



Sun Fire™ V1280/Netra™ 1280 Systems Installation Guide

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Preface

This guide describes how to install and set up a Sun Fire™ V1280/Netra™ 1280 systems.

Related Documentation

Application	Title
Safety	<i>Sun Fire V1280/Netra 1280 Systems Compliance and Safety Manual</i>
Use	<i>Sun Fire V1280/Netra 1280 System Administration Guide</i>
Use	<i>Sun Fire V1280/Netra 1280 System Controller Command Reference Manual</i>
Service	<i>Sun Fire V1280/Netra 1280 Systems Service Manual</i>

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Sun Fire V1280/Netra 1280 Systems Installation Guide, part number 817-3334-12

Tools Required

For the procedures in this document, you will need these tools:

- Computer lifting device
- Screwdriver, Phillips no. 2
- Wrench (remove adjustable bolts on slides)
- Wrench (removing shipping cradle bolts)
- Torque wrench and extension bar (Netra 1280 system only, supplied)
- M5 nut spinner (Netra 1280 system only, supplied)
- Crimp connectors 1-hole (Netra 1280 system only, supplied)
- Crimp connectors 2-hole (Netra 1280 system only, supplied)

Physical Installation

Sun Fire V1280/Netra 1280 systems can be shipped in one of three ways:

1. Not in a cabinet and with a slide rail mounting kit for installation in a cabinet
2. Not in a cabinet and intended to be freestanding
3. Pre-installed in a cabinet

For method 1 begin with [Section 1.1, “Installing Slides and Rails” on page 1-2](#). For methods 2 and 3 begin with [Section 1.4, “Installing the Cable Management Arm” on page 1-21](#).

This chapter contains the following sections:

- [Section 1.1, “Installing Slides and Rails” on page 1-2](#)
- [Section 1.2, “Installing the System in a Cabinet” on page 1-12](#)
- [Section 1.3, “Installing Slide Rail Locking Nuts” on page 1-19](#)
- [Section 1.4, “Installing the Cable Management Arm” on page 1-21](#)
- [Section 1.5, “Connecting Sun Fire V1280 Power Cables” on page 1-30](#)
- [Section 1.6, “Connecting Netra 1280 Power Cables” on page 1-32](#)
- [Section 1.7, “Connecting Consoles to the System Controller” on page 1-35](#)
- [Section 1.8, “Connecting the I/O Assemblies” on page 1-38](#)
- [Section 1.9, “Powering On the System” on page 1-38](#)
- [Section 1.10, “Powering Off the System” on page 1-38](#)
- [Section 1.11, “Installing Additional Hardware” on page 1-39](#)
- [Section 1.12, “Installing Additional Peripheral Devices” on page 1-40](#)



Caution – The Sun Fire V1280/Netra 1280 system, with mounting cradle, weighs approximately 286 lbs (130 kg). Two people using a computer equipment lift are required to move the system safely into the cabinet .



Caution – Pull only one Sun Fire V1280/Netra 1280 system out of the cabinet at a time to prevent unbalancing the cabinet.



Caution – The cabinet stabilizers (if applicable) must be extended whenever a Sun Fire V1280/Netra 1280 system is pulled out of the cabinet.

1.1 Installing Slides and Rails

Systems received freestanding which are to be mounted in a cabinet are shipped with a slide rail mounting kit. This kit includes the following:

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



Note – If you received your system pre-installed in a cabinet you may proceed directly to [Section 1.4, “Installing the Cable Management Arm”](#) on page 1-21.

This section contains the following topics:

- [Section 1.1.1, “Adjusting the Rail Assembly”](#) on page 1-3
- [Section 1.1.2, “Installing the Inner Slides on the System”](#) on page 1-4
- [Section 1.1.3, “Preparing the Rails for Two-Post Installations”](#) on page 1-6
- [Section 1.1.4, “Installing the Rail Assemblies in a Sun Fire/StoreEdge Cabinet”](#) on page 1-7
- [Section 1.1.5, “Installing the Rail Assemblies in a Sun Rack 900 Cabinet”](#) on page 1-9
- [Section 1.1.6, “Installing the Rail Assemblies in a 19-Inch Four-Post Cabinet”](#) on page 1-11
- [Section 1.1.7, “Installing the Rail Assemblies in a 19-inch Two-Post Rack”](#) on page 1-12

1.1.1 Adjusting the Rail Assembly

Each rail assembly is comprised of four components (FIGURE 1-1):

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

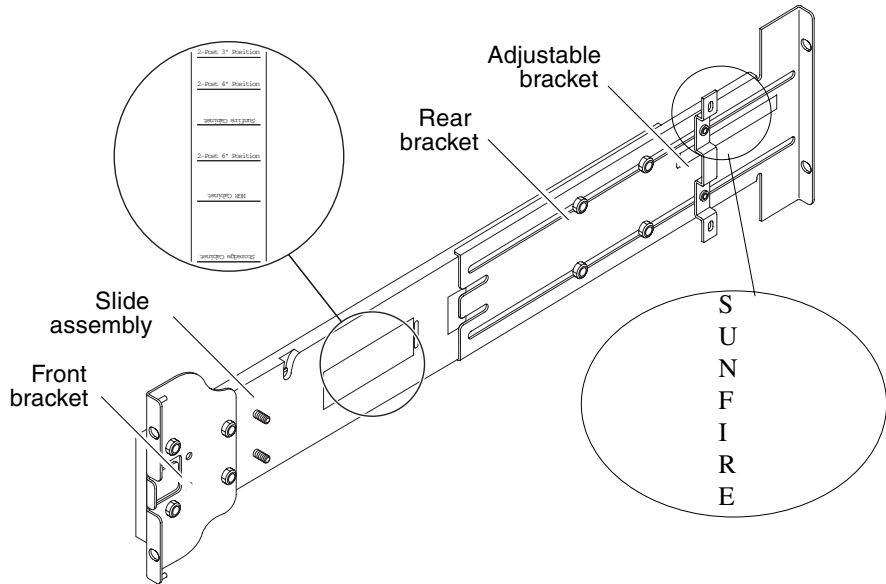


FIGURE 1-1 Rail Assembly (Standard Configuration)

Adjust the position of the rear bracket or the adjustable bracket to modify the length of the assembly. The slide assembly and the rear bracket are marked with bracket locations for specific cabinets stamped onto the metal. FIGURE 1-1 shows the location of the markings.

1.1.2 Installing the Inner Slides on the System

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

The spring tab should engage.

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

3. Secure the inner slide to the system using two 5 x 8 mm screws for each slide.
4. Repeat Step 1 through Step 3 for the second inner slide.

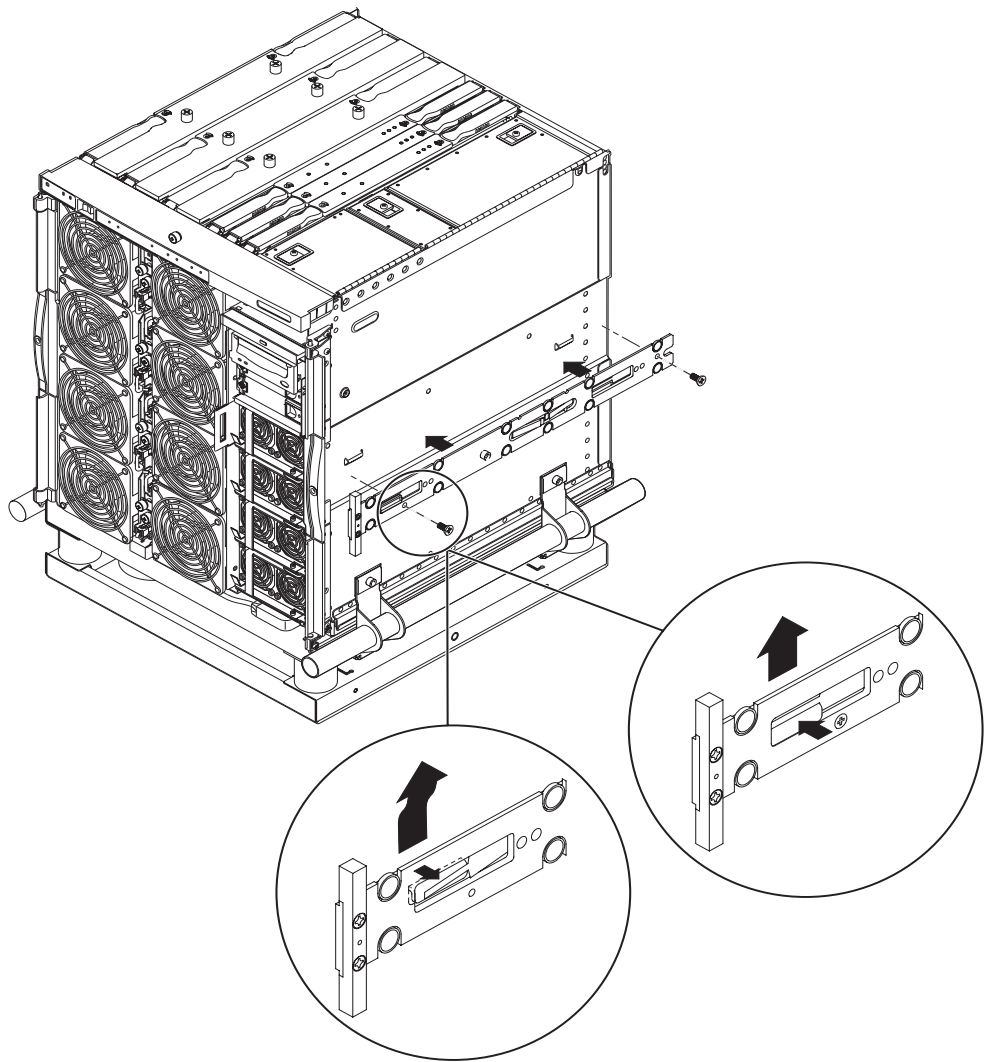


FIGURE 1-2 Spring Clips and Cutouts

1.1.3 Preparing the Rails for Two-Post Installations

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

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

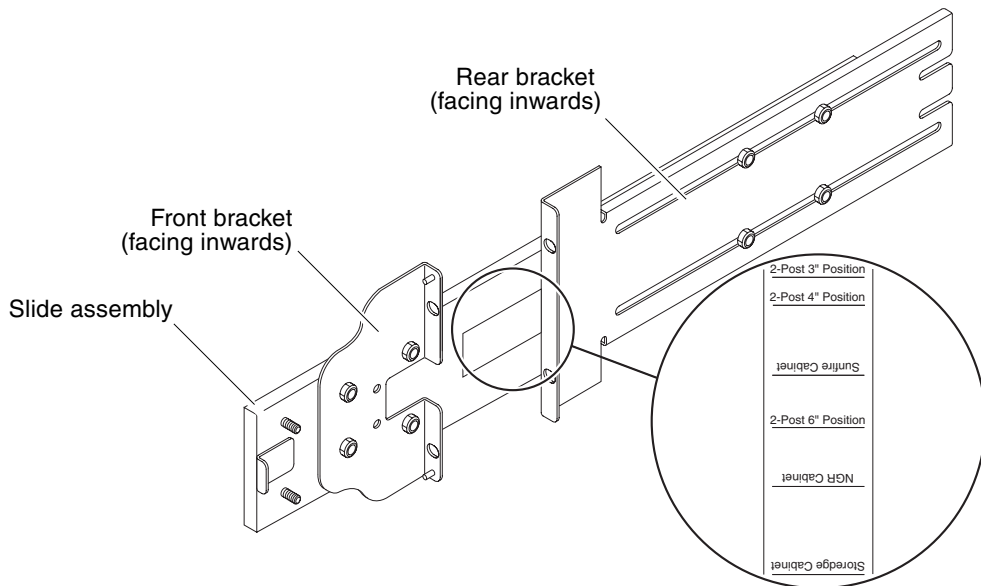


FIGURE 1-3 Rail Assembly (Modified for Two-Post Installation)

