

SGI® InfiniteStorage NAS 4050 and NAS 4550 Rack Installation Instructions

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SGI InfiniteStorage NAS4050 and NAS 4550 Rack Installation Instructions

This document guides a knowledgeable user through the unpacking, installation and basic setup of an SGI InfiniteStorage 39U rack enclosure. If your system is being unpacked and set up by SGI professional services personnel, set these instructions aside as a reference. For more information on SGI NAS hardware or software products used in the rack, refer to one of the following guides:

- *SGI Altix 450 System User's Guide* (P/N 007-4857-00x)
- *SGI InfiniteStorage NAS 4550 and NAS 4050 Quick Start Guide* (P/N 007-4900-00x)
- *SGI InfiniteStorage NAS Manager User's Guide* (P/N 007-4699-00x)
- *SGI InfiniteStorage 4000 RAID User's Guide* (P/N 007-4834-00x)
- *SGI InfiniteStorage 4500 RAID User's Guide* (P/N 007-4843-00x)
- *SGI InfiniteStorage Appliance Manager User's Guide* (P/N 007-4699-004 or later)

These and other SGI documents are available in PDF or other formats, and can be accessed and downloaded via internet from the SGI publications library.

<http://docs.sgi.com>

Various formats are available. This library contains the most recent and most comprehensive set of online books, release notes, man pages, and other information.

This document contains the following major topics:

- “Rack System Hardware Setup Safety Measures” on page 3
- “Preinstallation Activities” on page 4
- “Installing a Rack” on page 4
- “Unloading and Moving System Racks” on page 10
- “Removing a Short Rack from the Shipping Crate” on page 14
- “Unpacking and Installing the Tall Rack” on page 16
- “Positioning and Leveling Racks” on page 19
- “Contacting the SGI Customer Service Center” on page 20

Rack System Hardware Setup Safety Measures

Observe the following safety measures when you install the system:

- Use caution when you remove the system from the shipping crate. Failure to handle the system carefully can result in personal injury or property damage.



Caution: Ensure that the shipping crate is positioned close to its destination before you unpack the crate.

- Do not move the system while it is connected to power.



Warning: Keep fingers and conductive tools away from high-voltage areas. Failure to follow these precautions may result in serious injury or death. The high-voltage areas of the system are indicated with high-voltage warning labels.

- Ensure that a qualified electrician has properly installed the power receptacles.
- Set all PDU circuit breakers to the OFF (O) position before you plug in the system power cord.



Warning: Use the following guidelines to prevent the rack from toppling over. Otherwise, people could be seriously injured and/or equipment could be damaged.

- Follow these guidelines to prevent a rack from toppling over:
 - Install all equipment in the lowest available position in the rack.
 - Use optional seismic tiedowns where appropriate.
 - Always site the unit on a level surface.

Installing a Rack

This section describes how to unpack and install a rack that already has your system components rackmounted and cabled together. The following information is provided:

- “Preinstallation Activities” on page 4
- “Unloading and Moving System Racks” on page 10
- “Removing a Short Rack from the Shipping Crate” on page 14
- “Unpacking and Installing the Tall Rack” on page 16
- “Positioning and Leveling Racks” on page 19

After you have completed installing your rack, refer to your system user’s guide to continue your installation.

Preinstallation Activities

Perform the following preinstallation activities:

- Perform site verifications (see “Site Plan Verification” on page 4)
- Gather appropriate tools to complete the installation (see “Tools Required” on page 5)
- Ensure that the correct power receptacle is installed and properly wired (see “Power Receptacle Verification” on page 6)

Note: You can perform the preinstallation activities days or weeks before you receive your system.

Site Plan Verification

Ensure that all site requirements are met before your system arrives. If you have questions about the site requirements or you would like to order full-size floor templates for your site, contact a site planning representative by e-mail (site@sgi.com).

Tools Required

Table 1-1 lists the tools that you need to complete the installation.

