

Sun™ Ultra™ 30/60/80 Systems Rackmount Installation Guide



THE NETWORK IS THE COMPUTER™

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Sun Ultra 30/60/80 Systems Rackmount Installation Guide

This document describes how to install a Sun™ Ultra™ 30, Ultra 60, or Ultra 80 workstation (the *system*) into a rack configuration using the optionally purchased rackmounting kit.

Preparing the Site

Prior to rackmounting the system, ensure you have adequate power, ventilation, and environmental controls to support your rackmounted system. This includes rack spacing that allows for front-to-back air flow for cooling your system. See TABLE 1.

TABLE 1 Site Rack Requirements

Feature	Requirement
Floor	Before installing the system cabinet ensure that the planned area floor is level.
Ventilation	To prevent overheating, openings in the rack must not be blocked or covered. Do not place the rack near a radiator or heating register.
Power	Operate the rack from the type of power source indicated on the electrical rating label provided on the rack. The rack power cords must each be connected to dedicated branch circuits of the proper current capacity.

The rackmounting kit is designed so that you can install it in a Sun system cabinet or other similar industry-standard rack that meets the requirements listed in TABLE 2. You need one Sun rackmounting kit for each system that you wish to install (mount) in a rack.

TABLE 2 Rack Requirements

Feature	Requirement
Load bearing capacity	The rack must firmly support the weight of up to five Ultra 80 systems (at 66 lbs, 30 kg each) or six Ultra 30/60 systems (at 45 lbs, 20 kg each), plus the weight of each associated rackmounting kit.
Vertical space requirements	Each Ultra 80 system requires seven rack units (12.3 inches, 31.1 cm) and each Ultra 30/60 system requires six rack units (10.6 inches, 26.9 cm) of vertical space for rack installation. (A 72-inch [183 cm] cabinet can accommodate up to five Ultra 80 or six Ultra 30/60 systems.)
Vertical mounting rail	<p>The rack must have two pairs of vertical mounting rails (one pair in front, one in back) that conform to the EIA (RETMA) standard for mounting hole spacing.</p> <p>Left-side-to-right-side rail spacing (mounting hole center to mounting hole center) for front and rear rails must be 18.3 inches (46.5 cm).</p> <p>Front-to-rear rail spacing must be at least 28 inches (71.1 cm) and not more than 34 inches (86.3 cm) from the outside face of the front rail to the outside face of the rear rail.</p> <p>Front and rear vertical rail mounting faces must be parallel with each other and with the front plane of the rack.</p>
EMI	Electromagnetic interference (EMI) shielding requirements are met by the system chassis and metal side panels, which remain in place when the unit is rackmounted.
Anti-tip protection	The rack must be bolted securely to the floor or equipped with a sturdy and extendable anti-tip leg. You must prevent the cabinet from tipping forward when one or more systems and other devices are fully extended out the front of the rack.
Minimum service access	An area not less than 3 feet (1 meter) deep and 6 feet (2 meters) wide must be available in front of the rack for installation and service access.
Fire containment	The rack enclosure must meet Underwriters Laboratories, Inc. and TUV Rheinland of N.A. requirements for fire containment.

Preparing the Rackmounting Tray

You will need a No. 2 Phillips screwdriver to perform this installation.

1. Unpack your rackmounting kit (FIGURE 1).

Each item is a quantity of one, except the fasteners. There are 23 screw-type fasteners.

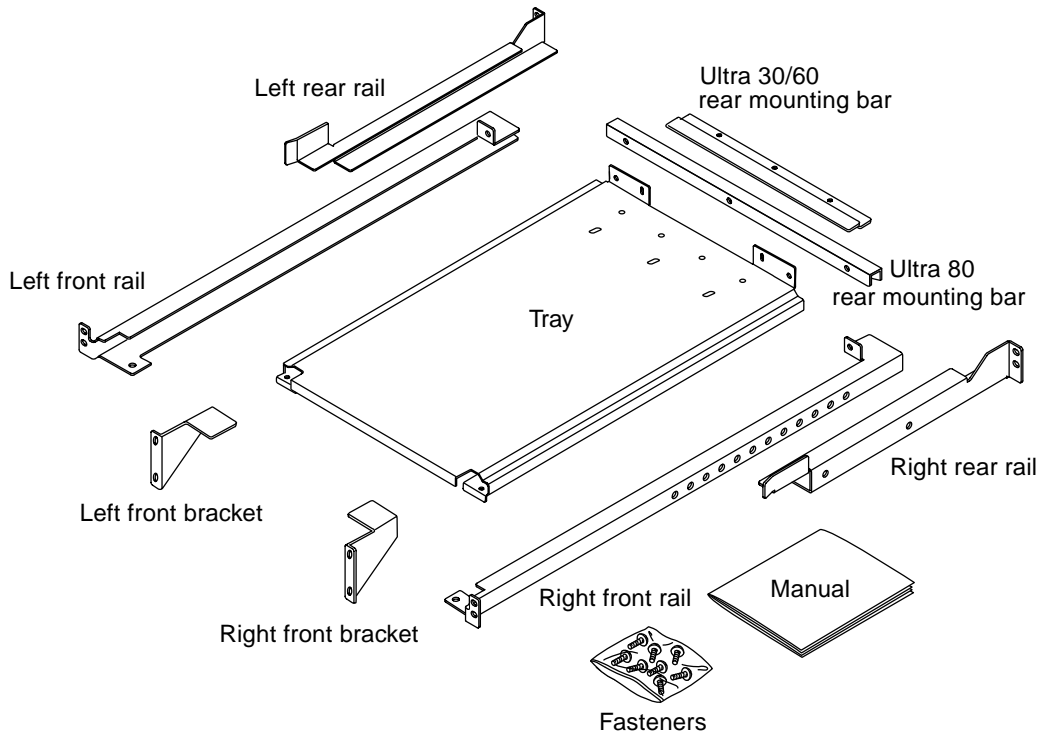


FIGURE 1 Rackmounting Kit Inventory

2. Clear a working space in the rack (FIGURE 2).

A rack-installed system requires clearance to allow for the rackmounting tray, the system, and air flow space. An Ultra 80 requires seven rackmount units (22 holes, 12.3 inches, 31.1 cm). An Ultra 30 or Ultra 60 requires six rackmount units (19 holes, 10.6 inches, 26.9 cm).

A typical rack 72 inch (183 cm) in height can support up to five Ultra 80 or six Ultra 30/60 rackmounted systems.

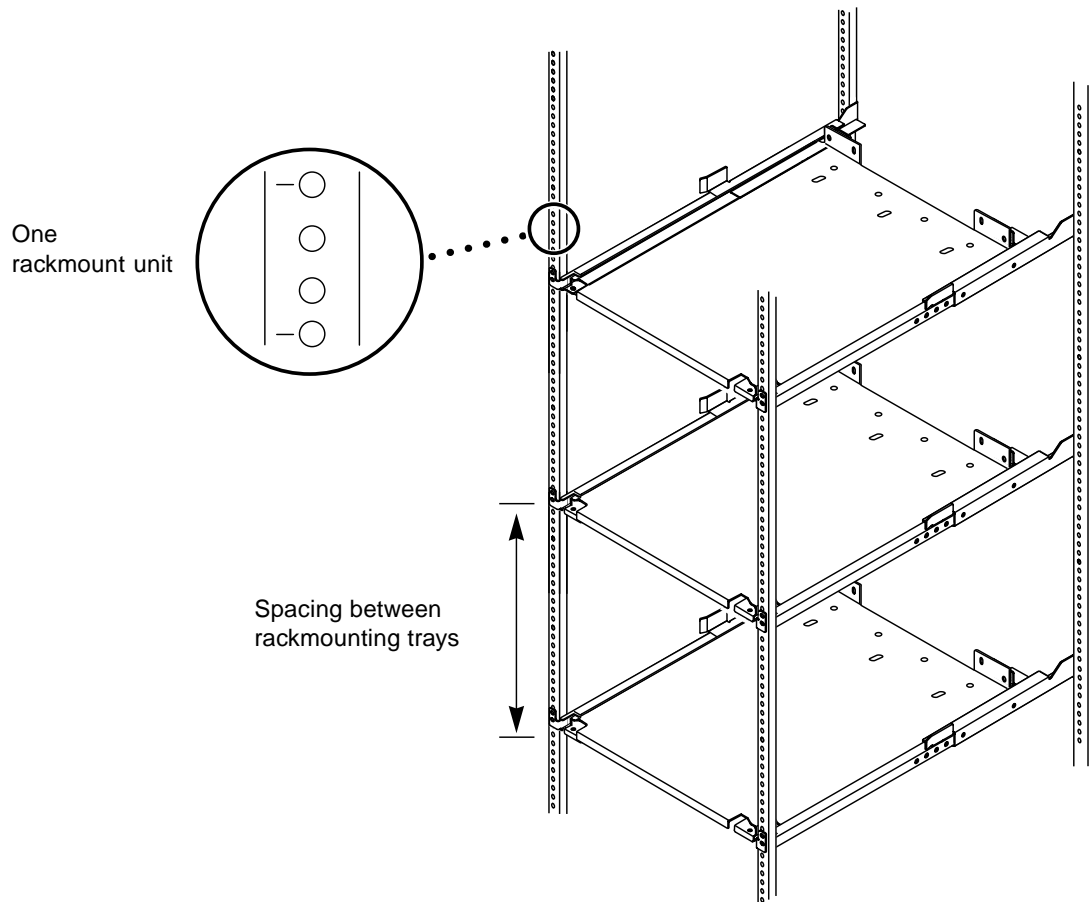


FIGURE 2 Mounting Rack

3. Unfasten the mounting rails (FIGURE 3).

The rails are fastened together for shipping purposes. Using a No. 2 Phillips screwdriver unfasten the screw holding the front and rear rail pieces together.