1.1.4 Installing the Rail Assemblies in a Sun Fire/StoreEdge Cabinet

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

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

1. **Adjust the position of the adjustable bracket on each 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 resecure the adjustable bracket.**
2. **Adjust the length of each 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 assembly and resecure the rear bracket.**

1.1.4.1 Installing the Rail Assemblies in the Bottom Position

1. **Insert the pins in the front bracket into cabinet holes 22 and 33 (FIGURE 1-4).**

The pins will hold the bracket in place until the bracket is secured.
2. **Secure the adjustable bracket into cabinet holes 24 and 31 with two no. 10-32 UNF screws.**
3. **Secure the front bracket into cabinet holes 24 and 31 with two no. 10-32 UNF screws.**
4. **Repeat Step 1 through Step 3 for the second rail assembly.**

1.1.4.2 Installing the Rail Assemblies in the Top Position

1. Insert the pins in the front bracket into cabinet holes 58 and 69 (FIGURE 1-4).
The pins will hold the bracket in place until it is secured.
2. Secure the adjustable bracket into cabinet holes 60 and 67 with two no. 10-32 UNF screws.
3. Secure the front bracket into cabinet holes 60 and 67 with two no. 10-32 UNF screws.
4. Repeat Step 1 through Step 3 for the second rail assembly.

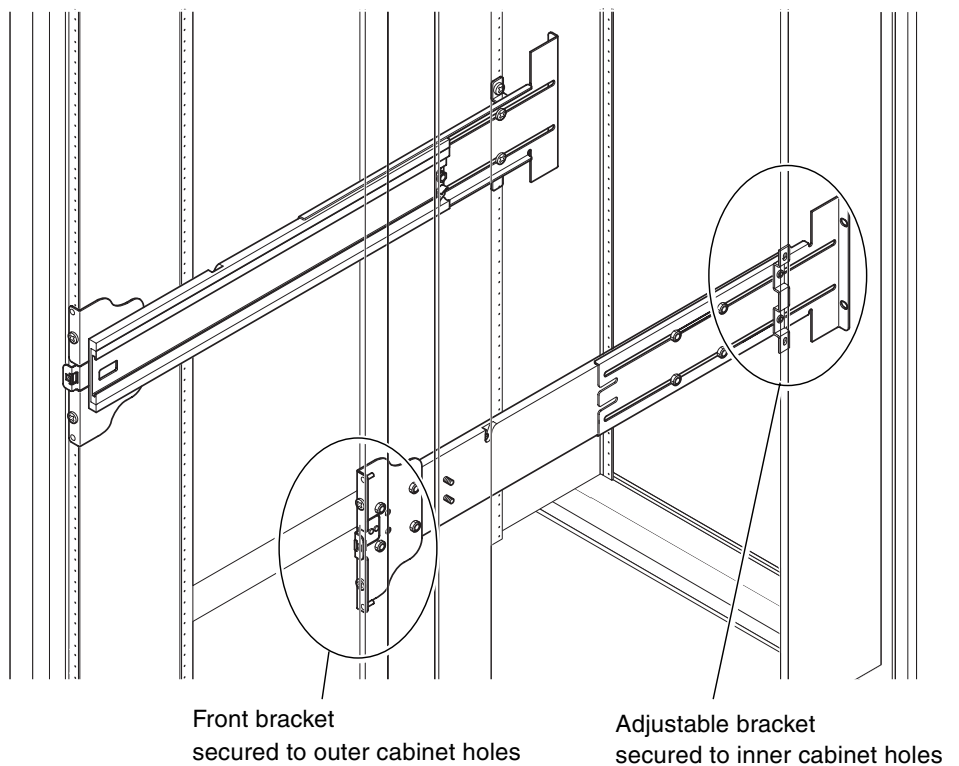


FIGURE 1-4 Installing the Rails in a Sun Fire Cabinet

1.1.5 Installing the 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 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 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 assembly and resecure the rear bracket.

1.1.5.1 Installing the Rail Assemblies in the Bottom Position

1. Insert the pins in the front bracket into cabinet holes 22 and 33 (FIGURE 1-5).
The pins will hold the bracket in place until the bracket is secured.
2. Secure the rear bracket into cabinet holes 24 and 31 with two M-6 UNF screws.
3. Secure the front bracket into cabinet holds 24 and 31 with two M-6 UNF screws.
4. Repeat Step 1 through Step 3 for the second rail assembly.

1.1.5.2 Installing the Rail Assemblies in the Top Position

1. Insert the pins in the front bracket into cabinet holes 58 and 69 (FIGURE 1-5).
The pins will hold the bracket in place until the bracket is secured.
2. Secure the rear bracket into cabinet holes 60 and 67 with two M-6 UNF screws.
3. Secure the front bracket into cabinet holes 60 and 67 with two M-6 UNF screws.
4. Repeat Step 1 through Step 3 for the second rail assembly.

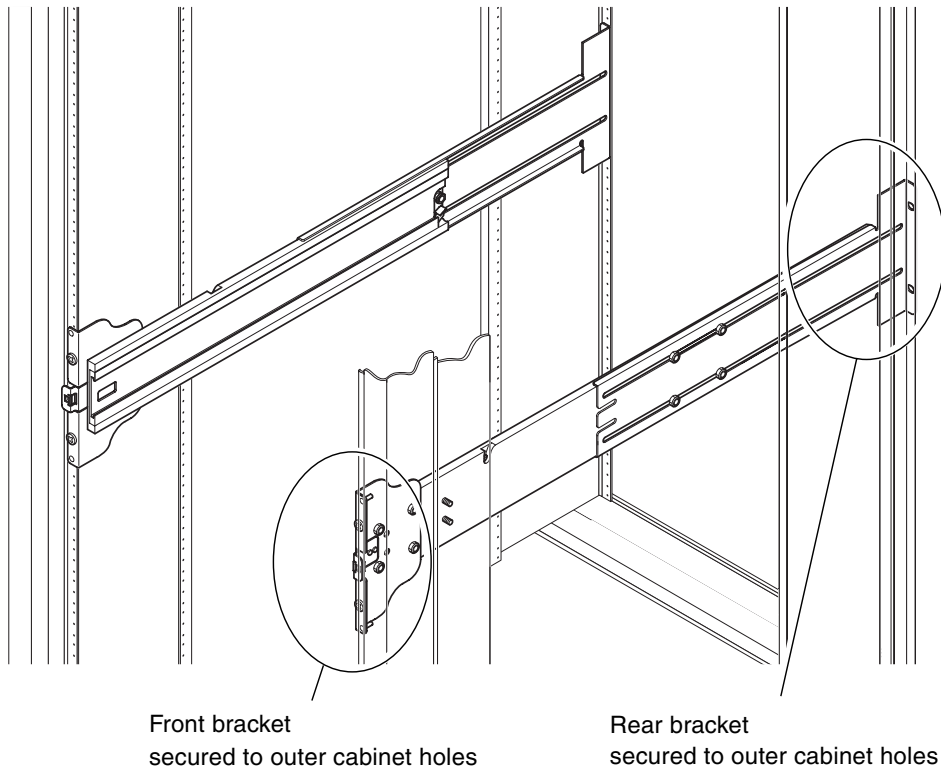


FIGURE 1-5 Installing the Rails in a Sun Rack 900 Cabinet or 19-Inch Four-Post Cabinet

1.1.6 Installing the Rail Assemblies in a 19-Inch Four-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 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 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.

1. Remove the adjustable bracket on each rail assembly.
 - a. Loosen the two nuts that secure the adjustable bracket.
 - b. Discard the adjustable bracket.
2. Adjust the length of each 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 assembly and resecure the rear bracket.
3. Secure the rear bracket with two no. 10-32 UNF screws (FIGURE 1-5).
 - To install the system 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. Refer to the Sun Fire V1280/Netra 1280 *Slide Rail Installation Instructions and Mounting Template* to determine cabinet hole locations.
 - To install the system 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. Refer to the Sun Fire V1280/Netra 1280 *Slide Rail Installation Instructions and Mounting Template* to determine cabinet hole locations.
4. Secure the front bracket with two no. 10-32 UNF screws (FIGURE 1-5).
5. Repeat Step 1 through Step 4 for the second rail assembly.

1.1.7 Installing the Rail Assemblies in a 19-inch Two-Post Rack

Note – The rails assemblies must be prepared. See “Preparing the Rails for Two-Post Installations” on page 1-3.

Note – The 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 to adjacent frames. It is the installer’s responsibility to ensure that the rack has sufficient structural strength and stability to handle any required installations.

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. Refer to the Sun Fire V1280/Netra 1280 *Slide Rail Installation Instructions and Mounting Template* to determine cabinet hole locations.

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

3. **Repeat Step 1 and Step 2 for the second rail assembly.**

1.2 Installing the System in a Cabinet

This section contains the following topics:

- [Section 1.2.1, “Preparing to Install the System in the Cabinet” on page 1-12](#)
- [Section 1.2.2, “Mounting the System in the Cabinet” on page 1-15](#)

1.2.1 Preparing to Install the System in the Cabinet

1. **Remove the front bezel doors** ([FIGURE 1-6](#)).

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

c. Repeat Step a and Step b for the second front bezel door.