Table 1-1 Installation Tools

| Tool | Part Number | Purpose |
|-------------------------------------|--------------------|---|
| 13-mm wrench | 7260744 | Adjust the leveling pads. |
| 13-mm socket (3/8-in. drive) | 7260726 | Remove bracket bolts from tall rack shipping crate. |
| 19-mm socket (3/8-in. drive) | 9470618 | Remove bolts from short rack shipping crate. |
| Extension, 6-in. (3/8-in. drive) | 7260655 | Used with ratchet and sockets. |
| Ratchet, reversible (3/8-in. drive) | 7260755 | Used with extension and sockets. |
| Level, 9-in. | 9470556 | Level the rack. |

Power Receptacle Verification

Ensure that a qualified technician installs the correct power receptacles. Your SGI NAS system uses one or two single-phase power receptacles. For North American sites, the single-phase receptacle is a 30-amp, 200- to 240-volt receptacle that has two phase sockets and one ground socket. For international sites, the single-phase receptacle is a 32-amp, 200-volt receptacle that has one phase socket, one neutral socket, and one ground socket. Note that the ground pin is slightly longer than the other two pins on the North American plug.

For North American sites, follow these steps to ensure that a single-phase power receptacle is properly wired:

1. Set the voltmeter to a high AC voltage range.
2. Check the voltage between socket X and socket Y (see Figure 1-1). The meter should read between 200 and 240 VAC.
3. Check the voltage between socket X and the ground socket. The meter should read approximately 120 VAC.
4. Check the voltage between socket Y and the ground socket. The meter should read approximately 120 VAC.
5. Check the voltage between the ground socket and an earth-ground location. The meter should read 0 VAC.
6. Change the voltmeter to a low-resistance setting.
7. Measure between the ground socket and an appropriate earth-ground location and ensure that resistance is less than 1 ohm.
8. Repeat steps 1 through 7 for any additional single-phase power receptacles.



Caution: If a voltage reading is incorrect, or if the resistance measured in step 7 is more than 1 ohm, contact a site-approved electrician. Do not proceed with the installation.

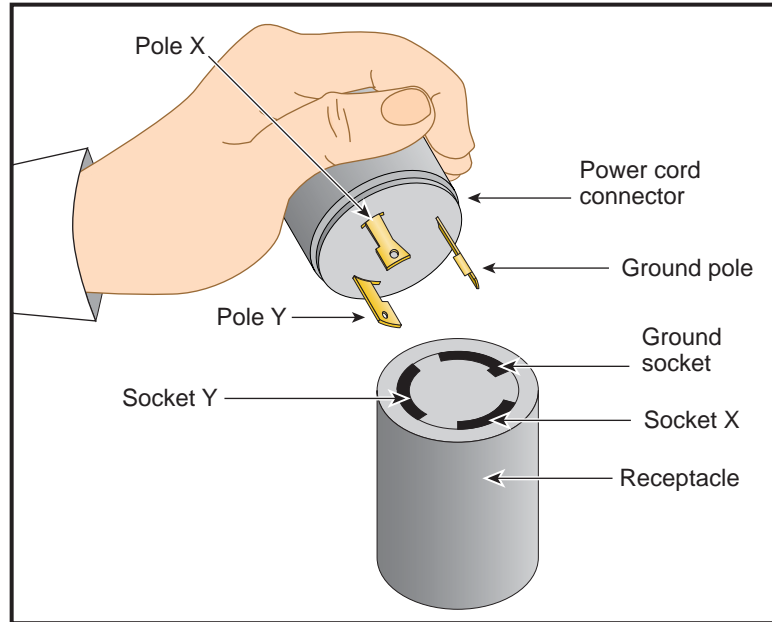


Figure 1-1 30-amp Single-phase Power Receptacle for North American Sites

For international sites, follow these steps to ensure that a single-phase power receptacle is properly wired:

1. Set the voltmeter to a high AC voltage range.
2. Check the voltage between socket 1 and socket 2 (see Figure 1-2). The meter should read between 200 and 240 VAC.
3. Check the voltage between socket 1 (line) and the ground socket. The meter should read between 200 and 240 VAC.

Note: The ground pin is slightly larger in diameter than the other two pins.

4. Check the voltage between socket 2 (neutral) and the ground socket. The meter should read approximately 0 VAC.
5. Check the voltage between the ground socket and an earth-ground location. The meter should read 0 VAC.
6. Change the voltmeter to a low-resistance setting.
7. Measure between the ground socket and an appropriate earth-ground location and ensure that resistance is less than 1 ohm.
8. Repeat steps 1 through 7 for any additional single-phase power receptacles.



