

Sun Server X4-4 Installation Guide

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Using This Documentation

This section describes how to get the latest firmware and software for the system, documentation and feedback, and a document change history.

- [“Sun Server X4-4 Model Naming Convention” on page 9](#)
- [“Getting the Latest Firmware and Software” on page 9](#)
- [“Documentation and Feedback” on page 10](#)
- [“About This Documentation” on page 10](#)
- [“Support and Training” on page 10](#)
- [“Contributors” on page 10](#)
- [“Change History” on page 11](#)

Sun Server X4-4 Model Naming Convention

The Sun Server X4-4 name identifies the following:

- X identifies an x86 product.
- The first number, 4, identifies the generation of the server.
- The second number, 4, identifies the number of processor sockets in the server.

Getting the Latest Firmware and Software

Firmware, drivers, and other hardware-related software for each Oracle x86 server are updated periodically.

You can obtain the latest version in one of following ways:

- Oracle System Assistant – This is a factory-installed option for Sun Oracle x86 servers. It has all the tools and drivers you need and resides on an internal USB flash stick.

- My Oracle Support – This is the Oracle support web site located at: <https://support.oracle.com>.

Documentation and Feedback

Documentation	Link
All Oracle products	http://docs.oracle.com
Sun Server X4-4	http://www.oracle.com/goto/X4-4/docs
Oracle Integrated Lights Out Manager (ILOM). Refer to the documentation for your supported version of Oracle ILOM listed in the <i>Product Notes</i> .	http://www.oracle.com/goto/ILOM/docs
Oracle Hardware Management Pack. Refer to the documentation for your supported version of Oracle Hardware Management Pack listed in the <i>Product Notes</i> .	http://www.oracle.com/goto/ohmp/docs

Provide feedback on this documentation at: <http://www.oracle.com/goto/docfeedback>.

About This Documentation

This documentation set is available in both PDF and HTML. The information is presented in topic-based format (similar to online help) and therefore does not include chapters, appendixes, or section numbering.

Support and Training

These web sites provide additional resources:

- Support: <https://support.oracle.com>
- Training: <http://education.oracle.com>

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Change History

The following lists the release history of this documentation set:

- April 2014. Initial publication.
- May 2014. Updated *Product Notes* for SW 1.0.1. Updated *Product Notes*, *Installation Guide* and *Service Manual* information for the 8 GB DIMM which will no longer be orderable as of June 2014.
- October 2014. Updated *Product Notes* for SW 1.1.0. Updated *Installation Guide* and *Sun Server X4-4 Installation Guide for Linux Operating System* information to add support for the Oracle Linux Fault Management Architecture software available with Oracle Hardware Management Pack 2.3. Minor editorial updates to *Sun Server X4-4 Installation Guide for Windows Operating System*.
- January 2015. Updated *Product Notes* for SW 1.1.1.
- August 2015. Updated *Product Notes* for SW 1.2. Updated the *Service Manual* information for the fan module replacement. Updated the *Installation Guide* for minor technical edits.
- September 2015. Updated *Product Notes* for SW 1.2.1.
- October 2015. Updated *Product Notes* to add note about important updates. Removed information in all books about obtaining physical media for Oracle software.

Installation Procedure Overview

This document describes initial setup and configuration Oracle's Sun Server X4-4 to the point of first power-on and operating system installation.

The following table summarizes an ordered list of tasks that you must perform to properly install the server.

Step	Description	Links
1	Review the product notes for any late-breaking information about the server.	<i>Sun Server X4-4 Product Notes</i> at http://www.oracle.com/goto/X4-4/docs
2	Review the server site requirements, specifications, and components and confirm that you have received all the items you ordered; familiarize yourself with ESD and safety precautions; and assemble the required tools and equipment.	"Preparing to Install the Server" on page 27
3	Review the server features.	"Server Features and Components" on page 15
4	Install any separately shipped optional components.	"Optional Component Installation" on page 32
5	Install the server into a rack.	"Installing the Server Into a Rack" on page 33
6	Attach data cables and power cords to the server.	"Cabling the Server" on page 49
7	Connect to Oracle Integrated Lights Out Manager (ILOM).	"Connecting to Oracle ILOM" on page 53
8	(Recommended) Set up your system software and firmware using Oracle System Assistant.	"Setting Up Software and Firmware Using Oracle System Assistant" on page 71
9	If purchased, configure your factory preinstalled operating system or virtual machine software option.	<ul style="list-style-type: none">■ "Configuring the Preinstalled Oracle Solaris OS" on page 107■ "Configuring the Preinstalled Oracle Linux OS" on page 113■ "Configuring the Preinstalled Oracle VM Software" on page 119
10	If you did not purchase a factory preinstalled operating system or virtual machine software option, install a supported operating system or virtual machine software product.	<ul style="list-style-type: none">■ <i>Sun Server X4-4 Installation Guide for Oracle Solaris</i>■ <i>Sun Server X4-4 Installation Guide for Linux</i>■ <i>Sun Server X4-4 Installation Guide for Oracle VM</i>

