



# Netra™ 240 Server Installation Guide

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Sun Microsystems, Inc.  
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# Preface

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This document provides installation and configuration instructions for the Netra™ 240 server. These instructions are designed for enterprise and network administrators with experience installing similar hardware and software.

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## Using UNIX Commands

This document might not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. See the following for this information:

- Software documentation that you received with your system, or downloaded from the system web site
- Solaris™ operating system documentation, which is here:  
<http://docs.sun.com>

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# Shell Prompts

Shell	Prompt
C shell	<i>machine-name%</i>
C shell superuser	<i>machine-name#</i>
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#

---

# Typographic Conventions

Typeface*	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
<b>AaBbCc123</b>	What you type, when contrasted with on-screen computer output	% <b>su</b> Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> .

\* The settings on your browser might differ from these settings.

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## Related Documentation

<b>Application</b>	<b>Title</b>	<b>Part Number</b>
Installation overview	<i>Netra 240 Server Quick Start Guide</i>	817-3904
Latest product updates	<i>Netra 240 Server Release Notes</i>	817-3142
Compliance and safety	<i>Important Safety Information for Sun Hardware Systems</i>	816-7190
	<i>Netra 240 Server Safety and Compliance Manual</i>	817-3511
Documentation web site location	<i>Sun Netra 240 Server Product Documentation</i>	817-2697
Administration	<i>Netra 240 Server System Administration Guide</i>	817-2700
Lights out management	<i>Sun Advanced Lights Out Manager Software User Guide for the Netra 240 Server</i>	817-3174
Servicing	<i>Netra 240 Server Service Manual</i>	817-2699

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*Netra 240 Server Installation Guide*, part number 817-2698-14



# Introduction

---

This chapter contains a description of the Netra 240 server and provides the installation site requirements. The chapter contains the following sections:

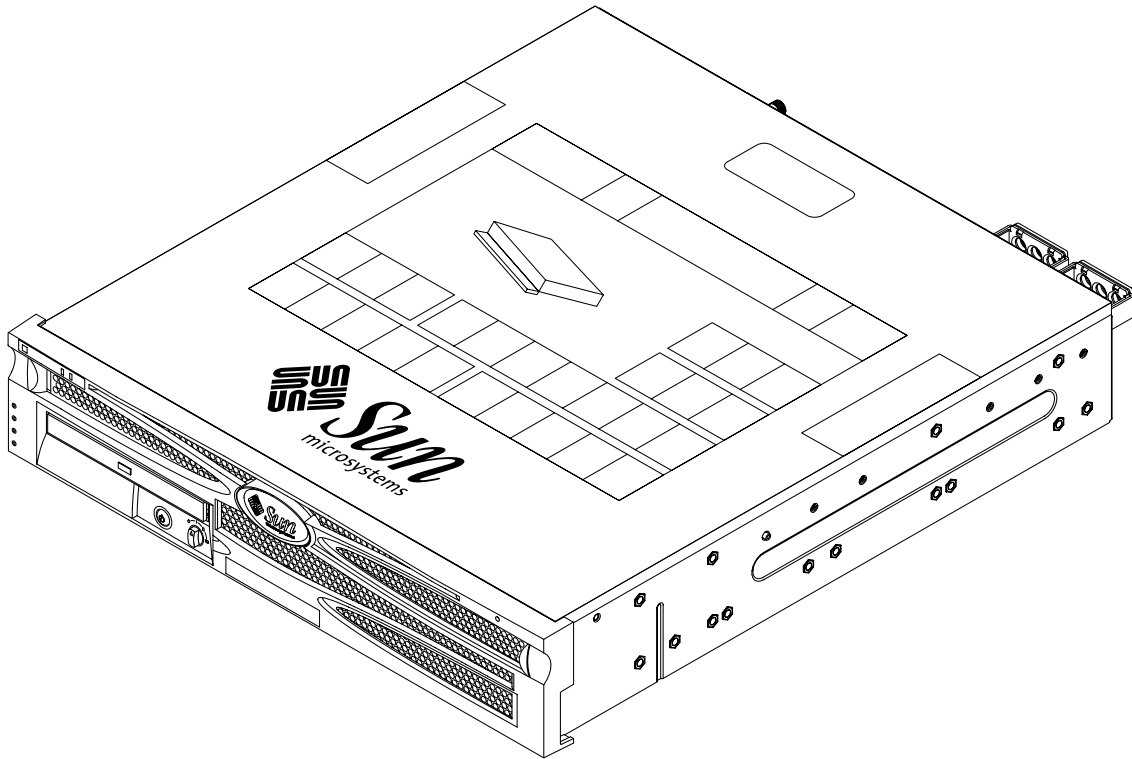
- “Overview” on page 2
- “Standard Server Configurations” on page 3
- “Shipment Contents” on page 4
- “Sun Advanced Lights Out Manager” on page 5
- “Sun Install Check Tool” on page 6
- “Sun Remote Services Net Connect Support” on page 6
- “Installation Site Requirements” on page 7

---

# Overview

The Netra 240 server is a two rack unit (RU) server with one or two processors.

**FIGURE 1-1** Netra 240 Server



The Netra 240 server uses either one or two UltraSPARC® IIIi processors. The server depth enables mounting in standard rack depths of 24 inch, 600 mm, or deeper.

Storage is provided by two hot-swappable disk drives, together with an optional non-hot-swappable slimline DVD-RW or DVD-ROM drive. Built-in I/O functionality is provided by four Gigabit Ethernet channels, and two SCSI channels (one for external and one for internal use). Two independent open host controller interface (OHCI) USB hubs are also provided. I/O expansion is provided with one full-length PCI card slot supporting both 33MHz and 66MHz cards, and two half-length PCI card slots supporting 33MHz cards. A dry contact relay alarm card for remote management control (RMC) firmware and an alarm status LEDs card are provided.

# Features

The Netra 240 server has these features:

- One- to two-way UltraSPARC IIIi processor
- Telcordia NEBS Level 3 Certified (DC server only)
- Two redundant (1+1) 400 W power supplies
- Four DIMM slots per processor
- Four 10/100/1000BASE-T Gigabit Ethernet ports
- Two SCSI channels (one for external and one for internal use)
- Up to two SCSI hard disk drives available on an internal SCSI channel
- One DB-9 serial port and one RJ-45 serial port for remote management control (RMC)
- One 10BASE-T management port for RMC
- Two USB ports
- Three PCI expansion slots (one full length and two half length)
- DVD-RW or DVD-ROM drive (optional component)
- System configuration card (SCC)
- Front and back system status indicators
- Advanced Lights Out Manager (ALOM) software
- Dry contact relay alarms with alarm indicators
- Cooling blowers and a replaceable air filter

---

## Standard Server Configurations

The Netra 240 server standard configurations are listed in [TABLE 1-1](#).

**TABLE 1-1** Netra 240 Server Standard Configurations

Number of Processors	Memory	Number of Hard Drives	Number of Power Supply Units (PSUs)
1	1 GB	1	2
2	2 GB	2	2

---

**Note** – For more information about standard configurations, and to see a list of optional components, refer to the SunStore<sup>SM</sup> web site (<http://store.sun.com>).

---

## Number of DC-Powered Servers Permitted in the Same Rack

If you have more than six DC-powered Netra 240 servers in the same rack, you may exceed Telcordia NEBS EMI limits. For instructions on mounting the server into a rack, refer to [Chapter 3](#).

---

## Shipment Contents

The Netra 240 server ships with the components listed in [TABLE 1-2](#). Make sure that all the parts are present in the shipment. If any components are missing, contact your Sun sales representative.

**TABLE 1-2** Contents of the Netra 240 Server Shipment

Description	Quantity
M5 nut kit	1
RJ-45 to DB-9 adapter	1
RJ-45 to DB-25 adapter	1
WAGO DC connector assembly kit (DC server only)	1
19-inch, 4-post rackmount kit	1
<i>Sun Netra 240 Server Quick Start Guide</i>	1
<i>Sun Netra 240 Server Product Documentation</i>	1
<i>Binary Code Licenses</i>	1
<i>Important Safety Information for Sun Hardware Systems</i>	1

---

**Note** – The WAGO DC connector assembly kit is for the DC-powered server only. If you have an AC-powered server, please dispose of this DC connector kit.

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# Sun Advanced Lights Out Manager

The Netra 240 server ships with the Sun Advanced Lights Out Manager (ALOM) software preinstalled. By default, the system console is directed to ALOM and is configured to show server console information on startup.

ALOM enables you to monitor and control your server over either a serial connection (using the SERIAL MGT port), or Ethernet connection (using the NET MGT port). See [“Connecting the Data Cables” on page 66](#) for the location of these and other ports. For information about configuring an ALOM Ethernet connection, refer to the *Sun Advanced Lights Out Manager User Guide for the Netra 240 Server* (817-3174).

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**Note** – The ALOM serial port, labelled SERIAL MGT, is for server management only. If you need a general purpose serial port, use the serial port labeled 10101. See [“Rear Cable Connections” on page 62](#) for the location of these serial ports.

---

ALOM can be configured to send email notifications of hardware failures and other events related to the server or to ALOM.

The ALOM circuitry uses standby power from the server, which means:

- ALOM is active as soon as the server is connected to a power source, and remains active until power is removed by unplugging the power cables.
- ALOM continues to be effective even when the operating system is offline and when the server is in Standby mode.

[TABLE 1-3](#) lists the components monitored by ALOM and describes the information provided for each component.

**TABLE 1-3** ALOM Component Monitoring

Component	Status Monitored
Hard drives	Presence and status
System	Speed and status
CPUs	Presence, temperature, and any thermal warning or failure conditions
Power supplies	Presence and status
System temperature	Ambient temperature and any thermal warning or failure conditions
Server front panel	Rotary switch position and LED status

**TABLE 1-3** ALOM Component Monitoring

Component	Status Monitored
Voltages	Status and thresholds
SCSI and USB circuit breakers	Status
Dry contact alarm	LED status

Refer to the *Sun Advanced Lights Out Manager User Guide for the Netra 240 Server* (817-3174) and the *Netra 240 Server Release Notes* (817-3142) for additional information about the ALOM software.

---

## Sun Install Check Tool

The Netra 240 server supports the Sun Install Check tool, which can confirm that your server has been installed successfully. The Install Check software checks the initial server installation and tests your server for:

- Minimum required Solaris operating system level
- Presence of key critical patches
- Proper firmware levels
- Unsupported hardware components

If potential issues are identified, the software generates a report with specific instructions to remedy the issues.

You can download the Sun Install Check tool software and documentation at: <http://www.sun.com/software/installcheck/>

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## Sun Remote Services Net Connect Support

The Netra 240 server supports the Sun Remote Services (SRS) Net Connect monitoring services. The SRS Net Connect web services give you the ability to self-monitor systems, create performance and trend reports, and receive automatic notifications, so you can act more quickly when a system event occurs and manage potential issues before they become problems.

For more information about SRS Net Connect, including how to sign up and download the documentation, refer to the SRS Net Connect web site at: <http://www.sun.com/service/support/srs/netconnect/>

---

**Note** – The *Net Connect Installation Guide* contains installation instructions specific to the Netra 240 server. This guide can be downloaded after signing up for the service.

---

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## Installation Site Requirements

This section provides the specifications and site requirements you may need when planning the installation of the Netra 240 server. For safety and compliance information, refer to the *Netra 240 Safety and Compliance Manual* (817-3511).

### Physical Dimensions

**TABLE 1-4** Physical Dimensions

Netra 240 Server Dimensions	Measurements
Height (2 RU)	3.44 inches (87.4 mm)
Width without bezel	16.73 inches (425 mm)
Width with bezel	17.4 inches (442 mm)
Depth from front bezel to system board connectors	19.0 inches (483 mm)
Depth to rear of power supply unit handle	20.06 inches (509.5 mm)
Weight with full configuration (not including PCI cards and mounting brackets)	36 lbs (16.33 kg)
Weight with full configuration (including PCI cards and mounting brackets)	41 lbs (18.6 kg)

# Environmental Requirements

You can operate and store the system safely in the conditions detailed in [TABLE 1-5](#).

**TABLE 1-5** DC and AC Server Operating and Storage Specifications

Specification	Operating	Storage
Ambient temperature	5°C (41°F) to 40°C (104°F) Short term*: -5°C (23°F) to 55°C (131°F)	-40°C (-40°F) to 70°C (158°F)
Relative humidity	5% to 85% relative humidity, noncondensing Short term*: 5% to 90% relative humidity, noncondensing, but not to exceed 0.024 kg water/kg dry air (0.053 lbs. water/2.205 lb. dry air)	Up to 93% relative humidity noncondensing, 38°C (100.4°F) max wet bulb
Altitude	Up to 3000 m (9842.4 ft.)	Up to 12000 m (39369.6 ft.)

\* Short term (no more than 96 hours) temperature and humidity limits apply to servers with altitudes up to 1800 m (5905.44 ft.).

## Recommended Operating Environment

Your environmental control system must provide intake air for the server which complies with the limits specified in [“Environmental Requirements”](#) on page 8.

To avoid overheating, *do not* direct warmed air:

- Toward the front air intake of the server
- Toward the server access panels

---

**Note** – When you receive your system, place it in the environment in which you will install it. Leave it in its shipping crate at its final destination for 24 hours. This resting period prevents thermal shock and condensation.

---

The system has been tested to meet all functional requirements when operating in the operating environmental limits in [TABLE 1-5](#). Operating computer equipment in extremes of temperature or humidity increases the failure rate of hardware components. To minimize the chance of component failure, use the server within the optimal temperature and humidity ranges.



## Ambient Temperature

An ambient temperature range of 21°C (69.8°F) to 23°C (73.4°F) is optimal for system reliability. At 22°C (71.6°F) it is easy to maintain safe relative humidity levels. Operating in this temperature range provides a buffer if the environmental support systems fail.

## Ambient Relative Humidity

Ambient relative humidity levels between 45% and 50% are the most suitable for data processing operations in order to:

- Prevent corrosion
- Provide an operating time buffer in the event of environmental control system failure
- Help avoid failures caused by the intermittent interference from static discharges that occur when relative humidity is too low

Electrostatic discharge (ESD) is easily generated and less easily dissipated in areas where the relative humidity is below 35%, and becomes critical when levels drop below 30%.

## Airflow Considerations

- Ensure unobstructed airflow through the chassis.

The Netra 240 server uses internal blowers that can achieve a total airflow of 1.42 m<sup>3</sup>/min (50 CFM) in normal operating conditions.

- Inlet air enters at the front of the server and exits from the back.
- Ventilation openings such as cabinet doors, for both the inlet and exhaust of the server should provide a minimum open area of 215 cm<sup>2</sup> (33.325 in<sup>2</sup>) each. This equates to a 60% open area perforation pattern across the front and rear area of the server (445 mm x 81 mm; 17.5 in x 3.2 in). The impact of other open area characteristics that are more restrictive should be evaluated by the user.
- Front and rear clearance of the server should allow a minimum of 5 mm (.2 in) at the front of the system and 80 mm (3.1 in) at the rear of the server when mounted. These clearance values are based on the above inlet and exhaust impedance (available open area) and assume a uniform distribution of the open area across the inlet and exhaust areas. Clearance values greater than these are recommended for improved cooling performance.

---

**Note** – The combination of inlet and exhaust restrictions such as cabinet doors and the spacing of the server from the doors can affect the cooling performance of the system and should be evaluated by the user. The server placement is particularly important for high temperature NEBS environments where the server inlet ambient temperature is 55°C (131°F). (The DC-powered server is NEBS compliant.)

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- Care should be taken to prevent recirculation of exhaust air within a rack or cabinet.
- Cables should be managed to minimize interfering with the server exhaust vent.
- Air temperature rise through the system is approximately 15°C (59°F).

## Acoustic Noise Emissions

The acoustic noise emissions on a Netra 240 server are as follows:

- Operating acoustic noise is 7.0 B (LWAd (1B=10dB))
- Idling acoustic noise is 7.0 B (LWAd (1B=10dB))

Declared noise emissions are in accordance with ISO 9296 standards.

## Calculating Heat Dissipation

To calculate the heat generated by a server so that you can estimate the heat your cooling system must dissipate, convert the figure for the system's power requirement from Watts to BTU/hr. A general formula for doing this is to multiply the power requirement figure in Watts by 3.412.

# NEBS Level 3 Certification

Telcordia certified that the DC-powered version of the Netra 240 server meets NEBS Level 3 requirements per SR-3580, including the appropriate sections of GR-63-CORE (*Network Equipment-Building System Requirements: Physical Protection*) and GR-1089-CORE (*Electromagnetic Compatibility and Electrical Safety – Generic Criteria for Network Telecommunications Equipment*).



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**Caution** – To maintain NEBS compliance, the network management (NET MGT) Ethernet port and the RJ-45 serial management (SERIAL MGT) port must use shielded cables and both ends of the shield must be grounded. See [“Rear Cable Connections”](#) on page 62 for cabling information.

---



## Installation Overview

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This chapter lists the steps in a typical Netra 240 server installation and contains the procedures that must be performed before installing the server in a rack.

This chapter contains these topics:

- [“Installation Overview” on page 14](#)
- [“Installing the Bezel Air Filter” on page 15](#)
- [“Installing Optional Components” on page 17](#)

---

# Installation Overview

Each step in this task list refers you to the relevant section of the documentation for more information. Complete each step in the order listed.

1. Verify that you have received all of the components that ship with your server.  
See [TABLE 1-2](#) for a list of the ship kit contents.
2. Remove the shipping insert from the bezel and install the air filter.  
See [“Installing the Bezel Air Filter” on page 15](#) for instructions.
3. Install any optional components shipped with your system.  
If you have purchased optional components such as additional memory, install them prior to mounting the server in a rack. See [“Installing Optional Components” on page 17](#) for more information.
4. Mount the server into a rack or cabinet.  
See [Chapter 3](#) for rackmount installation instructions.
5. Connect the chassis grounding cable.  
See [“Connecting the Chassis Grounding Cable” on page 65](#).
6. Connect the serial, network, and all other data cables to the server.  
See [“Connecting the Data Cables” on page 66](#).
7. Assemble and connect the input power cables to the server.  
See [Chapter 5](#) for complete instructions.
8. Set up a terminal or console for installing your server.  
See [Chapter 6](#) for complete instructions.
9. Gather configuration information for your system.  
See the [“Software Configuration Worksheet” on page 106](#).
10. (Optional) Set any desired OpenBoot™ PROM configuration options.  
You can control several aspects of system behavior through OpenBoot PROM commands and configuration variables. Refer to the *OpenBoot 4.x Command Reference Manual* (816-1177) and the *Netra 240 Server System Administration Guide* (817-2700) for OpenBoot command information.
11. Confirm that the Ethernet connection is attached to the server.
12. Check whether the rotary switch is in the Normal position.

See “Setting the Rotary Switch” on page 102.

13. Power on the server by either pressing the On/Standby button on the front panel or from a keyboard using the ALOM software.

See “Powering On the Server” on page 102.

14. Configure the server software.

The Solaris operating system is preinstalled on the server. When you power on, you are automatically guided through the Solaris operating system configuration procedure. See “Configuring the Server” on page 106 for more information.

15. Install any required patch or patches to the server.

Refer to the *Netra 240 Server Release Notes* (817-3142) for a list of the required patches.

16. Load additional software from the Solaris media kit (optional).

The Solaris media kit (sold separately) includes several CDs containing software to help you operate, configure, and administer your server. See the documentation provided with the media kit for a complete listing of included software and detailed installation instructions.

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## Installing the Bezel Air Filter

The Netra 240 server ships with a protective shipping insert located between the bezel and the front panel. You must remove this protective insert and replace it with an air filter before powering on the server.



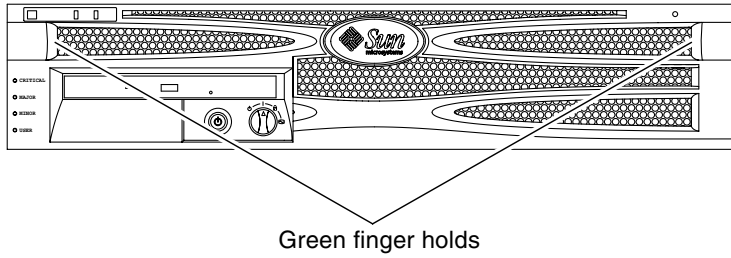
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**Caution** – Failure to remove the shipping insert from the front bezel can block the air from flowing through the server, which would seriously damage the server components.

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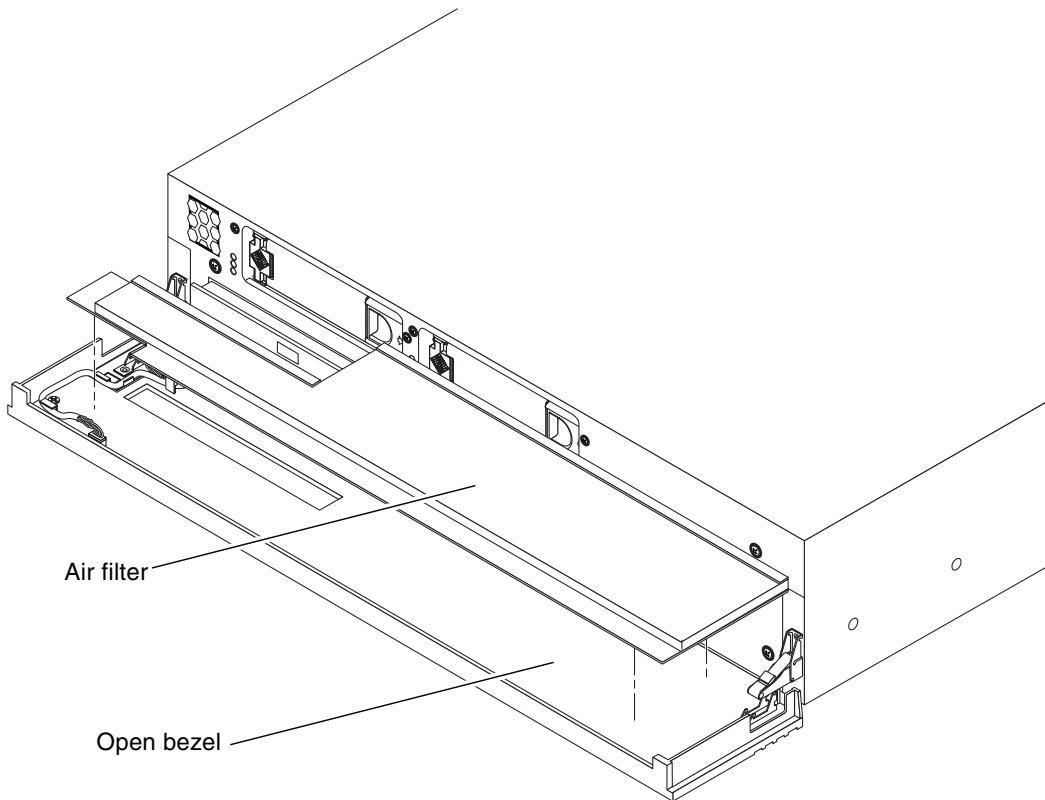
1. **Grip the bezel at the two finger holds and rotate it down to its open position (FIGURE 2-1).**

**FIGURE 2-1** Finger Holds on Bezel



2. Carefully remove the shipping insert from the inside of the bezel.
3. Get the air filter that shipped with your server.
4. Snap the new air filter into place in the bezel ([FIGURE 2-2](#)).

**FIGURE 2-2** Installing the Air Filter in the Front Bezel



5. Close the bezel.



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# Installing Optional Components

The standard components of the Netra 240 server are installed at the factory. However, if you ordered options such as additional memory or a PCI card, these will be shipped separately. If possible, install these components prior to installing the server in a rack.

- **Install any optional components shipped with your system.**

If you ordered options that are not factory-installed, see the *Netra 240 Server Service Manual* (817-2699) for installation instructions.

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**Note** – All internal components except disk drives must be installed by qualified service technicians only.

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**Caution** – To protect electronic components from electrostatic damage, which can permanently disable the system or require repair by Sun service technicians, note the following guidelines.

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- Place components on an antistatic surface, such as a Sun antistatic discharge mat, an antistatic bag, or a disposable antistatic mat.
- Always wear an antistatic wrist strap connected to a metal surface on the chassis when you work on system components.

Refer to the *Netra 240 Server Service Manual* for the list of optional components.

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**Note** – The optional component list might be updated at any time. Refer to the Sun Store<sup>SM</sup> web site (<http://store.sun.com>) for the most current list of Netra 240 server supported components.

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## Mounting the Server Into a Rack

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This chapter provides instructions for installing the Netra 240 server into a rack, and contains the following sections:

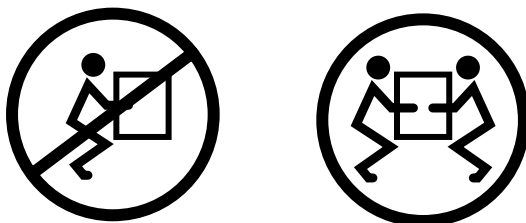
- “Rackmounting Options” on page 20
- “Hardmount in a 19-Inch 4-Post Rack” on page 20
- “Sliding Rail Mount in a 19-Inch 4-Post Rack” on page 25
- “Hardmount in a 600 mm 4-Post Rack” on page 36
- “Hardmount in a 23-Inch 2-Post Rack” on page 46
- “Hardmount in a 19-Inch 2-Post Rack” on page 54



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**Caution** – The server is heavy. Two people are required to lift and mount the system into a rack enclosure when using the procedures in this chapter.

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Before starting any of the following rackmounting procedures, identify a helper to assist you in installing the server. Verify that your helper can safely lift and carry 20.5 lbs. (9.3 kg), which is approximately half the weight of a fully-equipped server.



