



Netra™ 1290 Server Installation Guide

Sun Microsystems, Inc.
www.sun.com

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Preface

The *Netra 1290 Server Installation Guide* provides detailed procedures that describe the installation, power-on, and configuration of the Netra™ 1290 server into a rack. This document is written for technicians, system administrators, authorized service providers (ASPs), and users who have experience installing and configuring computer hardware.

How This Document Is Organized

[Chapter 1](#) describes how to unpack your server and install it into a cabinet or rack.

[Chapter 2](#) describes how to cable, power on, and perform setup tasks with your server.

[Appendix A](#) provides connector locations, signals, and pinouts.

Using UNIX Commands

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

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is at:

<http://docs.sun.com>

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. <code>% You have mail.</code>
AaBbCc123	What you type, when contrasted with on-screen computer output	<code>% su</code> 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.

Related Documentation

The documents listed as online are available at:

<http://www.sun.com/products-n-solutions/hardware/docs/>

Application	Title	Part Number	Format	Location
Pointer doc	<i>Netra 1290 Server Getting Started Guide</i>	819-4378-10	Printed PDF	Shipping kit Online
Service	<i>Netra 1290 Server Service Manual</i>	819-4373-10	PDF	Online
Administration	<i>Netra 1290 Server System Administration Guide</i>	819-4374-10	PDF	Online
Updates	<i>Netra 1290 Server Product Notes</i>	819-4375-10	PDF	Online
Compliance	<i>Netra 1290 Server Safety and Compliance Guide</i>	819-4376-10	PDF	Online

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Netra 1290 Server Installation Guide, part number 819-4372-10

Unpacking and Installing the Server

This chapter describes unpacking and installing the Netra 1290 server into a rack. Topics include:

- “Unpacking the Server” on page 1
- “Installing Slide Rails” on page 4
- “Installing the Server in a Cabinet” on page 15
- “Installing Slide Rail Lock Nuts” on page 22
- “Installing the Cable Management Arm” on page 24
- “Connecting Power Cables” on page 33
- “Connecting Consoles to the System Controller” on page 34
- “Connecting the I/O Assemblies” on page 37
- “Installing Additional Hardware” on page 37
- “Installing Additional Peripheral Devices” on page 38

Unpacking the Server

▼ To Unpack the Server

1. Ensure there is adequate space around the server to maneuver a computer lifting device.
2. Remove the yellow Customer Information Sheet from the plastic pocket on the side of the packaging, and keep it for future reference.
3. Remove the carton protection pads.

See [FIGURE 1-1](#).

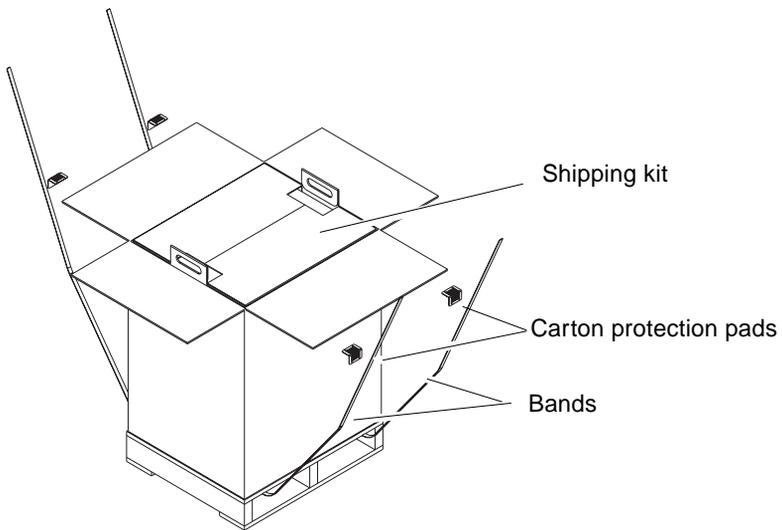


FIGURE 1-1 Opening the Shipping Carton

4. Cut the bands from the outer packaging and open the carton.

See [FIGURE 1-1](#).

5. Remove and unpack the shipping kit.

See [FIGURE 1-2](#).

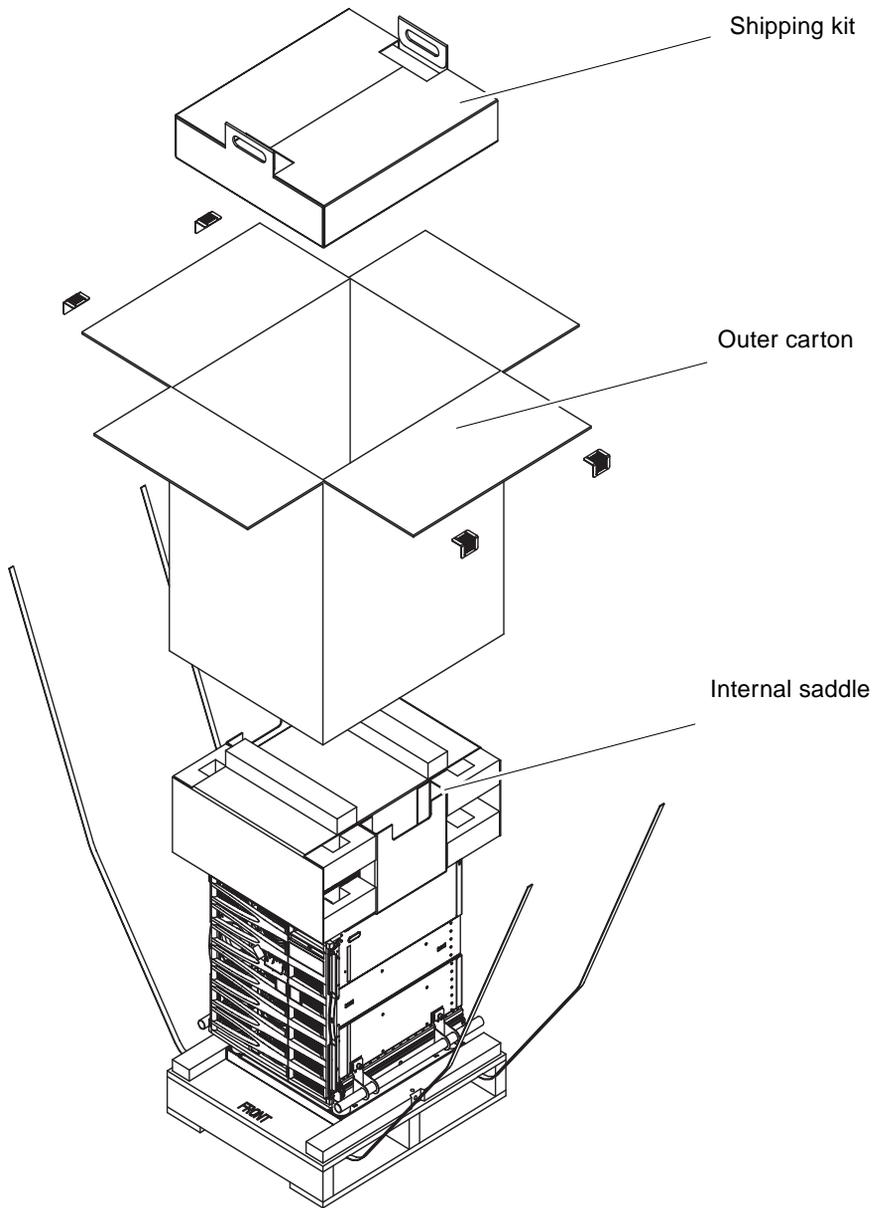


FIGURE 1-2 Removing the Carton Pieces

6. Remove the outer carton.

See [FIGURE 1-2](#).

7. Remove the internal saddle.
See [FIGURE 1-2](#).
8. Lift off the server bag.
9. Make a visual check to ensure that the chassis is undamaged.
10. Move the server to the operating location using a computer lifting device.

Note – Power cords for the Netra 1290 server are supplied in a separate country kit.

Note – The Solaris software and the LOM firmware are preinstalled or preconfigured on the server.

Installing Slide Rails



Caution – The cabinet stabilizers (if applicable) must be extended whenever a Netra 1290 server is pulled out of the cabinet.



Caution – The Netra 1290 server, with mounting cradle, weighs approximately 286 lb (130 kg). Two people using a computer equipment lift are required to move the server safely into the cabinet.



Caution – Pull only one Netra 1290 server out of the cabinet at a time to prevent unbalancing the cabinet.

Servers that are to be mounted in a cabinet use a slide rail mounting kit. This kit includes the following:

- Two lock spacers
- Two lock nuts
- Four slide rails, two inner and two outer
- 8 mm wrench



Note – If you received your server preinstalled in a cabinet you may proceed directly to [“Installing the Cable Management Arm”](#) on page 24.

This section is divided into the following:

- “Adjusting the Slide Rail Assembly” on page 5
- “To Install the Inner Rails on the Server” on page 6
- “To Prepare the Rails for 2-Post Installations” on page 8
- “Installing the Slide Rail Assemblies in a Sun Fire or Sun StorEdge Cabinet” on page 9
- “Installing the Slide Rail Assemblies in a Sun Rack 900 Cabinet” on page 11
- “Installing the Slide Rail Assemblies in a 19-Inch 4-Post Cabinet” on page 13
- “Installing the Slide Rail Assemblies in a 19-Inch 2-Post Rack” on page 14

Adjusting the Slide Rail Assembly

Each slide rail assembly consists of four components (FIGURE 1-3):

- Rear bracket that attaches to the assembly
- Adjustable bracket that attaches to the rear bracket (adjustable bracket is not used in some configurations)
- Slide rail assembly (with inner and outer rails)
- Front bracket

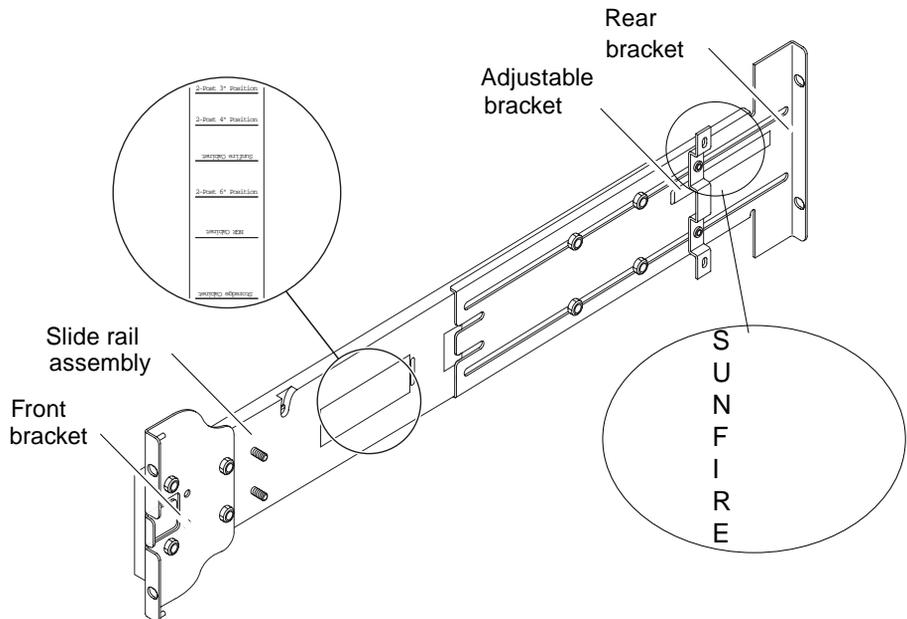


FIGURE 1-3 Slide Rail Assembly (Standard Configuration)

Adjust the rear bracket or the adjustable bracket position to modify the length of the assembly. The slide rail assembly and the rear bracket have bracket locations for specific cabinets stamped onto the metal. [FIGURE 1-3](#) shows the location of the markings.

▼ To Install the Inner Rails on the Server

1. Remove the inner rail from the slide rail assembly:
 - a. Press the latch adjacent to the green latch.
 - b. Pull the inner rail free from the outer slide rail assembly.
2. Push up on the inner rail so that the locating tab, on the side of the server, clips over the cutouts in the rail ([FIGURE 1-4](#)).

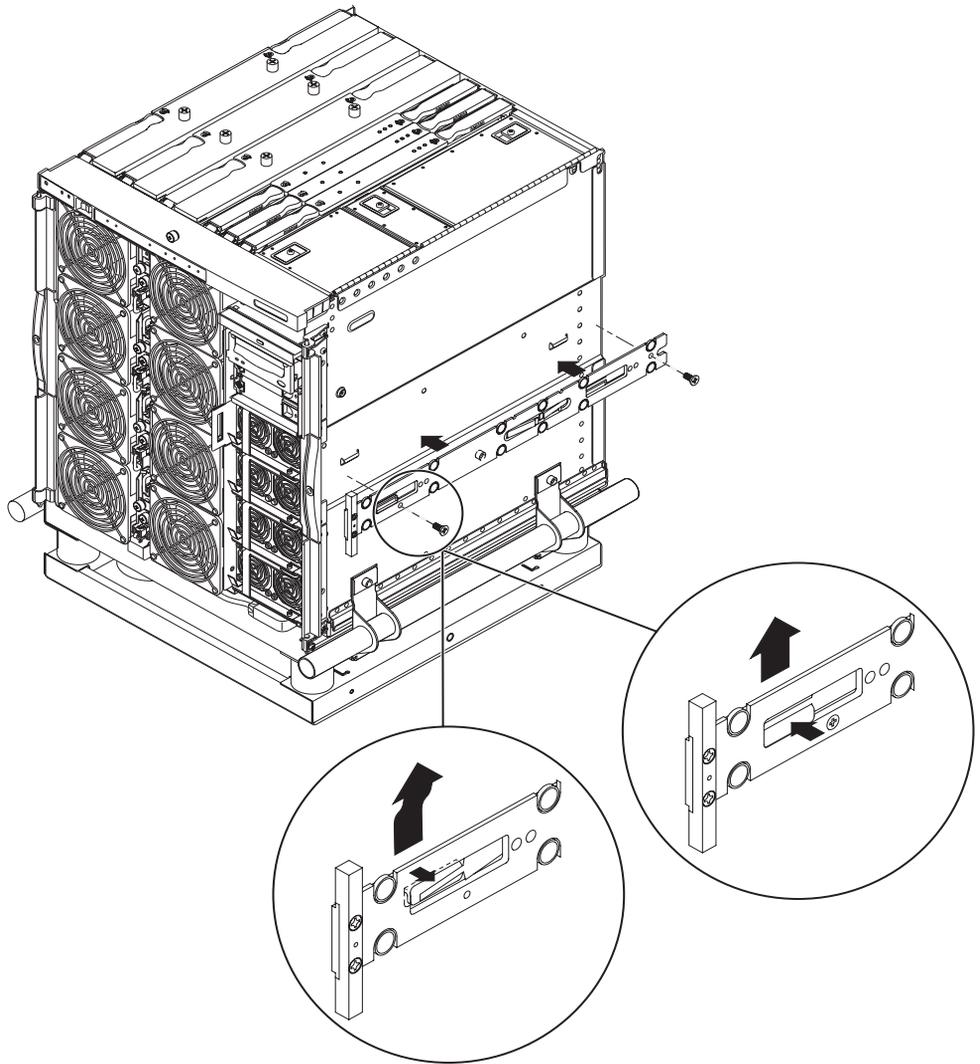


FIGURE 1-4 Spring Clips and Cutouts

The spring clip should engage.