Caution: If a voltage reading is incorrect, or if the resistance measured in step 7 is more than 1 ohm, contact a site-approved electrician. Do not proceed with the installation.

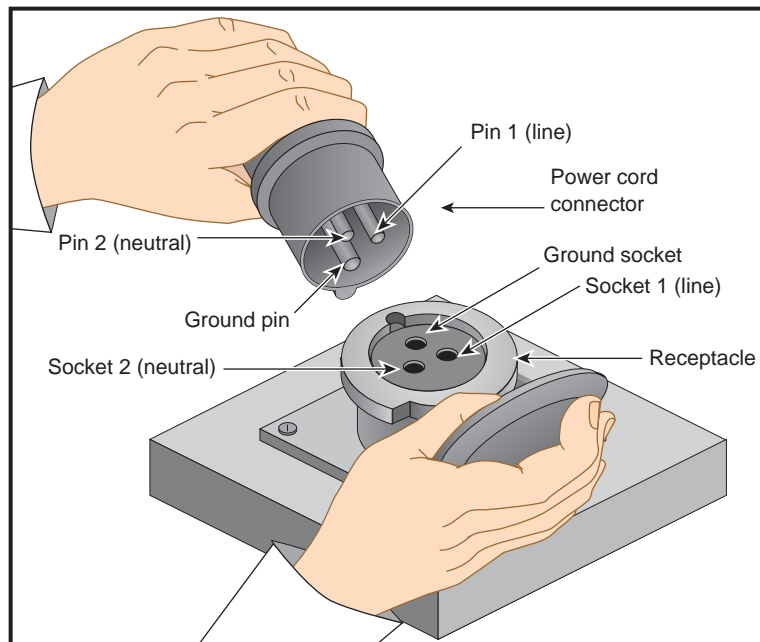


Figure 1-2 32-amp Single-phase Power Plug for International Sites

Unloading and Moving System Racks

Your NAS system arrives at the site in a pallet-mounted cardboard shipping crate.

For a short rack system, the documentation carton and the accessories carton are packed with the system. The documentation carton may contain system manuals, optional CDs, warranty and licensing information. The accessories carton may contain the I/O, peripheral, and system cables, and any additional connectors or tools that are required for a specific configuration. Optional storage or monitors are shipped in a separate carton.

For a tall rack system, any documentation, CDs, accessories and other optional hardware arrive in separate cartons.

This section describes how to unload and transport the rack system to its designated location, as follows:

- “Unloading the Equipment from the Truck” on page 10
- “Inspecting the Shipping Crate” on page 13
- “Transporting the Shipping Crate” on page 13

Unloading the Equipment from the Truck

If your loading dock is the same height as the transportation vehicle, use a pallet jack to unload the system from the transportation vehicle. The pallet jack should have 48-in. tines or forks. Follow any instructions that are printed on the packing crates.

If the loading dock is not the same height as the vehicle, you must provide a forklift or another approved method to unload the system. You can use a platform or ramp to obtain the desired level as long as the ramp incline does not exceed a ratio of one unit vertical to six units horizontal. For more information on site requirements, contact SGI site planning by e-mail (site@sgi.com).



Warning: Use two or more people to prevent computer equipment from rolling off the transportation vehicle. Failure to do so could result in serious damage to the computer equipment.

If your site does not have a loading dock, arrange for a forklift to unload the system from the transportation vehicle. Ensure that two or three people are available to help unload the equipment. Move all crates slowly and carefully.

Figure 1-3 shows the lift openings and dimensions of a tall rack shipping crate. This figure also shows where to position the pallet jack.