Step	Description	Links
		<ul style="list-style-type: none">■ Sun Server X4-4 Installation Guide for Microsoft Windows■ Sun Server X4-4 Installation Guide for VMware ESXi
11	Review procedures for getting server firmware and software updates.	“Getting Server Firmware and Software” on page 125
12	Review procedures for controlling system power.	“Controlling System Power and Viewing BIOS Messages” on page 131
13	If needed, troubleshoot installation issues.	“Troubleshooting Installation Issues” on page 143

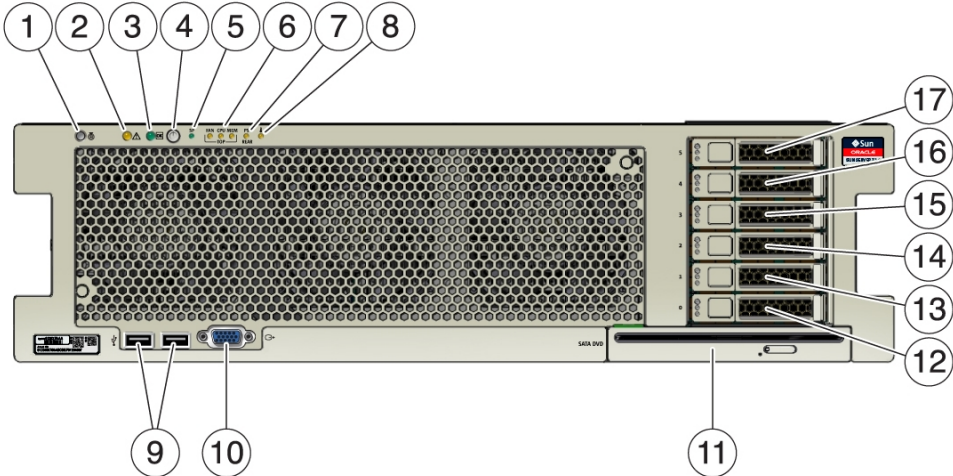
Server Features and Components

This section describes Oracle's Sun Server X4-4 hardware. It includes topics shown in the following table:

Description	Links
Locate status indicators, connectors, and storage drives on the server front and back panels.	<ul style="list-style-type: none"> ■ “Front Panel Features” on page 15 ■ “Back Panel Features” on page 16
Review server features and components.	“Server Supported Components” on page 17
Review server management software.	“Managing Your Server” on page 19

Front Panel Features

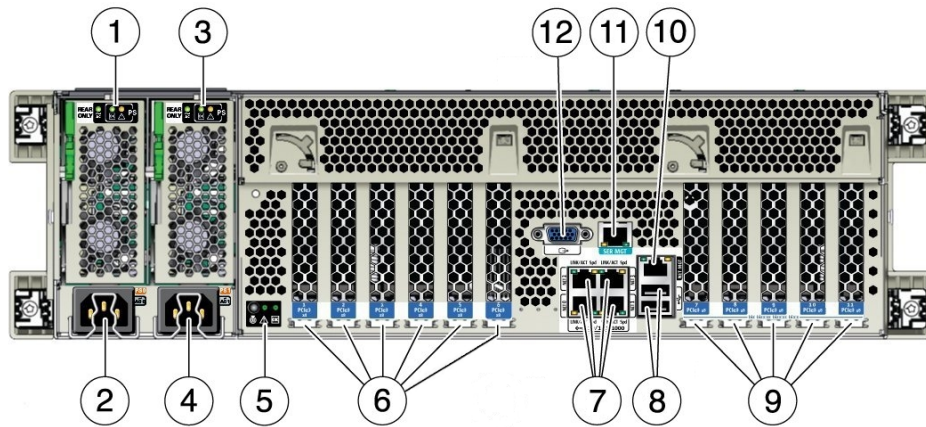
The following figure shows the Sun Server X4-4 front panel and describes its components.