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**Caution** – When completing a two-person procedure, always communicate your intentions clearly before, during, and after each step to minimize confusion.

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# Rackmounting Options

The Netra 240 server ships with a 19-inch, 4-post hardmount rack kit (see [“Hardmount in a 19-Inch 4-Post Rack” on page 20](#) for installation instructions). [TABLE 3-1](#) lists the four additional rackmount kit options that can be ordered from Sun. This chapter provides installation instructions for all of these rackmount kit options.

**TABLE 3-1** Optional Rackmount Kits

Mounting Kit	Installation Instructions
19-inch 4-post slide mount kit	<a href="#">“Sliding Rail Mount in a 19-Inch 4-Post Rack” on page 25</a>
600 mm x 600 mm rackmount kit	<a href="#">“Hardmount in a 600 mm 4-Post Rack” on page 36</a>
23-inch 2-post rackmount kit	<a href="#">“Hardmount in a 23-Inch 2-Post Rack” on page 46</a>
19-inch 2-post rackmount kit	<a href="#">“Hardmount in a 19-Inch 2-Post Rack” on page 54</a>

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**Note** – If you have more than six DC-powered Netra 240 servers in the same rack, you may exceed Telcordia NEBS EMI limits.

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## Hardmount in a 19-Inch 4-Post Rack

The hardmount kit for a 19-inch 4-post rack consists of:

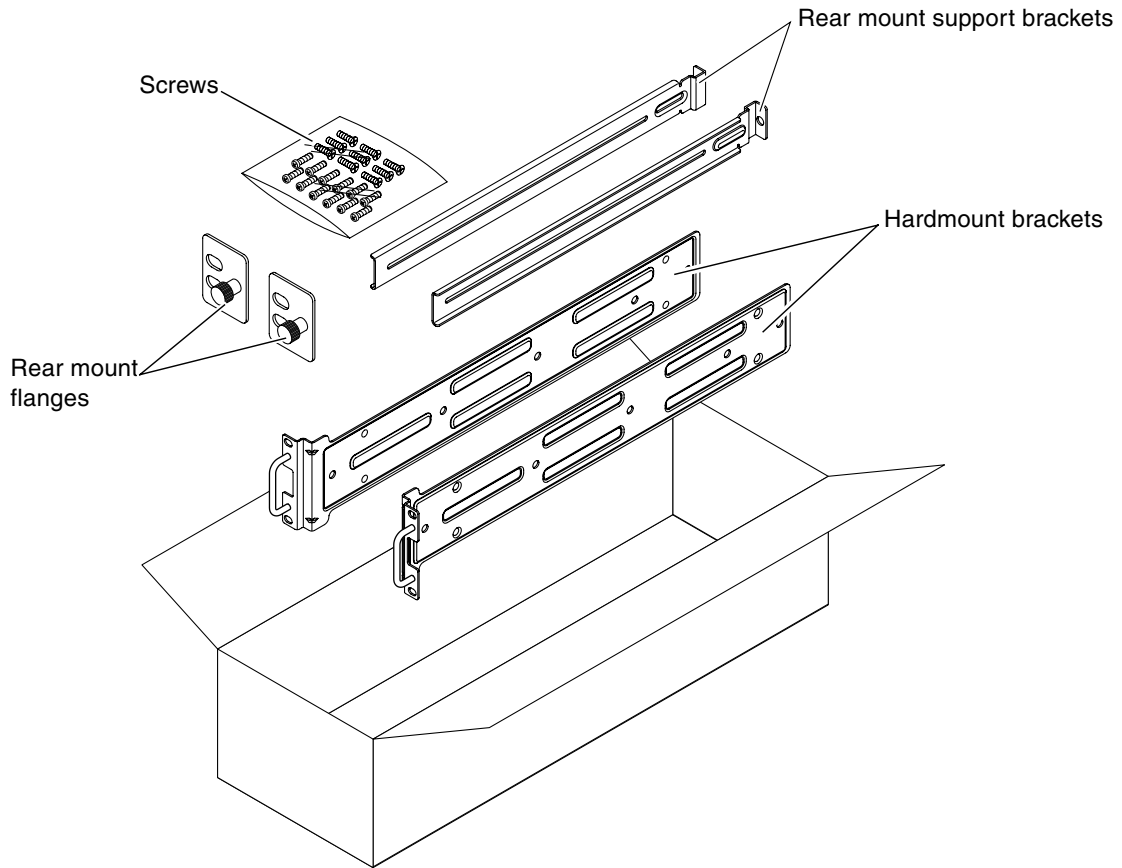
- Two hardmount brackets
- Two rear mount support brackets
- Two rear mount flanges
- Bag of screws

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**Note** – The front-to-back rail spacing must be at least 460 mm (18.11 inches) and not more than 715 mm (28.15 inches) from the outside face of the front rail to the outside face of the back rail.

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**FIGURE 3-1** Contents of the Hardmount 19-Inch 4-Post Kit



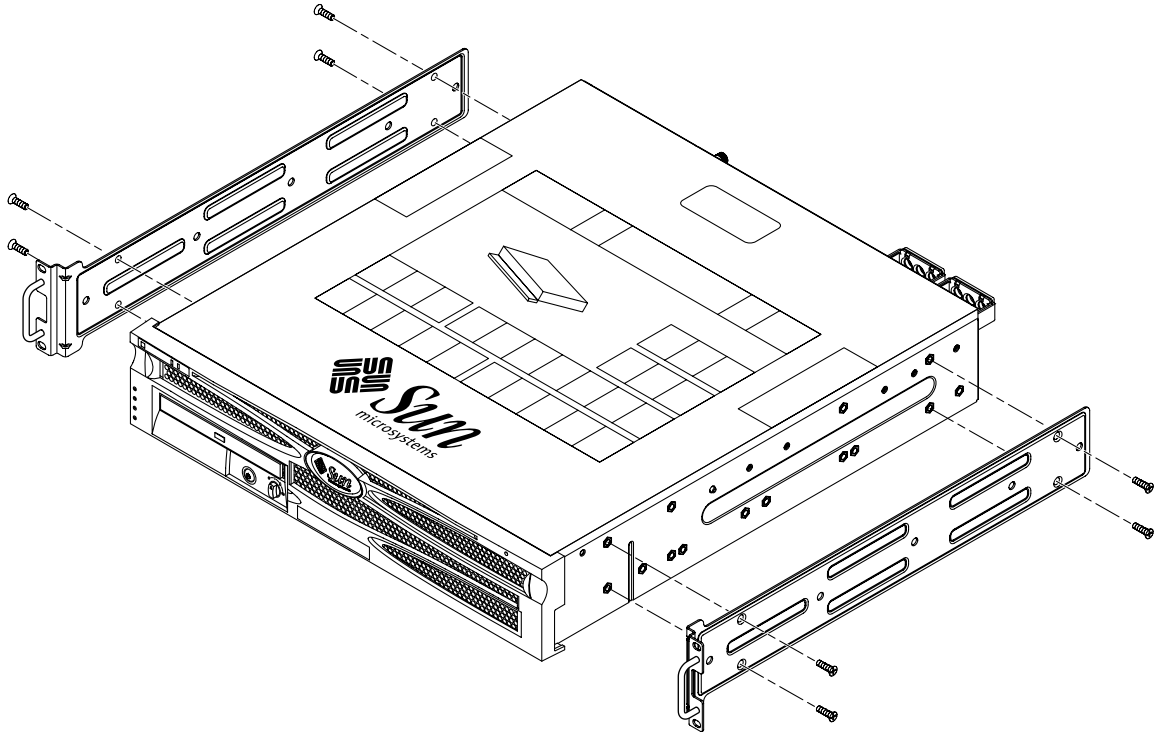
**TABLE 3-2** 19-inch 4-Post Rackmount Screw Kit Contents

Number	Description	Where Used
10	M5 x 8 mm Phillips flathead screws	8 for hardmount brackets, 2 extra
10	M4 x 0.5 mm x 5 mm Phillips panhead screws	4-6 for rear mount brackets, 6-4 extra
10	M5 x 12.7 mm screws	10 for rack, if appropriate
10	M6 x 13 mm screws	10 for rack, if appropriate
9	M6 square clip nuts	9 for rack, if appropriate
12	10-32 x 0.5 in. combo head screws	12 for rack, if appropriate
12	12-24 x 0.5 in. combo head screws	12 for rack, if appropriate

1. Get the hardmount brackets from the rack kit (FIGURE 3-1).

2. Using eight of the supplied M5 × 8 mm flathead Phillips screws (four screws for each bracket), secure the hardmount brackets to the sides of the server (FIGURE 3-2).

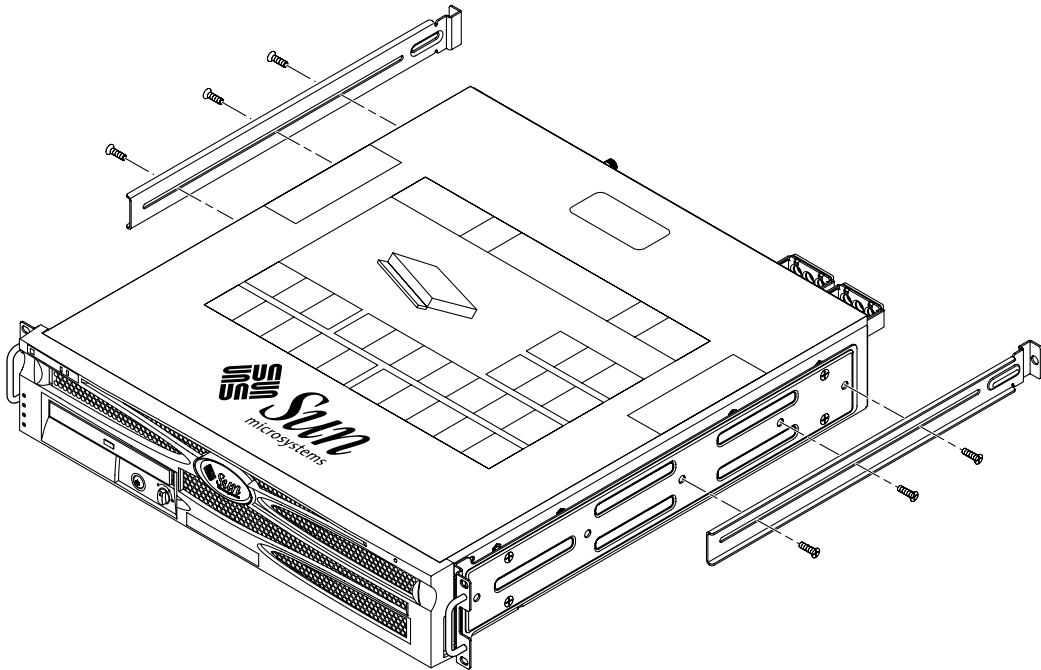
FIGURE 3-2 Securing the Hardmount Brackets to the Server



3. Measure the depth of the rack.
4. Get the two rear mount support brackets from the rack kit (FIGURE 3-1).
5. Install the rear mount support brackets at the rear of the server, extending the rear mount support brackets to the measured depth of the rack (FIGURE 3-3).

Use two to three of the supplied M4 × 0.5 × 5 mm panhead Phillips screws for each bracket, depending on the rack depth. If your rack is especially deep, you may only be able to secure the rear mount support brackets using only two screws per side.

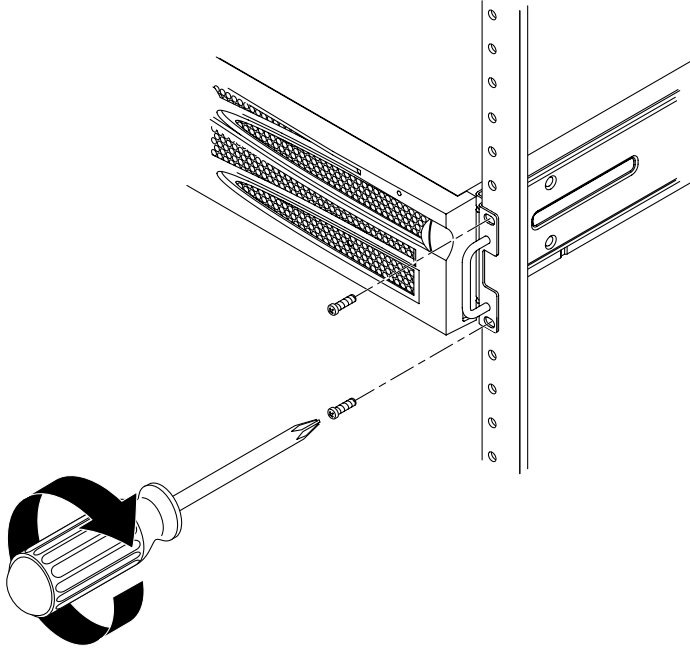
**FIGURE 3-3** Attaching the Rear Mount Support Brackets



6. Lift the server to the desired location in the rack.
7. Using two screws per side, secure the front of the hardmount brackets attached to the sides of the server to the front of the rack (FIGURE 3-4).

The size of the screws varies, depending on your particular rack.

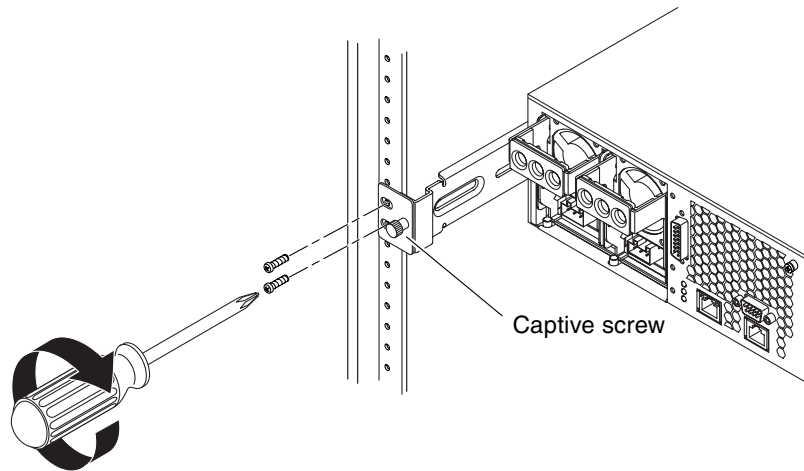
**FIGURE 3-4** Securing the Front of the Server to the Rack





8. Get the two rear mount flanges from the rack kit (FIGURE 3-1).
9. At the rear of the rack, use the captive screws to secure the two rear mount flanges to the rear mount support brackets that are attached to the server (FIGURE 3-5).

**FIGURE 3-5** Securing the Rear of the Server to the Rack



10. Using two screws for each rear mount support bracket, secure the rear mount support brackets to the rear of the rack (FIGURE 3-5).

The size of the screws vary, depending on your particular rack.

---

## Sliding Rail Mount in a 19-Inch 4-Post Rack

The sliding rail mount kit for a 19-inch 4-post rack consists of:

- Two 19-inch 4-post Telco slide assemblies
- Two short brackets
- Two long brackets
- Four M6 and four 10-32 threaded strips
- Two extension brackets
- Bag of screws

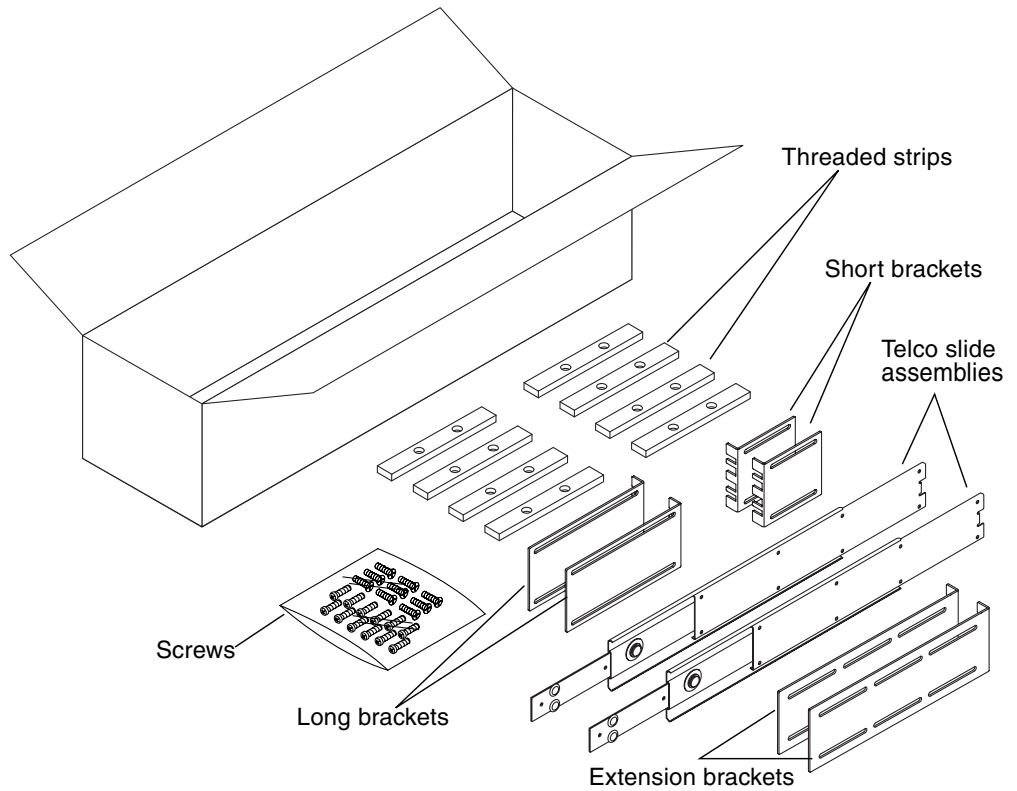
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**Note** – The front-to-back rail spacing must be at least 392 mm (15.43 inches) and not more than 863.6 mm (34 inches) from the outside face of the front rail to the outside face of the back rail.

---

You also need the hardmount brackets from the standard rackmount kit that came with the Netra 240 server ([FIGURE 3-1](#)).

**FIGURE 3-6** Contents of the Sliding Rail 19-Inch 4-Post Kit



**TABLE 3-3** Sliding Rail 19-inch 4-Post Rackmount Screw Kit Contents

Number	Description	Where Used
10	M4 x 0.5 mm x 5 mm Phillips panhead screws	8 for glides, 2 extra
10	M6 brass collar screws	4 for short brackets, 4 for long brackets, 2 extra
8	M5 panhead screws, nuts, plain washers and star washers	8 for slides
10	M5 x 12.7 mm screws	10 for rack, if appropriate
12	M6 x 13 mm screws	10 for rack, if appropriate
9	M6 square clip nuts	9 for rack, if appropriate

**TABLE 3-3** Sliding Rail 19-inch 4-Post Rackmount Screw Kit Contents (*Continued*)

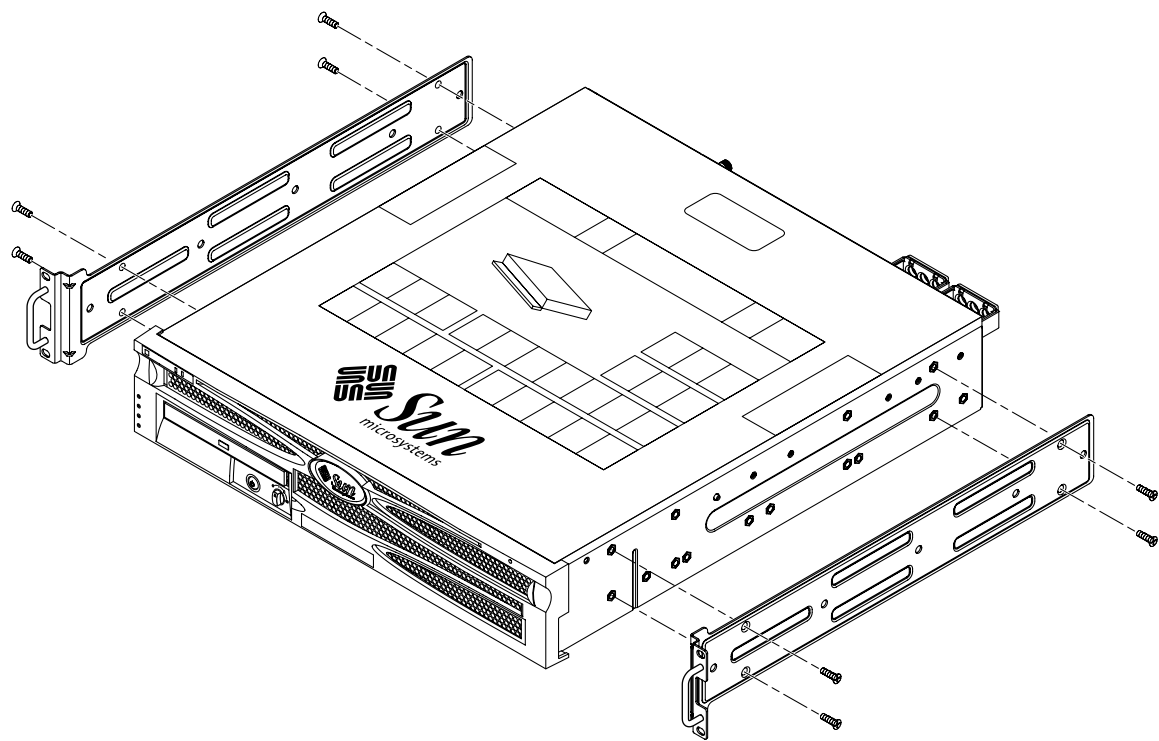
Number	Description	Where Used
10	10-32 collar screws 4 short, 4 long, 2 extra	8 for racks with 10-32 holes, if appropriate
12	10-32 x 0.5 in. combo head screws	12 for rack, if appropriate
12	12-24 x 0.5 in. combo head screws	12 for rack, if appropriate

1. Get the hardmount brackets and M5 × 8 mm flathead Phillips screws from the standard rack kit (FIGURE 3-1).

These hardmount brackets and screws came as part of the standard Netra 240 server ship kit, not as part of the sliding rail 19-inch 4-post rackmount ship kit.

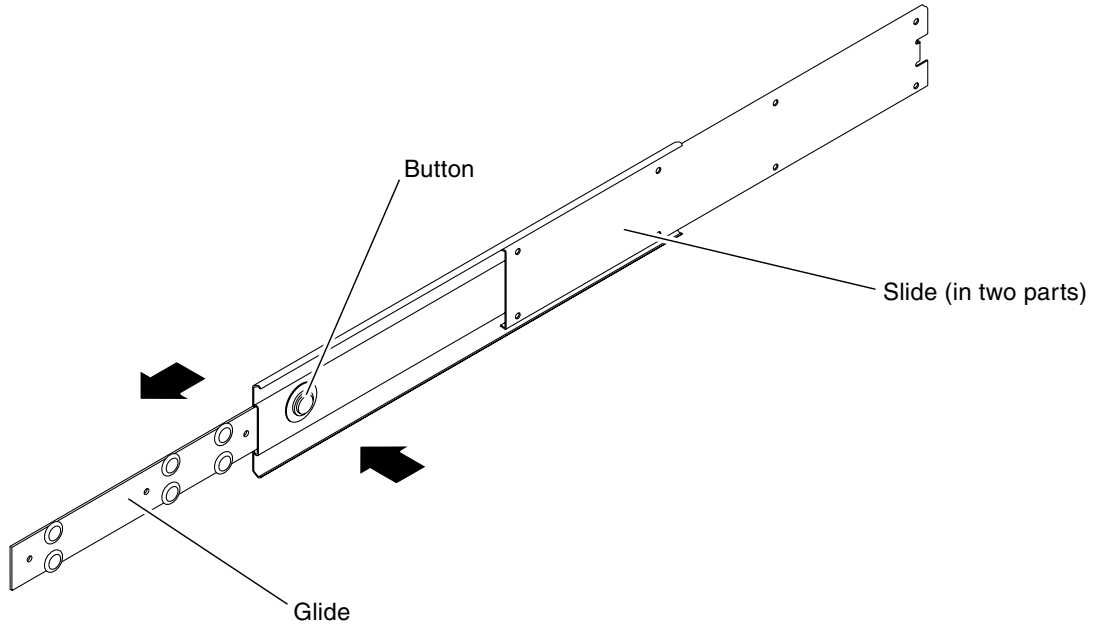
2. Using eight of the supplied M5 × 8 mm flathead Phillips screws (four screws for each bracket), secure the hardmount brackets to the sides of the server (FIGURE 3-7).

