

Sun Server X2-4
(formerly Sun Fire X4470 M2)

Installation Guide



Part No.: E20782-05
September 2012

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Using This Documentation

This installation guide contains hardware installation and configuration procedures for the Sun Server X2-4. You perform these procedures to bring the server to a configurable and usable state.

Note – The Sun Server X2-4 was formerly named the Sun Fire X4470 M2 server. This former name might still appear in the software. The new product name does not indicate any change in system features or functionality.

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

- [“Getting the Latest Software and Firmware” on page vii](#)
- [“About This Documentation” on page viii](#)
- [“Related Documentation” on page viii](#)
- [“Feedback” on page viii](#)
- [“Support and Accessibility” on page ix](#)

Getting the Latest Software and Firmware

Firmware, drivers, and other hardware-related software for each Oracle x86 server, server module (blade), and blade chassis are updated periodically.

For instructions, see [Chapter 7](#).

About This Documentation

This documentation set is available in both PDF and HTML formats. A PDF version that includes all information on a particular topic subject (such as hardware installation or product notes) can be generated by clicking the PDF button in the upper left corner of the HTML page.

Related Documentation

| Documentation | Link |
|--|---|
| All Oracle documentation | http://www.oracle.com/documentation |
| Sun Server X2-4 | http://www.oracle.com/pls/topic/lookup?ctx=SunServerX2-4 |
| Oracle Integrated Lights Out Manager (ILOM) 3.0 | http://www.oracle.com/pls/topic/lookup?ctx=ilom30 |
| Oracle Integrated Lights Out Manager (ILOM) 3.1 (for Sun Server X2-4 Software Release 1.3 and above) | http://www.oracle.com/pls/topic/lookup?ctx=ilom31 |
| Oracle Hardware Installation Assistant | http://www.oracle.com/pls/topic/lookup?ctx=hia |

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Preparing to Install the Server

Note – The Sun Server X2-4 was formerly named the Sun Fire X4470 M2 server. This former name might still appear in the software. The new product name does not indicate any change in system features or functionality.

This chapter describes Oracle’s Sun Server X2-4 hardware and the information you need to know before you begin to install the server into a rack. It includes the following topics:

- “Tools and Equipment Needed” on page 1
- “Server Installation Task Checklist” on page 2
- “Opening the Box” on page 3
- “ESD Precautions” on page 4
- “Server Description” on page 4
- “Server Supported Components” on page 6
- “Server Specifications” on page 8
- “Managing Your Server” on page 10

Tools and Equipment Needed

To install the system, you need the following tools:

- No. 2 Phillips screwdriver
- ESD mat and grounding strap

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

- 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 3 |
| 2 | If applicable, install optional server components prior to installing the server into the rack. | • <i>Sun Server X2-4 Service Manual</i> |
| 3 | Install the server into a rack. | • Chapter 2 |
| 4 | Connect cables and power cords to the server. | • Chapter 3 |
| 5 | Connect to Oracle ILOM and apply main power to the server. | • Chapter 4 |

TABLE 1-1 Installation Task Checklist (Continued)

| Step | Task Description | For Instructions, See: |
|------|---|---|
| 6 | Get information about supported operating systems and available preinstalled operating systems. | • Chapter 5 |
| | If applicable, configure one of the preinstalled operating systems: Oracle Solaris Oracle VM | • Chapter 5 |
| | If applicable, install one of the following operating systems: | • <i>Sun Server X2-4 Installation Guide for Linux Operating Systems</i> |
| | <ul style="list-style-type: none"> • Oracle Linux • Red Hat Enterprise Linux (RHEL) • SUSE Linux Enterprise Server (SLES) | |
| | <ul style="list-style-type: none"> • Oracle Solaris 10 Operating System • Oracle Solaris 11 Operating System | • <i>Sun Server X2-4 Installation Guide for Oracle Solaris Operating System</i> |
| | <ul style="list-style-type: none"> • Oracle VM | • <i>Sun Server X2-4 Installation Guide for Oracle VM Software</i> |
| | <ul style="list-style-type: none"> • Microsoft Windows Server 2008 SP2 Operating System • Microsoft Windows Server 2008 R2 Operating System | • <i>Sun Server X2-4 Installation Guide for Windows Operating Systems</i> |

Opening the Box

Carefully open the shipping box. Unpack all server components from the packing cartons.

Server Box Contents

The following items should be packaged with the Sun Server X2-4:

- Sun Server X2-4
- Power cord, packaged separately with country kit
- (Optional) Rackmount kit containing rack rails and installation instructions

Options

Power cables are packaged separately from the other items.

Required server components and most options are installed at the factory. However, some ordered options might be packaged separately. If possible, install optional components before installing the server in a rack. For instructions for installing server options, see the *Sun Server X2-4 Service Manual*.

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 authorized 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 panels of the Sun Server X2-4.

Front Panel Features

[FIGURE 1-1](#) shows the Sun Server X2-4 front panel and describes its components.

FIGURE 1-1 Sun Server X2-4 Front Panel

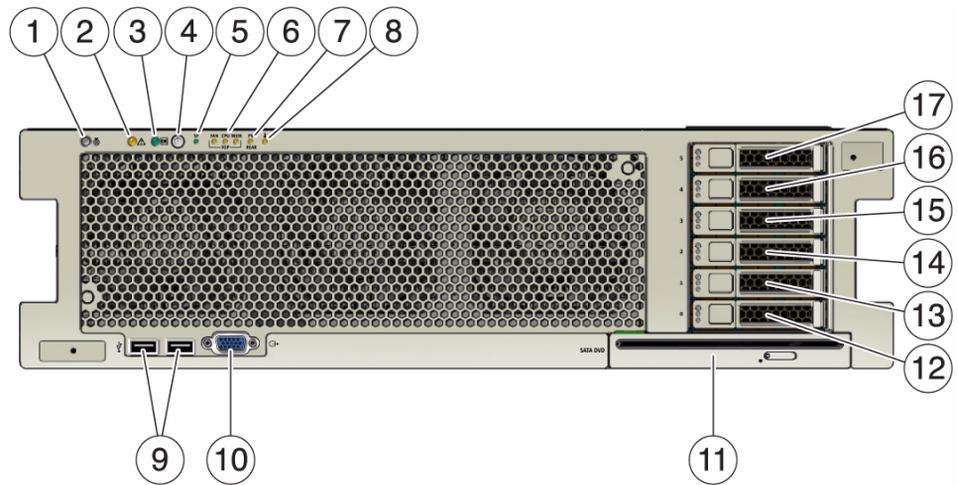


Figure Legend

| | | | |
|---|--|----|------------------------------|
| 1 | Locator LED/Locator button: white | 10 | DB-15 video connector |
| 2 | Service Action Required LED: amber | 11 | SATA DVD drive (optional) |
| 3 | Main Power/OK LED: green | 12 | Hard disk drive 0 (optional) |
| 4 | Power button | 13 | Hard disk drive 1 (optional) |
| 5 | SP OK/Fault LED: green/amber | 14 | Hard disk drive 2 (optional) |
| 6 | Service Action Required LEDs (3) for Fan Module (FAN), Processor (CPU) and Memory: amber | 15 | Hard disk drive 3 (optional) |
| 7 | Power Supply (PS) Fault (Service Action Required) LED: amber | 16 | Hard disk drive 4 (optional) |
| 8 | Over Temperature Warning LED: amber | 17 | Hard disk drive 5 (optional) |
| 9 | USB 2.0 connectors (2) | | |

Back Panel Features

FIGURE 1-2 shows the Sun Server X2-4 back panel and describes its components.

FIGURE 1-2 Sun Server X2-4 Back Panel

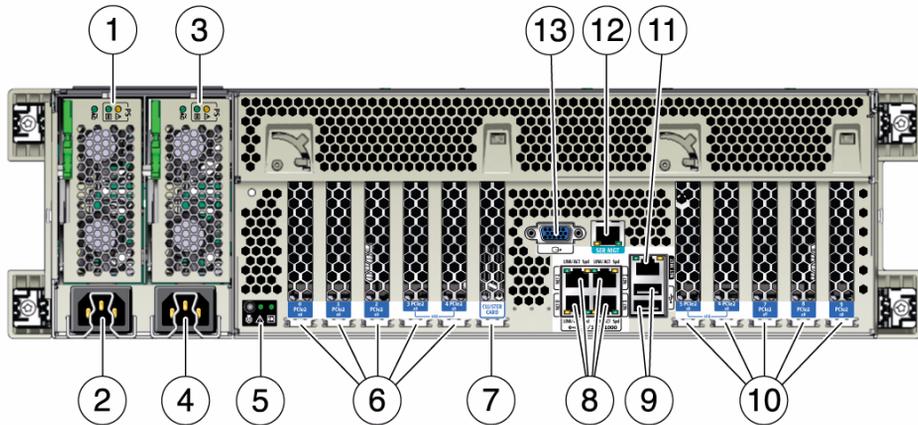


Figure Legend

-
- | | |
|---|--|
| 1 Power supply unit 0 status indicator LEDs: Service Action Required: amber DC OK: green AC OK: green or amber | 8 Network (NET) 10/100/1000 ports: NET0– NET3 |
| 2 Power supply unit 0 AC inlet | 9 USB 2.0 connectors (2) |
| 3 Power supply unit 1 status indicator LEDs: Service Action Required: amber DC OK: green AC OK: green or amber | 10 PCIe card slots 5–9 |
| 4 Power supply unit 1 AC inlet | 11 Service processor (SP) network management (NET MGT) port |
| 5 System status LEDs: Power/OK: green Attention: amber Locate: white | 12 Serial management (SER MGT)/RJ-45 serial port |
| 6 PCIe card slots 0–4 | 13 DB-15 video connector |
| 7 Cluster card slot | |
-

Server Supported Components

This section describes the components that are supported in the Sun Server X2-4.

Sun Server X2-4 Supported Components and Capabilities

The following table describes the components and capabilities of the Sun Server X2-4.

TABLE 1-2 Sun Server X2-4 Components and Capabilities

| Component | Sun Server X2-4 |
|-----------------|---|
| Processor (CPU) | Supported configurations: <ul style="list-style-type: none">• Two processors installed in socket 0 and socket 2• Four processors installed in sockets 0 through 3 For the latest information on CPU specifications, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page: http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html |
| Memory | Up to eight memory riser modules are supported (two risers per CPU) in the server chassis. Each riser module supports eight PC3L RDIMMs, allowing up to sixteen RDIMMs per processor. <ul style="list-style-type: none">• A 2-socket system using four riser modules populated with 16-GB RDIMMs supports a maximum of 512 GB of system memory.• A 4-socket system using eight riser modules populated with 16-GB RDIMMs supports a maximum of 1024 GB of system memory. |
| Storage devices | For internal storage, the server chassis provides: <ul style="list-style-type: none">• Six 2.5-inch drive bays, accessible through the front panel. The supported drive interfaces for each bay depend on the host bus adapter (HBA) chosen.• An optional slot-loading DVD+/-RW drive on the front of the server, below the drive bays. This SATA DVD connects to a USB-SATA bridge, so that it appears to the system software as a USB storage device.• One internal high-speed USB port on the motherboard. This port can hold a USB flash device for system booting. |
| USB 2.0 ports | Two front, two rear, and one internal |
| VGA ports | One front and one rear high-density DB-15 video port Note - The rear VGA port supports VESA Device Data Channel for monitor identification. |

TABLE 1-2 Sun Server X2-4 Components and Capabilities (*Continued*)

| Component | Sun Server X2-4 |
|---------------------------|--|
| PCI Express 2.0 I/O slots | Ten PCI Express 2.0 slots that accommodate low-profile PCIe cards. All slots support x8 PCIe connectors. Two slots are also capable of supporting x16 PCIe connectors. <ul style="list-style-type: none">• Slots 0 and 9: x4 electrical interface• Slots 1, 2, 4, 6, 7, and 8: x8 electrical interface• Slots 3 and 5: x8 or x16 electrical interface (x16 connector) Note - PCI Express slots 3 and 5 will operate as x16 interfaces only when an x16 capable card is installed and the adjacent slot (4 or 6) is unpopulated. |
| Cluster card slot | One specialized slot dedicated for use in Sun Storage appliances. The Sun Server X2-4 does not support populating this slot with standard PCIe cards. |
| PCI Express I/O cards | For a list of I/O cards that are customer-orderable options, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page: http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html |
| Ethernet ports | Four 10/100/1000 RJ-45 Gigabit Ethernet (GbE) ports on rear panel Each Network Interface Controller (NIC) supports Intel QuickData Technology, Intel I/OAT, VMDq, PCI-SIG SR-IOV, IPSec offload, and LinkSec. |
| Service processor | Integrated Baseboard Management Controller (BMC), which supports the industry-standard IPMI feature set Supports remote KVMs, DVD, and floppy 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 | Two hot-swappable power supplies, each with 2000 watts capacity (from 200 volts to 240 volts), auto-ranging, light load efficiency mode and redundant over-subscription |
| Cooling fans | Six hot-swappable, redundant fans at chassis front (top-loading); redundant fans in each power supply |
| Management software | Oracle Integrated Lights Out Manager (ILOM) |

Server Specifications

Physical Specifications

TABLE 1-3 lists the physical specifications for the Sun Server X2-4.

