
*Figure 5-7        Attaching the Brackets to the Cisco PDU for a Tower Mount*



**Step 3**    Install the PDU in the Cisco R-Series Rack with the outlets facing the rear of the rack. (See Figure 5-8.)

  **a.**   Position the PDU in the rack at either the top or bottom of the rack:

**b.** Align the mounting holes in the L brackets with the mounting holes in the rack supports.

**c.** Secure the PDU using four (two on each side) no. 12 self-tapping screws through the holes in the L bracket and rack frame.
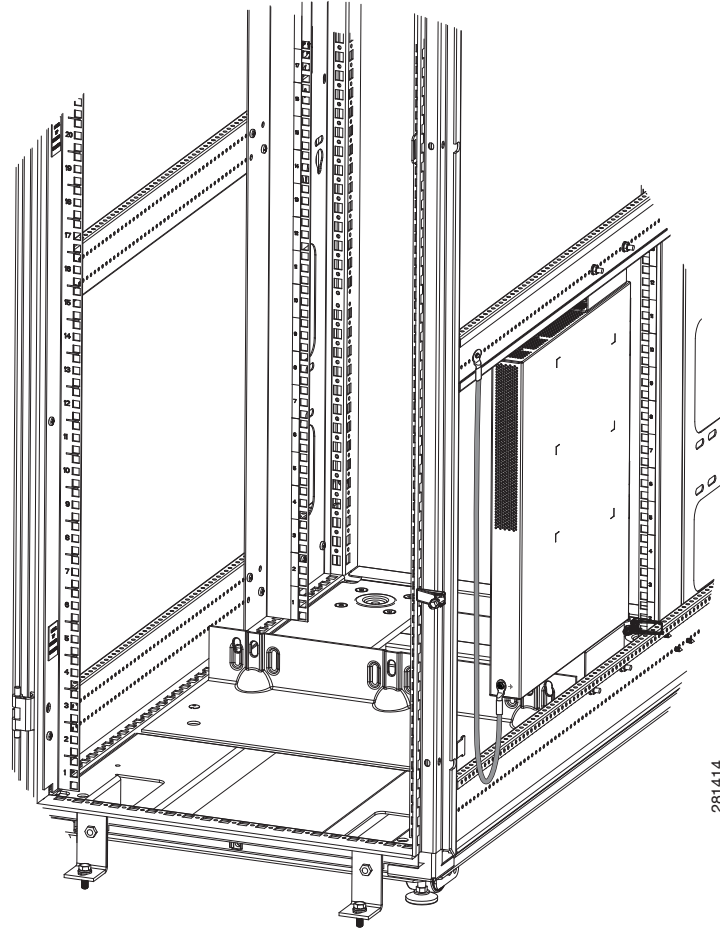
*Figure 5-8        Tower Mounting a Cisco 1-RU PDU*



**Step 4**    Ground the Cisco PDU to the Cisco R-Series Rack as shown in Figure 5-9. This example shows a connection to the frame using a no. 12 self-tapping screw.

*Figure 5-9*        *Grounding a 1-RU Tower Mount*



**Step 5**    Connect the PDU power cord to the AC source.

# Installing in a 1RU Configuration

The 1 RU configuration will work in most square hole rack cabinets, and does not require a Cisco R-Series Rack. Follow these steps to install the Cisco PDU in a rack in a 1 RU configuration:

**Step 1**    Prepare for installation:

    **a.**  Place the PDU on the floor or on a sturdy table as close as possible to the rack. Leave enough clearance to allow you to move around the chassis.