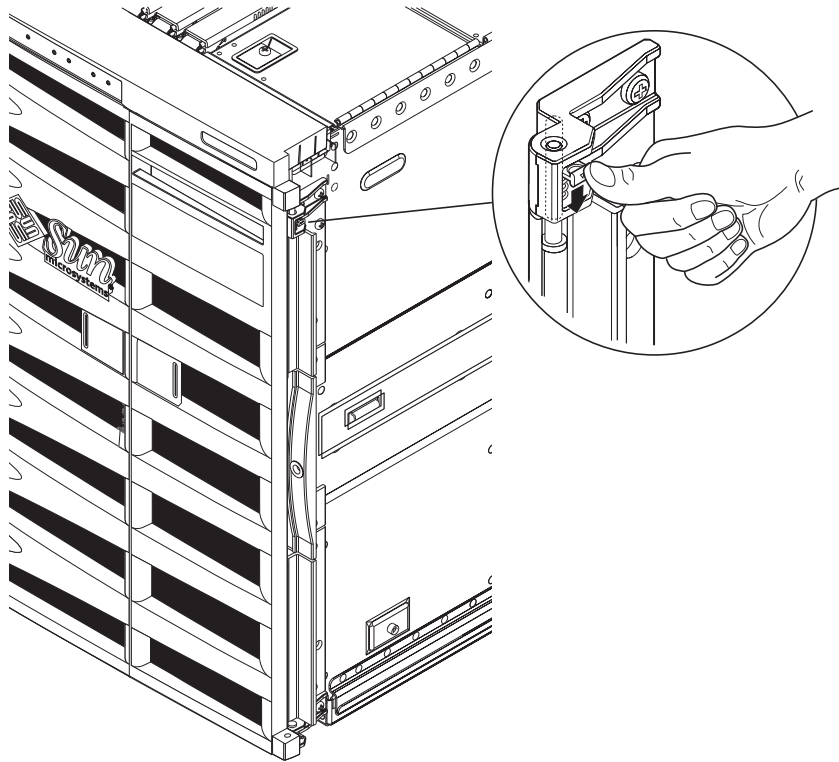


FIGURE 1-6 Releasing the Door Hinge Mechanism

2. Remove the shipping cradle bolts (FIGURE 1-7).

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

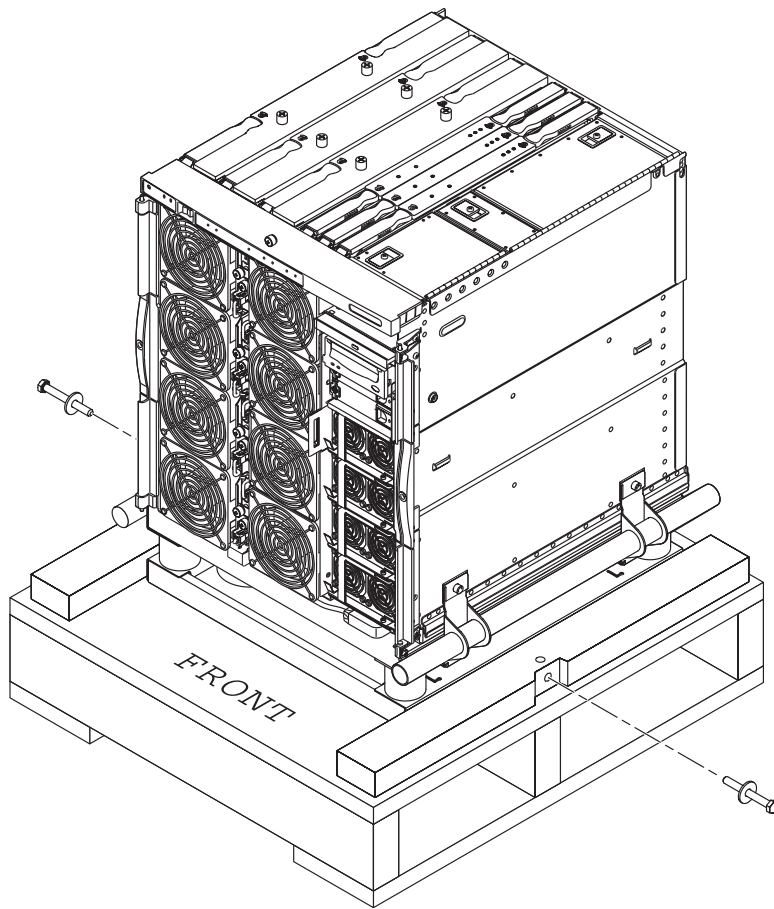


FIGURE 1-7 Removing the Shipping Cradle Bolts

1.2.2 Mounting the System in the Cabinet



Caution – The Sun Fire V1280/Netra 1280 system with mounting cradle weighs approximately 286.0 lbs (130.0 kg). To prevent personal injury, two people are needed to move the system 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 system is lifted. Failure to do so will result in major damage to the system.

2. Insert the forks of the lifting device fully through the shipping cradle opening (FIGURE 1-8).

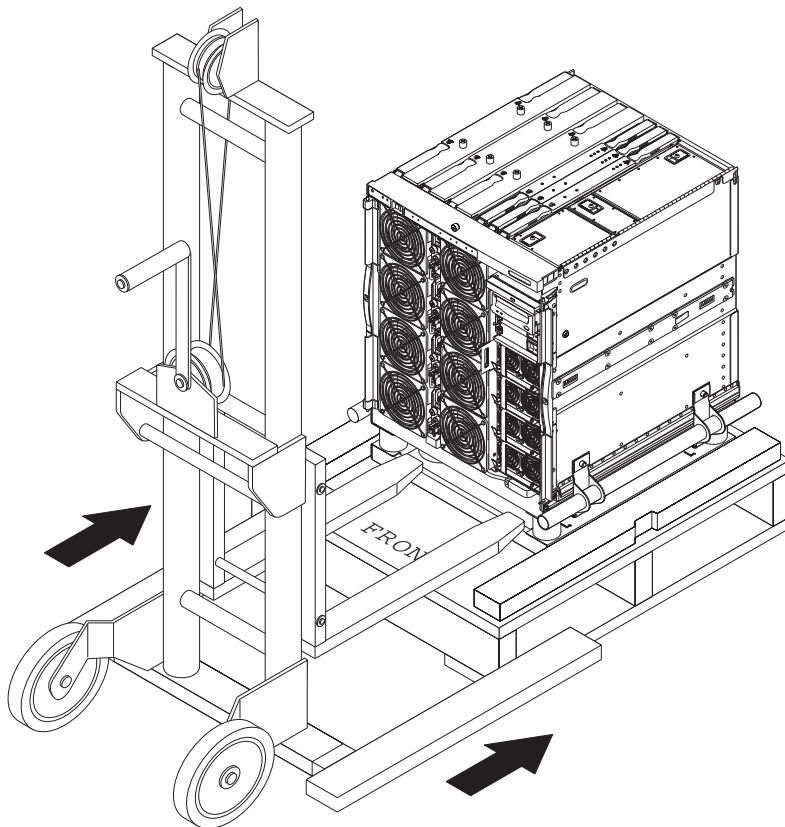


FIGURE 1-8 Inserting the Lifting Device into the Shipping Cradle

3. Lift the system off of the wooden shipping pallet and remove the pallet.
4. Extend the outer slides from the cabinet and latch them in the extended position.
5. Lift the system until it is level with the outer slides on the cabinet.
6. Carefully move the lifting device forward until the slides on the system are fully engaged with the outer slides on the cabinet (FIGURE 1-9).
The latches on each side must click out, locking the slides.

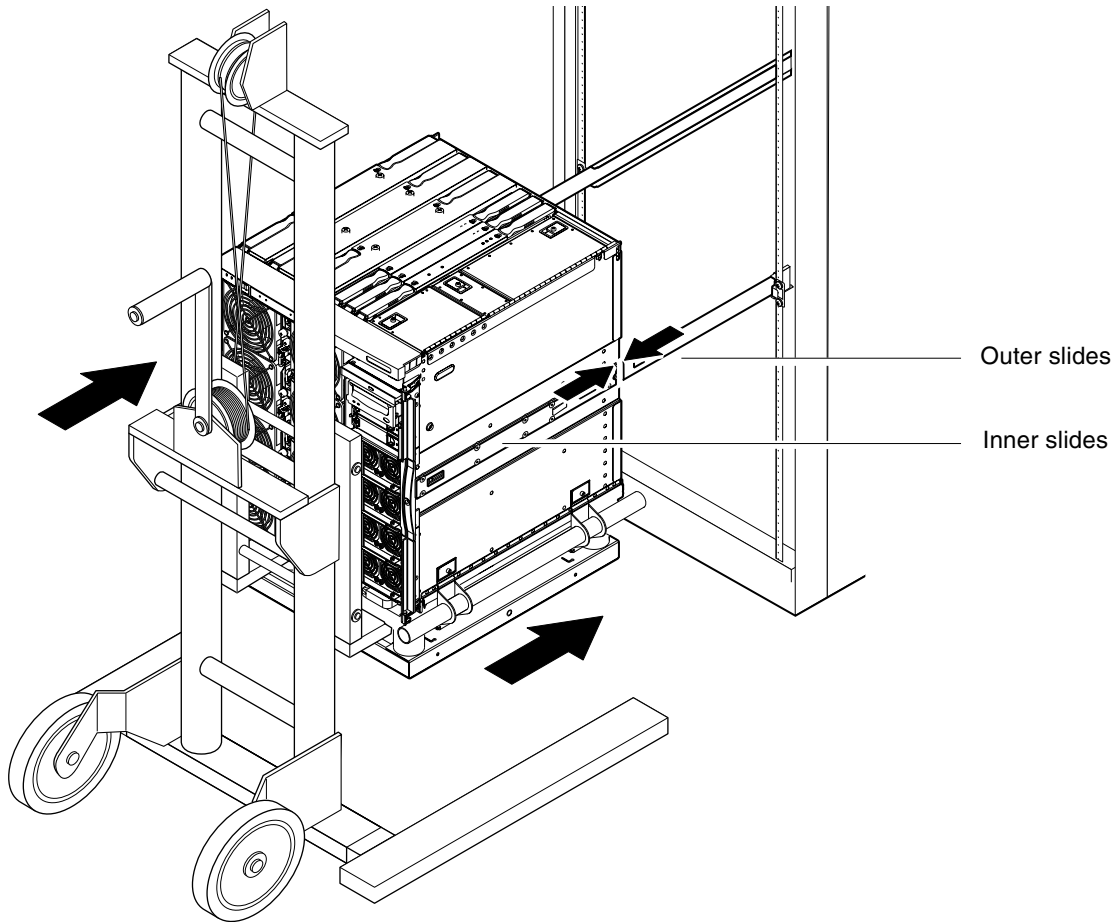


FIGURE 1-9 Aligning the Slides



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 system, loosen the four captive screws attaching the handles of the shipping cradle to the system.**
8. **Pull both shipping cradle handles away from the system.**
This disconnects the shipping cradle from the system.
9. **Lower the shipping cradle out of the way with the lifting device.**
Store the shipping cradle for future use.