Callout	Description
1	Locator indicator/button: white
2	Service Action Required indicator: amber
3	System OK indicator: green
4	Power button
5	SP OK indicator: green
6	Service Action Required indicators (3) for Fan Module (FAN), Processor (CPU) and Memory: amber
7	Power Supply (PS) Fault (Service Action Required) indicators: amber
8	Over Temperature Warning indicator: amber
9	USB 2.0 ports (2)
10	DB-15 video port
11	SATA DVD drive (optional)
12-17	Storage drive slots 0-5 (from bottom to top)

Back Panel Features

The following figure shows the Sun Server X4-4 back panel and describes its components.



Callout	Description
1	Power supply unit (PSU) 0 indicator panel
2	PSU 0 AC inlet

Callout	Description
3	PSU 1 indicator panel
4	PSU 1 AC inlet
5	System status indicator panel
6	PCIe card slots 1–6
7	Network (NET) 10 GbE ports: NET0–NET3
8	USB 2.0 ports (2)
9	PCIe card slots 7–11
10	Service processor (SP) network management (NET MGT) port
11	Serial management (SER MGT)/RJ-45 serial port
12	DB-15 video port

Server Supported Components

This section describes the components that are supported in the Sun Server X4-4.

Component	Sun Server X4-4
Processor (CPU)	<p>Intel Xeon® E7-8895 v2 15-core 2.8 GHz processor.</p> <p>Supported configurations:</p> <ul style="list-style-type: none"> ■ Two processors installed in sockets 0 and 1. ■ Four processors installed in sockets 0 through 3.
Memory	<p>Up to eight memory riser cards are supported (two risers per CPU) in the server chassis. Each memory riser supports up to twelve DDR3-1600 ECC low-voltage registered or load-reduced DIMMs, allowing up to twenty-four DIMMs per processor. Installed DIMMs must be the same type and size.</p> <ul style="list-style-type: none"> ■ In a two CPU system, you can install up to a maximum of 1.5 TB of system memory. ■ In a four CPU system, you can install up to a maximum of 3 TB of system memory. <p>Refer to the <i>Service Manual</i> for DIMM population rules and supported configurations.</p>
Storage devices	<p>For internal storage, the server chassis provides:</p> <ul style="list-style-type: none"> ■ Six 2.5-inch drive bays, accessible through the front panel. All bays can be populated with SAS-2 HDDs or SATA-3 SSDs. ■ An optional DVD+/-RW drive on the front of the server, below the drive bays. This SATA DVD drive connects to a USB-SATA bridge, so that the drive appears to the system as a USB storage device. ■ SAS-2 HBA PCIe card options: <ul style="list-style-type: none"> ■ Sun Storage 6 Gb SAS PCIe HBA. Supports RAID levels : 0, 1, 10.

Component	Sun Server X4-4
	<ul style="list-style-type: none"> ■ Sun Storage 6 Gb SAS PCIe RAID HBA. Supports RAID levels : 0, 1, 1E, 10, 5, 5EE, 6 with Battery Backed Write Cache (BBWC).
USB 2.0 ports	<ul style="list-style-type: none"> ■ Two ports on the front of the system and two on the back. ■ Two internal ports on the motherboard. One port holds the optional factory-installed Oracle System Assistant (OSA) stick—a bootable device used to configure the server. A second port can hold a USB flash device for system booting.
VGA ports	<p>Two high-density DB-15 video ports are available. One on the front of the system and one on the back. The server includes an embedded VGA 2D graphics controller with 8 MB, which supports resolutions up to 1600 x 1200 x 16bits @ 60 Hz (1024 x 768 when viewed remotely using Oracle ILOM Remote Console Plus RKVMS).</p> <p>Note - The VGA port available on the back panel supports VESA Device Data Channel for monitor identification.</p>
PCI Express 3.0 I/O slots	<p>Eleven PCI Express 3.0 slots that accommodate low-profile PCIe cards. In configurations that include a SAS HBA card, the HBA card is installed in slot 2. All slots support x8 PCIe connections. Two slots are also capable of supporting x16 PCIe cards.</p> <ul style="list-style-type: none"> ■ Slots 1 through 7, 9, and 10: x8 connector ■ Slots 8 and 11: x8 or x16 connector <p>Note - PCIe slots 7 through 11 are only functional in four CPU systems.</p>
PCI Express I/O cards	For a list of supported I/O cards for your system, refer to the Sun Server X4-4 Product Notes .
Ethernet ports	Four 10 GbE RJ-45 Ethernet ports on back panel.
Service processor	<p>Emulex Pilot 3 baseboard management controller (BMC) mounted on a daughterboard.</p> <p>Supports industry-standard IPMI feature set.</p> <p>Supports remote KVMS, USB, DVD, CD, floppy, and ISO image over IP.</p> <p>Includes a serial port.</p> <p>Supports Ethernet access to SP through a dedicated RJ-45 Gigabit Ethernet (10/100/1000) management port and optionally through one of the host 10 GbE ports (sideband management).</p>
Power supplies	<p>Two 1030/2060 Watt AC input auto-ranging hot-swappable power supplies.</p> <p>Note - A two-CPU system can operate with low-line 100 - 127 VAC or high-line 200 - 240 VAC sources. A four-CPU system can only operate with high-line 200 - 240 VAC sources.</p>
Cooling fans	Six hot-swappable, redundant fans at chassis front (top-loading); redundant fans in each power supply.
Management software	<p>The following options are available:</p> <ul style="list-style-type: none"> ■ Oracle Integrated Lights Out Manager (ILOM) on the service processor. ■ Oracle System Assistant (OSA) on an optional internal USB flash drive. ■ Oracle Hardware Management Pack on the optional OSA internal USB flash drive. ■ Oracle Enterprise Management Ops Center, downloadable from the Oracle site.