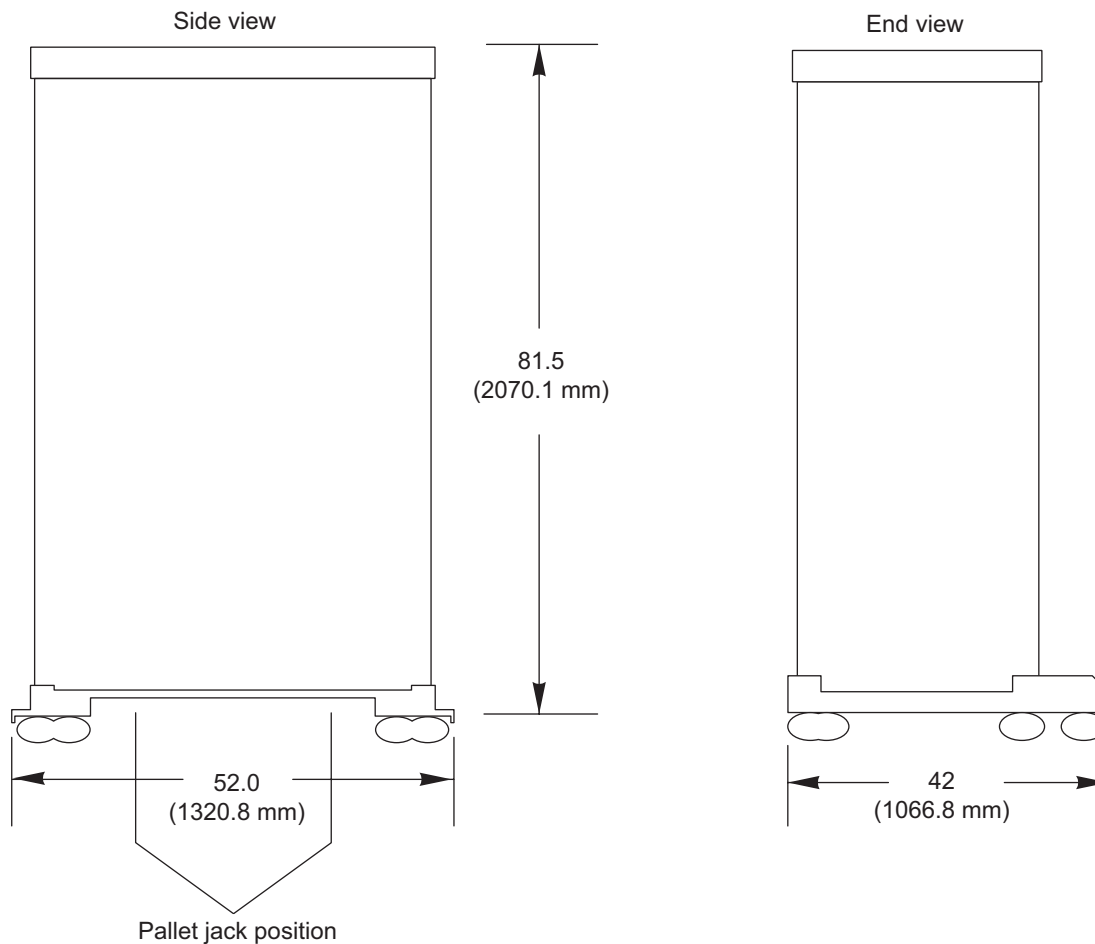


Figure 1-3 Dimensions of Tall Rack Shipping Crate

Figure 1-4 shows the lift openings and dimensions of a short rack shipping crate. This figure also shows where to position the pallet jack.