**FIGURE 3-7** Securing the Hardmount Bracket to the Server



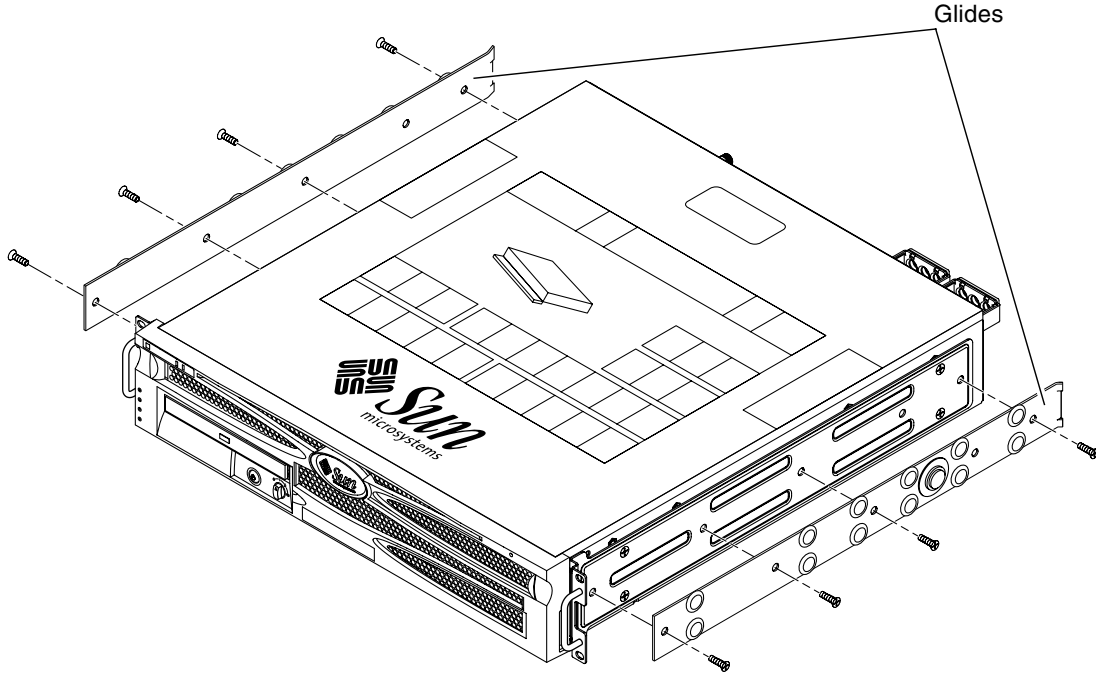
3. Get the Telco slide assemblies from the rack kit (FIGURE 3-6).
4. Press in the button on each slide and pull the glide completely out of the slide (FIGURE 3-8).

**FIGURE 3-8** Dismantling the Slide



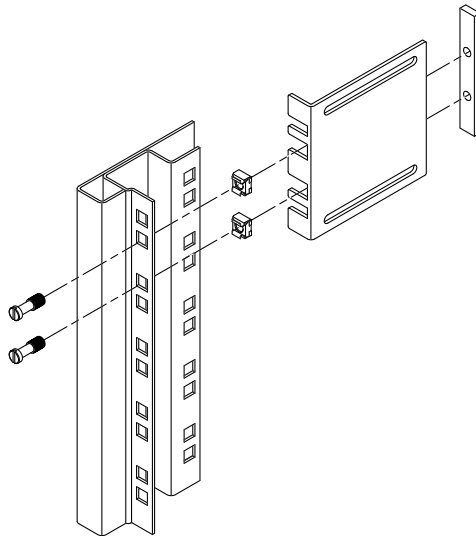
- Using eight of the  $M4 \times 0.5 \times 5$  mm panhead Phillips screws from the rackmount kit (four for each side), screw each glide to the side of the system chassis (FIGURE 3-9).

FIGURE 3-9 Fixing the Glides to the System Chassis



6. Get the short brackets and long brackets from the rackmount kit (FIGURE 3-6).
7. Lift each short bracket to the desired position at the *front* of the rack and attach a short bracket to each of the front rack uprights (FIGURE 3-10).  
Use two of the brass M6 collar screws and M6 cage nuts (if required), and one threaded strip, to secure each bracket (FIGURE 3-10).
8. Lift each long bracket to the desired position at the *rear* of the rack and attach a long bracket to each of the rear rack uprights (FIGURE 3-10).  
To secure each bracket, use two of the brass M6 collar screws and M6 cage nuts (if required) and one threaded strip, exactly as you did for the front rack uprights in the previous step.

**FIGURE 3-10** Securing the Brackets to the Rack



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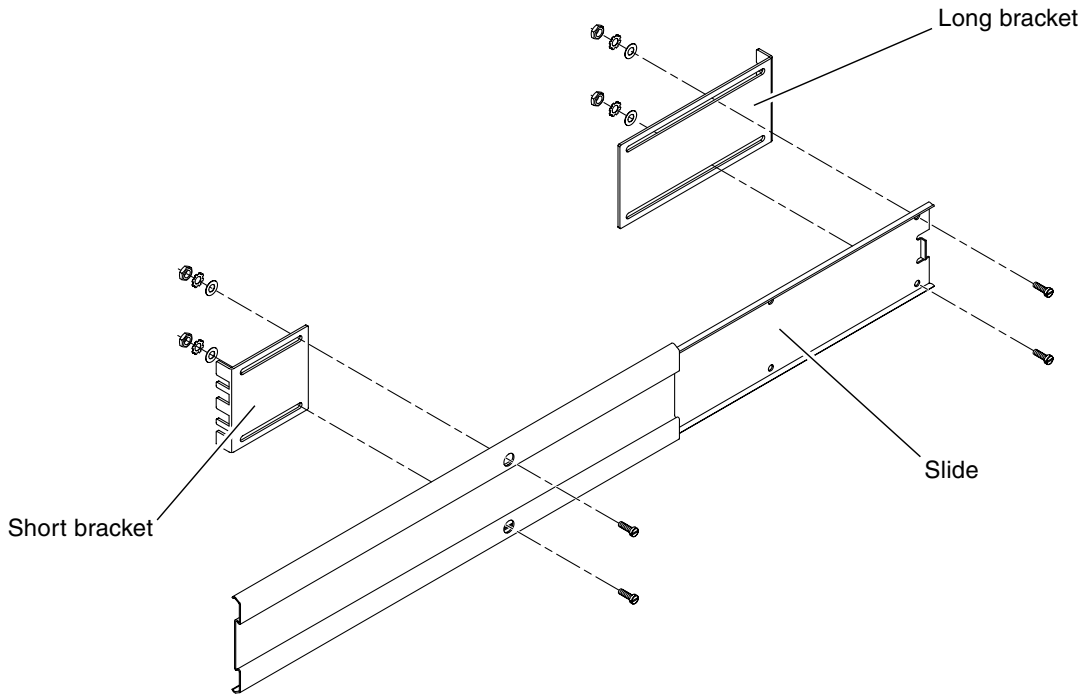
**Note** – If your rack has 10–32 holes, use the 10–32 collar screws and 10–32 threaded strips.

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9. Extend a slide to line up the access holes with the front screw holes.
10. Secure the slide onto the short and long brackets at the front and rear of the rack (FIGURE 3-11).

Use the M5 panhead screws from the inside and the M5 nuts, plain washers, and star washers from the outside. Use extension brackets instead of the long brackets if the dimension is greater than 665 mm.

FIGURE 3-11 Securing the Slide to the Brackets



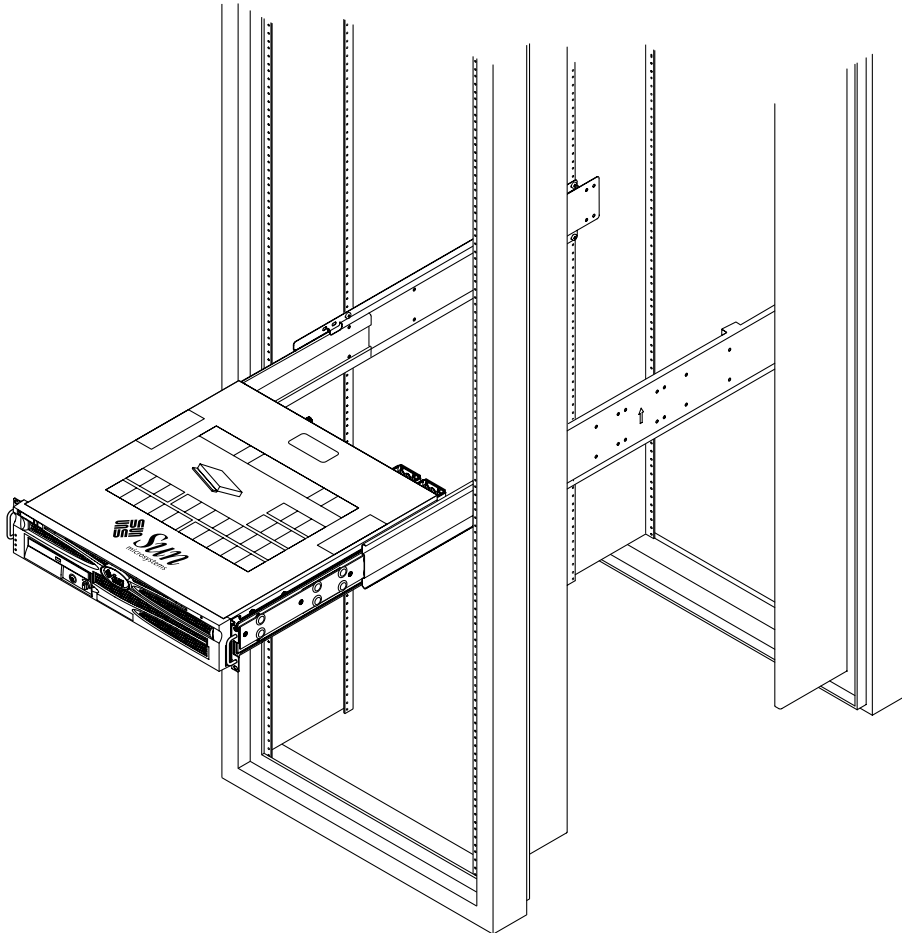
11. Repeat Step 9 and Step 10 for the slide on the other side of the rack.



- 12. Push the slides completely into the assembly on each side of the rack and release the stop catches.**
- 13. Align the glides attached to the system with the slide assemblies in the rack.**

You might find that there is too much or too little room between the two slides mounted in the rack, and the glides attached to the system might not align correctly with the slides in the rack. If either situation occurs, loosen the M6 collar screws and cage nuts on the long and short brackets ([Step 7](#) and [Step 8](#)), move them inward or outward to the appropriate points, then tighten them again.
- 14. Push in the slide buttons and slide the system all the way into the rack enclosure ([FIGURE 3-12](#)).**

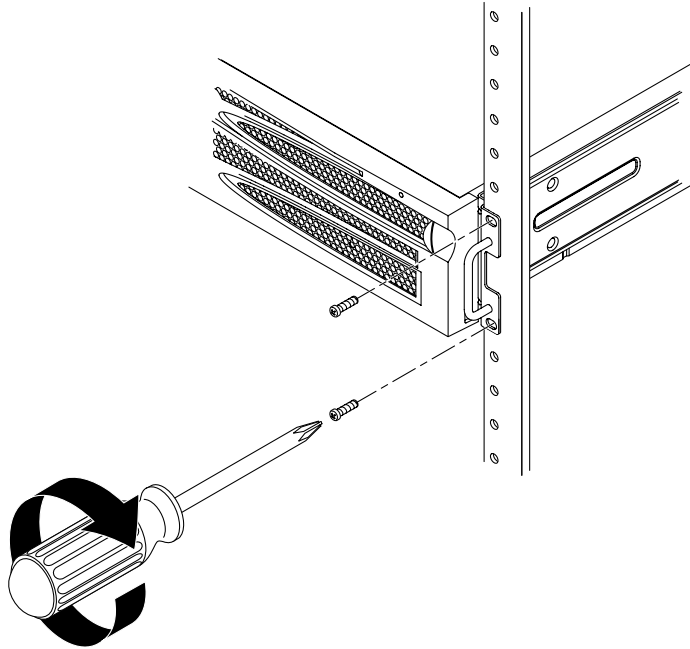
**FIGURE 3-12** Sliding the System Into the Rack



- 15. Using two screws per side, secure the front of the hardmount brackets that are attached to the sides of the server to the front of the rack (FIGURE 3-13).**

The size of the screws varies, depending on your particular rack.

**FIGURE 3-13** Securing the Front of the System to the Rack



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## Hardmount in a 600 mm 4-Post Rack

The hardmount kit for a 600 mm 4-post rack consists of:

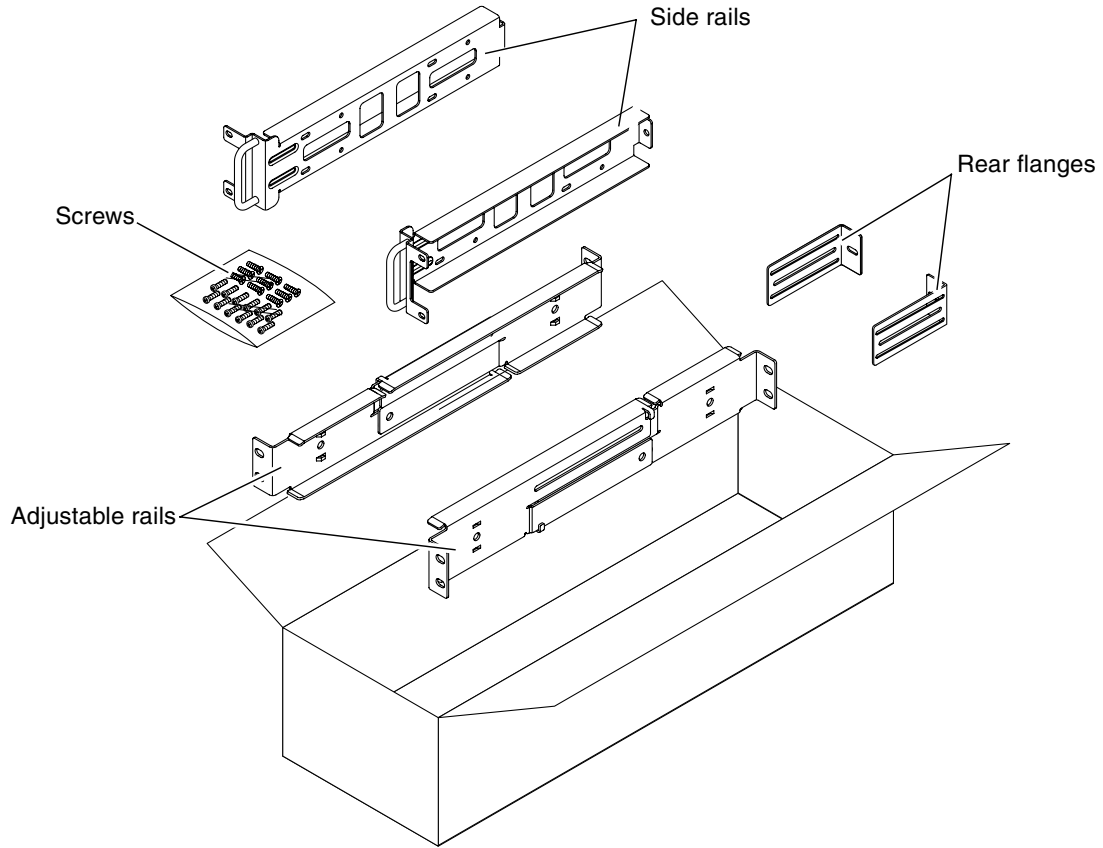
- Two adjustable rails
- Two side rails
- Two rear flanges
- Bag of screws

---

**Note** – The front-to-back rail spacing must be at least 392 mm (15.43 inches) and not more than 504 mm (19.84 inches) from the outside face of the front rail to the outside face of the back rail.

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**FIGURE 3-14** Contents of the Hardmount 600 mm 4-Post Kit



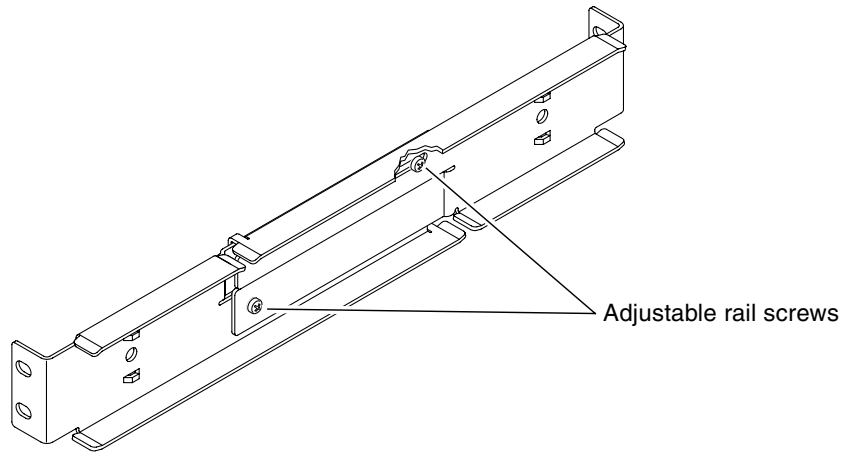
**TABLE 3-4** Hardmount 600 mm 4-Post Rackmount Screw Kit Contents

Number	Description	Where Used
12	M5 x 10 SEM screws	8 for side rails, 4 for rear flanges
10	M5 x 12.7 mm screws	10 for rack, if appropriate
10	M6 x 13 mm screws	10 for rack, if appropriate
9	M6 square clip nuts	9 for rack, if appropriate
12	10-32 x 0.5 in. combo head screws	12 for rack, if appropriate
12	12-24 x 0.5 in. combo head screws	12 for rack, if appropriate

1. Get the adjustable rails from the rack kit (FIGURE 3-14).

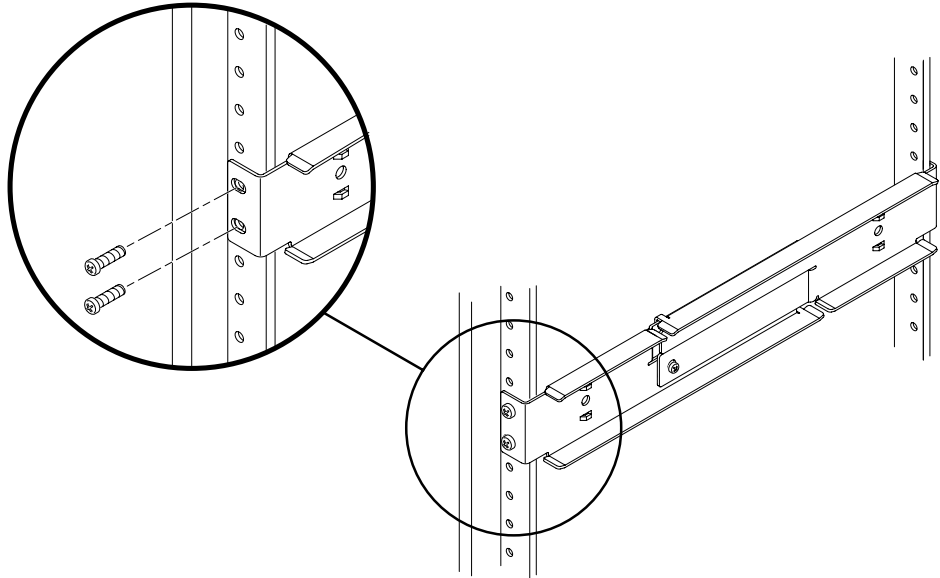
2. Loosen the two screws at the middle of each adjustable rail so that you can extend the adjustable rail ([FIGURE 3-15](#)).

**FIGURE 3-15** Loosening the Adjustable Rail Screws



3. Lift one of the adjustable rails to the desired location in the rack. Using two screws, secure the front of the rail in the rack (FIGURE 3-16).  
The size of the screws varies, depending on your particular rack.

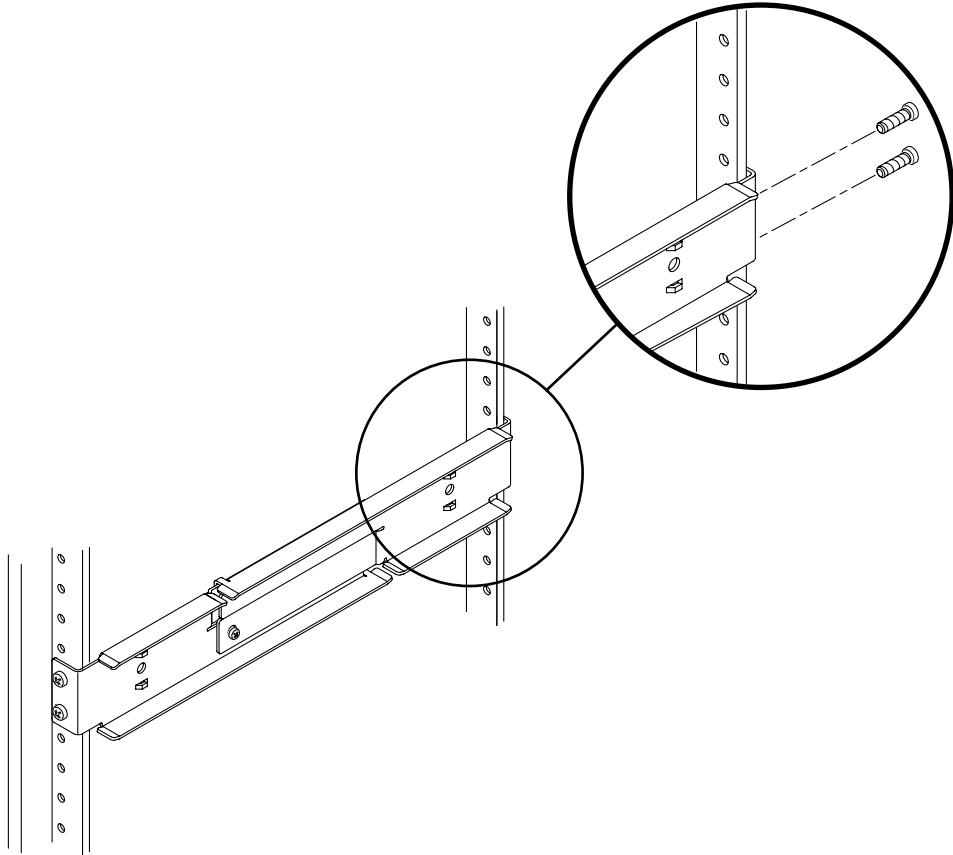
**FIGURE 3-16** Securing the Front of the Adjustable Rails to the Rack



4. At the rear of the rack, use two screws to secure the rear of the adjustable rails to the rack (FIGURE 3-17).

The size of the screws varies, depending on your particular rack.

**FIGURE 3-17** Securing the Rear of the Adjustable Rails to the Rack

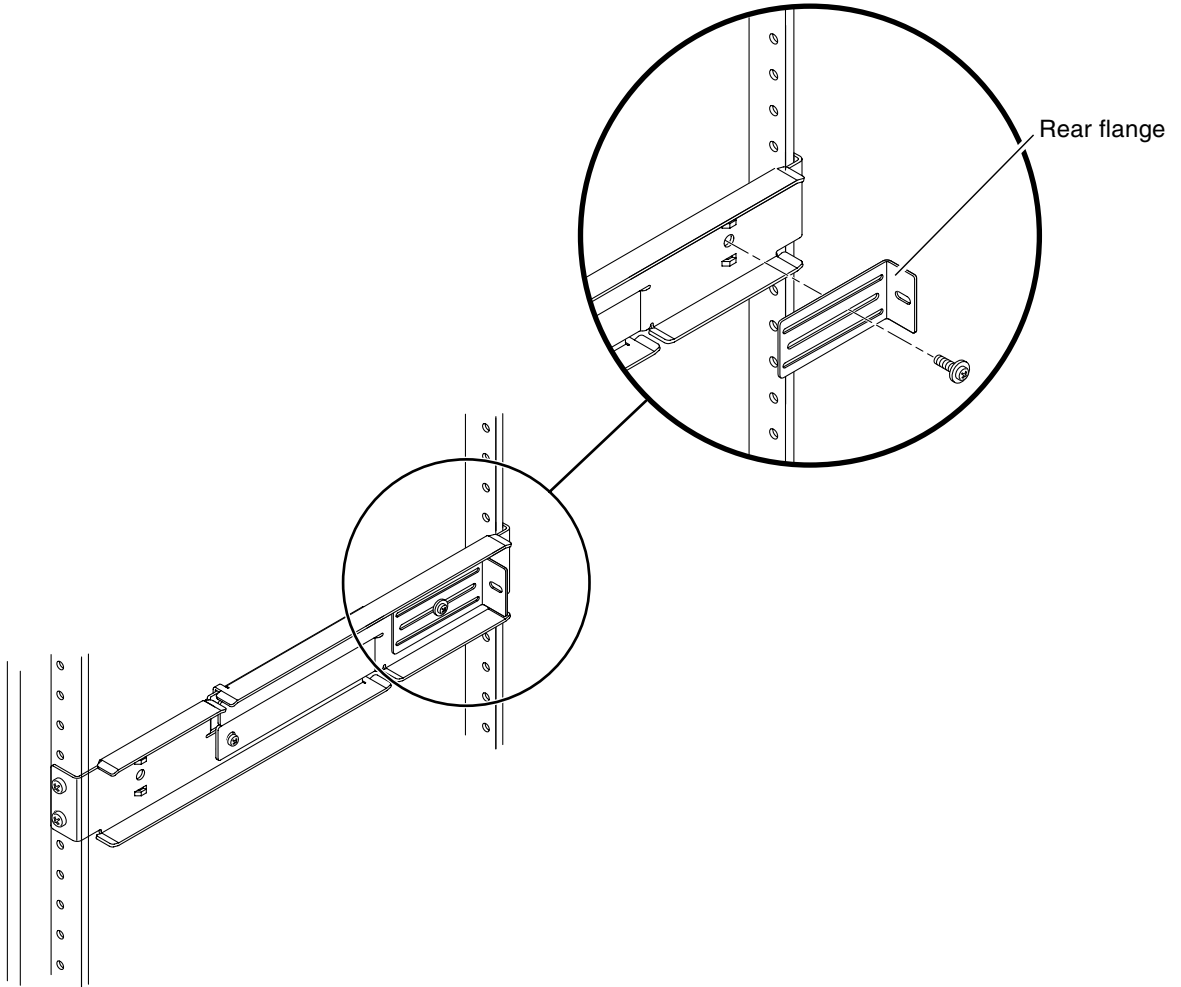


5. Tighten the two screws at the middle of each adjustable rail (FIGURE 3-15).
6. Repeat Step 3 through Step 5 to mount the other adjustable rail into the rack.