Managing Your Server

After you have installed your server, you have several different options for system management 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, refer to:

<http://www.oracle.com/goto/system-management>

The following is an overview of some of the system management tools for multiple systems:

- If you want to manage your server from a single interface, provision firmware, an operating system, or operating system updates to multiple servers, you can use the Oracle Enterprise Manager Ops Center. For more details, refer to:

<http://www.oracle.com/technetwork/oem/ops-center/index.html>

- If you want to monitor your enterprise servers, you can take advantage of Sun Management Center. For more details, refer to:

<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, refer to:

<http://www.oracle.com/goto/system-management>

Managing a single server.

The following sections contain information on single server management tools.

- [“Oracle System Assistant” on page 19](#)
- [“Oracle ILOM” on page 21](#)
- [“Oracle Hardware Management Pack” on page 23](#)
- [“UEFI BIOS” on page 24](#)

Oracle System Assistant

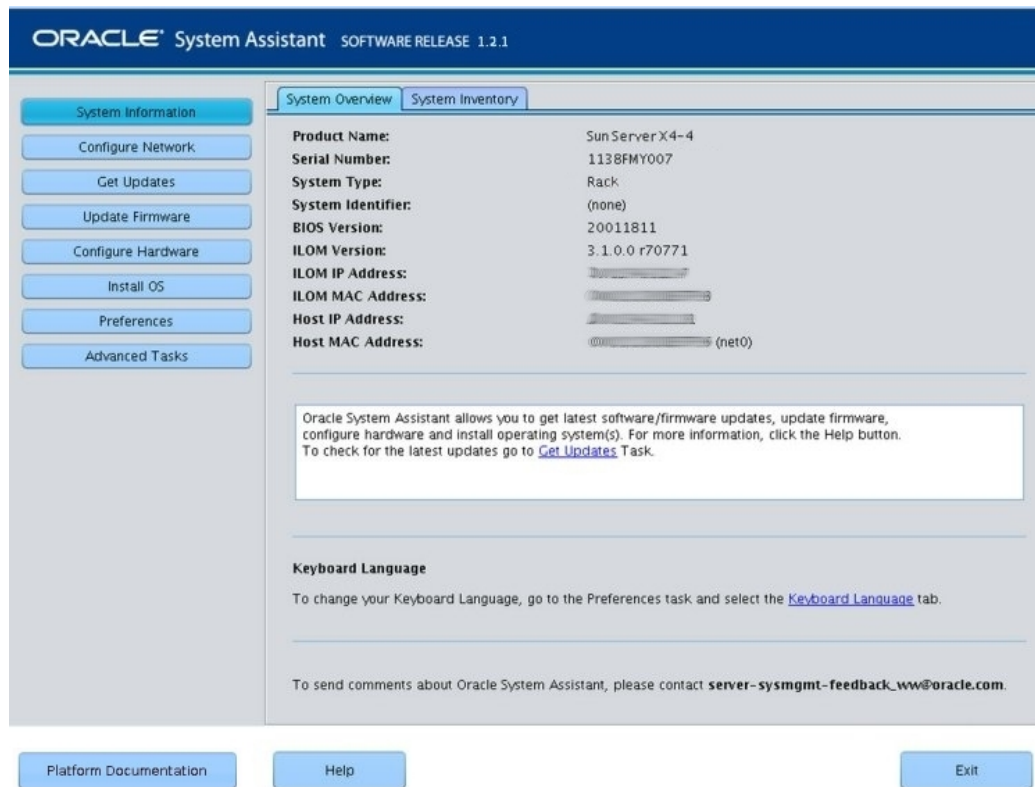
The Oracle System Assistant application is a task-based server provisioning tool that allows you to perform initial server setup and maintenance for Oracle x86 servers. Using Oracle System

Assistant, you can install a supported Oracle Solaris, Oracle VM, Linux, or Windows operating system, update your server to the latest software release, and configure server hardware. Oracle System Assistant is a factory-installed option available when you purchase your server. If your server includes Oracle System Assistant, it resides on an internal USB flash drive.