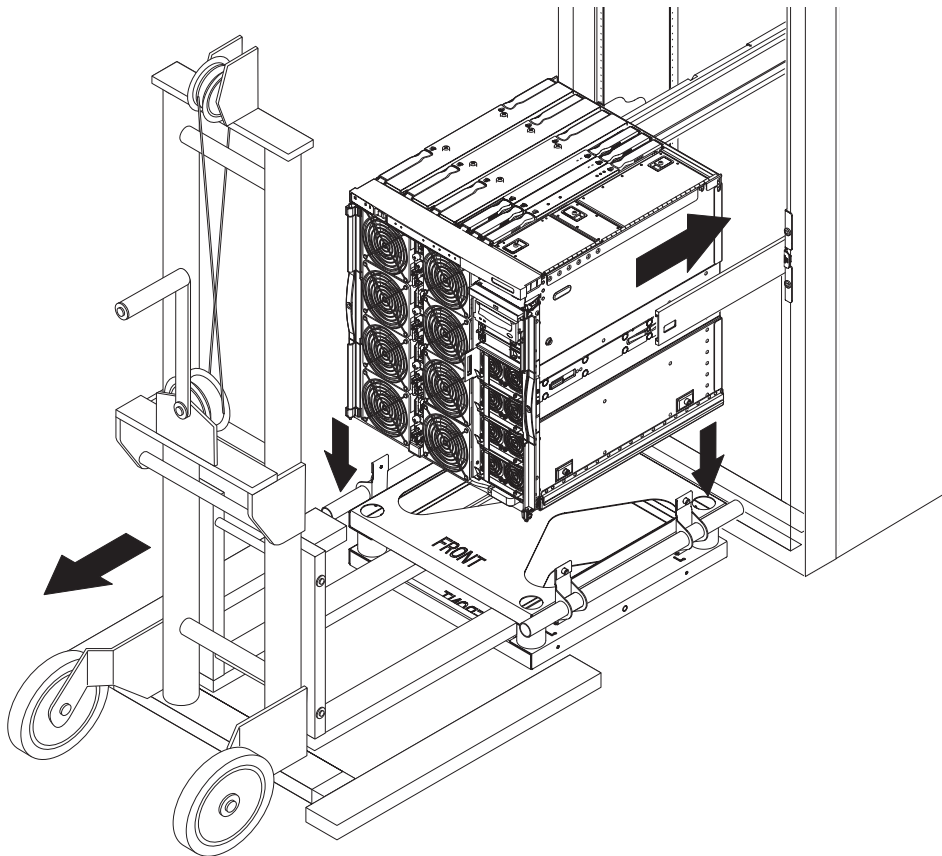


FIGURE 1-10 Removing the Shipping Cradle

10. Press the green latches on each slide and push the system into the cabinet (FIGURE 1-11).

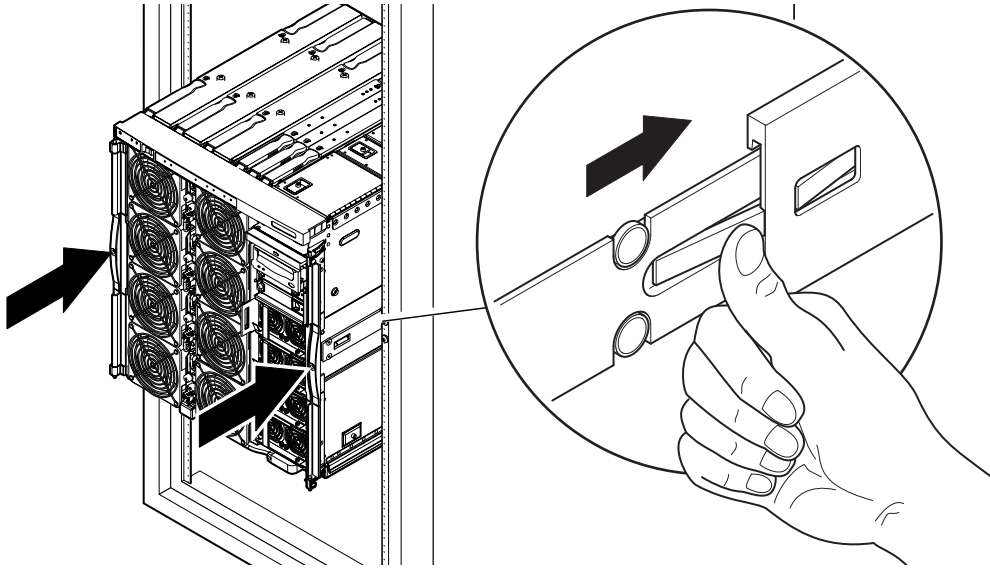


FIGURE 1-11 Pushing the System into the System Cabinet

11. Tighten the two securing screws on the front of the system to secure the system in the cabinet (FIGURE 1-12).
12. Retract the cabinet stabilization mechanism (as required).
13. Reattach the front doors of the system.

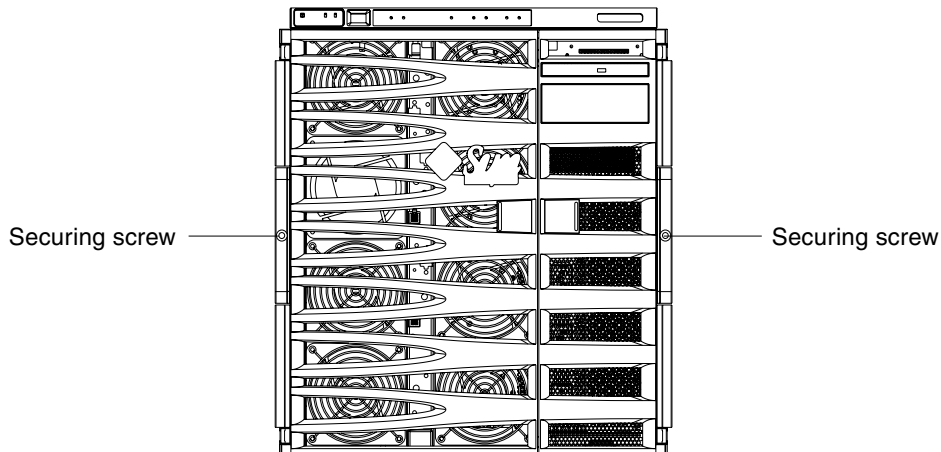


FIGURE 1-12 Tightening the Securing Screws

1.3 Installing Slide Rail Locking Nuts

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

Slide rail locking nuts and spacers are contained in a kit that is used to install a system in a cabinet, see [Section 1.1, “Installing Slides and Rails”](#) on page 1-2. Once installed, the following is applicable:

- It is essential that the locking nuts on Netra 1280 systems are securely fitted for the system to comply with NEBS Level 3 vibration requirements.
- Slide rail locking nuts must be loosened in order to remove a system from a cabinet
- Slide rail locking nuts must be securely tightened on each system prior to moving a cabinet with one or more systems

The following procedure is used to secure systems in cabinets when a freestanding system is ordered along with a slide rail kit for mounting in a cabinet. The procedure is also applicable if a slide rail kit is ordered to mount and secure a system(s) in a cabinet.

Proceed as follows to install the slide rail locking 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.

1. **Slide the system out of the system cabinet.**
2. **Remove and discard the manufactures spacers provided with the slide rails in the kit.**
3. **From the rear of the system, insert and tighten the supplied spacers onto the bolts (FIGURE 1-13).**

The spacer shoulders must face outwards.

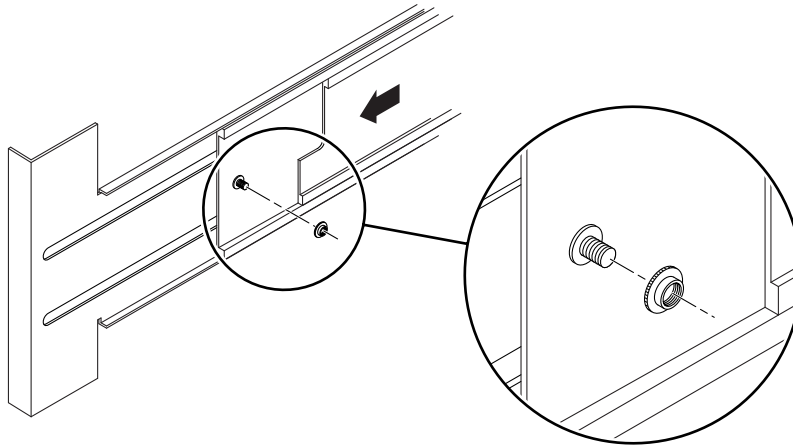


FIGURE 1-13 Inserting and Tightening the Slide Rail Spacers

- 4. Slide the system into the system cabinet.**
- 5. From the rear of the system, insert and tighten the locking nut (FIGURE 1-14).**

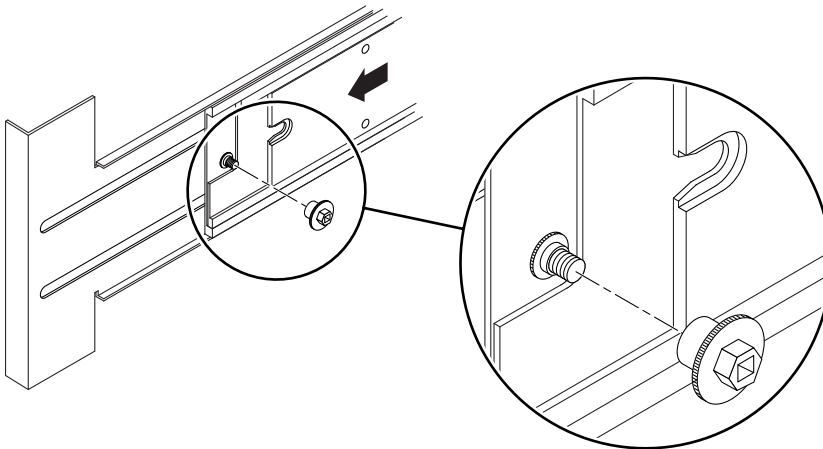


FIGURE 1-14 Inserting and Tightening the Slide Rail Locking Nut

- 6. Repeat Step 1 through Step 5 for each system in the system cabinet.**

1.4 Installing the Cable Management Arm

This section contains the following topics:

- [Section 1.4.1, “Installing the CMA-Lite” on page 1-22](#)
- [Section 1.4.2, “Installing the CMA-800” on page 1-23](#)

The purpose of a cable management arm is to support and protect cables when a system slides into or out of a cabinet.

Two cable management arm solutions are offered: CMA-Lite and CMA-800. The optimum choice of CMA is dependant upon 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 system ([FIGURE 1-15](#)).