7. Get the rear flanges from the rack kit (FIGURE 3-14).
8. Using one M5 × 10 SEM screw for each rear flange, loosely install the rear flange onto the rear of each of the adjustable rails (FIGURE 3-18).  
Do not completely secure the rear flanges to the adjustable rails yet; you will use these flanges to set the rack depth for the system in a later step.

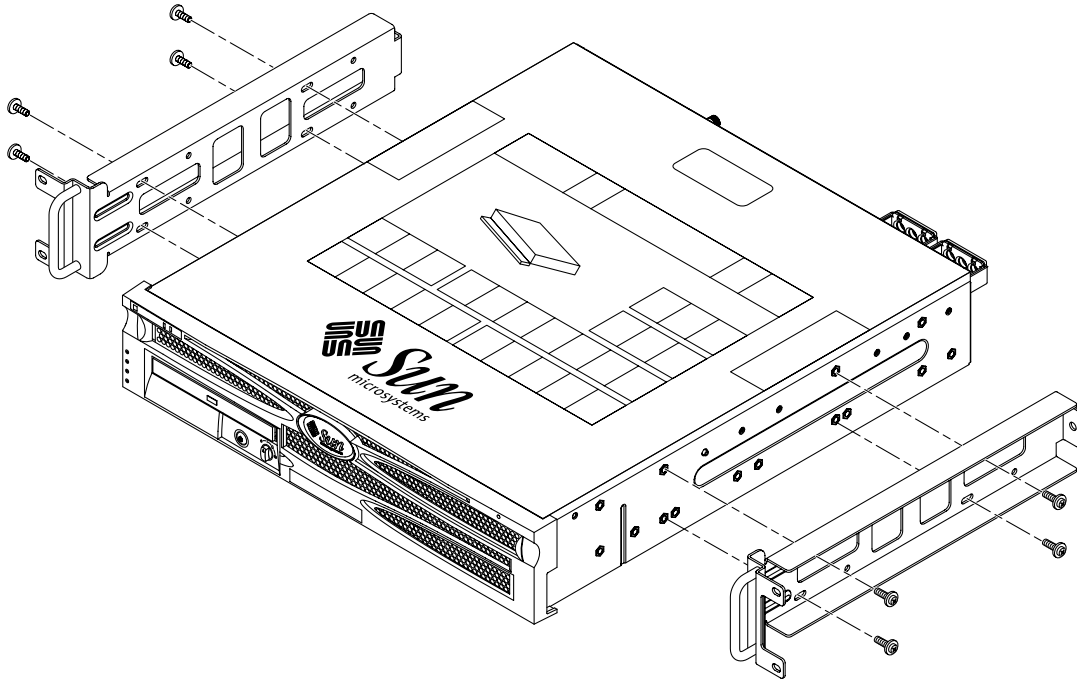
**FIGURE 3-18** Installing the Rear Flange Onto the Adjustable Rail



9. Get the side rails from the rack kit (FIGURE 3-14).
10. Using eight of the M5 × 10 SEM screws (four for each side rail), secure the side rails to the sides of the server (FIGURE 3-19).

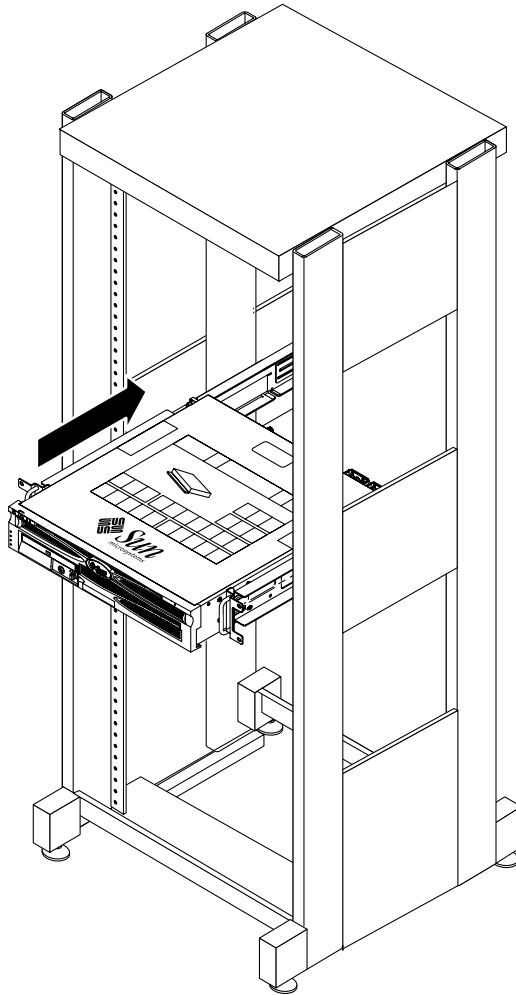
The side rails can accommodate rack rail setbacks (the distance from the front of the rack to the rack rail) of 50 mm, 75 mm, or 100 mm, depending on the type of rack you are installing the server into.

**FIGURE 3-19** Securing the Side Rails to the Server



11. Lift the server into the rack and slide the server onto the adjustable rails (FIGURE 3-20).

**FIGURE 3-20** Sliding the Server Onto the Adjustable Rails



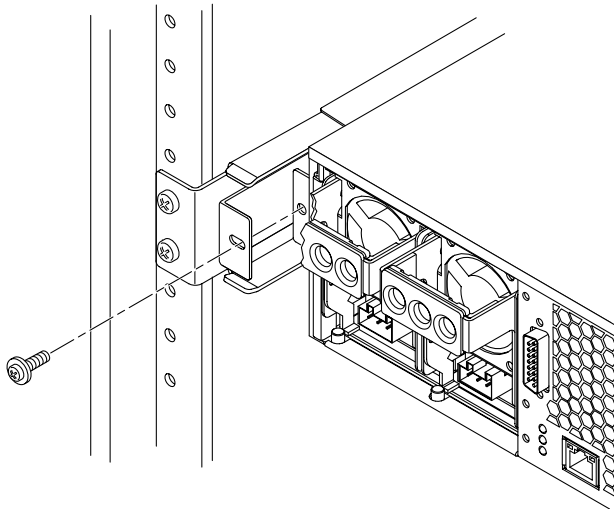
12. Push the server to the desired depth in the rack, then go to the rear of the system and push the rear flanges flush against the back of the system (FIGURE 3-18).

If the rack is especially shallow, you can flip the rear flanges around so that they rest flush against the rear of the server.

13. Lift the server back out of the rack.

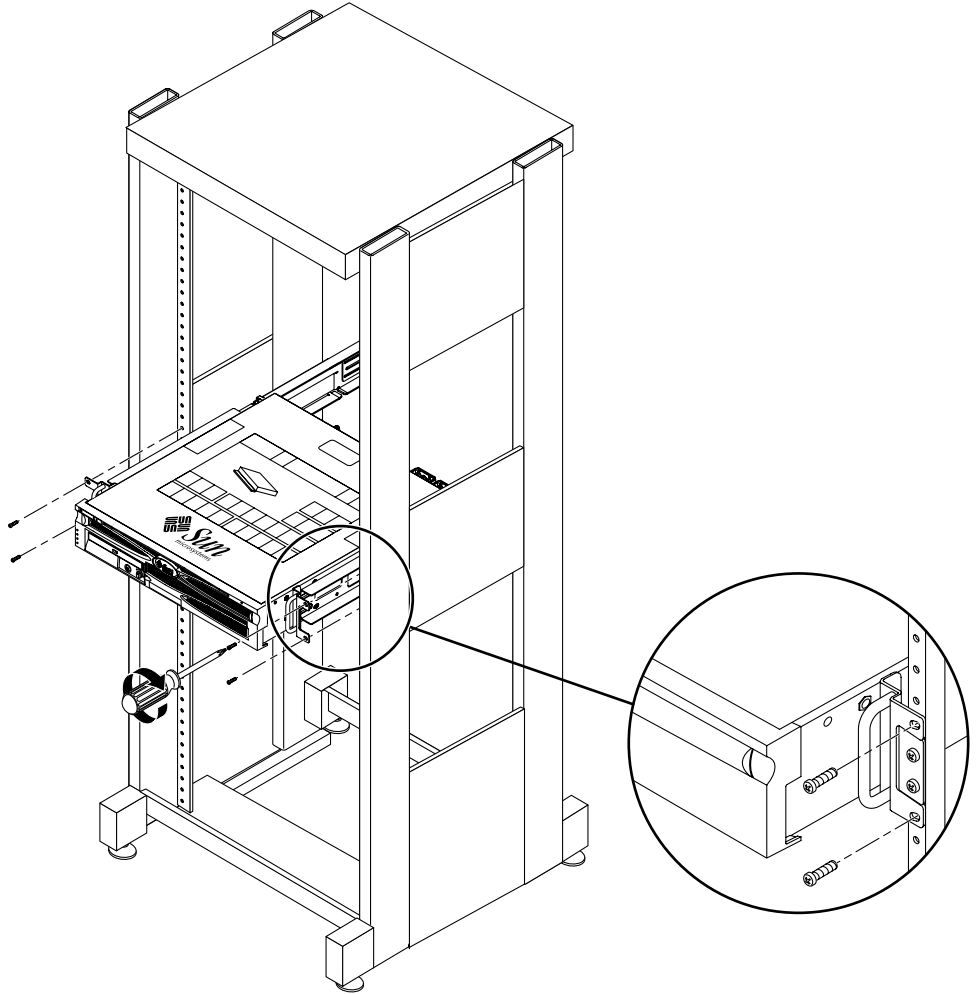
14. Set the rear flanges to the desired depth in the rack, then tighten the single M5 × 10 SEM screw on each of the flanges to secure them to the adjustable rails (FIGURE 3-18).
15. Lift the server back into the rack and slide it onto the adjustable rails.
16. Push the server back until it rests flush against the rear flanges, then use one M5 × 10 SEM screw for each rear flange to secure the rear of the server to the rear flanges (FIGURE 3-21).

**FIGURE 3-21** Securing the Rear of the Server to the Rear Flanges



17. At the front of the rack, use two screws per side to secure the side rails attached to the server to the front of the rack (FIGURE 3-22).  
The size of the screws varies, depending on your particular rack.

**FIGURE 3-22** Securing the Front of the Server to the Front of the Rack



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## Hardmount in a 23-Inch 2-Post Rack

The hardmount kit for a 23-inch 2-post rack consists of:

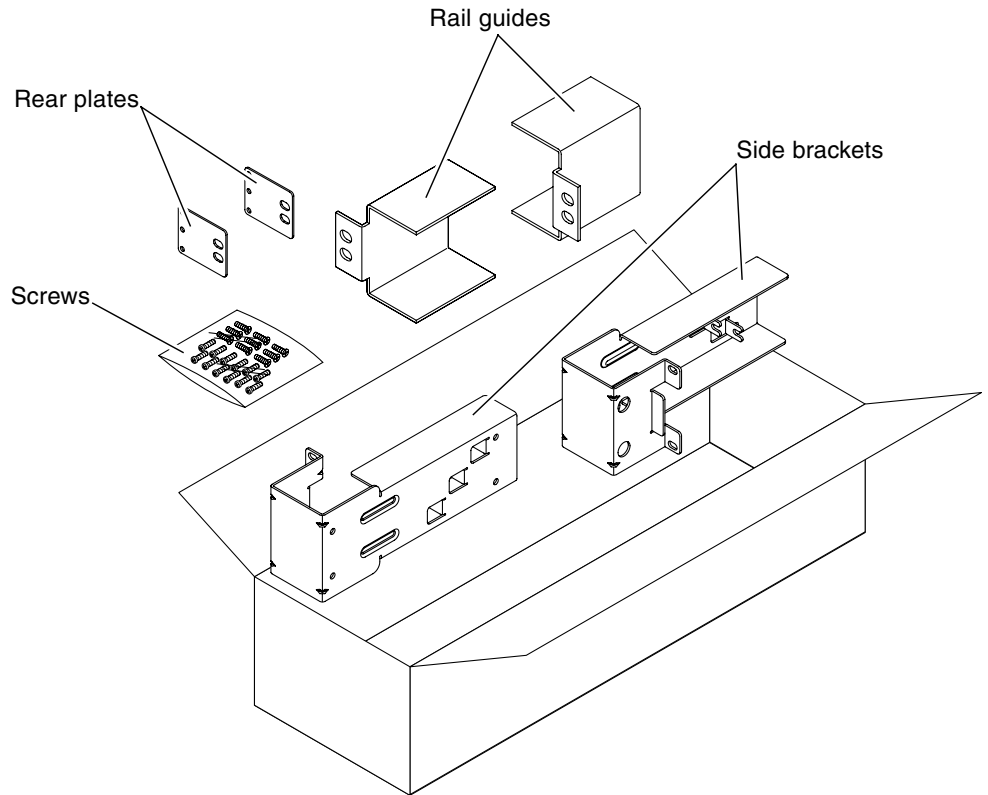
- Two side brackets
- Two rail guides
- Two rear plates
- Bag of screws

---

**Note** – The 23-inch 2-post rackmount kit supports rack web thicknesses (the width of the rack post) of 76.20 mm (3 inches), 101.6 mm (4 inches), and 127 mm (5 inches).

---

**FIGURE 3-23** Contents of the Hardmount 23-Inch 2-Post Kit

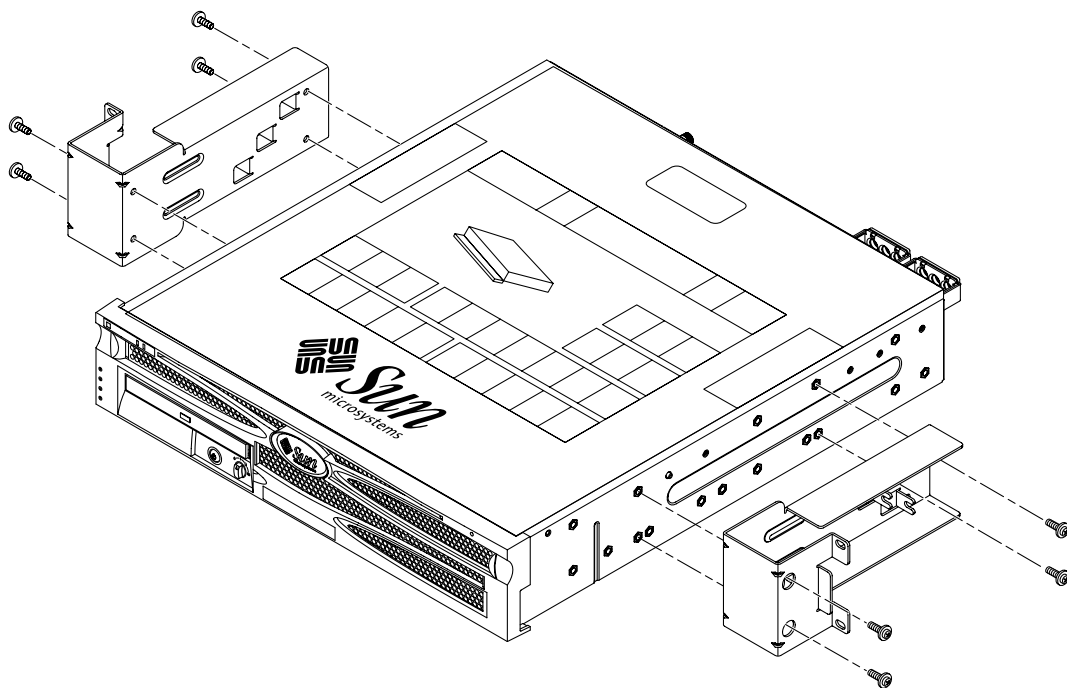


**TABLE 3-5** Hardmount 23-Inch 2-Post Rackmount Screw Kit Contents

Number	Description	Where Used
10	M5 x 10 SEM screws	8 for side brackets, 2 for rear plates
10	M5 x 12.7 mm screws	10 for rack, if appropriate
10	M6 x 13 mm screws	10 for rack, if appropriate
9	M6 square clip nuts	9 for rack, if appropriate
12	10-32 x 0.5 in. combo head screws	12 for rack, if appropriate
12	12-24 x 0.5 in. combo head screws	12 for rack, if appropriate

1. Get the side brackets from the rack kit (FIGURE 3-23).
2. Using eight of the M5 x 10 SEM screws (four for each side bracket), secure the side brackets to the sides of the server (FIGURE 3-24).

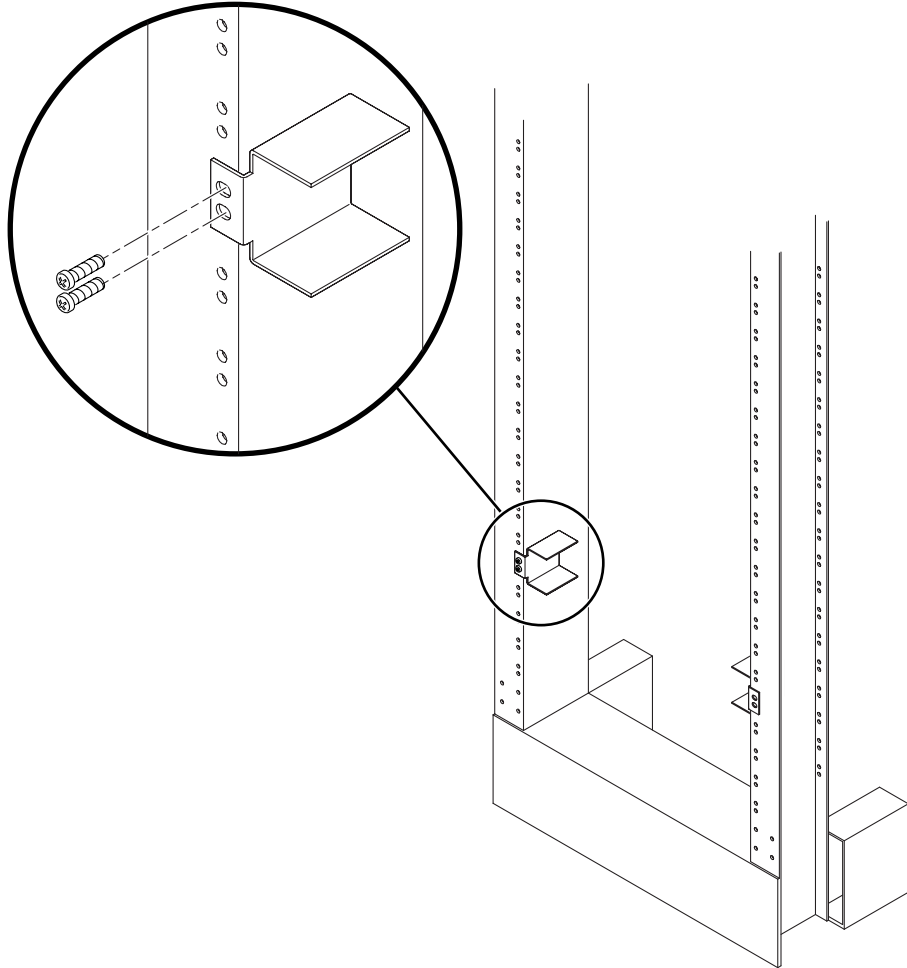
**FIGURE 3-24** Securing the Side Brackets to the Side of the Server





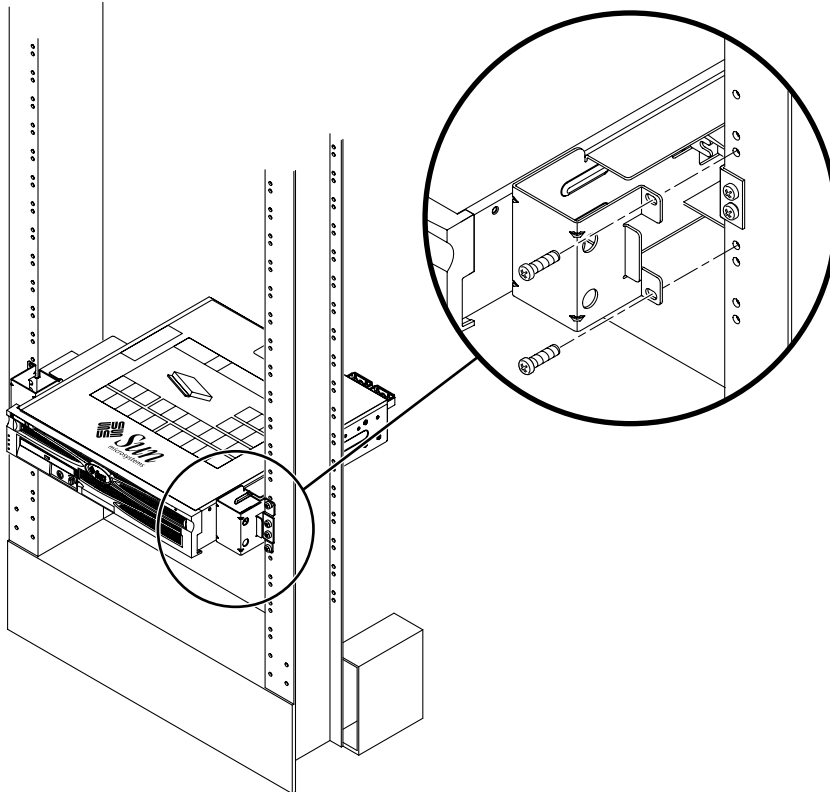
3. Get the rail guides from the rack kit (FIGURE 3-23).
4. Lift the rail guides to the desired height in the rack and, using two screws each, secure both rail guides to the rack (FIGURE 3-25).  
The size of the screws varies, depending on your particular rack.

FIGURE 3-25 Installing the Rail Guides in the Rack



5. Lift the server into the rack and slide the server onto the rail guides (FIGURE 3-26).

**FIGURE 3-26** Installing and Securing the Server in the 2-Post Rack



6. Using two screws on each side, secure each side bracket on the server to the front of the rack (FIGURE 3-26).

The size of the screws varies, depending on your particular rack.

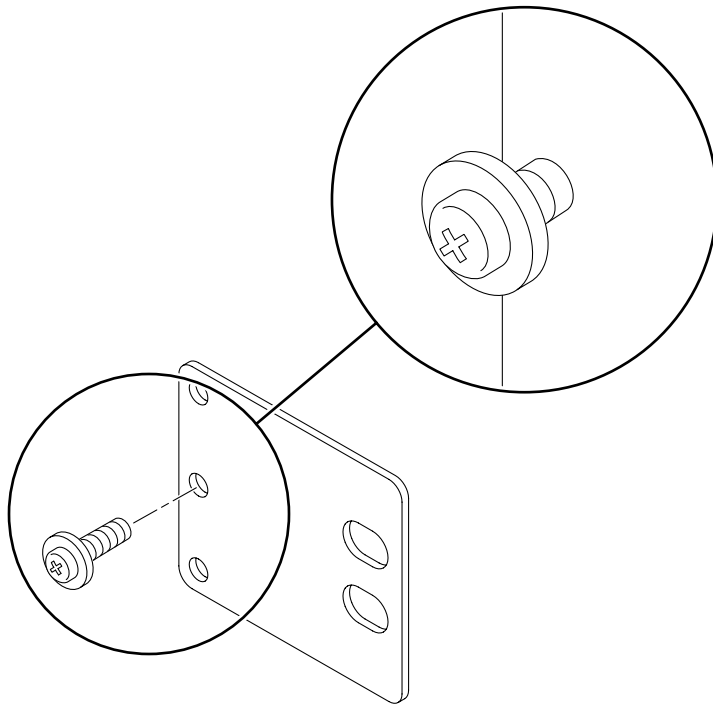
7. (Optional) If your environment contains especially high vibrations, use the rear plates to further secure the server to the rack (FIGURE 3-23).

The rear plates attach to the rear of the post and to one of the three eyelets on each side bracket, depending on the thickness of the post.

- a. Using one M5 × 10 SEM screw for each rear plate, loosely install the screw in one of the three positions on the rear plate (FIGURE 3-27).

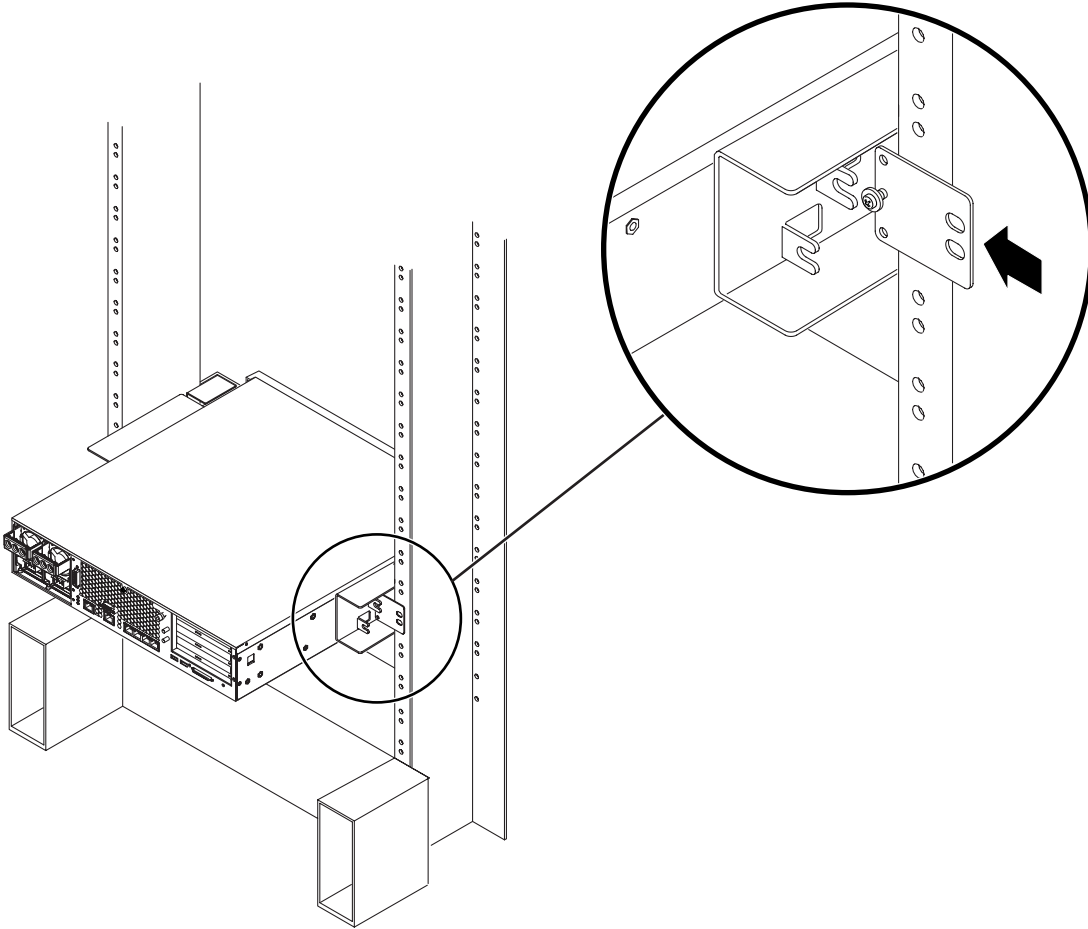
The position varies depending on the thickness of the rail in the rack. For example, FIGURE 3-27 shows where you would install the screw for the middle rack position on the rear plate.

