Sun Fire X4170 M2 and X4270 M2 Servers

Installation Guide

Part No. 821-0481-13
September 2010, Revision A

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Contents

Using This Documentation

This guide contains hardware installation procedures and configuration procedures for the preinstalled Oracle Solaris Operating System. You perform these procedures to bring the server to a configurable and usable state.

This document is intended for system administrators, network administrators, and service technicians who have an understanding of server systems.

Product Information

For information about Sun Fire X4170 M2 and X4270 M2 Servers, go to the following web sites:

- (http://www.oracle.com/goto/x4170m2)
- (http://www.oracle.com/goto/x4270m2)

At these sites, you can find links and navigate to the following information and downloads:

- Product information and specifications
- Supported operating systems
- Software and firmware downloads
- Supported option cards

- External storage options
- Power calculator

Related Documentation

The related documents listed in the following table are available online at:

(http://docs.sun.com/app/docs/prod/sf.x4170m2#hic) and
(http://docs.sun.com/app/docs/prod/sf.x4270m2#hic)

Title	Content	Part Number	Format
Sun Fire X4170 M2 and X4270 M2 Servers Product Notes	Late-breaking information about the server	821-0482	PDF HTML
Sun Fire X4170 M2 and X4270 M2 Servers Getting Started Guide	Basic installation information for setting up the server	821-0480	PDF Print
Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide	Detailed installation information for setting up the server	821-0481	PDF HTML Print option
Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems	Installation instructions for the Linux, Oracle VM, VMware, and Oracle Solaris operating systems	821-0483	PDF HTML
Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Windows Operating Systems	Installation instructions for the Windows Server operating systems	821-0484	PDF HTML
Sun Installation Assistant 2.3 through 2.4 User's Guide for x64 Servers	Instructions for using the Sun Installation Assistant to install the Windows and Linux operating systems	821-0694	PDF HTML
Sun Fire X4170 M2 Server Service Manual	Information and procedures for maintaining and upgrading the Sun Fire X4170 M2 Server	821-0486	PDF HTML
Sun Fire X4270 M2 Server Service Manual	Information and procedures for maintaining and upgrading the Sun Fire X4270 M2 Server	821-0488	PDF HTML

Title	Content	Part Number	Format
Oracle x86 Servers Diagnostics Guide	Information for diagnosing and troubleshooting the server	820-6750	PDF HTML
Sun Server CLI Tools and IPMItool 2.0 User's Guide	Information for using applications and utilities common to x86 servers	821-1600	PDF HTML
Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection (formerly called Sun Integrated Lights Out Manager Documentation Collection)	Documents covering ILOM features and tasks that are common to servers and server modules that support ILOM 3.0	820-5523 820-6410 820-6411 820-6412 820-6413	PDF HTML
Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X4170 M2 and X4270 M2 Servers	ILOM 3.0 information that is specific to the Sun Fire X4170 M2 and X4270 M2 Servers	821-0489	PDF HTML
Sun Fire X4170 M2 and X4270 M2 Servers Safety and Compliance Guide	Hardware safety and compliance information for the server	821-0490	PDF
Important Safety Information for Sun Hardware Systems	Multilingual hardware safety and compliance information for all Sun hardware system	821-1590	Print

Translated versions of some of these documents are available at the web sites listed above this table. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

Documentation, Support, and Training

- Documentation: (http://docs.sun.com)
- Support: (http://www.sun.com/support/)
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Include the title and part number of your document with your feedback:

Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide, part number 821-0481-13.

Product Downloads

To download the latest product software, go to one of the following web sites:

- (http://www.oracle.com/goto/x4170m2)
- (http://www.oracle.com/goto/x4270m2)

At these sites, you can find links and navigate to the following items:

- Tools and Drivers DVD image
- Sun Installation Assistant DVD image
- Sun Validation Test Suite (SunVTS) Update

CHAPTER 1

Preparing to Install the Sun Fire X4170 M2 and X4270 M2 Servers

This chapter describes Oracle's Sun Fire X4170 M2 and X4270 M2 Servers hardware and the information you need to know before you begin to install the servers into a rack. It includes the following topics:

Tools and Equipment Needed

To install the system, you need the following tools:

- No. 2 Phillips screwdriver
- ESD mat and grounding strap
- Pencil, stylus, or other pointed device, for pushing front panel buttons

You also need a system console device, such as one of the following:

- Sun workstation
- ASCII terminal
- Terminal server
- Patch panel connected to a terminal server

Server Installation Task Checklist

TABLE 1-1 summarizes an ordered list of tasks that you must perform to properly install the server.

TABLE 1-1 Installation Task Checklist

Step	Task Description	For Instructions, See:
1	Unpack the server and any optional components ordered for the server from the shipping containers.	• "Opening the Box" on page 2
2	If applicable, install optional server components prior to installing the server into the rack.	• *Sun Fire X4170 M2 Server Service Manual* (821-0486) • *Sun Fire X4270 M2 Server Service Manual* (821-0488)
3	Install the server into a rack.	• Chapter 2
4	Connect cables to the server and apply power to the server.	• Chapter 3
5	Configure the ILOM service processor.	• Chapter 4
6	If ordered, configure the factory-installed Solaris Operating System image shipped on one of the storage drives.	• Chapter 5 • Chapter 6
	If applicable, install one of the following operating systems: • Oracle Enterprise Linux (OEL) • Red Hat Enterprise Linux (RHEL) • SUSE Linux Enterprise Server (SLES) • Oracle Solaris 10 Operating System • Oracle VM (OVM) • VMware ESX/ESXi	• *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems* (821-0483)
	• Microsoft Windows Server 2008 or 2008 R2 Operating Systems	• *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Windows Operating Systems* (821-0484)

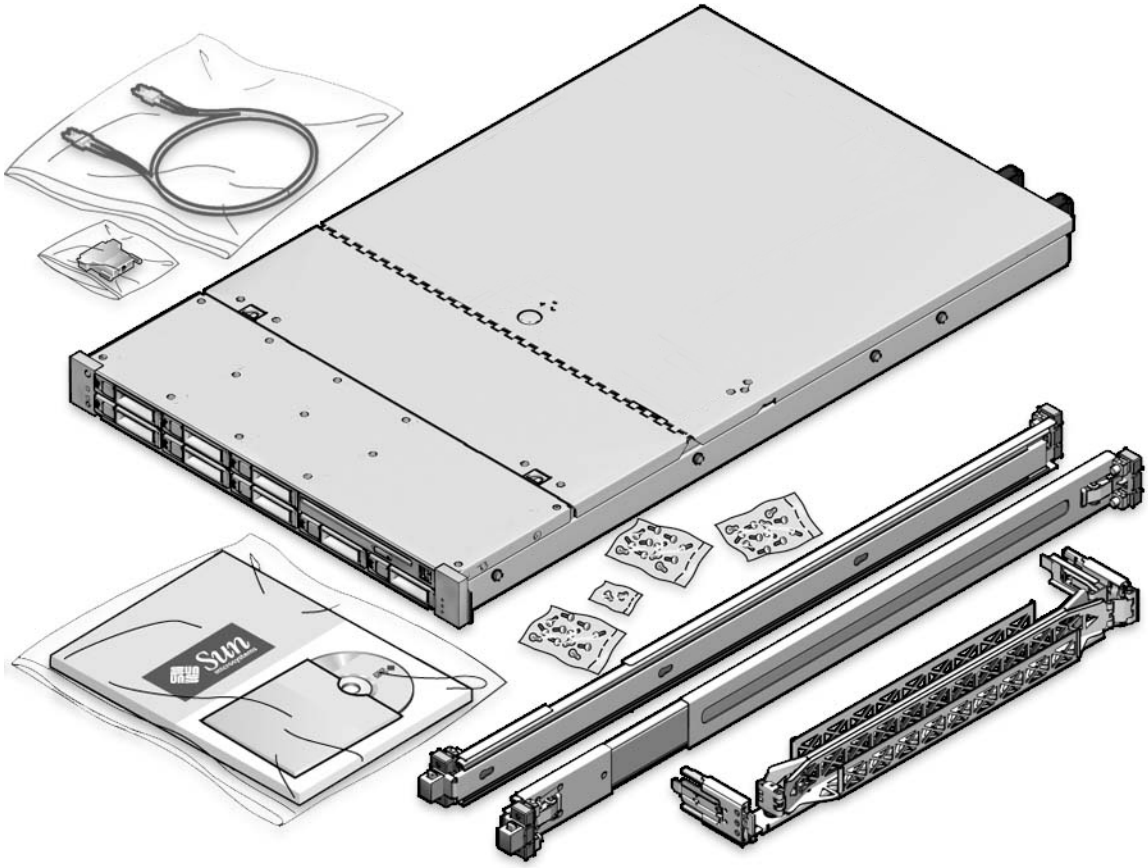
Opening the Box

Carefully open the shipping box.

Unpacking

Unpack all server components from the packing cartons. FIGURE 1-1 shows the packing contents:

FIGURE 1-1 Unpacking the Box



Package Contents Inventory

The following items should be packaged with the Sun Fire X4170 M2 and X4270 M2 Servers:

- Sun Fire 4170 M2 or X4270 M2 Server
- Power cord, packaged separately with country kit

- (Optional) Sun Fire X4170 M2 and X4270 M2 Servers Documentation and Media Kit, including the following:
  - *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide* (this document)
  - License and safety documentation
  - Tools and Drivers DVD (includes drivers and additional software), Sun Installation Assistant (SIA) CD, and SunVTS CD
- (Optional) Rackmount kit containing rack rails and installation instructions

Options

Power cables are packaged separately from the other items.

Standard server components are installed at the factory. However, ordered options such as additional memory or PCI Express cards are shipped separately. If possible, install optional components before installing the server in a rack. For instructions for installing server options, see the *Sun Fire X4170 M2 Server Service Manual* (821-0486) or the *Sun Fire X4270 M2 Server Service Manual* (821-0488).

ESD Precautions

Electronic equipment is susceptible to damage by static electricity. Use a grounded antistatic wrist strap, foot strap, or equivalent safety equipment to prevent electrostatic damage (ESD) when you install or service the server.

Caution – To protect electronic components from electrostatic damage, which can permanently disable the system or require repair by Oracle service technicians, place components on an antistatic surface, such as an antistatic discharge mat, an antistatic bag, or a disposable antistatic mat. Wear an antistatic grounding strap connected to a metal surface on the chassis when you work on system components.

Server Description

This section shows the front and back of the Sun Fire X4170 M2 and X4270 M2 Servers.

Front Panel Features

FIGURE 1-2 shows the Sun Fire X4170 M2 Server front panel and describes its components.

FIGURE 1-2 Sun Fire X4170 M2 Server Front Panel

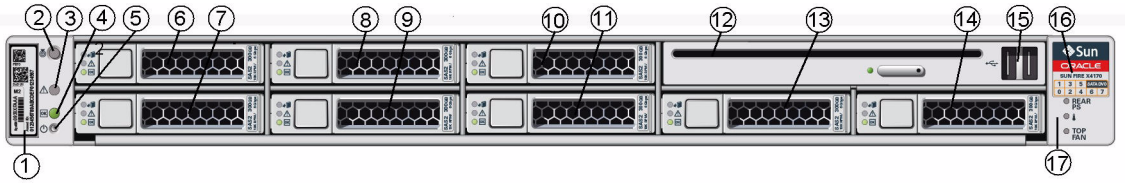


Figure Legend

1	Product Serial Number (PSN) label and Radio Frequency Identification (RFID) tag	**10**	Hard disk drive 4 (optional)
2	Locator LED/Locator button: white	**11**	Hard disk drive 5 (optional)
3	Service Action Required LED: amber	**12**	DVD drive (optional)
4	Power/OK LED: green	**13**	Hard disk drive 6 (optional)
5	Power button	**14**	Hard disk drive 7 (optional)
6	Hard disk drive 1 (optional)	**15**	USB 2.0 ports (2)
7	Hard disk drive 0 (optional)	**16**	Disk configuration label
8	Hard disk drive 3 (optional)	**17**	Power Supply Service Action Required LED: amber System Overtemperature LED: amber Fan Module Service Action Required LED: amber
9	Hard disk drive 2 (optional)		

The Sun Fire X4270 M2 Server can optionally be configured with 12 or 24 storage drives. FIGURE 1-3 shows the 12 storage drive configuration. FIGURE 1-4 shows the 24 storage drive configuration.

Note – In FIGURE 1-4, the storage drives are numbered 0 to 23 from left to right.

FIGURE 1-3 Sun Fire X4270 M2 Server Front Panel (With 12 Storage Drives)

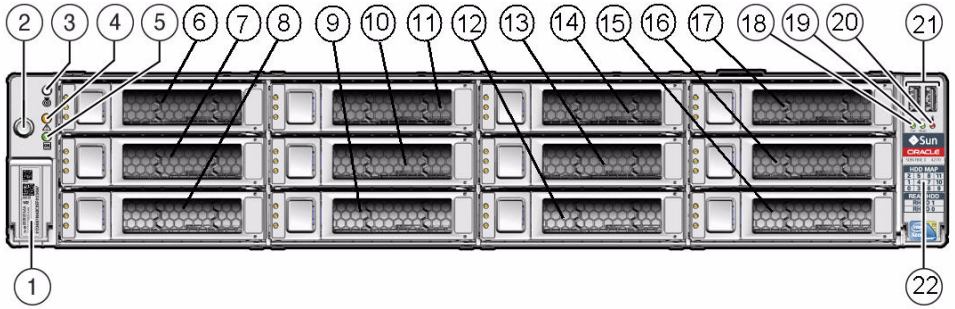


Figure Legend

1	Product Serial Number (PSN) label and Radio Frequency Identification (RFID) tag	**12**	Hard disk drive 6 (optional)
2	Power button	**13**	Hard disk drive 7 (optional)
3	Locator LED/Locator button: white	**14**	Hard disk drive 8 (optional)
4	Service Action Required LED (System Level): amber	**15**	Hard disk drive 9 (optional)
5	Power/OK LED: green	**16**	Hard disk drive 10 (optional)
6	Hard disk drive 2 (optional)	**17**	Hard disk drive 11 (optional)
7	Hard disk drive 1 (optional)	**18**	Fan Module Service Action Required LED: amber
8	Hard disk drive 0 (optional)	**19**	Power Supply Service Action Required LED: amber
9	Hard disk drive 3 (optional)	**20**	System Overtemperature LED: amber
10	Hard disk drive 4 (optional)	**21**	USB 2.0 ports (2)
11	Hard disk drive 5 (optional)	**22**	Disk configuration label

FIGURE 1-4 Sun Fire X4270 M2 Server Front Panel (With 24 Storage Drives)

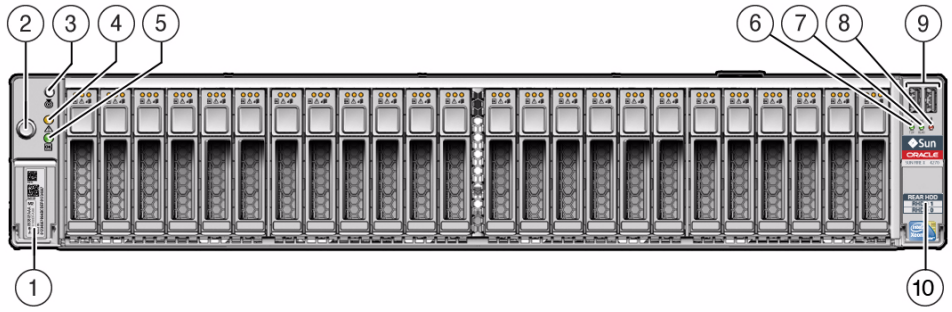


Figure Legend

1	Product Serial Number (PSN) label and Radio Frequency Identification (RFID) tab	**6**	Fan Module Service Action Required LED: amber
2	Power button	**7**	Power Supply Service Action Required LED: amber
3	Locator LED/Locator button: white	**8**	System Overtemperature LED: amber
4	Service Action Required LED (System Level): amber	**9**	USB 2.0 ports (2)
5	Power/OK LED: green	**10**	Disk configuration label

Back Panel

FIGURE 1-5 shows the Sun Fire X4170 M2 Server back panel and describes its components.