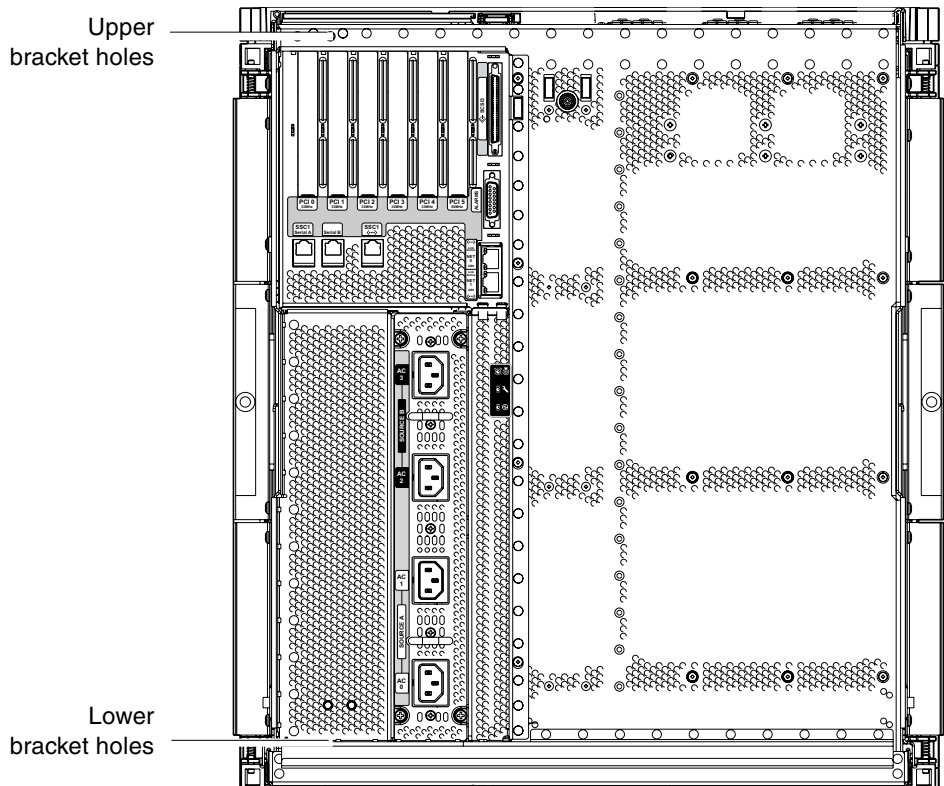


FIGURE 1-15 Bracket Mounting Holes

1.4.1 Installing the CMA-Lite

1. Secure the pivot at the end of the upper arm to the top rear of the system using the two captive screws (FIGURE 1-16).
2. Secure the center pivot point of the CMA to the inside rear of the left hand rail assembly using the two captive screws.
3. Secure the pivot at the end of the lower arm to the bottom rear of the system using the two captive screws.

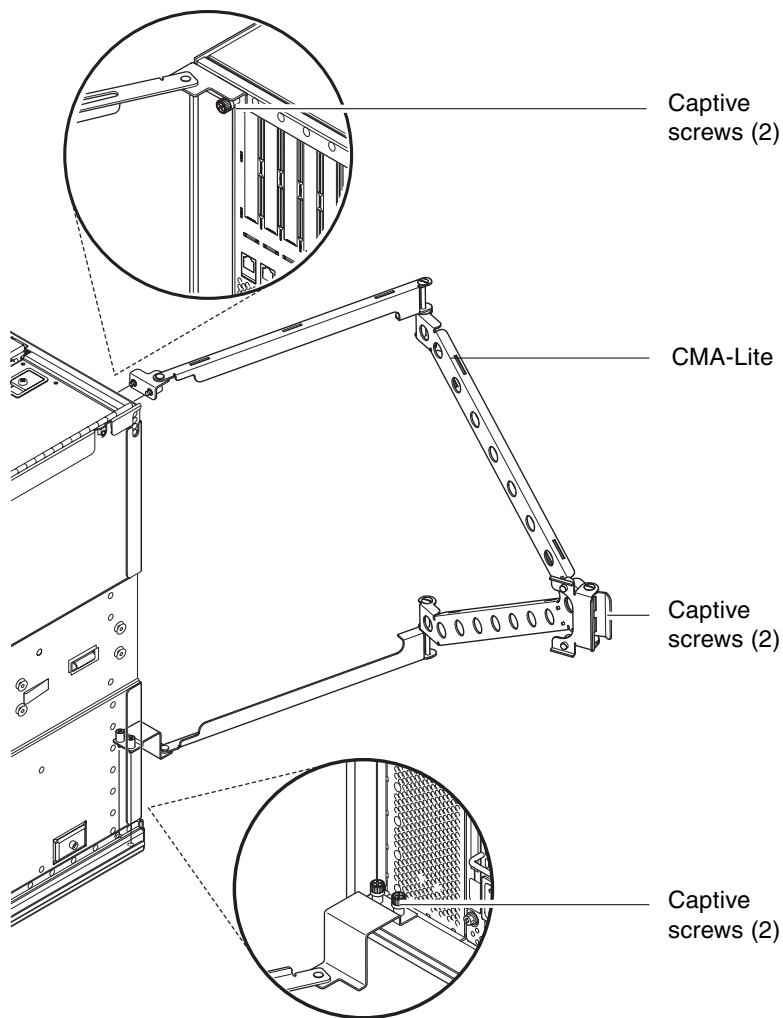


FIGURE 1-16 CMA-Lite Cable Management Arm

1.4.2 Installing the CMA-800

To install a CMA-800 proceed as follows:

1. Refer to [FIGURE 1-17](#), throughout the following procedure for identification and orientation of CMA parts.

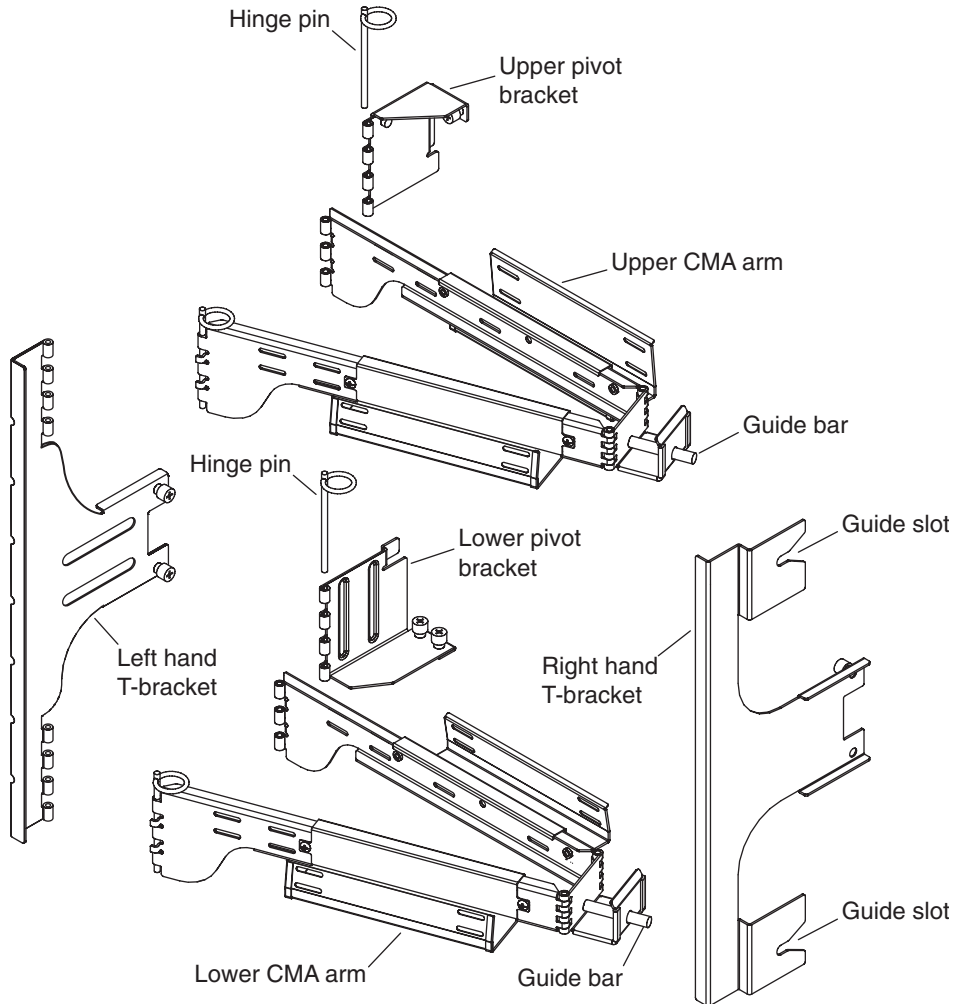


FIGURE 1-17 Upper/Lower CMA Arms and Left Hand/Right Hand T-Brackets

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

2. Remove the hinge pin securing the pivot bracket to the upper CMA arm, which will facilitate attaching the bracket to the system chassis.
3. Secure the pivot bracket to the upper left hand side of the system chassis using the two captive screws, [FIGURE 1-18](#).

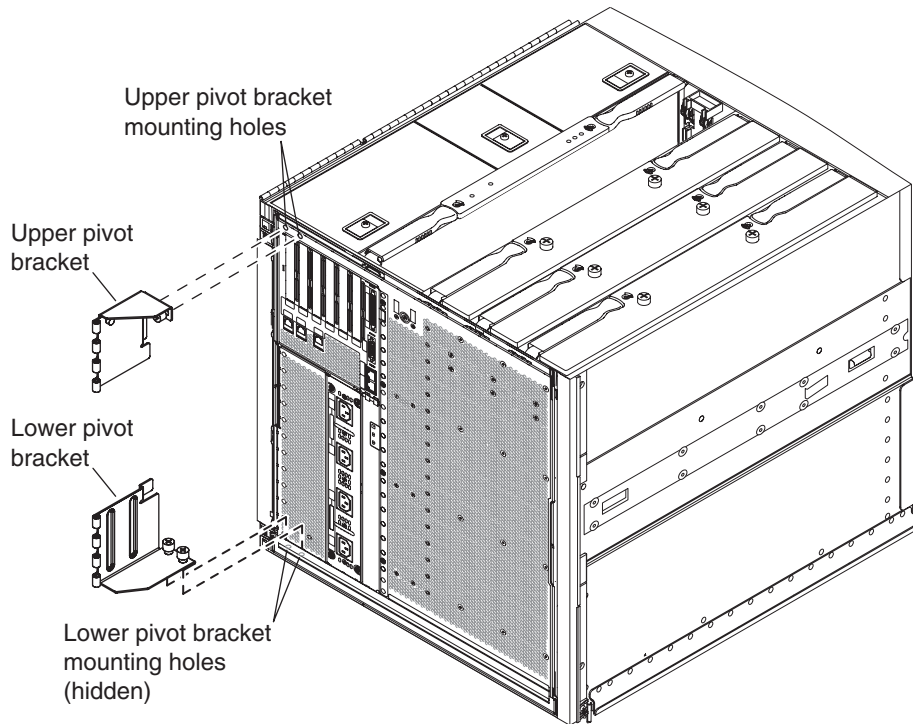


FIGURE 1-18 Upper/Lower Pivot Bracket Mounting Holes

After attaching the pivot bracket to the chassis, use the hinge pin removed previously to secure it to the upper CMA arm, [FIGURE 1-19](#).