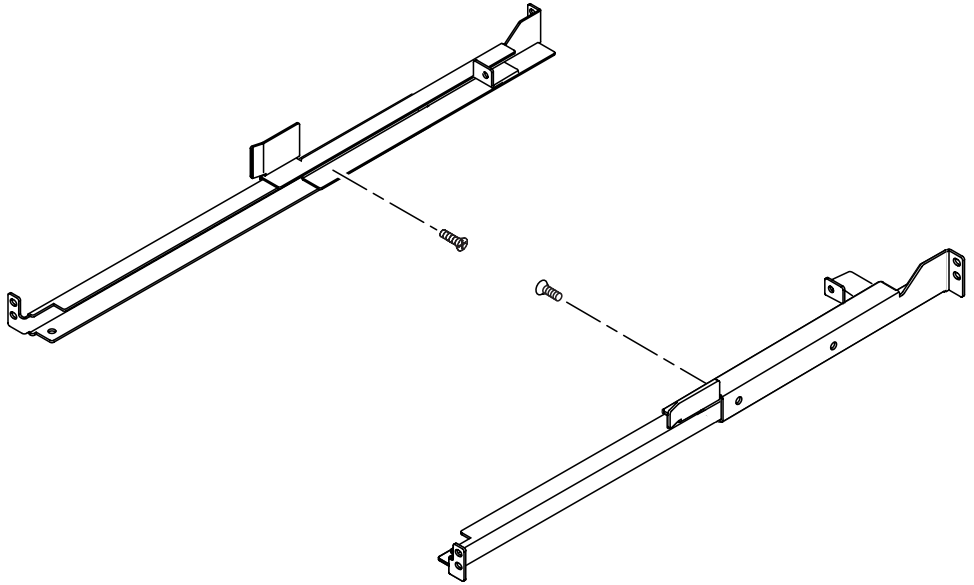


FIGURE 3 Unfastening Mounting Rails

4. Assemble the mounting rails (FIGURE 4).

- a. Estimate the length required to fit the left rail pair into the rack.
- b. Place the left rail pair into the rack. Slide the rails to adjust to the depth of the rack.
Place the bracket on the inside of the rack. Place the flanges on the outside edges of the rack rails.
- c. Using a No. 2 Phillips screwdriver and two of the provided screws, fasten the front and rear rail pieces together.
Feed the screw from the inside track of the rails, then tighten.
- d. Using the completed left rail pair as a template, measure the length required for the right rail pair, adjust and fasten with two of the provided screws.

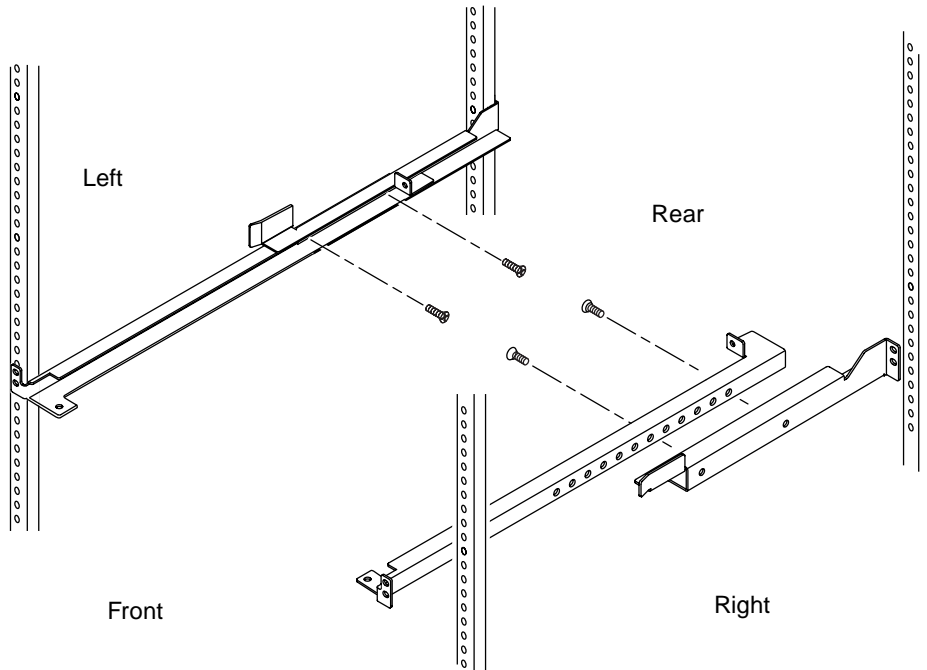


FIGURE 4 Assembling the Mounting Rails



Caution – If you are installing multiple systems, install the lower rackmounting kits (and systems) first, then work toward the top. This prevents the rack from being top-heavy and tipping.

5. Fasten the rails to the rack (FIGURE 5).

- a. Mark one rack hole on each rack column to ensure horizontal spacing for the rails and tray.**

Typical racks are numbered in increments of 5 rack holes. Use these markers to align your rails.

- b. Using four of the provided screws, fasten the left rail assembly to the left side of the rack.**
- c. Horizontally align the right side rail assembly with the left side rail.**
- d. Using four of the provided screws, fasten the right rail assembly to the right side of the rack.**

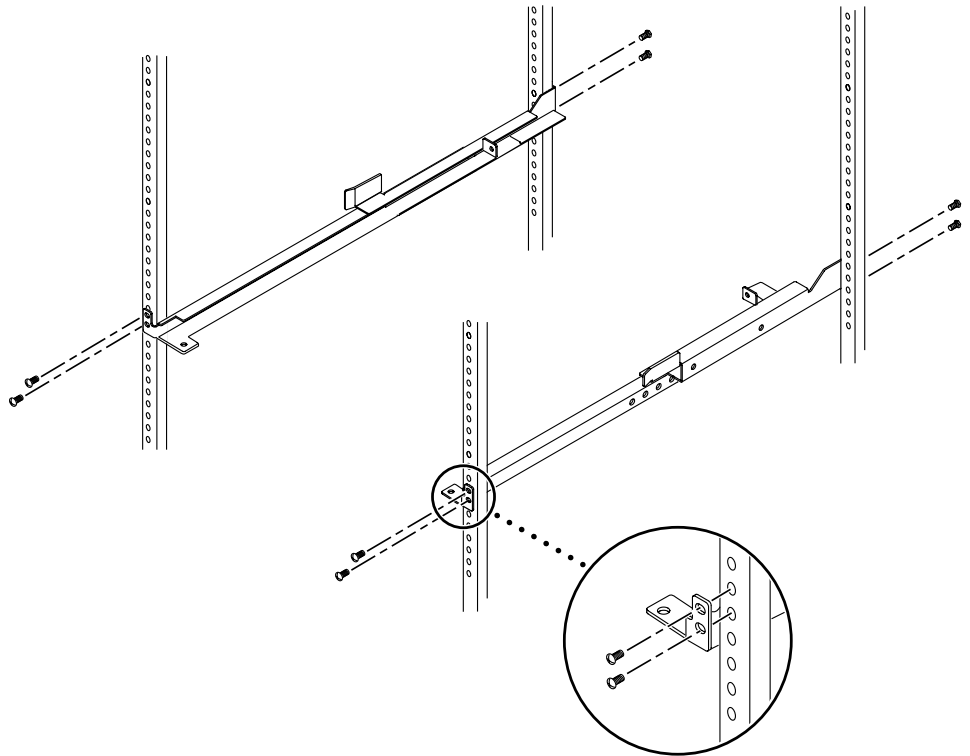


FIGURE 5 Installing Rails into the Rack

6. Slide the tray into the installed rails (FIGURE 6).

Gripping the tray from the front, insert and slide the tray along the inside of the rails until the front and rear flanges stop the tray (FIGURE 6).

The tray is a fixed length. The mounting rails extend beyond the tray.