TABLE 1-3 Server Physical Specifications

| Parameter | Sun Server X2-4 |
|-----------|----------------------|
| Height | 5.1 inches/129.85 mm |
| Width | 17.2 inches/436.5 mm |
| Depth | 28.8 inches/732 mm |
| Weight | 85 lbs/38.5 kg |

Electrical Specifications

TABLE 1-4 lists the electrical specifications for the Sun Server X2-4.

Note – For up-to-date information on power consumption, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page:
<http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>.

TABLE 1-4 Server Electrical Specifications

| Parameter | Value |
|----------------------------|---|
| Input | |
| Nominal frequencies | 50/60 Hz |
| AC operating voltage range | 100-127 VAC for 2 CPUs 200-240 VAC for 2 or 4 CPUs |
| Maximum current AC RMS | 12A @ 100 VAC / 12A @ 200 VAC |
| Power dissipation | |
| Max power consumption | 1800 W |
| Max heat output | 6143 BTU/hr |
| Volt-Ampere rating | 1837 VA @ 240 VAC, 0.98 P.F. |

Environmental Requirements

TABLE 1-5 lists the environmental requirements for the Sun Server X2-4.

TABLE 1-5 Server 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 |
| Operating altitude (single, non-rack system) | Up to 3048 m, maximum ambient temperature is derated by 1 degree C per 300 m above 900 m |
| Non-operating altitude (single, non-rack system) | Up to 12,000 m |
| Acoustic noise | 8.9 B idle and operating, 75 dBA bystander position |

Managing Your Server

After you have installed your server, you have several different options for managing it depending on your situation.

- Managing many servers

Your server can be managed with a wide variety of system management tools. For more information on system management tools, see the information at: <http://www.oracle.com/goto/system-management>

Here is a summary and overview 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.oracle.com/us/products/enterprise-manager/044497.html>.
- If you want to monitor your enterprise servers, you can take advantage of Sun Management Center. For more details, see <http://www.oracle.com/technetwork/systems/patches/sysmgmt/smc-jsp-138444.html>.

- If you already have third-party system management tools, the servers can integrate with many third-party tools. For more details, see <http://www.oracle.com/goto/system-management>.
- Managing a single server
 - Oracle Hardware Installation Assistant is an application that you can use for initial server configuration. This application helps you to update firmware (Oracle ILOM firmware, BIOS, and RAID controller software) and to automate installation of a Linux or Windows operating system. For more details, see the *Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers* at: <http://www.oracle.com/pls/topic/lookup?ctx=hia>
 - 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) 3.1 Documentation Library (for Sun Server X2-4 software release 1.3 and above) at: <http://www.oracle.com/pls/topic/lookup?ctx=ilom31>
For Sun Server X2-4 software release 1.0 through 1.2, see the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Library at: <http://www.oracle.com/pls/topic/lookup?ctx=ilom30>

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:

- “Before You Begin” on page 13
- “Rack Compatibility” on page 14
- “Disassembling the Slide-Rails” on page 16
- “Installing the Mounting Brackets Onto the Server” on page 17
- “Attaching the Slide-Rail Assemblies to the Rack” on page 19
- “Installing the Server Into the Slide-Rail Assemblies” on page 22
- “Installing the Cable Management Arm” on page 24
- “Verifying Operation of the Slide-Rails and CMA” on page 29

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 of the server 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, perform the following tasks in the order listed.

1. “Rack Compatibility” on page 14
2. “Disassembling the Slide-Rails” on page 16
3. “Installing the Mounting Brackets Onto the Server” on page 17
4. “Installing the Cable Management Arm” on page 24
5. “Verifying Operation of the Slide-Rails and CMA” on page 29
6. “Back Panel Connectors and Ports” on page 31

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. Only M6 tapped or 9.5 mm square holes are supported. |
| 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). |

TABLE 2-1 Rack Compatibility (Continued)

| Item | Requirement |
|--|---|
| Clearance depth behind front mounting plane | Distance to rear cabinet door is at least 900 mm (35.5 inches) with the cable management arm, or 770 mm (30.4 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): 732 mm (28.82 inches) Width: (not including ears): 436.5 mm (17.19 inches) Height: 129.85 mm (5.11 inches) |



Caution – Equipment Loading: 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 (T_{ma}) specified for the server. For server environmental requirements, see [“Environmental Requirements” on page 9](#).



Caution – Reduced Airflow: Installation of the equipment in a rack should be such that the amount of airflow 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 the Slide-Rails

Complete the following procedures to disassemble the slide-rails before installation.

▼ Disassemble Slide-Rails

To remove the mounting brackets from the 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. **Press and hold the slide-rail lock toward the direction of the arrow, 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 Slide-Rail Before Installation

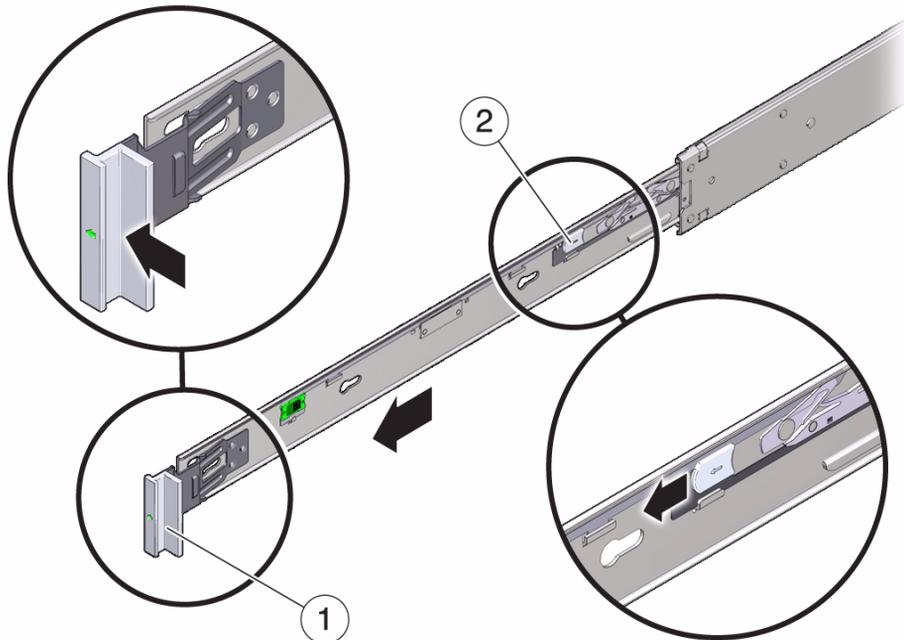


Figure Legend

-
- 1 Slide-rail lock
 - 2 Mounting bracket release button
-

Installing the Mounting Brackets Onto the Server

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

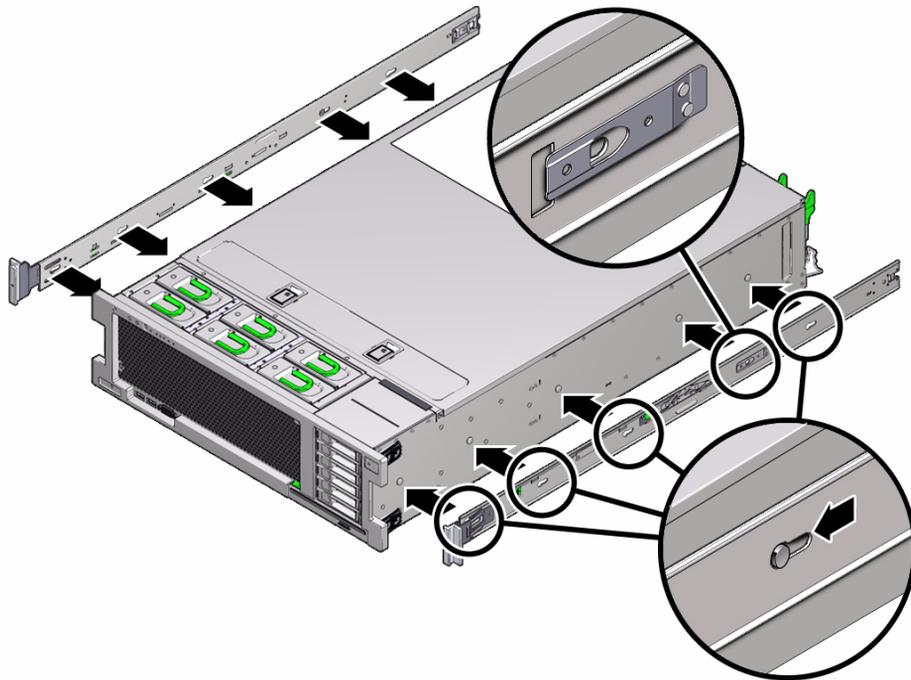
▼ Install Mounting Brackets

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 five keyhole openings on the mounting bracket are aligned with the five locating pins on the side of the chassis (FIGURE 2-2).

Note – The mounting brackets are identical and can be installed on either side of the chassis.

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



2. With the heads of the five chassis locating pins protruding through the five keyhole 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.
4. Repeat Step 1 through Step 3 to install the remaining mounting bracket on the other side of the server.

Attaching the Slide-Rail Assemblies to the Rack

Complete the following procedures to attach the slide-rail assemblies to the rack.

Note – The slide rail assemblies support only racks with 9.5-mm square holes and M6 round holes. All other racks, including those racks with 7.2-mm, M5, or 10-32 mounting holes, are *not* supported. Refer to your rack documentation for information about the size of its rail holes.

▼ Attach Slide-Rail Assemblies

To attach slide-rail assemblies to the rack:

1. **(Optional) If you need to move the rack with the server installed, it is recommended that you attach the slide-rail assembly with mounting screws and cage nuts.**

Insert the cage nuts prior to performing [Step 2](#). Refer to the *Rail Rackmount Kit Overview and Information* card for instructions on inserting these cage nuts. This card is included with the rack kit.

2. **Position a slide-rail assembly in your rack so that the slide-rail assembly front bracket is on the outside of the front rack post and the slide-rail assembly rear bracket is on the inside of the rear rack post ([FIGURE 2-5](#)).**
3. **Align the slide-rail assembly mounting pins with the front and rear rack post mounting holes. Then lock the assembly into place by pushing the assembly toward the rear of the rack until the mounting pins engage the rack ([FIGURE 2-3](#) and [FIGURE 2-4](#)).**

You will hear an audible click when the mounting pins engage the rack.

Note – The slide assembly mounting pins accommodate either 9.5-mm square mounting holes or M6 round mounting holes. No other mounting hole sizes are supported.