At initial product release, the Sun Server X4-4 supports Oracle System Assistant version 1.2.1.

For more details on Oracle System Assistant, see the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

The following illustration shows an example of the Oracle System Assistant System main screen.



Oracle ILOM

Oracle Integrated Lights Out Manager (ILOM) is a built-in feature that allows connection to the server's service processor (SP). At initial product release, the Sun Server X4-4 supports Oracle ILOM version 3.2.2.

The Oracle ILOM software resides on the service processor. Use Oracle ILOM to monitor and manage server components. Oracle ILOM functions include:

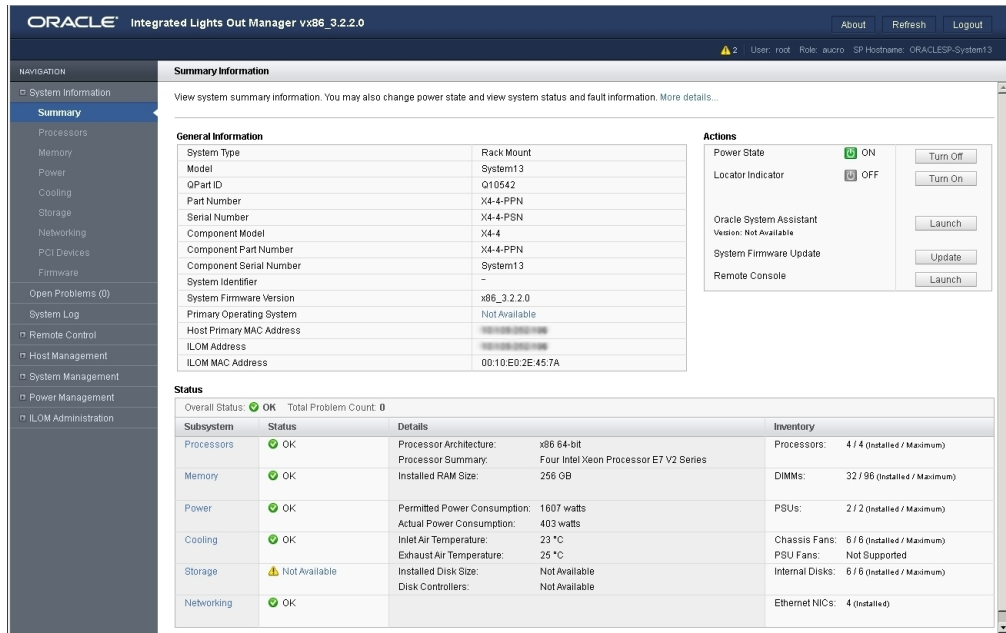
- Configuring network information
- Viewing and editing hardware configurations for the SP
- Monitoring vital system information and viewing logged events
- Managing Oracle ILOM user accounts

You can access Oracle ILOM in either of the following ways:

- Using a remote ethernet connection
- Using a local serial connection

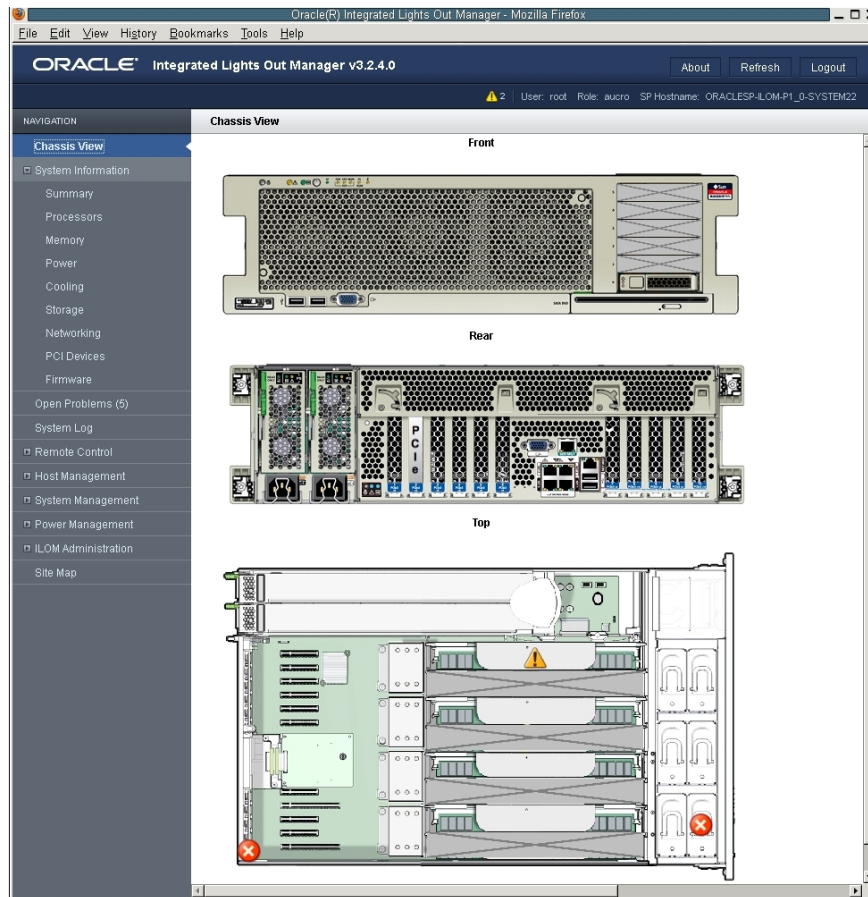
Oracle ILOM provides both a web interface and a command-line interface (CLI)

The following illustration shows an example of the web interface when you are logged in to Oracle ILOM.



As of system software release 1.1.0, a new feature has been added that provides a graphical view of the server, its components and mouseover or clickable status. To access this new feature, select the Chassis View link from the left nav list after logging into Oracle ILOM for your server.

The following illustration is a sample of the chassis view.



For more on accessing Oracle ILOM for your server, see:

- [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 56](#)
- [“Log In to Oracle ILOM Using a Local Serial Connection” on page 55](#)

Oracle Hardware Management Pack

Oracle Hardware Management Pack provides tools to help you manage and configure your Oracle servers. Refer to [“Server Management Tools” in *Sun Server X4-4 Product Notes*](#) to see which versions of Oracle Hardware Management Pack are supported.

Hardware Management Pack enables you to do the following using command-line tools:

- Use a management agent at the operating system level to enable in-band monitoring of your Oracle hardware over Simple Network Management Protocol (SNMP). You can use this information to integrate your Oracle servers into your data center management infrastructure.
- Configure BIOS, UEFI BIOS, RAID volumes and Oracle Integrated Lights Out Manager (ILOM) service processors on your servers.
- Upgrade your server components' firmware.
- View hardware configuration information and the status of your Oracle servers.
- Configure an ILOM trap proxy that forwards SNMP traps from your Oracle ILOM service processor over the Host-to-ILOM Interconnect.
- Use IPMItool to access server service processors using the IPMI protocol and perform management tasks.
- Use **Oracle Linux Fault Management Architecture (FMA)** host-based command-line interface to view and act on faults from the host operating system using fault management commands similar to those available from the Oracle ILOM Fault Management shell. The Oracle Linux FMA software is available starting with Oracle Hardware Management Pack 2.3 and supported for the Sun Server X4-4 running Oracle Linux 6.5 with system software 1.1.0.

For more details on Oracle Hardware Management Pack, refer to:

<http://www.oracle.com/goto/OHMP/docs>

UEFI BIOS

The Sun Server X4-4 contains a Unified Extensible Firmware Interface (UEFI)-compatible BIOS that provides more boot options and configuration capability for adapter cards than previous versions of the BIOS.

Two boot modes are available for BIOS (described in the table below): Legacy BIOS Boot Mode and UEFI BIOS Boot Mode. UEFI BIOS can be configured to support either boot mode. However, some devices and operating systems do not yet support UEFI BIOS and can boot only with the server configured for Legacy BIOS Boot Mode.

The boot mode can be changed in the BIOS Setup Utility. The new mode is configured after you make the appropriate selection in the BIOS Setup Utility and then Save Changes and Reset. Afterwards, you can configure your boot candidates (such as disk drives) with a supported operating system.

Note - Note that If you change boot modes, any boot candidates (such as disk drives) configured when the server was in the previous mode will no longer be available. The only way to make them available is to either go back to the previous boot mode or to reconfigure them while in the new boot mode (which would wipe out any data on them).