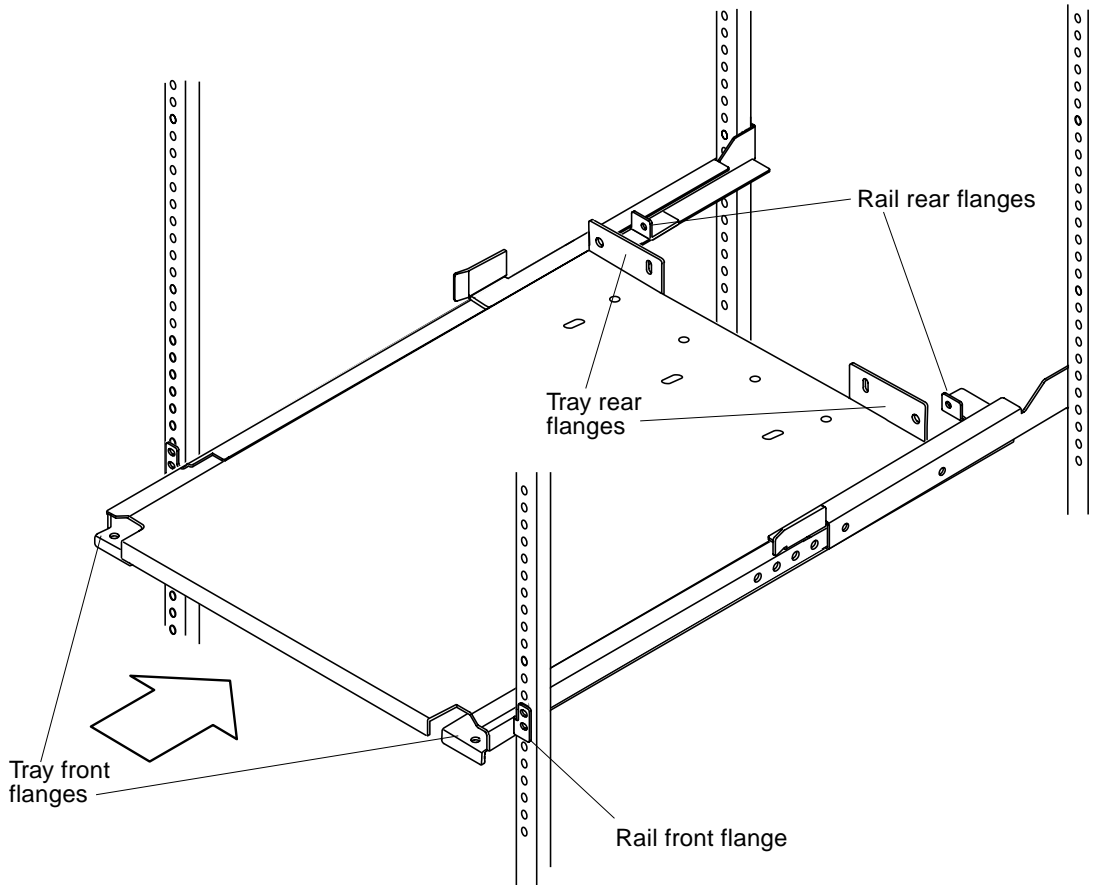


FIGURE 6 Assembling the Rackmounting Tray



Caution – Do not place the system on the tray before the tray is in place and fully secured. The rails are not designed to support the weight of a system on an extended tray. Do not use the tray as a “sliding shelf”.

7. Fasten the mounting tray to the mounting rails (FIGURE 7).

a. Using two of the provided screws, fasten the rear of the tray to the rails.

Feed the screws through the flanges from the rear side of the flange. This helps to align the fastening holes in the front flanges.

b. Using two of the provided screws, fasten the front of the tray to the rails.

The screws should be fed through the tray flange into the rail flange from the top.

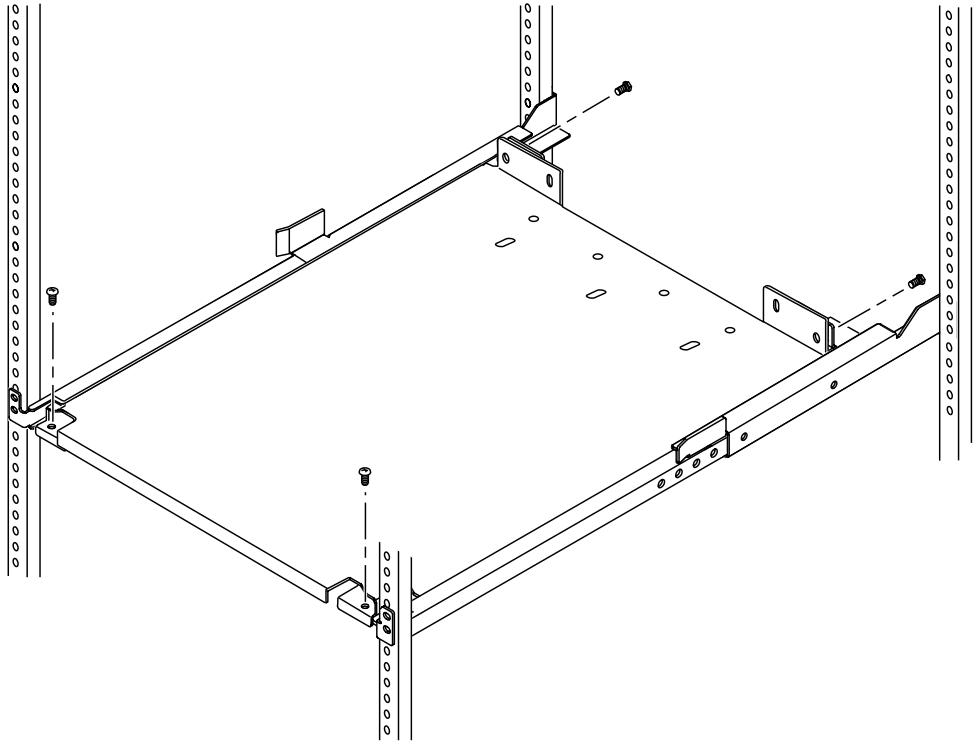


FIGURE 7 Fastening the Mounting Tray to the Mounting Rails

Preparing the Ultra 30/60 System

1. Unpack or disconnect your system (FIGURE 8).

Refer to your system documentation for specific directions on powering off and disconnecting your system. The power switch is the same for an Ultra 30 and an Ultra 60.

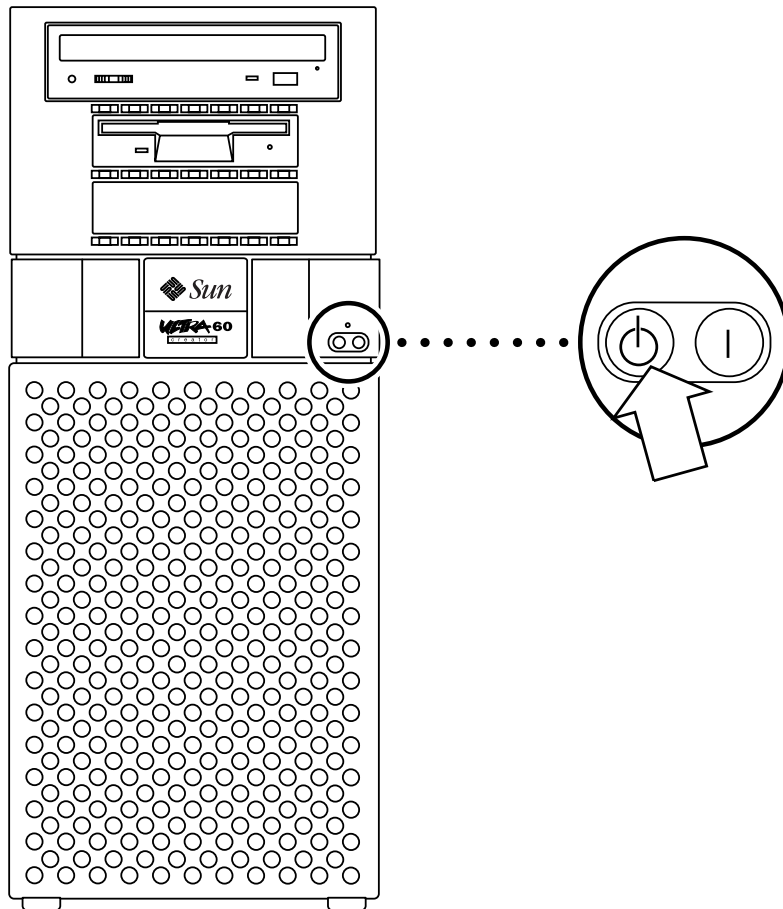


FIGURE 8 Power Switch on an Ultra 60 System

To power off the Ultra 30/60 system:



Caution – Prior to turning off the system power, exit from the operating system. Failure to do so may result in data loss.

- a. **Back up system files and data.**
- b. **Halt the system.**



Caution – Pressing the front panel power switch does not remove all power from the system; a trickle voltage remains in the power supply. To remove all power from the system, disconnect the AC power cord from the system.

- c. **Set the front panel power switch to the Off position (FIGURE 8).**
- d. **Verify the following:**
 - The front panel LED is off.
 - The system fans are not spinning.



Caution – When the power switch is in standby and the AC power cord remains connected to a power receptacle, AC voltage is present in the power supply primary.

- e. **Turn off the power to the monitor and any peripheral equipment.**
- f. **Disconnect the power cord.**
- g. **Disconnect cables to any peripheral equipment.**
- h. **Set aside all cabling and peripherals.**

2. Lay the system on its side (FIGURE 9).

Facing the front of the system, tip the unit to the right so the feet are to the left.