FIGURE 2-3 Installing Slide-Rail Assemblies Onto Rack

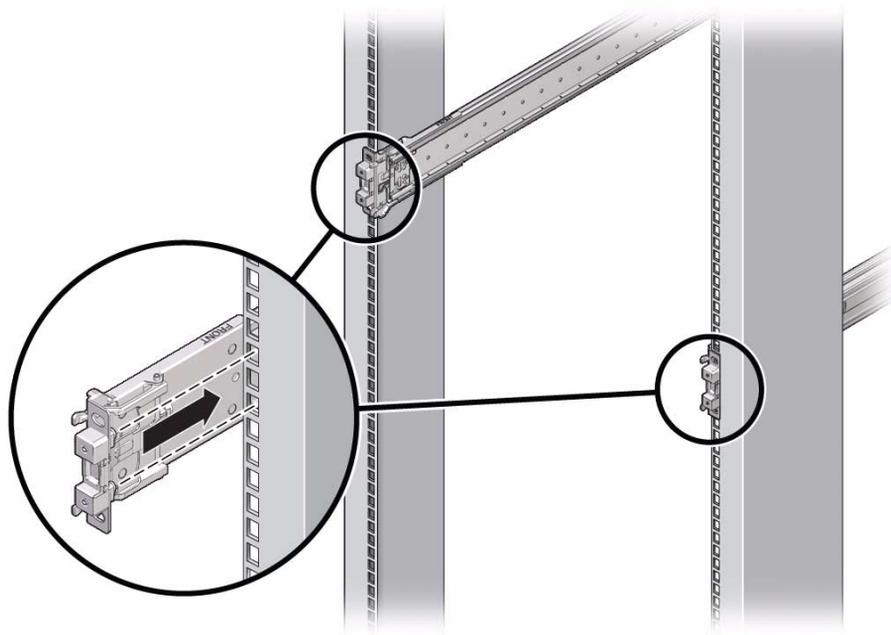
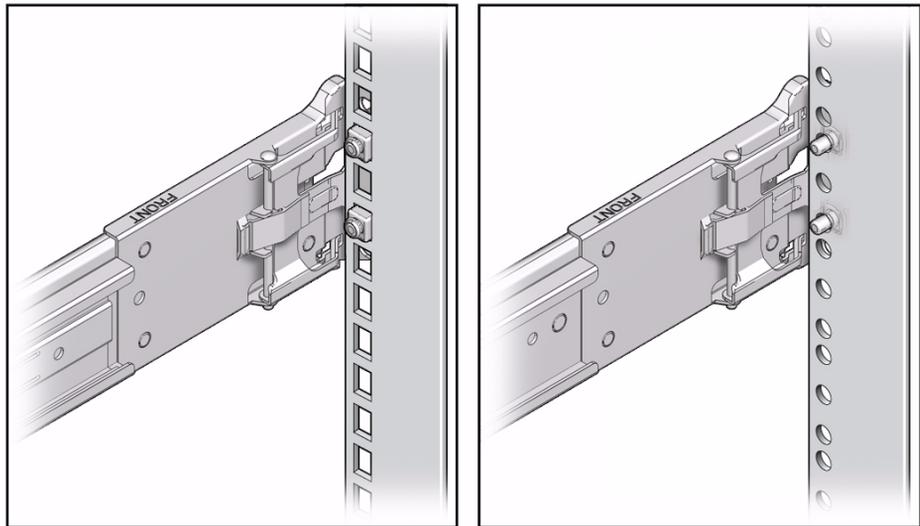
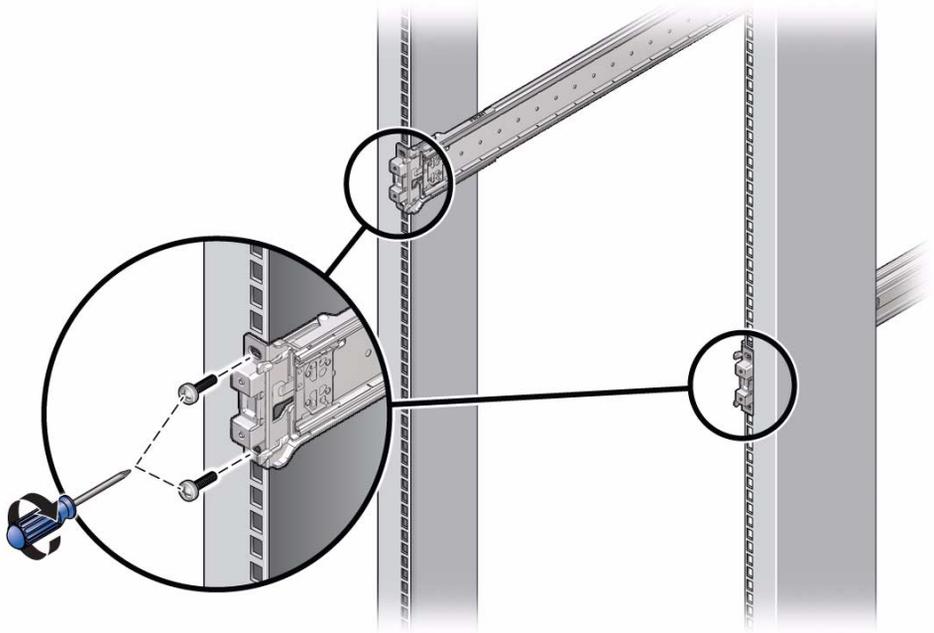


FIGURE 2-4 Slide-Rail Mounting Pins



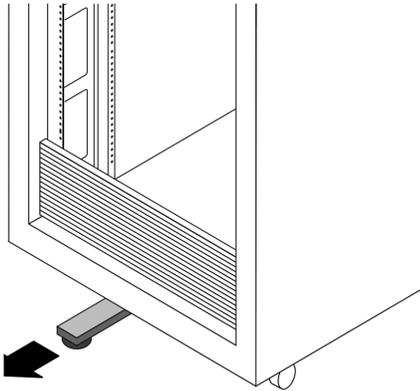
4. (Optional) If you chose to attach the slide-rail assembly with mounting screws and cage nuts, insert the M6 mounting screws through both front and rear slide-rail brackets and rack posts, then secure them with the caged nuts. (FIGURE 2-5).

FIGURE 2-5 Attaching Slide-Rail Assembly to Rack



5. Repeat [Step 2](#) through [Step 4](#) for the remaining slide-rail assembly.
6. If available, extend the anti-tip bar at the bottom of the rack ([FIGURE 2-6](#)). Refer to your rack documentation for instructions.

FIGURE 2-6 Extending the Anti-tip Bar



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

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

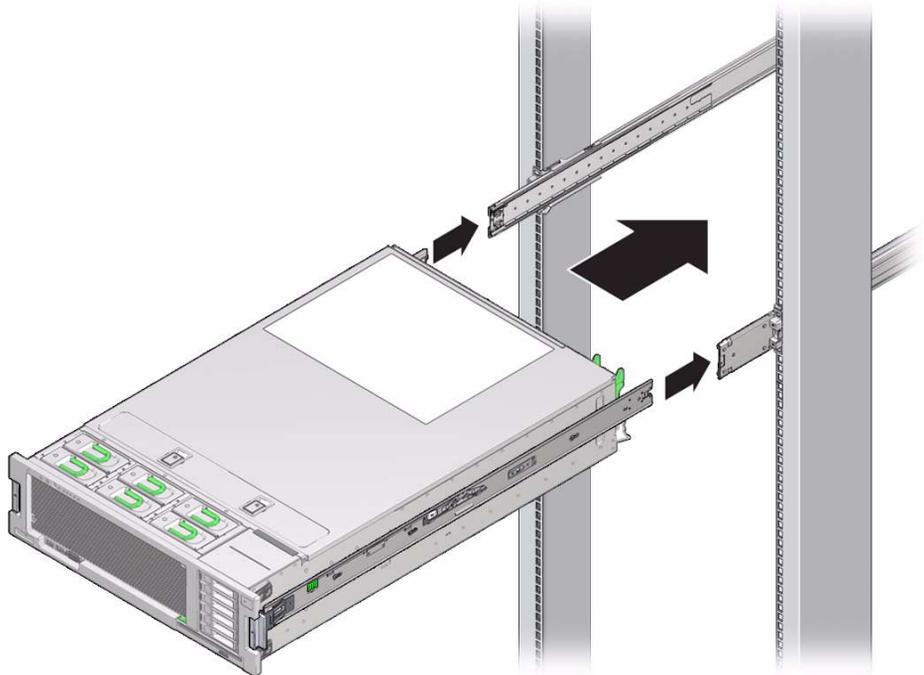
1. Push the slide-rails into the slide-rail assemblies in the rack as far as possible.

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 2-7).
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).



Caution – When inserting the server into the slide-rail, ensure that both the top and bottom mounting lips of the mounting brackets are inserted into the slide-rail. The server should slide forward and backward easily if correctly installed. If the unit does not slide easily, ensure that each mounting lip is inserted properly. If the mounting brackets are not inserted properly, the unit may fall when removing it from the rack.

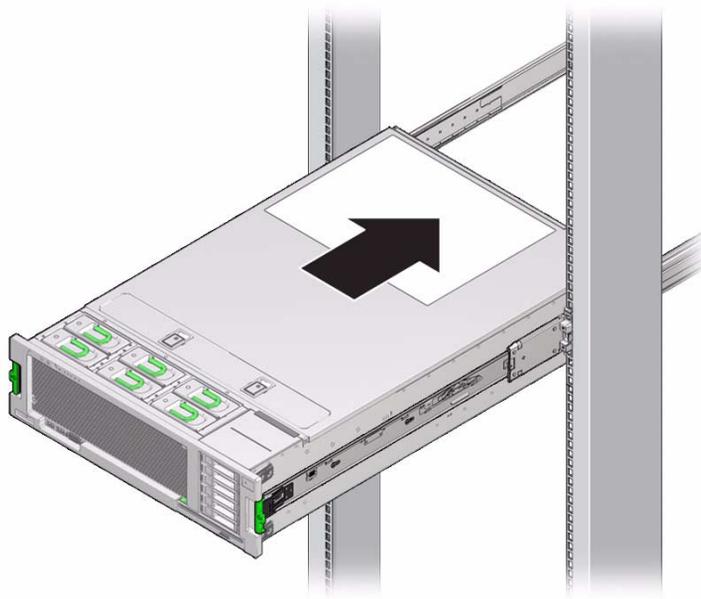
FIGURE 2-7 Inserting the Server With Mounting Brackets Into the Slide-Rails



4. Simultaneously push and hold the green slide-rail release buttons (FIGURE 2-1) on each mounting bracket while you push the server into the rack (FIGURE 2-8). Continue pushing until the slide-rail locks (on the front of the mounting brackets) engage the slide-rail assemblies.

You will hear an audible click.

FIGURE 2-8 Sliding the Server Into 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

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.
4. Insert the CMA's mounting bracket connector into the right slide-rail until the connector locks into place with an audible click (FIGURE 2-9).

FIGURE 2-9 Inserting the CMA Mounting Bracket Into the Back of the Right Slide-Rail

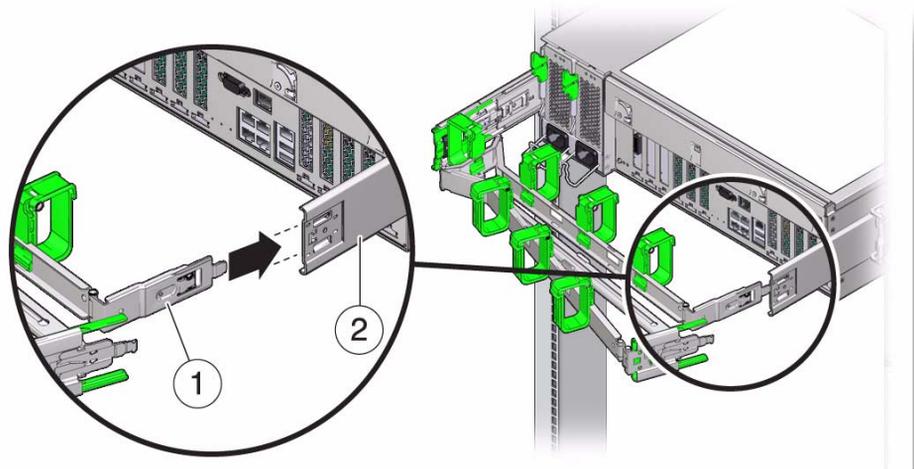


Figure Legend

-
- 1 CMA mounting bracket
 - 2 Right slide-rail
-

5. Insert the right CMA slide-rail connector into the right slide-rail assembly until the connector locks into place with an audible click (FIGURE 2-10).