Before changing boot modes, use the Oracle ILOM BIOS Backup and Restore function to preserve the previous configuration in case you want to switch back.

Boot Mode	Description
Legacy BIOS Boot Mode	<p>Legacy BIOS Boot Mode is the default setting in the BIOS Setup Utility. Choose Legacy BIOS Boot Mode to allow host bus adapters (HBAs) to use adapter option ROMs. Select Legacy BIOS Boot Mode when software or adapters do not have UEFI drivers, or the system is using option ROM.</p> <p>In Legacy BIOS Boot Mode, only boot candidates that support Legacy BIOS Boot Mode appear in the BIOS Setup Utility screens in the Boot Options Priority list.</p> <p>Note - Once you choose a boot mode and install an operating system, if you reboot the server and select a different boot mode in BIOS, the OS will no longer be accessible and cannot be used. You will need to switch back to the previous boot mode setting to boot the OS.</p>
UEFI BIOS Boot Mode	<p>Choose UEFI BIOS Boot Mode from the BIOS Setup Utility to use UEFI drivers when software and adapters have UEFI drivers. For instructions for making the selection, refer to the Oracle X4 Series Servers Administration Guide (http://www.oracle.com/goto/x86AdminDiag/docs).</p> <p>In UEFI BIOS Boot Mode, only boot candidates that support UEFI BIOS Boot Mode appear on the BIOS Setup Utility screens in the Boot Options Priority list.</p> <p>Currently, the following operating systems supported for the Sun Server X4-4 support UEFI BIOS Boot Mode:</p> <ul style="list-style-type: none"> ■ Oracle Solaris 11.1 and later ■ Oracle Linux 6.5 ■ Red Hat Enterprise Linux 6.5 ■ SUSE Linux Enterprise Server 11 SP3 ■ Microsoft Windows Server 2008 R2 SP1 and Microsoft Windows Server 2012 <p>All other operating systems (including factory preinstalled OS images) must use Legacy BIOS Boot Mode.</p> <p>For an up-to-date list, refer to the <i>Sun Server X4-4 Product Notes</i> at http://www.oracle.com/goto/x4-4/docs.</p> <p>Note - Once you choose a boot mode and install an operating system, if you reboot the server and select a different boot mode in BIOS, the OS will no</p>

Boot Mode	Description
	longer be accessible and cannot be used. You will need to switch back to the previous boot mode setting to boot the OS.

See Also

- For more details on UEFI BIOS, refer to [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).
- For information about Oracle ILOM, refer to the documentation for your supported version of Oracle Integrated Lights Out Manager (ILOM) at: <http://www.oracle.com/goto/ILOM/docs>.

Preparing to Install the Server

This section describes the information you need to know before you install the server into a rack. It includes the topics shown in the following table.

Description	Links
Review the server physical, electrical, and environmental specifications.	“Server Specifications” on page 27
Review ventilation and cooling requirements for the rackmounted server.	“Ventilation Guidelines” on page 29
Unpack the server and verify the ship kit contents.	“Shipping Inventory” on page 30
Assemble the tools required for installation.	“Tools and Equipment Needed” on page 31
Review ESD requirements and take safety precautions.	“ESD Precautions” on page 31
Install any optional components into the server.	“Optional Component Installation” on page 32

Server Specifications

This section includes physical, electrical and environmental specifications for the system.

Physical Specifications

The following table lists the physical specifications for the Sun Server X4-4.

Parameter	Value
Height	129.9 mm (5.1 inches)
Width	436.5 mm (17.2 inches)
Depth	732 mm (28.8 inches)
	752.35 mm (29.6 inches) with PSU ejectors

Parameter	Value
Weight	40 kg (88 lbs)

Electrical Specifications

The following table lists the electrical specifications for the Sun Server X4-4.

Note - For up-to-date information on power consumption, go to the Sun x86 Servers web site and navigate to the Sun Server X4-4 page: <http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>.

Parameter	Value
Nominal input frequencies	50/60 Hz
Operating input voltage range	100-127 VAC (two-CPU configuration)
	200-240 VAC (two or four-CPU configuration)
Rated input current	100-127 VAC 12A
	200-240 VAC 10A
Maximum power consumption	2000W
Maximum heat output	6824 BTU/hr

Environmental Requirements

The following table lists the environmental requirements for the Sun Server X4-4.

