

System 42U Rack and System 42U Expansion Rack

This document contains important safety information that you must know before you install the rack. It also contains instructions for earth (ground) bonding the rack covers and doors to the rack frame.

Compliance ID Number: RR001

Safety information

Before installing the System 42U Rack and System 42U Expansion Rack, read the following safety instructions:

DANGER

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

DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet.
- Connect to properly wired outlets any equipment that will be attached to this product.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless you are instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described in the following procedures when installing, moving, or opening covers inside this product or attached devices:

To Connect:

1. Turn everything OFF.
2. First, attach all cables to devices.
3. Attach signal cables to connectors.
4. Attach power cords to outlet.
5. Turn device ON.

To Disconnect:

1. Turn everything OFF.
2. First, remove power cords from outlet.
3. Remove signal cables from connectors.
4. Remove all cables from devices.

DANGER

For configured racks with a total weight of > 227 kg (500 lb), use only professional movers.

DANGER

Do not transport this rack via fork truck unless it is within its packaging, on top of a pallet.

CAUTION

Always ensure that a load of 95 kg (210 lb) is inside the bottom of the rack.

CAUTION

- This rack is not intended to serve as an enclosure and does not provide any degrees of protection required of enclosures.
- It is intended that equipment installed within this rack will have its own enclosure.

CAUTION

Tighten the stabilizer brackets until they are flush against the rack.

CAUTION

Use safe practices when lifting.

CAUTION

Do not place any object on top of a rack-mounted device unless that rack-mounted device is intended for use as a shelf.

CAUTION

Removing components from the upper position in the rack improves rack stability during relocation. Follow these general guidelines whenever you relocate a populated rack within a room or building:

- Reduce the weight of the rack by removing equipment starting at the top of the rack. When possible, restore the rack to the configuration of the rack as you received it. If this configuration is not known, you must perform the following tasks:
 - Remove all devices in the 22nd U position and above.
 - Ensure that the heaviest devices are installed in the bottom of the rack.
 - Ensure that there are no empty U positions between devices installed in the rack below the 22nd U position.
- If the rack you are relocating is part of a suite of racks, detach the rack from the suite.
- Inspect the route that you plan to take to eliminate potential hazards.
- Verify that the route that you choose can support the weight of the loaded rack. Refer to the documentation that comes with your rack for the weight of a loaded rack.
- Verify that all door openings are at least 760 x 2083 mm (30 x 82 in.).
- Ensure that all devices, shelves, drawers, doors, and cables are secure.
- Ensure that no stabilizer bracket is installed on the rack.
- Do not use a ramp inclined at more than ten degrees.
- Once the rack is in the new location, perform the following tasks:
 - Lower the four leveling pads.
 - Install stabilizer brackets on the rack.
 - If you removed any devices from the rack, repopulate the rack from the lowest position to the highest position.

If a long distance relocation is required, restore the rack to the configuration of the rack as you received it. Pack the rack in the original packaging material, or equivalent. Also, lower the leveling pads to raise the casters off the pallet and strap the rack to the pallet

CAUTION

The weight of this unit is more than 55 kg (121.2 lb). Trained persons, a lifting device, or both are required to safely lift this unit.

CAUTION

A coupled model RR001 rack should be coupled only with another model RR001 rack.



Protective Earth (Ground): This symbol is marked at the rear of the frame, near the bottom. The protective earth (ground) lead must be terminated at that point. A listed closed-loop connector must be used and placed with the provided lock washer on the provided M6 bolt between the frame and the M6 bolt. The connector must be properly sized to be suitable for the bolt, the lock washer, the lead that is used, and the breaker that is installed on the product. The bolt must then be placed into the frame and tightened until the bolt, connector, lock washer, and frame are all flush together, so that the lock washer pierces the paint on the frame. The intent is to ensure that the frame is electrically bonded to the protective earth (ground) lead.

Note: These IT racks are certified by UL under the NWIN category of UL 60950-1: 2007. UL certification of this rack system includes the doors and covers as optional components.