FIGURE 1-5 Sun Fire X4170 M2 Server Back Panel

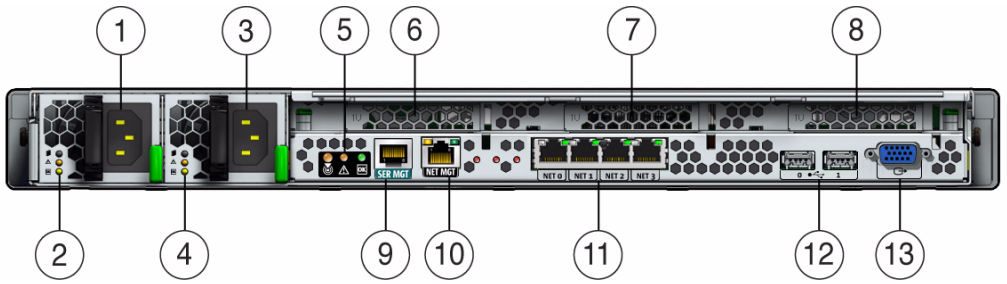


Figure Legend

1	Power supply unit 0 connector	**8**	PCI Express Module slot (2)
2	Power supply unit 0 status indicator LEDs: Power Supply OK: green Power Supply Fail: amber AC OK: green	**9**	Serial management (SER MGT)/RJ-45 serial port
3	Power supply unit 1 connector	**10**	Service processor (SP) network management (NET MGT) port
4	Power supply unit 1 status indicator LEDs: Power Supply OK: green Power Supply Fail: amber AC OK: green	**11**	Gigabit Ethernet ports NET 0, 1, 2, 3
5	System status LEDs: Power: green Attention: amber Locate: white	**12**	USB 2.0 ports (0, 1)
6	PCI Express Module slot (0)	**13**	HD15 video connector (analog VGA)
7	PCI Express Module slot (1)		

FIGURE 1-6 shows the Sun Fire X4270 M2 Server back panel without rear mounted storage drives. FIGURE 1-7 shows the Sun Fire X4270 M2 Server back panel with rear mounted storage drives.

FIGURE 1-6 Sun Fire X4270 M2 Server Back Panel (Without Rear Boot Drives)

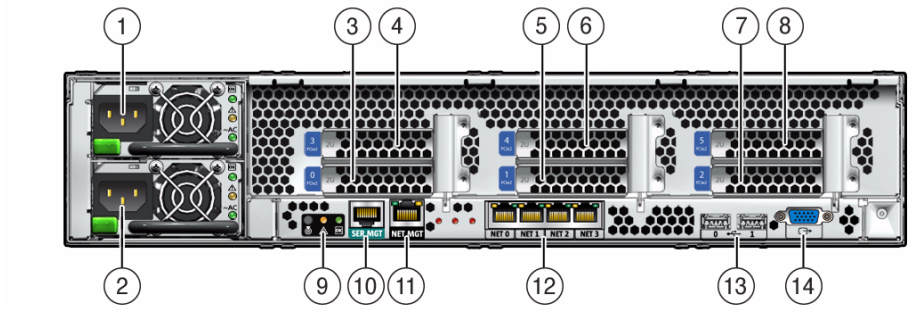


Figure Legend

1	Power supply unit 1 (PSU1)	**8**	PCI Express Module slot (5) (filler panel shown)
2	Power supply unit 0 (PSU0)	**9**	System status LEDs: Power: green Attention: amber Locate: white
3	PCI Express Module slot (0) (filler panel shown)	**10**	Serial management (SER MGT)/RJ-45 serial port
4	PCI Express Module slot (3) (filler panel shown)	**11**	Service processor (SP) network management (NET MGT) port
5	PCI Express Module slot (1) (filler panel shown)	**12**	Gigabit Ethernet ports NET 0, 1, 2, 3
6	PCI Express Module slot (4) (filler panel shown)	**13**	USB 2.0 ports (0, 1)
7	PCI Express Module slot (2) (filler panel shown)	**14**	HD15 video connector (analog VGA)

FIGURE 1-7 Back Panel of Sun Fire X4270 M2 Server Back Panel (With Rear Boot Drives)

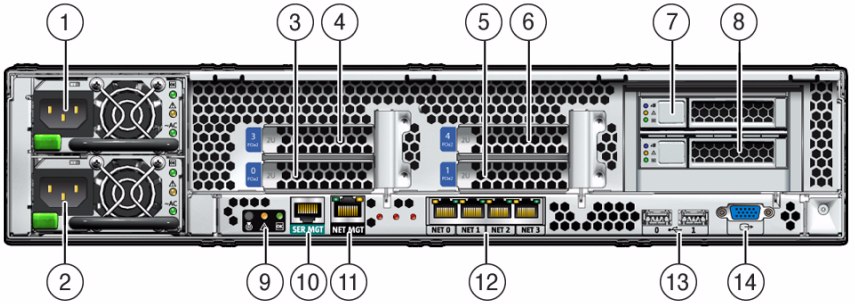


Figure Legend

1	Power supply unit 1 (PSU1)	**8**	Boot disk drive 0
2	Power supply unit 0 (PSU0)	**9**	System status LEDs: Power: green Attention: amber Locate: white
3	PCIe Slot 0 (filler panel shown)	**10**	Serial management (SER MGT)/RJ-45 serial port
4	PCIe Slot 3 (filler panel shown)	**11**	Service processor (SP) network management (NET MGT) port
5	PCIe Slot 1 (filler panel shown)	**12**	Gigabit Ethernet ports NET 0, 1, 2, 3
6	PCIe Slot 4 (filler panel shown)	**13**	USB 2.0 ports (0, 1)
7	Boot disk drive 1	**14**	HD15 video connector (analog VGA)

Server Supported Components

This section describes the components that are supported in the Sun Fire X4170 M2 and X4270 M2 Servers.

Sun Fire X4170 M2 Server Supported Components

The following table describes the components and capabilities of the Sun Fire X4170 M2 Server.

TABLE 1-2 Sun Fire X4170 M2 Server Components

Component	Sun Fire X4170 M2 Server
CPU	One or two quad-core (2.4-GHz) or six-core (2.26-GHz or 2.93-GHz) processors with three integrated DDR3 memory controllers per processor. The following CPUs are supported: • 95 Watts • 80 Watts • 60 Watts
Memory	Nine DDR3 DIMMs per processor for a maximum of 18 DDR3 DIMMs and a maximum of 144 GB of memory
Storage devices	• Up to six 2.5-inch SATA hard drive devices (HDDs) or four solid-state drives (SSDs) • Up to eight 2.5-inch SAS/SATA HDDs or four SSDs with the optional Hardware RAID controller • DVD-RW drive
USB ports	Two front, two rear, and one internal (for a USB thumb drive)
PCI Express 2.0 I/O slots	Three low-profile PCIe Gen2 slots (one x16 and two x8)
PCI Express I/O cards	For a list of I/O cards that are customer-orderable options, go to the following web site and navigate to the appropriate page: (http://www.oracle.com/goto/x4170m2)
Ethernet ports	Four Gigabit Ethernet (GbE) ports on rear panel Each Network Interface Card (NIC) supports I/O Acceleration Technology 3 (IOAT3)
Service processor (SP)	Uses the SP subsystem Includes the Baseboard Management Controller (BMC), which supports the industry-standard IPMI feature set Supports remote KVMS over IP Includes serial port Supports Ethernet access to SP through a dedicated 10/100BaseT management port and optionally through one of the host GbE ports (sideband management)
Power supplies	Up to two hot-pluggable power supplies
Cooling fans	Redundant hot-pluggable fans
Management software	Oracle Integrated Lights Out Manager 3.0

Sun Fire X4270 M2 Server Supported Components

The following table describes the components and capabilities of the Sun Fire X4270 M2 Server.

TABLE 1-3 Sun Fire X4270 M2 Server Components and Capabilities

Component	Sun Fire X4270 M2 Server
CPU	One or two quad-core (2.4-GHz) or six-core (2.93-GHz or 3.33-GHz) processors with three integrated DDR3 memory controllers per processor. The following CPUs are supported: • 130 Watts • 95 Watts • 80 Watts
Memory	Nine DDR3 DIMMs per processor for a maximum of 18 DDR3 DIMMs and a maximum of 144 GB of memory
Storage devices	• Up to twelve 3.5-inch SAS/SATA HDDs with the optional Hardware RAID controller • Up to twenty-four 2.5-inch SAS/SATA HDDs with the optional Hardware RAID controller • Up to two optional rear-located (using PCIe slots 2 and 5) 2.5-inch SATA HDDs. These disks are for boot purposes only.
USB ports	Two front, two rear, and one internal (for a USB thumb drive)
PCI Express 2.0 I/O slots	Six x8 low-profile PCIe Gen2 slots
PCI Express I/O cards	For a list of I/O cards that are customer-orderable options, go to the following web site and navigate to the appropriate page: (http://www.oracle.com/goto/x4270m2)
Ethernet ports	Four Gigabit Ethernet (GbE) ports on rear panel Each Network Interface Card (NIC) supports I/O Acceleration Technology 3 (IOAT3)
Service processor (SP)	Uses the SP subsystem Includes the Baseboard Management Controller (BMC), which supports the industry-standard IPMI feature set Supports remote KVMS over IP Includes a serial port Supports Ethernet access to SP through a dedicated 10/100BaseT management port and optionally through one of the host GbE ports (sideband management)
Power supplies	Up to two hot-pluggable power supplies
Cooling fans	Redundant hot-pluggable fans
Management software	Oracle Integrated Lights Out Manager 3.0

Server Specifications

Physical Specifications

TABLE 1-4 lists the physical specifications for the Sun Fire X4170 M2 and X4270 M2 Servers.

TABLE 1-4 Servers Physical Specifications

Parameter	Sun Fire X4170 M2 Server	Sun Fire X4270 M2 Server
Height	1.71 inches/43.43 mm	3.43 inches/87.12 mm
Width	16.75 inches/425.45 mm	16.75 inches/425.45 mm
Depth	27.0 inches/685.8 mm	30.0 inches/762.0 mm
Weight	36 lbs/16.36 kg	65 lbs/29.54 kg

Electrical Specifications

TABLE 1-5 lists the electrical specifications for the Sun Fire X4170 M2 and X4270 M2 Servers.

Note – The power dissipation numbers listed in the following table are the maximum rated power numbers for the power supply used in these servers. The numbers are not a rating of the actual power consumption of the system. For up to date information on power consumption, go to the following web sites and navigate to the appropriate page: (http://www.oracle.com/goto/x4170m2) or (http://www.oracle.com/goto/x4270m2).

TABLE 1-5 Servers Electrical Specifications

Parameter	Value
Sun Fire X4170 M2 Server	
Input	
Nominal frequencies	50/60 Hz
Nominal voltage range	100-120/200-240 VAC

TABLE 1-5 Servers Electrical Specifications *(Continued)*

Parameter	Value
Maximum current AC RMS	9.0 amps Max
AC operating range	90-264 VAC
Output	
3.3 VDC STBY	3.6A
+12 VDC	62.3 A
Power dissipation	
Max power consumption	873 W
Max heat output	2977 BTU/hr
Volt-Ampere rating	891 VA @ 240 VAC, 0.98 P.F.
Sun Fire X4270 M2 Server	
Input	
Nominal frequencies	50/60 Hz
Nominal voltage range	100 VAC, 110-127 VAC, 200-240 VAC
Maximum current AC RMS	13.0 amps Max
AC operating range	90-264 VAC
Output	
3.3 VDC STBY	3.0 A
+12 VDC	86.7 A
Power dissipation	
Max power consumption	1235.3 W
Max heat output	4212 BTU/hr
Volt-Ampere rating	1261 VA @ 240 VAC, 0.98 P.F.

Environmental Requirements

TABLE 1-6 lists the environmental requirements for the Sun Fire X4170 M2 and X4270 M2 Servers.

TABLE 1-6 Servers Environmental Requirements

Parameter	Value
Operating temperature (single, non-rack system)	5° C to 35° C (41° F to 95° F)
Non-operating temperature (single, non-rack system)	-40° C to 70° C (-40° F to 158° F)
Operating humidity (single, non-rack system)	10% to 90% relative humidity, non-condensing
Non-operating humidity (single, non-rack system)	Up to 93% relative humidity, non-condensing
Altitude (operating) (single, non-rack system)	• **For the Sun Fire X4170 M2 Server:** Up to 3000 m, maximum ambient temperature is derated by 1 degree C per 300 m above 900 m • **For the Sun Fire X4270 M2 Server:** Up to 3048 m, maximum ambient temperature is derated by 1 degree C per 300 m above 900 m
Altitude (non-operating) (single, non-rack system)	Up to 12,000 m

CHAPTER 2

Installing the Server Into a Rack With Slide-Rails

This chapter describes how to place the server into a rack using the rail assembly in the rackmount kit. Perform these procedures if the rail assembly is purchased.

This chapter includes the following topics:

Note – In this guide, the term rack means either an open rack or a closed cabinet.

Before You Begin

Read the following overview and see the service label on the top cover before you begin to install the server into a rack.

Server Installation Process Overview

To install your server into a four-post rack using the slide-rail and cable management arm options, see the following sections to perform the tasks in the order listed.

1. "Rack Compatibility" on page 19
2. "Disassembling Slide-Rails" on page 20
3. "Installing the Mounting Brackets Onto the Server" on page 22
4. "Installing the Cable Management Arm on the Sun Fire X4170 M2 Server" on page 30 or "Installing the Cable Management Arm on the Sun Fire X4270 M2 Server" on page 36
5. "Verifying Operation of the Slide-Rails and CMA" on page 44
6. "Connecting the Cables" on page 45

Rail Assemblies

The server might include either tool-less or bolt-on rail assemblies in rackmount kits. Instructions for both types are included in this chapter.

Service Label

Refer to the service label on the server top cover for instructions on how to install your server into a four-post rack, using the slide-rail and cable management arm options. The service label includes instructions for both tool-less and bolt-on rail assemblies.

Rack Compatibility

Check that your rack is compatible with the slide-rail and cable management arm (CMA) options. The optional slide-rails are compatible with a wide range of equipment racks that meet the following standards.