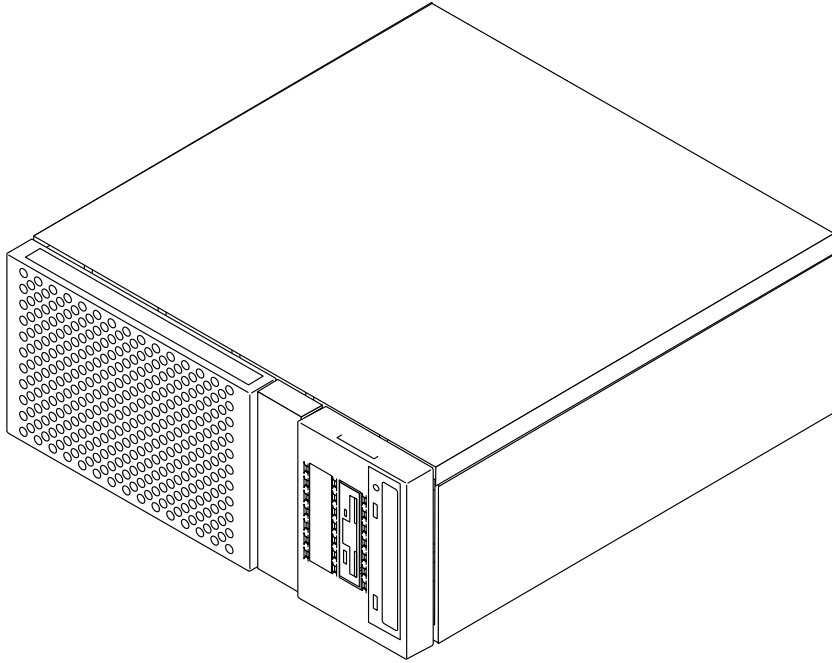


FIGURE 9 Ultra 30/60 System Placed Horizontally

3. Remove the system feet (FIGURE 10).

Using the No. 2 Phillips screwdriver, unfasten the screws attaching the feet to the system. Set the feet and screws aside.

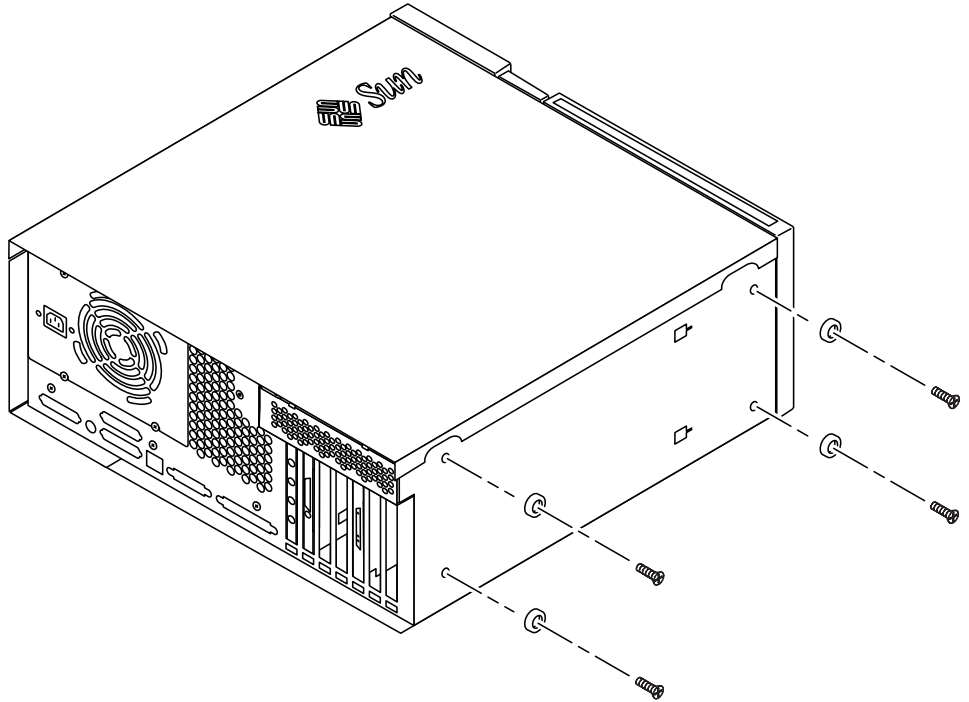


FIGURE 10 Removing the Ultra 30/60 System Feet

Installing the Ultra 30/60 System

1. If your rack has stabilizing bars, extend these prior to installing the system.

Refer to the documentation that accompanied your rack for directions on using stabilizing bars.



Caution – If you are installing multiple systems, install the lower units first, then work toward the top. This prevents the rack from being top-heavy and tipping.

Leave six rackmount units of space between each rackmounting tray.

2. Facing the front of the system and the front of the rack, place the system on the mounting tray.
3. Slide the system back until it is slightly behind the front of the rackmounting tray (FIGURE 11).

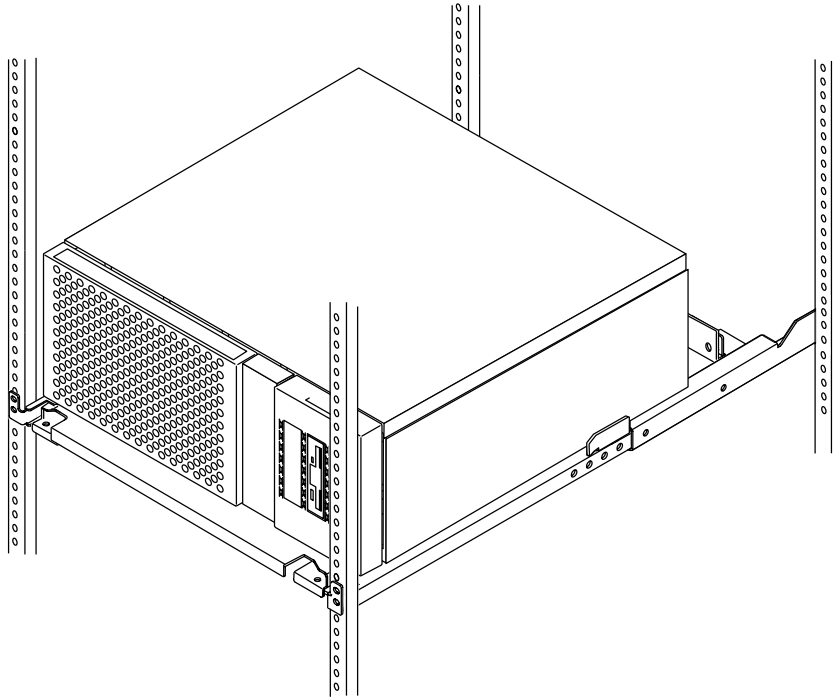


FIGURE 11 Placing the Ultra 30/60 System in the Rack

4. Slide the left front bracket onto the left side of the system until the bracket flanges meet the rack.

Place the bracket so it fits snugly above the system, while maintaining alignment with the rack rail holes.

5. Using two of the provided screws, fasten the left front bracket to the rack (FIGURE 12).

6. Slide the right front bracket onto the right side of the system until the bracket flanges meet the rack.

Place the bracket so it fits snugly above the system, while maintaining alignment with the rack rail holes.