Installation:

Leveling pads:

1. Use the open-end wrench that comes with the hardware kit to lower each of the four leveling pads just enough so that they touch the floor. The rack casters support the weight of the rack. The pads prevent the rack from rolling.
2. Hand-tighten the thumbscrews on the front fixed casters.
3. If outriggers are supplied, remove them from the sides of the rack by removing the four bolts on each side with a 6 mm hex wrench. Save the outriggers for use in the future if you have to move the rack to another location.

Front or front stabilizer bracket:

1. Use the four screws and the hex wrench that comes in the hardware kit to secure the front stabilizer bracket to the bottom front of the rack so that it is flush with the rack.
2. Whether or not a stabilizer bracket was used, the front of the rack can be bolted to the floor if it is necessary for various local building codes. Bolt either the front corners of the stabilizer bracket or the front of the rack (if no stabilizer bracket is installed) to the floor surface through the holes in the lower frame or stabilizer bracket by using the two bolts and washers that you removed from the rack and pallet.

Rear:

1. If it is necessary for various local building codes, bolt the rear of the rack to the floor surface through the holes in the lower rear of the frame by using the two bolts and washers that you removed from the rack and pallet.

Attaching racks in a suite:

1. Where the two racks come together at the top front, align the screw holes of an attachment bracket (which comes with the expansion rack) with the holes in the standard rack and expansion rack. Secure the bracket to the racks with four screws. Do not fully tighten the screws. Attach the bottom front attachment bracket and then, tighten all of the bracket screws.
Repeat this step to attach the rear top and bottom attachment brackets.

Attach additional expansion racks to the suite by using the same procedure.

Specifications:

Approximate empty weight:	111 kg (244 lb)
Total load (50 lb/U):	953 kg (2100 lb)
Total maximum configuration:	1064 kg (2344 lb)

Height:	2009 mm (79.1 in.)
Width:	600 mm (23.8 in.)
Depth:	1100 mm (43.3 in.)

Earth (ground) bonding the rack

Electrical bonding is the practice of intentionally electrically connecting all exposed metallic non-current-carrying items in a room or building as protection from electric shock. The following sections provide instructions for earth (ground) bonding the rack side covers and the front and rear doors to the rack frame.

Items required

You will need to the following items to complete the procedures in the following sections:

- Approximately 48 inches of 8 AWG copper wire with green or green-yellow insulation
- Ring-type connectors, correctly sized for 8 AWG wire (8 each)
- 6 mm M6 thread forming screws (2 each)
- M6 lock washers (4 each)
- M6 nuts (2 each)

Locating the earth (ground) connection points on the rack side covers, doors, and frame

The locations of the earth (ground) connection points on the rack side covers, doors, and frame are shown in the following illustrations.

Side covers

The earth (ground) connection points on each rack side cover are in the bottom left and right corners and are identified by the international earth (ground) symbol.

On each side cover, use the connection point that is closest to the rear of the rack.

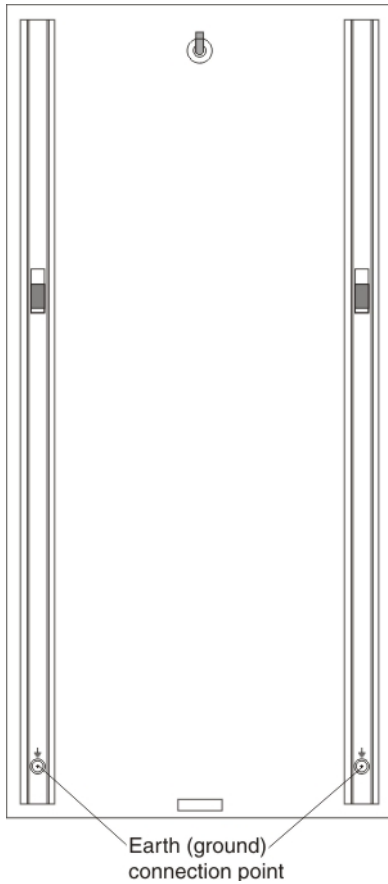


Figure 1. Earth (ground) connection points on rack side cover

Front and rear doors

The earth (ground) connection points on the front and rear doors are in each of the hinge-side corners of the doors and are identified by the international earth (ground) symbol.