Note – The spring clips must be above the system hooks. The lip on the main body of the inner rail must engage under and behind the system hook.

3. Secure the inner rail to the server using two 5 x 10 mm screws for each rail.

4. Repeat Step 1 through Step 3 for the second inner rail.

▼ To Prepare the Rails for 2-Post Installations

For 2-post installations, you can dismantle and reassemble the slide rail assemblies (FIGURE 1-5). The slide rail assemblies can be adjusted to suit a 19-inch 2-post rack that has a post depth in the range of 3 to 6 inches (7.5 to 15.0 cm).

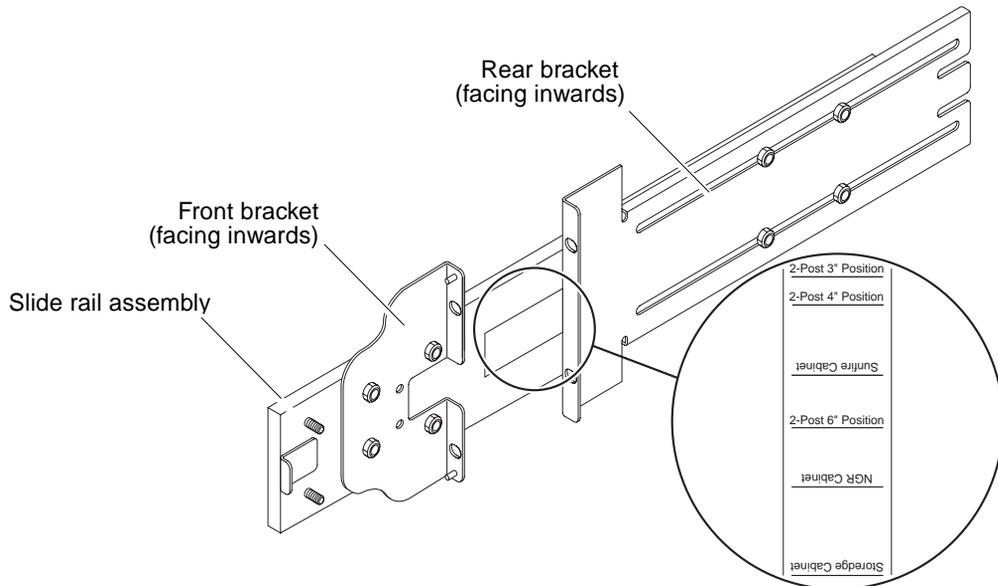


FIGURE 1-5 Slide Rail Assembly—Modified for 2-Post Installation

1. Remove the nuts that secure the adjustable bracket and discard the adjustable bracket (FIGURE 1-3).
2. Remove the four nuts securing the front bracket.
3. Rotate the front bracket 180 degrees and secure it facing inward (7.).
4. Remove the four nuts that secure the rear bracket.
5. Rotate the rear bracket 180 degrees so that it faces inward (7.).
6. Align the rear bracket to the appropriate markings on the slide rail assembly and secure the rear bracket.
7. Repeat Step 1 through Step 6 for the second slide rail assembly.

Installing the Slide Rail Assemblies in a Sun Fire or Sun StorEdge Cabinet

Sun Fire™ and Sun StorEdge™ cabinets have No. 10-32 UNF tapped screw holes in the front and rear, which are numbered from bottom to top.

Note – The slide rail assemblies are reversible. They can be used on either side of the cabinet.

▼ To Install the Slide Rail Assemblies in the Bottom Position

1. Adjust the position of the adjustable bracket on each slide rail assembly.
 - a. Loosen the two nuts that secure the adjustable bracket.
 - b. Reposition the adjustable bracket to the location stamped “SUNFIRE” on the rear bracket and secure the adjustable bracket.
2. Adjust the length of each slide rail assembly.
 - a. Loosen the four nuts that secure the rear bracket.
 - b. Reposition the rear bracket to the location marked “Sun Fire Cabinet” on the slide rail assembly and secure the rear bracket.

3. Insert the pins in the front bracket into cabinet holes 22 and 33 (FIGURE 1-6).

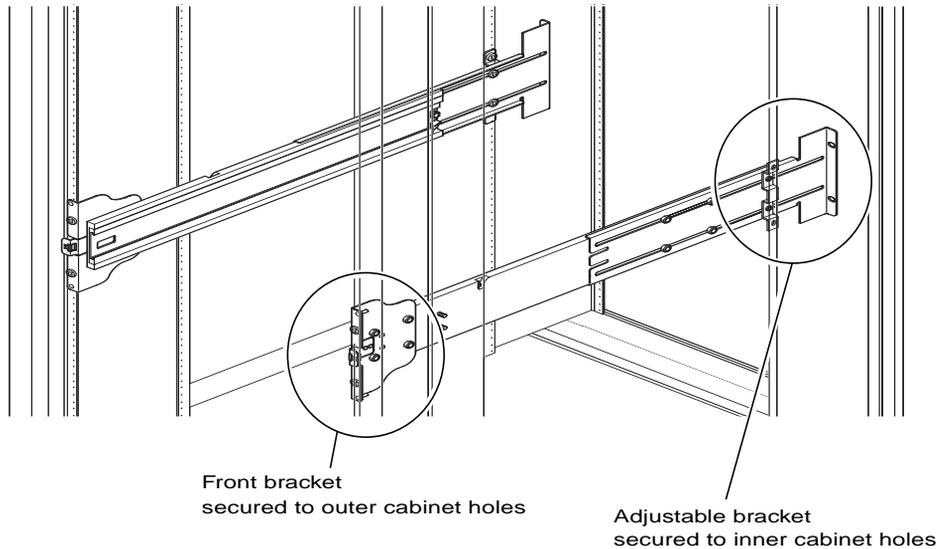


FIGURE 1-6 Installing the Slide Rails in a Sun Fire Cabinet

The pins hold the bracket in place until the bracket is secured.

4. Secure the adjustable bracket into cabinet holes 24 and 31 with two No. 10-32 UNF screws.
5. Secure the front bracket into cabinet holes 24 and 31 with two No. 10-32 UNF screws.
6. Repeat [Step 1](#) through [Step 5](#) for the second slide rail assembly.

Note – Mounting the server in cabinet holes 24 and 31 allows for 10-inches of space beneath the server in order to service the backplane.

▼ To Install the Slide Rail Assemblies in the Top Position

1. Adjust the position of the adjustable bracket on each slide rail assembly.
 - a. Loosen the two nuts that secure the adjustable bracket.
 - b. Reposition the adjustable bracket to the location stamped “SUNFIRE” on the rear bracket and secure the adjustable bracket.
2. Adjust the length of each slide rail assembly.

- a. Loosen the four nuts that secure the rear bracket.
 - b. Reposition the rear bracket to the location marked “Sun Fire Cabinet” on the slide rail assembly and secure the rear bracket.
3. Insert the pins in the front bracket into cabinet holes 58 and 69 (FIGURE 1-6).
The pins hold the bracket in place until it is secured.
 4. Secure the adjustable bracket into cabinet holes 60 and 67 with two No. 10-32 UNF screws.
 5. Secure the front bracket into cabinet holes 60 and 67 with two No. 10-32 UNF screws.
 6. Repeat [Step 1](#) through [Step 5](#) for the second slide rail assembly.

Installing the Slide Rail Assemblies in a Sun Rack 900 Cabinet

Sun Rack 900 cabinets have M-6 UNF tapped screw holes in the front and rear that are numbered from bottom to top.

Note – The slide rail assemblies are reversible. They can be used on either side of the cabinet.

1. Remove the adjustable bracket on each rail.
 - a. Loosen the two nuts that secure the adjustable bracket.
 - b. Discard the adjustable bracket.
2. Adjust the length of each slide rail assembly.
 - a. Loosen the four nuts that secure the rear bracket.
 - b. Reposition the rear bracket to the location marked “NGR Cabinet” on the slide rail assembly and secure the rear bracket.

▼ To Install the Slide Rail Assemblies in the Bottom Position

1. Remove the adjustable bracket on each rail.
 - a. Loosen the two nuts that secure the adjustable bracket.
 - b. Discard the adjustable bracket.
2. Adjust the length of each slide rail assembly.

- a. Loosen the four nuts that secure the rear bracket.
 - b. Reposition the rear bracket to the location marked “NGR Cabinet” on the slide rail assembly and secure the rear bracket.
3. Insert the pins in the front bracket into cabinet holes 22 and 33 (FIGURE 1-7).

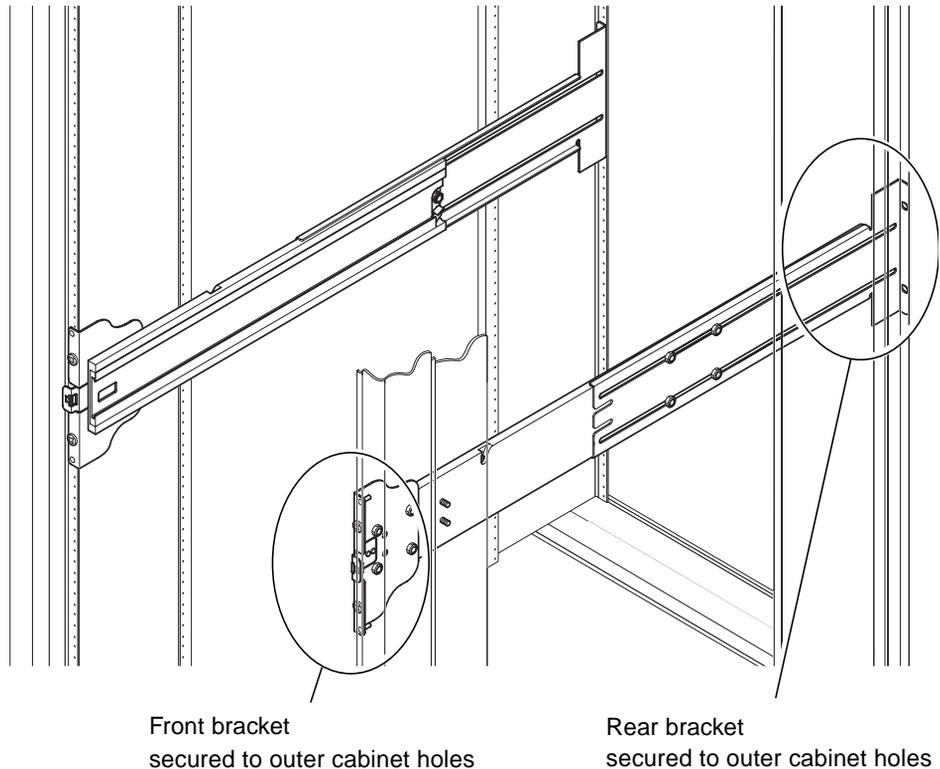


FIGURE 1-7 Installing the Rails in a Sun Rack 900 Cabinet or 19-Inch Four-Post Cabinet

The pins will hold the bracket in place until the bracket is secured.

4. Secure the rear bracket into cabinet holes 24 and 31 with two M-6 UNF screws.
5. Secure the front bracket into cabinet holes 24 and 31 with two M-6 UNF screws.
6. Repeat [Step 1](#) through [Step 5](#) for the second slide rail assembly.

Note – Mounting the server in cabinet holes 24 and 31 allows for 10-inches of space beneath the server in order to service the backplane.

▼ To Install the Slide Rail Assemblies in the Top Position

1. Remove the adjustable bracket on each rail.
 - a. Loosen the two nuts that secure the adjustable bracket.
 - b. Discard the adjustable bracket.
2. Adjust the length of each slide rail assembly.
 - a. Loosen the four nuts that secure the rear bracket.
 - b. Reposition the rear bracket to the location marked “NGR Cabinet” on the slide rail assembly and secure the rear bracket.
3. Insert the pins in the front bracket into cabinet holes 58 and 69 (FIGURE 1-7).

The pins will hold the bracket in place until the bracket is secured.
4. Secure the rear bracket into cabinet holes 60 and 67 with two M-6 UNF screws.
5. Secure the front bracket into cabinet holes 60 and 67 with two M-6 UNF screws.
6. Repeat [Step 1](#) through [Step 5](#) for the second slide rail assembly.