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

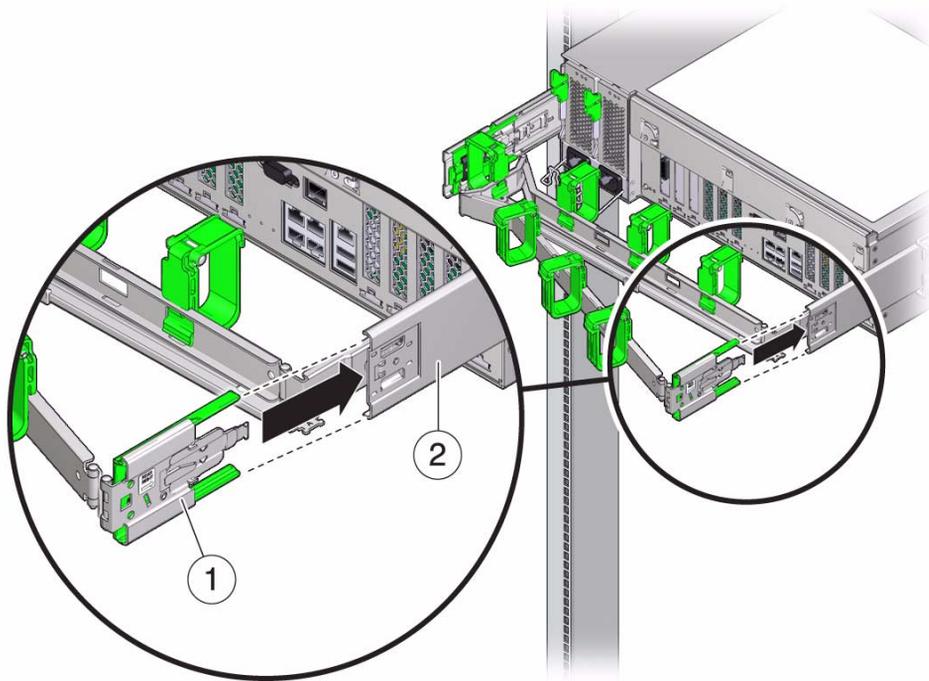


Figure Legend

-
- 1 CMA slide-rail connector
 - 2 Right slide-rail
-

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

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

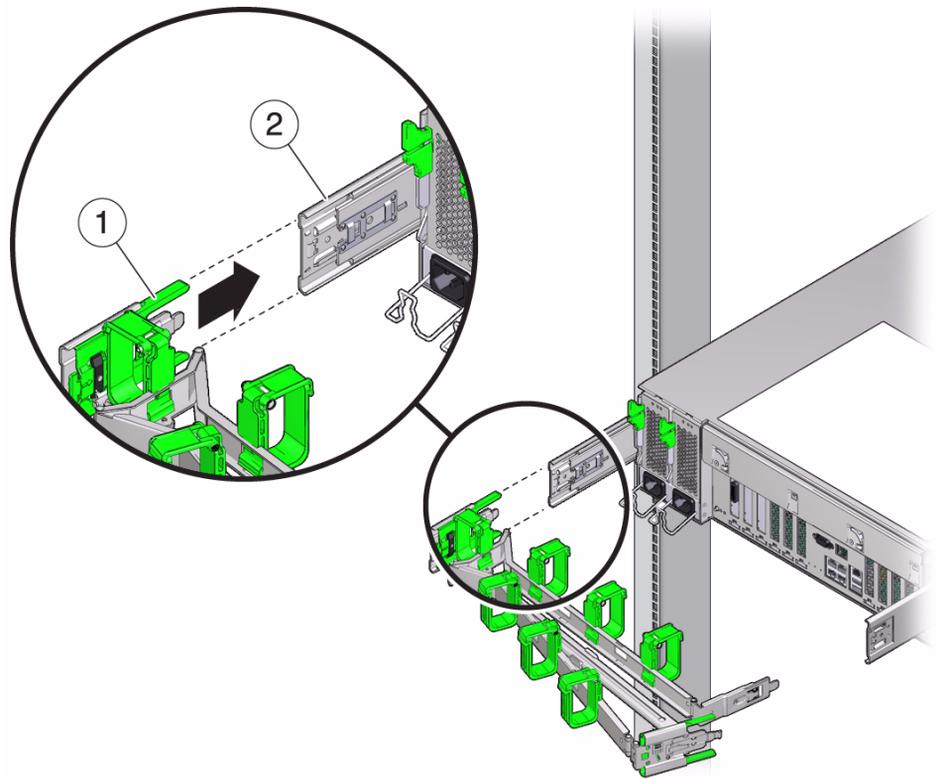


Figure Legend

-
- | | |
|---|--------------------------|
| 1 | CMA slide-rail connector |
| 2 | Left slide-rail |
-

7. Install and route cables to your server, as required.

Note – Instructions for installing the server cables are provided in [“Back Panel Connectors and Ports”](#) on page 31.

8. If required, attach the cable hook and loop straps to the CMA, and press them into place to secure the cables (FIGURE 2-12).

Note – Cable hooks and loop straps are preinstalled on the CMA. Perform this step if you need to reinstall cable hooks and straps on the CMA.

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 2-12 Installing CMA Cable Straps

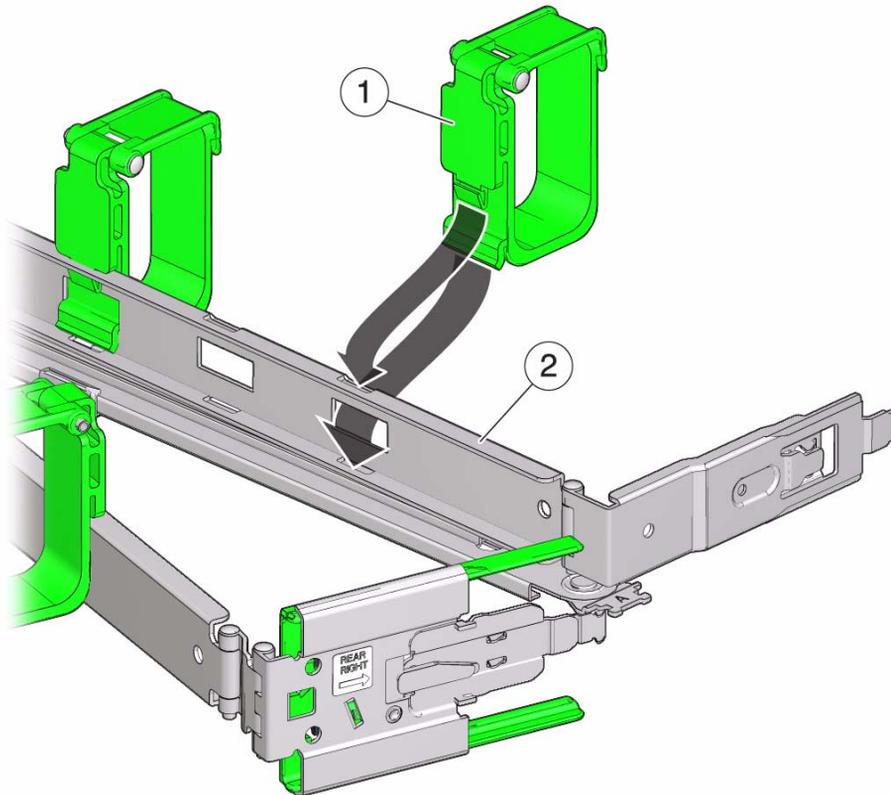


Figure Legend

-
- | | |
|---|-----------------|
| 1 | CMA cable strap |
| 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. Push in both green 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 2-1). Simultaneously push both of the green 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.

Attaching Cables and Power Cords

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

- “Back Panel Connectors and Ports” on page 31
- “Attaching Cables to the Server” on page 32
- “Connecting Power Cords to the Server” on page 33

Back Panel Connectors and Ports

FIGURE 3-1 shows and describes the locations of the server back panel connectors and ports.

FIGURE 3-1 Back Panel Connectors and Ports

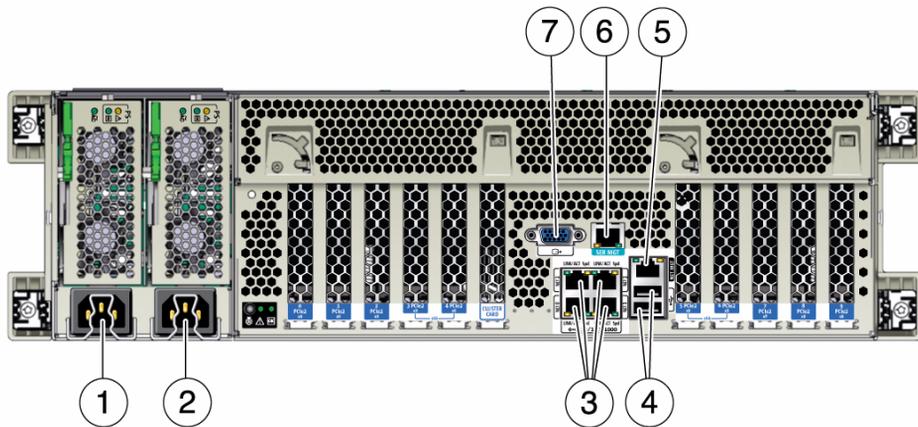


Figure Legend

-
- | | |
|--|---|
| 1 Power supply unit 0 AC inlet | 5 Service processor (SP) network management (NET MGT) Ethernet port |
| 2 Power supply unit 1 AC inlet | 6 Serial management (SER MGT)/RJ-45 serial port |
| 3 Network (NET) 10/100/1000 ports: NET0–NET3 | 7 DB-15 video connector |
| 4 USB 2.0 connectors (2) | |
-

Attaching Cables to the Server

Use the following procedure to attach cables to the sever.

▼ Cable the Server

Connect external cables to the server in the following order. Refer to [FIGURE 3-1](#).

1. **Connect an Ethernet cable to the Gigabit Ethernet (NET) connectors as needed for OS support [3].**
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 [4], and/or a monitor to the DB-15 video connector [7].**

3. If you plan to connect to the Oracle Integrated Lights Out Manager (ILOM) software over the network, connect an Ethernet cable to the Ethernet port labeled NET MGT [5].

Note – The service processor (SP) uses the NET MGT (out-of-band) port by default. You can configure the SP to share one of the server’s four 10/100/1000 Ethernet ports instead. The SP uses only the configured Ethernet port.

4. If you plan to access the Oracle 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 [6].

See “Log In to Oracle ILOM Using a Local Serial Connection” on page 36 for more information about viewing system output from a serial console.

Connecting Power Cords to the Server

Use this procedure to connect power cords to the server. When the power cords are connected, the server will be in standby power mode.

Note – By default, only a two-CPU system will operate from low-line (100 to 127 Volt) AC sources. The system requires high-line (200 to 240 Volt) AC sources to turn on main power of a four-CPU system.

▼ Connect the Power Cords

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 [1, 2]).

When power is connected, the server boots into standby power mode. The SP OK/Fault LED flashes while Oracle ILOM is starting, and the main Power/OK LED remains off until Oracle ILOM is ready for system log in (FIGURE 3-2). After a few minutes, the main Power/OK LED slowly flashes the standby pattern, indicating the service processor (SP) is ready for use. Note that the server is not initialized or powered on yet.

FIGURE 3-2 Front Panel Indicators and Power Button

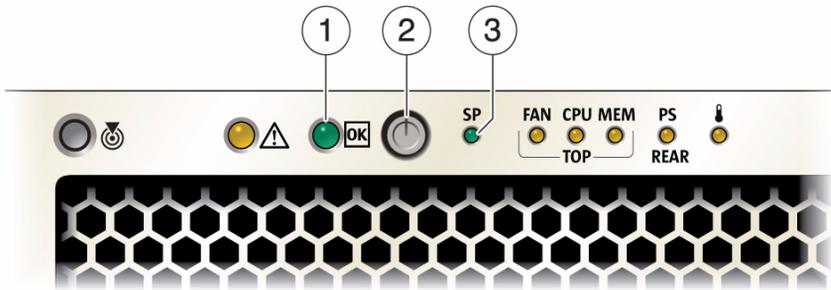


Figure Legend

-
- 1 Main Power/OK LED
 - 2 Power Button
 - 3 SP OK/Fault LED
-

Connecting to Oracle ILOM and Applying Main Power to the Server

This chapter describes how to access the Oracle Integrated Lights Out Manager (ILOM) command-line interface (CLI) or web browser user interface (BUI) to manage the server. It also describes how to apply main power to the server.

This chapter contains the following topics:

- “Connecting to Oracle ILOM” on page 35
- “Applying Main Power to the Server” on page 47

For complete instructions on using Oracle ILOM, refer to:

- Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library (for Sun Server X2-4 software release 1.3 and above) at:
<http://www.oracle.com/pls/topic/lookup?ctx=ilom31>
- Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Library (for Sun Server X2-4 software release 1.0 through 1.2) at:
<http://www.oracle.com/pls/topic/lookup?ctx=ilom30>

Connecting to Oracle ILOM

This section describes how to configure the IP address for the server using Oracle Integrated Lights Out Manager (ILOM). It contains the following topics:

- “Network Defaults” on page 36
- “Log In to Oracle ILOM Using a Local Serial Connection” on page 36
- “Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 37
- “Modify Network Settings From the Oracle ILOM CLI” on page 38
- “Modify Network Settings From the Oracle ILOM Web Interface” on page 42

- [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI”](#) on page 44
- [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM Web Interface”](#) on page 45
- [“Exit Oracle ILOM”](#) on page 46

Network Defaults

The Sun Server X2-4 supports dual-stack IPv4 and IPv6 settings, which enable Oracle ILOM to fully operate in an IPv4 and IPv6 network environment. For IPv4 configurations, DHCP is enabled by default, allowing a DHCP server on the network to automatically assign network settings to the server. For IPv6 configurations, IPv6 stateless auto-configuration is enabled by default, allowing an IPv6 router on the network to assign the network settings. In a typical configuration, you will accept these settings assigned by the DHCP server or IPv6 router.

Note – To determine the IP address or host name assigned by the DHCP server, use the network tools provided with the DHCP server or IPv6 router.

The procedures in this section enable you to test that the assigned settings are working correctly and to establish a connection to Oracle ILOM locally and remotely.

To log in locally, see [“Log In to Oracle ILOM Using a Local Serial Connection”](#) on page 36.

To log in remotely, use the IP address, hostname, or IPv6 local link name assigned to the server SP and follow the instructions in [“Log In to Oracle ILOM Using a Remote Ethernet Connection”](#) on page 37.

▼ Log In to Oracle ILOM Using a Local Serial Connection

This procedure does not require that you know the IP address of the server SP. It does require that you have an Oracle ILOM Administrator account.

Note – The default Oracle 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 Oracle ILOM user account with Administrator privileges.

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 Oracle ILOM.

A login prompt to Oracle ILOM appears.
4. Log in to the Oracle ILOM command-line interface (CLI) using an Administrator account.

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

▼ Log In to Oracle ILOM Using a Remote Ethernet Connection

This procedure requires that you have an Oracle ILOM Administrator account and that you know the IP address or hostname of the server SP.

Note – The default Oracle 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 Oracle ILOM user account with Administrator privileges.