TABLE 2-1 Rack Compatibility

Item	Requirement
Structure	Four-post rack (mounting at both front and rear). Two-post racks are not compatible.
Rack horizontal opening and unit vertical pitch	Conforms to ANSI/EIA 310-D-1992 or IEC 60927 standards.
Distance between front and rear mounting planes	Minimum 610 mm and maximum 915 mm (24 inches to 36 inches).
Clearance depth in front of front mounting plane	Distance to front cabinet door is at least 25.4 mm (1 inch).
Clearance depth behind front mounting plane	Distance to rear cabinet door is at least 800 mm (31.5 inches) with the cable management arm, or 700 mm (27.5 inches) without the cable management arm.
Clearance width between front and rear mounting planes	Distance between structural supports and cable troughs is at least 456 mm (18 inches).
Server dimensions	Depth: (not including PSU handle): 685.80 mm (27.0 inches) Width: (not including ears): 425.45 mm (16.75 inches) Height: Sun Fire X4170 M2 Server: 43.43 mm (1.71 inches), Sun Fire X4270 M2 Server: 87.12 mm (3.43 inches)

Caution – Always load equipment into a rack from the bottom up so that the rack will not become top-heavy and tip over. Deploy your rack's anti-tip bar to prevent the rack from tipping during equipment installation.

Caution – Elevated Operating Ambient Temperature: If the server is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment might be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment

compatible with the maximum ambient temperature (Tma) specified for the server. For server environmental requirements, see "Environmental Requirements" on page 15.

Caution – Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Caution – Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Caution – Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate power ratings should be used when addressing this concern.

Caution – Reliable Earthing: Reliable earthing of rackmounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Caution – Slide-rail mounted equipment is not to be used as a shelf or a work space.

Disassembling Slide-Rails

Complete one of the following procedures before installation:

- "Disassemble Bolt-On Slide-Rails" on page 20
- "Disassemble Tool-less Slide-Rails" on page 21

▼ Disassemble Bolt-On Slide-Rails

To remove the mounting brackets from the bolt-on slide-rail assemblies:

1. **Unpack the slide-rails.**
2. **Locate the slide-rail lock at the front of one of the slide-rail assemblies (**FIGURE 2-1**).**
3. **Squeeze and hold the tabs at the top and bottom of the lock while you pull the mounting bracket out of the slide-rail assembly until it reaches the stop (**FIGURE 2-1**).**
4. **Push the mounting bracket release button toward the front of the mounting bracket (**FIGURE 2-1**), and simultaneously withdraw the mounting bracket from the slide-rail assembly.**
5. **Repeat for the remaining slide-rail assembly.**

FIGURE 2-1 Disassembling the Bolt-On Slide-Rail Before Installation

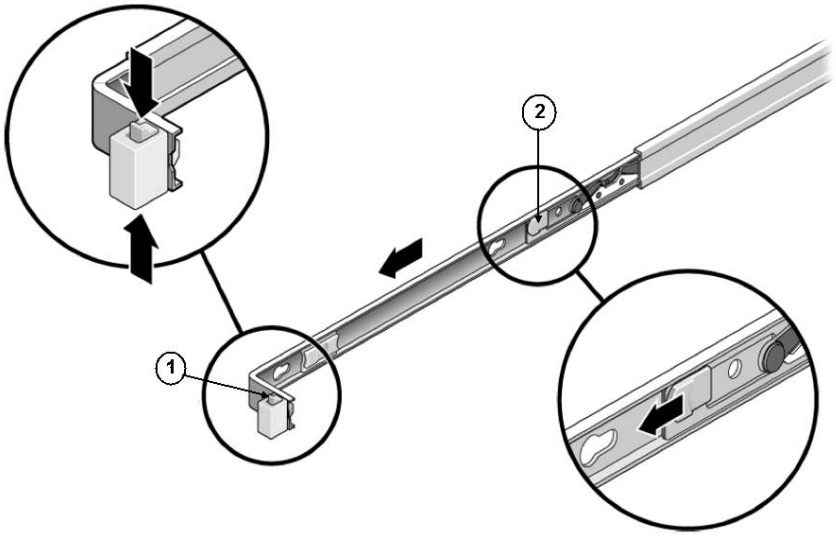


Figure Legend

1	Slide-rail lock
2	Mounting bracket release button

▼ Disassemble Tool-less Slide-Rails

To remove the mounting brackets from the tool-less slide-rail assemblies:

- **Refer to the installation card included with the rackmount kit for instructions on removing the mounting brackets from the tool-less slide-rail assemblies.**

Installing the Mounting Brackets Onto the Server

You must install the mounting brackets onto the server before you can rackmount the server.

▼ Install Mounting Brackets

To install the mounting brackets onto the sides of the server:

1. **Position a mounting bracket against the chassis so that the slide-rail lock is at the server front, and the four keyed openings on the mounting bracket are aligned with the four locating pins on the side of the chassis (**FIGURE 2-2**).**

FIGURE 2-2 Aligning the Mounting Bracket With the Server Chassis

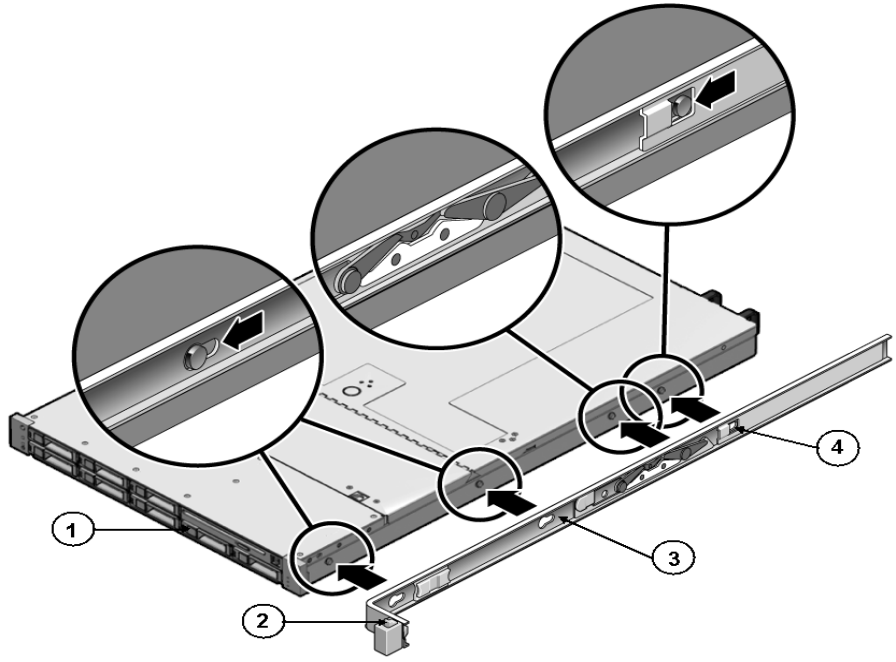


Figure Legend

1	Chassis front
2	Slide-rail lock
3	Mounting bracket
4	Mounting bracket clip

2. **With the heads of the four chassis locating pins protruding though the four keyed openings in the mounting bracket, pull the mounting bracket toward the front of the chassis until the mounting bracket clip locks into place with an audible click (**FIGURE 2-2**).**

3. **Verify that the rear locating pin has engaged the mounting bracket clip (**FIGURE 2-2**).**

4. **Repeat to install the remaining mounting bracket on the other side of the server.**

Attaching the Slide-Rail Assemblies to the Rack

Complete one of the following procedures to attach the slide-rail assemblies to the rack:

- "Attach Bolt-On Slide-Rail Assemblies" on page 24
- "Attach Tool-less Slide-Rail Assemblies" on page 27

▼ Attach Bolt-On Slide-Rail Assemblies

To attach bolt-on slide-rail assemblies to the rack:

1. **Position a slide-rail assembly in your rack so that the brackets at each end of the slide-rail assembly are on the outside of the front and rear rack posts (**FIGURE 2-3**).**

2. **Attach the slide-rail assembly to the rack posts, but do *not* tighten the screws completely.**

   Choose one of the following methods to attach the slide-rails. The method you use varies, depending on the type of rack:

   - If your rack has threaded mounting holes in the rack posts, first determine whether the threads are metric or standard, then insert the correct mounting screws through the slide-rail brackets and into the threaded holes.
   - If your rack does not have threaded mounting holes, insert the mounting screws through both the slide-rail brackets and rack posts, then secure them with the caged nuts.

FIGURE 2-3 Attaching Slide-Rail Assembly to Rack Post

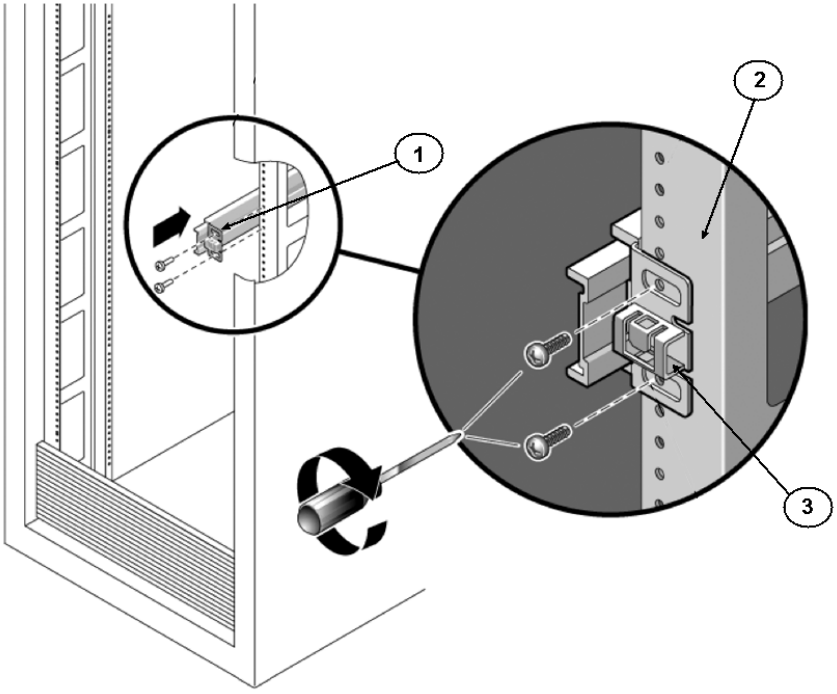


Figure Legend

1	Slide-rail assembly
2	Rack post
3	Slide-rail assembly bracket on outside of rack post

3. **Repeat** Step 1 **and** Step 2 **for the remaining slide-rail assembly.**

4. **From the front of the rack, set the proper width of the rails using the spacer (**FIGURE 2-4**).**

FIGURE 2-4 Setting the Rail Width

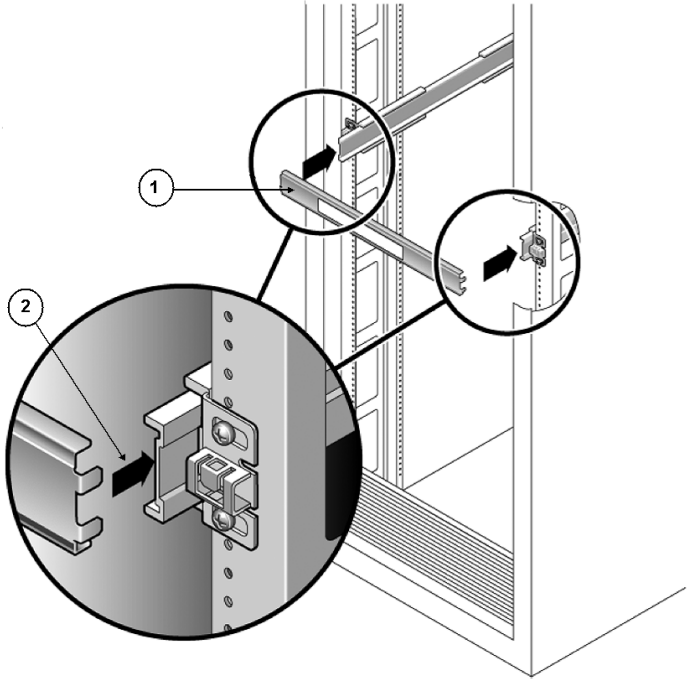
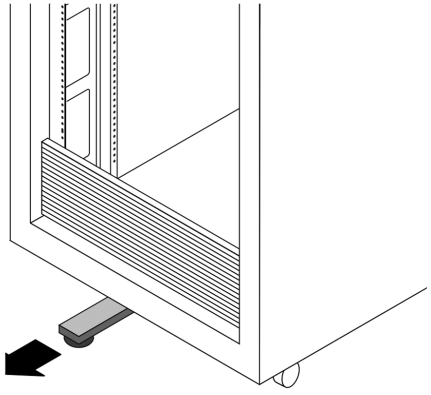


Figure Legend

1	Rail-width spacer
2	Attaching the spacer to the rails

5. **Tighten the screws on both brackets (**FIGURE 2-4**).**
6. **Remove the spacer and confirm that the rails are attached tightly to the rack.**
7. **Repeat** Step 4 **through** Step 6 **for the side-rail assembly at the rear of the rack.**
8. **If available, extend the anti-tip bar at the bottom of the rack (**FIGURE 2-5**).**

FIGURE 2-5 Extending the Anti-tip Bar



Caution – If your rack does not have an anti-tip bar, the rack could tip over.

▼ Attach Tool-less Slide-Rail Assemblies

To attach tool-less slide-rail assemblies to the rack:

- **Refer to the installation card included with the rackmount kit for instructions on attaching tool-less slide-rail assemblies to the rack.**

Installing the Server Into the Slide-Rail Assemblies

Use this procedure to install the server chassis, with mounting brackets, into the slide-rail assemblies that are mounted to the rack.

Caution – This procedure requires a minimum of two people because of the weight of the server. Attempting this procedure alone could result in equipment damage or personal injury.

Caution – Always load equipment into a rack from the bottom up so that the rack will not become top-heavy and tip over. Extend your rack's anti-tip bar to prevent the rack from tipping during equipment installation.