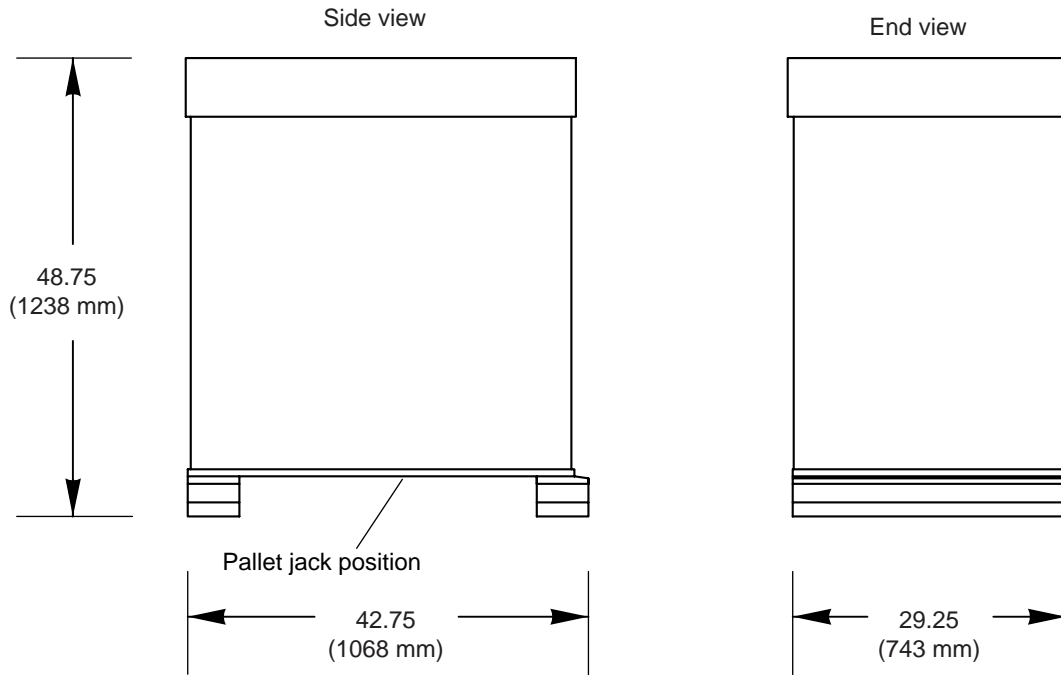


Figure 1-4 Dimensions of Short Rack Shipping Crate

Inspecting the Shipping Crate

After the system is unloaded from the truck, follow these steps before you unpack it:

1. Ensure that the crates and cartons arrive unopened.
2. Inspect the shipping crate for signs of external damage such as dents, holes, crushed corners, and water marks.
3. Ensure that the tilt watch has not been tripped.
4. If the crate is damaged, file a damage claim with the carrier immediately. In addition, notify your local Customer Support Center (CSC) for any missing, incorrect, or damaged items. For CSC contact information, see <http://www.sgi.com/support/supportcenters.html>.

Transporting the Shipping Crate

Use a pallet jack with forks that are 48 in. (122 cm) long or longer to transport the shipping crate to the designated location. See Figure 1-3 and Figure 1-4 for the crate dimensions and location to position the pallet jack.

If the crate does not fit through all access doors, you may need to partially disassemble the crate.



Caution: If the system shipping or storage environment is significantly colder than the environment in which it will be installed [40 °F (22 °C) or greater disparity], leave the rack in its shipping crate for at least 24 hours at room temperature before you start the installation. This acclimation prevents damage to the equipment that could result from thermal shock and condensation.

Removing a Short Rack from the Shipping Crate



Warning: Be careful when you unpack and move the short rack system. Use a pallet jack to move the rack to the unpacking site. Ensure that the rack remains on a level surface and that the rack weight remains evenly distributed across the four casters. If you must lift the casters over an obstacle, such as a door threshold, use proper lifting techniques and employ a minimum of two people.



Caution: Do not subject the rack to any unnecessary shocks or vibration while you unpack and install the system.

See Figure 1-5 as you follow these steps; the numbered illustrations correspond to the numbered steps.

1. Ensure that the temperature of the rack is acclimated to the environment in which you are installing it and move the crate to the installation location.
2. Remove all external banding and lift the crate's ramp away from the unit.
3. Remove the cardboard carton top and packing/insulation materials.
4. Prepare to move the rack off the crate using the following steps:
 - a. Remove the two bolts that hold the pallet's rear retention bracket in place.
 - b. Remove the two bolts that hold the rear "gate" of the pallet in place.
 - c. Remove the two bolts that hold the pallet's front retention bracket in place.
5. Align the holes in the edge of the ramp with the holes at the rear of the crate and secure the ramp in place using the two bolts removed from the pallet's rear gate.
6. Using two people, carefully pull the rack off the crate and roll it down the ramp.



Warning: The maximum weight of the short rack is approximately 750 lbs (340 kg). Use caution when you roll the rack down the ramp.