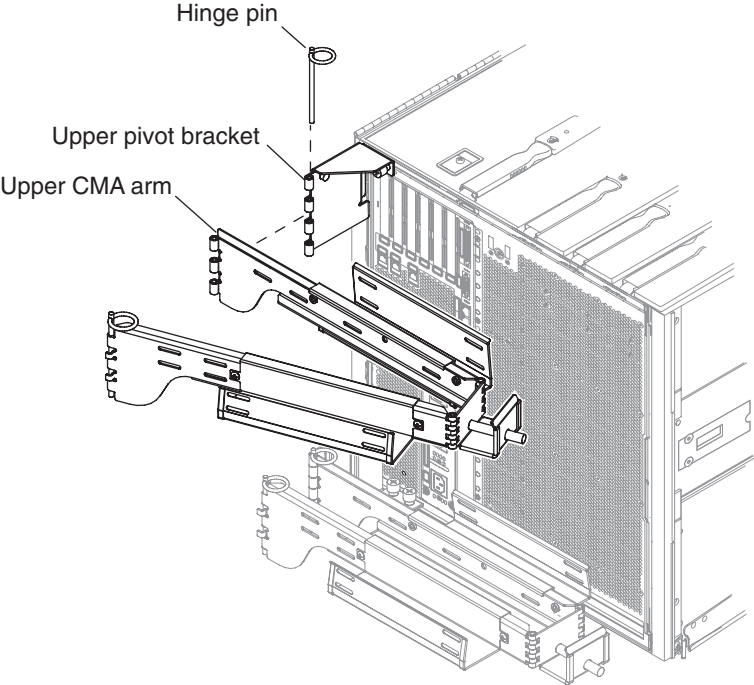


FIGURE 1-19 Attachment of Upper CMA Arm and Pivot Bracket

4. Remove the hinge pin securing the pivot bracket to the lower CMA arm, which will facilitate attaching the bracket to the system chassis.
5. Secure the pivot bracket to the lower left hand of the system chassis using the two captive screws, see [FIGURE 1-18](#).
6. After attaching the bracket to the chassis, secure the lower CMA arm to the bracket using the hinge pin removed previously, [FIGURE 1-20](#).

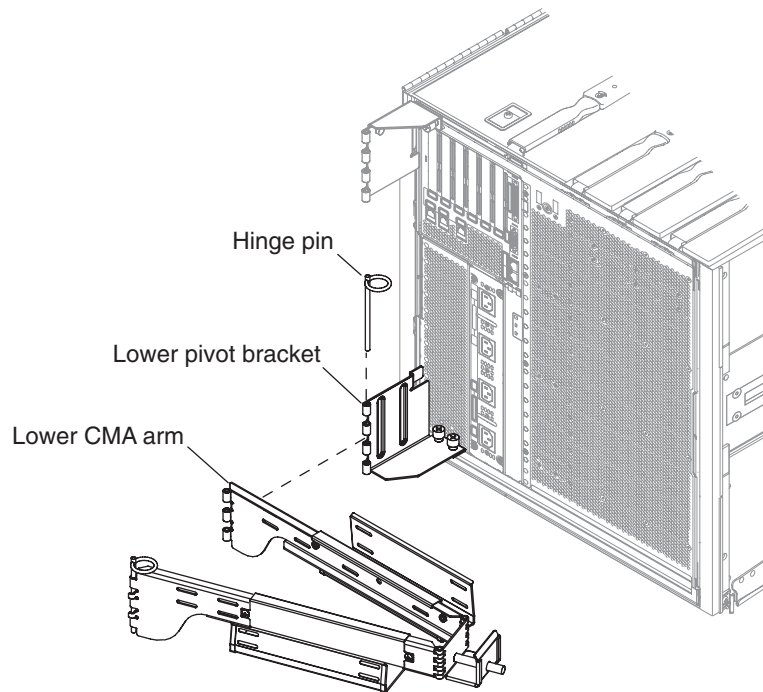


FIGURE 1-20 Attachment of Lower CMA Arm and Pivot Bracket

7. Secure the left hand T-bracket to the left hand slide rail using two captive screws, [FIGURE 1-21](#).

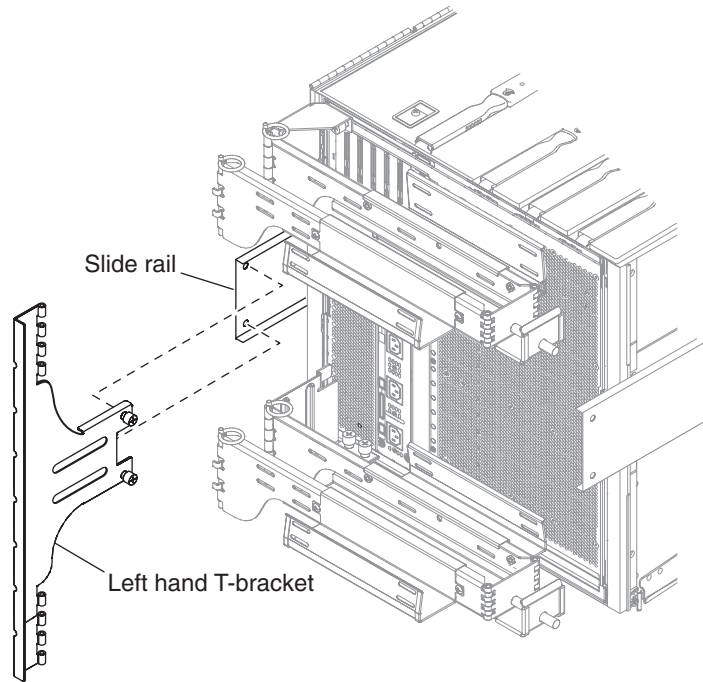


FIGURE 1-21 Attaching Left Hand T-Bracket

8. Secure the right hand T-bracket to the right hand slide rail using two captive screws, [FIGURE 1-22](#).

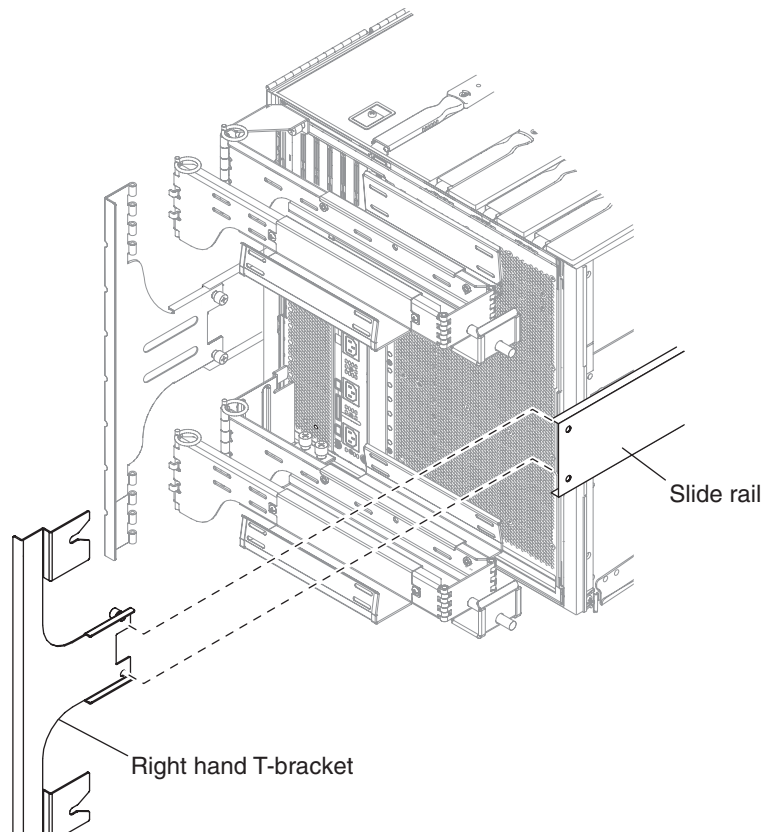


FIGURE 1-22 Attachment of Right-Hand T-Bracket

9. Secure the upper CMA arm to left hand T-bracket using a single hinge pin
FIGURE 1-23.

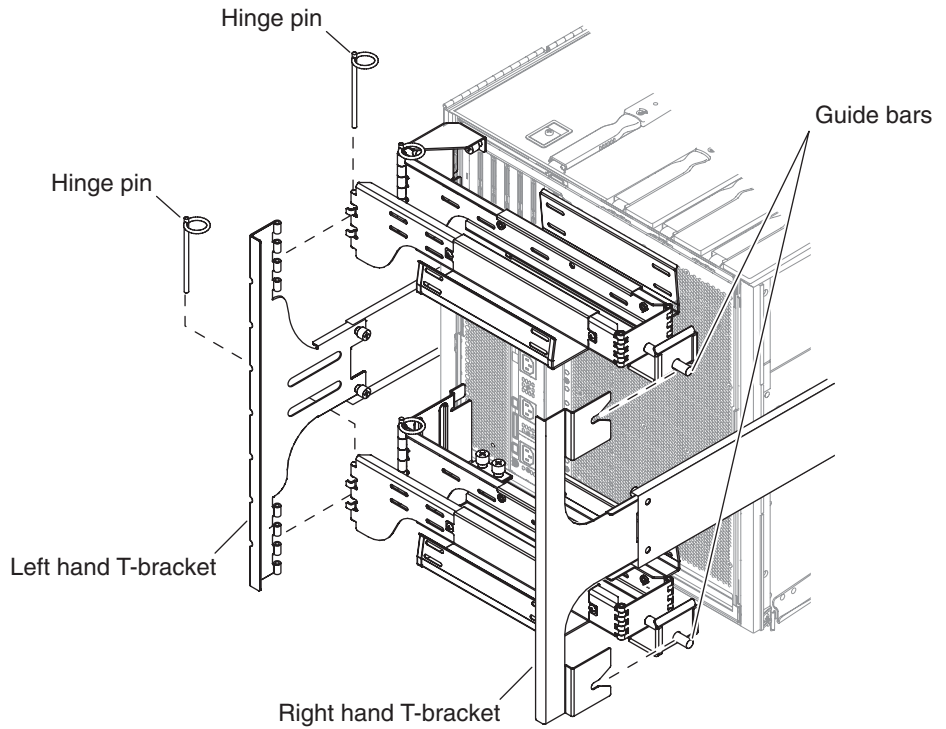


FIGURE 1-23 Attachment of Upper/Lower CMA Arms to T-Bracket

10. Secure the lower CMA arm to the left hand T-bracket using a single hinge pin,
FIGURE 1-23.
11. Route the cabling through the cable channels as desired and then 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.

1.5

Connecting Sun Fire V1280 Power Cables



Caution – The Sun Fire V1280 system 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 – Your Sun product is shipped with grounding type (three-wire) power cords. Always connect the cords into a grounded power outlet.



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

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



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

2. Turn the cabinet power off (in a powered cabinet).
Refer to the installation guide that came with the cabinet.
3. Label both ends of the power cords.
Two cords should be labelled Source A and two should be labelled Source B.
4. Connect the power cables to the system.
 - a. Connect the Source A power cords to AC0 and AC1 on the system and the Source B power cords to AC2 and AC3 on the system.
 - b. Run the power cords through the CMA and secure them with tie-wraps.
Make sure the CMA can extend and retract without dislodging the power cords.

Note – Step 3 and Step 4 will already be completed for systems that come preinstalled in a Sun Rack 900 cabinet.