▼ Install Server Into the Slide-Rail Assemblies

1. **Push the slide-rails into the slide-rail assemblies in the rack as far as possible.**
2. **Raise the server so that the rear ends of the mounting brackets are aligned with the slide-rail assemblies that are mounted in the rack (**FIGURE 2-6**).**
3. **Insert the mounting brackets into the slide-rails, then push the server into the rack until the mounting brackets encounter the slide-rail stops (approximately 12 inches, or 30 cm).**

FIGURE 2-6 Inserting the Server With Mounting Brackets Into the Slide-Rails

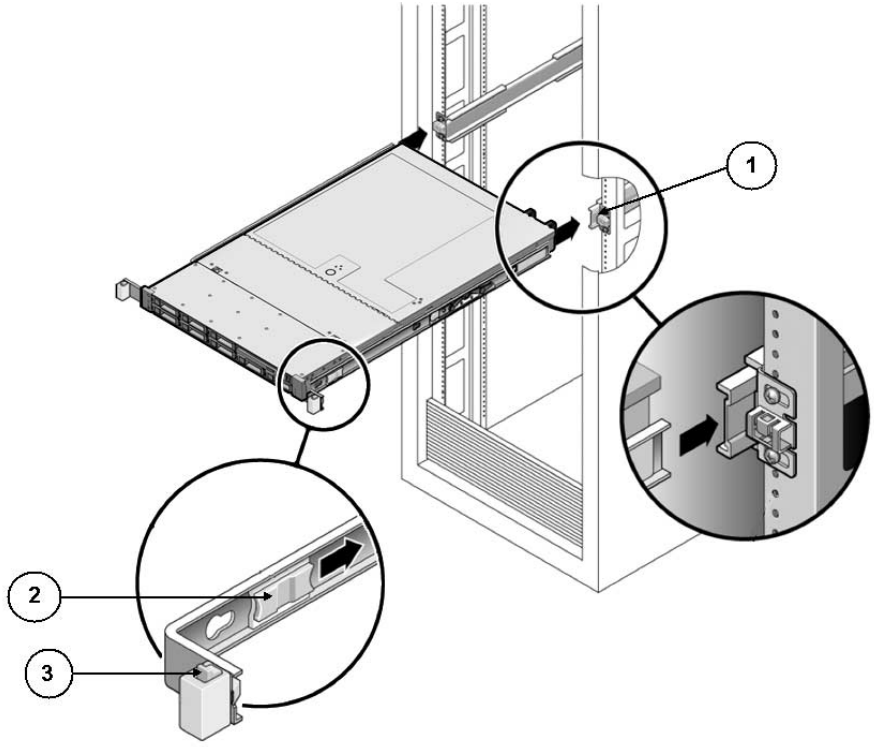


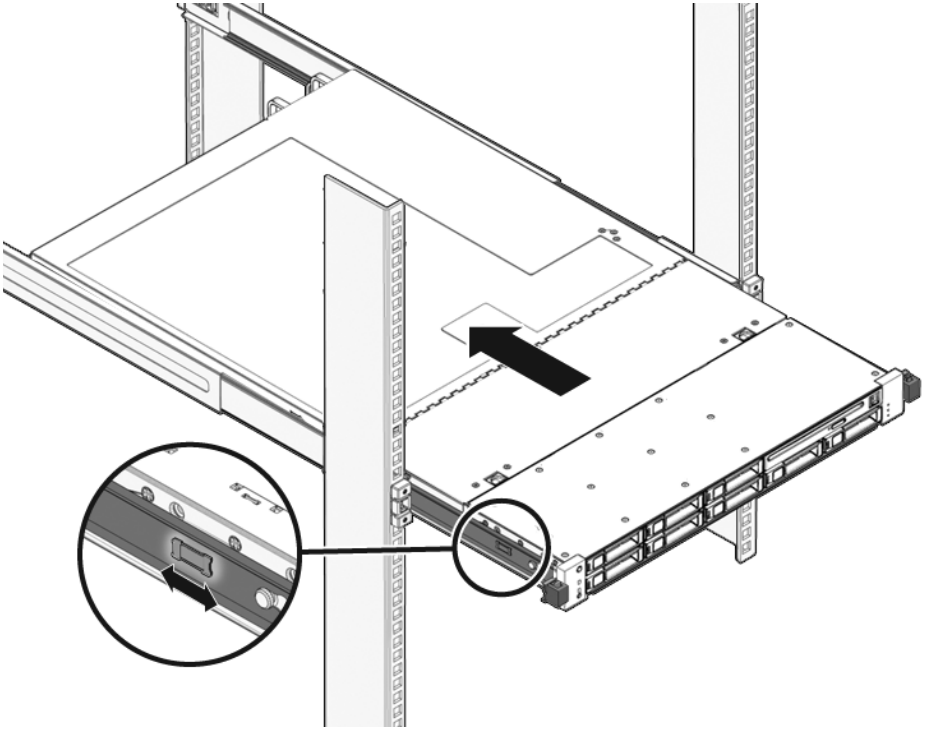
Figure Legend

1	Inserting mounting bracket into slide rail
2	Slide-rail release button
3	Slide-rail lock

4. **Simultaneously push and hold the slide-rail release buttons on each mounting bracket while you push the server into the rack (**FIGURE 2-6**). Continue pushing until the slide-rail locks (on the front of the mounting brackets) engage the slide-rail assemblies (**FIGURE 2-7**).**

   You will hear an audible click.

FIGURE 2-7 Sliding the Server Back Into the Rack



Caution – Verify that the server is securely mounted in the rack and that the slide-rail locks are engaged with the mounting brackets before continuing.

Installing the Cable Management Arm on the Sun Fire X4170 M2 Server

The cable management arm (CMA) is an optional assembly that you can use to route the server cables in the rack.

▼ Install Cable Management Arm

Use this procedure to install the optional CMA.

1. **Unpack the CMA parts.**
2. **Take the CMA to the back of the equipment rack and ensure that you have adequate room to work around the back of the server.**

Note – References to “left” or “right” in this procedure assume that you are facing the back of the equipment rack.

---

3. **Remove tape to separate the parts of the CMA.**

   The CMA rail extension might be taped to the CMA arm.

4. **Attach the CMA rail extension into the left slide-rail until the extension locks into place with an audible click (**FIGURE 2-8**).**

FIGURE 2-8 Inserting the CMA Rail Extension Into the Back of the Left Slide-Rail

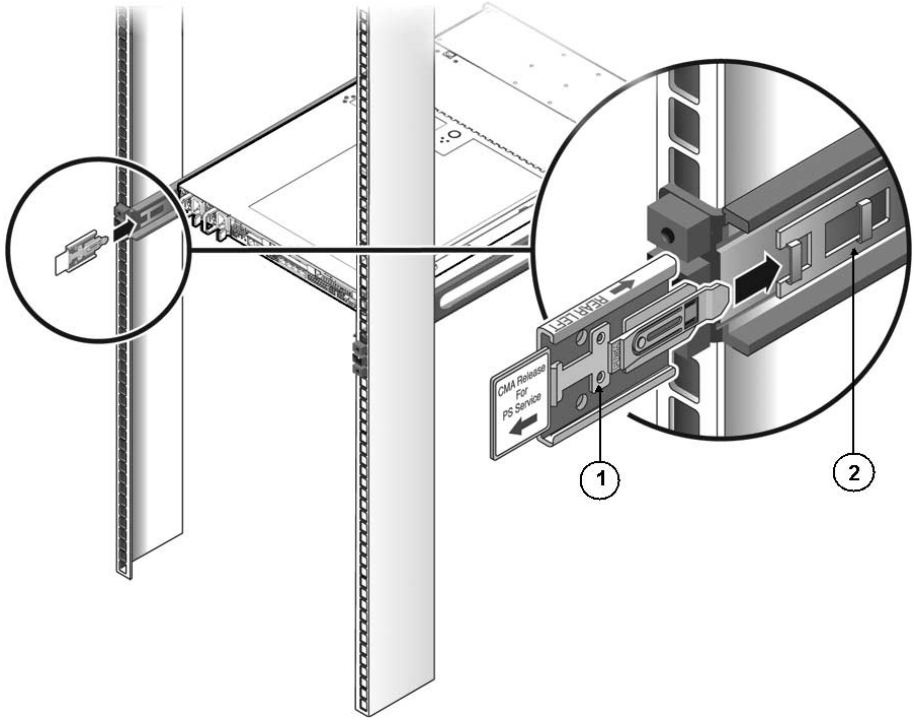
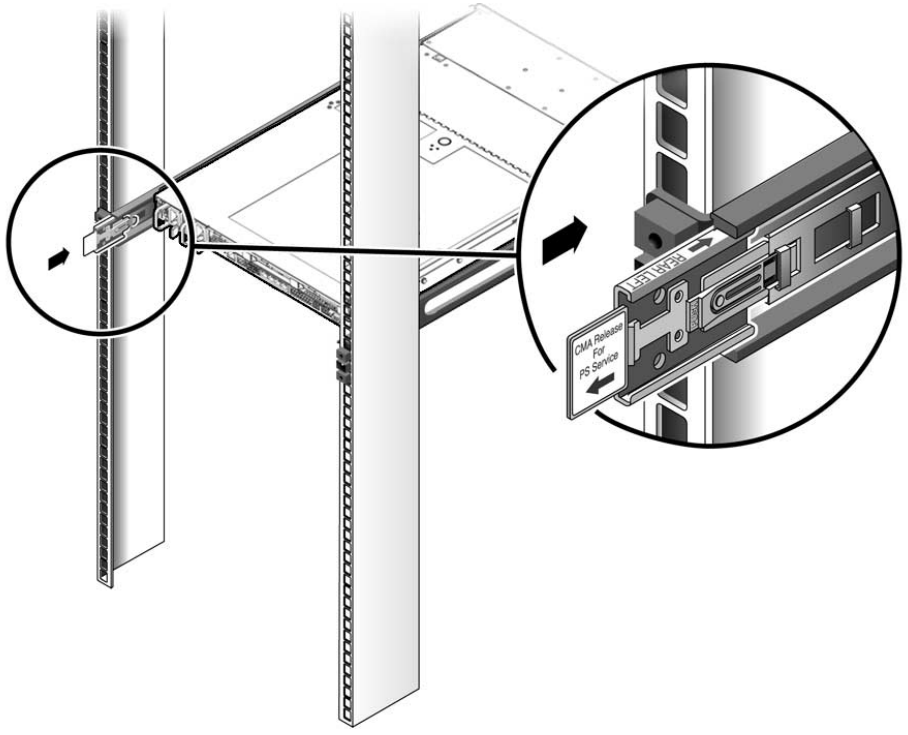


Figure Legend

1	CMA rail extension
2	Left slide-rail

5. **Verify that the CMA rail extension engages the slide-rail (**FIGURE 2-9**).**

FIGURE 2-9 Engaging the CMA Rail Extension With the Left Slide-Rail



Note – Support the CMA in the remaining installation steps. Do not allow the arm to hang by its own weight until it is secured by all three attachment points.

---

6. **Insert the CMA's mounting bracket connector into the right slide-rail until the connector locks into place with an audible click (**FIGURE 2-10**).**

FIGURE 2-10 Inserting the CMA Mounting Bracket Into the Back of the Right Slide-Rail

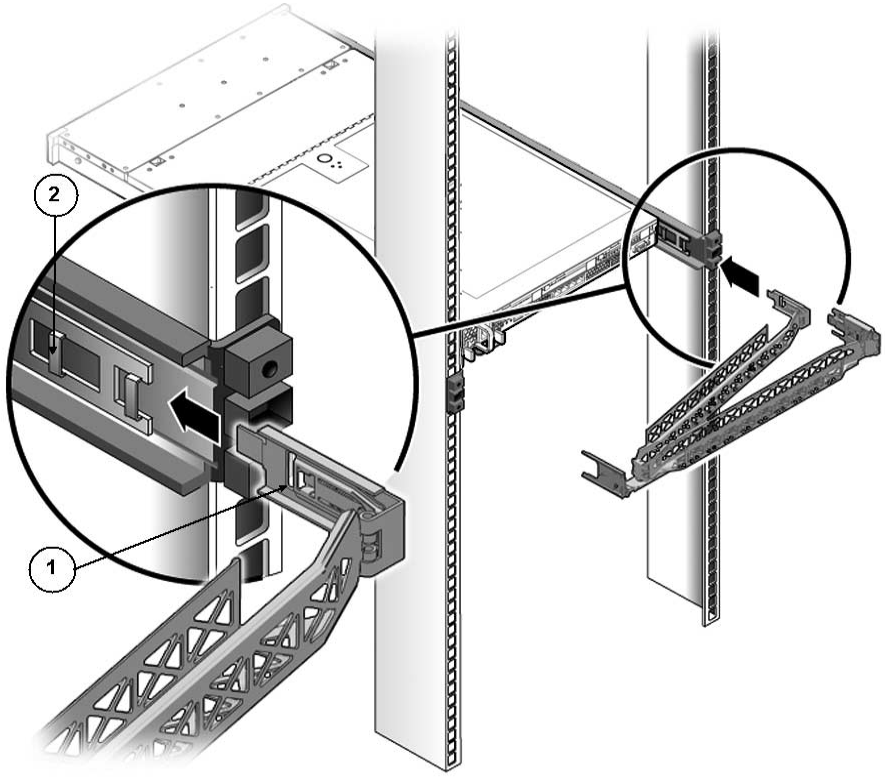


Figure Legend

1	CMA mounting bracket
2	Right slide-rail

7. Insert the right CMA slide-rail connector into the right slide-rail assembly until the connector locks into place with an audible click (FIGURE 2-11).

FIGURE 2-11 Inserting CMA Slide-Rail Connector Into the Back of the Right Slide-Rail

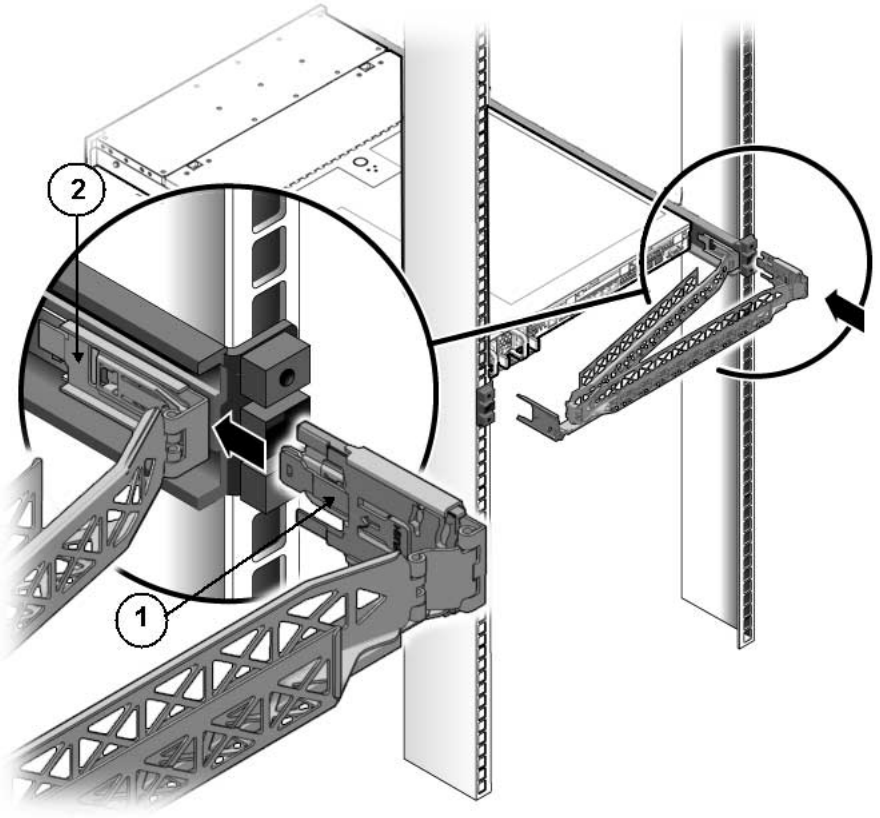


Figure Legend

1	CMA slide-rail connector
2	Right slide-rail

8. **Insert the left CMA slide-rail connector into the rail extension on the left slide-rail assembly until the connector locks into place with an audible click (**FIGURE 2-12**).**

FIGURE 2-12 Connecting the CMA to the Rail Extension Connector

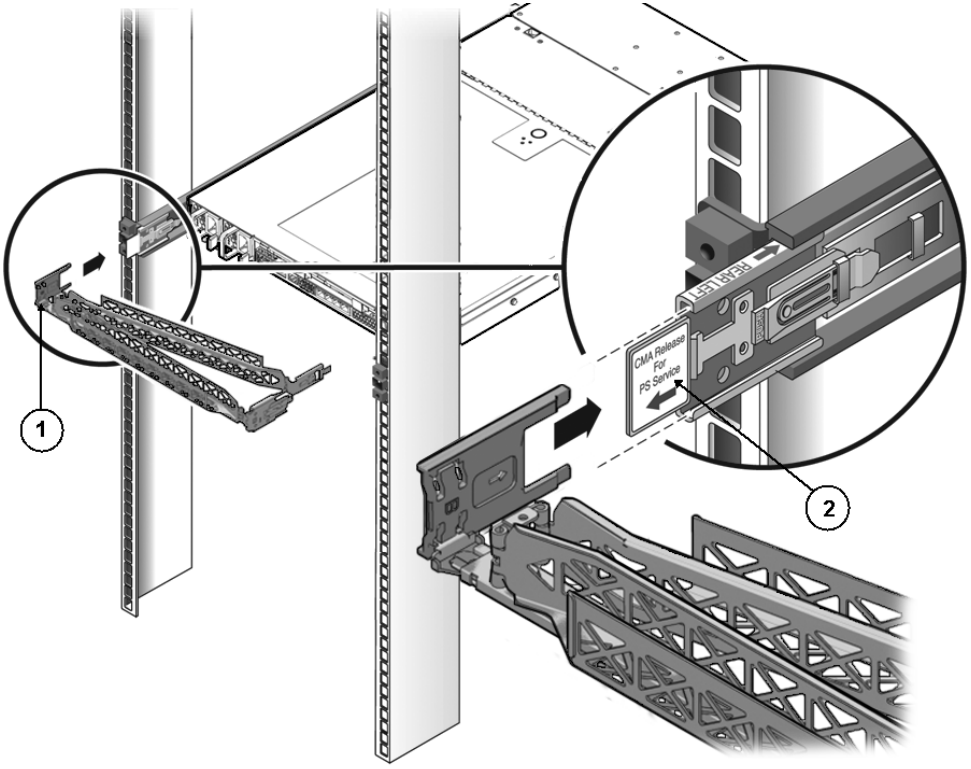


Figure Legend

1	CMA extension arm (on left slide-rail)
2	CMA extension

9. **Install and route cables to your server, as required.**

Note – Instructions for installing the server cables are provided in "Connecting the Cables" on page 45.