1. Establish a connection to Oracle ILOM.
 - **Command-line interface (CLI):** Using a secure shell session, specify your Administrator account user name and the IP address or hostname of the server. For example, type `ssh username@host`, where `host` is either the IP address or hostname of the server SP (when using DNS).

The Oracle ILOM password prompt appears.
 - **Web browser user interface (BUI):** Type the IP address of the server in the address field of your web browser and press Enter.

The Oracle ILOM web login page appears.
2. Follow the relevant step below to complete the login process.
 - **CLI:** At the Oracle ILOM password prompt, type your password and press Enter. For example:

Password: **changeme**

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

- **BUI:** In the ILOM web login page, type your user name and password, and click Log In.

The Summary page appears, indicating that you have successfully logged in to Oracle ILOM.

▼ Modify Network Settings From the Oracle ILOM CLI

If you want to modify the network settings currently configured for the server from the Oracle ILOM CLI, use the following procedure.

Note – You can also change network settings using the BIOS Setup Utility. For instructions, see the *Sun Server X2-4 Service Manual*.

1. **Log in to the Oracle ILOM CLI using the relevant method in “Log In to Oracle ILOM Using a Local Serial Connection” on page 36 or “Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 37.**

Note – If you log in to Oracle ILOM using an Ethernet connection, after you modify the network settings, your connection will be terminated, and you will have to log back in using the new settings.

2. **Perform the network configuration instructions that apply to your network environment, then test the network settings:**

- To view or configure IPv4 network settings, perform [Step 3](#) through [Step 4](#).
- To view or configure IPv6 network settings, perform [Step 5](#) through [Step 8](#).
- To test the IPv4 or IPv6 network settings, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI” on page 44](#).

3. **For IPv4 network configurations, use the `cd` command to navigate to the `/SP/network` directory:**

```
-> cd /SP/network
```

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

- If you have a DHCP server on the network, type the following command to view the settings assigned to the server by the DHCP server:

```
-> show /SP/network
```

- If there is no DHCP server, or if you want to assign settings, use the set command to assign values for the properties listed in the following table. For example:

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

```
-> set /SP/network/ pendingipaddress=10.8.183.106
```

```
-> set /SP/network/ pendingipnetmask=255.255.255.0
```

```
-> set /SP/network/ pendingipgateway=10.8.183.254
```

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

| Property | Set Property Value | Description |
|--|---|--|
| state | set state=enabled | The network state is enabled by default. |
| pendingipdiscovery | set pendingipdiscovery=static | To enable a static network configuration, set pendingipdiscovery to static. By default, pendingipdiscovery is set to dhcp. |
| pendingipaddress pendingipnetmask pendingipgateway | set pendingipaddress=<ip_address> pendingipnetmask=<netmask> pendingipgateway=<gateway> | To assign multiple static network settings, type the set command followed by the pending command for each property value (IP address, netmask, and gateway), then type the static value that you want to assign. |
| commitpending | set commitpending=true | Type set commitpending=true to commit changes. |

Note – If you are logged in to Oracle ILOM using an Ethernet connection, when you set commitpending to true to commit the changes to the network settings, your Oracle ILOM connection will be terminated and you will have to log back in using the new settings.

5. For IPv6 network configurations, use the `cd` command to navigate to the `SP/network/ipv6` directory:

```
-> cd SP/network/ipv6
```

6. Type the `show` command to view the IPv6 network settings configured on the device.

For example, see the following sample output values for the IPv6 properties on a server SP device.

```
-> show
/SP/network/ipv6
Targets:

Properties:
state = enabled
autoconfig = stateless
dhcpv6_server_duid = (none)
link_local_ipaddress = fe80::214:4fff:feca:5f7e/64
static_ipaddress = ::/128
ipgateway = fe80::211:5dff:febe:5000/128
pending_static_ipaddress = ::/128
dynamic_ipaddress_1 fec0:a:8:b7:214:4fff:feca:5f7e/64

Commands:
cd
show
```

7. To configure an IPv6 auto-configuration option, use the `set` command to specify the following auto-configuration property values:

| Property | Set Property Value | Description |
|------------|------------------------|---|
| state | set state=enabled | The IPv6 network state is enabled by default. To enable an IPv6 auto-configuration option this state must be set to enabled. |
| autoconfig | set autoconfig=<value> | Specify this command followed by the autoconfig value you want to set. Options include: <ul style="list-style-type: none"> • <code>stateless</code> (default setting) Automatically assigns IP address learned from IPv6 network router. • <code>dhcpv6_stateless</code> Automatically assigns DNS information learned from the DHCPv6 server. The <code>dhcpv6_stateless</code> property value is available in Oracle ILOM as of 3.0.14. • <code>dhcpv6_stateful</code> Automatically assigns the IPv6 address learned from the DHCPv6 server. The <code>dhcpv6_stateful</code> property value is available in Oracle ILOM as of 3.0.14. • <code>disable</code> Disables all auto-configuration property values and sets the read-only property value for link local address. |

Note – The IPv6 configuration options take affect after they are set. You do not need to commit these changes under the `/network` target.

Note – You can enable the `stateless` auto-configuration option to run at the same time as when the option for `dhcpv6_stateless` is enabled or as when the option for `dhcpv6_stateful` is enabled. However, the auto-configuration options for `dhcpv6_stateless` and `dhcpv6_stateful` should not be enabled to run at the same time.

8. To set a static IPv6 address, complete these steps:

a. Specify the following property types:

| Property | Set Property Value | Description |
|------------------|--|---|
| state | set state=enabled | The IPv6 network state is enabled by default. To enable a static IP address this state must be set to enabled. |
| pendingipaddress | set pending_static_ipaddress =<ipv6_address>/<subnet mask length in bits> | Type this command followed by the property value for the static IPv6 address and netmask that you want to assign to the device. IPv6 address example: fec0:a:8:b7:214:4f ff:feca:5f7e/64 |

b. Commit the pending IPv6 static network parameters by typing the following command:

```
-> set commitpending=true
```

Note – Network settings are considered pending until you commit them. Assigning a new static IP address to the server will end all active Oracle ILOM sessions to the server. To log back in to Oracle ILOM, you will need to create a new session using the newly assigned IP address.

9. Test the IPv4 or IPv6 network configuration from Oracle ILOM using the Network Test Tools (Ping and Ping6).

For details, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI”](#) on page 44.

▼ Modify Network Settings From the Oracle ILOM Web Interface

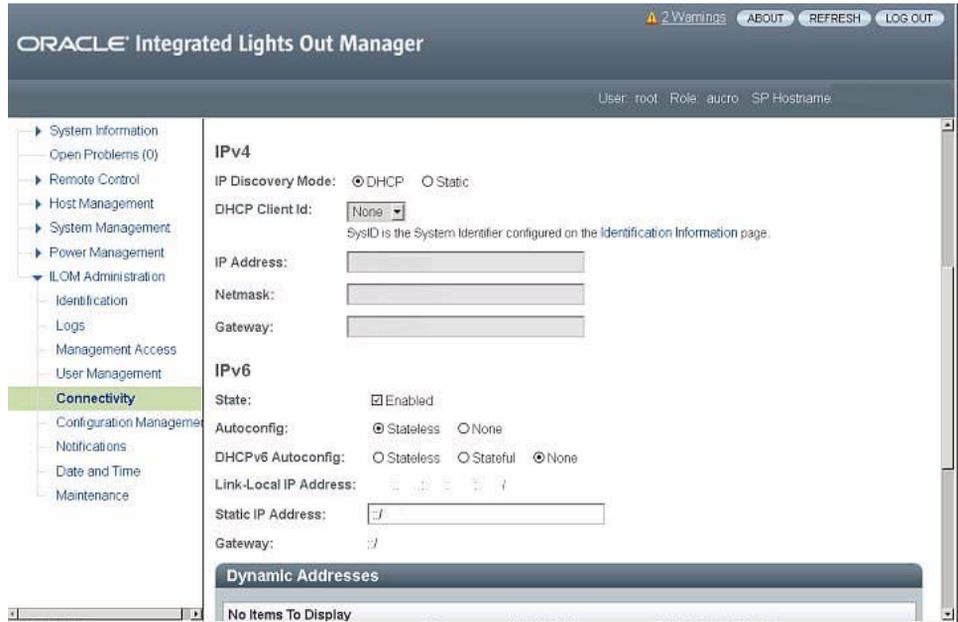
If you want to modify the network settings currently configured for the server from the Oracle ILOM web interface, use the following procedure.

Note – You can also change network settings using the BIOS Setup Utility. For instructions, see the *Sun Server X2-4 Service Manual*.

1. Log in to the Oracle ILOM web interface using the relevant steps in “Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 37.

2. Select ILOM Administration > Connectivity from the navigation tree on the left.

The Network Settings page appears. The settings configured on your device are displayed.



3. Perform the network configuration instructions that apply to your network environment:

- **IPv4:** To allow the DHCP server on your network to assign network settings, ensure that the DHCP radio button is selected and click Save.
- **IPv4:** To assign network settings, select the Static radio button and fill in the IP Address, Netmask, and Gateway fields. Then, click Save.
- **IPv6:** To configure an auto-configuration option, ensure that the Enabled check box next to the State property is selected. Then, select an auto-configuration value and click Save.

Note – You can enable the Autoconfig Stateless option to run at the same time as when the option for DHCPv6 Autoconfig Stateless is enabled or as when the option for DHCPv6 Autoconfig Stateful is enabled.

- **IPv6:** To set a static IPv6 address, ensure that the Enabled check box next to the State property is selected. Then, type the values for *ipv6_address/subnet mask length in bits* in the Static IP Address field and click Save.

4. **Test the IPv4 or IPv6 network configuration from Oracle ILOM using the Network Test Tools (Ping and Ping 6).**

For details, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI”](#) on page 44.

▼ Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI

1. **At the CLI prompt, type the `show` command to view the network test targets and properties.**

For example, the following output shows the test target properties.

```
-> show
/SP/network/test
Targets:

Properties:
ping = (Cannot show property)
ping6 = (Cannot show property)

Commands:
cd
set
show
```

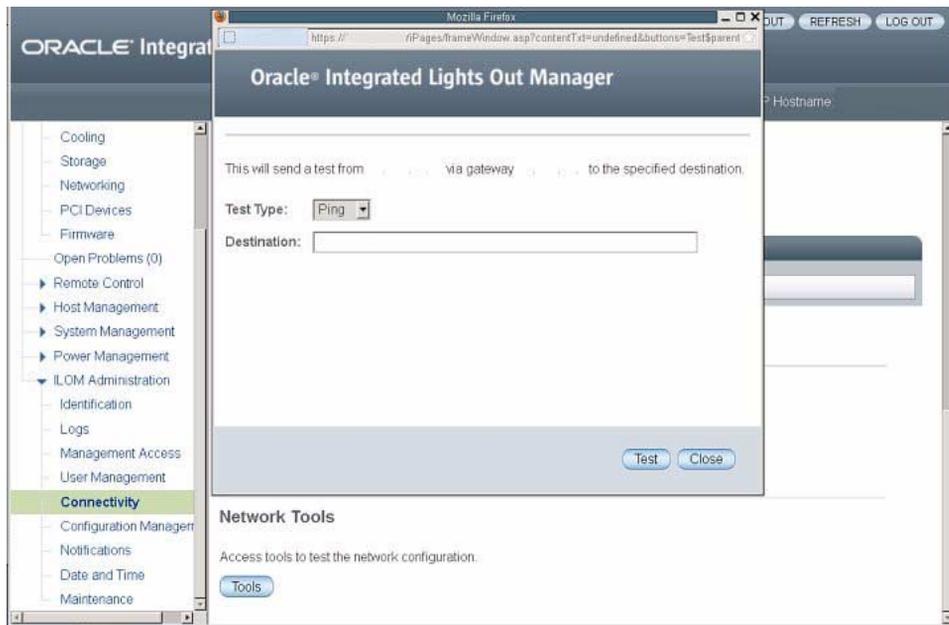
2. **Use the `set ping` or `set ping6` command to send a network test from the device to a specified network destination:**

| Property | Set Property Value | Description |
|----------|--------------------------|---|
| ping | set ping=<IPv4_address> | Type the set ping= command at the command prompt followed by the IPv4 test destination address. For example: -> set ping=10.8.183.106 Ping of 10.8.183.106 succeeded |
| ping6 | set ping6=<IPv6_address> | Type the set ping6= command followed by the IPv6 test destination address. For example:-> set ping6=fe80::211:5dff:febe:5000 Ping of fe80::211:5dff:febe:5000 succeeded |

▼ Test IPv4 or IPv6 Network Configuration From the Oracle ILOM Web Interface

1. From the Network Settings page, click the Tools button at the bottom of the page.

The Network Configuration Test screen appears.



2. Select Ping or Ping6 from the Test Type list box.

Choose a Ping test for an IPv4 network configuration. Choose a Ping6 test for an IPv6 network configuration.