Installing the Slide Rail Assemblies in a 19-Inch 4-Post Cabinet

The rails can be adjusted to suit a 19-inch cabinet that is compliant with either IEC 297-4 or EIA 310-D. Each slide rail assembly has a distance between front and rear mounting rails from 17.7 to 30.7 inches (45.0 to 78.0 cm).

Note – The slide rail assemblies are reversible. They can be used on either side of the cabinet.



Caution – It is the installer’s responsibility to ensure that the cabinet has sufficient structural strength and stability to handle any required installations.

▼ To Install the Slide Rail Assemblies in a 19-Inch 4-Post Cabinet

1. Remove the adjustable bracket on each slide rail assembly.
 - a. Loosen the two nuts that secure the adjustable bracket.

- b. Discard the adjustable bracket.
 2. Adjust the length of each slide rail assembly.
 - a. Loosen the four nuts that secure the rear bracket.
 - b. Reposition the rear bracket to the appropriate markings shown on the slide rail assembly and secure the rear bracket.
 3. Secure the rear bracket with two No. 10-32 UNF screws (FIGURE 1-7).
 - To install the server in the *lowest* position, insert the rackmount securing screws no lower than 18.5 inches and 22.5 inches (47.0 cm and 57.2 cm) respectively.
-
- Note** – Mounting the bracket no lower than 18.5 inches and 22.5 inches allows for 10 inches of space beneath the server in order to service the backplane.
-
- To install the server in the *topmost* position, insert the rackmount securing screws no higher than 39.5 inches and 43.5 inches (100.0 cm and 110.0 cm) respectively.
4. Secure the front bracket with two No. 10-32 UNF screws (FIGURE 1-7).
 5. Repeat Step 1 through Step 4 for the second slide rail assembly.

Installing the Slide Rail Assemblies in a 19-Inch 2-Post Rack

Note – The slide rail assemblies must be prepared. See [“To Prepare the Rails for 2-Post Installations”](#) on page 8.

Note – The slide rail assemblies are reversible. They can be used on either side of the cabinet.



Caution – Ensure that the rack is anchored to the floor, ceiling, or adjacent frames. It is the installer’s responsibility to ensure that the rack has sufficient structural strength and stability to handle any required installations.

▼ To Install the Slide Rail Assemblies in a 19-Inch 2-Post Rack

1. Secure the front bracket with two No. 10-32 UNF screws.

Insert the rackmount securing screws no lower than 18.5 inches and 22.5 inches (47.0 cm and 57.2 cm) respectively.

Note – Mounting the bracket no lower than 18.5 inches and 22.5 inches allows for 10 inches of space beneath the server in order to service the backplane.

2. Secure the rear bracket with two No. 10-32 UNF screws.

3. Repeat [Step 1](#) and [Step 2](#) for the second slide rail assembly.

Installing the Server in a Cabinet

This section contains the following topics:

- [“To Prepare to Install the Server in the Cabinet” on page 15](#)
- [“To Mount the Server in the Cabinet” on page 17](#)

▼ To Prepare to Install the Server in the Cabinet

1. Remove the front bezel doors ([FIGURE 1-8](#)).

- a. Open the door and press down on the hinge pin levers to release the hinges.
- b. Lift the door off the hinge pins and store the door in a safe place.

c. Repeat [Step a](#) and [Step b](#) for the second front bezel door.

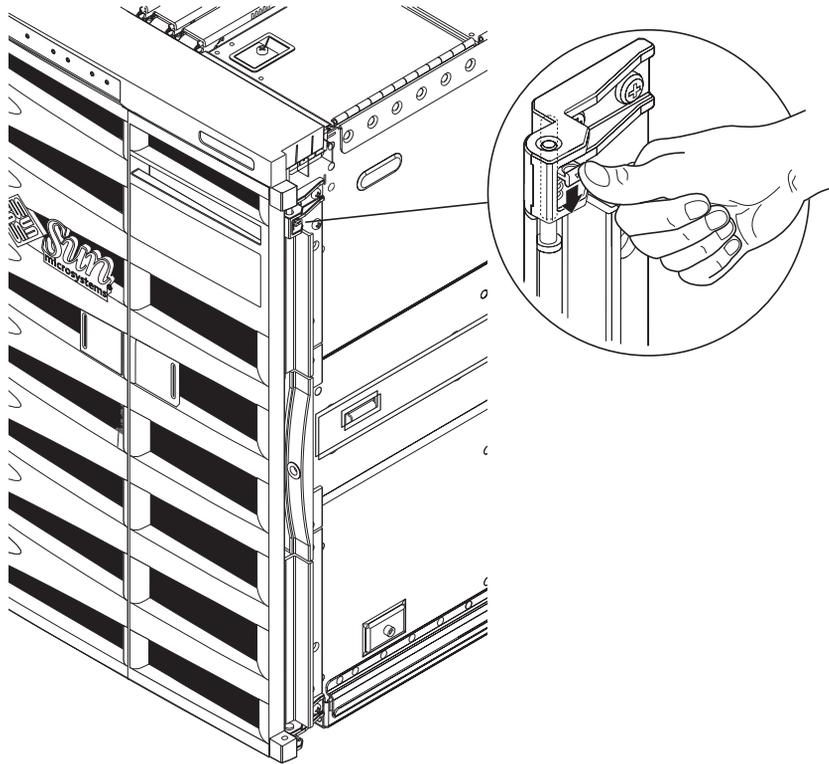


FIGURE 1-8 Releasing the Door Hinge Mechanism

2. Remove the shipping cradle bolts (FIGURE 1-9).

The bolts secure the orange metal shipping cradle to the wooden pallet.

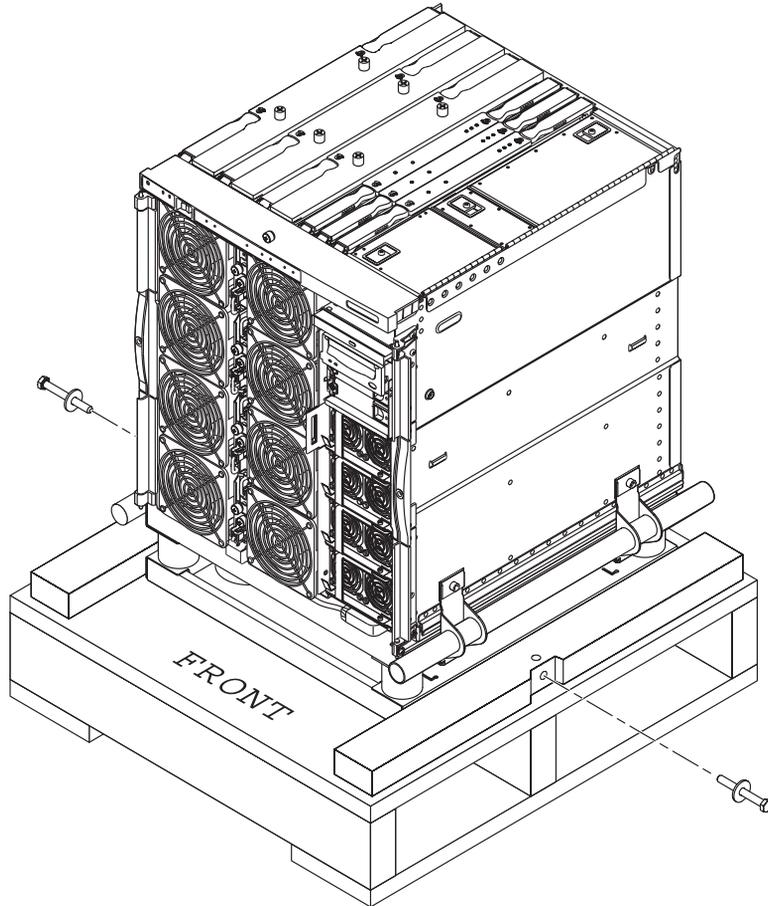


FIGURE 1-9 Removing the Shipping Cradle Bolts

▼ To Mount the Server in the Cabinet



Caution – The Netra 1290 server with shipping cradle weighs approximately 286.0 lb (130.0 kg). To prevent personal injury, two people are needed to move the server safely into the cabinet using a computer equipment lift.

1. Extend the cabinet stabilizer and lock it in position (as applicable).



Caution – The shipping cradle must be attached when the server is lifted. Failure to do so will result in major damage to the server.

2. Insert the forks of the lifting device fully through the shipping cradle opening (FIGURE 1-10).

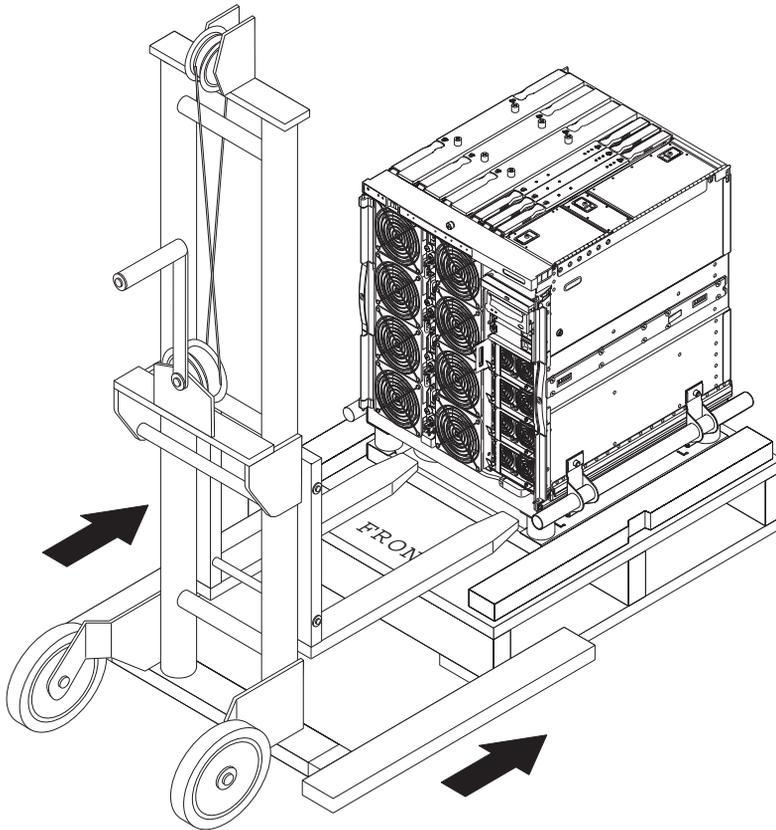


FIGURE 1-10 Inserting the Lifting Device Into the Shipping Cradle

3. Lift the server off the wooden shipping pallet and remove the pallet.
4. Extend the outer rails from the cabinet and latch them in the extended position.
5. Lift the server until it is level with the outer rails on the cabinet.
6. Carefully move the lifting device forward until the rails on the server are fully engaged with the outer rails on the cabinet (FIGURE 1-11).

The latches on each side must click out, locking the rails.

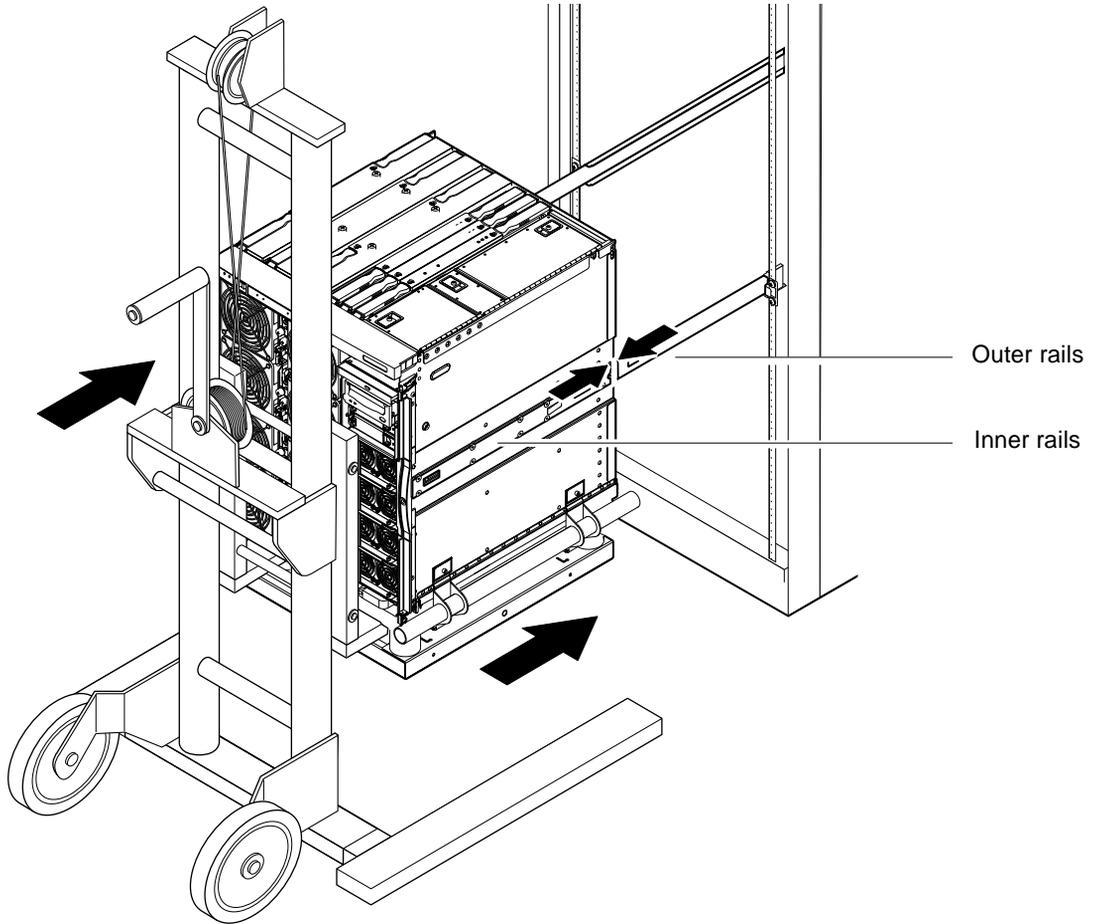


FIGURE 1-11 Aligning the Rails



Caution – The cabinet stabilizers (if applicable) must be extended or the cabinet might topple when the lifting device is withdrawn.