    **b.**  Open the rack-mount kit, and refer to the component checklist  to verify that all parts are included.
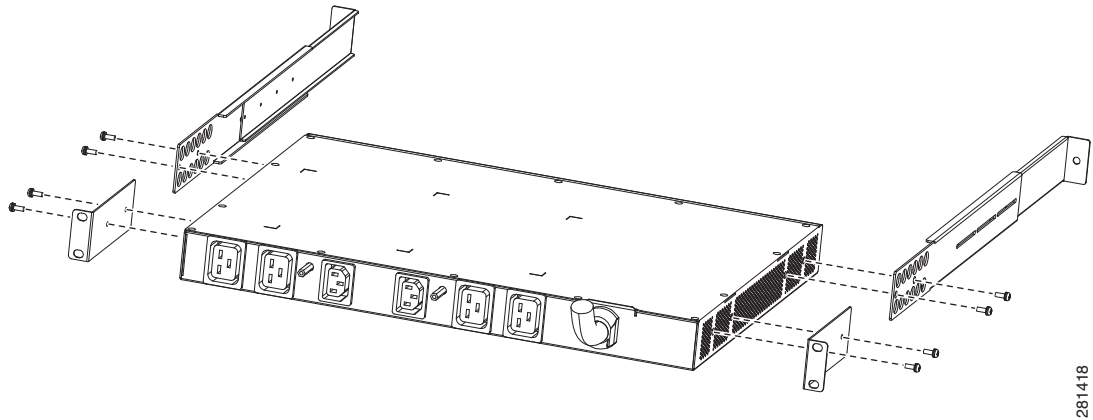
*Table 5-2    Rack-Mount Kit Checklist*

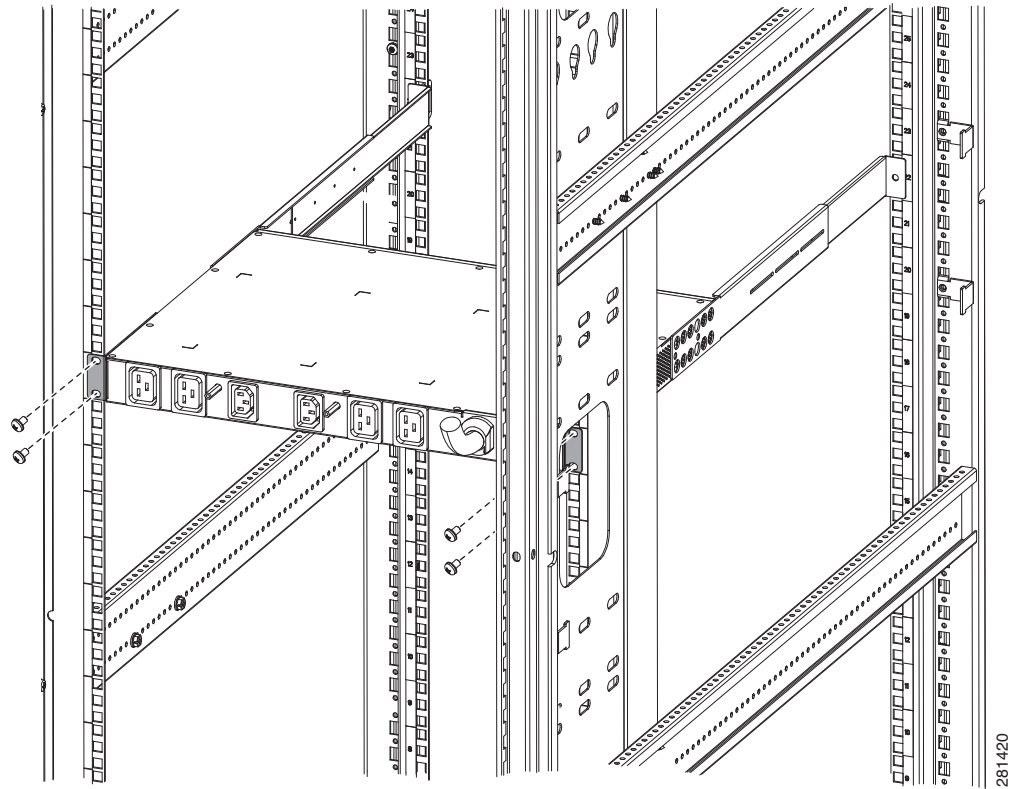| Quantity | Part Description | Received |
|----------|------------------|----------|
| 2 | Front L brackets (I RU install) | |
| 4 | Rear L brackets (static and sliding for 1 RU install) | |
| 2 | Tower brackets (tower install) | |
| 8 | M4 Phillips pan-head screws | |
| 4 | 12-24 x 3/4-inch Phillips binder-head screws | |
| 4 | 10-32 x 3/4-inch Phillips binder-head screws | |

**Note** Some equipment racks provide a power strip along the length of one of the rear posts. If the rack has this feature, consider the position of the strip when planning fastener points. Before installing the L brackets on the chassis, determine whether to install the chassis from the front or the rear of the rack.

**Step 2** Attach the left and right brackets using eight of the M4 Phillips pan-head screws provided in the rack-mount kit. (See Figure 5-10.)