3. Type the IPv4 or IPv6 test destination address in the Destination field and click Test.

If the test was successful, a “Ping of *ip_address* succeeded” message appears below the Destination field in the Network Configuration Test screen.

▼ Exit Oracle ILOM

- **To end an Oracle ILOM session:**
 - **From the Oracle ILOM CLI**, type **exit** at the CLI prompt.
 - **From the Oracle ILOM web interface**, click the Log Out button at the top-right corner of the page.

Applying Main Power to the Server

After you have verified that you can connect to Oracle ILOM and are ready to install or configure an operating system, apply main power to the server.

▼ Apply Main Power to the Server

1. **Verify that the Power/OK LED on the front panel of the server is in the standby power mode.**

In standby power mode, the OK/Power LED illuminates in a standby blink pattern (0.1 seconds on, 2.9 seconds off), indicating that the SP is working.

2. **Press the recessed Power button on the server's front panel to apply main power to the server.**

▼ Power Off From Main Power

- **To remove main power from the server, use one of the following two methods:**
 - **Graceful shutdown** – 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 AC inlets of the power supplies on the back panel of the server.

Configuring the Preinstalled Oracle Solaris OS or the Oracle VM Software

This chapter provides the steps for configuring the Oracle Solaris Operating System (OS) or Oracle VM software that is preinstalled on the server, if ordered. The preinstalled Solaris version can be either Oracle Solaris 11 or Oracle Solaris 10 9/10 (at minimum). The preinstalled version of Oracle VM is 3.0.2 (minimum) or 3.0.3.

Based on the operating system that is preinstalled, perform the procedures in one of the following sections:

- [“Configuring the Preinstalled Oracle Solaris 11 Operating System” on page 54](#)
- [“Configuring the Preinstalled Oracle Solaris 10 Operating System” on page 58](#)
- [“Configuring the Preinstalled Oracle VM 3.0 Software” on page 64](#)

Operating System Options

[TABLE 5-1](#) lists the preinstalled operating system or virtual machine software that are available for the Sun Server X2-4 at the time of publication of this document.

TABLE 5-1 Preinstalled OS and VM Software Available for the Sun Server X2-4

| Operating System | Supported Version | For Configuration Information, See: |
|--------------------------|---|---|
| Oracle Solaris | Oracle Solaris 10 9/10 Oracle Solaris 11 11/11 | <ul style="list-style-type: none">• “Configuring the Preinstalled Oracle Solaris 10 Operating System” on page 58• “Configuring the Preinstalled Oracle Solaris 11 Operating System” on page 54 |
| Virtual Machine Software | Oracle VM 3.0.2 Oracle VM 3.0.3 | <ul style="list-style-type: none">• “Configuring the Preinstalled Oracle VM 3.0 Software” on page 64 |

Note – For an up-to-date list of the preinstalled operating systems available on the Sun Server X2-4, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page: <http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>.

However, the server supports several different operating systems. Therefore, you do not have to use the preinstalled version of the Oracle Solaris Operating System or Oracle VM software on your server. If you want to install a fresh or newer version of the Oracle Solaris Operating System or Oracle VM software or a different operating system such as Linux, Microsoft Windows, or VMware ESXi, you can do so, provided it is a supported version. For a list of operating systems supported, see the *Sun Server X2-4 Product Notes*.

For installation instructions for supported operating systems, see the following documents:

- For Oracle Solaris, see the *Sun Server X2-4 Installation Guide for Oracle Solaris Operating System*
- For Oracle VM, see the *Sun Server X2-4 Installation Guide for Oracle VM*
- For Oracle Linux, Red Hat Enterprise Linux, and SUSE Linux Enterprise Server, see the *Sun Server X2-4 Installation Guide for Linux Operating Systems*
- For Windows Server 2008, see the *Sun Server X2-4 Installation Guide for Windows Operating Systems*
- For VMware ESXi, see the *Sun Server X2-4 Installation Guide for VMware ESXi Operating System*

Preparing for the Oracle Solaris Configuration

Before you start to configure the preinstalled Oracle Solaris 10 or 11 Operating System, review the applicable limitations on RAID configurations. Then complete the worksheet for the Oracle Solaris configuration.

Preinstalled Oracle Solaris Operating System RAID Limitations

Configuring RAID for the server is optional. However, the Oracle Solaris preinstalled image can only be configured in a non-RAID configuration. If a RAID configuration is required, you must configure RAID on the server and then perform a fresh install of the Oracle Solaris OS (or other OS) in the desired RAID configuration.

Oracle Solaris 10 and 11 Configuration Worksheet

Before you begin configuring the operating system, use the configuration worksheet in the following table to gather the information that you will need. You need to collect only the information that applies to your application of the system.

TABLE 5-2 Worksheet for Oracle Solaris 10 and 11 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? | <ul style="list-style-type: none">• Networked• Non-networked* |

TABLE 5-2 Worksheet for Oracle Solaris 10 and 11 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? | <ul style="list-style-type: none"> • 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: 192.168.100.1 | |
| | Subnet | If you are not using DHCP, is the system part of a subnet? If yes, what is the netmask of the subnet? Example: 255.255.255.0 | 255.255.0.0* |
| | IPv6 | Do you want to enable IPv6 on this machine? | <ul style="list-style-type: none"> • 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: | <ul style="list-style-type: none"> • Yes • No* |

TABLE 5-2 Worksheet for Oracle Solaris 10 and 11 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? | <ul style="list-style-type: none"> • NIS+ • NIS • DNS • LDAP • None* |
| | Domain name | Provide the name of the domain in which the system resides. | DNS or NIS |
| | NIS+ and NIS | <i>If you chose NIS+ or NIS</i> , do you want to specify a name server, or let the installation program find one? | <ul style="list-style-type: none"> • Specify One • Find One* If you choose NIS: <ul style="list-style-type: none"> • Specify a NIS domain, or • Indicate whether to specify a NIS server or search for one. |
| | DNS | <p><i>If you chose DNS</i>, provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses.</p> <p>You can also enter a list of DNS domains to search when a DNS query is made.</p> <p>Search domain: Search domain: Search domain:</p> | |
| | LDAP | <p><i>If you chose LDAP</i>, provide the following information about your LDAP profile:</p> <p>Profile name: Profile server:</p> <p>If you specify a proxy credential level in your LDAP profile, gather the following information:</p> <p>Proxy-bind distinguished name: Proxy-bind password:</p> | |

TABLE 5-2 Worksheet for Oracle Solaris 10 and 11 Operating System Configuration (*Continued*)

| Information for Installation | Description or Example | Your Answers: Defaults (*) |
|------------------------------|---|--|
| Default route | <p>Do you want to specify a default route IP address, or let the OS installation program find one?</p> <p>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.</p> <p>You have the following choices:</p> <ul style="list-style-type: none">• You can specify the IP address. An <code>/etc/defaultrouter</code> 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. | <ul style="list-style-type: none">• Specify one• Detect One• None* |
| Time zone | How do you want to specify your default time zone? | <ul style="list-style-type: none">• Geographic region*• Offset from GM• Time zone file |
| Root password | Choose a root password for the system. | |

Configuring the Preinstalled Oracle Solaris 11 Operating System

This section describes how to configure the Oracle Solaris 11 Operating System (OS) that is preinstalled on your server, if ordered. The preinstalled OS image contains all of the necessary drivers for your server.

If your server has the Oracle Solaris 10 9/10 (at minimum) operating system preinstalled, perform the steps in [“Configuring the Preinstalled Oracle Solaris 10 Operating System”](#) on page 58.

Note – For up-to-date information about supported versions of the preinstalled Oracle Solaris Operating System, see the *Sun Server X2-4 Product Notes*.

To configure the preinstalled Oracle Solaris 11 operating system, perform the procedures in the following table, in the order that they are listed.

| Procedure | Links |
|--|--|
| Review operating system options. | “Operating System Options” on page 49 |
| Review RAID limitations on the preinstalled operating system. | “Preinstalled Oracle Solaris Operating System RAID Limitations” on page 51 |
| Gather the information you will need during the configuration process. | “Oracle Solaris 10 and 11 Configuration Worksheet” on page 51 |
| Configure the preinstalled Oracle Solaris Operating System. | “Configure the Preinstalled Oracle Solaris 11 Operating System” on page 55 |
| Review the Oracle Solaris Operating System documentation. | “Oracle Solaris 11 Operating System Documentation” on page 58 |

▼ Configure the Preinstalled Oracle Solaris 11 Operating System

After you have completed the configuration worksheet, shown in [TABLE 5-2](#), use the following procedure to configure the preinstalled Oracle Solaris 11 Operating System.

Note – Unlike with SPARC systems, you will *not* see the output of the preinstalled Solaris 11 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.

1. **If you are not already logged in to Oracle ILOM, log in either locally from a serial connection, or remotely from an Ethernet connection.**

See [“Log In to Oracle ILOM Using a Local Serial Connection”](#) on page 36 or [“Log In to Oracle ILOM Using a Remote Ethernet Connection”](#) on page 37.

Note – The following steps use Oracle ILOM 3.1 command syntax. If you are using Oracle ILOM 3.0, refer to the Oracle ILOM 3.0 Documentation Collection at <http://www.oracle.com/pls/topic/lookup?ctx=ilom30>.

2. Power on or reset the server, as follows:

- **To power on the server**, use one of the following methods:
 - **From the Oracle ILOM web interface**, select System Information > Summary from the navigation tree. Then, click the Turn On button next to Power State in the Actions panel.
 - **From the Oracle ILOM CLI**, type the following command from the prompt:

```
-> start /System
```

When prompted, type **y** to confirm:

```
Are you sure you want to start /System (y/n)? y
```

```
Starting /System
```

- **To reset the server**, use one of the following methods:
 - **From the Oracle ILOM web interface**, select Host Management > Power Control in the navigation tree. Then, select Reset from the Select Action list box and click Save.
 - **From the Oracle ILOM CLI**, type the following command from the prompt:

```
-> reset /System
```

When prompted, type **y** to confirm:

```
Are you sure you want to reset /System (y/n)? y
```

```
Performing hard reset on /System
```

The server begins the boot process.

3. Start the Remote Console.

- **From the Oracle ILOM CLI**, type the following command at the CLI prompt:

```
-> start /HOST/console
```

```
Are you sure you want to start /HOST/console (y/n)? y
```

```
Serial console started.
```

- **From the Oracle ILOM web interface**, select Remote Control > Redirection in the navigation tree. Then, click the Launch Remote Console button.

After the server boots, the GRUB menu appears. From the GRUB menu, you can choose whether you want to continue to direct the display to the serial port, or whether you want to direct the display to a device connected to the video port.

```
GNU GRUB Version 0.97 (607K lower / 2087168K)

s11_2011.11_a - Serial Port (ttya)
s11_2011.11_a - Graphics Adapter
```

4. Use the up and down arrow keys to select a display option and press Enter.

Note – By default, the system displays the output to the serial port. If you do not select an option on the GRUB menu, after 10 seconds, the GRUB menu is no longer available, and the system continues with the output directed to the serial port.

Use the up and down arrow keys to select which entry is highlighted. Press Enter to boot the selected OS, 'e' to edit the commands before booting, or 'c' for a command-line.

- To display output to the serial port, select the following option:

```
s11_2011.11_a - Serial Port (ttya)
```

- To display output to the video port, select the following option:

```
s11_2011.11_a - Graphics Adapter
```

If you choose to display output to the video port, you must connect a device to the VGA connector on the server and an input device (USB keyboard or mouse) and then complete the configuration from that device. See [“Attaching Cables to the Server” on page 32](#) for information about attaching devices to the server.

5. Follow the Oracle Solaris 11 installer on-screen prompts to configure the operating system.

Use the information gathered in [“Oracle Solaris 10 and 11 Configuration Worksheet” on page 51](#) 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 Oracle Solaris login prompt.

Oracle Solaris 11 Operating System Documentation

This section provides pointers to information about the Oracle Solaris 11 Operating System. Follow instructions specific to x86 systems, where they are specified.

The Oracle Solaris 11 Information Library is available at:

http://docs.oracle.com/cd/E23824_01/

- For detailed instructions about installing the Oracle Solaris 11 Operating System see *Installing Oracle Solaris 11 Systems: Preparing for the Installation* and *Installing Oracle Solaris 11 Systems: Automated Installations That Boot From Media*.
- For information about transitioning your operating system from Oracle Solaris 10 to Oracle Solaris 11 see *Transitioning from Oracle Solaris 10 to Oracle Solaris 11* and *Transitioning from Oracle Solaris 10 JumpStart to Oracle Solaris 11 Automated Installer*.
- Refer to the *Sun Server X2-4 Product Notes* for patch and other late-breaking information.

For patches and patch installation instructions, go to the My Oracle Support web site at:

<http://support.oracle.com>

Configuring the Preinstalled Oracle Solaris 10 Operating System

This section describes how to configure the Oracle Solaris 10 Operating System (OS) that is preinstalled on your server, if ordered. The preinstalled OS image contains all of the necessary drivers for your server.