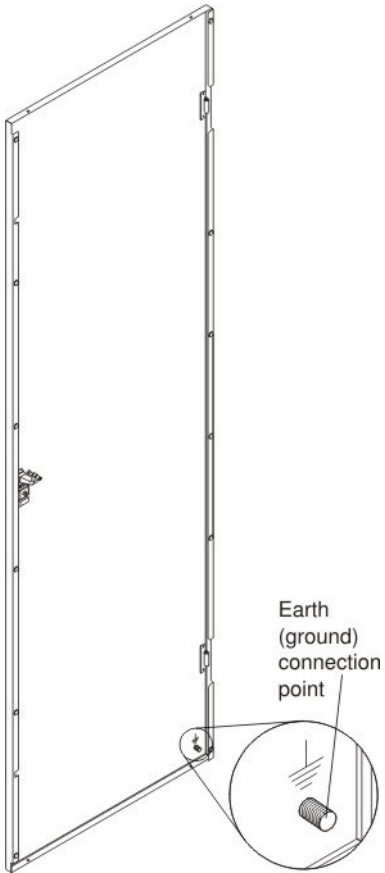


Figure 2. Earth (ground) connection point on the rack door (front or rear)

Rack frame

The available connection points on the rack frame are two openings on the bottom left and right rear of the frame and the bottom two openings on the bottom left and right front of the frame. These connection points are identified by the international earth (ground) symbol.

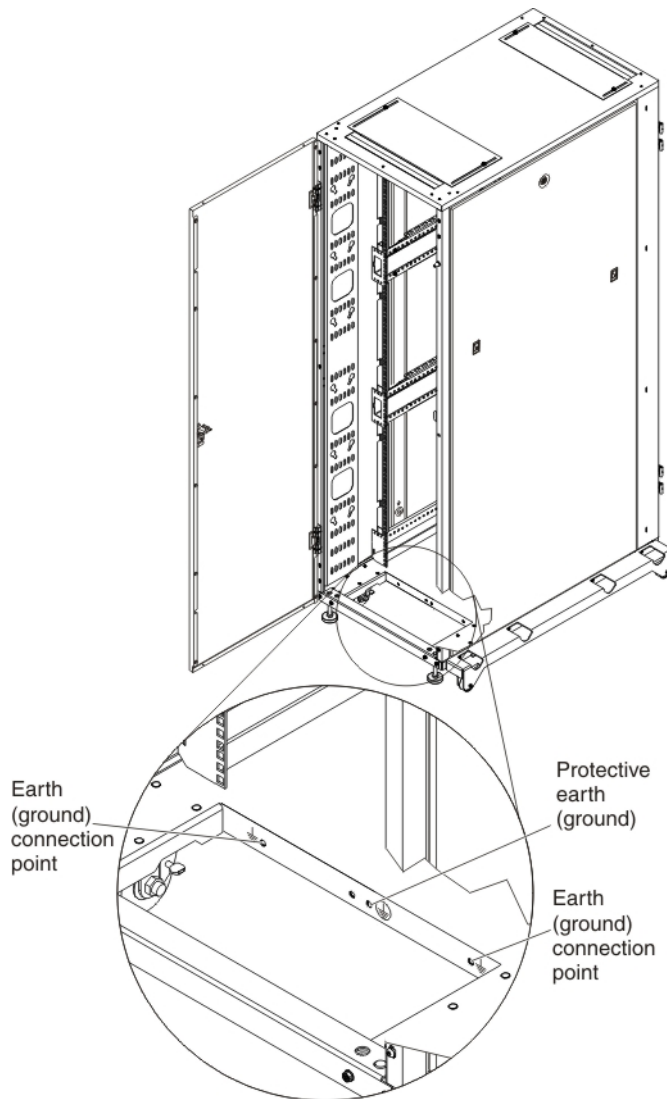


Figure 3. Earth (ground) connection points on the rack frame

Preparing the copper wire

To prepare the four pieces of copper wire, complete the following steps:

1. Cut four 12-inch-long (30 cm) pieces of 8 AWG copper wire with either solid green or green-yellow insulation.
2. Strip approximately 0.5 inch (1.25 cm) of insulation from both ends of each of the four wire pieces.
3. Secure a ring-type connector to each end of the four pieces of wire according to the instructions that come with the connectors.