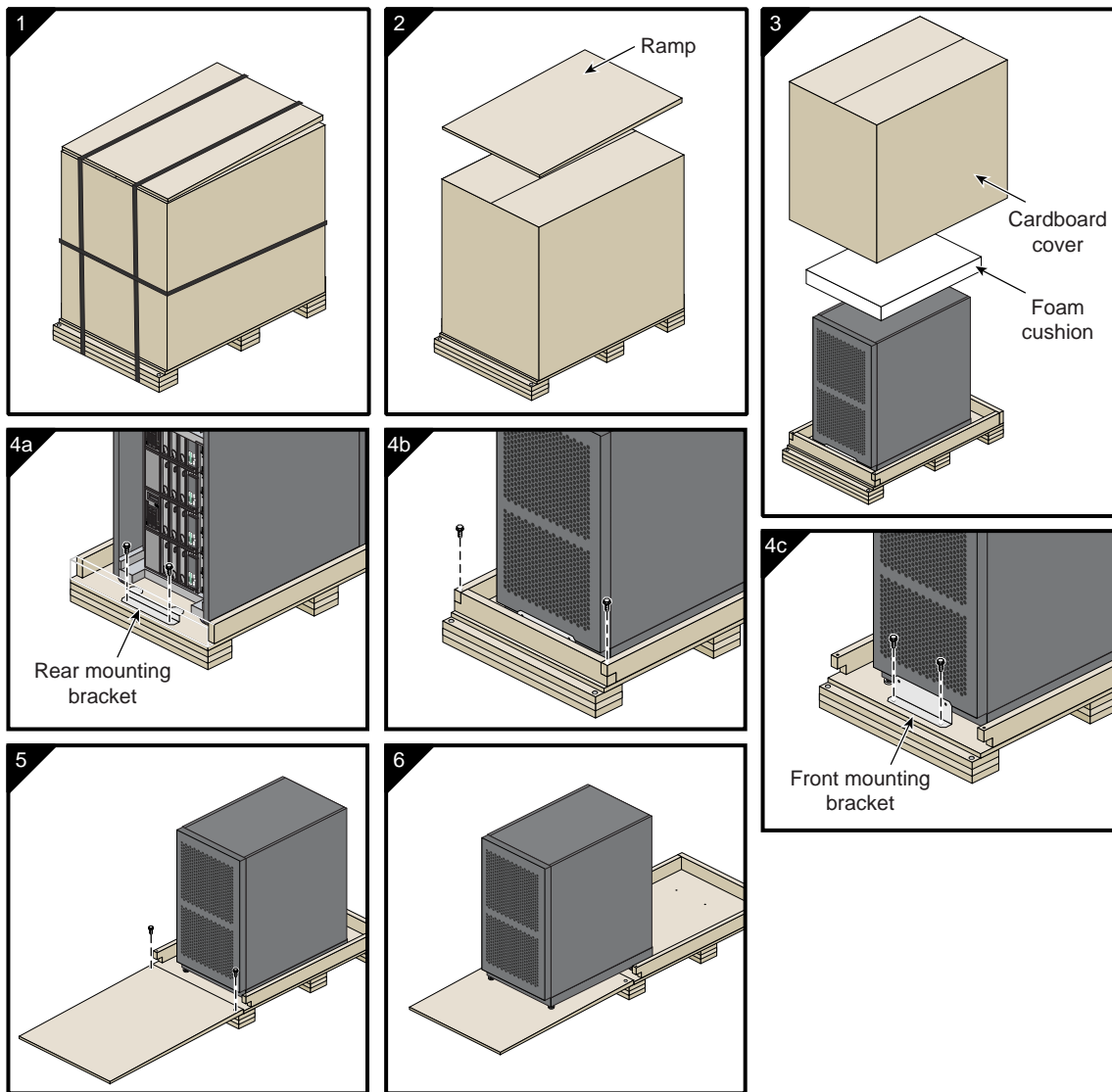


Figure 1-5 Removing a Short Rack from the Shipping Crate

Unpacking and Installing the Tall Rack



Warning: In its maximum configuration, a (42U) tall rack system can weigh up to approximately 1,450 lbs (658 kg). Use caution when you unpack and move this rack. A pallet jack is needed to move the rack prior to unpacking. Ensure that the rack remains on a level surface and that the rack weight remains evenly distributed across the four casters.

To unpack a tall rack, you will need the following tools:

- Extension, 6-inch (15.3 cm), 3/8-in. (13mm) drive
- 13-mm standard 3/8-in. drive socket
- Ratchet, reversible, 3/8-in. (13mm) drive

See Figure 1-6 as you follow these steps; the numbered illustrations correspond to the numbered steps. Ensure that the temperature of the rack is acclimated to the installation environment and that the system crate is stable, and in an upright position.