If your server has the Oracle Solaris 11 operating system preinstalled, perform the steps in “[Configuring the Preinstalled Oracle Solaris 11 Operating System](#)” on page 54.

To configure the preinstalled Oracle Solaris 10 Operating System, perform the procedures in the following table, in the order that they are listed.

| Procedure | Links |
|---|--|
| Review operating system options. | “Operating System Options” on page 49 |
| Review RAID limitations on the preinstalled operating system. | “Preinstalled Oracle Solaris Operating System RAID Limitations” on page 51 |
| Gather information that applies to your application of Oracle Solaris 10. | “Oracle Solaris 10 and 11 Configuration Worksheet” on page 51 |
| Configure the preinstalled Oracle Solaris Operating System. | “Configure the Preinstalled Oracle Solaris 10 Operating System” on page 59 |
| Review the Oracle Solaris Operating System documentation. | “Oracle Solaris 10 Operating System Documentation” on page 61 |

▼ Configure the Preinstalled Oracle Solaris 10 Operating System

After you have completed the configuration worksheet, shown in [TABLE 5-2](#), use the following procedure to configure the preinstalled Oracle Solaris 10 Operating System.

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.

1. If you are not already logged in to Oracle ILOM, log in either locally from a serial connection, or remotely from an Ethernet connection.

See [“Log In to Oracle ILOM Using a Local Serial Connection” on page 36](#) or [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 37](#).

Note – The following steps use Oracle ILOM 3.1 command syntax. If you are using Oracle ILOM 3.0, refer to the Oracle ILOM 3.0 Documentation Collection at <http://www.oracle.com/pls/topic/lookup?ctx=ilom30>.

2. Power on or reset the server, as follows:

- **To power on the server**, use one of the following methods:
 - **From the Oracle ILOM web interface**, select System Information > Summary from the navigation tree. Then, click the Turn On button next to Power State in the Actions panel.
 - **From the Oracle ILOM CLI**, type the following command from the prompt:

```
-> start /System
```

When prompted, type **y** to confirm:

```
Are you sure you want to start /System (y/n)? y
```

```
Starting /System
```

- **To reset the server**, use one of the following methods:

- **From the Oracle ILOM web interface**, select Host Management > Power Control in the navigation tree. Then, select Reset from the Select Action list box and click Save.

- **From the Oracle ILOM CLI**, type the following command from the prompt:

```
-> reset /System
```

When prompted, type **y** to confirm:

```
Are you sure you want to reset /System (y/n)? y
```

```
Performing hard reset on /System
```

The server begins the boot process.

3. Start the Remote Console.

- **From the Oracle ILOM CLI**, type the following command at the CLI prompt:

```
-> start /HOST/console
```

```
Are you sure you want to start /HOST/console (y/n)? y
```

```
Serial console started.
```

- **From the Oracle ILOM web interface**, select Remote Control > Redirection in the navigation tree. Then, click the Launch Remote Console button.

After the server boots, the GRUB menu appears. From the GRUB menu, you can choose whether you want to continue to direct the display to the serial port, or whether you want to direct the display to a device connected to the video port.

```
GNU GRUB version 0.97 (607K lower / 2087168K upper memory)
```

```
s10x_u9wos_14a - Serial Port (ttya)
```

```
s10x_u9wos_14a - Graphics Adapter
```

```
s10x_u9wos_14a failsafe
```

4. Use the up and down arrow keys to select a display option and press Enter.

Note – By default, the system displays the output to the serial port. If you do not select an option on the GRUB menu, after 10 seconds, the GRUB menu is no longer available, and the system continues with the output directed to the serial port.

Use the up and down arrow keys to select which entry is highlighted. Press Enter to boot the selected OS, 'e' to edit the commands before booting, or 'c' for a command-line.

- To display output to the serial port, choose the following option:

```
s10x_u9wos_14a - Serial Port (ttya)
```

- To display output to the video port, choose the following option:

```
s10x_u9wos_14a - Graphics Adapter
```

If you choose to display output to the video port, you must connect a device to the VGA connector on the server and an input device (USB keyboard and mouse), and then complete the configuration from that device. See [“Attaching Cables to the Server” on page 32](#) for information about attaching devices to the server.

5. Follow the Oracle Solaris 10 installer on-screen prompts to configure the operating system.

Use the information gathered in [“Oracle Solaris 10 and 11 Configuration Worksheet” on page 51](#) 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 Oracle Solaris login prompt.

Oracle Solaris 10 Operating System Documentation

This section provides pointers to information about the Oracle Solaris 10 Operating System. Follow instructions specific to x86 systems, where they are specified.

Oracle Solaris 10 OS documentation is available from the Oracle documentation web site at:

<http://docs.oracle.com/cd/E19253-01/index.html>.

Find the “Oracle Solaris 10 9/10 Release and Information Collection” section of the page to view a list of the documents in the Solaris 10 9/10 Documentation Collection.

- For the Oracle Solaris 10 installation guides, see the *Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*, *Solaris 10 9/10 Installation Guide: Basic Installations*, and *Solaris 10 9/10 Installation Guide: Network-Based Installations*.
- For information about upgrading your system, see *Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning*.
- For troubleshooting information, see Appendix A in *Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*.
- Refer to the *Sun Server X2-4 Product Notes* for patch and other late-breaking information.

For patches and patch installation instructions, go to the My Oracle Support web site at:

<http://support.oracle.com>

Reinstalling the Oracle Solaris 10 or 11 Operating System

If you want to reinstall the Oracle Solaris 10 or 11 OS or install a different version of the Oracle Solaris OS, refer to the relevant Oracle Solaris installation guide.

Download the Oracle Solaris Operating System

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

- To download the Oracle Solaris 11 Operating System, go to:

<http://www.oracle.com/technetwork/server-storage/solaris11/downloads/index.html>

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

<http://www.oracle.com/technetwork/server-storage/solaris10/downloads/index.html>

- To download Oracle Solaris patches, go to:

<http://support.oracle.com>

Preparing for the Oracle VM Configuration

Before you start to configure the preinstalled Oracle VM software, review the Oracle VM Server compatibility requirements. Then, complete the worksheet for the Oracle VM configuration.

Preinstalled Oracle VM Server Compatibility Requirements

If you use the Oracle VM Server software that is preinstalled on your system, you must ensure that it is compatible with the version of Oracle VM Manager that you use to manage your Oracle VM infrastructure. If necessary to achieve compatibility, upgrade your Oracle VM Manager so that it is the same version.

For information about upgrading the Oracle VM software, see the *Oracle VM Installation and Upgrade Guide*. The Oracle VM documentation is available at the following web site:

<http://www.oracle.com/technetwork/documentation/vm-096300.html>

Oracle VM Configuration Worksheet

Before you begin configuring the Oracle VM Server, use the worksheet in this section to gather the information you will need.

TABLE 5-3 Worksheet for Oracle VM Server Configuration

| Information for Configuration | Description or Example | Your Answers |
|-------------------------------|------------------------|--|
| Oracle VM Server passwords | Root | Choose a root password; there are no restrictions on the characters or length. |
| | Oracle VM agent | Choose an Oracle VM agent password; password must be at least six characters. |
| Network interface | | Supply the interface to be used to manage the server. |

TABLE 5-3 Worksheet for Oracle VM Server Configuration (*Continued*)

| Information for Configuration | Description or Example | Your Answers |
|-------------------------------|---|---|
| Network configuration | Static IP address | Supply the IP address for the server. A static IP address is required. Example: 192.0.2.0 |
| | Netmask | If the server is part of a subnet, supply the netmask of the subnet. Example: 255.255.0.0 |
| | Gateway | If the server is accessed via a gateway, supply the IP address of the gateway. |
| | DNS server | Supply the IP address for the domain name server (DNS). One (and only one) DNS is required. |
| Host name | Supply the fully qualified domain name for the server. Example: xxx.oracle.com | |

Configuring the Preinstalled Oracle VM 3.0 Software

This section describes how to configure the Oracle VM software that is preinstalled on the server, if ordered. The preinstalled image contains all of the necessary drivers for the server.

Note – For more up-to-date information about supported versions of the preinstalled Oracle VM, see the *Sun Server X2-4 Product Notes*.

To configure the preinstalled Oracle VM software, perform the procedures in the following table, in the order that they are listed.

| Procedure | Links |
|--|---|
| Review requirements for Oracle VM software. | “Preinstalled Oracle VM Server Compatibility Requirements” on page 63 |
| Gather the information you will need during the configuration process. | “Oracle VM Configuration Worksheet” on page 63 |
| Configure the preinstalled Oracle VM software. | “Configure the Preinstalled Oracle VM Server” on page 65 |
| Get started using Oracle VM. | “Oracle VM Documentation” on page 68 |

▼ Configure the Preinstalled Oracle VM Server

These instructions describe only how to configure preinstalled Oracle VM Server on your server. Oracle VM also has other components, such as Oracle VM Manager, that must be installed or already up and running to support the virtual machine environment.

1. **If you are not already logged in to Oracle ILOM, log in locally from a serial connection or remotely using an Ethernet connection.**

Note – The following steps use Oracle ILOM 3.1 command syntax. If you are using Oracle ILOM 3.0, refer to the Oracle ILOM 3.0 Documentation Collection at <http://www.oracle.com/pls/topic/lookup?ctx=ilom30>.

2. **Power on or reset the server, as follows:**

- **To power on the server**, use one of the following methods:
 - **From the Oracle ILOM web interface**, select System Information > Summary from the navigation tree. Then, click the Turn On button next to Power State in the Actions panel.
 - **From the Oracle ILOM CLI**, type the following command from the prompt:


```
-> start /System
```

 When prompted, type **y** to confirm:


```
Are you sure you want to start /System (y/n)? y
```

 Starting /System
- **To reset the server**, use one of the following methods:

- **From the Oracle ILOM web interface**, select Host Management > Power Control in the navigation tree. Then, select Reset from the Select Action list box and click Save.

- **From the Oracle ILOM CLI**, type the following command from the prompt:

```
-> reset /System
```

When prompted, type **y** to confirm:

```
Are you sure you want to reset /System (y/n)? y
```

```
Performing hard reset on /System
```

The server begins the boot process.

3. Start the Remote Console.

- **From the Oracle ILOM web interface**, select Remote Control > Redirection in the navigation tree. Then, click the Launch Remote Console button.

- **From the Oracle ILOM CLI**, type the following command at the CLI prompt:

```
-> start /HOST/console
```

```
Are you sure you want to start /HOST/console (y/n)? y
```

```
Serial console started.
```

After the server boots, the GRUB menu appears. From the GRUB menu, you can choose whether you want to continue to direct the display to the serial port, or whether you want to direct the display to a device connected to the video port.

```
GNU GRUB version 0.97 (613K lower / 2087424K upper memory)

Oracle VM Server-ovs (xen-4.0.0 2.6.32.21-41ovs)
Oracle VM Server-ovs serial console (xen-4.0.0 2.6.32.21-41ovs)
```

4. Use the up and down arrow keys to select a display option and press Enter.

Note – If you do not select an option on the GRUB menu, after five seconds, the GRUB menu is no longer available and the system continues with the output directed to the serial port. To pause at the GRUB menu, press any key other than Enter. Then select the option you want to use and press Enter to continue.

Use the up and down arrow keys to select which entry is highlighted. Press Enter to boot the selected OS, 'e' to edit the commands before booting, or 'c' for a command-line.

The menu offers two choices: one for normal booting, and one for serial-console enabled booting.

- To display the default option, select the first option on the list:

```
Oracle VM Server-ovs (xen-4.0.0 2.6.32.32-41ovs)
```

- To display output to the serial port, select the second option on the list:
Oracle VM Server-ovs serial console (xen-4.0.0 2.6.32.21-41ovs)

5. As the configuration process continues, the following screen appears. Scroll down the screen and set and confirm the root password and the Oracle VM Agent password.

```
Starting OUM console server: [
Starting OUM ovmwatch services: [
Starting ovs-agent: Starting ovs-agent services:
  OK ] [

Configuring Oracle VM...

Enter new root password:
Confirm password:

Enter new Oracle VM Agent password:
Confirm password:
```

Note – The prompts for the root and the Oracle VM Agent passwords are only displayed the first time you boot the Oracle VM Server.

6. Follow the prompts to select the onboard network interface controller (NIC) to configure and enter other required configuration information related to the network.

```
This tool is used to select the NIC used by the OUM Manager.
You can exit at any time by pressing CTRL-C.

Here's the list of current available network interfaces.
  eth0  eth1  eth2  eth3

Please select interface(s) to be used for OUM management.
These interfaces will be configured for redundancy.
eth1
```

7. If all of the configuration settings are correct, type **Y** and press Enter to save the settings.

```
Are these settings correct?(Y/n)
```

When all settings have been entered and saved, the system loads an Oracle VM Server Console session as shown below.

```
Oracle VM Server 3.0.2 Console [Alt-F2 for login console]
```

```
Local hostname      : lynxp-ovm.us.oracle.com
Manager UUID       : 0004fb0000010000a060c639d1075957
Hostname           : None
Server IP          : None
Server Pool        : None
Clustered          : No
Server Pool Virtual IP : None
Cluster state      : Offline
Master Server      : No
Cluster type       : None
Cluster storage    : None
```

```
OVS Agent          : Running
VMs running        : 0
System memory      : 4087
Free memory        : 2439
Uptime             : 0 days, 4 hours, 33 minutes_
```

This completes the configuration of preinstalled Oracle VM Server to create a virtual operating system.