7. Using two of the provided screws, fasten the right front bracket to the rack (FIGURE 12).

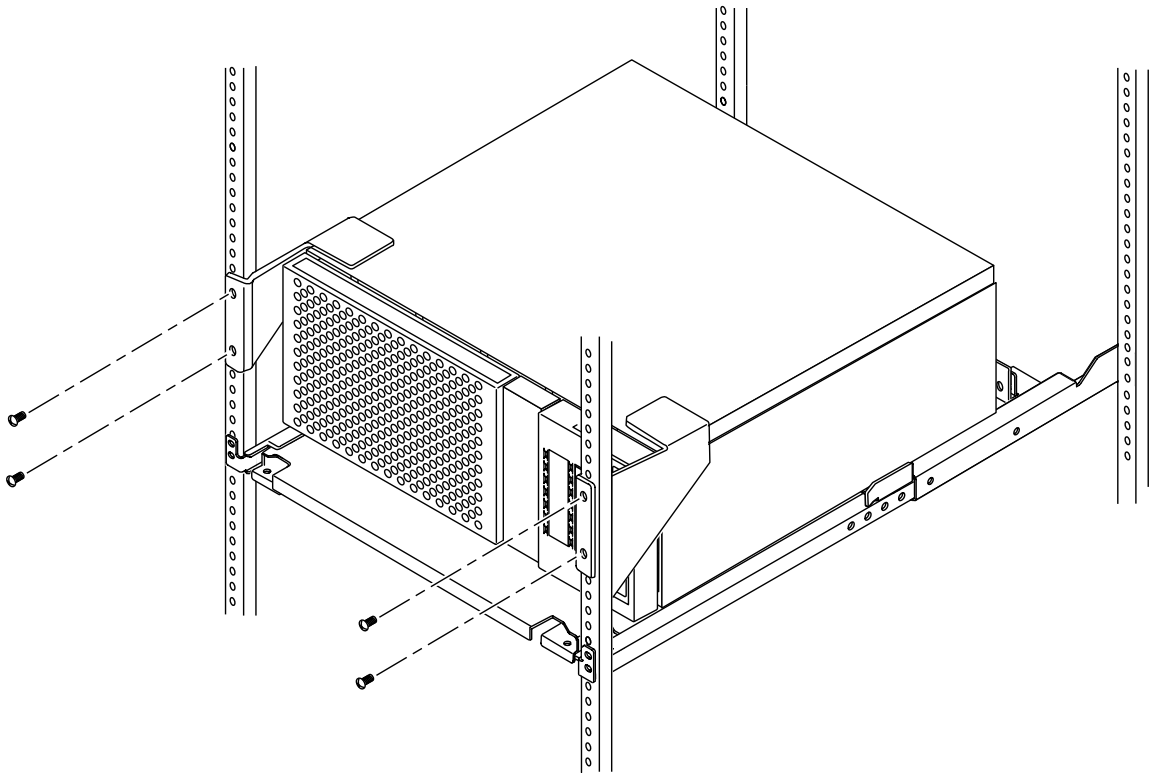


FIGURE 12 Fastening the Front Brackets

8. Slide the system forward on the rackmounting tray until it is tight against the front brackets (FIGURE 13).

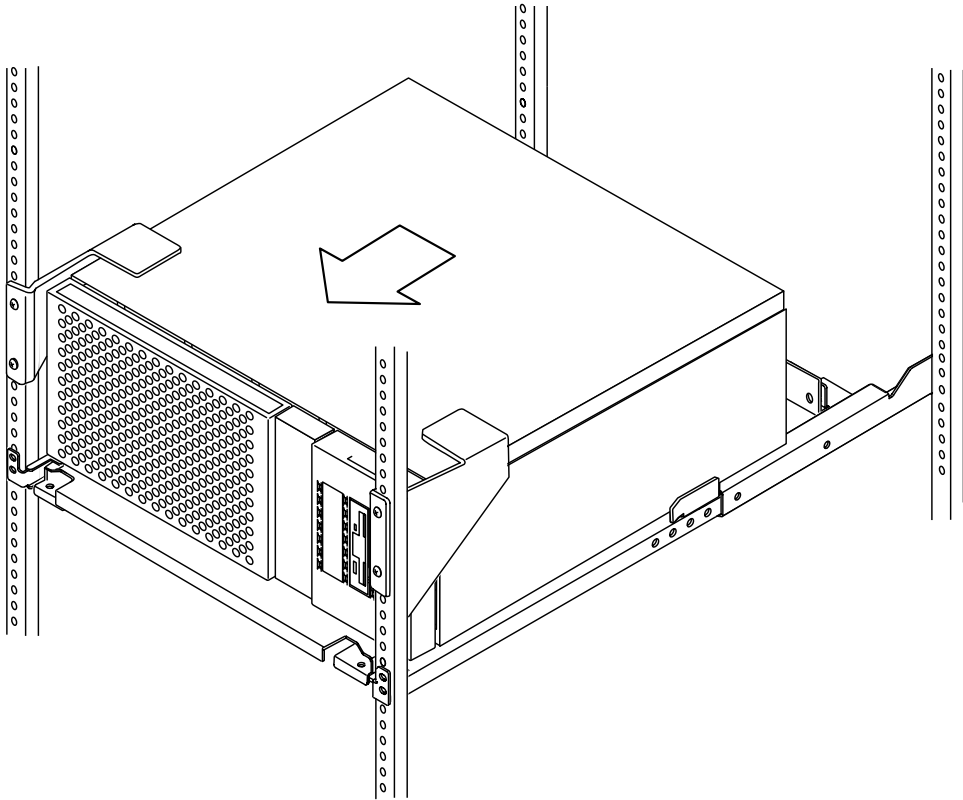


FIGURE 13 Sliding the Ultra 30/60 System into the Front Brackets

9. Using three of the provided screws, fasten the rear mounting bar to the rear of the rackmounting tray (FIGURE 14).

Place the rear mounting bar so that it overlaps the base of the system. Feed the screws through the rear mounting bar flange and fasten them through the slots into the mounting tray. These screws do not fasten to the system.

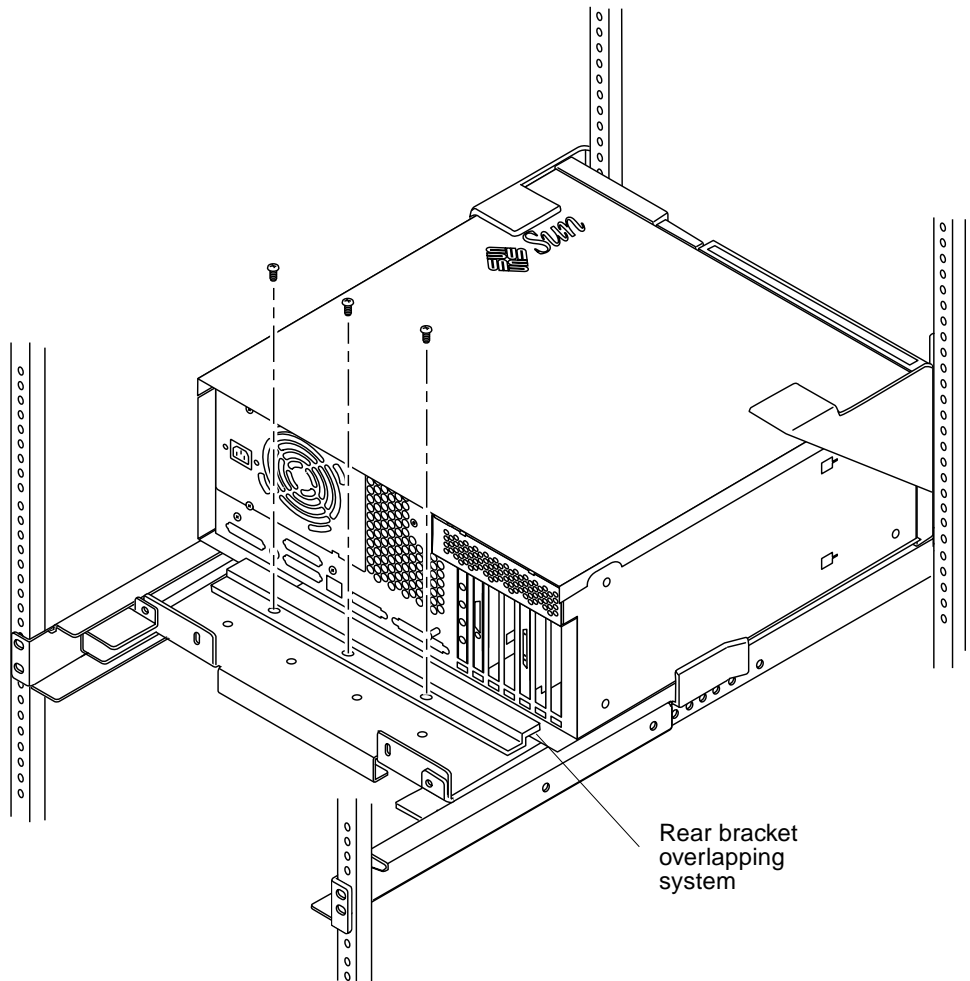


FIGURE 14 Fastening the Ultra 30/60 System to the Mounting Tray

10. Store the system feet (FIGURE 15).

Using the screws that originally fastened the feet to the system, fasten the spare feet to the rackmounting tray.

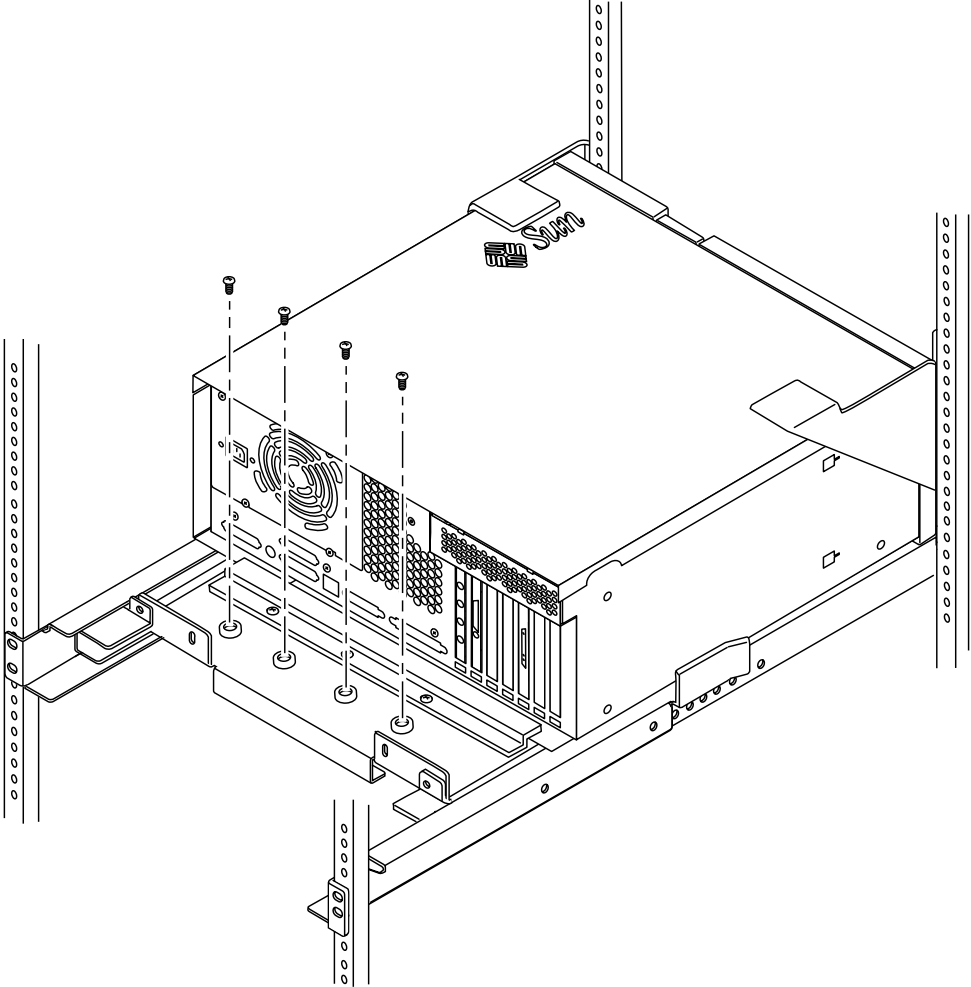


FIGURE 15 Storing Ultra 30/60 System Feet

11. Connect power and other cables as needed (FIGURE 16).

Your system is ready for you to continue with your system-specific installation processes. Refer to your system documentation for further instructions.