7. With the lifting device still supporting the server, loosen the four captive screws attaching the handles of the shipping cradle to the server.
8. Loosen the four captive screws that attach the handles to the shipping cradle.
9. Pull both shipping cradle handles away from the server.
This disconnects the shipping cradle from the server.
10. Lower the shipping cradle out of the way with the lifting device (FIGURE 1-12).
Store the shipping cradle for future use.

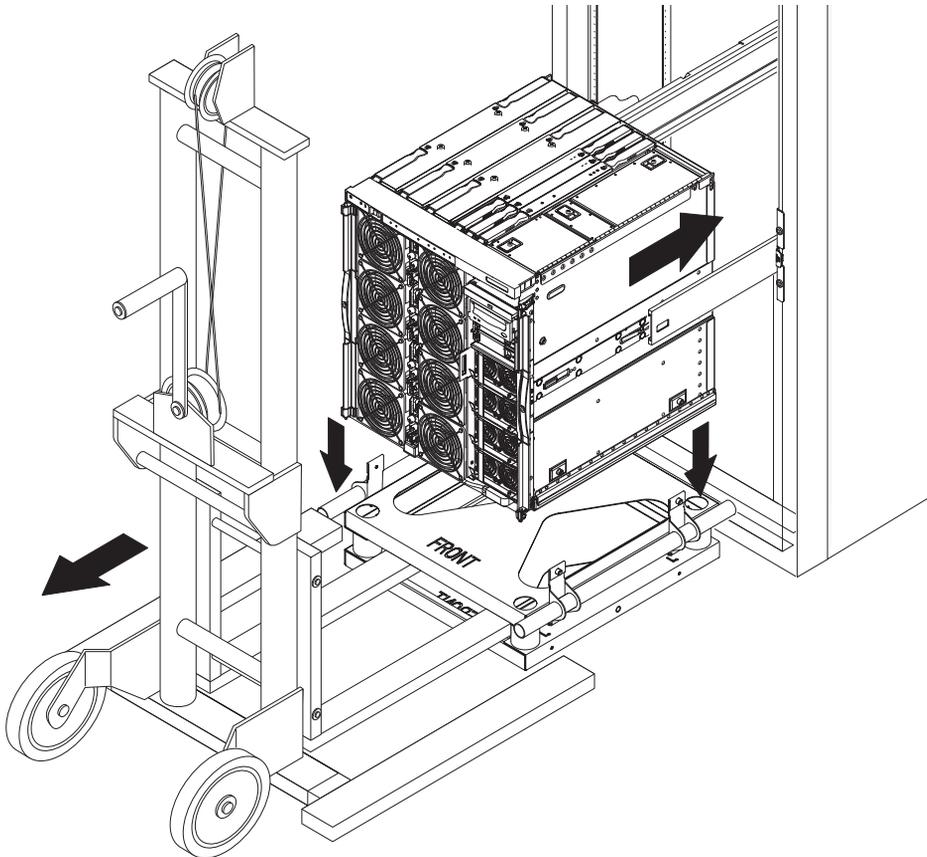


FIGURE 1-12 Removing the Shipping Cradle

11. Press the green latches on each rail and push the server into the cabinet (FIGURE 1-13).

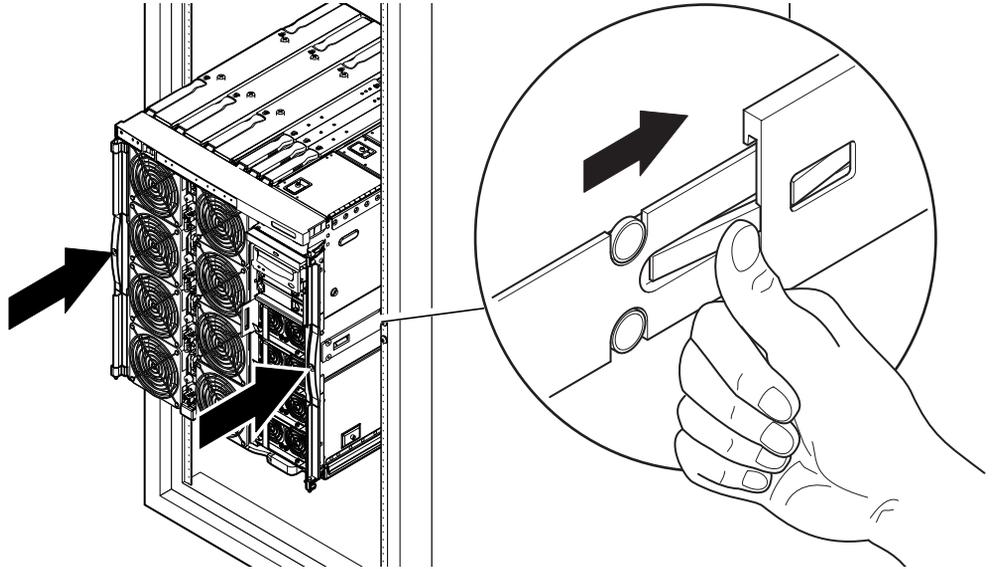


FIGURE 1-13 Pushing the Server Into the System Cabinet

12. Tighten the two securing screws on the front of the server to secure the server in the cabinet (FIGURE 1-14).

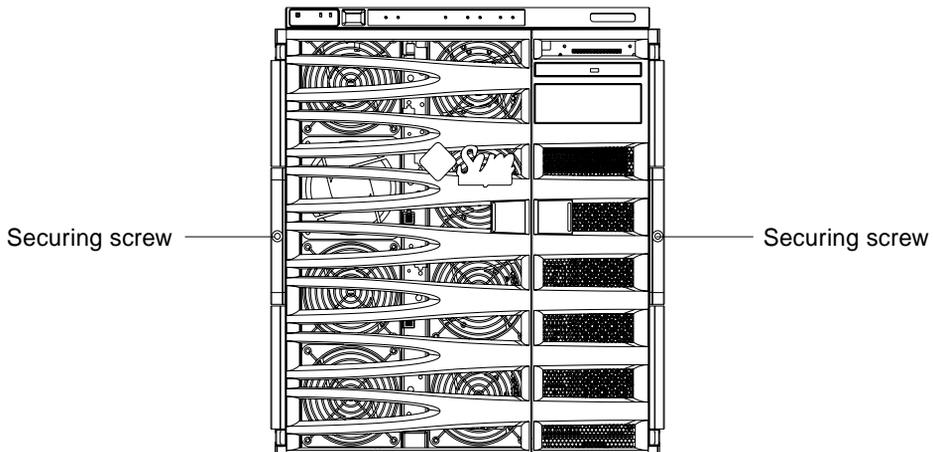


FIGURE 1-14 Tightening the Securing Screws

13. Retract the cabinet stabilization mechanism (as required).

14. Reattach the front doors of the server.

Installing Slide Rail Lock Nuts

Note – Slide rail lock nuts are preinstalled on all units shipped from the factory in a cabinet.

For servers not shipped preinstalled in a cabinet, a slide rail mounting kit containing lock nuts, spacers, and rails is used to mount and secure a server in a cabinet. See [“Installing Slide Rails” on page 4](#). Once the locking nuts are installed on the server, the following is applicable:

- Lock nuts must be loosened in order to remove a server from a cabinet.
- Lock nuts must be securely tightened on each server prior to moving a cabinet with one or more servers.

Proceed as follows to install the slide rail lock nuts:

Note – The slide rail mounting kits contain a pair of spacers provided by the manufacturer along with the rails. The manufacturer’s spacers must be discarded and replaced by the Sun spacers provided in the kit.

▼ To Install the Lock Nuts

1. Extend the cabinet stabilization mechanism (as required).
2. Slide the server out of the system cabinet.
3. Remove and discard the manufacturers spacers provided with the rails in the kit.
4. From the rear of the server, insert and tighten the Sun supplied spacers onto the studs on each rail ([FIGURE 1-15](#)).

The spacer shoulders must face outwards.

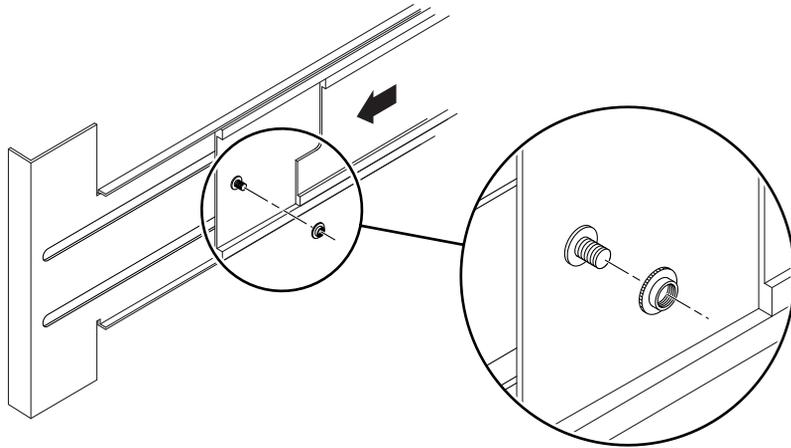


FIGURE 1-15 Inserting and Tightening the Spacers

5. Slide the server into the system cabinet.
6. From the rear of the server, insert and tighten the lock nuts, one for each rail ([FIGURE 1-16](#)).

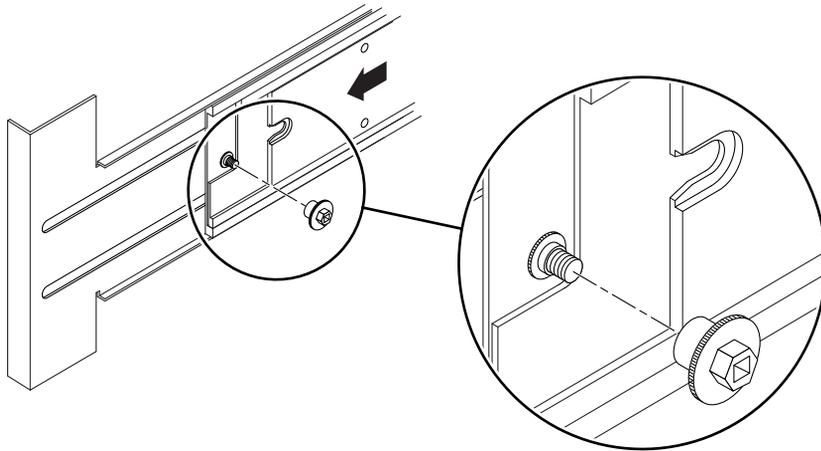


FIGURE 1-16 Inserting and Tightening the Lock Nut

7. Repeat [Step 1](#) through [Step 6](#) for each server in the system cabinet.
8. Retract the cabinet stabilization mechanism (as required).

Installing the Cable Management Arm

This section contains the following topics:

- ["To Install the CMA-Lite" on page 25](#)
- ["To Install the CMA-800" on page 26](#)

The cable management arm (CMA) supports and protects cables when a server slides into or out of a cabinet.

Two cable management arm solutions are offered – CMA-Lite and CMA-800. The choice of CMA depends on the available depth in the cabinet and the quantity or type of cable to be supported. Use the CMA-Lite if the larger CMA-800 management arm does not fit your cabinet.

Threaded holes for attaching the CMA are provided on the rear of the server (FIGURE 1-17).

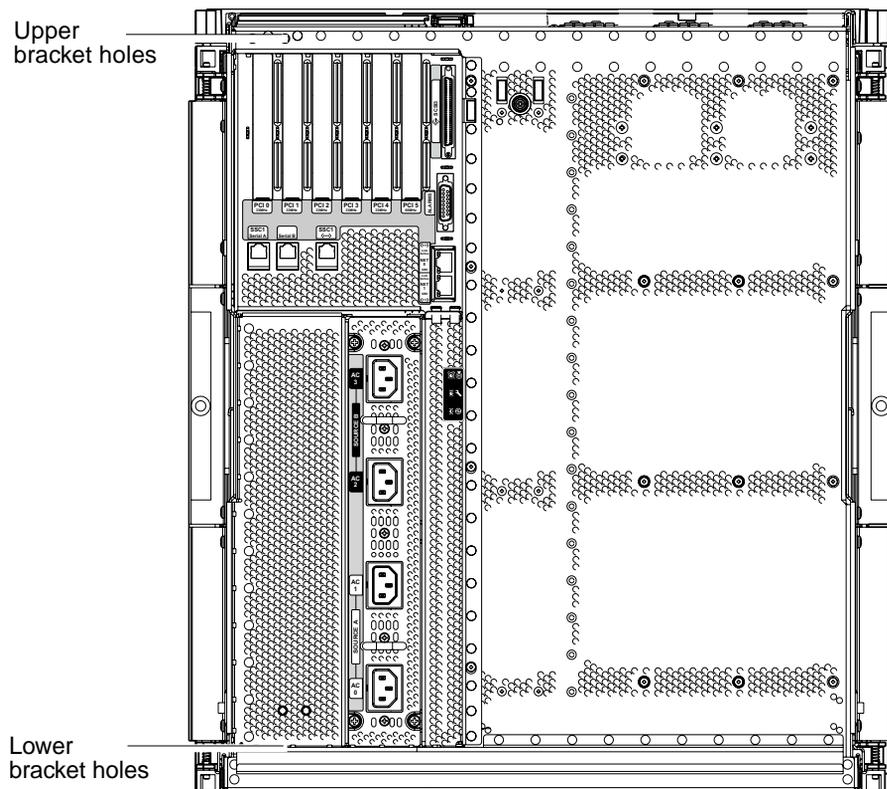


FIGURE 1-17 CMA Bracket Mounting Holes

▼ To Install the CMA-Lite

1. Secure the pivot at the end of the upper arm to the top rear of the server, using the two captive screws (FIGURE 1-18).
2. Secure the center pivot point of the CMA to the inside rear of the left hand slide rail assembly, using the two captive screws.
3. Secure the pivot at the end of the lower arm to the bottom rear of the server, using the two captive screws.