Oracle VM Documentation

For complete information about using Oracle VM, refer to the Oracle VM documentation that is available at:
<http://www.oracle.com/technetwork/documentation/vm-096300.html>

Installing an Operating System

You can either install an operating system or, if the server was shipped with a preinstalled operating system, you can configure that preinstalled system.

This chapter includes the following topics:

- “Installing an Operating System” on page 69

Installing an Operating System

TABLE 6-1 lists the operating systems supported for installation and use on the Sun Server X2-4 at the time of publication of this document, along with information about where to get instructions for installing each operating system.

Note – For an up-to-date list of the operating systems supported on the Sun Server X2-4, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page: <http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>.

TABLE 6-1 Supported Operating Systems

| Operating System | Supported Version | For More Information, See: |
|-------------------------|--|--|
| Oracle Solaris | <ul style="list-style-type: none">• Oracle Solaris 11 11/11• Oracle Solaris 10 8/11• Oracle Solaris 10 9/10 | <ul style="list-style-type: none">• <i>Sun Server X2-4 Installation Guide for Oracle Solaris Operating System.</i> |
| Linux | <ul style="list-style-type: none">• Oracle Unbreakable Enterprise Kernel• Oracle Linux 5.5 through 6.2• Red Hat Enterprise Linux (RHEL) 5.8• SUSE Linux Enterprise Server (SLES) 11 SP1, SP2 | <ul style="list-style-type: none">• If you want to use the Oracle Hardware Installation Assistant to install the Linux OS, see the <i>Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers.</i>• If you want to install the Linux OS from installation media, see the <i>Sun Server X2-4 Installation Guide for Linux Operating Systems.</i> |
| Oracle VM Software | <ul style="list-style-type: none">• Oracle VM 3.0.x• Oracle VM 2.2.1 | <ul style="list-style-type: none">• <i>Sun Server X2-4 Installation Guide for Oracle VM Software.</i> |
| Windows | <ul style="list-style-type: none">• Microsoft Windows Server 2008 SP2/R2, Standard Edition, 64-bit• Microsoft Windows Server 2008 SP2/R2, Enterprise Edition, 64-bit• Microsoft Windows Server 2008 SP2/R2, Datacenter Edition, 64-bit | <ul style="list-style-type: none">• If you want to use the Oracle Hardware Installation Assistant to install the Windows OS, see the <i>Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers.</i>• If you want to install the Windows OS from installation media, see the <i>Sun Server X2-4 Installation Guide for Windows Operating Systems.</i> |

Getting Server Firmware and Software

This section explains the options for accessing server firmware and software.

- [“Firmware and Software Updates”](#) on page 71
- [“Firmware and Software Access Options”](#) on page 72
- [“Available Software Release Packages”](#) on page 72
- [“Accessing Firmware and Software”](#) on page 73
- [“Installing Updates”](#) on page 77

Firmware and Software Updates

Firmware and software, such as hardware drivers and tools for the server, are updated periodically. These are made available as a software release. The software release is a set of downloads (patches) that includes all available firmware, hardware drivers, and utilities for the server. All these have been tested together. The ReadMe document that is included with the download explains what has changed and what has not changed from the prior software release.

You should update your server firmware and software as soon as possible after the software release becomes available. Software releases often include bug fixes, and updating ensures that your server software is compatible with the latest server firmware and other component firmware and software.

The ReadMe file in the download package contains information about the updated files in the download package, as well as bugs that are fixed with the current release. The product notes also provide information about which server software versions are supported.

Firmware and Software Access Options

Use one of the following options to obtain the latest set of firmware and software for your server:

- **Oracle Hardware Installation Assistant** – Oracle Hardware Installation Assistant is a factory-installed feature for the Sun Server X2-4 that allows you to easily update server firmware and software.

For more information about Oracle Hardware Installation Assistant, refer to the *Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers* at <http://www.oracle.com/pls/topic/lookup?ctx=hia>.

- **My Oracle Support** – All system firmware and software are available from the My Oracle Support web site.

For more information about what is available on the My Oracle Support web site, see <http://support.oracle.com>.

For instructions on how to download software releases from My Oracle Support, see “[Download Firmware and Software Using My Oracle Support](#)” on page 73.

- **Physical Media Request (PMR)** – You can request a DVD that contains any of the downloads (patches) that are available from My Oracle Support.

For information see, “[Requesting Physical Media](#)” on page 74.

Available Software Release Packages

Downloads on My Oracle Support are grouped by product family, then product, then version. The version contains one or more downloads (patches).

For servers and blades, the pattern is similar. The product is the server. Each server contains a set of releases. These releases are not true software product releases, but rather are releases of updates for the server. These updates are called software releases and comprise several downloads, all tested together. Each download contains firmware, drivers, or utilities.

My Oracle Support has the same set of download types for this server family as shown in the following table. These can also be requested through a physical media request (PMR).

| Package Name | Description | When to Download This Package |
|---|---|--|
| X4470 M2 SERVER SW 1.3 – ILOM_AND_BIOS | Oracle ILOM and BIOS. | You need the latest platform firmware. |
| X4470 M2 SERVER SW 1.3 – ORACLE_HARDWARE_INSTALLATION_ASSISTANT | Oracle Hardware Installation Assistant recovery and ISO update image. | You need to manually recover or update Oracle Hardware Installation Assistant. |
| X4470 M2 SERVER SW 1.3 – TOOLS_DRIVERS_AND_FIRMWARE_DVD | Includes the tools and drivers and platform firmware. This DVD image does not include Oracle VTS. | You need to update a combination of system firmware and OS-specific software. |
| X4470 M2 SERVER SW 1.0 – DIAGNOSTICS | Oracle VTS diagnostics image. | You need the Oracle VTS diagnostics image. |

Accessing Firmware and Software

This section covers instructions for downloading or requesting software release files. See:

- “Download Firmware and Software Using My Oracle Support” on page 73
- “Requesting Physical Media” on page 74

▼ Download Firmware and Software Using My Oracle Support

1. **Navigate to the following web site:** <http://support.oracle.com>.
2. **Sign in to My Oracle Support.**
3. **At the top of the page, click the Patches and Updates tab.**
The Patches and Updates screen appears.
4. **In the Search screen, click Product or Family (Advanced).**
The screen appears with search fields.

5. **In the Product field, select the product from the drop-down list.**
Alternatively, type a full or partial product name (for example, Sun Server X2-4) until a match appears.
6. **In the Release field, select a software release from the drop-down list.**
Expand the folders to see all available software releases.
7. **Click Search.**
The software release comprises a set of downloads (patches).
See [“Available Software Release Packages” on page 72](#) for a description of the available downloads.
8. **To select a patch, click the check box next to the patch name. (You can use the Shift key to select more than one patch.)**
A pop-up action panel appears. The panel contains several action options.
9. **To download the update, click Download in the pop-up panel.**
The File Download dialog box appears.
10. **In the File Download dialog box, click on the patch zip file.**
The patch file downloads.

Requesting Physical Media

If your processes do not allow downloads from Oracle web sites, you can access the latest software release through a physical media request (PMR).

The following table describes the high-level tasks for making a physical media request and provides links for further information.

| Description | Link |
|---|--|
| Gather information you will need to provide for the request. | “Gathering Information for the Physical Media Request” on page 74 |
| Make the physical media request either online or by calling Oracle Support. | “Request Physical Media (Online)” on page 75 “Request Physical Media (By Phone)” on page 76 |

Gathering Information for the Physical Media Request

You must have a warranty or support contract for your server in order to make a physical media request (PMR).

Before you make the PMR, gather the following information:

- **Obtain product name, software release version, and patches required.** It will be easier to make the request if you know the latest software release and the name of the download packages (patches) that you are requesting.
 - *If you have access to My Oracle Support* – Follow the instructions in “[Download Firmware and Software Using My Oracle Support](#)” on page 73 to determine the latest software release and view available downloads (patches). After viewing the list of patches, you can navigate away from the Patch Search Results page, if you do not want to continue with the download steps.
 - *If you do not have access to My Oracle Support* – Use the information in “[Available Software Release Packages](#)” on page 72 to determine which packages you want, then request those packages for the latest software release.
- **Have the shipping information ready.** You will need to provide a contact, phone number, email address, company name, and shipping address as part of the request.

▼ Request Physical Media (Online)

Gather the information described in “[Gathering Information for the Physical Media Request](#)” on page 74 before making the request.

1. **Go to the following web site:** <http://support.oracle.com>.
2. **Sign in to My Oracle Support.**
3. **Click on the Contact Us link in the upper right corner of the page.**
4. **In the Request Description section, fill in the following:**
 - a. **In the Request Category drop-down menu, select the following:**
Software and OS Media Requests
 - b. **In the Request Summary field, type:** PMR for latest software release for Sun Server X2-4.
5. **In the Request Details section, answer the questions shown in the following table:**

| Question | Your Answer |
|---|--------------|
| Is this a physical software media shipment request? | Yes |
| Which product line does the media request involve? | Sun Products |

| Question | Your Answer |
|---|--|
| Are you requesting a required password for a patch download? | No |
| Are you requesting a patch on CD/DVD? | Yes |
| If requesting a patch on CD/DVD, please provide the patch number and OS/platform? | Enter the patch number for each download that you want from the software release. |
| List the product name and version requested for the physical media shipment? | <i>Product Name:</i> Sun Server X2-4 <i>Version:</i> Latest software release number |
| What is the OS/platform for the requested media? | If you are requesting OS-specific downloads, specify the OS here. If you are requesting system firmware only, enter Generic. |
| Are any languages required for this shipment? | No |

6. Fill in the Ship-To contact, phone number, email address, company name, and shipping address information.

7. Click Next.

8. In the Upload Files, Relevant Files screen, click Next.

You do not need to supply any information.

9. In the Related Knowledge screen, review Knowledge Articles applicable to your request.

10. Click Submit.

▼ Request Physical Media (By Phone)

Gather the information described in “[Gathering Information for the Physical Media Request](#)” on page 74 before making the request.

1. Call Oracle support, using the appropriate number from the Oracle Global Customer Support Contacts Directory at:

<http://www.oracle.com/us/support/contact-068555.html>

2. Tell Oracle support that you want to make a physical media request (PMR) for the Sun Server X2-4.

- If you are able to access the specific software release and patch number information from My Oracle Support, provide this information to the support representative.

- If you are unable to access the software release information, request the latest software release for the Sun Server X2-4.

Installing Updates

The following sections provide information about installing firmware and software updates:

- “Installing Firmware” on page 77
- “Installing Hardware Drivers and OS Tools” on page 78

Installing Firmware

Updated firmware can be installed using one of the following:

- **Oracle Hardware Installation Assistant** – Oracle Hardware Installation Assistant can download and install the latest firmware from Oracle.

For more information about Oracle Hardware Installation Assistant, refer to the *Oracle Hardware Installation Assistant 2.5 User’s Guide for x86 Servers* at:

<http://www.oracle.com/pls/topic/lookup?ctx=hia>

- **Oracle Enterprise Manager Ops Center** – Ops Center Enterprise Controller can automatically download the latest firmware from Oracle, or firmware can be loaded manually into the Enterprise Controller. In either case, Ops Center can install the firmware onto one or more servers, blades, or blade chassis.

For more information, go to:

<http://www.oracle.com/us/products/enterprise-manager/044497.html>

- **Oracle Hardware Management Pack** – The `fwupdate` CLI Tool within the Oracle Hardware Management Pack can be used to update firmware within the system.

For more information, refer to the Oracle Hardware Management Pack Documentation Library at:

<http://www.oracle.com/pls/topic/lookup?ctx=ohmp>

- **Oracle ILOM** – Oracle ILOM and BIOS firmware are the only firmware that can be updated using either the Oracle ILOM web interface or the command-line interface.

For more information, refer to the Oracle Lights Out Manager (ILOM) 3.0 Documentation Library at:

<http://www.oracle.com/pls/topic/lookup?ctx=ilom30>

You can access the Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at:
<http://www.oracle.com/pls/topic/lookup?ctx=ilom31>

Installing Hardware Drivers and OS Tools

Updated hardware drivers and operating system (OS)-related tools, such as Oracle Hardware Management Pack, can be installed using one of the following:

- **Oracle Enterprise Manager Ops Center**

For more information, go to:

<http://www.oracle.com/us/products/enterprise-manager/044497.html>

- **Other deployment mechanisms**, such as JumpStart, KickStart, or third-party tools.

For more information, refer to your operating system documentation.

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