Earth (ground) bonding the side covers to the rack frame

To earth (ground) bond the side covers to the rack frame, complete the following steps.

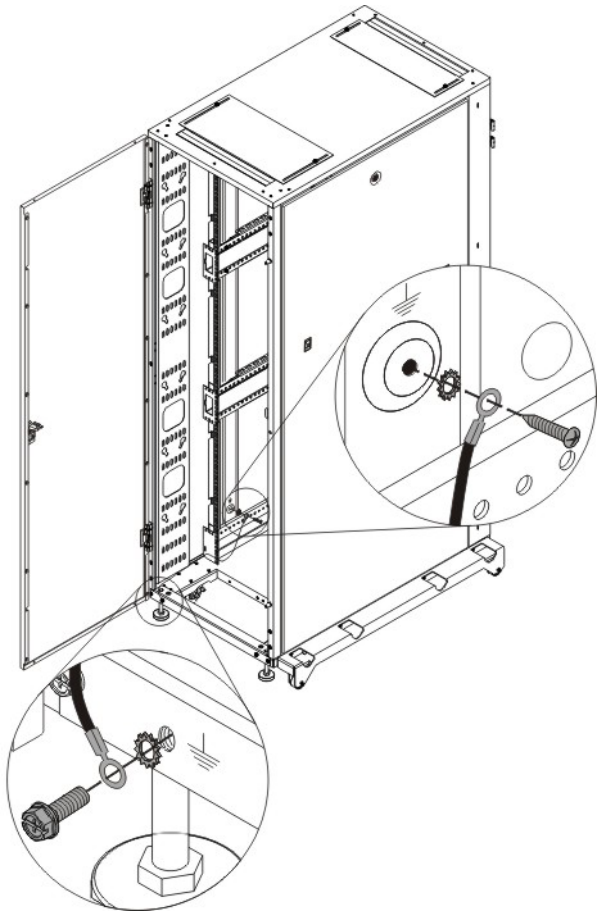


Figure 4. Earth (ground) bonding a side cover to the rack frame

1. On the rack side cover, locate the earth (ground) connection point that is closest to the rear of the rack (see “Locating the earth (ground) connection points on the rack side covers, doors, and frame” on page 5).
2. Place one of the connector ring ends of a 12-inch wire piece on an M6 thread-forming screw.
3. Place an M6 lock washer on the screw (next to the connector ring), making sure that the teeth face away from the screw head.
4. Align the thread-forming screw with the small hole on the bottom inside of the side cover, just below the earth (ground) symbol.
5. Use a screwdriver to tighten the screw into the connection point on the side cover so that the lock washer teeth break through the paint on the side cover.
6. On the rack rear frame, select the earth (ground) connection point screw hole that is closest to the side cover. (For more information, see “Locating the earth (ground) connection points on the rack side covers, doors, and frame” on page 5.)
7. Place the other connector ring end on an M6 screw; then, place an M6 lock washer on the screw (next to the connector ring), making sure that the teeth face away from the screw head.
8. Use a screwdriver to tighten the screw into the connection point on the rack frame so that the lock washer teeth break through the paint.
9. Repeat steps 1 to 8 to earth (ground) bond the other side cover.

Earth bonding the front and rear doors to the rack frame

To earth (ground) bond the rack front and rear doors to the rack frame, complete the following steps.