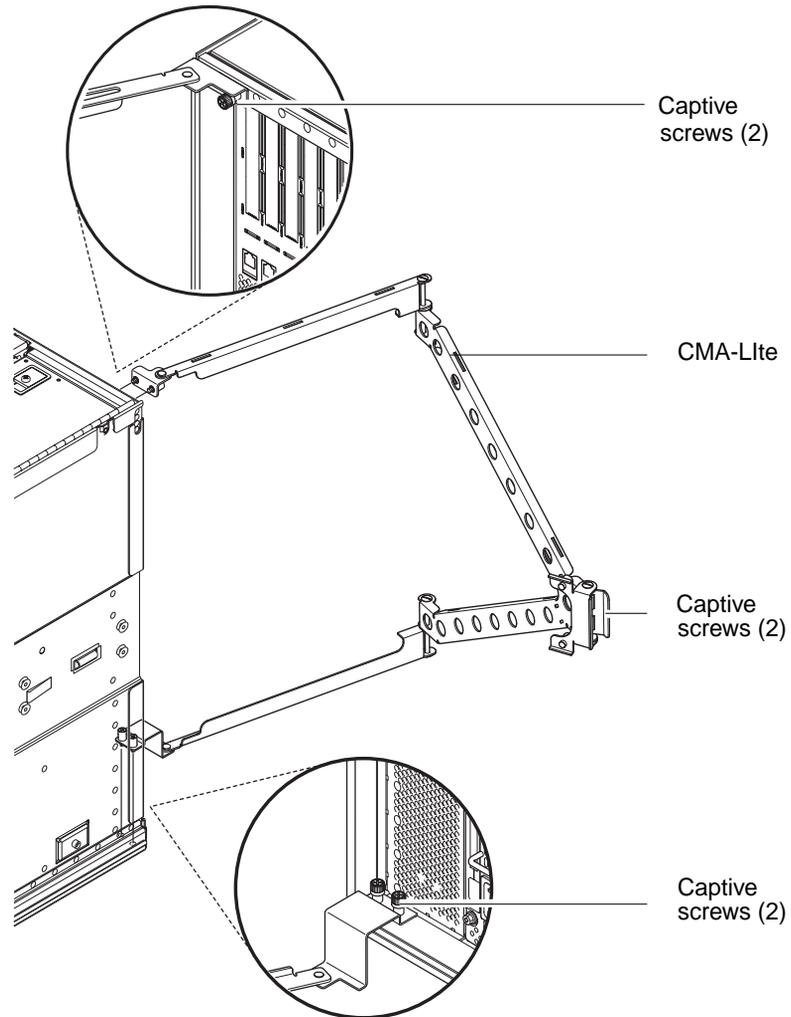


FIGURE 1-18 CMA-Lite Cable Management Arm

▼ To Install the CMA-800

Refer to [FIGURE 1-19](#), throughout the following procedure for identification of CMA parts.

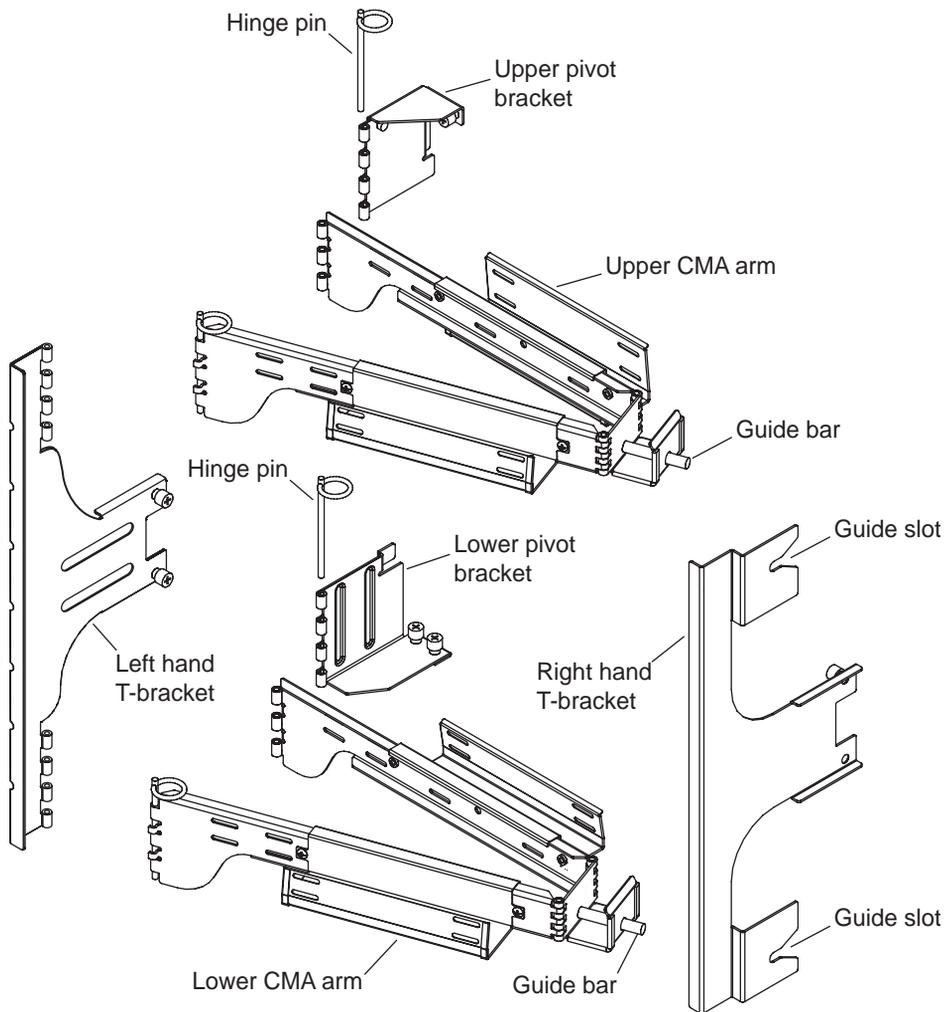


FIGURE 1-19 Upper and Lower CMA Arms, and Left-Hand and Right-Hand T-Brackets

Note – In the following procedure all left-hand and right-hand orientation is as viewed from the rear of the server chassis.

1. Remove the hinge pin securing the pivot bracket to the upper CMA arm, which facilitates attaching the bracket to the server chassis.
2. Secure the pivot bracket to the upper left-hand side of the server chassis using the two captive screws. See [FIGURE 1-20](#) and [FIGURE 1-21](#).

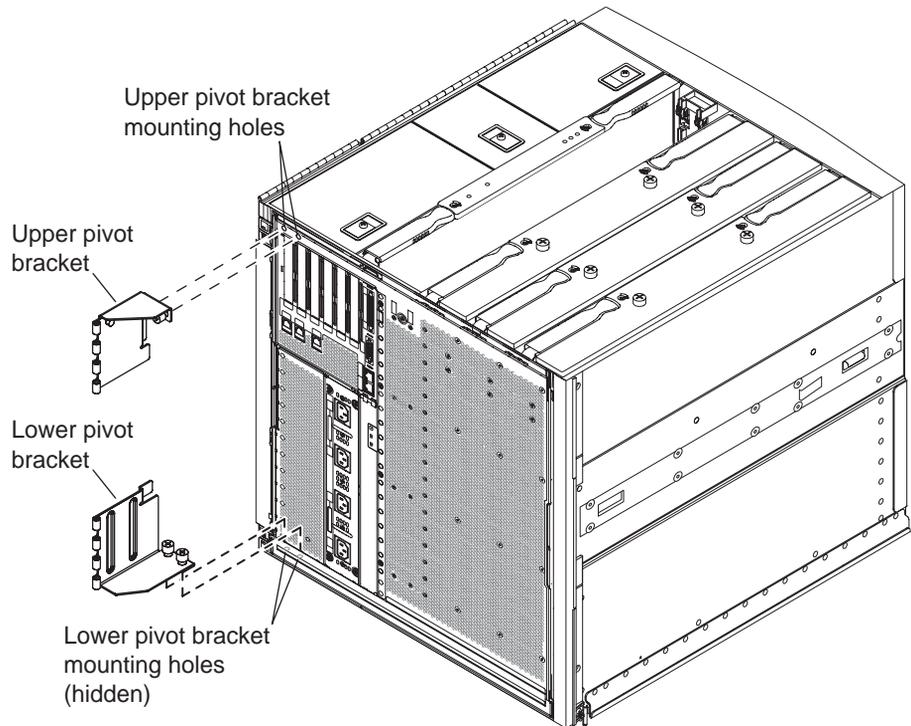


FIGURE 1-20 Upper and Lower Pivot Bracket Mounting Holes

After attaching the pivot bracket to the chassis, use the hinge pin removed previously to secure it to the upper CMA arm.

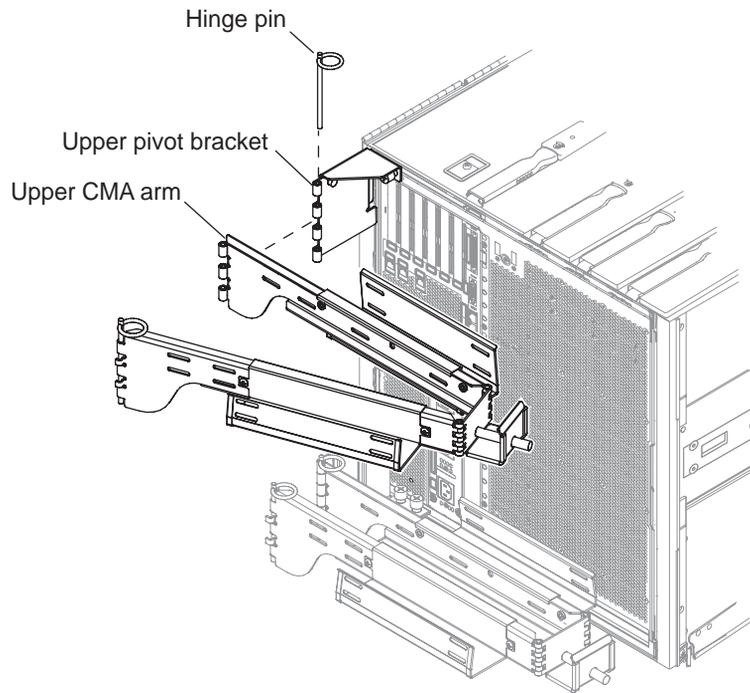


FIGURE 1-21 Attaching the Upper CMA Arm and Pivot Bracket

- 3. Remove the hinge pin securing the pivot bracket to the lower CMA arm, which facilitates attaching the bracket to the server chassis.**
- 4. Secure the pivot bracket to the lower left-hand of the server chassis using the two captive screws. See [FIGURE 1-20](#) and [FIGURE 1-22](#).**

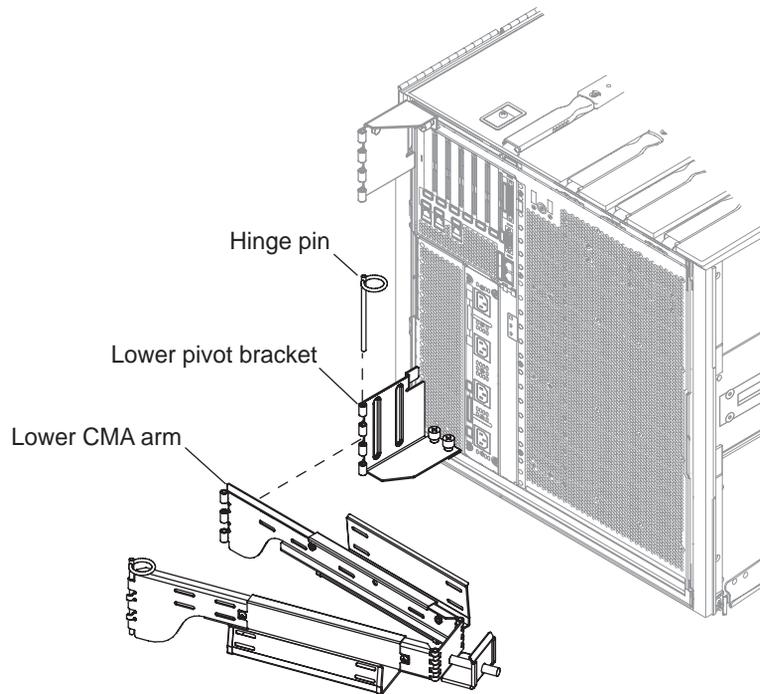


FIGURE 1-22 Attaching the Lower CMA Arm and Pivot Bracket

5. After attaching the bracket to the chassis, secure the lower CMA arm to the bracket using the hinge pin removed previously.
6. Secure the left hand T-bracket to the left hand slide rail using two captive screws, [FIGURE 1-23](#).