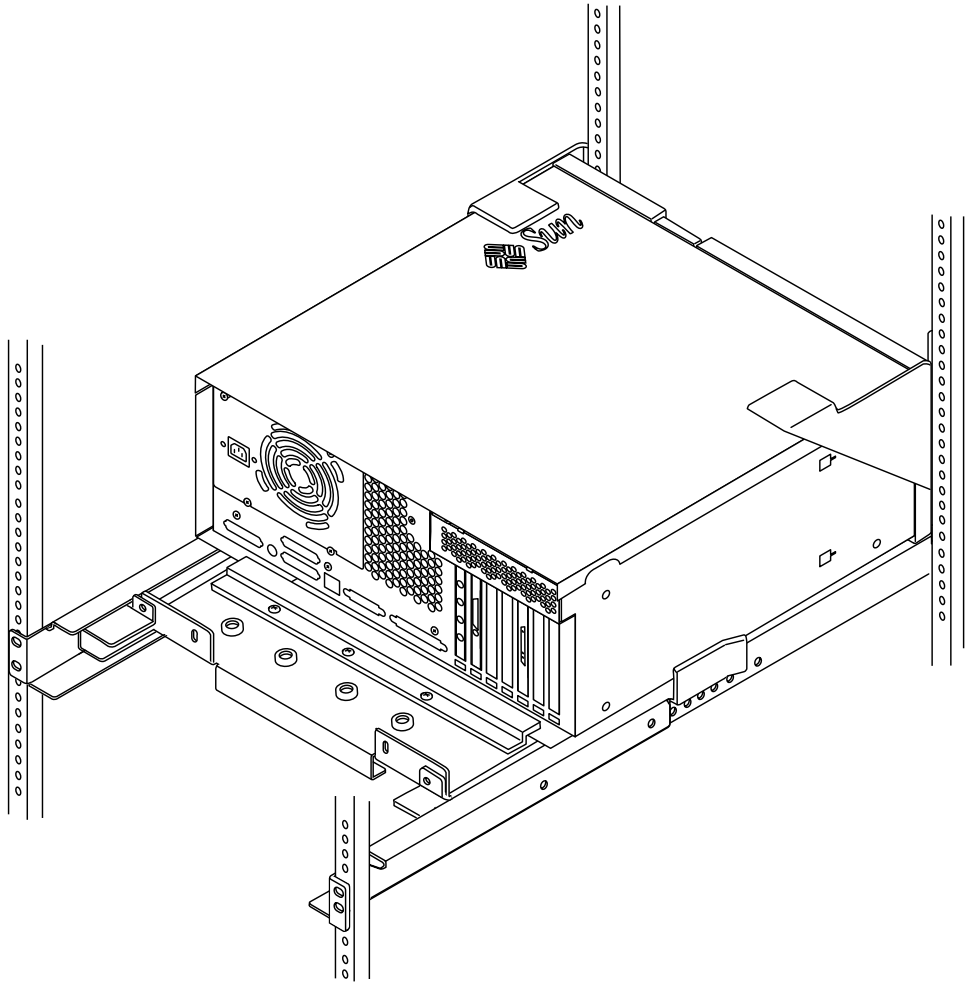


FIGURE 16 Ultra 30/60 System Installed and Ready for Cabling

Preparing the Ultra 80 System

1. Unpack or disconnect your system (FIGURE 17).

Refer to your system documentation for specific directions on powering off and disconnecting your system.

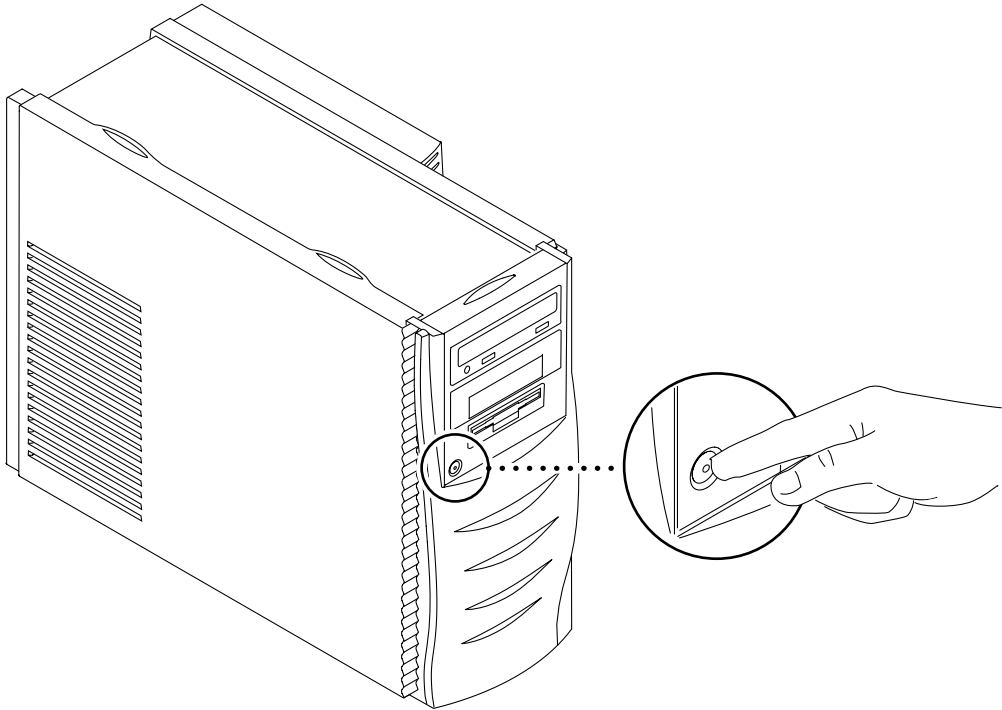


FIGURE 17 Power Switch on an Ultra 80 System

To power off your system:



Caution – Prior to turning off the system power, exit from the operating system. Failure to do so may result in data loss.

- a. Back up system files and data.
- b. Halt the system.



Caution – Pressing the power switch does not remove all power from the system; a trickle voltage remains in the power supply. To remove all power from the system, disconnect the power cord.

c. Press and quickly release the front-panel power switch (FIGURE 17) and follow the instructions on the screen.

Note – If a system will not shut down, such as when the operating system has crashed, press and hold the power switch for at least five seconds.

d. Verify the following:

- The front panel LED is off.
- The system fans are not spinning.

e. Turn off the power to the monitor.

f. Disconnect the power cord.

g. Disconnect cables to any peripheral equipment.

h. Set aside all cabling and peripherals.

2. Lay the system on its side.

Facing the back of the system, tip the unit to the left so the feet are to the right.

Note – Place the system on the power supply side. Do not place the system on the access panel side.

3. Remove the three screws from the base of the power supply at the back of the system. Set the screws aside (FIGURE 18).