10. **Attach the cable hook and loop straps to the CMA, and press them into place to secure the cables (**FIGURE 2-13**).**

    For best results, place three cable straps, evenly spaced, on the rear-facing side of the CMA and three cable straps on the side of the CMA nearest the server.

FIGURE 2-13 Installing CMA Cable Straps

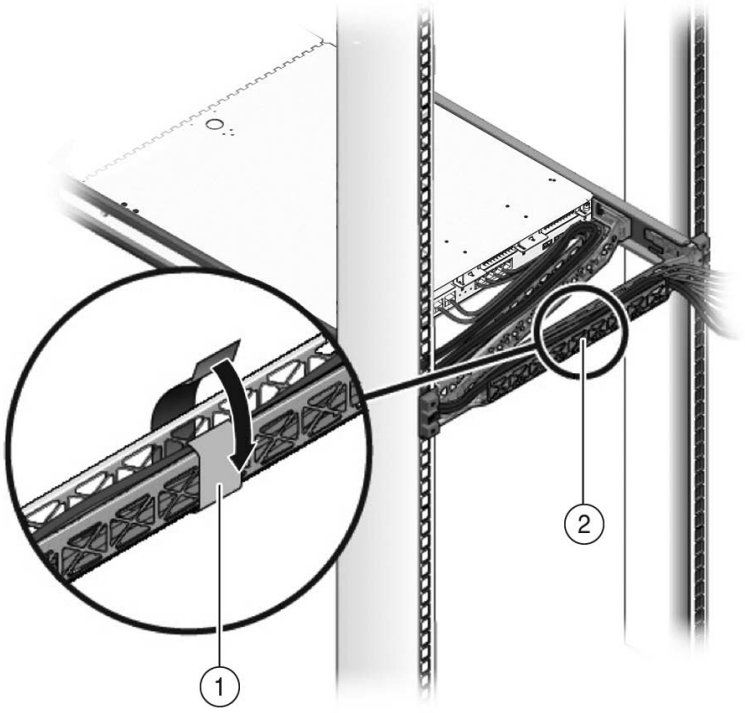


Figure Legend

1	CMA cable strap
2	CMA arm

Installing the Cable Management Arm on the Sun Fire X4270 M2 Server

The cable management arm (CMA) is an optional assembly that you can use to route the server cables in the rack.

▼ Install Cable Management Arm

Use this procedure to install the optional CMA.

1. **Unpack the CMA parts.**

2. **Take the CMA to the back of the equipment rack and ensure that you have adequate room to work around the back of the server.**

Note – References to “left” or “right” in this procedure assume that you are facing the back of the equipment rack.

---

3. **Remove tape to separate the parts of the CMA.**

   The CMA rail extension might be taped to the CMA arm.

4. **Attach the CMA rail extension into the left slide-rail until the extension locks into place with an audible click (**FIGURE 2-14**).**

FIGURE 2-14 Inserting the CMA Rail Extension Into the Back of the Left Slide-Rail

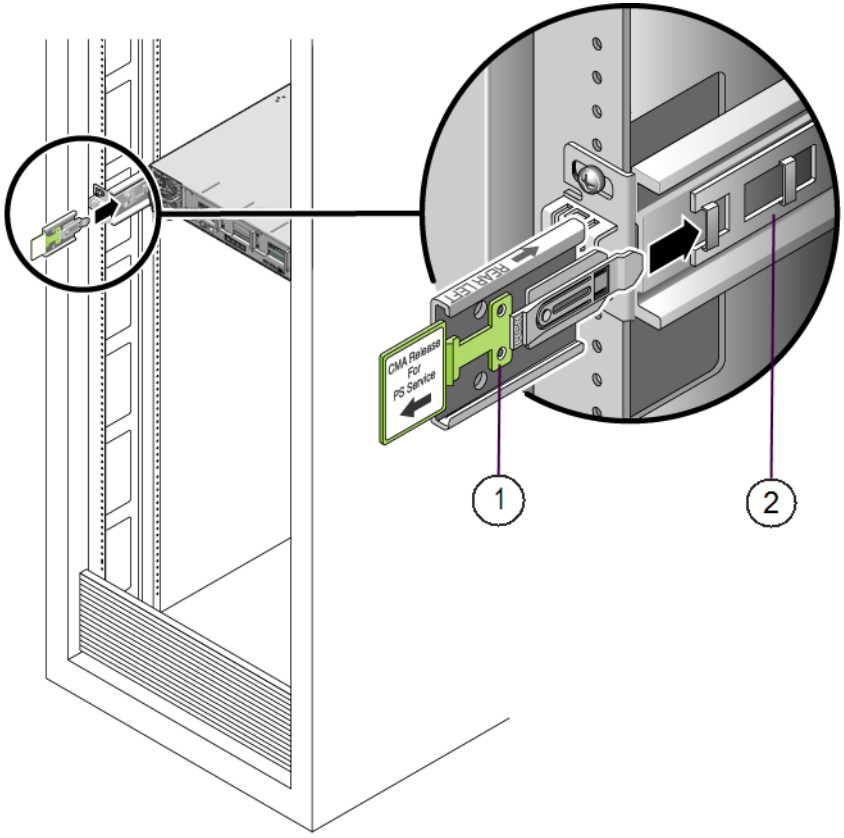
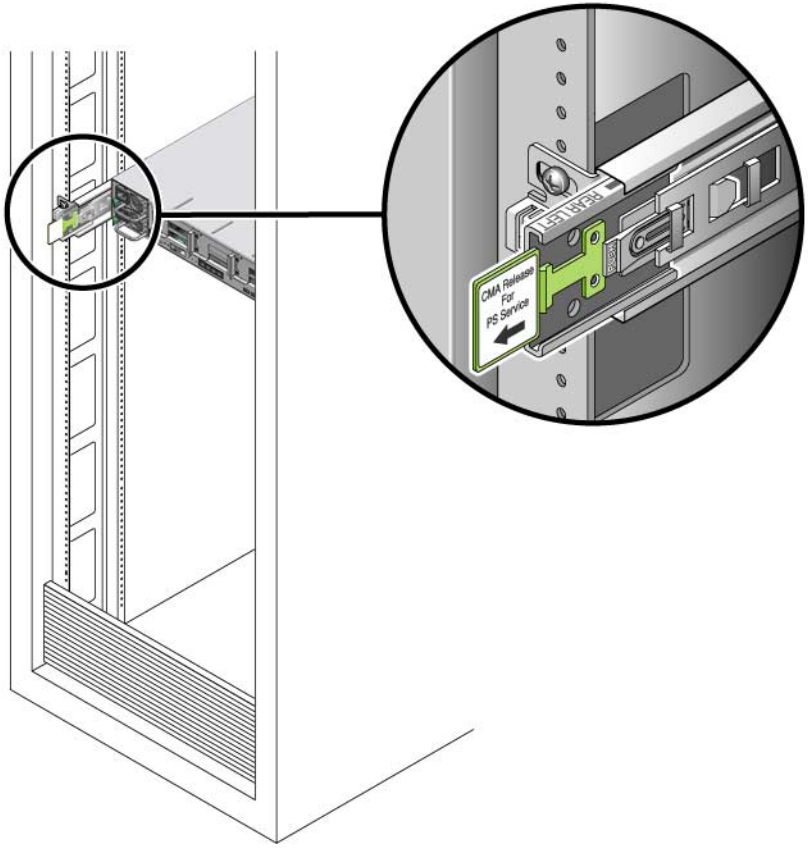


Figure Legend

1	CMA rail extension
2	Left slide-rail

5. Verify that the CMA rail extension engages the slide-rail (FIGURE 2-15**).**

FIGURE 2-15 Engaging the CMA Rail Extension With the Left Slide-Rail



Note – Support the CMA in the remaining installation steps. Do not allow the arm to hang by its own weight until it is secured by all three attachment points.

6. **Insert the CMA's mounting bracket connector into the right slide-rail until the connector locks into place with an audible click (**FIGURE 2-16**).**

FIGURE 2-16 Inserting the CMA Mounting Bracket Into the Back of the Right Slide-Rail

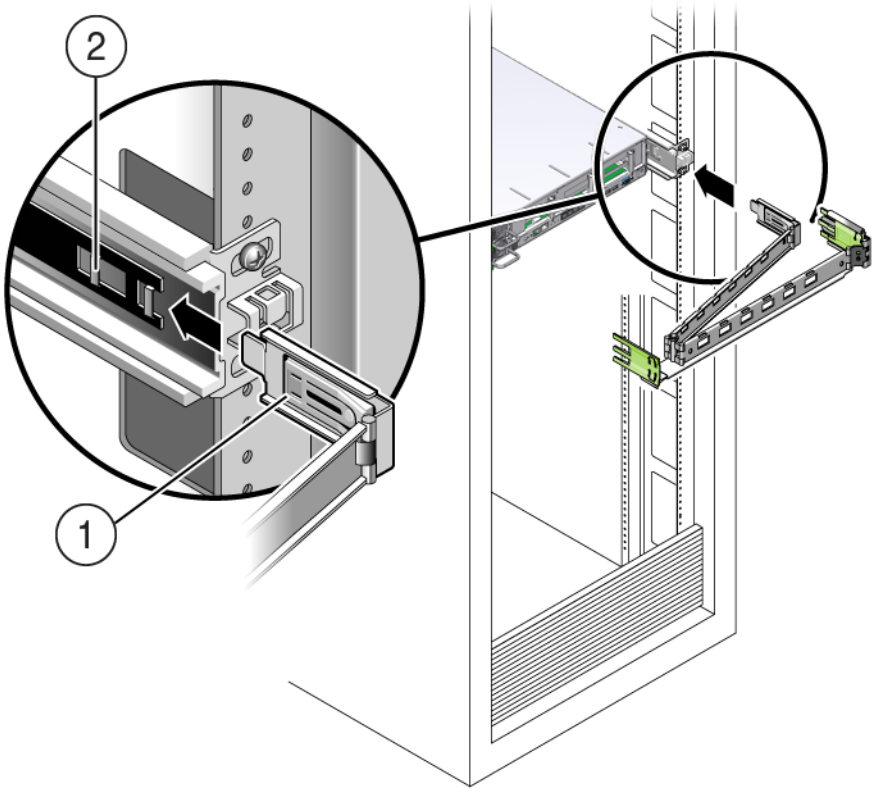


Figure Legend

1	CMA mounting bracket
2	Right slide-rail

7. **Insert the right CMA slide-rail connector into the right slide-rail assembly until the connector locks into place with an audible click (**FIGURE 2-17**).**

FIGURE 2-17 Inserting CMA Slide-Rail Connector Into the Back of the Right Slide-Rail

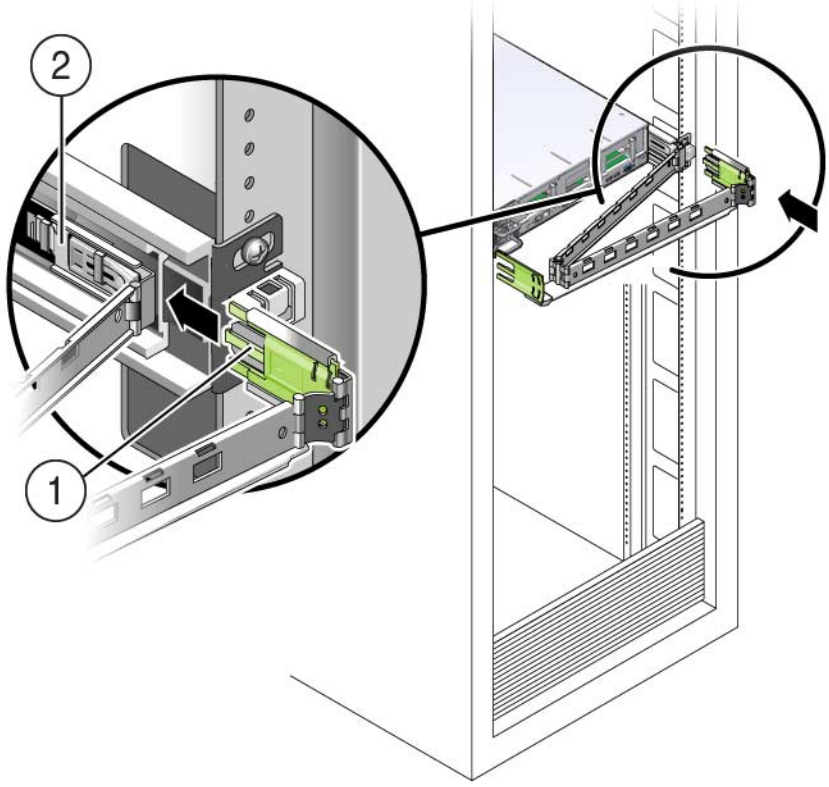


Figure Legend

1	CMA slide-rail connector
2	Right slide-rail

8. **Insert the left CMA slide-rail connector into the rail extension on the left slide-rail assembly until the connector locks into place with an audible click (**FIGURE 2-18**).**