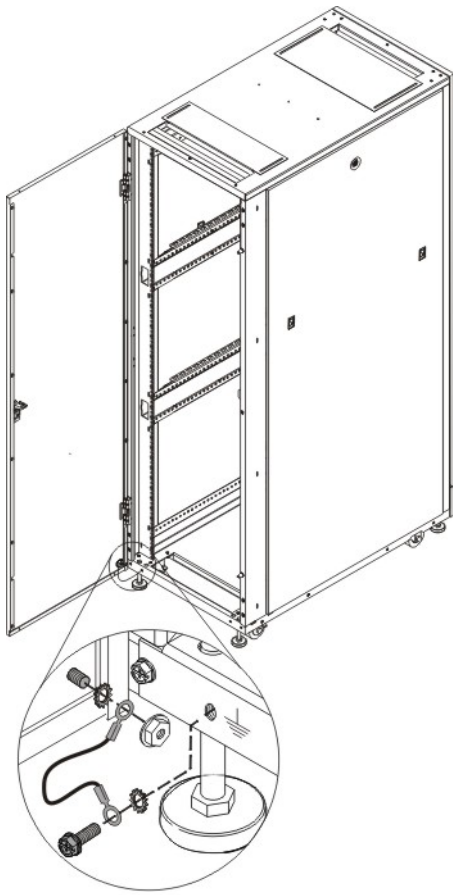


Figure 5. Earth (ground) bonding the front door to the rack frame

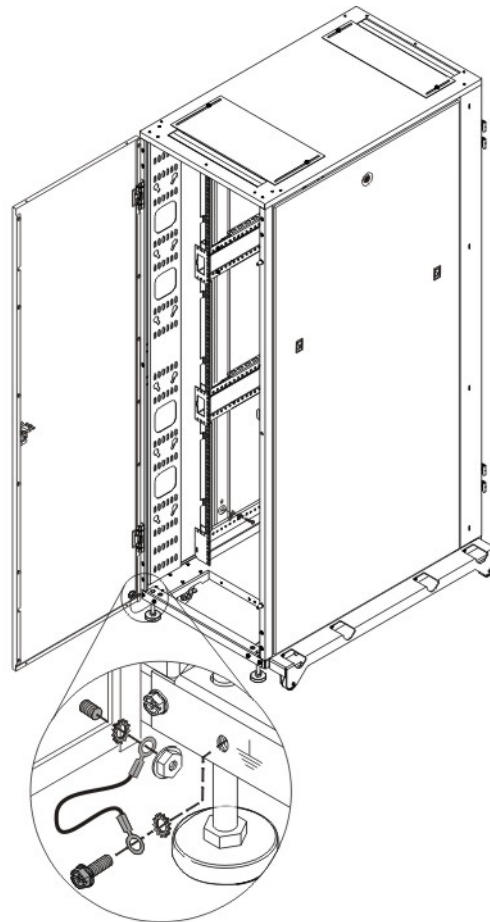


Figure 6. Earth (ground) bonding the rear door to the rack frame

1. On the rack front door, locate the earth (ground) connection point, which is the M6 bolt that is already installed on the hinge side of the door on the inside (see “Locating the earth (ground) connection points on the rack side covers, doors, and frame” on page 5).
2. Make sure that there is an M6 lock washer on the bolt and that the teeth face the rack door.
3. Place one of the connector ring ends of a 12-inch wire piece on the bolt on the door, next to the lock washer.
4. Thread an M6 nut onto the bolt and tighten the nut so that the lock washer teeth break through the paint on the door.
5. On the rack front frame, select the earth (ground) connection point screw hole that is closest to the door hinge. (For more information, see “Locating the earth (ground) connection points on the rack side covers, doors, and frame” on page 5).
6. Place the other connector ring end on an M6 screw; then, place an M6 lock washer on the screw (next to the connector ring), making sure that the teeth face away from the screw head.
7. Use a screwdriver to tighten the screw into the connection point on the rack frame so that the lock washer teeth break through the paint.
8. Repeat steps 1 to 7 to earth (ground) bond the rack rear door.

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