5. **Connect the system to the power source.**

If mounted in an unpowered cabinet:

- i. **Connect power cords from Source A on the system to the customer-supplied power source A circuit breakers.**
- ii. **Connect power cords from Source B on the system to the customer-supplied power source B circuit breakers.**

If mounted in a powered cabinet:

- i. **Connect power cords from Source A on the cabinet to the customer-supplied power source A circuit breakers and 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.

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

- ii. **Connect power cords from Source A on the cabinet to Source A on the system and Source B on the cabinet to the Source B on the system.**

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

1.6 Connecting Netra 1280 Power Cables

Note – The following Netra 1280 procedures are intended as a guide only and should only be performed by a qualified electrician.

This section contains the following topics:

- “Assembling the Netra 1280 Power Connectors” on page 1-27
- “Connecting the Netra 1280 Power Cables” on page 1-29
- “Verifying the Power Input Connections Prior to the Initial Power Application” on page 1-29

1.6.1 Assembling the Netra 1280 Power Connectors

Note – The following procedure is intended as a guide only and should only be performed by a qualified electrician.

1. Turn the power switch to the Standby position.



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

2. Remove the plastic covers from the DC inlet box ([FIGURE 1-24](#)).
Each cover is retained by a Phillips no. 2 screw.
3. Assemble the earth connection.
 - a. Crimp the two-hole earth lug onto the earth cable.
The shipping kit contains lugs for crimping customer-supplied cables. Use a crimping tool or approved equivalent to secure the lugs onto the cables.
 - b. Use two M5 nuts and washers to fit the lug to the location between the two plastic covers using the M5 nut spinner provided.
4. Assemble the power cable ends.
 - a. Crimp the single-hole lugs onto the input and return cables.
 - b. Slide the lugs through the plastic cover.

- c. Ensure that the cables are oriented correctly with respect to the labeling on the connection studs.
 - d. Ensure that the correct polarity of feed is connected to each stud on the rear of the system.
 - e. Ensure that an earth strap for each feed pair is connected to the electrical earth studs (FIGURE 1-24).
5. Secure the plastic covers with the Phillips no. 2 screws.

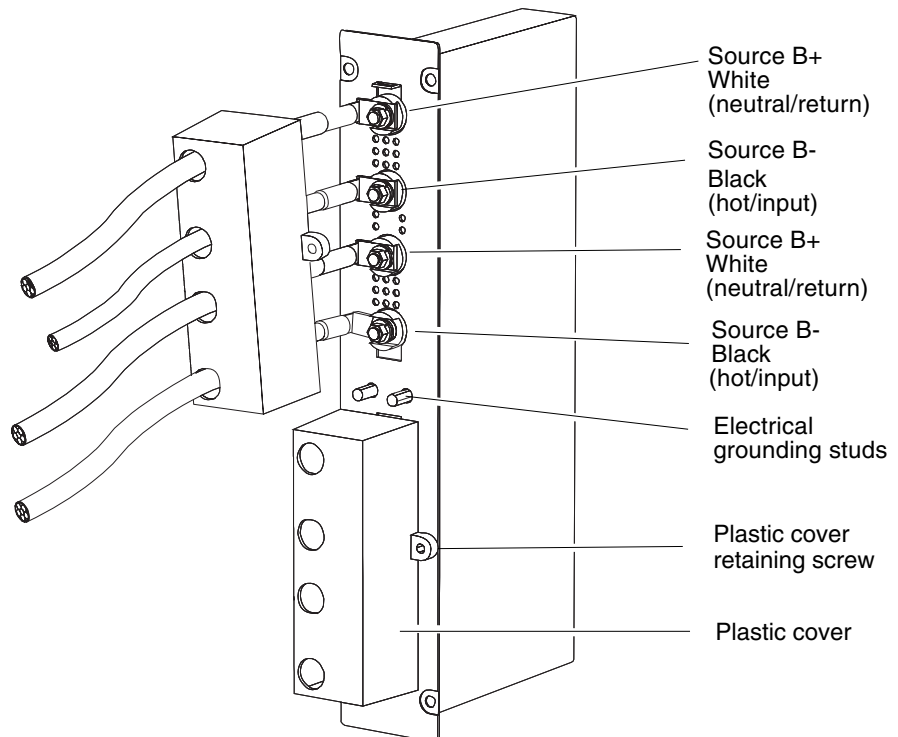


FIGURE 1-24 DC Inlet Box With Source B Plastic Cover Removed and Connectors Exposed

1.6.2 Connecting the Netra 1280 Power Cables

Note – The following procedure is intended as a guide only and should only be performed by a qualified electrician.

1. Connect the earthground cable to a suitable ground point.
2. Connect the remaining power cables to the customer-supplied circuit breakers.
DC0 and DC1 are connected to one power source, and DC2 and DC3 to the other (FIGURE 1-25).

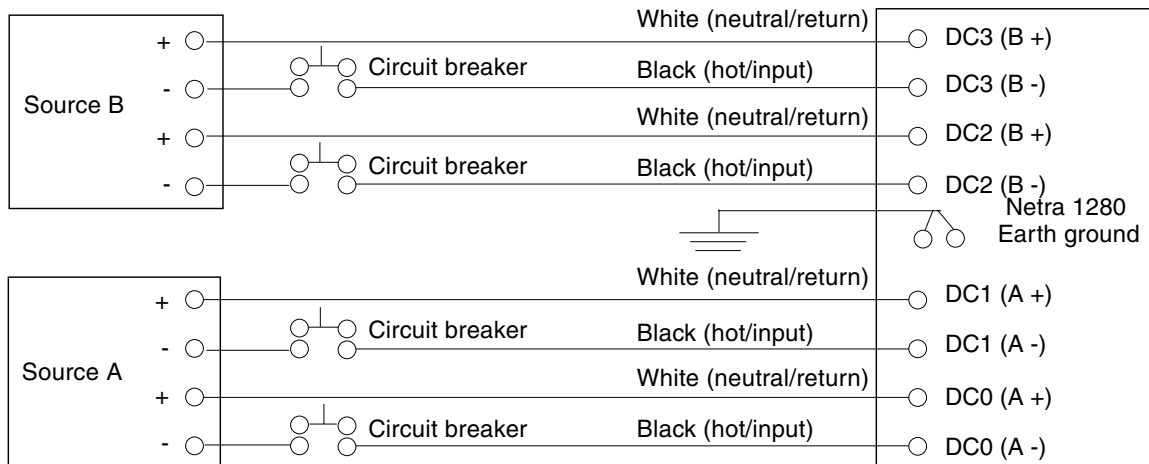


FIGURE 1-25 Netra 1280 Power Feed Connectors

1.6.3 Verifying the Power Input Connections Prior to the Initial Power Application

Note – The following procedure is intended as a guide only and should only be performed by a qualified electrician.



Caution – Ensure the cabling is correct prior to switching system power on for the first time. Incorrect cabling could cause injury to personnel or damage to equipment.

1. Verify the ground input wires (green) connect to system ground.

2. Verify the hot input wires (black) connect to negative terminal lugs.
3. Verify the neutral-return input wires (white) connect to positive terminal lugs.

Connect a digital volt meter to each branch in turn and verify:

- DVM ground probe-to-system ground and red probe to + (positive) terminals indicates 0 VDC.
- DVM ground probe-to-system ground and - (negative) terminals indicates -48 VDC.

1.7 Connecting Consoles to the System Controller

This section contains the following topics:

- “Connecting the Initial Administrative Console” on page 1-30
- “Connecting the Administrative Console” on page 1-32

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

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

Serial port A is used to connect 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. It is used to modify the default system controller settings (usually so that the 10/100 LOM Ethernet port can be used as an administrative console). The configuration of Serial port A cannot be changed.

The 10/100 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 pre-configured system controller Ethernet IP address, Gateway, DNS domain, DNS servers

1.7.1 Connecting the Initial Administrative Console

For the initial configuration, connect 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 10/100 LOM Ethernet port by DHCP is known, the 10/100 LOM Ethernet port can be accessed without the Serial A port.

1. Connect the administrative console to the Serial A port.

The Serial A port is a DTE (data terminal equipment) port. An adapter, cross-over or null modem cable is required to connect the Serial A port to another DTE port. For Serial A port connector pinouts and adaptor information, see “LOM Serial Ports” on page A-6).

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 *Sun Fire V1280/Netra 1280 System Administration Guide Administration Guide*.

4. Set up the administrative console.

Refer to the *Sun Fire V1280/Netra 1280 System Administration Guide*.

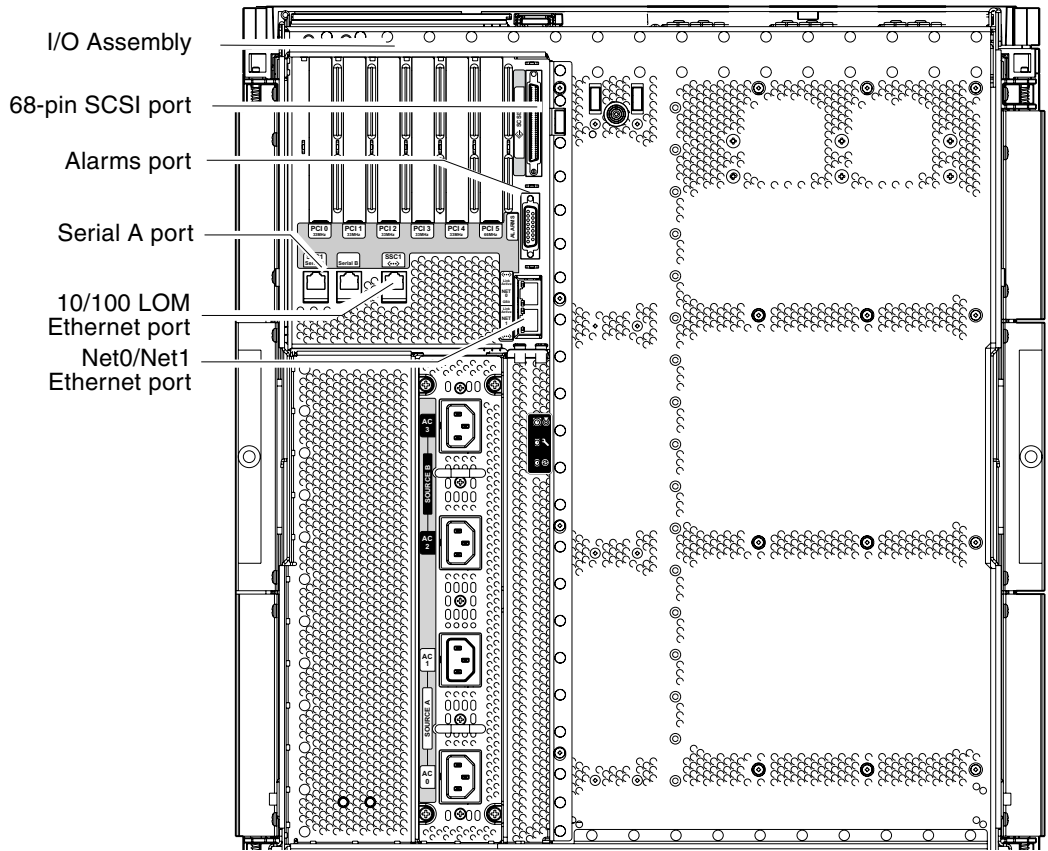


FIGURE 1-26 System Controller and I/O Assembly Locations

1.7.2 Connecting the Administrative Console

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

Note – Communication on the Serial A port is possible but is subject to interruption by the LOM device. Refer to the *Sun Fire V1280/Netra 1280 System Administration Guide*.