**FIGURE 3-27** Installing a Screw on the Shallowest Rack Position on the Rear Plate



- b. Slide the rear plate in so that the screw slides into position into one of the eyelets, so that the screw head is facing the rear of the server and the other side of the rear plate is in front of the rack post (FIGURE 3-28).

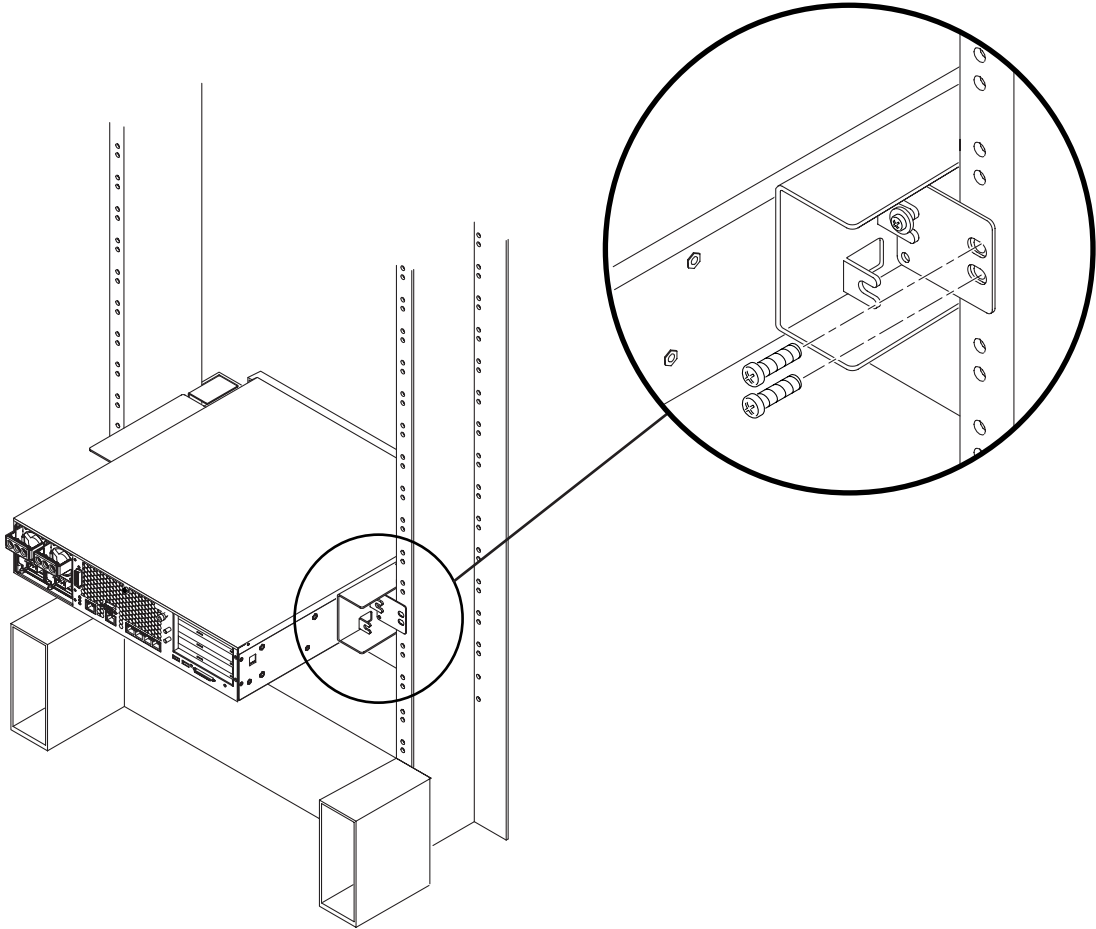
**FIGURE 3-28** Installing the Rear Plate to the Side Bracket



- c. Tighten the screw to secure the rear plate to the eyelet on the side bracket (FIGURE 3-28).

- d. Using two screws, secure the other side of the rear plate to the back of the post (FIGURE 3-29).  
The size of the screws varies, depending on your rack.

FIGURE 3-29 Securing the Rear Plate to the Side Bracket



- e. Repeat Step a through Step d to secure the rear plate on the other post.

---

# Hardmount in a 19-Inch 2-Post Rack

The hardmount kit for a 19-inch 2-post rack consists of:

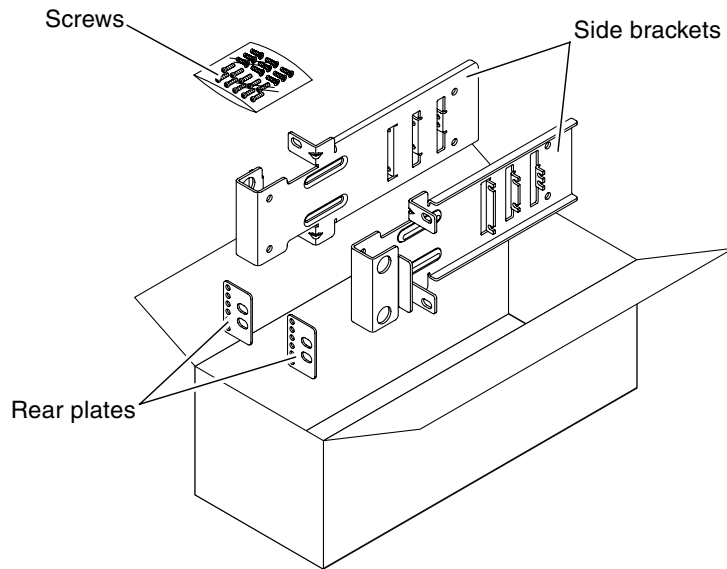
- Two side brackets
- Two rear plates
- Bag of screws

---

**Note** – The 19-inch 2-post rackmount kit supports rack web thicknesses (the width of the rack post) of 76.20 mm (3 inches), 101.6 mm (4 inches), and 127 mm (5 inches).

---

**FIGURE 3-30** Contents of the Hardmount 19-Inch 2-Post Kit



**TABLE 3-6** Hardmount 19-Inch 2-Post Rackmount Screw Kit Contents

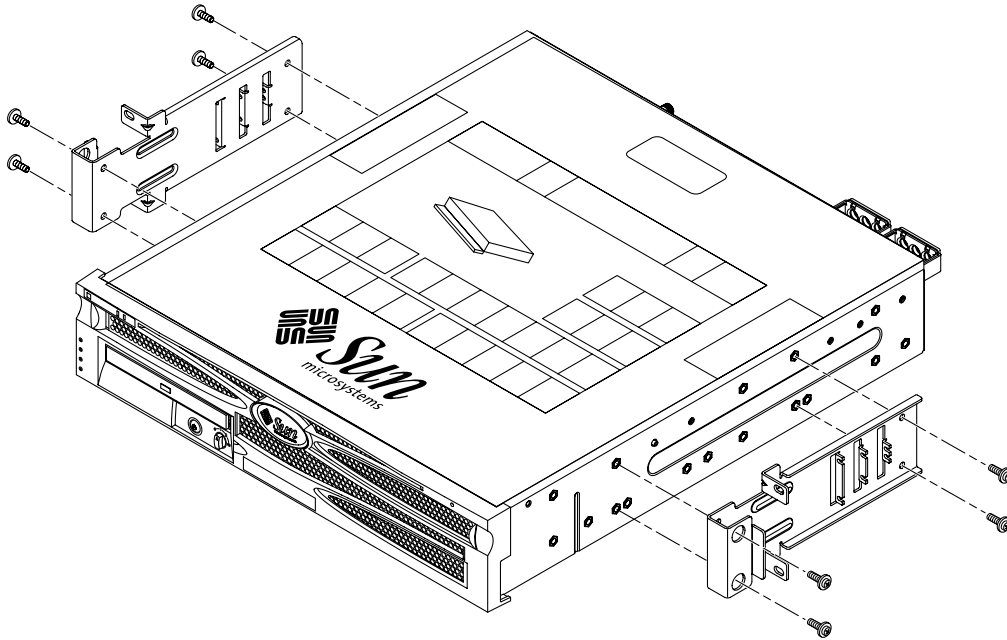
Number	Description	Where Used
10	M5 x 10 SEM screws	8 for side brackets, 2 extra
6	M3 x 8 SEM screws	4 for rear plates, 2 extra
10	M5 x 12.7 mm screws	10 for rack, if appropriate
10	M6 x 13 mm screws	10 for rack, if appropriate

**TABLE 3-6** Hardmount 19-Inch 2-Post Rackmount Screw Kit Contents (Continued)

Number	Description	Where Used
9	M6 square clip nuts	9 for rack, if appropriate
12	10-32 x 0.5 in. combo head screws	12 for rack, if appropriate
12	12-24 x 0.5 in. combo head screws	12 for rack, if appropriate

1. Get the side brackets from the rack kit (FIGURE 3-30).
2. Using four of the M5 x 10 SEM screws for each side bracket, secure the side brackets to the sides of the server (FIGURE 3-31).

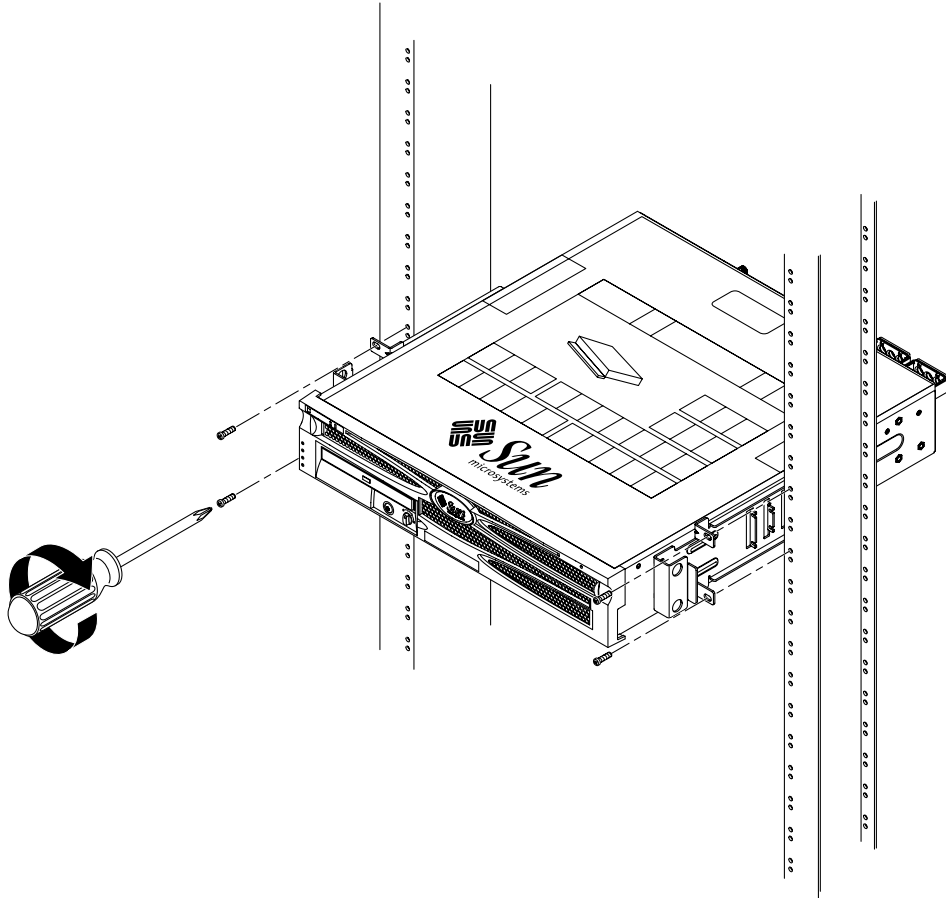
**FIGURE 3-31** Securing the Side Brackets to the Side of the Server



3. Lift the server into the rack.
4. Using two screws for each bracket, secure the front of the server to the front of the rack (FIGURE 3-32).

The size of the screws varies, depending on your rack.

**FIGURE 3-32** Installing and Securing the Server in the 2-Post Rack





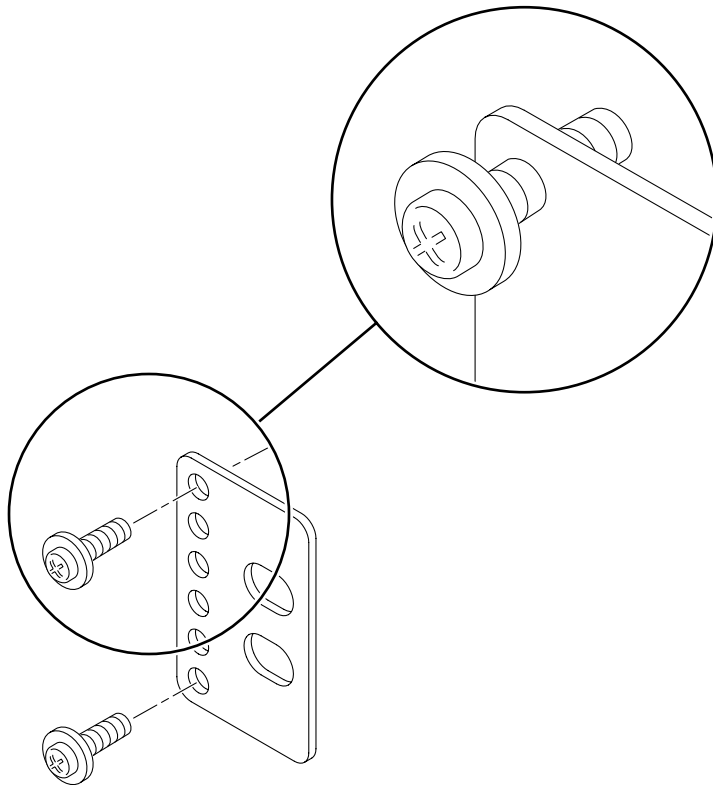
5. (Optional) If your environment contains especially high vibrations, use the rear plates to further secure the server to the rack (FIGURE 3-30).

The rear plates attach to the rear of the post and to one of the three sets of eyelets on each side bracket, depending on the thickness of the post.

- a. Using two of the M3 × 8 SEM screws or each rear plate, loosely install the screws in one of the three positions on the rear plate (FIGURE 3-33).

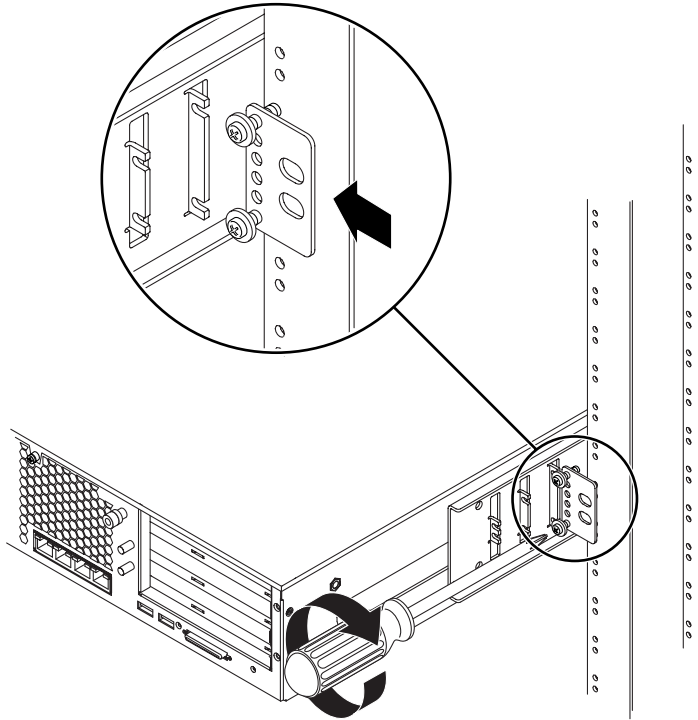
The position varies depending on the thickness of the rail in the rack. For example, FIGURE 3-33 shows where you would install the screws for the shallowest rack position on the rear plate.

**FIGURE 3-33** Installing Screws on the Shallowest Rack Position on the Rear Plate



- b. Slide the rear plate in so that the screws slide into position into one set of the eyelets, so that the screw heads are facing the rear of the server and the other side of the rear plate is in front of the rack post (FIGURE 3-34).

FIGURE 3-34 Installing the Rear Plate to the Side Bracket

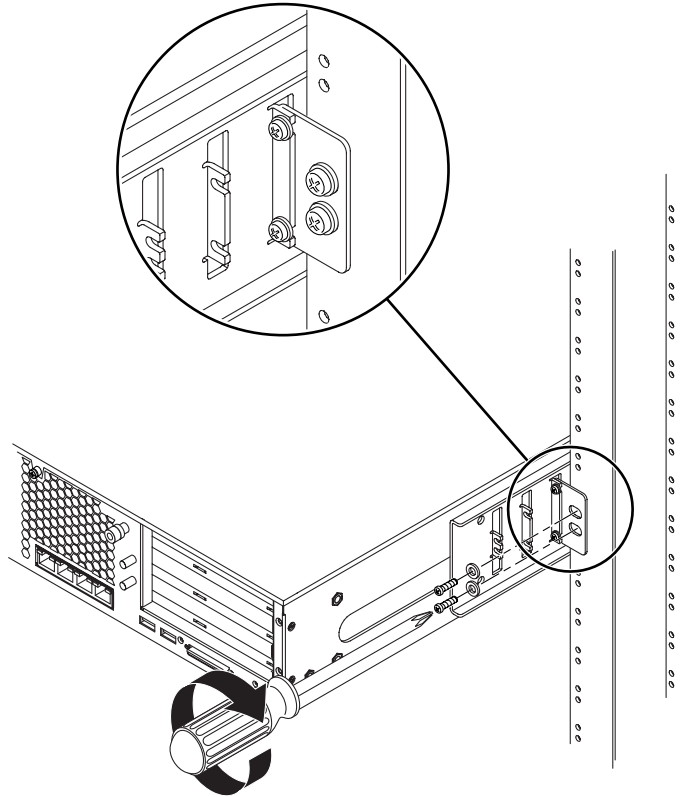


- c. Tighten the screws to secure the rear plate to the set of eyelets on the side bracket (FIGURE 3-34).

- d. Using two screws, secure the other side of the rear plate to the back of the post (FIGURE 3-35).

The size of the screws varies, depending on your rack.

**FIGURE 3-35** Securing the Rear Plate to the Rack



- e. Repeat Step a through Step d to secure the rear plate on the other post.



## Connecting the Data Cables

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This chapter provides the data cabling instructions for the Netra 240 server, and contains the following sections:

- “Rear Cable Connections” on page 62
- “Connecting the Chassis Grounding Cable” on page 65
- “Connecting the Data Cables” on page 66

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**Note** – See [Chapter 5](#) for a listing of the power site requirements and the instructions for assembling and connecting the power cables.

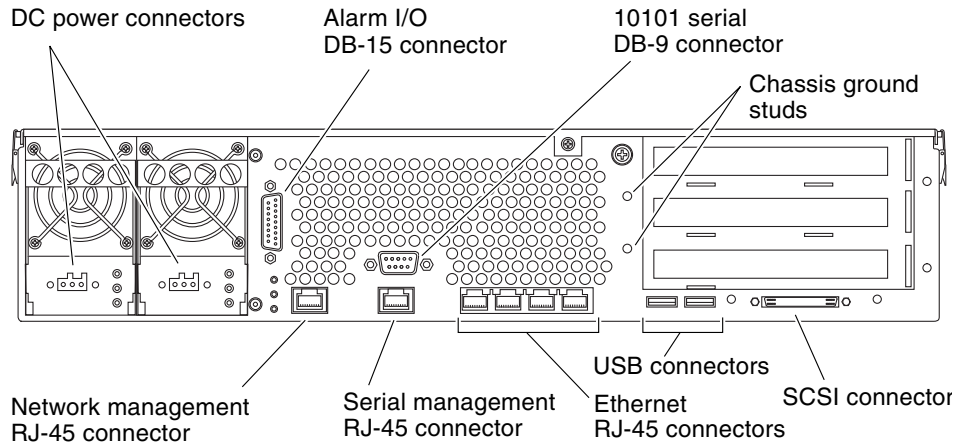
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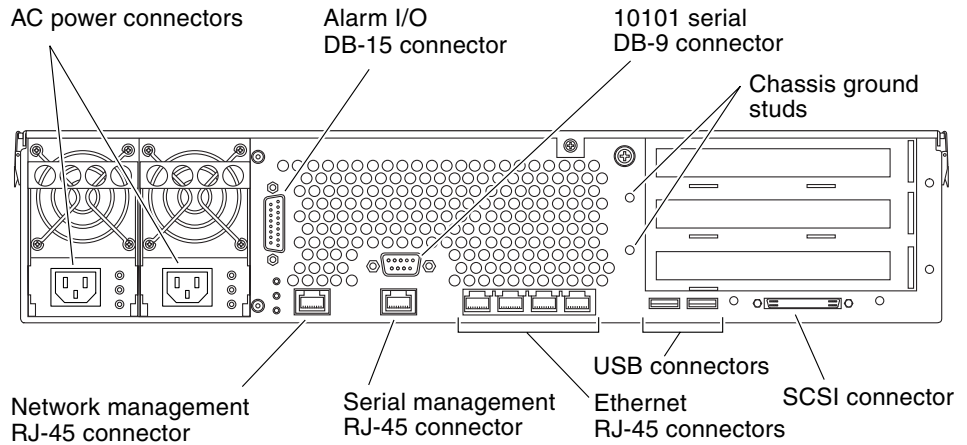
## Rear Cable Connections

[FIGURE 4-1](#) displays the location of the rear cable connectors of the DC server, [FIGURE 4-2](#) displays the AC server's rear cable connectors, and [TABLE 4-1](#) describes these connectors.

**FIGURE 4-1** Rear Cable Connectors (DC Server)



**FIGURE 4-2** Rear Cable Connectors (AC Server)



**TABLE 4-1** Rear Cable Connector Descriptions

Cable Connector	Connector Type	Description
DC power (DC server only)	WAGO	DC power input cables connect to each DC connector. Do <i>not</i> connect the power cables to a DC connector at this point. <b>Note:</b> See <a href="#">Chapter 5</a> for instructions on assembling and connecting the DC power cables.
AC power (AC server only)	IEC320	AC power input cables connect to each AC connector. Do <i>not</i> connect the power cables to a AC connector at this point. <b>Note:</b> See <a href="#">Chapter 5</a> for instructions on assembling and connecting the AC power cables.
Alarm I/O	DB-15	In a telecommunications environment, use this port to connect to the central office alarming system.
10101 serial	DB-9	Use this serial port for general purpose data transfer.
Chassis ground studs	Two exposed studs	Use these studs to connect the server to protected earth ground.
Network management	RJ-45	Use this port for making an Ethernet connection to the ALOM software.
Serial management	RJ-45	Use this serial port for server management using the ALOM software.
Ethernet	Four RJ-45	Use these ports to connect to autonegotiating 10/100/1000BASE-T Ethernet networks.
USB	Two USB	Use these two ports to connect to external USB 1.1 devices.
SCSI	68-pin Ultra160 LVD	Use this port to connect to external SCSI devices.



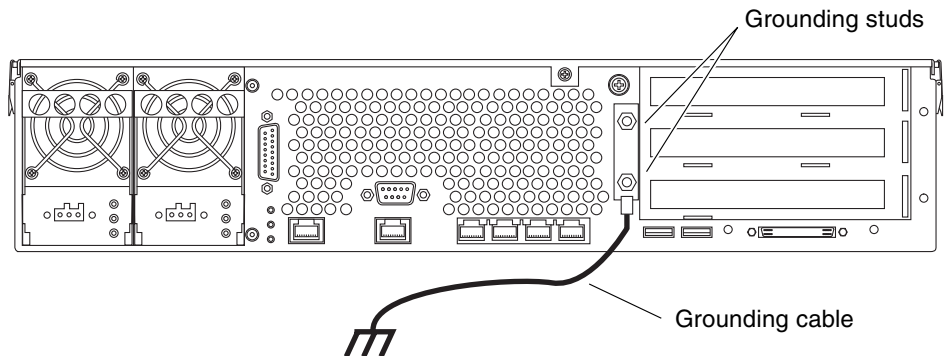
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# Connecting the Chassis Grounding Cable

Before installing any other cable, you should first attach the chassis ground cable to the server's chassis grounding studs. Refer to the [Chapter 5](#) for the site requirements for this section.