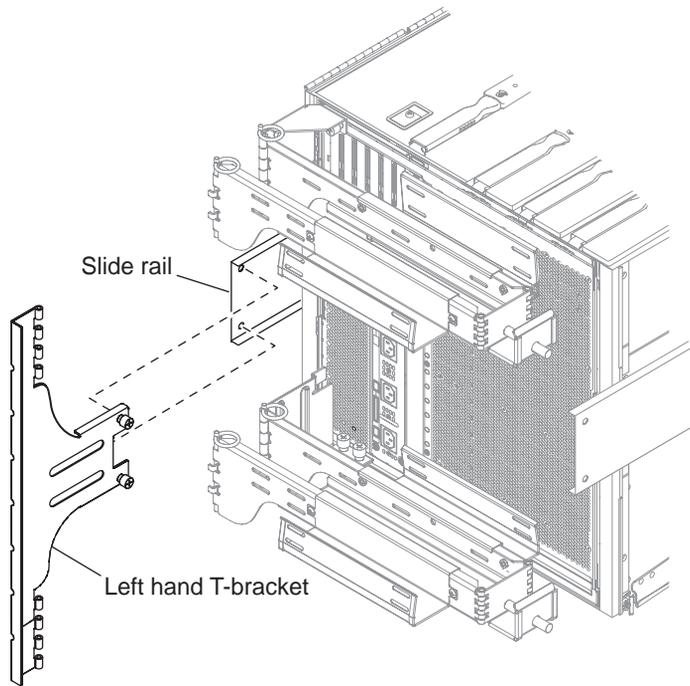


FIGURE 1-23 Attaching the Left-Hand T-Bracket

7. Secure the right-hand T-bracket to the right-hand slide rail using two captive screws ([FIGURE 1-24](#)).

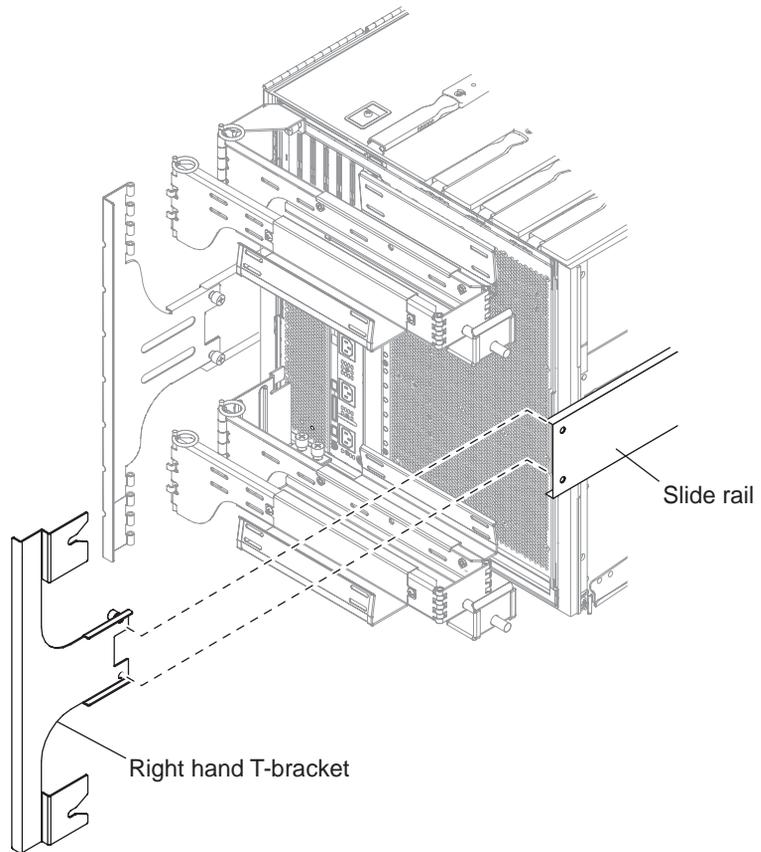


FIGURE 1-24 Attaching the Right-Hand T-Bracket

8. Secure the upper CMA arm to the left-hand T-bracket using a single hinge pin (FIGURE 1-25).

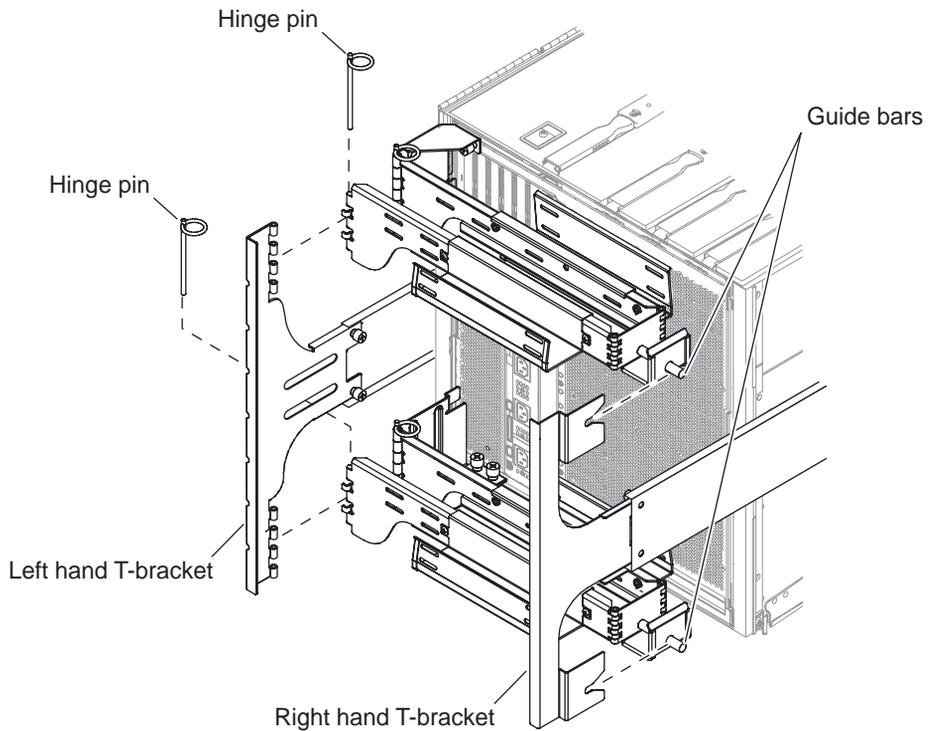


FIGURE 1-25 Attaching the Upper and Lower CMA Arms to the T-Bracket

9. Secure the lower CMA arm to the left-hand T-bracket using a single hinge pin (FIGURE 1-25).
10. Route the cabling through the cable channels as desired.
11. Secure both the upper and lower CMA arms by inserting the guide bars of each arm into the slots provided on the right-hand T-bracket.

Connecting Power Cables



Caution – The Netra 1290 server is designed to work with power systems having a grounded neutral conductor. Do not connect the equipment into any other type of power system. Contact your facilities manager or a qualified electrician to determine what type of power is supplied to your building.



Caution – The Netra 1290 server is shipped with grounding-type (three-wire) power cords. Always connect the cords into grounded power outlets.



Caution – The socket outlets must be installed near the equipment and easily accessible.

▼ To Connect the Power Cables

1. Turn the system power switch to the Standby position.



Caution – The On/Standby power switch does not isolate the equipment. The power cords are the primary means of disconnection for this product.

2. Turn the cabinet power off if you are using a powered cabinet.
Refer to the installation guide that came with the cabinet.
3. Label both ends of the 4 power cords.
Label two power cords Source A and label the other two power cords Source B.
4. Connect the power cables to the server.
 - a. Connect the Source A power cords to AC0/DC0 and AC1/DC1 on the server and the Source B power cords to AC2/DC2 and AC3/DC3 on the server.
 - b. Run the power cords through the CMA and secure them with tie wraps.
Ensure that the CMA can extend and retract without dislodging the power cords.
5. Connect the server to the power source.

Note – It is the installer’s responsibility to ensure that the cabinet has sufficient electrical power and redundancy to handle the required installation.

- If the server is mounted in an unpowered cabinet:
 - a. **Connect power cords from Source A on the server to the customer-supplied power source A circuit breakers.**
 - b. **Connect power cords from Source B on the server to the customer-supplied power source B circuit breakers.**
- If the server is mounted in a powered cabinet:
 - a. **Connect power cords from Source A on the cabinet to the customer-supplied power source A circuit breakers and from Source B on the cabinet to the customer-supplied power source B circuit breakers.**

Refer to the installation guide that came with the cabinet for instructions on cabinet power cabling.
 - b. **Connect power cords from Source A on the cabinet to Source A on the server and from Source B on the cabinet to the Source B on the server.**

Refer to the installation guide that came with the cabinet for instructions on cabinet power cabling.

Connecting Consoles to the System Controller

This section contains the following topics:

- [“To Connect the Initial Administrative Console” on page 35](#)
- [“To Connect the Administrative Console” on page 36](#)

The system controller (SC) provides the Lights-Out Management (LOM) functions, which include power-on sequencing, executing module power-on self-tests (POST), environmental monitoring, fault indication, and alarms.

The LOM command-line interface, the Solaris console, and the OpenBoot™ PROM console are accessed by connecting an administrative console to either serial port A or the 10/100BASE-T LOM Ethernet port. The administrative console can be any external input device (laptop computer or workstation) connected to either of these ports.

LOM Serial A port connects directly to an ASCII terminal or a network terminal server (NTS) using a command-line interface. This port is used for the initial administrative console. Use this port to modify the default system controller settings so that the 10/100BASE-T LOM Ethernet port can be used as an administrative console. The configuration of Serial port A cannot be changed. See [Appendix A](#) for details on the serial ports.

The 10/100BASE-T LOM Ethernet port is used to connect the system controller to the network. This port is preconfigured as follows:

- System controller configured to be on a network
- System controller Ethernet configured for Dynamic Host Configuration Protocol (DHCP)
- No preconfigured system controller Ethernet IP address, gateway, domain name service (DNS) domain, or DNS servers

▼ To Connect the Initial Administrative Console

For the initial configuration, connect LOM Serial A port to the serial port on any of the following devices:

- ASCII terminal
- Sun workstation
- Terminal server (or patch panel connected to a terminal server)

Note – If the IP address assigned to the 10/100BASE-T LOM Ethernet port by DHCP is known, the 10/100BASE-T LOM Ethernet port can be accessed without the LOM Serial A port.

1. Connect the administrative console to the LOM Serial A port ([FIGURE 1-26](#)).

The LOM Serial A port is a DTE (data terminal equipment) port. An adapter, crossover cable, or null modem cable is required to connect the LOM Serial A port to another DTE port. For LOM Serial A port connector pinouts and adaptor information, see [“LOM Serial A and Serial B Ports” on page 59](#).

2. Turn the customer-supplied circuit breakers power switch to the On position.

3. Turn the system power switch to the On position.

Refer to the *Netra 1290 Server System Administration Guide*, 819-4374.

4. Set up the system console.

Refer to the *Netra 1290 Server System Administration Guide*, 819-4374.

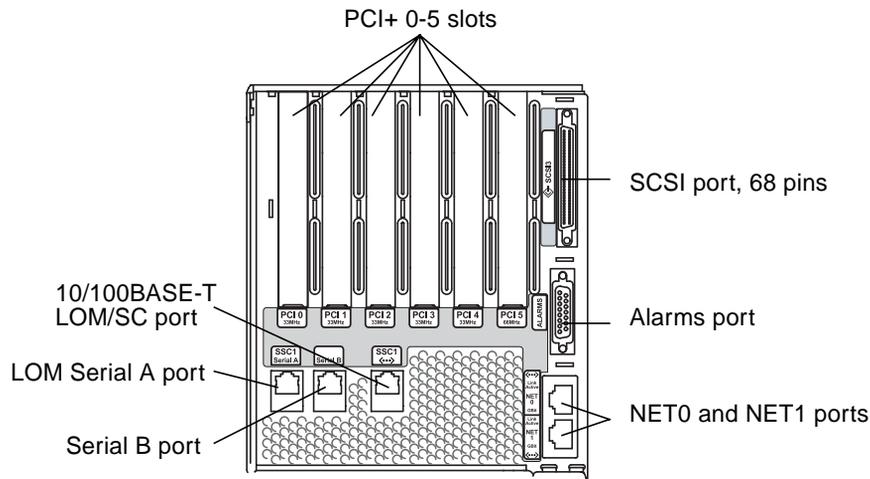


FIGURE 1-26 System Controller and I/O Assembly Locations

▼ To Connect the Administrative Console

Once the initial configuration is complete, you can perform system administration tasks directly or over the network using the 10/100BASE-T LOM Ethernet port.

Note – Communication on the LOM Serial A port is possible but is subject to interruption by the LOM device. Refer to the *Netra 1290 Server System Administration Guide*, 819-4374.

1. **Connect the 10/100BASE-T LOM Ethernet port to the chosen administrative console (local hub, router, or switch)(FIGURE 1-26).**

For 10/100BASE-T LOM Ethernet port connector information, see [“10/100BASE-T LOM Ethernet Port”](#) on page 58.

2. **Set up the chosen administrative console.**

Refer to the *Netra 1290 Server System Administration Guide*, 819-4374.

Connecting the I/O Assemblies

The I/O assemblies provide network interface and peripheral access to the system domains.

▼ To Connect the I/O Assemblies

1. Connect one end of the I/O Ethernet cable to the NET0/NET1 Ethernet port (FIGURE 1-26).
2. Connect the other end of the I/O Ethernet cable to the hub, workstation, or peripheral.

Installing Additional Hardware

Do not install additional hardware until the initial factory configuration has been completely installed, the server has been powered on, and POST has been completed successfully. This makes it easier to diagnose conflicts that might be caused by additional installations.



Caution – To avoid damaging boards when installing CPU/memory boards, refer to the *Netra 1290 Server Service Manual*, 819-4373 for instructions.



Caution – During initial installation, turn off the power at the circuit breakers before removing or replacing server hardware. Refer to the installation guide of the additional hardware for any further instructions.



Caution – For optimum performance, use only I/O cards and associated drivers that are qualified by Sun Microsystems for use on the Netra 1290 server. It is possible for interactions to occur between cards and drivers on a specific bus that might lead to potential system panics or other negative outcomes if the card/driver solution is not qualified by Sun Microsystems.

For an updated listing of qualified I/O cards and configurations for the server, contact your Sun authorized sales representative or your service provider. For

additional information refer to:

<http://www.sun.com/io>

Installing Additional Peripheral Devices

When you add additional storage devices, refer to the *Rackmount Placement Matrix*, at <http://docs.sun.com>, for the mounting hole numbers of the mounting screws for Sun Microsystems disk arrays, other storage trays, and devices.