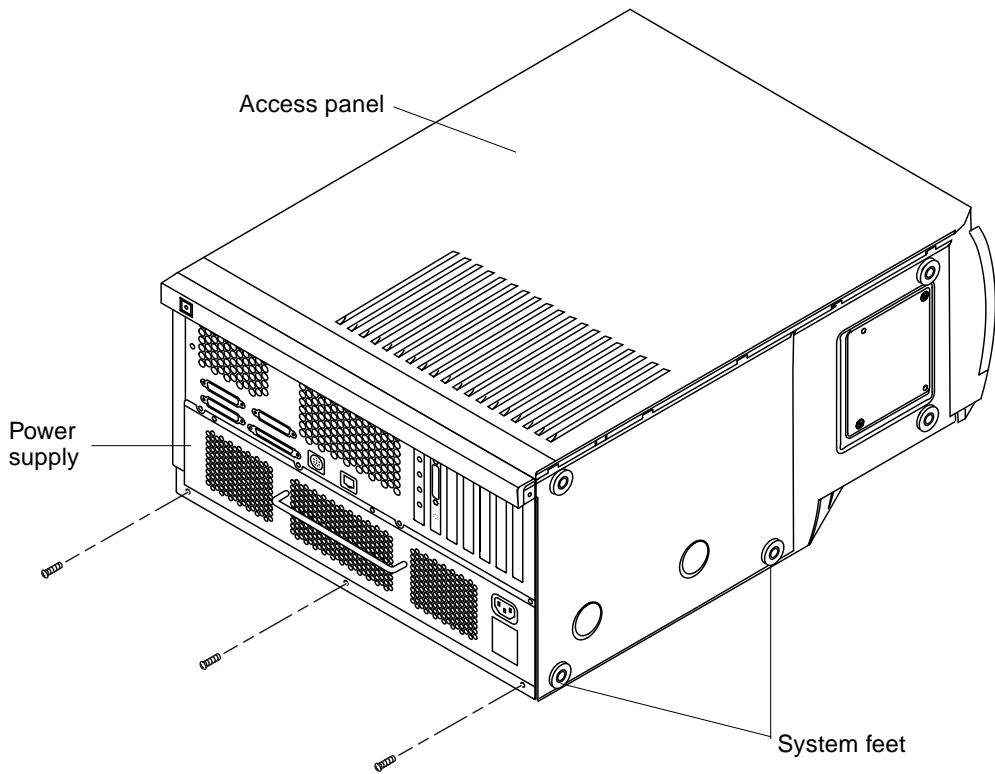


FIGURE 18 Removing the Power Supply Screws

4. Using the three screws you set aside in the previous step, fasten the mounting bar to the system (FIGURE 19).
- Face the open channel of the mounting bar downward.
 - Feed the power supply screws through the mounting bar's open channel cutouts.

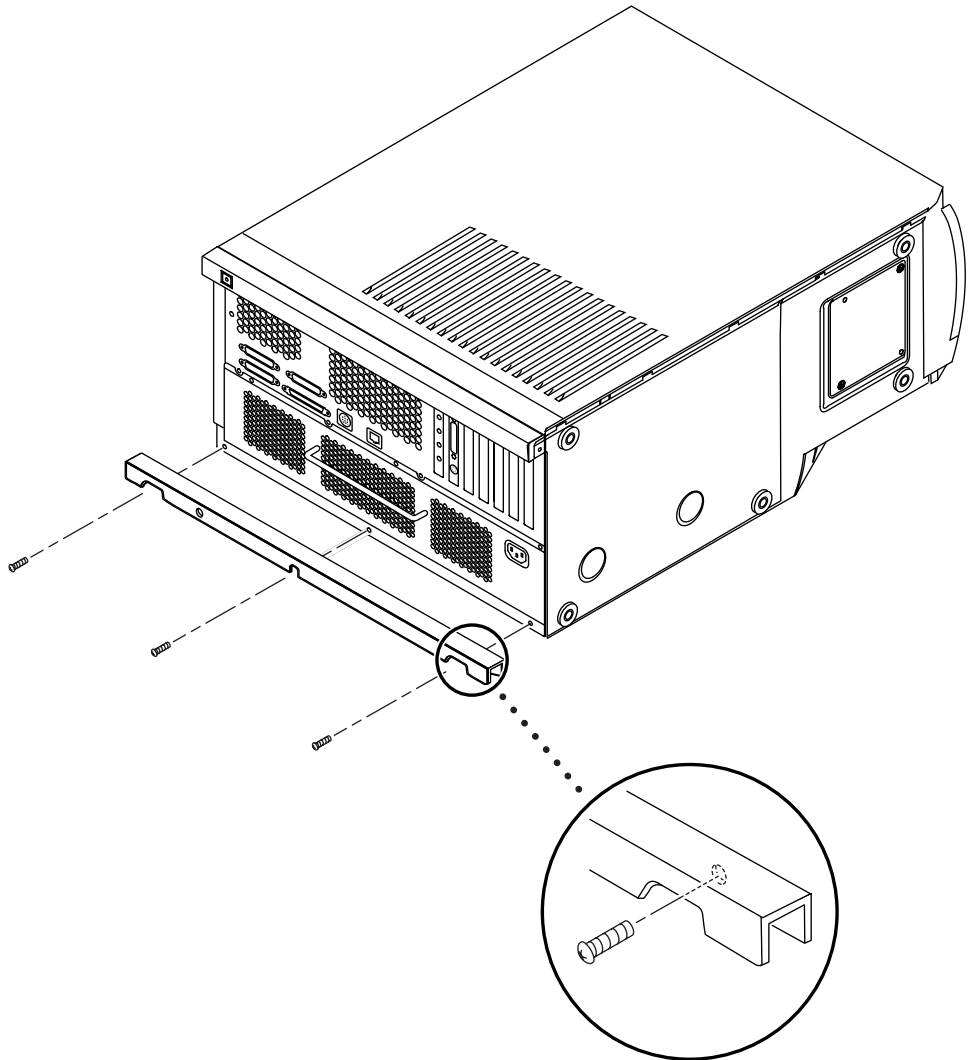


FIGURE 19 Fastening the Mounting Bar to the Ultra 80 System

Installing the Ultra 80 System

1. **If your rack has stabilizing bars, extend these prior to installing the system.**

Refer to the documentation that accompanied your rack for directions on using stabilizing bars.



Caution – If you are installing multiple systems, install the lower units first, then work toward the top. This prevents the rack from being top-heavy and tipping.

Leave seven rackmount units of space between each rackmounting tray.

2. **Facing the front of the system and the front of the rack, place the system on the mounting tray.**



Caution – The system weighs over 66 pounds (29.5 kg). **Always** ensure that *two people* lift the system.

3. Slide the system back until it is flush with the rear flanges on the mounting tray (FIGURE 20).

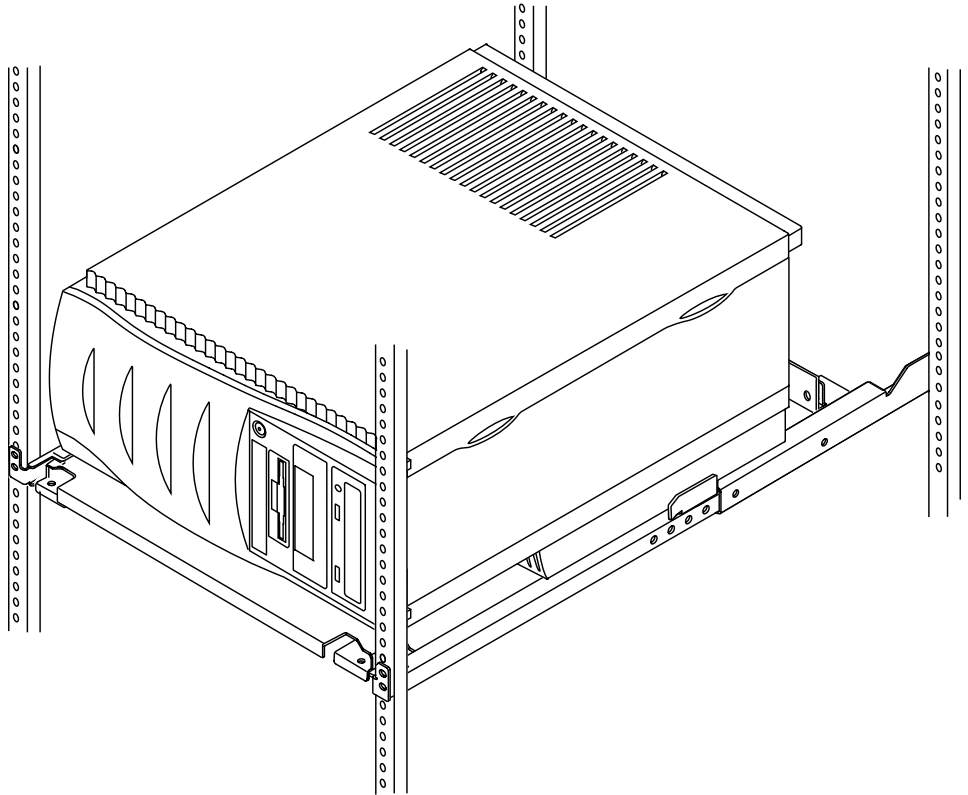


FIGURE 20 Placing the Ultra 80 System in the Rack

4. Using two of the provided screws, fasten the rear of the mounting tray to the mounting bar (FIGURE 21).

Feed the screws through the mounting tray flange and fasten them to the mounting bar. These screws do not fasten to the system. They fasten to the *mounting bar*.