1. Obtain a chassis grounding cable from your site and two M5 nuts with lock washers from the ship kit.
2. Go to the back of the server and locate the two chassis grounding studs (see [FIGURE 4-3](#)).
3. Position and align the chassis grounding cable against the two grounding studs at the rear of the chassis.

**FIGURE 4-3** Location of Chassis Grounding Studs



4. Tighten the two M5 nuts to secure the grounding cable to the two studs.
5. Secure the other end of the grounding cable to the earth ground in the building.

You can secure the grounding cable to a proper grounding point on the rack, as long as the rack is properly grounded to the earth ground in the building.



---

**Caution** – An electrical hazard is present if energized units are not properly grounded.

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# Connecting the Data Cables

This section provides information about the rear panel cable connections.

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**Note** – See [Chapter 5](#) for complete information about assembling and connecting the power cables.

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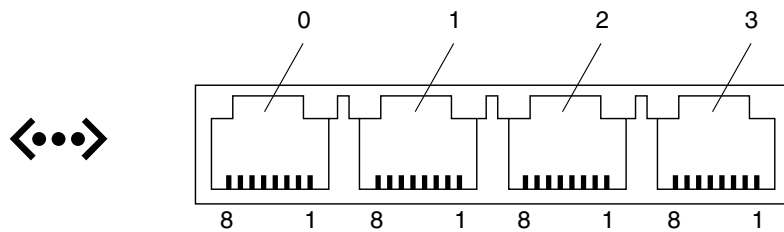
## Gigabit Ethernet Ports

The Netra 240 server has four autonegotiating 10/100/1000BASE-T Gigabit Ethernet system domain ports. All four Ethernet ports use a standard RJ-45 connector, the transfer rates for which are given in [TABLE 4-2](#). [FIGURE 4-4](#) shows the pin numbering of the ports, and [TABLE 4-3](#) describes the pin signals.

**TABLE 4-2** Ethernet Connection Transfer Rates

Connection Type	IEEE Terminology	Transfer Rate
Ethernet	10BASE-T	10 Mbit/s
Fast Ethernet	100BASE-TX	100 Mbits/s
Gigabit Ethernet	1000BASE-T	1000 Mbit/s

**FIGURE 4-4** Gigabit Ethernet Port Pin Numbering



**TABLE 4-3** Gigabit Ethernet Port Signals

Pin	Signal Description	Pin	Signal Description
1	Transmit/Receive Data 0 +	5	Transmit/Receive Data 2 –
2	Transmit/Receive Data 0 –	6	Transmit/Receive Data 1 –
3	Transmit/Receive Data 1 +	7	Transmit/Receive Data 3 +
4	Transmit/Receive Data 2 +	8	Transmit/Receive Data 3 –

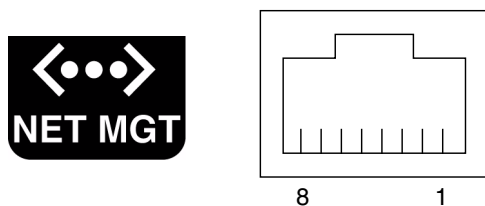
## Network Management Port

The server has one 10BASE-T Ethernet management domain interface, labelled NET MGT. For information on configuring this port for managing the server with ALOM, see the *Sun Advanced Lights Out Manager User Guide for the Netra 240 Server* (817-3174).



**Caution** – If you are planning to use the network management (NET MGT) port, you must use a shielded Ethernet cable to maintain your server’s NEBS compliance. The cable’s shield must be grounded at both ends.

**FIGURE 4-5** Network Management Port Pin Numbering



**TABLE 4-4** Network Management Connector Signals

Pin	Signal Description	Pin	Signal Description
1	Transmit Data +	5	Common Mode Termination
2	Transmit Data –	6	Receive Data –
3	Receive Data +	7	Common Mode Termination
4	Common Mode Termination	8	Common Mode Termination

# Serial Ports

The server has two serial ports, labeled SERIAL MGT and 10101. [TABLE 4-5](#) lists the default serial connection settings for both serial ports.

**TABLE 4-5** Default Serial Connection Settings

Parameter	Setting
Connector	SERIAL MGT or 10101
Rate	9600 baud
Parity	None
Stop bits	1
Data bits	8

## Serial Management Port

The serial management connector (labeled SERIAL MGT) is an RJ-45 connector that can be accessed from the back panel. This port is the default connection to the system, and you should use this port *only* for server management.



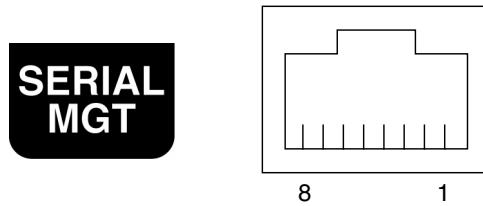
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**Caution** – You must use a shielded Ethernet cable to maintain your server’s NEBS compliance. The cable’s shield must be grounded at both ends.

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[FIGURE 4-6](#) shows the pin numbering of the serial management port, and [TABLE 4-6](#) describes the pin signals.

**FIGURE 4-6** Serial Management Port Pin Numbering



**TABLE 4-6** Serial Management RJ-45 Connector Signals

Pin	Signal Description	Pin	Signal Description
1	Request to Send	5	Ground
2	Data Terminal Ready	6	Receive Data
3	Transmit Data	7	Data Set Ready
4	Ground	8	Clear to Send

If you need to connect to the SERIAL MGT port using a cable with either a DB-9 or a DB-25 connector, use a supplied adapter to perform the crossovers given for each connector. The supplied RJ-45 to DB-9 and RJ-45 to DB-25 adapters are wired as described in [TABLE 4-7](#) and [TABLE 4-8](#).

### *RJ-45 to DB-9 Adapter Crossovers*

**TABLE 4-7** RJ-45 to DB-9 Adapter Crossovers

Serial Port (RJ-45 Connector)		DB-9 Adapter	
Pin	Signal Description	Pin	Signal Description
1	RTS	8	CTS
2	DTR	6	DSR
3	TXD	2	RXD
4	Signal Ground	5	Signal Ground
5	Signal Ground	5	Signal Ground
6	RXD	3	TXD
7	DSR	4	DTR
8	CTS	7	RTS

## RJ-45 to DB-25 Adapter Crossovers

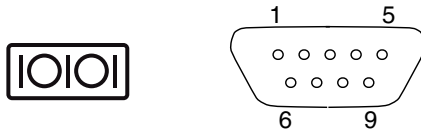
**TABLE 4-8** RJ-45 to DB-25 Adapter Crossovers

Serial Port (RJ-45 Connector)		DB-25 Adapter	
Pin	Signal Description	Pin	Signal Description
1	RTS	5	CTS
2	DTR	6	DSR
3	TXD	3	RXD
4	Signal Ground	7	Signal Ground
5	Signal Ground	7	Signal Ground
6	RXD	2	TXD
7	DSR	20	DTR
8	CTS	4	RTS

## Serial Port (10101)

The port labeled 10101 accepts a DB-9 connector. Use this port for general purpose serial data transfers. [FIGURE 4-7](#) shows the pin numbering of the serial port, and [TABLE 4-9](#) describes the pin signals.

**FIGURE 4-7** Serial Port (10101) Pin Numbering



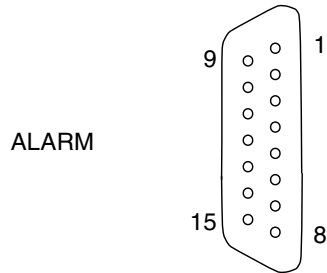
**TABLE 4-9** Serial Port (10101) Connector Signals

Pin	Signal Description	Pin	Signal Description
1	Data Carrier Detect	6	Data Set Ready
2	Receive Data	7	Request to Send
3	Transmit Data	8	Clear to Send
4	Data Terminal Ready	9	Ring Indicate
5	Ground		

# Alarm Port

The alarm port on the alarm rear transition card uses a standard DB-15 male connector. In a telecommunications environment, use this port to connect to the central office alarming system. [FIGURE 4-8](#) shows the pin numbering of the alarm port, and [TABLE 4-10](#) describes the pin signals.

**FIGURE 4-8** Alarm Port Pin Numbering



**TABLE 4-10** Alarm Connector Signals

Pin	Service	Pin	Service
1	INPUT0 +	9	ALARM1_NC
2	INPUT0 -	10	ALARM1_COM
3	NC	11	ALARM2_NO
4	NC	12	ALARM2_NC
5	ALARM0_NC*	13	ALARM2_COM
6	ALARM0_NO*	14	ALARM3_NO
7	ALARM0_COM*	15	ALARM3_COM
8	ALARM1_NO	CHASSIS	FRAME GND

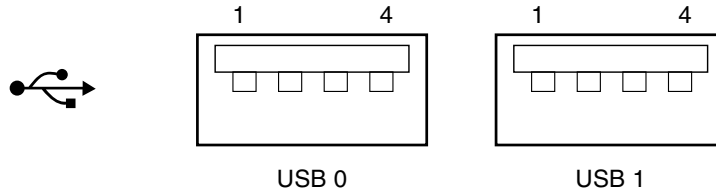
\* The ALOM software sets the ALARM0 (critical) relay and the associated (critical) LED for the following conditions:

- When the system is in Standby mode.
- When the server is powered on and the operating system has not booted or has failed.

# USB Ports

The server has two USB ports for attaching supported USB 1.1-compliant devices. [FIGURE 4-9](#) shows the pin numbering of the USB ports, and [TABLE 4-11](#) describes the pin signals.

**FIGURE 4-9** USB Ports Pin Numbering



**TABLE 4-11** USB Connector Pin Signals

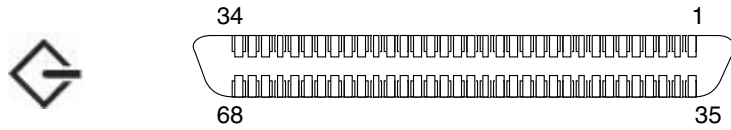
Pin	Signal Description
1	+5 V
2	DAT-
3	DAT+
4	Ground

# SCSI Port

The SCSI port is a multimode Ultra 160SCSI interface. To operate at Ultra 160SCSI speeds, the part must be in Low-Voltage Differential (LVD) mode. If a single-ended device is connected to the server, it automatically switches to single-ended mode. [FIGURE 4-10](#) shows the pin numbering of the SCSI port, and [TABLE 4-12](#) describes the pin signals.



**FIGURE 4-10** SCSI Port Pin Numbering



**TABLE 4-12** SCSI Port Pin Signals

Pin	Signal Description	Pin	Signal Description
1	Data12 +	35	Data12 –
2	Data13 +	36	Data13 –
3	Data14 +	37	Data14 –
4	Data15 +	38	Data15 –
5	Parity1 +	39	Parity1 –
6	Data0 +	40	Data0 –
7	Data1 +	41	Data1 –
8	Data2 +	42	Data2 –
9	Data3 +	43	Data3 –
10	Data4 +	44	Data4 –
11	Data5 +	45	Data5 –
12	Data6 +	46	Data6 –
13	Data7 +	47	Data7 –
14	Parity0 +	48	Parity0 –
15	Ground	49	Ground
16	DIFF_SENSE	50	Ground
17	TERM_PWR	51	TERM_PWR
18	TERM_PWR	52	TERM_PWR
19	(N/C)	53	(N/C)
20	Ground	54	Ground
21	ATN +	55	ATN –
22	Ground	56	Ground
23	BSY +	57	BSY –
24	ACK +	58	ACK –
25	RST +	59	RST –

**TABLE 4-12** SCSI Port Pin Signals (*Continued*)

<b>Pin</b>	<b>Signal Description</b>	<b>Pin</b>	<b>Signal Description</b>
26	MSG +	60	MSG –
27	SEL +	61	SEL –
28	CD +	62	CD –
29	REQ +	63	REQ –
30	I/O +	64	I/O –
31	Data8 +	65	Data8 –
32	Data9 +	66	Data9 –
33	Data10 +	67	Data10 –
34	Data11 +	68	Data11 –

# Power Source Requirements and Connections

---

This chapter describes the power source requirements for the Netra 240 server and how to assemble and connect the power cables. This chapter contains the following sections:

- [“Operating Power Limits and Ranges” on page 76](#)
- [“DC Source Site Requirements” on page 78](#)
- [“Assembling and Connecting the DC Input Power Cable” on page 79](#)
- [“Connecting the AC Power Cables” on page 90](#)

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**Note** – If you are installing a DC-powered version of the Netra 240 server, go to [“DC Source Site Requirements” on page 78](#) and [“Assembling and Connecting the DC Input Power Cable” on page 79](#) for instructions. For instructions for the AC-powered server, see [“Connecting the AC Power Cables” on page 90](#).

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# Operating Power Limits and Ranges

TABLE 5-1 gives operating power limits for the DC version of the Netra 240 server, and TABLE 5-2 provides the limits for the AC version of the server.

**TABLE 5-1** DC Operating Power Limits and Ranges

Description	Limit or Range
Operating Input Voltage Range	-40 VDC to -75 VDC
Maximum Operating Input Current	15A @ 40V
Maximum Operating Input Power	571W

**TABLE 5-2** AC Operating Power Limits and Ranges

Description	Limit or Range
Operating Input Voltage Range	90 VAC to 264 VAC
Operating Frequency Range	47 to 63 Hz
Maximum Operating Input Current	6.5A @ 100V
Maximum Operating Input Power	556W

---

**Note** – The figures for the maximum operating current are provided to help you specify the fusing and cabling you need to deliver power to your equipment. However, these figures represent worst-case scenarios.

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# Estimated Power Consumption

TABLE 5-3 shows the estimated power consumed in a fully populated, DC-powered Netra 240 server. TABLE 5-4 shows the estimated power consumed in a AC-powered server.

**TABLE 5-3** DC Server Power Consumption

Configuration	Maximum Input Power
1x1.5GHz CPU 2x256MB DIMMs 1x73GB/15Krpm Disk	211W
2x1.5GHz CPUs 8x1GB DIMMs 2x73GB/15Krpm Disks 3 PCI Cards (63W max)	394W

**TABLE 5-4** AC Server Power Consumption

Configuration	Maximum Input Power
1x1.5GHz CPU 2x256MB DIMMs 1x73GB/15Krpm Disk	218W
2x1.5GHz CPUs 8x1GB DIMMs 2x73GB/15Krpm Disks 3 PCI Cards (63W max)	407W

---

**Note** – The maximum input power values shown in TABLE 5-4 are based on AC power supply efficiency.

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**Note** – For more information about server configurations, and to see a list of optional components, refer to the SunStore web site (<http://store.sun.com>).

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# DC Source Site Requirements

Details of the power source requirements for the Netra 240 server are provided in this section.

**TABLE 5-5** DC Power Requirements

Electrical Element	Requirement
Voltage (nominal)	-48 VDC, -60 VDC
Input current (maximum)	14 A
Max. input surge current	17 A

- Reliably connected to protected earth ground
- May be supplied by one or two power sources, isolated from each other
- Capable of providing up to 600 W of continuous power per feed
- Limited to TNV-2 as defined by UL 60950 and IEC 60950

---

**Note** – The DC server must be installed in a restricted-access location. According to the National Electrical Code, a restricted-access location is an area intended for qualified or trained personnel only and has access controlled by a locking mechanism, such as a key lock or an access card system.

---

## DC Supply and Ground Conductor Requirements

- Suitable conductor material: use copper conductors only
- Power supply connections through the input connector: 12 AWG (between the Netra 240 server and the source). There are three conductors:
  - -48V (negative terminal)
  - Chassis ground connection
  - -48V Return (positive terminal)
- System ground conductor: 12 AWG (to be connected to the chassis)
- Cable insulation rating: Minimum of 75°C (167°F), low smoke fume (LSF), flame retardant
- Cable type one of the following:
  - UL style 1028 or other UL 1581 (VW-1) compliant equivalent

- IEEE 383 compliant
- IEEE 1202-1991 compliant
- \*Branch circuit cable insulation color: Per applicable National Electrical Codes
- Grounding cable insulation color: Green/yellow

---

**Note** – Depending on the DC power source, the -48V (negative terminal) might be marked with a minus (-) symbol, and the -48V Return (positive terminal) might be marked with a positive (+) symbol.

---

## Overcurrent Protection Requirements

- Overcurrent protection devices must be provided as part of each equipment rack.
- Circuit breakers must be located between the DC power source and the Netra 240 server. Use one 20 A double-pole, fast trip DC-rated circuit breaker for each power supply unit.

---

**Note** – Overcurrent protection devices must meet applicable national and local electrical safety codes and be approved for the intended application.

---

---

# Assembling and Connecting the DC Input Power Cable

This section describes how to assemble and connect the DC input power cable and the location of the I/O ports at the rear of the servers.

---

**Note** – This section describes how to assemble and connect the DC power cables to a DC-powered Netra 240 server. For AC-powered server instructions, see [“Connecting the AC Power Cables” on page 90](#).

---

# Assembling the DC Input Power Cable

---

**Note** – If you have already assembled the DC input power cables, skip to [“Connecting the DC Input Power Cable to the Server”](#) on page 87.

---

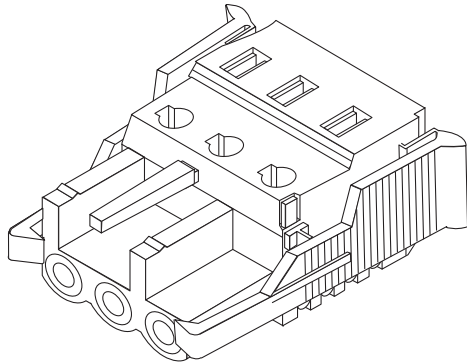
**1. Identify the parts that you will use to assemble the DC input power cable (FIGURE 5-1).**

The following DC connection parts are required to assemble one or more DC power input cables. These cables connect the -48V DC input source(s) to the power supply units.

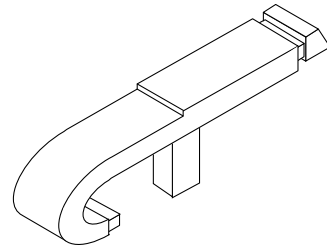
- DC input plugs
- Strain relief housings
- Cage clamp operating lever
- Tie wraps



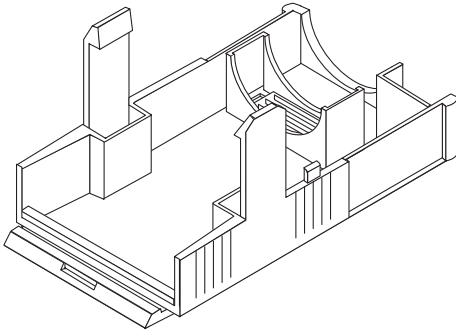
FIGURE 5-1 DC Connection Parts



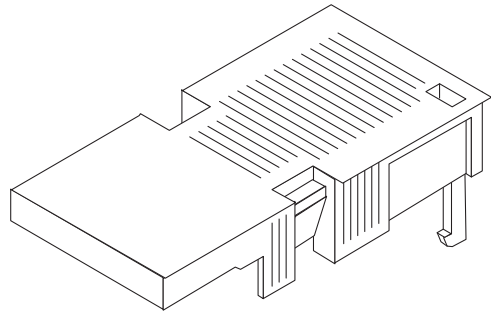
DC input plug



Cage clamp operating lever



Strain relief housing



2. Turn off power from the DC power source through the circuit breakers.



---

**Caution** – Do *not* proceed with these instructions until you have turned off the power from the DC power source through the circuit breakers.

---

3. Get a DC input plug from the ship kit.
4. Locate the three wires coming from the DC power source that will be used in the connection to your unit:
  - -48V (negative terminal)
  - Chassis ground
  - -48V Return (positive terminal)

---

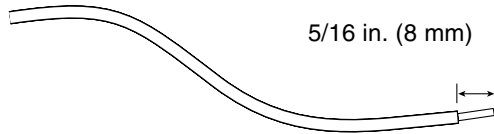
**Note** – Depending on the DC power source, the -48V (negative terminal) might be marked with a minus (-) symbol, and the -48V Return (positive terminal) might be marked with a positive (+) symbol.

---

**5. Strip 5/16 inches (8 mm) of insulation from each of the wires coming from the DC power source.**

Do not strip more than 5/16 inches (8 mm) from each wire. Doing so leaves uninsulated wire exposed from the DC connector after the assembly is complete.

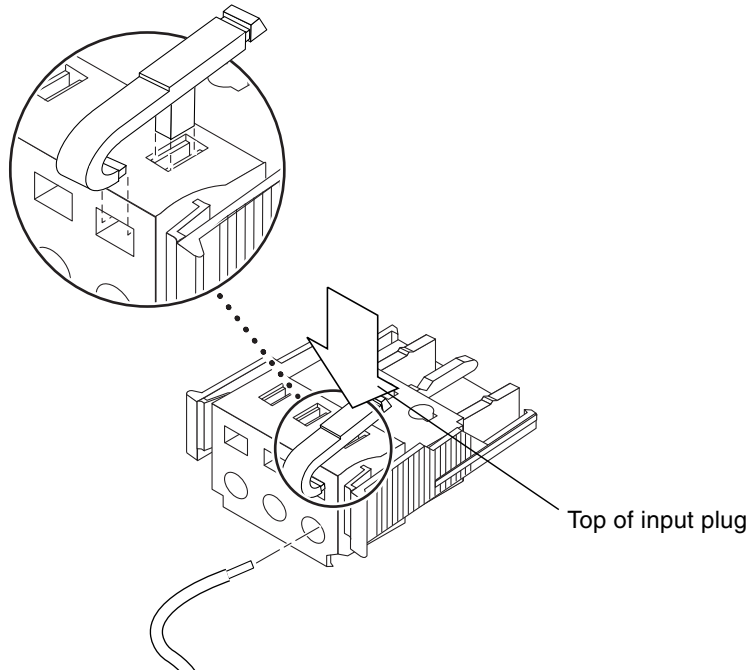
**FIGURE 5-2** Stripping the Insulation From the Wire



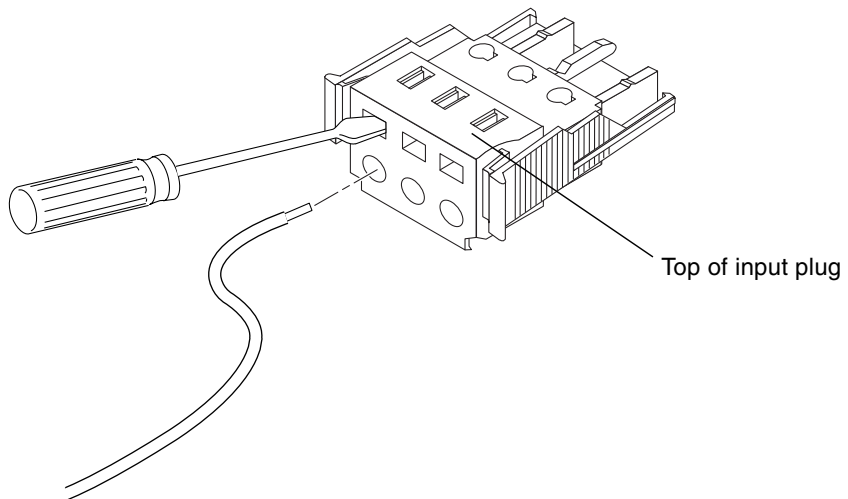
**6. Open the cage clamp for this section of the DC input plug by taking one of the following actions:**

- Insert the tip of the cage clamp operating lever into the rectangular hole directly above the hole in the DC input plug where you want to insert the first wire. Press down on the cage clamp operating lever ([FIGURE 5-3](#)).
- Insert a small slotted screwdriver into the rectangular hole directly above the hole in the DC input plug where you want to insert the first wire, and press down on the screwdriver ([FIGURE 5-4](#)).

**FIGURE 5-3** Opening the DC Input Plug Cage Clamp Using the Cage Clamp Operating Lever



**FIGURE 5-4** Opening the Cage Clamp Using a Screwdriver

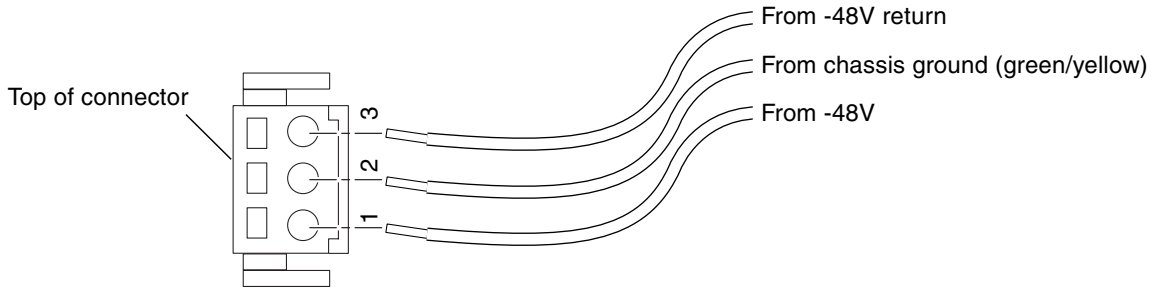


**7. Feed the exposed section of the appropriate wire into the rectangular plug hole**

in the DC input plug.

FIGURE 5-5 shows which wires should be inserted into each hole in the DC input plug.

FIGURE 5-5 Assembling the DC Input Power Cable



8. Repeat Step 6 and Step 7 for the other two wires to complete the assembly of the DC input power cable.
9. Repeat Step 4 through Step 8 to create as many DC input power cables as you need for your unit.