Unless otherwise specified in the *Rackmount Placement Matrix*, mount the heaviest subassemblies at the lowest available opening. This placement minimizes the effects of a top-heavy system in the event of an earthquake.

Refer to the installation guide for the peripheral device for additional instructions.

Setting Up

This chapter describes how to power on your server using the system controller command-line interface (LOM prompt), how to set up the SC using the `setupnetwork` command, and how to boot the Solaris Operating System.

This chapter contains the following topics:

- “Setup Process” on page 39
- “Setting Up the Hardware” on page 40
- “On/Standby Switch” on page 40
- “Powering On the Server” on page 41
- “Bringing the Server to Standby Mode” on page 42
- “Setting Up the Server” on page 44
- “Installing and Booting the Solaris Operating System” on page 46
- “Installing the Lights Out Management Packages” on page 47

Setup Process

The major steps you must perform to power on and set up the server are as follows:

1. Installing and cabling the hardware.
2. Applying external power to the hardware.
3. Setting the date and time for the system.
4. Setting the password for the SC.
5. Setting up system-specific parameters with the `setupnetwork` command.
6. Powering on all hardware with the `poweron` command.
7. If the Solaris Operating System is not preinstalled, installing it.

8. Booting the Solaris Operating System.
9. Installing the Lights Out Management packages from the Sun Microsystems software download center.

Setting Up the Hardware

▼ To Install and Cable the Hardware

1. Connect a terminal to the system controller board serial port (FIGURE 1-26).
2. Set up the terminal to use the same baud rate as the SC serial port.

The serial port settings of the System Controller board are:

- 9600 baud
- 8 data bits
- No parity
- 1 stop bit

On/Standby Switch

The On/Standby switch is a rocker switch with two positions, On and Standby. FIGURE 2-1 illustrates the switch and its location.



FIGURE 2-1 Netra 1290 Server On/Standby Switch

2.0.1 Disabling Operation of the On/Standby Switch

- To disable the On/Standby switch, use the `setupsc` command.

```
lom>setupsc

System Controller Configuration
-----
SC POST diag Level [off]:
Host Watchdog [enabled]:
Rocker Switch [enabled]:disabled
Secure Mode [off]:
```

Powering On the Server

When all the power cables are connected and the external circuit breakers are switched on, the server enters Standby mode. The Source A and Source B indicators are the only indicator LEDs to be illuminated on the system indicator board. The IB_SSC assembly Active LED is lit, but not visible from the front of the server.

Powering the server on from Standby mode can be achieved in either of two ways:

- Operating the On/Standby switch
- Sending the `poweron` command via the LOM port

The On/Standby switch of the Netra 1290 server controls only low voltage signals and no high voltage circuits pass through it.

Note – The power switch is not an On/Off switch, it is an On/Standby switch. It does not isolate the equipment.

Once the server is powered on, if the `auto-boot?` variable has been set `true` in the OpenBoot PROM, the server will automatically boot into the Solaris Operating System.

▼ To Power On Using the On/Standby Switch

1. Check that power is applied to the server and that it is correctly in Standby mode.
2. Momentarily press the On/Standby switch to the right.

The server powers on completely. The System Active indicator illuminates and the server executes the power-on self-test (POST).

▼ To Power On Using the LOM `poweron` Command

- At the `lom>` prompt, type:

```
lom>poweron
```

The SC first powers on all the power supplies, followed by the fan tray. Finally the SC powers on the system boards. If the value of the OpenBoot PROM variable `auto-boot?` is `true` then the server also boots the Solaris Operating System.

Note – Individual modules can also be powered on using the `poweron` command. For further details, see the *Sun Fire Entry-Level Midrange System Controller Command Reference Manual*, 819-1268.

The System Active indicator is lit. The server will execute the power-on self-tests (POST).

Note – The `poweron all` command only powers on individual components; it does not boot the Solaris software.

See the *Sun Fire Entry-Level Midrange System Controller Command Reference Manual*, 819-1268 for a full description of the `poweron` command.

Bringing the Server to Standby Mode

Powering off the system to Standby mode can be achieved by three methods:

- From the Solaris command line
- From the LOM port
- By the On/Standby switch

When the system powers off to Standby mode, the Source A and Source B indicators are the only indicator LEDs to be illuminated on the system indicator board. The IB_SSC assembly Active LED is lit, but not visible from the front of the server.

▼ To Bring the System to Standby Mode From the Solaris Command Line

- At the system prompt, type:

```
# shutdown -i5
```

▼ To Bring the System to Standby Mode From the LOM Port

- At the lom> prompt, type:

```
lom>shutdown
```

- For an abrupt power off, type:

```
lom>poweroff  
  
This will abruptly terminate Solaris.  
Do you want to continue? [no]
```



Caution – This abruptly brings the system to Standby mode, regardless of the system state and might corrupt data on the hard drives.

▼ To Bring the System to Standby Mode by the On/Standby Switch



Caution – The On/Standby switch does not isolate the equipment. Turning off the power switch on the customer-supplied circuit breakers is required to isolate the equipment.

- Press the left side of the system On/Standby switch.

- For an abrupt power off, press the left side of the On/Standby switch and hold it for at least four seconds.



Caution – This abruptly brings the system to Standby mode, regardless of the system state and might corrupt data on the hard drives.

Setting Up the Server

After powering on, you must set up your server using the SC `setdate` and `setupnetwork` commands described in this section.

This section contains the following topics:

- [“To Set the Date and Time” on page 44](#)
- [“To Configure Network Parameters” on page 45](#)
- [“To Install and Boot the Solaris Operating System” on page 46](#)

▼ To Set the Date and Time

If your time zone area is using daylight or summer time, this is set automatically.

- **Set the date, time, and time zone for the server by using the `setdate` command at the LOM prompt.**

The following example shows setting the time zone to Pacific Standard Time (PST) using the offset from Greenwich mean time (GMT), date, and time to Tuesday, April 20, 2004 at 18 hours 15 minutes and 10 seconds.

```
lom>setdate -t GMT-8 042018152004.10
```

If Solaris software is running, use the Solaris `date` command instead.

For more information on the `setdate` command, see the *Sun Fire Entry-Level Midrange System Controller Command Reference Manual*, 819-1268.

▼ To Set Up the Password

1. **At the LOM prompt, type the SC `password` command.**

2. **At the Enter new password prompt, type your password.**
3. **At the Enter new password again prompt, re-type your password.**

```
lom>password
Enter new password:
Enter new password again:
lom>
```

If your password has been lost or forgotten, contact Sun Service for assistance.

▼ To Configure Network Parameters

The Netra 1290 server can be administered from the SC LOM prompt and from the Solaris software. There are two ways to access the LOM console connection:

- Through the SC serial port connection
- Through a remote (network) connection using the 10/100BASE-T Ethernet port

Note – The system can be administered solely through the serial port, but if you want to use the 10/100BASE-T Ethernet port, use a separate secure subnet for this connection. Remote connection capability is not enabled by default. If you use SSH or Telnet to administer the system, you must set the connection type to SSH or Telnet, using the `setupnetwork` command.

1. **At the LOM prompt, type `setupnetwork`.**

```
lom>setupnetwork
```

2. **Answer the questions in the script.**

Note – If you press the Return key after each question, the current value will not be changed.

See the *Sun Fire Entry-Level Midrange System Controller Command Reference Manual*, 819-1268 for full details of the `setupnetwork` command. [CODE EXAMPLE 2-1](#) shows an example of the `setupnetwork` command.

CODE EXAMPLE 2-1 Output From the setupnetwork Command

```
lom> setupnetwork

Network Configuration
-----
Is the system controller on a network? [yes]:
Use DHCP or static network settings? [static]:
Hostname [hostname]:
IP Address [xxx.xxx.xxx.xxx]:
Netmask [xxx.xxx.xxx.x]:
Gateway [xxx.xxx.xxx.xxx]:
DNS Domain [xxxx.xxx.xxx]:
Primary DNS Server [xxx.xxx.xxx.xx]:
Secondary DNS Server [xxx.xxx.xx.x]:
Connection type (ssh, telnet, none) [ssh]:

Rebooting the SC is required for changes in the above network settings to take
effect.
lom>
```

Use [CODE EXAMPLE 2-1](#) as a guide for the information you need to enter for each parameter value entry.

Installing and Booting the Solaris Operating System

To use LOM commands you must install the Lights Out Management 2.0 packages (SUNWlomu, SUNWlomr and SUNWlomm).

▼ To Install and Boot the Solaris Operating System

1. Access the LOM prompt.

For detailed instructions on how you can access the LOM prompt, see the *Netra 1290 Server System Administration Guide*, 819-4374.

2. To power on the server, type `poweron`.

Depending on the setting of the OpenBoot PROM `auto-boot?` parameter, the server attempts to boot the Solaris Operating System (OS) or remains at the OpenBoot PROM `ok` prompt. The default setting is `true`, which attempts to initiate a boot into the Solaris OS. If the setting of `auto-boot?` is `false` or there is no bootable Solaris image installed, then you the OpenBoot PROM `ok` prompt is returned.

```
lom>poweron
<POST messages displayed here . . . >
. . .
. . .
ok
```

3. If necessary, install the Solaris Operating System.

See your Solaris installation documentation, which is available with your Solaris release.

At the `ok` prompt, boot the Solaris OS by typing the OpenBoot PROM `boot` command:

```
ok boot [device]
```

For the optional *device* parameter, see the OpenBoot PROM `devalias` command, which displays the predefined aliases.

After the Solaris Operating System is booted, the `login:` prompt is displayed.

```
login:
```

Installing the Lights Out Management Packages

Three LOM packages needed for a Netra 1290 server:

- `SUNWlom_u` (LOMlite Utilities (`usr`))
- `SUNWlom_m` (LOMlite manual pages)
- `SUNWlom_r` (LOM drivers)

These packages are available from the Solaris software download center at:

<http://www.sun.com/download/>

Under Systems Administration, click on the Systems Management link.

Note – The latest patches to these packages is available from SunSolve in patch 110208. It is strongly advised that the latest version of patch 110208 be obtained from SunSolve and be installed on the Netra 1290 server to make use of the latest LOM utility updates.

▼ To Install the LOM Drivers

- As superuser, type:

CODE EXAMPLE 2-2 Installing the LOM Drivers

```
# pkgadd -d . SUNWlomr

Processing package instance <SUNWlomr> from </export/lom>

LOMlite driver (root)
(sparc) 2.0,REV=2000.08.22.14.14
Copyright 2000 Sun Microsystems, Inc. All rights reserved.
## Executing checkinstall script.
Using </> as the package base directory.
## Processing package information.
## Processing system information.
   9 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlomr> [y,n,?] y

Installing LOMlite driver (root) as <SUNWlomr>

## Installing part 1 of 1.
20 blocks
i.drivers (INFO): Starting
i.drivers (INFO): Installing /var/tmp/SUNWlomr/reloc/platform/sun4u/kernel/drv/lom
i.drivers (INFO): Installing /var/tmp/SUNWlomr/reloc/platform/sun4u/kernel/drv/lomp
i.drivers (INFO): Installing /var/tmp/SUNWlomr/reloc/platform/sun4u/kernel/drv/sparcv9/lom
i.drivers (INFO): Installing /var/tmp/SUNWlomr/reloc/platform/sun4u/kernel/drv/sparcv9/lomp
```

CODE EXAMPLE 2-2 Installing the LOM Drivers (Continued)

```
i.drivers (INFO): Installing /var/tmp/SUNWlomr/reloc/platform/sun4u/kernel/drv/sparcv9/lomv

i.drivers (INFO): Identified drivers 'lom lomv lomv'
i.drivers (INFO): Cleaning up old driver 'lom'...
Cleaning up old devlink entry 'type=ddi_pseudo;name=SUNW,lom lom'
i.drivers (INFO): Cleaning up old driver 'lomv'...
Cleaning up old devlink entry 'type=ddi_pseudo;name=lomv lomv'
i.drivers (INFO): Cleaning up old driver 'lomv'...
Cleaning up old devlink entry 'type=ddi_pseudo;name=SUNW,lomv \M0
type=ddi_pseudo;name=lomv \M0'
i.drivers (INFO): Cleaning up old driver 'lomh'...
Cleaning up old devlink entry 'type=ddi_pseudo;name=SUNW,lomh lom'

i.drivers (INFO): Adding driver 'lomv'...
driver = 'lomv'
aliases = ''
link = 'lomv'
spec = 'lomv'

Adding devlink entry 'type=ddi_pseudo;name=lomv lomv'
adding driver with aliases '' perm '* 0644 root sys'
devfsadm: driver failed to attach: lomv
Warning: Driver (lomv) successfully added to system but failed to attach

i.drivers (INFO): Adding driver 'lom'...
driver = 'lom'
aliases = 'SUNW,lom'
link = 'SUNW,lom lom'
spec = '\M0'

Adding devlink entry 'type=ddi_pseudo;name=SUNW,lom \M0'
Adding devlink entry 'type=ddi_pseudo;name=lom \M0'
adding driver with aliases 'SUNW,lom' perm '* 0644 root sys'
devfsadm: driver failed to attach: lom
Warning: Driver (lom) successfully added to system but failed to attach

i.drivers (INFO): Adding driver 'lomh'...
driver = 'lomh'
aliases = 'SUNW,lomh SUNW,lomh'
link = 'SUNW,lomh SUNW,lomh'
spec = 'lomh'

Adding devlink entry 'type=ddi_pseudo;name=SUNW,lomh lom'
Adding devlink entry 'type=ddi_pseudo;name=SUNW,lomh lom'
adding driver with aliases 'SUNW,lomh SUNW,lomh' perm '* 0644 root sys'
devfsadm: driver failed to attach: lomh
Warning: Driver (lomh) successfully added to system but failed to attach
i.drivers (SUCCESS): Finished

[ verifying class <drivers> ]

Installation of <SUNWlomr> was successful.
```

Note – The warning messages concerning `lomv`, `lomv`, and `lom` driver attachment seen during the installation of the `SUNWlomr` package can be safely ignored since the `SUNWlomr` package is not used on the Netra 1290 server. However, the presence of the package is required to enable successful upgrade through future patches.