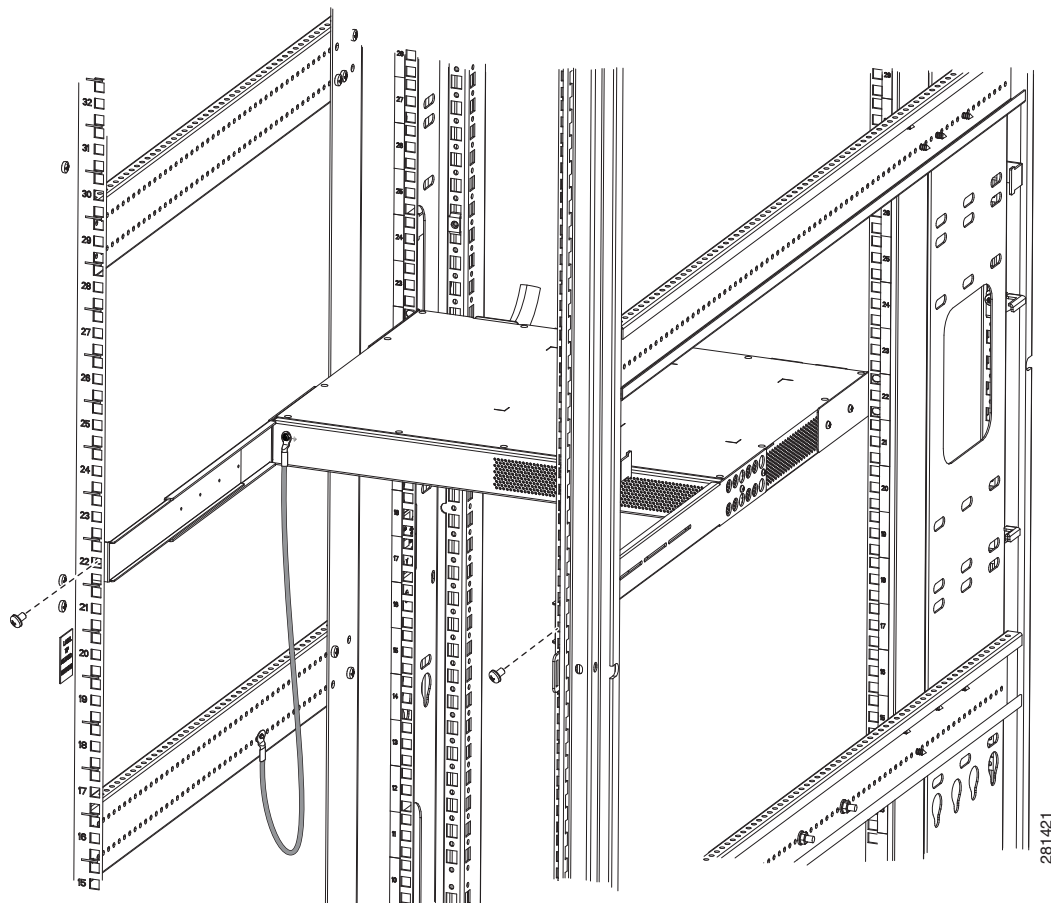*Figure 5-10    Attaching the Brackets to the Cisco PDU for a 1 RU Mount*



**Step 3** Slide the rear L bracket onto the rear bracket.

**Step 4** Install 8 cage nuts as needed into the square holes in the desired RU of the rack.

**Step 5** Install the PDU in the rack with the outlets facing the rear of the rack as shown in Figure 5-11 and Figure 5-12.

    **a.** Position the PDU in the rack at either the top or bottom of the rack:

    **b.** Align the mounting holes in the L brackets with the mounting holes in the rack. Slide the rear L bracket to the length needed.

    **c.** Secure the PDU using eight (two on each bracket) 12-24 x 3/4-inch screws through the elongated holes in the L bracket and into the cage nuts in the mounting post.

***Figure 5-11***        ***RU Mounting a Cisco 1-RU PDU***



**Step 6**    Ground the Cisco PDU to the rack as shown in Figure 5-12. This example shows a connection to the frame using a no. 12 self-tapping screw.

*Figure 5-12        Grounding a 1-RU Mount*



**Step 7**    Connect the PDU power cord to the AC source.