FIGURE 2-18 Connecting the CMA to the Rail Extension Connector

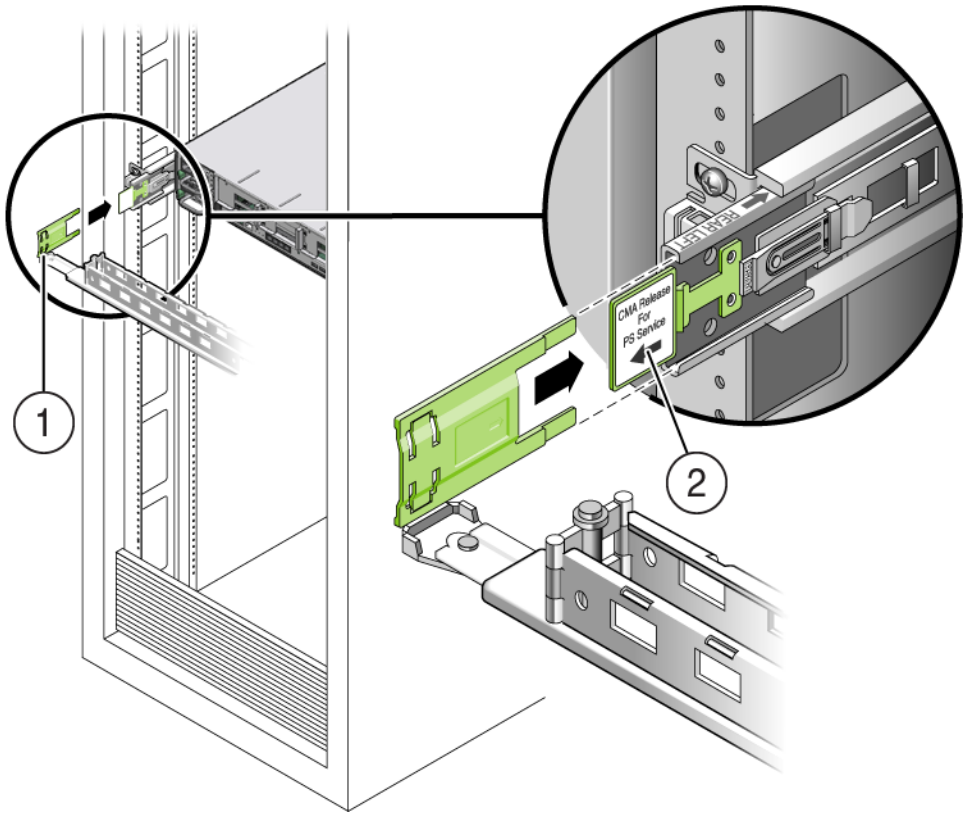


Figure Legend

1	CMA extension arm (on left slide-rail)
2	CMA extension

9. **Install and route cables to your server, as required.**

Note – Instructions for installing the server cables are provided in "Connecting the Cables" on page 45.

10. **If required, attach the cable hangers to the CMA, and snap them into place to secure the cables (**FIGURE 2-19**).**

Note – Cable hangers are preinstalled on the CMA. Perform the procedure in this step if you need to reinstall cable hangers on the CMA.

For best results, place three cable hangers, evenly spaced, on the rear-facing side of the CMA and three cable hangers on the side of the CMA nearest the server.

FIGURE 2-19 Installing CMA Cable Hangers

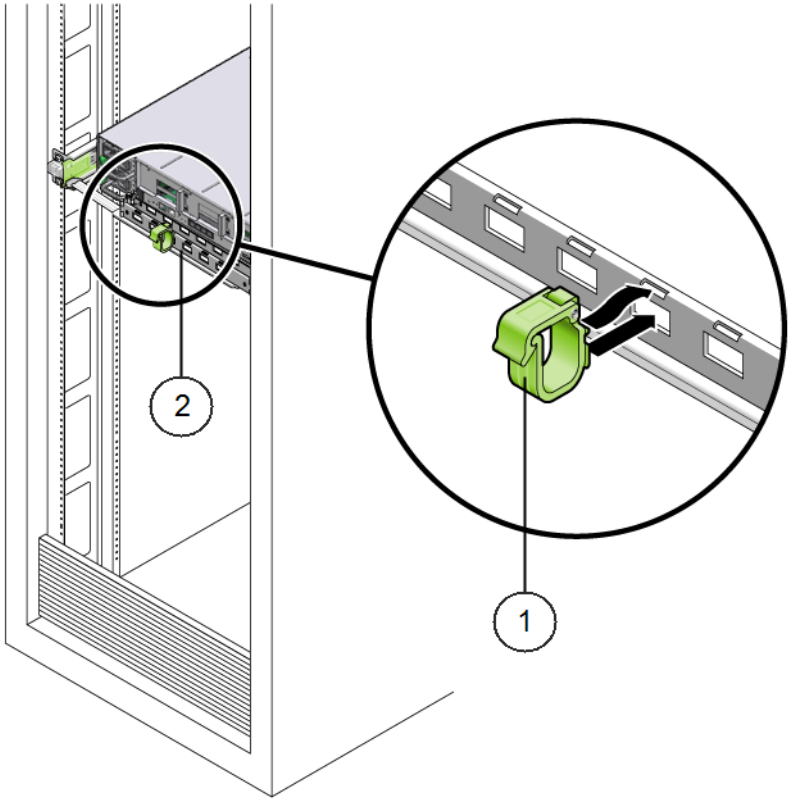


Figure Legend

1	CMA cable hanger
2	CMA arm

Verifying Operation of the Slide-Rails and CMA

Use the following procedure to ensure that the slide-rails and CMA are operating correctly.

▼ Verify Operation of Slide-Rails and CMA

Note – Two people are recommended for this procedure: one to move the server in and out of the rack, and one to observe the cables and CMA.

1. **Slowly pull the server out of the rack until the slide-rails reach their stops.**
2. **Inspect the attached cables for any binding or kinks.**
3. **Verify that the CMA extends fully from the slide-rails.**
4. **Push the server back into the rack, as described in the following sub-steps.**

   When the server is fully extended, you must release two sets of slide-rail stops to return the server to the rack:

   a. **The first set of stops are levers, located on the inside of each slide-rail, just behind the back panel of the server. These levers are labeled "PUSH." Push in both levers simultaneously and slide the server toward the rack.**

      The server will slide in approximately 18 inches (46 cm) and stop.

      Verify that the cables and the CMA retract without binding before you continue.

   b. **The second set of stops are the slide-rail release buttons, located near the front of each mounting bracket (**FIGURE 2-7**). Simultaneously push or pull both of the slide-rail release buttons, and push the server completely into the rack until both slide-rail locks engage.**

5. **Adjust the cable straps and CMA, as required.**

CHAPTER 3

Setting Up the Server

This chapter describes how to connect cables and power on the server for the first time. It includes the following topics:

Connecting the Cables

Connect the power and device data cables to the server back panel. FIGURE 3-1 shows and describes the locations of the Sun Fire X4170 M2 Server back panel connectors.

FIGURE 3-1 Sun Fire X4170 M2 Server M2 Server Back Panel Connectors

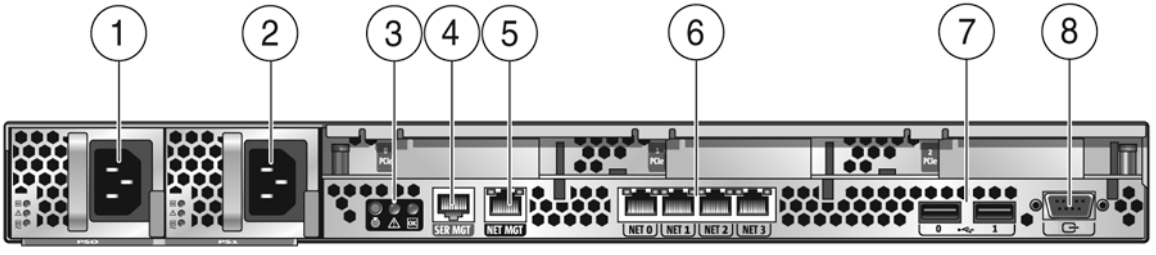


Figure Legend

1	Power supply unit 0 connector	**5**	Service processor (SP) network management (NET MGT) Ethernet port

Figure Legend *(Continued)*

2	Power supply unit 1 connector	**6**	Gigabit Ethernet ports NET 0, 1, 2, 3
3	System status LEDs	**7**	USB 2.0 ports (0, 1)
4	Serial management (SER MGT)/RJ-45 serial port	**8**	HD15 video connector (analog VGA)

FIGURE 3-2 shows and describes the locations of the Sun Fire X4270 M2 Server M2 Server back panel connectors.

FIGURE 3-2 Sun Fire X4270 M2 Server M2 Server Back Panel Connectors

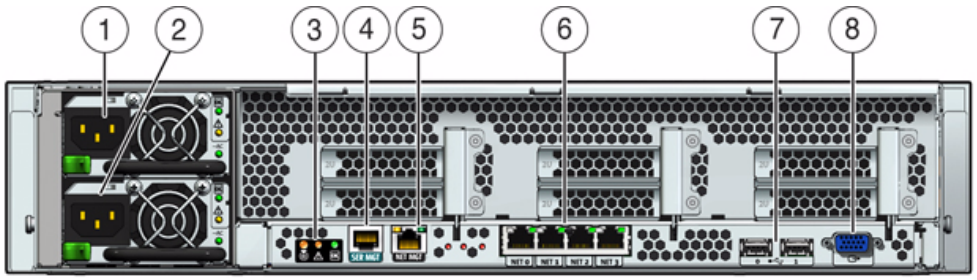


Figure Legend

1	Power supply unit 1 connector	**5**	Service processor (SP) network management (NET MGT) Ethernet port
2	Power supply unit 0 connector	**6**	Gigabit Ethernet ports NET 0, 1, 2, 3
3	System status LEDs	**7**	USB 2.0 ports (0, 1)
4	Serial management (SER MGT)/RJ-45 serial port	**8**	HD15 video connector (analog VGA)

▼ Cable the Server

Connect external cables to the server in the following order. Refer to FIGURE 3-1 and FIGURE 3-2.

1. **Connect an Ethernet cable to the Gigabit Ethernet (NET) connectors as needed for OS support [6].**
2. **(Optional) If you plan to interact with the system console directly, connect any external devices, such as mouse and keyboard to the server's USB connectors [7] and/or a monitor to the HD15 video connector [8].**
3. **If you plan to connect to Integrated Lights Out Manager (ILOM) software over the network, connect an Ethernet cable to the Ethernet port labeled NET MGT [5].**

4. **If you plan to access the ILOM command-line interface (CLI) using the serial management port, connect a serial null modem cable to the RJ-45 serial port labeled SER MGT [4].**

   See "Logging In to ILOM" on page 53 for more information about viewing system output from a serial console.

Applying Standby Power for Initial SP Configuration

Use this procedure to apply standby power to the service processor (SP) before initial configuration.

▼ Apply Standby Power to the Server

1. **Connect two grounded server power cords to grounded electrical outlets.**

2. **Connect the two server power cords to the AC connectors on the back panel of the server (**FIGURE 3-1 **and** FIGURE 3-2 **[1, 2]).**

   When power is connected, the server boots into standby power mode. In standby power mode, the Power/OK LED on the front panel (see FIGURE 1-2, FIGURE 1-3 and FIGURE 1-4) flashes in a Standby Blink pattern (01. seconds on, 2.9 seconds off), indicating that the SP is working. After a few minutes, the SP Login prompt appears on the terminal device. Note that the server is not initialized or powered on yet.

Note – Do not apply main power to the rest of the server until you are ready to install and configure a platform operating system. At this point, power is supplied only to the SP board and the power supply fans.

Applying Main Power to the Server for the First Time

When main power is applied to the server, you can access all of ILOM's parameters and you also can configure the preinstalled operating system or install a supported operating system.

▼ Apply Main Power to the Server

To turn on main power to the server for the first time, following these steps:

1. **Verify that the two power cords have been connected and that standby power is on.**

   In standby power mode, the Power/OK LED on the front panel blinks. See FIGURE 1-2, FIGURE 1-3and FIGURE 1-4.

2. **Verify that you are connected to the server through the serial management (SER MGT) port; perform the following sub-steps:**

   a. **Ensure that the server hardware is installed and cables are inserted.**

   b. **Verify that your terminal, laptop, PC, or terminal server is operational.**

   c. **Configure the terminal device or the terminal emulation software running on a laptop or PC to the following settings:**

      - 8,N,1: eight data bits, no parity, one stop bit
      - 9600 baud
      - Disable hardware flow control (CTS/RTS)
      - Disable software flow control (XON/XOFF)

   d. **Connect a null serial modem cable from the server's back panel SER MGT/RJ-45 port to the terminal device (if not connected already).**

      See FIGURE 3-1 and FIGURE 3-2 for the SER MGT/RJ-45 port location.

   e. **Press Enter on the terminal device to establish a connection between the terminal device and the ILOM SP.**

      The SP eventually displays a login prompt, such as the following:

      ```
      SUNSP0003BA84D777 login:
      ```

      In this example login prompt:

      - The string `SUNSP` is the same for all SPs.

- `0003BA84D777` is an example of the product serial number displayed by default. This value can also be the host name, which is assigned by the user or DHCP server.

f. Log in to ILOM.

The default user name is **`root`**.

The default password is **`changeme`**.

ILOM displays a default command prompt (->), indicating that you have successfully logged in to ILOM.

3. Press and release the recessed Power button on the server front panel.

When main power is applied to the server, the green Power/OK LED next to the Power button lights and remains lit.

4. To display a screen for installing the preinstalled Solaris OS from the server SER MGT port, type:

```
-> start /SP/console
```

5. To configure the preinstalled Solaris OS software, proceed to Chapter 6**.**

Note – To return to the ILOM command-line interface from the serial console, press **`ESC (`**, depending on your keyboard (U.S.A. or international).

Powering Off the Server From Main Power

If you need to power off the server, you can use either a graceful shutdown or an emergency shutdown. For details, see the following procedure.

▼ Power Off from Main Power

- **To remove main power from the server, use one of the following two methods:**
  - **Graceful shutdown** – Use a pen, or other pointed object, to momentarily press and release the Power button on the front panel. This causes Advanced Configuration and Power Interface (ACPI)-enabled operating systems to perform an orderly shutdown. Servers not running ACPI-enabled operating systems will shut down to standby power mode immediately.

- **Emergency shutdown** – Press and hold the Power button for at least four seconds until the main power is off and the server enters standby power mode. When the main power is off, the Power/OK LED on the front panel flashes, indicating that the server is in standby power mode.

Caution – To completely power off the server, you must disconnect the AC power cords from the back panel of the server.

CHAPTER 4

Setting Up ILOM

This chapter describes how to access the Oracle Integrated Lights Out Manager (ILOM) software and how to initially configure an IP address for the server service processor (SP). It includes the following topics:

IP Configuration Task Checklist

TABLE 4-1 summarizes an ordered list of tasks that you must perform to initially configure an IP address for the server SP.