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

For 10/100 LOM Ethernet port connector information, see “10/100 LOM Ethernet Port” on page A-9.

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

Refer to the *Sun Fire V1280/Netra 1280 System Administration Guide*.

1.8 Connecting the I/O Assemblies

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

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.**

1.9 Powering On the System

1. **Turn the power switch to the On position.**
2. **Power on the system.**

Refer to the *Sun Fire V1280/Netra 1280 System Administration Guide*.

1.10 Powering Off the System

1. **Notify users that the system is going down.**
2. **Back up the system files and data to tape, if necessary.**
3. **Halt the Solaris operating system.**

Refer to the *Sun Fire V1280/Netra 1280 System Administration Guide*.

4. **Wait for the system-halted message and the boot monitor prompt.**

5. Turn off each external drive and expansion cabinet (as applicable).
6. Turn the power switch to the Standby position.



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

1.11 Installing Additional Hardware

Do not install additional hardware until the initial factory configuration has been completely installed, the system 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 Sun Fire V1280/Netra 1280 *Systems Service Manual* for instructions.



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

Note – For optimum performance, use only I/O cards and associated drivers that are qualified by Sun Microsystems for use on the Sun Fire V1280/Netra 1280 systems. 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 system, contact your Sun authorized sales representative or your service provider. For additional information refer to:

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

1.12 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 to minimize 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.

External Connections

This appendix describes the cables and connectors that should be available in order for the installation to be completed. Sun Fire V1280/Netra 1280 systems have the following slots, connectors, and ports on the rear of the system:

- Six I/O slots
- SCSI connector
- Alarms port
- LOM Serial ports (serial system controller ports, one reserved)
- 10/100 LOM Ethernet port (system controller Ethernet port)
- Net0/Net1 Ethernet port (Two-gigabit Ethernet RJ-45 ports)

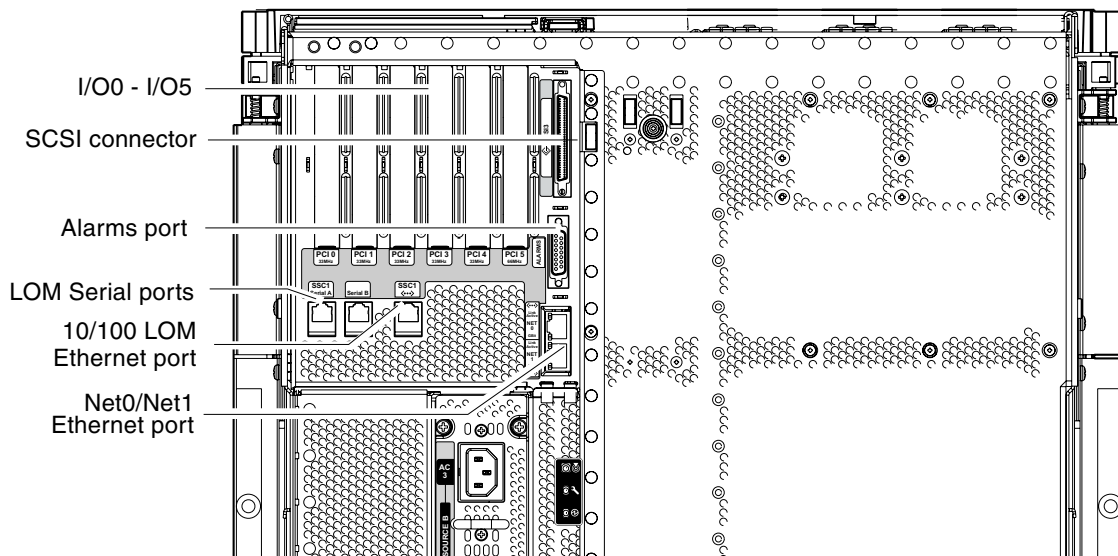


FIGURE A-1 External I/O Connections—Sun Fire V1280/Netra 1280 Systems (Rear View)

A.1 I/O Slots

There are currently three versions of IB_SSC assemblies, PCI, PCI+, and PCI-X. Consult your Sun representative for cards supported by your version of the IB_SSC assembly.

Note – Mixing PCI, PCI+ and PCI-X cards within an IB6 leaf (two slots) is not recommended since leaf slots run at the lowest speed and the lowest mode for a given set of cards within a leaf. For example, if a 66 MHz PCI card is in slot 0 and a 100 MHz PCI-X card is in slot 1, then both leaf slots will run at the lower 66 MHz PCI speed. IB6 leaves are comprised of paired slots 0 and 1, 2 and 3, and 4 and 5.

A.1.1 PCI IB_SSC Assemblies

PCI IB_SSC assemblies provide six I/O slots labeled 0 through 5. When viewing the rear of the system, slot 0 is on the left and slot 5 is on the right. Slot 0 supports 66 MHz, slots 1-5 support 33 MHz with 5V signaling. The I/O slots are *not* hot swappable. All slots are half length.

Note – PCI+ and PCI-X IB_SSC assemblies are not supported in Netra 1280 systems.

A.1.2 PCI+ and PCI-X IB_SSC Assemblies

Note – PCI+ and PCI-X IB_SSC assemblies are not supported in Netra 1280 systems.

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

A.1.3 SCSI Connector

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

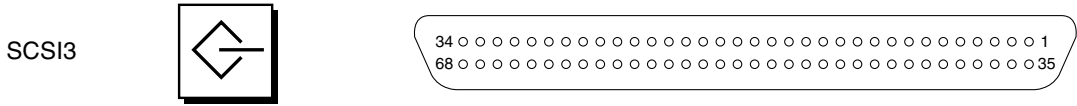


FIGURE A-2 68-Pin SCSI Connector

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	Termpwr	POWER
6	+DB(0)	I/O	29	+REQ	I/O	52	Termpwr	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	Diffsens	ANAL	39	-DB(P1)	I/O	62	-C/D	I/O
17	Termpwr	POWER	40	-DB(0)	I/O	63	-REQ	I/O
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

TABLE A-1 68-Pin SCSI Connector Pinout (*Continued*)

Pin No.	Signal Name	Type	Pin No.	Signal Name	Type	Pin No.	Signal Name	Type
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			

A.1.4 SCSI Implementation

For PCI compatible IB_SSC assemblies the embedded SCSI subsystem is:

- SCSI Fast-160 (UltraSCSI) low-voltage differential parallel interface
 - 16-bit SCSI bus
 - 160-MBps data transfer rate

Maximum cable length (terminator to terminator) support is 82 ft. (25 meter) for low-voltage differential, point-to-point interconnect.

For PCI+/PCI-X compatible IB_SSC assemblies the embedded SCSI subsystem is:

- 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).

A.2 Alarms Port

The alarms service port is a male DB-15 (FIGURE A-3). TABLE A-2 lists the pinout information.

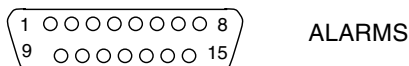


FIGURE A-3 DB-15 (Male) Alarms Service Port Connector

TABLE A-2 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		

A.3 LOM Serial Ports

LOM Serial ports A and B use RJ-45 connectors (FIGURE A-4). These ports are also known as the system controller serial ports. TABLE A-3 lists the pinout information.

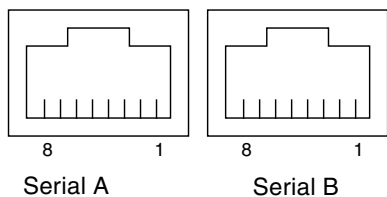


FIGURE A-4 RJ-45 Serial Connectors

TABLE A-3 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-4](#) lists the settings needed to use the serial connection. The configuration of this port cannot be changed. Be sure to check the manufacturer’s documentation for your specific terminal server. Communication on Serial A is subject to interruption by the LOM device. Refer to the Sun Fire V1280/Netra 1280 *Systems Administration Guide*.

TABLE A-4 Default Settings for Connecting to Serial A

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

A.3.1 Using a DB-25 Adapter for Your Serial Link

To connect from a VT100 terminal, use either the DB-25 (25-Pin DSUB male to 8-POS RJ-45 female) adapter supplied with your system (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 any Sun system. [TABLE A-5](#) lists the pin interconnections the DB-25 adapter performs.

TABLE A-5 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)

A.3.2 Using a DB-9 Adapter for Your Serial Link

Connect serial A to a DB-9 (9-pin) adapter to connect to a terminal that has a 9-pin serial connector. [TABLE A-6](#) lists the pin interconnections.

TABLE A-6 Pin Interconnections Performed by a DB-9 (9-pin) 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)

A.3.2.1 Connecting to a Male 9-Pin D-Type Serial Port

1. **Connect one end of the RJ-45 patch cable to Serial A and the other end to the DB-25 adapter (supplied with the system).**
2. **Connect the DB-25 adapter to an adapter that has one 25-way female connector and one 9-way D-type female connector.**
Sun does not supply a 25x9-way D-type female-to-female adapter.
3. **Connect the male end of a 9-pin serial cable to the 25x9-way D-type female-to-female adapter and the other end to the 9-pin serial port on the administrative console.**

A.4 10/100 LOM Ethernet Port

The 10/100 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-7 lists the pinout information.

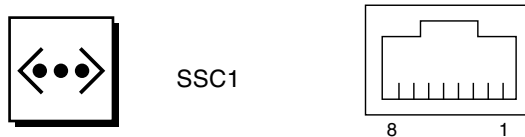


FIGURE A-5 RJ-45 TPE Socket

TABLE A-7 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

A.4.1 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-8 TPE STP-5 Cable Lengths

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

A.5 Net0/Net1 Ethernet Ports

The Net0/Net1 Ethernet ports are shielded RJ-45 connectors ([FIGURE A-6](#)). The Net0/Net1 Ethernet ports are also known as the gigabit Ethernet RJ-45 ports. [TABLE A-9](#) lists the pinout information.

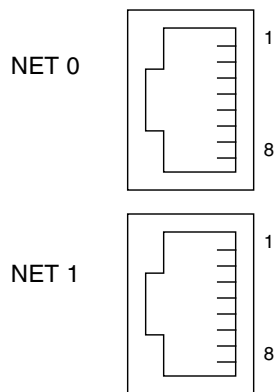


FIGURE A-6 RJ-45 Gigabit Ethernet Connectors

TABLE A-9 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

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