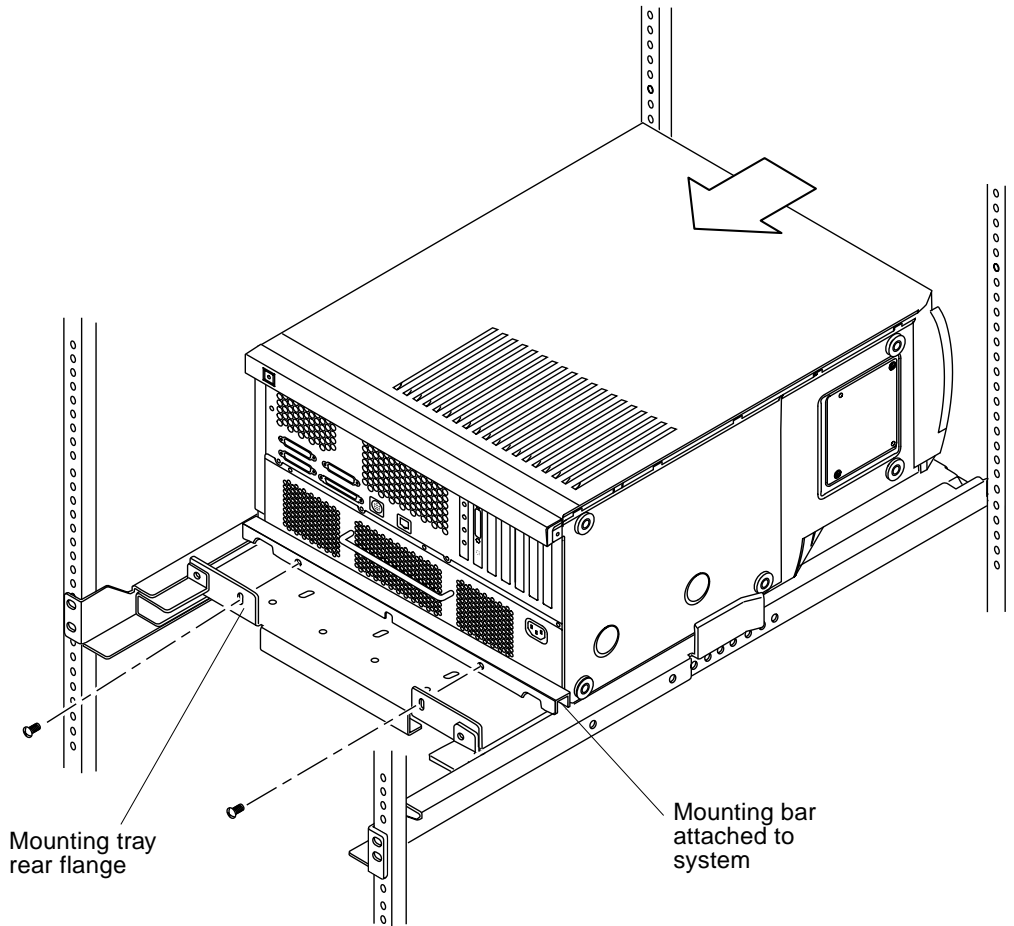


FIGURE 21 Fastening the Ultra 80 System to the Mounting Tray

5. Slide the left front bracket onto the left side of the system until the bracket flanges meet the rack.

Place the bracket so it fits snugly above the system, while maintaining alignment with the rack rail holes.

6. Using two of the provided screws, fasten the left front bracket to the rack (FIGURE 22).

7. Slide the right front bracket onto the right side of the system until the bracket flanges meet the rack.

Place the bracket so it fits snugly above the system, while maintaining alignment with the rack rail holes.

8. Using two of the provided screws, fasten the right front bracket to the rack (FIGURE 22).

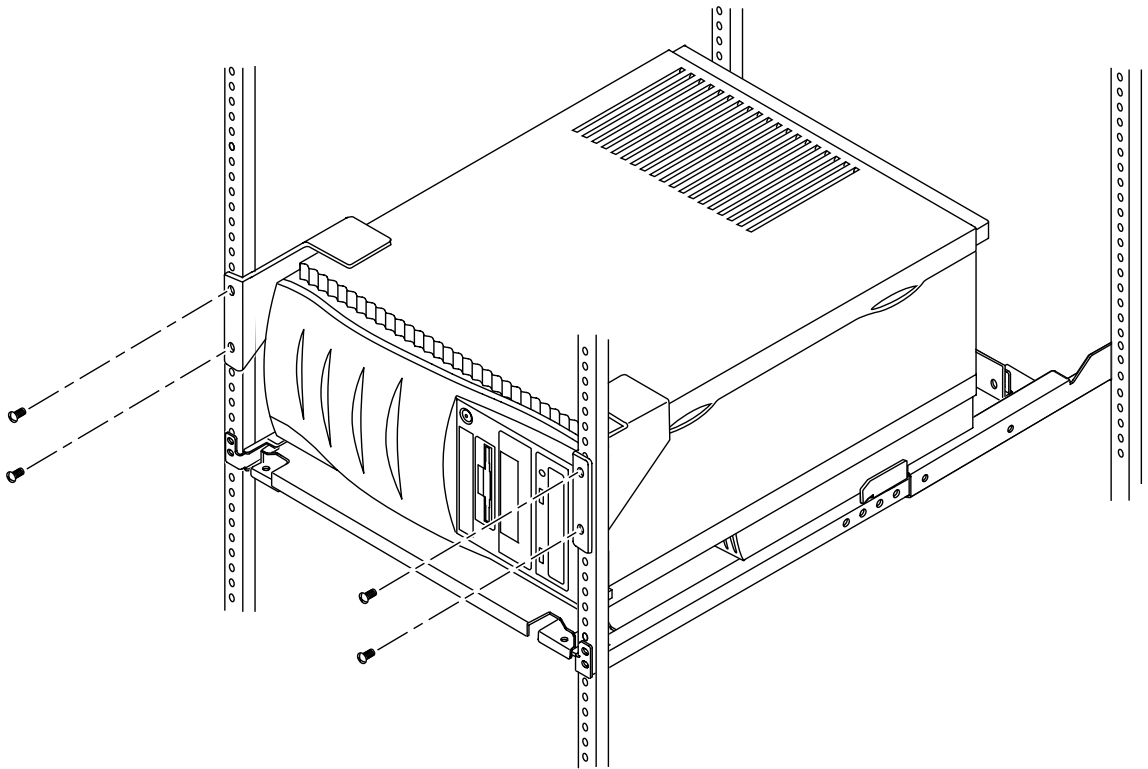


FIGURE 22 Fastening the Front Brackets

9. Connect power and other cables as needed (FIGURE 23).

Your system is ready for you to continue with your system-specific installation processes. Refer to your system documentation for further instructions.

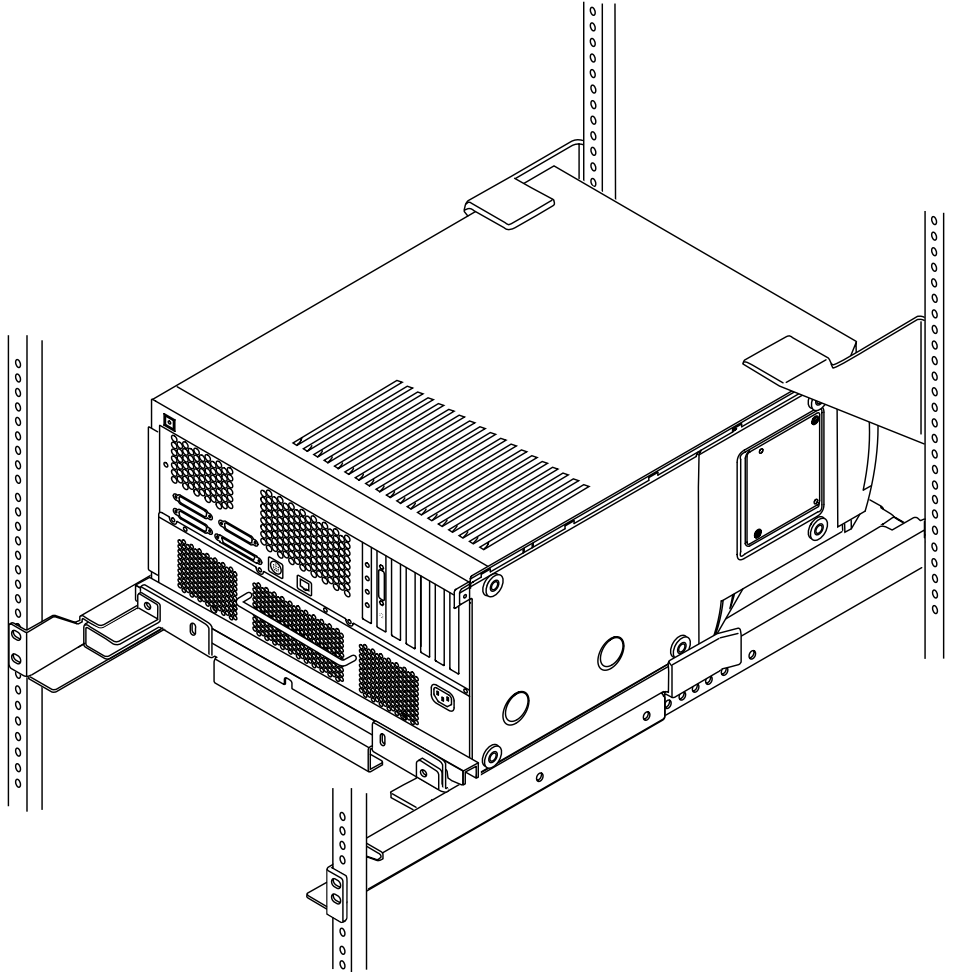


FIGURE 23 Ultra 80 System Installed and Ready for Cabling