TABLE 4-1 IP Address Configuration Tasks

Step	Requirement	Description
1	Install the server into the chassis.	The server must be properly installed in the chassis. For more information, see Chapter 1 through Chapter 3 of this guide.
2	Establish a console connection to ILOM.	You can establish a connection with the ILOM server SP through a local or remote console. • Local serial console. Connect a serial console to the serial management (SER MGT/RJ-45) port on the rear panel of the server. For instructions, see "Connecting the Cables" on page 45. • Remote Console. Attach a local area Ethernet network cable to the network management (NET MGT) Ethernet port on the rear panel of the server. The server Ethernet ports provide the most robust method of connecting to ILOM. This connection supports both the command-line interface and the web interface. For instructions, see "Connecting the Cables" on page 45.
3	Obtain an Administrator user account.	To configure an IP address in ILOM, you must log in to ILOM with an Administrator account. A preconfigured Administrator account is shipped on each server SP. The preconfigured Administrator account name is `root` and its password is `changeme`. It is highly recommended that you change the password after initial setup. This account offers built-in administrative privileges (read and write access) to all service processor features and commands. For more information about ILOM's user accounts, see the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection (formerly called Sun Integrated Lights Out Manager Documentation Collection).
4	Log in to ILOM.	Follow the instructions in this chapter to log in to ILOM. See "Logging In to ILOM" on page 53.

TABLE 4-1 IP Address Configuration Tasks *(Continued)*

Step	Requirement	Description
5	Configure an IP address.	Follow the instructions in this chapter to initially configure an IP address. See "Configuring an IP Address" on page 55.
6	If applicable, obtain additional information about ILOM.	For more information about configuring or modifying an IP address in ILOM, refer to the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection.

Logging In to ILOM

This section includes the following topics and procedures:

About ILOM SP Interfaces

You can choose one of several ILOM SP interfaces to support system management on your server. You can access SP firmware applications through the following ILOM SP interfaces:

- Serial port command-line interface (CLI) (local access)
- Secure shell (SSH) CLI (remote access over the network)
- Web browser user interface (BUI) (remote access over the network)

▼ Log In to ILOM Using a Serial Connection

To log in to ILOM using a serial connection, complete the following steps:

1. **Verify that your serial console connection to the server is secure and operational.**
2. **Ensure that the following serial communication settings are configured.**
   - 8N1: eight data bits, no parity, one stop bit

- 9600 baud
- Disable hardware flow control (CTS/RTS)

3. **Press Enter to establish a connection between your serial console and ILOM.**

   A login prompt to ILOM appears.

4. **Log in to the ILOM command-line interface (CLI) using an Administrator account.**

Note – The default ILOM Administrator account shipped with the server is `root` and its password is `changeme`. If this default Administrator account has since been changed, contact your system administrator for an ILOM User account with administrator privileges.

   ILOM displays a default command prompt (->), indicating that you have successfully logged in to ILOM.

5. **Proceed to** "Configuring an IP Address" on page 55**.**

▼ Log In to ILOM From an Ethernet Connection Using the CLI

Note – You need to know the IP address of the server SP to log in to ILOM using an Ethernet connection. For information about viewing or assigning an IP address, see "Configuring an IP Address" on page 55.

To log in to ILOM using an Ethernet connection, complete the following steps:

1. **Using a secure shell (SSH) session, log in to ILOM by specifying your Administrator account user name and the IP address of the server SP.**

   For example:

   `ssh -l` *username host*

   or

   `ssh` *username***@***host*

   Where *host* is either an IP address or a hostname (when using DNS).

   The ILOM password prompt appears.

2. **Type a password for the Administrator account.**

   For example:

   ```
   ssh root@192.168.25.25
   root@192.168.25.25's password: changeme
   ```

Note – The default ILOM Administrator account shipped with the server is `root` and its password is `changeme`. If this default Administrator account has since been changed, contact your system administrator for an ILOM User account with administrator privileges.

   ILOM displays a default command prompt (->), indicating that you have successfully logged in to ILOM.

3. **If you want to configure the preinstalled operating system, proceed to** Chapter 5**.**

Configuring an IP Address

You need to determine the server ILOM SP (network) address to use ILOM to manage your server.

If you are using a DHCP server to assign an IP address, the IP address will be assigned to the ILOM SP after the following requirements are met:

- Connection to your network must be through a network management (NET MGT) port.
- DHCP services must be present on your network infrastructure.

If a DHCP server cannot be reached after three DHCP requests, the ILOM SP is assigned a static IP address based on the network management port MAC address. This IP address is always in the format 192.168.xxx.xxx.

To view or configure an IP address at setup, you can use one of the following interfaces:

- BIOS Setup Utility
- ILOM command-line interface (CLI)

Both interfaces require a direct serial connection to the server. For information about how to attach devices to the server, see "Connecting the Cables" on page 45.

Note – After you know the IP address, you can also use the ILOM web interface to view or modify the IP address. For information about the ILOM web interface, refer to the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection.

To view or configure the ILOM SP IP address at setup, see the following procedures:

- "View or Assign the ILOM SP IP Address Using the BIOS Setup Utility" on page 56
- "View or Assign the ILOM SP IP Address Using the ILOM CLI" on page 57

▼ View or Assign the ILOM SP IP Address Using the BIOS Setup Utility

---

Note – Use this procedure when you are ready to apply main power to the server.

To access the BIOS Setup Utility and view the ILOM SP IP address, complete the following steps:

1. **Power on the server (or restart the server if it is running).**

   See "Apply Main Power to the Server" on page 48.

2. **When the BIOS splash screen or text prompt appears during the power-on self-test (POST) operation, press F2 to access the BIOS Setup Utility.**

3. **Using the left and right arrow keys on the keyboard, navigate to the Advanced tab.**

   The Advanced screen appears.

4. **Using the up and down arrow keys, select the IPMI Configuration option and press Enter to go to the subscreen.**

   The IPMI Configuration subscreen appears.

5. **Using the up and down arrow keys, select the Set LAN Configuration option and press Enter.**

   The LAN Configuration subscreen appears and shows the current ILOM SP IP address.

6. **Do one of the following:**

   - If the DHCP server has assigned the IP address, record the IP address as you will need it to log in to ILOM using SSH or a web browser.

Note – If the IP address is in the form of 192.168.xxx.xxx, the DHCP server might not have assigned an address and the SP might use a static address.

   - To assign an IP address, select Set LAN Configuration, then use the arrow keys to select settings. Specify the appropriate settings.

7. **Press F10 to save any changes you made and to exit the BIOS Setup Utility.**

▼ View or Assign the ILOM SP IP Address Using the ILOM CLI

Note – The following instructions assume that the system is in its factory-default configuration.

To view or assign the ILOM SP IP address using the ILOM CLI, complete the following steps:

1. **Verify that your DHCP server is properly configured.**
2. **Verify that an Ethernet cable is connected to the network management (NET MGT) Ethernet port on the rear of the server.**
3. **If applicable, obtain the MAC address of the server SP on the cover of the server.**
4. **Log in to ILOM as described in** "Log In to ILOM Using a Serial Connection" on page 53**.**
5. **At the ILOM command-line interface (CLI) prompt (->), type the following command to set the working directory:**

   -> **cd /SP/network**

6. **Do one of the following:**
   - To view the dynamic IP address assigned to the ILOM SP, type:

     -> **show /SP/network**

   - To configure a static IP address, type:

     -> **set /SP/network/ pendingipdiscovery=static**

     -> **set /SP/network/ pendingipaddress=***IP address*

     -> **set /SP/network/ pendingipnetmask=***Netmask address*

     -> **set /SP/network/ pendingipgateway=***Gateway address*

     -> **set /SP/network/ commitpending=true**

   - To configure a dynamic IP address, type:

     -> **set /SP/network pendingipdiscovery=dhcp**

     -> **set /SP/network commitpending=true**

Logging Out of ILOM

When you are ready to log out of ILOM, follow the procedure in this section.

▼ Log Out of ILOM Using the CLI

To log out of ILOM using the CLI, complete the following step:

- **At the command prompt, type:**

  -> **exit**

Managing Your Server

You have several different options for managing your server depending on your situation.

- Managing *many* servers

  Your server can be managed with a wide variety of system management tools. For more information on the system management tools, see the Sun Tools information at (http://www.sun.com/systemmanagement/managementtools.jsp)

  Here is a *sampling* of some of these tools:

  - If your server is one of many x86 and SPARC servers that you want to manage from a single interface, you can use the Oracle Enterprise Manager Ops Center. For more details, see (http://www.sun.com/software/products/opscenter)
  - If you want to monitor your enterprise servers, you can take advantage of Sun Management Center. For more details, see (http://www.sun.com/software/products/sunmanagementcenter/index.xml)
  - If you already have third-party system management tools, the servers can integrate with many third-party tools. For more details, see (http://www.sun.com/systemmanagement/tools.jsp)

- Managing a *single* server
  - Sun Installation Assistant (SIA) is an application that you can use for initial server configuration. SIA helps you to update firmware (ILOM firmware, BIOS, and RAID controller software) and to automate installation of a Linux or Windows operating system. For more details, see the *Sun Installation Assistant 2.3 through 2.4 User's Guide for x64 Servers*
  - Oracle Integrated Lights Out Manager (ILOM) is built-in software and hardware that you can use to monitor the status and configuration of your server. For more information, see the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection and the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X4170 M2 and X4270 M2 Servers*.

  These SIA and ILOM documents are available online at (http://docs.sun.com/app/docs/prod/sf.x4170m2#hic) and (http://docs.sun.com/app/docs/prod/sf.x4270m2#hic).

CHAPTER 5

Setting Up the Operating System

This chapter describes how to prepare your server to install the optional preinstalled Oracle Solaris 10 10/09 Operating System (OS).

After configuring the ILOM SP with network settings as described in Chapter 4, you can configure the optional preinstalled Solaris OS, install a Linux or Windows OS, or install virtual machine software such as Oracle Virtual Machine or VMware ESX/ESXi.

This chapter includes the following topics:

Before You Begin

Before you begin configuring the preinstalled OS, do the following:

- Configure the IP address for the server SP. For details, see "Configuring an IP Address" on page 55.
- Ensure that the main power has been applied to the server. For more information, see "Applying Main Power to the Server for the First Time" on page 48.
- Gather the information that you will need for the configuration, as listed in "Installation Worksheet" on page 63. Note that the default values are indicated by an asterisk (*).

Note – To identify the MAC address for a server or other chassis components, see the Customer Information Sheet (shipped with the component), or inspect the printed MAC address label attached to the server or chassis component.

Supported Operating Systems

The Sun Fire X4170 M2 and X4270 M2 Servers support the installation and use of the following operating systems, or a subsequent release of the operating systems.

TABLE 5-1 Supported Operating Systems

Operating System	Supported Version	For More Information, See:
Oracle Solaris	• Oracle Solaris 10 10/09 and later	• If you want to install the optional preinstalled OS, see Chapter 6. • If you want to install the Solaris OS from installation media, see the *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems* (821-0483).
Linux	• Oracle Enterprise Linux Server (OEL) 5.4, 64-bit • Red Hat Enterprise Linux (RHEL) 5.4, 64-bit • SuSE Linux Enterprise Server (SLES) 10 SP3, 64-bit • SLES 11, 64-bit	• *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems* (821-0483)
Virtual Machine Software	• Oracle Virtual Machine (OVM) 2.2.1 • VMware ESX 4.0 Update 1 • VMware ESXi 4.0 Update 1	• *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems* (821-0483)

TABLE 5-1 Supported Operating Systems *(Continued)*

Operating System	Supported Version	For More Information, See:
Windows	• Microsoft Windows Server 2008 SP2, Standard Edition, 64-bit • Microsoft Windows Server 2008 SP2, Enterprise Edition, 64-bit • Microsoft Windows Server 2008 SP2, Datacenter Edition, 64-bit • Microsoft Windows Server 2008 R2, Standard Edition, 64-bit • Microsoft Windows Server 2008 R2, Enterprise Edition, 64-bit • Microsoft Windows Server 2008 R2, Datacenter Edition, 64-bit	• *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Windows Operating Systems* (821-0484)

For an up-to-date list of the latest operating systems supported on the Sun Fire X4170 M2 and X4270 M2 Servers, go to the following web sites and navigate to the appropriate page:

- (http://www.oracle.com/goto/x4170m2)
- (http://www.oracle.com/goto/x4270m2)

Installation Worksheet

Use the worksheet in TABLE 5-2 to gather the information that you need to configure the preinstalled OS. You only need to collect the information that applies to your application of the system.

TABLE 5-2 Worksheet for Operating System Configuration

Information for Installation	Description or Example	Your Answers: Defaults (*)
Language	Select from the list of available languages for the OS.	English*
Locale	Select your geographic region from the list of available locales.	
Terminal	Select the type of terminal that you are using from the list of available terminal types.	
Network connection	Is the system connected to a network?	• Networked • Non-networked*

TABLE 5-2 Worksheet for Operating System Configuration *(Continued)*

Information for Installation		Description or Example	Your Answers: Defaults (*)
DHCP		Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	• Yes • No*
If you are not using DHCP, note the network address:	IP address	If you are not using DHCP, supply the IP address for the system. Example: `129.200.9.1`	
	Subnet	If you are not using DHCP, is the system part of a subnet? If yes, what is the netmask of the subnet? Example: `255.255.0.0`	255.255.0.0*
	IPv6	Do you want to enable IPv6 on this machine?	• Yes • No*
Host name		Choose a host name for the system.	
Kerberos		Do you want to configure Kerberos security on this machine? If yes, gather this information: Default realm: Administration server: First KDC: (Optional) Additional KDCs:	• Yes • No*

TABLE 5-2 Worksheet for Operating System Configuration *(Continued)*

Information for Installation		Description or Example	Your Answers: Defaults (*)
Name service	Name service	If applicable, which name service should this system use?	• NIS+ • NIS • DNS • LDAP • None*
	Domain name	Provide the name of the domain in which the system resides.	
	NIS+ and NIS	*If you chose NIS+ or NIS*, do you want to specify a name server, or let the installation program find one?	• Specify One • Find One*
	DNS	*If you chose DNS*, provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses. You can also enter a list of domains to search when a DNS query is made. Search domain: Search domain: Search domain:	
	LDAP	*If you chose LDAP*, provide the following information about your LDAP profile: Profile name: Profile server: If you specify a proxy credential level in your LDAP profile, gather the following information: Proxy-bind distinguished name: Proxy-bind password:	

TABLE 5-2 Worksheet for Operating System Configuration *(Continued)*

Information for Installation	Description or Example	Your Answers: Defaults (*)
Default route	Do you want to specify a default route IP address, or let the OS installation program find one? The default route provides a bridge that forwards traffic between two physical networks. An IP address is a unique number that identifies each host on a network. You have the following choices: • You can specify the IP address. An `/etc/defaultrouter` file is created with the specified IP address. When the system is rebooted, the specified IP address becomes the default route. • You can let the OS installation program detect an IP address. However, the system must be on a subnet that has a router that advertises itself by using the Internet Control Message Protocol (ICMP) for router discovery. If you are using the command-line interface, the software detects an IP address when the system is booted. • You can select None if you do not have a router or do not want the software to detect an IP address at this time. The software automatically tries to detect an IP address on reboot.	• Specify One • Detect One • None*
Time zone	How do you want to specify your default time zone?	• Geographic region* • Offset from GM • Time zone file
Root password	Choose a root password for the system.	

Configuring the Preinstalled Operating System

After compiling the information outlined in this chapter, you can configure the preinstalled Solaris Operating System. If you want to configure the preinstalled Solaris 10/09 OS, refer to Chapter 6.