1. Use a sharp cutting tool to remove the bands that secure the cardboard crate, then remove the outer packing materials.
2. Remove the cover bag and bungee cushion from the rack.
3. Locate and remove the 8 bolts that secure the wooden frame pieces to the base.
4. The rack's front door must be removed before you can remove the rack's shipping runners.
5. Remove and discard the foam plugs from either end of the rack's base. At this time you will need to place a pallet jack under the rack and lift it until the shipping runners are clear of the floor.
6. Undo and remove the two bolts on the shipping runners at either end of the rack and set the runners aside.
7. Use the pallet jack to lower the rack to the floor and use at least two people to roll the rack to the installation site.



Warning: Personal injury and system damage could result if the rack becomes unbalanced or gains too much momentum when rolled.

Reattach the door to the front before you move the rack to its designated location (see Figure 1-7 on page 18).

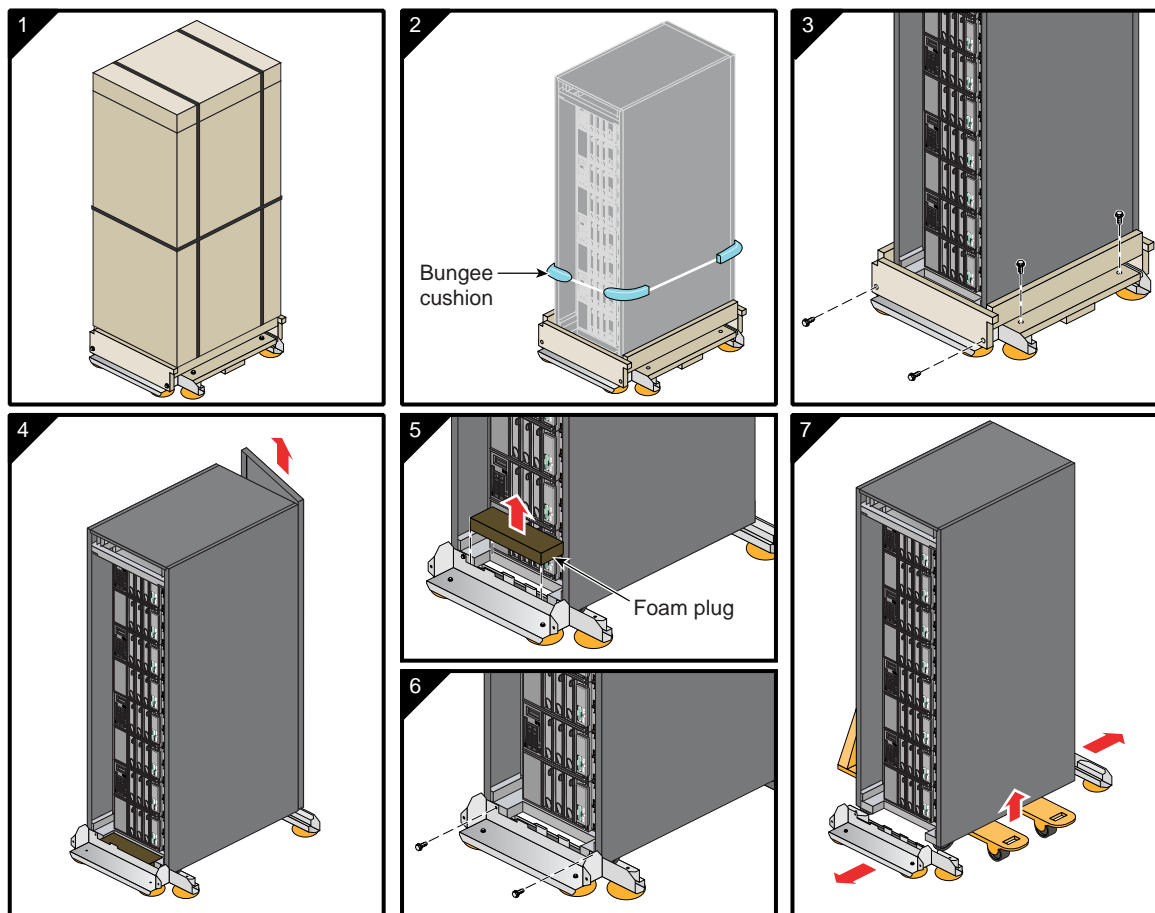


Figure 1-6 Removing a Tall Rack from the Shipping Crate

Installing “Kick” Panels

Every tall rack system requires installation of two “kick” panels - one on each side of a rack or row of racks. A row of racks might contain from 1 to 16 racks. The kick panels are wrapped in foam and shipped in the rear of the rack in which they are used. The kick panels are installed directly below the side panel of the rack. To install a kick panel use the following steps:

1. Align the sides of the kick panel with the side panel at the rack's bottom side.
2. Insert the tabs of the kick panel under the side panel and lift into position. There is a tab in the center of the kick panel that is inserted into a slot on the frame.
3. Press the kick panel against the side of the rack. The kick panel is held in place with hook and loop fasteners and the frame tab keeps it from moving downward.

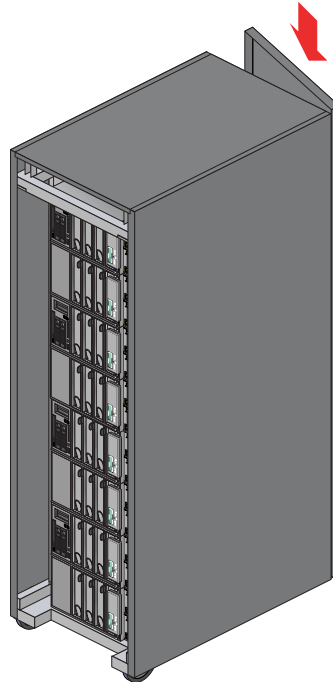


Figure 1-7 Reattaching the Tall Rack Door

Positioning and Leveling Racks



Caution: To avoid ESD damage to the electronic components, be sure to position the racks before you remove the ESD bags that cover the rack assemblies.

To position and level your system racks, follow these steps:

1. Grasp the rear of each rack and roll the rack to its designated location.
2. Remove the ESD bags.
3. Adjust the leveling bolts of a rack, as shown in Figure 1-8, until the rack is level.

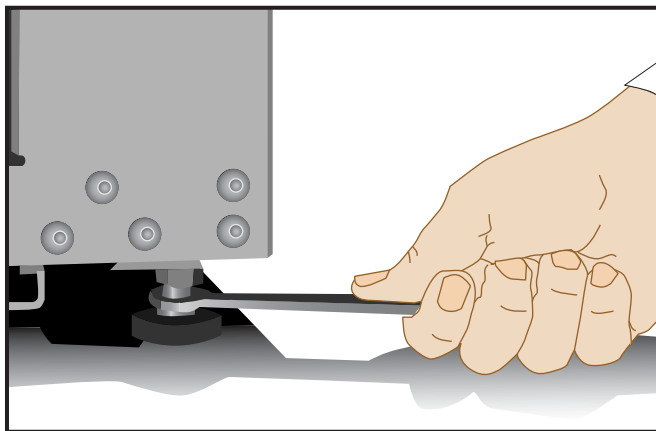
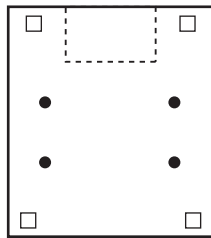


Figure 1-8 Leveling Bolts

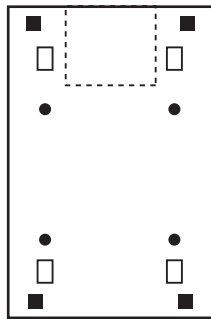
4. If you are installing additional racks, repeat until all of the racks are level.
5. Ensure that the circuit breakers on the power distribution units are in the OFF (○) position. Then connect the power cords to grounded power outlets. Plugging in the power cords grounds the racks.
6. It is recommended you secure all racks with optional seismic tie-downs if you are installing the system in an earthquake zone.

Note: Tall and short racks have four threaded holes that are located at the bottom of the rack (see Figure 1-9). Use these holes to secure the seismic tie-downs. Note that SGI does not supply the seismic tie-downs.

Top view of short rack



Top view of tall rack



- Seismic tie-down attachment points
- Casters
- Leveling pads

Figure 1-9 Seismic Tie-down Attachment Points

Contacting the SGI Customer Service Center

To contact the SGI Customer Service Center, call 1-800-800-4SGI, or visit <http://www.sgi.com/support/customerservice.html>.

From outside the United States contact your local SGI sales office.