▼ To Install the LOM Utility

- As superuser, type:

CODE EXAMPLE 2-3 Installing the LOM Utility

```
# pkgadd -d . SUNWlomu

Processing package instance <SUNWlomu> from </export/lom>

LOMlite Utilities (usr)
(sparc) 2.0,REV=2000.08.22.14.14
Copyright 2000 Sun Microsystems, Inc. All rights reserved.
Using </> as the package base directory.
## Processing package information.
## Processing system information.
   4 package pathnames are already properly installed.
## Verifying package dependencies.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

Installing LOMlite Utilities (usr) as <SUNWlomu>

## Installing part 1 of 1.
2333 blocks

Installation of <SUNWlomu> was successful.
```

▼ To Install the LOM Manual Pages

- As superuser, type:

CODE EXAMPLE 2-4 Installing the LOM Manual Pages

```
# pkgadd -d . SUNWlomm

Processing package instance <SUNWlomm> from </export/lom>

LOmlite manual pages
(sparc) 2.0,REV=2000.08.22.14.14
Copyright 2000 Sun Microsystems, Inc. All rights reserved.
Using </> as the package base directory.
## Processing package information.
## Processing system information.
    5 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

Installing LOmlite manual pages as <SUNWlomm>

## Installing part 1 of 1.
71 blocks

Installation of <SUNWlomm> was successful.
```


Netra 1290 Server Connections

This appendix describes the cables and connectors available to complete the installation. Topics include:

- “External I/O Connection Locations” on page 53
- “PCI+ IB_SSC Assemblies” on page 54
- “SCSI Connector” on page 55
- “Alarms Port” on page 56
- “NET0/NET1 Ethernet Ports” on page 57
- “10/100BASE-T LOM Ethernet Port” on page 58
- “LOM Serial A and Serial B Ports” on page 59

External I/O Connection Locations

FIGURE A-1 shows the location of external I/O connections of the Netra 1290 server.

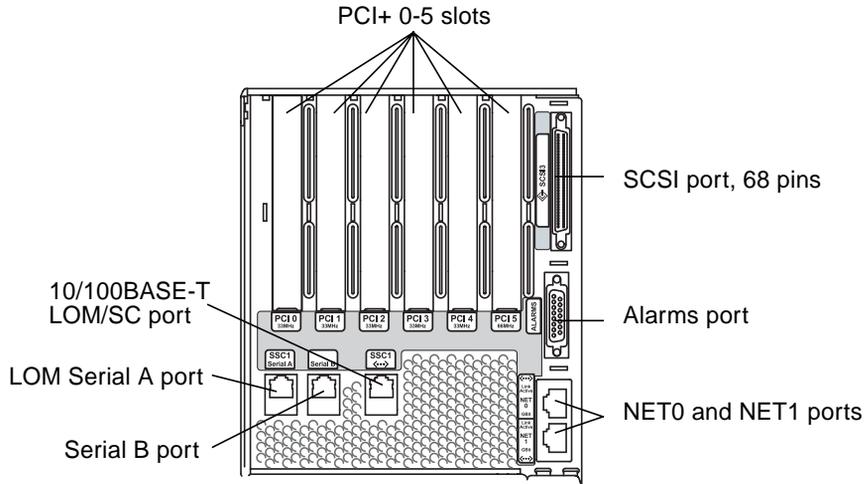


FIGURE A-1 External I/O Connection Locations

PCI+ IB_SSC Assemblies

Note – Do not mix different cards with different speeds within an IB6 leaf (two paired slots), because leaf slots run at the lowest speed and the lowest mode for a given set of cards within a leaf. For example, if a 33 MHz PCI card is in slot 0 and a 66 MHz PCI card is in slot 1, then both slots on the leaf will run in the lower 33 MHz PCI mode. IB6 leaves are comprised of paired slots 0 and 1, 2 and 3, and 4 and 5. In addition, all slots will only run in PCI+ mode.

PCI+ IB_SSC assemblies provide six PCI+ slots labeled 0 through 5. When viewing the rear of the server, slot 0 is on the left and slot 5 is on the right. All six slots support up to 66 MHz. The PCI+ slots are *not* hot-swappable, all slots are half length and 5V signaling is not supported.

SCSI Connector

The SCSI connector is a 68-pin SCSI connector (FIGURE A-2). TABLE A-1 lists the pinout information.

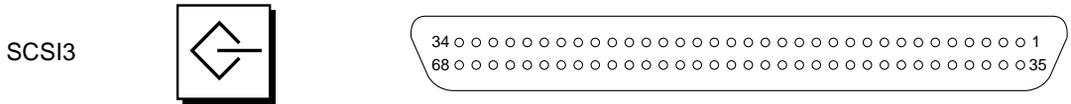


FIGURE A-2 68-Pin SCSI Connector

TABLE A-1 68-Pin SCSI Connector Pinout

Pin No.	Signal Name	Type	Pin No.	Signal Name	Type	Pin No.	Signal Name	Type
1	+DB(12)	I/O	24	+ACK	I/O	47	-DB(7)	I/O
2	+DB(13)	I/O	25	+RST	I/O	48	-DB(P0)	I/O
3	+DB(14)	I/O	26	+MSG	I/O	49	Ground	GND
4	+DB(15)	I/O	27	+SEL	I/O	50	Ground	GND
5	+DB(P1)	I/O	28	+C/D	I/O	51	Tempwpr	POWER
6	+DB(0)	I/O	29	+REQ	I/O	52	Tempwpr	POWER
7	+DB(1)	I/O	30	+I/O	I/O	53	Reserved	NA
8	+DB(2)	I/O	31	+DB(8)	I/O	54	Ground	GND
9	+DB(3)	I/O	32	+DB(9)	I/O	55	-ATN	I/O
10	+DB(4)	I/O	33	+DB(10)	I/O	56	Ground	GND
11	+DB(5)	I/O	34	+DB(11)	I/O	57	-BSY	I/O
12	+DB(6)	I/O	35	-DB(12)	I/O	58	-ACK	I/O
13	+DB(7)	I/O	36	-DB(13)	I/O	59	-RST	I/O
14	+DB(P0)	I/O	37	-DB(14)	I/O	60	-MSG	I/O
15	Ground	GND	38	-DB(15)	I/O	61	-SEL	I/O
16	Diffusion	ANAL	39	-DB(P1)	I/O	62	-C/D	I/O
17	Tempwpr	POWER	40	-DB(0)	I/O	63	-REQ	I/O

TABLE A-2 68-Pin SCSI Connector Pinout (continued)

Pin No.	Signal Name	Type	Pin No.	Signal Name	Type	Pin No.	Signal Name	Type
18	Termpwr	POWER	41	-DB(1)	I/O	64	-I/O	I/O
19	Reserved	NA	42	-DB(2)	I/O	65	-DB(8)	I/O
20	Ground	GND	43	-DB(3)	I/O	66	-DB(9)	I/O
21	+ATN	I/O	44	-DB(4)	I/O	67	-DB(10)	I/O
22	Ground	GND	45	-DB(5)	I/O	68	-DB(11)	I/O
23	+BSY	I/O	46	-DB(6)	I/O			

SCSI Implementation

For PCI+ IB_SSC assemblies the embedded SCSI subsystem is a SCSI Ultra-320 (UltraSCSI) low-voltage differential parallel interface

- 16-bit SCSI bus
- 320-MBps data transfer rate

Maximum cable length support is 33 ft. (10 meters).

Alarms Port

The alarms service port is a male DB-15 (FIGURE A-3). TABLE A-3 lists the pinout information.

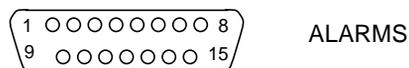


FIGURE A-3 DB-15 (Male) Alarms Service Port Connector

TABLE A-3 Alarms Service Port Connector Pinout

Pin	Signal Name	Description	State
1	Not connected		
2	Not connected		
3	Not connected		
4	Not connected		
5	SYSTEM_NO	UNIX® Running	Normally open
6	SYSTEM_NC	UNIX Running	Normally closed
7	SYSTEM_COM	UNIX Running	Common
8	ALARM1_NO	Alarm1	Normally open
9	ALARM1_NC	Alarm1	Normally closed
10	ALARM1_COM	Alarm1	Common
11	ALARM2_NO	Alarm2	Normally open
12	ALARM2_NC	Alarm2	Normally closed
13	ALARM2_COM	Alarm2	Common
14	Not connected		
15	Not connected		

NET0/NET1 Ethernet Ports

The NET0/NET1 Ethernet ports are shielded RJ-45 connectors ([FIGURE A-4](#)). The NET0/NET1 Ethernet ports are also known as the Gigabit Ethernet RJ-45 ports. [TABLE A-4](#) lists the pinout information.

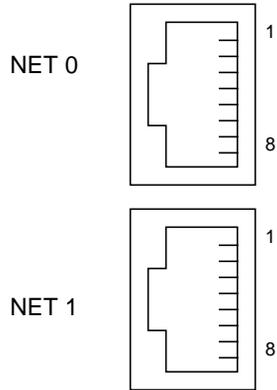


FIGURE A-4 RJ-45 Gigabit Ethernet Connectors

TABLE A-4 RJ-45 Gigabit Ethernet Connector Pinout

Pin	Signal Name	Pin	Signal Name
1	TRD0_H	5	TRD2_L
2	TRD0_L	6	TRD1_L
3	TRD1_H	7	TRD3_H
4	TRD2_H	8	TRD3_L

10/100BASE-T LOM Ethernet Port

The 10/100BASE-T LOM Ethernet port is an RJ-45 twisted-pair Ethernet (TPE) connector ([FIGURE A-5](#)). This port is also known as the system controller Ethernet port. [TABLE A-5](#) lists the pinout information.



FIGURE A-5 RJ-45 TPE Socket

TABLE A-5 Twisted-pair Ethernet Connector Pinout

Pin	Description	Pin	Description
1	TXD+	5	Common mode termination
2	TXD-	6	RXD-
3	RXD+	7	Common mode termination
4	Common mode termination	8	Common mode termination

Twisted-Pair Ethernet Cable-Type Connectivity

The following types of TPE cables can be connected to the 8-pin TPE connector:

- For 10BASE-T applications, shielded twisted-pair (STP) cable:
 - Category 3 (STP-3, *voice* grade)
 - Category 4 (STP-4)
 - Category 5 (STP-5, *data* grade)
- For 100BASE-T applications, shielded twisted-pair category 5 (STP-5, *data* grade) cable.

TABLE A-6 TPE STP-5 Cable Lengths

Cable Type	Application	Maximum Length
Shielded twisted pair category 5 (STP-5, <i>data</i> grade)	10BASE-T	1000 m (3282 ft)
Shielded twisted pair category 5 (STP-5, <i>data</i> grade)	100BASE-T	100 m (327 ft)

LOM Serial A and Serial B Ports

The LOM Serial A and serial B ports use RJ-45 connectors ([FIGURE A-6](#)). The LOM Serial A port is also known as the system controller serial port. [TABLE A-7](#) lists the pinout information identical for both serial ports.

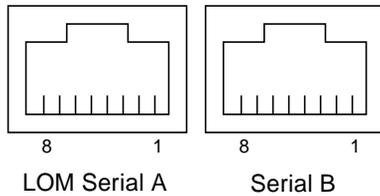


FIGURE A-6 RJ-45 Serial Connectors

TABLE A-7 RJ-45 Serial Connector Pinout

Pin	Signal
1	RTS
2	DTR
3	TXD
4	Signal Ground
5	Signal Ground
6	RXD
7	DSR
8	CTS

Note – Serial port B is reserved.

TABLE A-8 lists the settings needed to use the LOM Serial A connection. The configuration of this port cannot be changed. Be sure to check the manufacturer's documentation for your specific terminal server. Communication on LOM Serial A is subject to interruption by the LOM device. Refer to the *Netra 1290 Server System Administration Guide*, 819-4374.

TABLE A-8 Default Settings for Connecting to LOM Serial A

Parameter	Setting
Connector	LOM Serial A
Rate	9600 baud
Parity	No
Stop bits	1
Data bits	8

Using a DB-25 Adapter for Your Serial Link

To connect from a terminal, use either the DB-25 (25-Pin DSUB male to 8-POS RJ-45 female) adapter supplied with your server (part number 530-2889) or an alternative adapter that performs the same pin interconnections. The Sun supplied DB-25 adapter enables you to connect to most Sun system. [TABLE A-9](#) lists the pin interconnections the DB-25 adapter performs.

TABLE A-9 Pin Interconnections Performed by the Sun DB-25 Adapter

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

Using a DB-9 Adapter for Your Serial Link

To connect to a terminal that has a 9-pin serial connector, use a DB-9 (9-pin DSUB female to 8-POS RJ-45 female) adapter. [TABLE A-10](#) lists the pin interconnections the DB-9 adapter performs.

TABLE A-10 Pin Interconnections Performed by a DB-9 Adapter

Serial Port (RJ-45 Connector) Pin	9-Pin Connector
Pin 1 (RTS)	Pin 8 (CTS)
Pin 2 (DTR)	Pin 6 (DSR)
Pin 3 (TXD)	Pin 2 (RXD)
Pin 4 (Signal Ground)	Pin5 (Signal Ground)
Pin 5 (Signal Ground)	Pin 5 (Signal Ground)
Pin 6 (RXD)	Pin 3 (TXD)
Pin 7 (DSR)	Pin 4 (DTR)
Pin 8 (CTS)	Pin 7 (RTS)

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