You need one DC input power cable for each of the two power supplies.

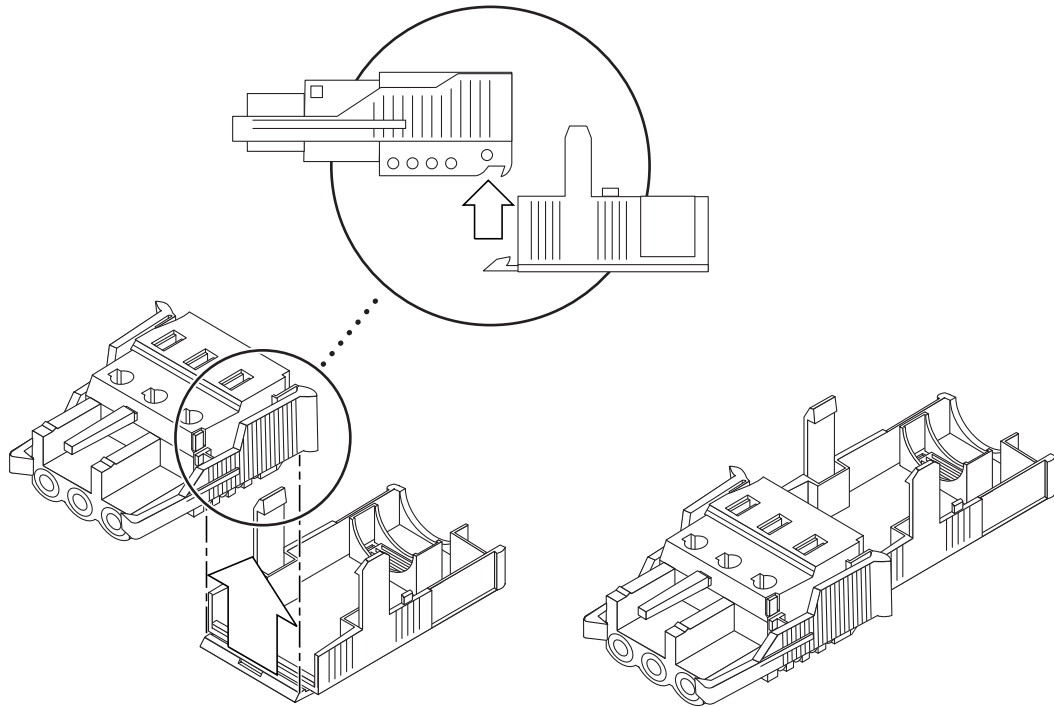
If you need to remove a wire from the DC input plug, insert the cage clamp operating lever or a small screwdriver into the slot directly above the wire and press down (FIGURE 5-3 and FIGURE 5-4). Pull the wire from the DC input plug.

## Installing the Strain Relief Housings

1. Insert the bottom portion of the strain relief housing into the notch on the DC input plug until it snaps into place.

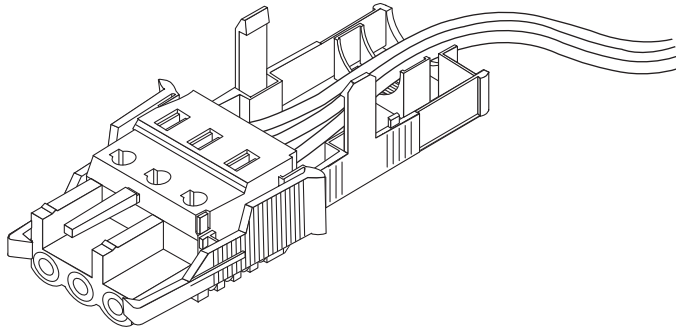
Ensure that the strain relief housing snaps into place on the DC input plug. You cannot complete the assembly correctly if the strain relief housing is not snapped into place.

**FIGURE 5-6** Inserting the Bottom Portion of the Strain Relief Housing



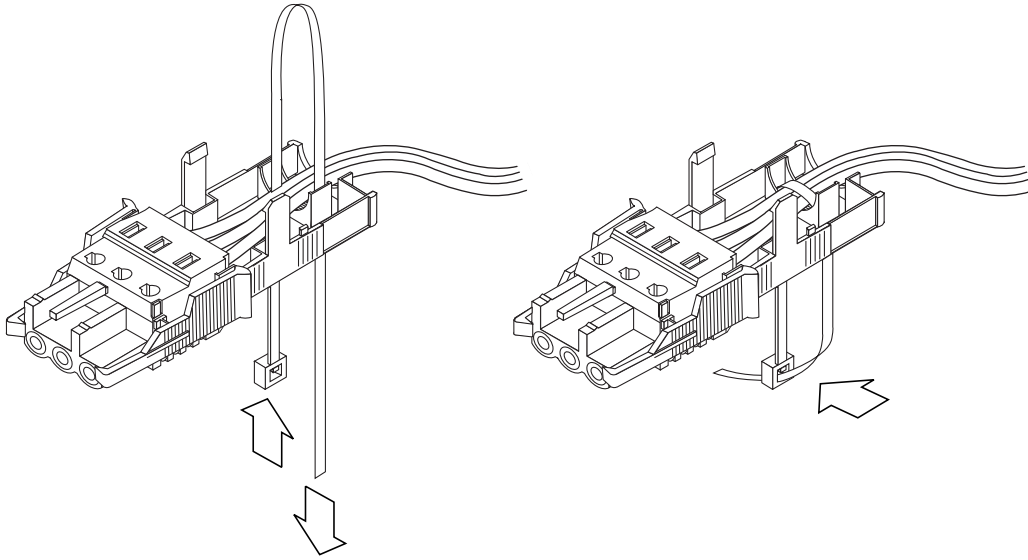
2. Route the three wires coming from the DC power source through the opening at the end of the bottom portion of the strain relief housing (FIGURE 5-7).

**FIGURE 5-7** Routing the Wires out of the Bottom Portion of the Strain Relief Housing



3. Insert a tie wrap into the bottom portion of the strain relief housing.

**FIGURE 5-8** Securing the Wires to the Strain Relief Housing

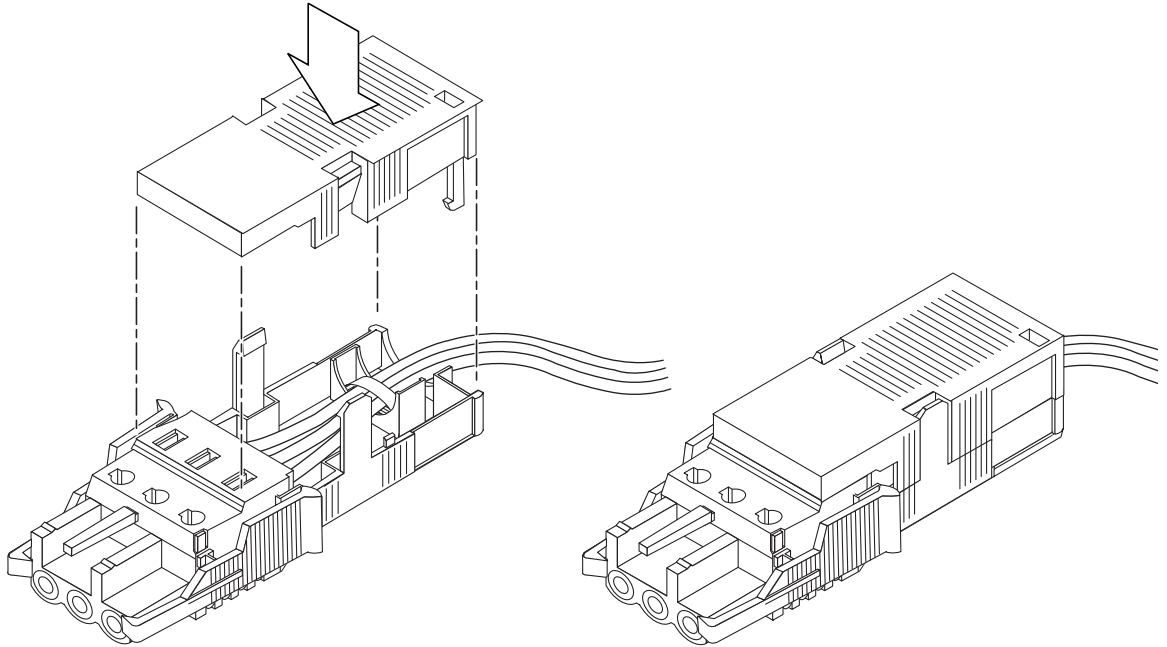


4. Loop the tie wrap over the wires and back out of the strain relief housing, and tightening the tie wrap to secure the wires to the strain relief housing (FIGURE 5-8).

5. Lower the top portion of the strain relief housing so that the three prongs on the top portion insert into the openings in the DC input plug.

Push the top and bottom portions of the strain relief housing together until they snap into place.

**FIGURE 5-9** Assembling the Strain Relief Housing



## Connecting the DC Input Power Cable to the Server



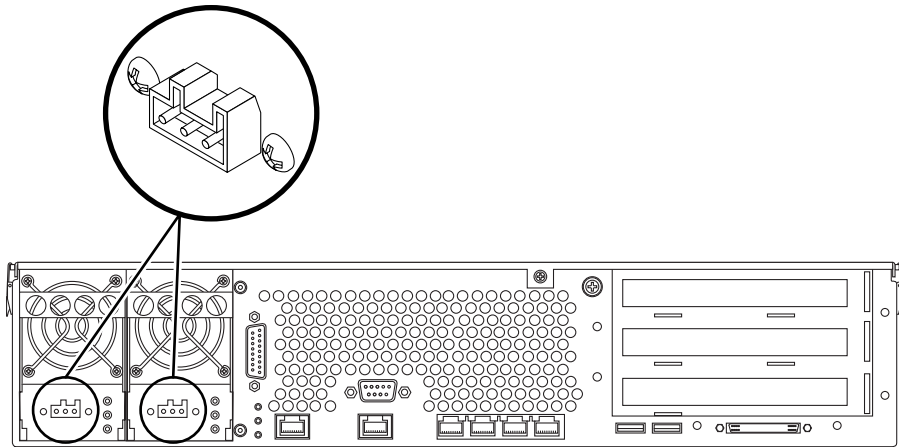
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**Caution** – An energy hazard is present when energized units are not properly earthed.

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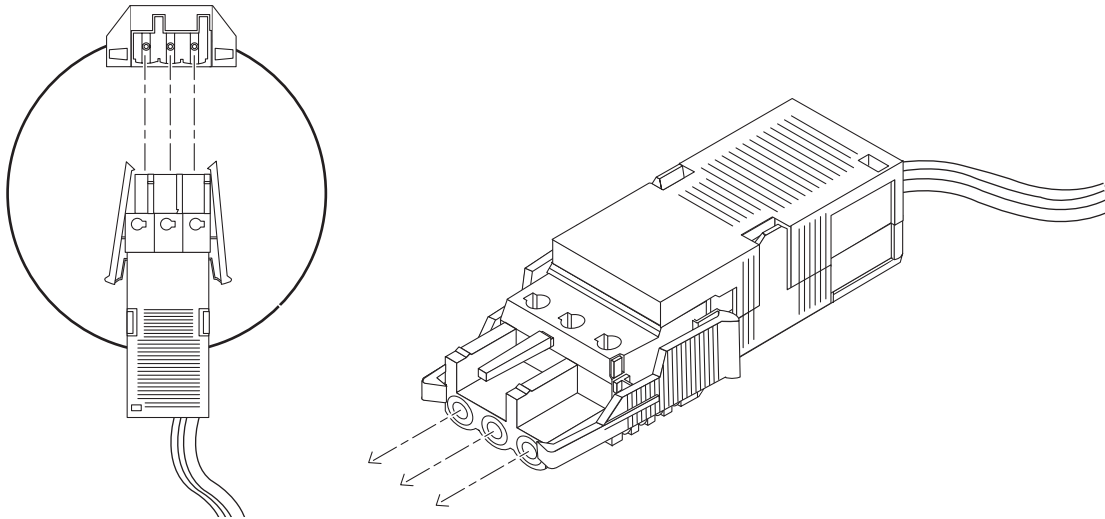
1. Locate the DC connectors at the rear of the server.

FIGURE 5-10 DC Connector Locations



2. Connect the DC input power cables to the DC connectors.

FIGURE 5-11 Connecting the DC Input Power Cable to the DC Connectors





### 3. Turn on the circuit breakers to provide power to the servers.

If you want to disconnect the DC input power cable from the DC connector at some point in the future, turn the circuit breakers off, then squeeze the two tabs on the sides of the DC input power cable and gently disconnect the DC input power cable from the DC power supply.

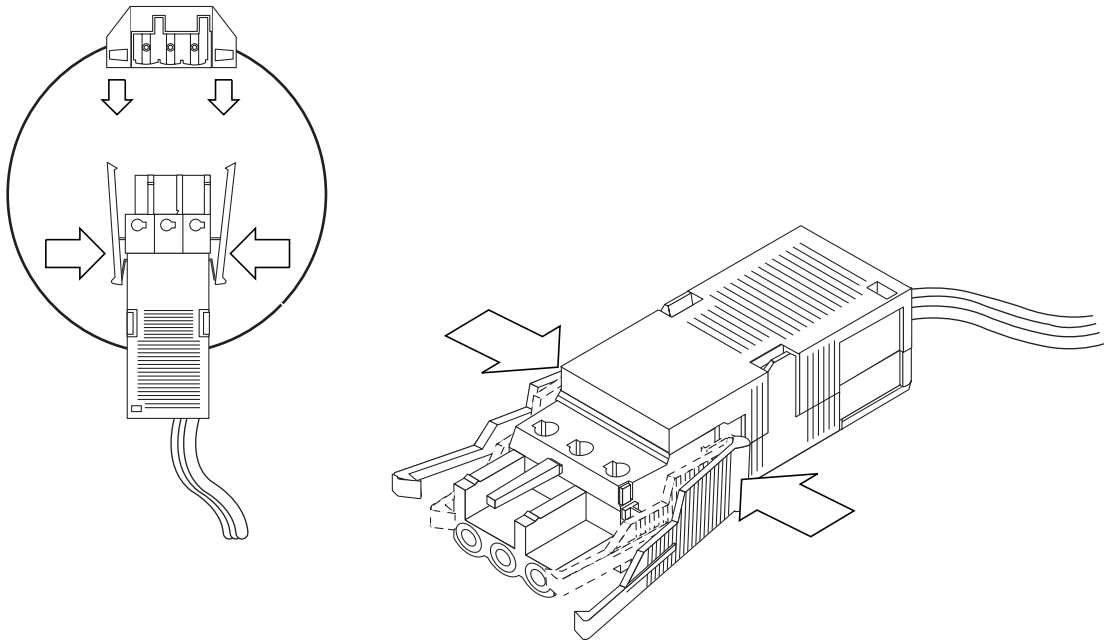


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**Caution** – Do *not* attempt to disconnect the DC input power cable from the DC connector until you have turned off the power from the DC power source through the circuit breakers.

---

**FIGURE 5-12** Disconnecting the DC Input Power Cable From the DC Connector



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# Connecting the AC Power Cables

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**Note** – This section describes how to connect AC power cords to an AC-powered Netra 240 server. For DC-powered server instructions, see [“Assembling and Connecting the DC Input Power Cable”](#) on page 79.

---

The two AC power supply units in the Netra 240 server allow for 1 + 1 power redundancy. If one power supply unit fails, then the system will continue to operate using the remaining power supply unit. Additionally, to ensure true AC line input redundancy for the server, you should connect each AC power cable to a different AC power source. You can also connect an uninterruptible power supply (UPS) between each AC power source and the server to increase the availability of the server.

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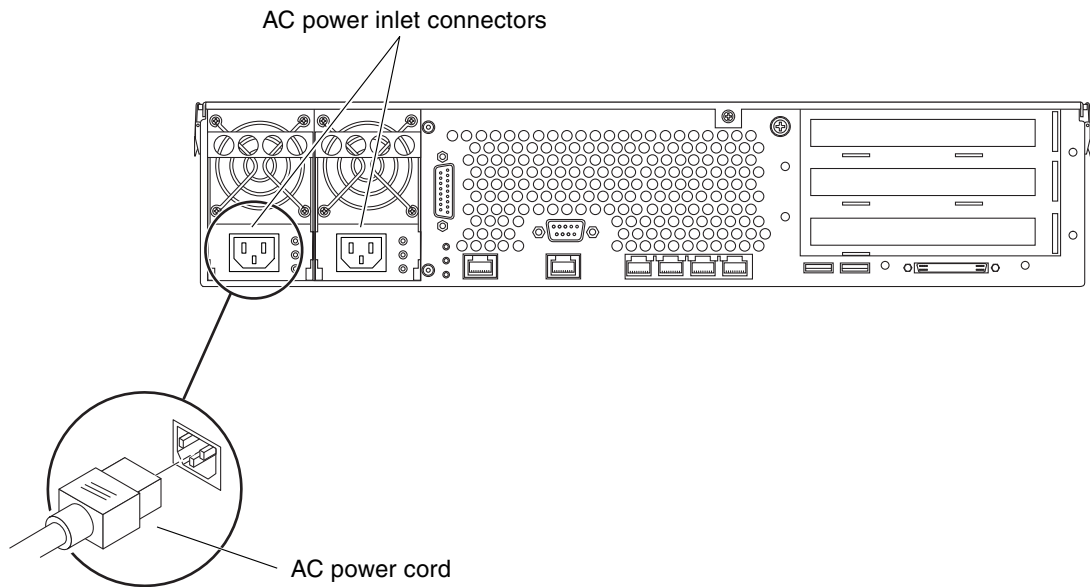
**Note** – The Netra 240 server uses nominal input voltages from 100 VAC to 240 VAC. Sun products are designed to work with power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug Sun products into another type of power source. Contact your facilities manager or a qualified electrician if you are unsure what type of power is supplied to your building.

---

1. **Get the supplied AC power cords from the server’s shipment kit.**
2. **Connect one end of each AC power cord into the AC power inlet connectors located at the rear of the server.**

See [FIGURE 5-13](#) for the location of the AC power inlet connectors.

**FIGURE 5-13** Connecting the AC Power Cords to the AC Power Inlet Connectors



**3. Connect the other ends of the power cords into AC wall outlets.**

Connect each AC power cord to a different AC power source if you want AC line input power redundancy.



## Setting Up a System Console Device

---

This chapter provides information on connecting a system console device to the server. To install the Solaris operating system and any application software, you must set up a terminal or other device to access the system console. You can either:

- Connect the system to a terminal server
- Use an alphanumeric (ASCII) terminal
- Establish a TIP connection from another server

Regardless of the method you choose, for the *initial* power-on you must connect the device to the serial management port (SERIAL MGT). All of the procedures in the following sections assume that you are setting up a system console device using this default configuration. After the initial power-on, you may use the NET MGT port if you choose.

See the appropriate section for the connection method that you want to use:

- [“Accessing the System Console Through a Terminal Server” on page 94](#)
- [“Accessing the System Console Through an Alphanumeric Terminal” on page 97](#)
- [“Accessing the System Console Through a TIP Connection” on page 98](#)

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# Accessing the System Console Through a Terminal Server

## Connecting the Server to a Terminal Server

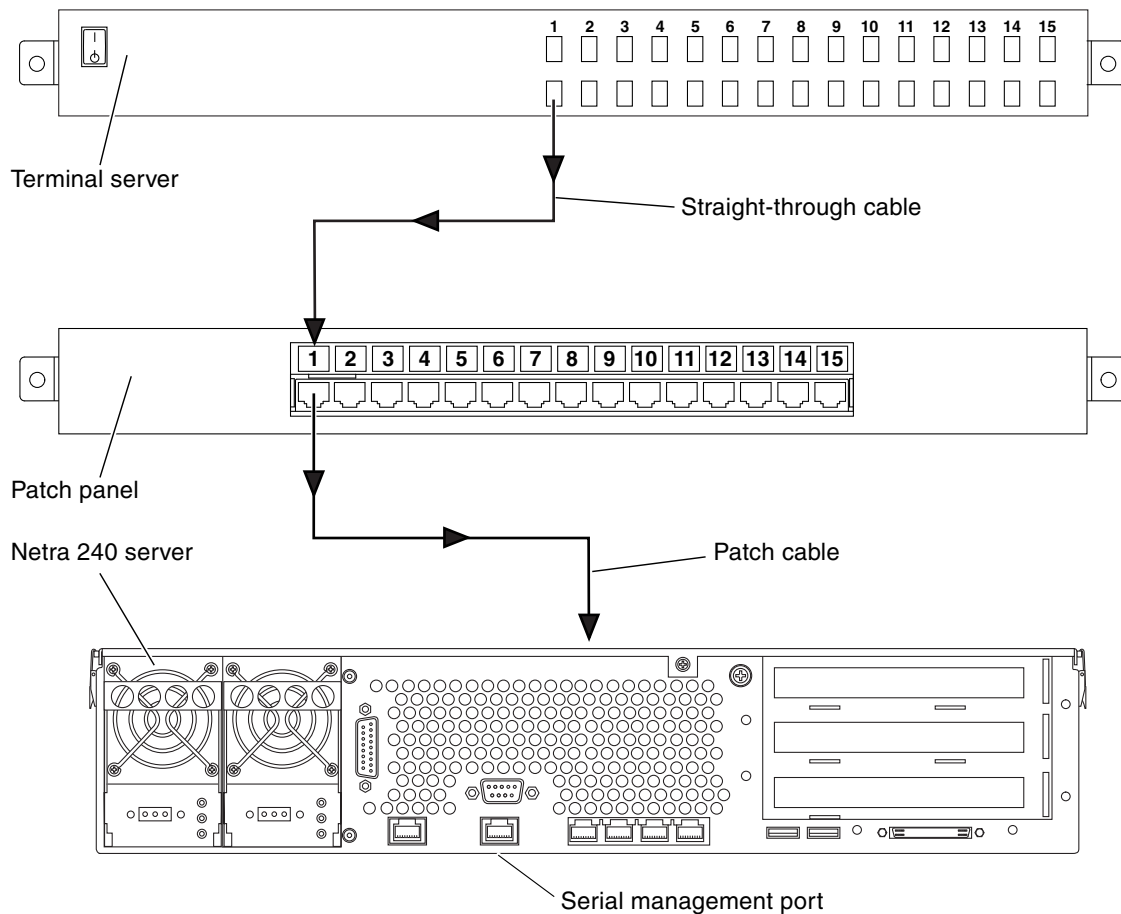
The serial management port on the Netra 240 server is a data terminal equipment (DTE) port. The pinouts for the serial management port correspond with the pinouts for the RJ-45 ports on the serial interface breakout cable supplied by Cisco for use with the Cisco AS2511-RJ terminal server. If you use a terminal server made by another manufacturer, ensure that the serial port pinouts of the Netra 240 server match those of the terminal server you plan to use.

If the pinouts for the server serial ports correspond with the pinouts for the RJ-45 ports on the terminal server, you have two connection options:

- Connect a serial interface breakout cable directly to the Netra 240 server.
- Connect a serial interface breakout cable to a patch panel and use the straight-through patch cable (supplied by Sun) to connect the patch panel to the server.

The following illustration shows how to connect a patch cable between a terminal server, patch panel, and the serial management port (SERIAL MGT) on the Netra 240 server.

**FIGURE 6-1** Patch Panel Connection Between a Terminal Server and a Netra 240 Server



If the pinouts for the serial management port *do not* correspond with the pinouts for the RJ-45 ports on the terminal server, you need to make a crossover cable that takes each pin on the Netra 240 server serial management port to the corresponding pin in the terminal server's serial port.

[TABLE 6-1](#) shows the crossovers that the cable must perform.

**TABLE 6-1** Pin Crossovers for Connecting to a Typical Terminal Server

<b>Netra 240 Serial Management Port (RJ-45 Connector) Pin</b>	<b>Terminal Server Serial Port Pin</b>
Pin 1 (RTS)	Pin 1 (CTS)
Pin 2 (DTR)	Pin 2 (DSR)
Pin 3 (TXD)	Pin 3 (RXD)
Pin 4 (Signal Ground)	Pin 4 (Signal Ground)
Pin 5 (Signal Ground)	Pin 5 (Signal Ground)
Pin 6 (RXD)	Pin 6 (TXD)
Pin 7 (DSR /DCD)	Pin 7 (DTR)
Pin 8 (CTS)	Pin 8 (RTS)

## Accessing the System Console Through a Terminal Server

- **Open a terminal session on the connecting device, and type:**

```
% telnet IP-address-of-terminal-server port-number
```

For example, for a Netra 240 server connected to port 10000 on a terminal server whose IP address is 192.20.30.10, you would type:

```
% telnet 192.20.30.10 10000
```

**Note** – At this point, all system information is delivered to you by means of the ALOM system controller and its software. ALOM is the default method for communicating with the Netra 240 server. For detailed information about using ALOM, refer to the *Sun Advanced Lights Out Manager User Guide For the Netra 240 Server* (817-3174), which includes information about reconfiguration options.



---

# Accessing the System Console Through an Alphanumeric Terminal

The following procedure assumes that you are accessing the system console device by connecting an alphanumeric terminal to the serial management port (SERIAL MGT) of the Netra 240 server.

1. **Turn off power to the alphanumeric terminal.**
2. **Attach one end of the serial cable to the alphanumeric terminal's serial port.**

Use an RJ-45 null modem serial cable or an adapter that is appropriate for your device. If you are using a laptop system or a terminal with a DB-9 connector, use an appropriate RJ-45/DB-9 adapter. Plug in this cable or adapter to the terminal's serial port connector. The supplied DB-9 and DB-25 adapters are suitable for most applications.
3. **Attach the serial cable's RJ-45 connector to the server's serial management port (SERIAL MGT).**

See [“Serial Management Port” on page 68](#) for the location and more information about this port.
4. **Connect the alphanumeric terminal's power cable to an outlet and turn it on.**
5. **Set the terminal to receive:**
  - 9600 baud
  - 8 bits
  - No parity
  - 1 stop bit
  - No handshake protocol

See the documentation accompanying your terminal for information about how to configure it.