CHAPTER 6

Configuring the Preinstalled Solaris 10 Operating System

This chapter explains the steps for configuring the Oracle Solaris 10 Operating System (OS) that is preinstalled on the hard disk drive or solid state drive, if ordered. The preinstalled Solaris version is Solaris 10 10/09 or later.

Note – Unlike with SPARC systems, you will *not* see the output of the preinstalled Solaris 10 image through a monitor when you power on the server. You will see the BIOS power-on self-test (POST) and other boot information output.

This chapter includes the following topics:

Before You Begin

Before you begin configuring the preinstalled Solaris 10 OS, do the following:

- Complete the procedures to prepare your server to configure the optional preinstalled Solaris 10 OS. For details, see Chapter 5.
- The server ships with its console redirected to the *serial* port. You can choose an option to send the output to VGA (video port). For more information, see "(Optional) Redirect the Console Output to the Video Port" on page 72.

Configuring Server RAID Drives

Configuring server RAID drives is not a supported feature of the preinstalled version of the Solaris 10 OS, as the preinstalled OS will be erased during RAID migration. If you want to configure your server drives in a RAID, refer to the following documents for instructions on configuring RAID and installing the Solaris 10 OS.

- *LSI MegaRAID SAS Software User's Guide*, which is available at: (http://www.lsi.com/support/sun)
- *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems* (821-0483), which is available at: (http://docs.sun.com/app/docs/prod/sf.x4170m2#hic) or (http://docs.sun.com/app/docs/prod/sf.x4270m2#hic)

Configuring the Preinstalled Solaris 10 Operating System

Note – Before you perform this procedure, you need to set up the service processor. If you have not done so, see Chapter 4.

After configuring the server ILOM service processor (SP), you can configure the preinstalled Solaris 10 Operating System (OS) using the SP to connect to the system console. You can connect to the system console (server host) either over the network or locally.

Use the information that you gathered in "Installation Worksheet" on page 63 as you perform the configuration.

▼ Accessing the System Over the Network

1. **Using a Secure Shell, log in to ILOM by specifying the `root` user account or your Administrator account user name, the IP address of the server SP, and the password for the `root` or Administrator account.**

   The following example shows how to log in to ILOM using the `root` user account and its default password, `changeme`.

```
ssh root@host
-or-
ssh -1 root host
Password: changeme
->
```

   Where *host* is either an IP address or a hostname (when using DNS).

   ILOM displays the default command-line prompt (->), indicating that you have successfully logged in to ILOM.

2. **Verify that the communication properties of the service processor are set to the defaults. Type the following command:**

```
-> show /SP/serial/host
/SP/serial/host
    Targets:

    Properties:
        commitpending = (Cannot show property)
        pendingspeed = 9600
        speed = 9600

    Commands:
       cd
       show
```

Note – If the speed is anything other than 9600, change it using this command:
`-> set /SP/serial/host pendingspeed=9600 commitpending=true`

---

3. **Start the serial console. Type the following command and answer the prompt:**

```
-> start /SP/console
Are you sure you want to start /SP/console (y/n)? y
Serial console started.
```

   You are now connected to the server module host.

▼ Accessing the System Locally

1. **Use a cable to connect the SER MGT port on the server to the serial port of the client system.**
2. **To access the system console, start a terminal session using one of the following methods:**
   - On a serial console running Solaris: Type the appropriate command to start a terminal session. For example, you can start a terminal session on a Solaris console by typing: `$tip -9600 /dev/ttya`
   - **On a client running Windows:** Open the appropriate program to start a terminal session. For example, you can start a terminal session on a Windows console by selecting: Start -> Programs -> Accessories -> Communications -> Hyperterminal
   - **On a client running Linux:** Type the appropriate command to start a terminal session. For example, to start a terminal session on a Linux console, you could launch Minicom.

     Minicom is a text-based serial communication program that is included in the Linux distributions. For more information, see the man pages included in the Linux distribution.
3. **Press Enter on the terminal device to connect the terminal device to the ILOM SP.**

   ILOM displays its login prompt.

Note – If you connect to the serial port on the server before the ILOM SP has been powered on or during the power-on sequence, SP boot messages might be displayed prior to the ILOM login prompt.

---

4. **Type your user name and password to log in to the ILOM SP.**

   The following example uses the default `root` user account and its default password, `changeme`.

```
login: root
Password: changeme
->
```

   ILOM displays its default command-line prompt (->).

5. **Verify that the communication properties of the service processor are set to the defaults. Type the following command:**

```
-> show /SP/serial/host
/SP/serial/host
    Targets:

    Properties:
        commitpending = (Cannot show property)
        pendingspeed = 9600
        speed = 9600

    Commands:
       cd
       show
```

Note – If the speed is anything other than 9600, change it using this command:
`-> set /SP/serial/host pendingspeed=9600 commitpending=true`

---

6. **Start the serial console. Type the following command and answer the prompt:**

```
-> start /SP/console
Are you sure you want to start /SP/console (y/n)? y
Serial console started.
```

You are now connected to the server module host.

▼ Configure the Preinstalled Solaris 10 OS

1. **Press the recessed Power button on the front panel to apply main power to the server.**

   For additional information about powering on your server, see "Applying Main Power to the Server for the First Time" on page 48.

   POST messages appear on your screen as the OS boots up.

2. **(Optional) When the POST completes, you can choose to redirect the console output to the video port.**

   For instructions, see "(Optional) Redirect the Console Output to the Video Port" on page 72.

3. **Follow the Solaris 10 preinstallation on-screen prompts.**

4. **Use the information gathered in "Installation Worksheet" on page 63 to help you enter the system and network information as you are prompted.**

   The screens that are displayed will vary, depending on the method that you chose for assigning network information to the server (DHCP or static IP address).

   After you have entered the system configuration information, the server completes the boot process and displays the Solaris login prompt.

▼ (Optional) Redirect the Console Output to the Video Port

The server is automatically directed to the serial port. However, you can choose to direct the serial console to the video port using the GRUB menu. GRUB is the open source boot loader. It is the default boot loader in the Solaris OS for x86-based systems. The boot loader is the first software program that runs after you power on a system.

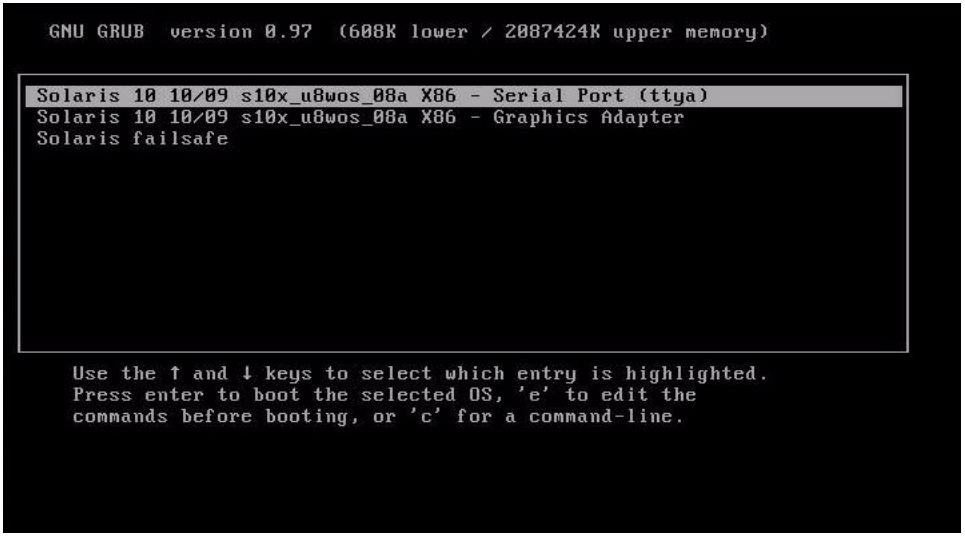
To redirect the console output to the video port, follow these steps:

1. **Power on the server and observe the POST messages.**

   When the POST completes, the GRUB menu appears.

   From the GRUB menu, you have the option of displaying the installation process to a TTY connection (serial port) or a VGA connection (video port) (see FIGURE 6-1).

FIGURE 6-1 GRUB Menu Screen



2. **To display output to the video port, choose this option:**

   `Solaris 10 10/09 s10x_u8wos_08a X86 - Graphics Adapter`

▼ (Optional) Modify the GRUB Menu to Auto Boot

The GRUB menu on the preinstalled image is configured for an infinite timeout to enable you to choose the console output on power-up. You can modify this configuration so that the system boots automatically.

To modify the GRUB menu so that the system boots automatically, follow these steps:

1. **From the GRUB menu, press e to enter edit mode.**
2. **Edit the `/rpool/boot/grub/menu.1st` file by changing the `-1` value on the timeout line to the duration that you want the menu to be presented.**

   For example, for a 10-second delay, change the timeout value to `10`.
3. **Add a line that specifies the default boot entry.**

   For example, to specify the first entry, add `default 10`.

Solaris 10 Operating System User Information

This section provides pointers to information about the Solaris 10 Operating System.

Solaris 10 User Documentation

Solaris 10 OS documentation is available from the web at: (http://docs.sun.com/).

Select `Solaris 10` to display the list of documents in the Solaris 10 Documentation Collection. Follow instructions specific to x86 systems, where they are specified.

- For the Solaris 10 installation guides, see (http://docs.sun.com/app/docs/coll/1236.1).
- For the Solaris 10 administration guides, see (http://docs.sun.com/app/docs/coll/47.16).

- For information about upgrading your system, see *Solaris 10 10/09 Installation Guide: Solaris Live Upgrade and Upgrade Planning* (821-0438).
- For troubleshooting information, see Appendix A in *Solaris 10 10/09 Installation Guide: Custom JumpStart and Advanced Installations* (821-0437).
- See the *Sun Fire X4170 M2 and X4270 M2 Servers Product Notes* for patch and other late-breaking information. For patches and instructions, go to the following web sites and navigate to the appropriate page:
  (http://www.oracle.com/goto/x4170m2) or
  (http://www.oracle.com/goto/x4270m2).

Solaris 10 documentation is also available on the Solaris Documentation DVD included with your Solaris OS software.

Using the Solaris Installation Program

The Solaris Installation Program on the Solaris 10 OS DVD can be run with a graphical user interface (GUI) or as an interactive text installer in a remote console. The Solaris Device Configuration Assistant is included in the Solaris Installation Program.

Follow the instructions for *x86-based* systems, not *SPARC-based* systems. For more information, see the Solaris 10 Release and Installation Collection for the version of the Solaris 10 Operating System you have installed. Documentation is available at:

(http://docs.sun.com/app/docs/prod/solaris.10)

After you configure the preinstalled Solaris OS, the Solaris Installation Program reboots the system and prompts you to log in.

Reinstalling the Solaris Operating System

If you want to reinstall the Solaris OS or install a different version of the Solaris OS, refer to the *Solaris 10 Installation Guide: Basic Installations* (820-0176).

Download the Solaris Operating System

You can download software for the Solaris OS from the following sites:

- To download the Solaris 10 Operating System, go to:

  (http://www.sun.com/software/solaris/get.jsp)

- To download patches, go to:

  (http://www.oracle.com/goto/x4170m2) or
  (http://www.oracle.com/goto/x4270m2)

CHAPTER 7

If You Need Help

This chapter describes troubleshooting information and how to troubleshoot server problems. Support contacts are also included.

This chapter includes the following topics:

Setup Troubleshooting

This section contains information to help you troubleshoot minor server problems.

If you experience problems while setting up your server, refer to the troubleshooting information in TABLE 7-1.

TABLE 7-1 Troubleshooting Procedures

Problem	Possible Solution
Server powers on, but the monitor does not.	• Is the Power button for the monitor turned on? • Is the monitor power cord connected to a wall outlet? • Is the monitor power cord connected to the monitor? • Does the wall outlet have power? Test by plugging in another device.
CD or DVD does not eject from the media tray when you press the Eject button.	• Move the mouse or press any key on the keyboard. The drive might be in low power mode. • Use the utility software installed on your server to eject the CD. • Ensure that the media in the device is not in use and is not mounted by the operating system.

TABLE 7-1 Troubleshooting Procedures *(Continued)*

Problem	Possible Solution
No video is displayed on the monitor screen.	• Is the monitor cable attached to the video connector? • Does the monitor work when connected to another system? • If you have another monitor, does it work when connected to the original system? • If, after POST and BIOS are complete, you no longer see video output on your monitor and see only a flashing cursor, check the configuration of the operating system to determine whether it is configured to redirect its output exclusively over the serial line.
Server does not power on when the front panel Power button is pressed.	Keep notes on the following situations in case you need to call service: • Is the Power/OK LED flashing or constantly illuminated on the front of the system? (Ensure that the power cord is connected to the system and to a grounded power receptacle.) • Does the wall outlet have power? Test by plugging in another device. • Does the monitor sync within five minutes after power on? (The green LED on the monitor stops flashing and remains illuminated.) • Has the system fully booted the ILOM SP? (Note that the system will block Power button presses until the ILOM SP is fully booted.)
Keyboard or mouse does not respond to actions.	• Verify that the mouse and keyboard cables are connected to the USB 2.0 connectors on the server. • Verify that the server is powered-on and the front Power/OK LED is illuminated.
Server appears to be in standby power mode, but the Power/OK LED does not blink.	The Power/OK LED only blinks when all server components are in standby power mode. A tape drive might be connected to your server. Because tape drives do not enter standby power mode, the Power/OK LED does not blink.
Hung or frozen server: No response from mouse or keyboard or any application.	Try to access your system from a different server on the network: 1. On another system, type: **`ping`** *IP_address_of_server*. 2. If a response is returned, then try logging in to the server using either `telnet`, `ssh`, or `rlogin`. 3. If you successfully log in, list the running processes using the **`ps`** command. 4. Kill any processes that appear unresponsive or should not be running, by using the **`kill`** *process_ID* command. 5. Check the responsiveness of the server after each process is killed. If the this procedure does not work, power cycle the server: 1. Press the Power/OK button to power off the server and wait 20 to 30 seconds. 2. Press the Power/OK button again to power on the system.

Note – For additional troubleshooting information, see the *Sun Fire X4170 M2 Server Service Manual* (821-0486), the *Sun Fire X4270 M2 Server Service Manual* (821-0488), and the *Oracle x86 Servers Diagnostics Guide* (820-6750).

Locate the Server Serial Number

You might need to have your server's serial number when you ask for service on your system. Record this number for future use. Use one of the following methods to locate your server's serial number:

- See the RFID label that is located on the left side of the server's front panel. This label contains the server's serial number. For an illustration of the server's front panel, see "Server Description" on page 4.
- Locate the yellow Customer Information Sheet (CIS) attached to your server packaging. This sheet includes the serial number.
- From ILOM, enter the `show/SYS` command or go to the System Information tab in the ILOM browser interface.

Use TABLE 7-2 to collect information that you might need to communicate to with support personnel.

TABLE 7-2 System Information Needed for Support

System Configuration Information Needed	Your Information
Service contract number	
System model	
Operating environment	
System serial number	
Peripherals attached to the system	
Email address and phone number for you and a secondary contact Street address where the system is located	
Administrator password	
Summary of the problem and the work being done when the problem occurred	
Other useful information	

TABLE 7-2 System Information Needed for Support *(Continued)*

System Configuration Information Needed	Your Information
IP address	
Server name (system host name)	
Network or internet domain name	
Proxy server configuration	

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