---

**Note** – At this point, all system information is delivered to you by means of the ALOM system controller and its software. ALOM is the default method for communicating with the Netra 240 server. For detailed information about using ALOM, refer to the *Sun Advanced Lights Out Manager User Guide For the Netra 240 Server* (817-3174), which includes information about reconfiguration options.

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# Accessing the System Console Through a TIP Connection

The following procedure assumes that you are setting up a system console device for the Netra 240 server by connecting the serial port of another Sun system to the serial management port (SERIAL MGT) of the Netra 240 server.

1. **Make sure that the Sun system to which you are establishing the TIP connection is powered on and active.**

2. **Connect the RJ-45 serial cable and RJ-45/DB-25 adapter.**

Use the cable and adapter to connect the other Sun system's TTYB serial port to the Netra 240 server's serial management port (SERIAL MGT). See [“Serial Management Port” on page 68](#) for more information about this port.

3. **Ensure that the `/etc/remote` file on the Sun system contains an entry for `hardwire`.**

Most releases of Solaris operating system software shipped since 1992 contain an `/etc/remote` file with the appropriate `hardwire` entry. However, if the Sun system is running an older version of Solaris software, or if the `/etc/remote` file has been modified, you might need to edit it.

4. **In a terminal window on the other Sun system, type:**

```
hostname% tip hardwire
```

The other Sun system responds by displaying:

```
connected
```

The terminal window is now a TIP window directed to the Netra 240 server through the other Sun system's TTYB port. This connection is established and maintained even when the Netra 240 server is completely powered off or just starting up.

---

**Note** – Use a terminal tool, not a console tool. Some `tip` commands might not work properly in a console tool window.

---

---

**Note** – At this point, all system information is delivered to you by means of the ALOM system controller and its software. ALOM is the default method for communicating with the Netra 240 server. For detailed information about using ALOM, refer to the *Sun Advanced Lights Out Manager User Guide For the Netra 240 Server* (817-3174), which includes information about reconfiguration options.

---



# Powering On and Configuring the Server

---

This chapter describes how to power on and configure the server to suit your application. It contains these sections:

- [“Powering On the Server” on page 102](#)
- [“Configuring the Server” on page 106](#)
- [“Accessing Advanced Lights Out Manager \(ALOM\) Software” on page 112](#)

---

# Powering On the Server

To power on the server, you can use either the On/Standby button located behind the front bezel, or you can use the keyboard. If you power on from the keyboard, you can see system output as the server powers on.



---

**Caution** – Never move the system when the system power is on. Movement can cause catastrophic hard drive failure. Always power off the system before moving it.

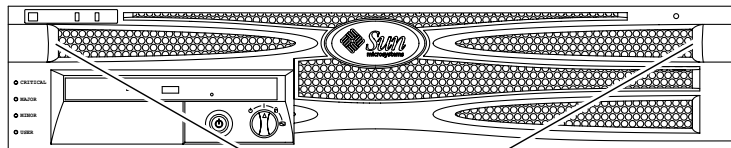
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## Setting the Rotary Switch

Before you begin powering on the server, make sure that the rotary switch is in the *normal* position. This position allows the On/Standby button to control the power state of the server. For more information on the operation of the rotary switch, refer to the *Netra 240 Server Service Manual* (817-2699).

1. **Grip the bezel at the two finger holds and rotate it down to its open position** (FIGURE 7-1).

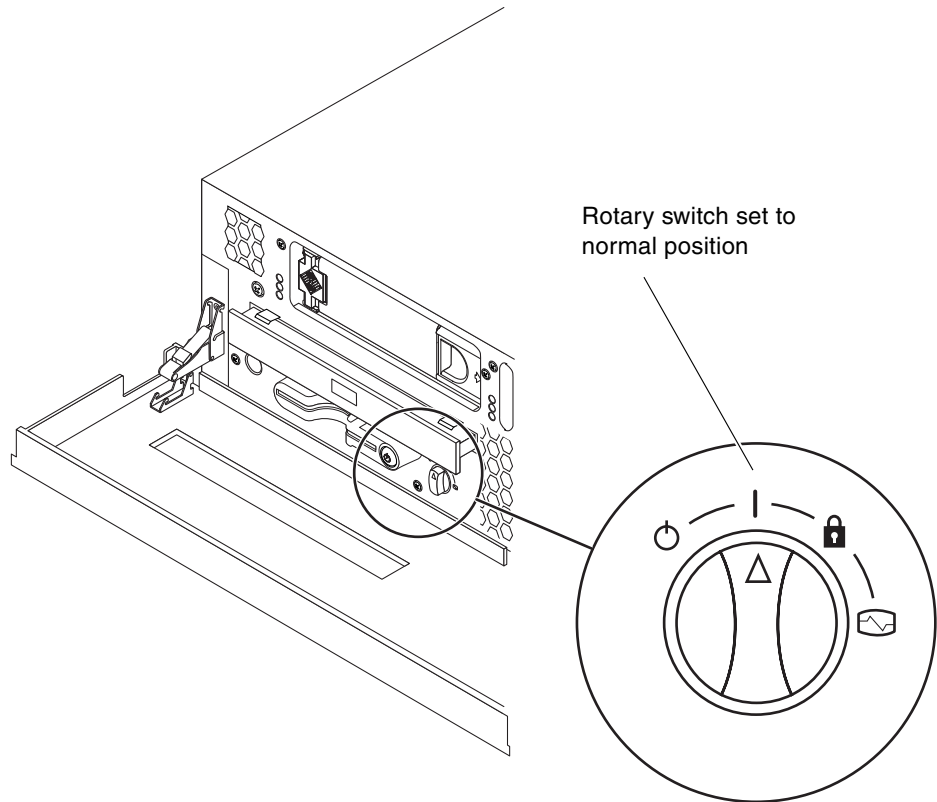
**FIGURE 7-1** Finger Holds on Bezel



Green finger holds

2. **Ensure that the rotary switch is set to the normal position.**  
If the switch is not in the normal position (1), set it now.

**FIGURE 7-2** Rotary Switch Set to Normal Position



3. Close the bezel.

## Powering On From the Keyboard

1. Connect the server to the power supply.

The server automatically goes into Standby power mode when it is connected to a power source. See [Chapter 5](#) for instructions on connecting the power cables.

2. Set up a connection to the SERIAL MGT port.

For details, see [Chapter 6](#).

When you switch to the ALOM prompt after initial power-on, you will be logged in as the admin user and prompted to set a password. You must set this password in order to execute certain commands.

3. **If you are prompted to do so, set a password for the admin user.**

The password must contain:

- At least two alphabetic characters
- At least one numeric or one special character
- Between six and eight characters

Once the password is set, the admin user has full permissions and can execute all ALOM command-line interface (CLI) commands.

4. **Turn on power to any peripherals and external storage devices you have connected to the server.**

Read the documentation supplied with the devices for specific instructions.

5. **At the console `sc>` prompt, type the following command to power on the server:**

```
sc> poweron
```

## Powering On Using the On/Standby Button

1. **Connect the server to the power supply.**

The server automatically goes into Standby power mode when it is connected to a power source. See [Chapter 5](#) for instructions on connecting the power cables.

2. **Turn on power to any peripherals and external storage devices you have connected to the server.**

Read the documentation supplied with the devices for specific instructions.

3. **Set the rotary switch on the front bezel to the Normal (1) position.**

See [“Setting the Rotary Switch” on page 102](#) for more information.

4. **Press the On/Standby button.**

5. **Turn the rotary switch to the Locked position.**

This prevents anyone from accidentally powering off the system.



# Powering Off the System Using the On/Standby Button

For complete instructions on powering down the server, refer to the *Netra 240 Server Service Manual* (817-2699).



---

**Caution** – Applications running on the Solaris operating system can be adversely affected by a poorly executed system shutdown. Make sure you have gracefully shut down any applications before powering off the system.

---

1. **Notify users that the system will be powered down.**
2. **Back up the system files and data, if necessary.**
3. **Ensure that the rotary switch is in the Normal or Diagnostics position.**  
See [“Setting the Rotary Switch” on page 102](#) for more information.
4. **Press and release the On/Standby button on the front bezel.**

The system begins an orderly software system shutdown.

---

**Note** – Pressing and releasing the On/Standby button initiates an orderly software shutdown. Pressing and holding the switch for four seconds causes an immediate hardware shutdown. Whenever possible, you should initiate an orderly shutdown. Forcing an immediate hardware shutdown can corrupt the disk drive and cause loss of data.

---

5. **Wait for the front panel green Activity indicator to go out.**  
See [“Front Panel Indicators” on page 116](#) for a description of this indicator.

---

# Configuring the Server

The Netra 240 server comes preinstalled with the Solaris operating system. When you power on the server for the first time, you are automatically taken through a configuration procedure. This procedure consists of a number of questions, and the answers you give determine how the server is configured.

Complete the software installation worksheet and choose the configuration that best suits your requirements from the list below. Then follow the instructions in the appropriate section to configure your server.

- [“Software Configuration Worksheet” on page 106](#)
- [“Configuring With the Server Details Registered as a Name Server” on page 109](#)
- [“Configuring Without the Server Details Registered as a Name Server” on page 110](#)
- [“Configuring a Standalone Server for the First Time” on page 111](#)
- [“Clearing Your Configuration and Starting Again” on page 111](#)

## Software Configuration Worksheet

Use the following worksheet to gather the information that you need to configure software on the Netra 240 server. You do not need to gather all of the information that is requested on the worksheet. You only need to collect the information that applies to your system.

**TABLE 7-1** Netra 240 Software Configuration Worksheet

Information Needed to Install	Description/Example	Your Answers
Network	Is the system connected to a network?	Yes/No
DHCP	Can the system use Dynamic Host configuration Protocol (DHCP) to configure its network interfaces?	Yes/No
Host Name	Host name that you choose for the system.	
IP Address	If you are not using DHCP, supply the IP address for the system. Example: 129.200.9.1	

**TABLE 7-1** Netra 240 Software Configuration Worksheet (*Continued*)

Information Needed to Install	Description/Example	Your Answers
Subnet	If you are not using DHCP, is the system part of a subnet? If yes, what is the netmask of the subnet? Example: 255.255.0.0	Yes/No
IPv6	Do you want to enable IPv6 on this machine?	Yes/No
Kerberos	Do you want to configure Kerberos security on this machine? If yes, gather this information: Default Realm: Administration Server: First KDC: (Optional) Additional KDCs:	Yes/No
Name Service	Which name service should this system use?	NIS+/NIS/DNS/LDAP/ None
Domain Name	If the system uses a name service, supply the name of the domain in which the system resides.	
NIS+ and NIS	Do you want to specify a name server or let the installation program find one? If you want to specify a name server, provide the following information. Server's host name: Server's IP address:	Specify One/Find One
DNS	Provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses. Server's IP Address(es): You can enter a list of domains to search when a DNS query is made. Search Domain: Search Domain: Search Domain:	
LDAP	Provide the following information about your LDAP profile. Profile Name: Profile Server: IP Address:	
Default Router	Do you want to specify a default IP router (gateway) or let the Solaris Web Start installation program find one? If you want to specify a default router, provide the following information. Router IP address:	Specify one/Find one

**TABLE 7-1** Netra 240 Software Configuration Worksheet (*Continued*)

<b>Information Needed to Install</b>	<b>Description/Example</b>	<b>Your Answers</b>
Time Zone	How do you want to specify your default time zone?	Geographic region Offset from GMT Time zone file
Locales	For which geographic regions do you want to install support?	
Power Management	Do you want to use Power Management?	Yes/No
Proxy Server Configuration (Only available in the Solaris Web Start program)	Do you have a direct connection to the Internet or do you need to use a proxy server to gain access to the Internet? If you use a proxy server, provide the following information. Host: Port:	Direct Connection/Proxy Server
Automatic reboot or CD/DVD ejection	Reboot automatically after software installation? Eject CD/DVD automatically after software installation?	Yes/No Yes/No
Software Group	Which Solaris Group do you want to install?	Entire Plus OEM Entire Developer End User Core
Custom Package Selection	Do you want to add or remove software packages from the Solaris Software Group that you install? Note - When you select which packages to add or remove, you need to know about software dependencies and how Solaris software is packaged.	
64-bit	Do you want to install support for 64-bit applications?	Yes/No
Select Disks	On which disks do you want to install the Solaris software? Example: c0t0d0	

**TABLE 7-1** Netra 240 Software Configuration Worksheet (*Continued*)

Information Needed to Install	Description/Example	Your Answers
Preserver Data	Do you want to preserve any data that exists on the disks where you are installing the Solaris software?	Yes/No
Auto-layout File Systems	Do you want the installation program to lay out file systems on your disks automatically? If yes, which file systems should be used for auto-layout? Example: / , /opt , /var If no, you must provide file system configuration information.	Yes/No
Mount Remote File Systems (only available in the Solaris suninstall program)	Does this system need to access software on another file system? If yes, provide the following information about the remote file system. Server: IP Address: Remote File System: Local Mount Point:	Yes/No

## Configuring With the Server Details Registered as a Name Server

**Note** – Follow the instructions in this section only if you have a name server installed on your network. For instructions on using a name server to automate the process of configuring the Solaris operating system on multiple servers, refer to the Solaris *Advanced Installation Guide* that comes with the Solaris software.

During the boot process, you are prompted for certain information. The information you provide determines the configuration of the server.

1. **Specify the type of terminal you are using to communicate with the server.**
2. **Specify whether you need IPv6 enabled, and then follow the instructions on the screen.**
3. **Specify whether you want to enable the Kerberos Security mechanism, and then follow the instructions on the screen.**
4. **When prompted, give a password (if any) for users logging in as superuser.**

# Configuring Without the Server Details Registered as a Name Server

Follow the instructions in this section if you do not have a name server configured on your network.

---

**Tip** – Read these instructions through before you follow them, to see what information the system prompts you for when you start it for the first time.

---

During booting you are prompted for certain information. The information you provide determines the configuration of the server.

1. **Specify the type of terminal you are using to communicate with the server.**
2. **When asked if you want the server to be networked, answer Yes.**
3. **Specify whether the IP address is to be configured by DHCP.**  
If you plan to configure the IP address manually, specify an IP address when prompted.
4. **Specify which of the Ethernet ports you intend to use as the primary Ethernet connection.**
5. **Specify a host name for the server.**
6. **If prompted, specify the IP address for the system.**  
The system prompts you for this address if you declined to use DHCP in [Step 3](#). It also asks you whether the server is to be part of a subnet. If you answer yes, the system prompts you to provide the netmask of the subnet.
7. **Specify whether you need IPv6 enabled, and then follow the instructions on the screen.**
8. **Specify whether you want to enable the Kerberos Security mechanism, and then follow the instructions on the screen.**
9. **Specify the name service you want the server to use.**
10. **Specify the name of the domain of which the server will be a part.**
11. **Specify whether you want the system to search the network for a name server or whether you want it to use a particular name server.**
12. **If you chose to use a particular name server, specify the host name and IP address of the name server.**
13. **At the name server prompt, create entries in the network administration files for the system you are setting up.**

14. At the system you are setting up, follow the prompts to provide time and date information.
15. When prompted, give a password (if any) for users logging in as superuser.

## Configuring a Standalone Server for the First Time

1. Specify the type of terminal you are using to communicate with the server.
2. When prompted to indicate whether you want the server to be networked, specify No.
3. Specify a host name for the server.
4. Confirm the information you have given.
5. Specify the date and time information.
6. When prompted, give a password (if any) for users logging in as superuser.

## Clearing Your Configuration and Starting Again

If you want to start the power on process again, as if from a previously unused server, you must clear the configuration of the server.

1. At the Solaris prompt, type:

```
# sys-unconfig
```

2. When prompted to confirm that you want to create a “blank” server, type `y`.
3. When the OpenBoot prompt appears, type:

```
ok> boot
```

4. Follow the instructions in one of the following sections:
  - [“Configuring With the Server Details Registered as a Name Server”](#) on page 109
  - [“Configuring Without the Server Details Registered as a Name Server”](#) on page 110
  - [“Configuring a Standalone Server for the First Time”](#) on page 111

---

# Accessing Advanced Lights Out Manager (ALOM) Software

For a brief introduction, see [“Sun Advanced Lights Out Manager” on page 5](#). For detailed ALOM instructions and configuration information, refer to the *Sun Advanced Lights Out Manager User Guide For the Netra 240 Server* (817-3174). For late-breaking information about the ALOM software, refer to the *Netra 240 Server Release Notes* (817-3142).

The ALOM software is preinstalled on the server and is ready to run as soon as power is supplied to the server. However, you need to perform some basic configuration steps to customize the ALOM software to suit your application.

## Displaying the ALOM Prompt

1. At the command prompt, type the default keystroke sequence (# .) to display the ALOM prompt:

```
# #.
```

---

**Note** – When you switch to the ALOM prompt after initial power-on, you are logged in as the admin user and prompted to set a password. You must set this password in order to execute certain commands.

---

2. If you are prompted to do so, set a password for the admin user.

The password must contain:

- At least two alphabetic characters
- At least one numeric or one special character
- Between six and eight characters

Once the password is set, the user has full permissions and can execute all ALOM command-line interface (CLI) commands.



## Displaying the Console Prompt

- At the ALOM prompt, type:

```
sc> console
```

More than one ALOM user can be connected to the server console stream at a time, but only one user is permitted to type input characters to the console.

If another user is logged on and has write capability, you will see the message below after issuing the `console` command:

```
sc> Console session already in use. [view mode]
```

## Taking Console Write Capability Away From Another User

- At the ALOM prompt, type:

```
sc> console -f
```



## Server Status Indicators

---

The server has LED indicators associated with the server itself and with various components. The server status indicators are located on the bezel and repeated on the back panel. The components with LED indicators to convey status are the dry contact alarm card, power supply units, Ethernet port, and hard drives.

This appendix contains these sections:

- [“Front Panel Indicators” on page 116](#)
- [“Rear Panel Indicators” on page 118](#)

---

**Note** – For additional information about these indicators, refer to the *Netra 240 Server Service Manual* (817-2699).

---

# Front Panel Indicators

FIGURE A-1 shows the location of the front panel indicators, and TABLE A-1 provides information about the server status indicators. For information about the dry contact alarm card indicators, refer to the *Netra 240 Server Service Manual* (817-2699).

FIGURE A-1 Location of the Front Indicators

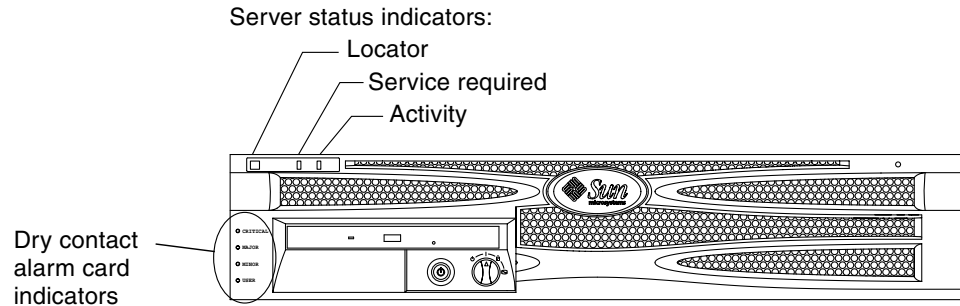


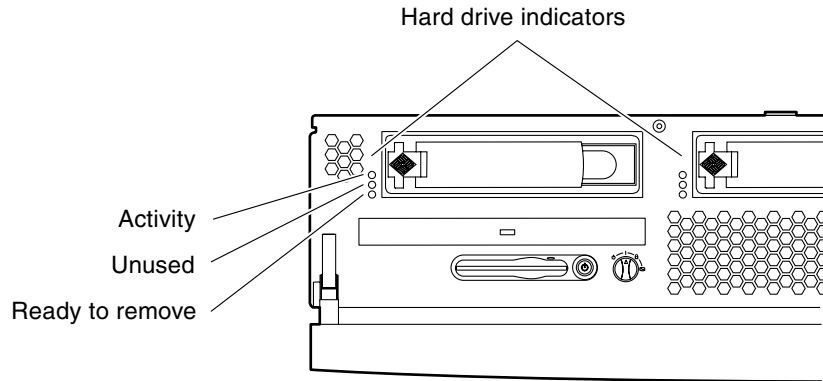
TABLE A-1 Server Status Indicators (Front and Rear)

Indicator	LED Color	LED State	Meaning
Activity	Green	On	The server is powered up and running the Solaris operating system.
		Off	Either power is not present or the Solaris software is not running.
Service Required	Yellow	On	The server has detected a problem and requires the attention of service personnel.
		Off	The server has no detected faults.
Locator	White	On	A continuous light turns on and identifies the server from others in a rack, when the ALOM <code>setlocator</code> command is used.

# Hard Drive Indicators

The hard drive indicators can be seen when you lower the front bezel. [FIGURE A-2](#) shows the location of the indicators, and [TABLE A-2](#) provides information about these indicators.

**FIGURE A-2** Hard Drive Indicators



**TABLE A-2** Hard Drive Indicators

Indicator	LED Color	LED State	Component Status
Activity	Green	Flashing	Active SCSI transactions.
		Off	No activity.
Unused			Reserved for later use.
Ready to remove	Blue	On	Ready to remove.
		Off	Not ready to remove.

# Rear Panel Indicators

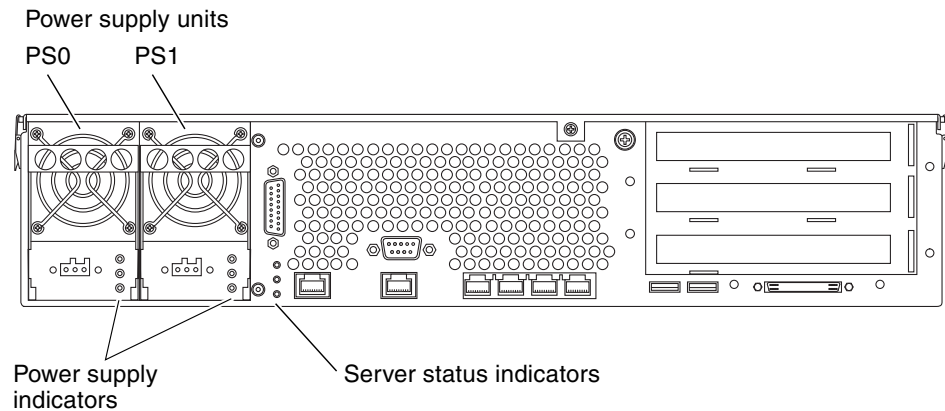
FIGURE A-3 shows the location of the power supply unit and rear server status indicators, and TABLE A-3 provides information about the power supply unit indicators. See TABLE A-1 for information about the server status indicators.

---

**Note** – FIGURE A-3 displays a DC-powered server. The rear panel indicators can be found in the same locations on an AC-powered server.

---

**FIGURE A-3** Rear Indicators on the Netra 240 Server



**TABLE A-3** Power Supply Unit Indicators

LED Color	LED State	Component Status
Green	On	Power is present and the power supply unit is active.
	Off	Either the input power is not present, or the power supply unit has shut down due to an internal protection event.
Amber	On	The power supply unit has shut down due to an internal protection event and requires service attention.
	Off	The power supply unit is operating normally.
Blue	On	The power supply unit is ready to be removed.
	Off	The power supply unit is not ready for removal.

# Ethernet Network Indicators

FIGURE A-4 shows the location of the Ethernet network indicators, and TABLE A-4 describes the network link indicators and TABLE A-5 describes the network speed indicators.

FIGURE A-4 Ethernet Network Indicators

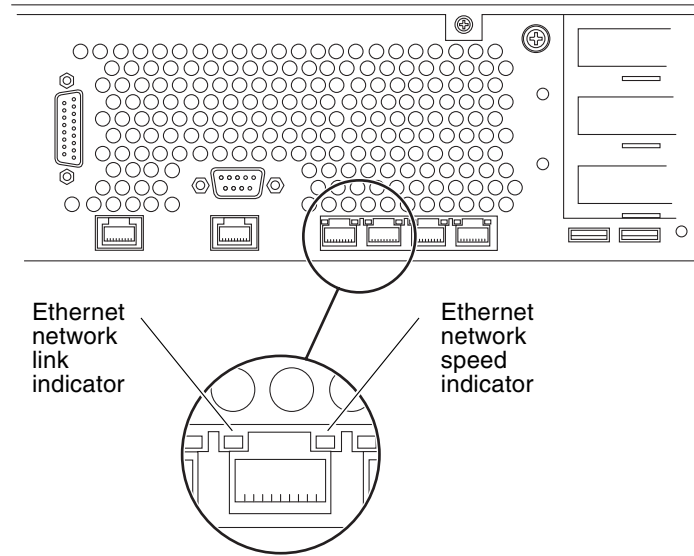


TABLE A-4 Network Link Indicators

LED Color	LED State	Network Link Status
Green	On	Link is established.
	Blinking	Link is transferring data.
	Off	Link is not established.

**TABLE A-5** Network Speed Indicators

<b>LED Color</b>	<b>LED State</b>	<b>Network Speed Status</b>
Green	On	The network link is established and running at its maximum supported speed.
	Off	<ul style="list-style-type: none"><li>• If the network activity indicator is on, the network link is established but not running at its maximum supported speed.</li><li>• If the network activity indicator is off, network link is not established.</li></ul>



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