Parameter	Value
Operating temperature (single, non-rack system)	At sea level: 5° C to 35° C (41° F to 95° F)
	At altitude: 5° C to 31° C (41° F to 88° F)
Non-operating temperature (single, non-rack system)	-40° C to 68° C (-40° F to 154° 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 3,000 m (9,840 ft), maximum ambient temperature is derated by 1 degree C per 300m above 900 m, except

Parameter	Value
	in China where regulations might limit installations to a maximum altitude of 2,000 m
Non-operating altitude (single, non-rack system)	0 m to 12,000 m (0 ft to 40,000 ft)
Acoustic noise	LwAd: 8.9 B (idle and operating, room temp.), 8.9 B (max. ambient); LpAm: 75 dBA (bystander position, max. ambient)

Ventilation Guidelines

Rackmountable servers and equipment, including the Sun Server X4-4, typically draw cool air in through the front of the rack and let warm air out the rear of the rack. There is no airflow requirement for the left and right sides due to front-to-back cooling.

Air conditioning facilities usually do not precisely monitor or control temperature and humidity throughout an entire computer room. Generally, monitoring is done at individual points corresponding to multiple exhaust vents in the main unit, and other units in the room.

Special consideration should be paid to humidity when using underfloor ventilation. When underfloor ventilation is used, monitoring is done at each point close to an exhaust vent. Distribution of the temperature and humidity across the entire room is uneven.

The Sun Server X4-4 has been designed to function while installed in a natural convection airflow. The following requirements must be followed to meet the environmental specification:

- Ensure that there is adequate airflow through the system.
- Ensure that air intake is at the front of the system, and the air outlet is at the rear of the system.
- Allow a minimum clearance of 1,232 mm (48.5 inches) at the front of the system, and 914 mm (36 inches) at the rear of the system for ventilation.
- Ensure unobstructed airflow through the chassis. The server uses internal blowers that can achieve a total airflow of 100 CFM in normal operating conditions.
- Ensure that air temperature rise through the server is no greater than 68°F (20°C).
- Ensure that inlet air enters at the front of the server and exits from the back.
- Ensure that ventilation openings such as cabinet doors, for both the inlet and exhaust of the server are not obstructed.

For example, Oracle's Sun Rack II has been optimized for cooling. Both the front and rear doors have 80 percent perforations that provide a high level of airflow through the rack.

- Ensure that front and rear clearance of the server allow a minimum of 1 inch (25 mm) at the front of the server and 3.15 inch (80 mm) at the rear of the server when mounted.

These clearance values are based on the inlet and exhaust impedance (available open area) stated here and assume a uniform distribution of the open area across the inlet and exhaust areas. These values also improve cooling performance.

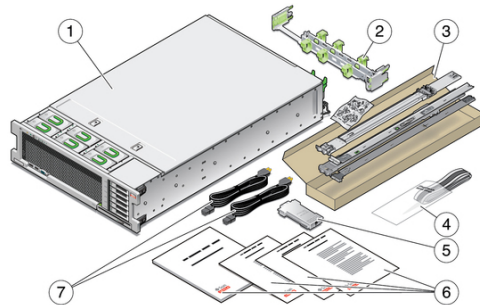
Note - The combination of inlet and exhaust restrictions, such as cabinet doors and the spacing of the server from the doors, can affect the cooling performance of the server. You must evaluate these restrictions. Server placement is particularly important for high-temperature environments.

- Take care to prevent recirculation of exhaust air within a rack or cabinet.
- Manage cables to minimize interference with the server exhaust vent.

Shipping Inventory

Inspect the shipping cartons for evidence of physical damage. If a shipping carton appears damaged, request that the carrier's agent be present when the carton is opened. Keep all contents and packing material for the agent's inspection.

The following items are typically packaged with the Sun Server X4-4:



Callout	Description
1	Server
2	Cable management assembly
3	Rackmount kit
4	Antistatic wrist strap

Callout	Description
5	RJ-45 to DB-9 crossover adaptor
6	Printed documents
7	2 AC power cords

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 [“Optional Component Installation” on page 32](#).

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

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 - Equipment damage. 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.

Optional Component Installation

Standard system components are installed at the factory. Optional components that you purchased independent of the standard configuration are shipped separately, and in most cases should be installed before you install the server in a rack.

The following optional components can be ordered and purchased separately:

- PCIe cards
- DDR3 DIMM memory kits
- Storage drives
- Software media

If you ordered any customer-installable components, refer to the service label on the top cover of the server or the component removal and replacement procedures in the [Sun Server X4-4 Service Manual](#).

Supported components and their part numbers are subject to change over time and without notice. For the most up-to-date list, refer to:

https://support.oracle.com/handbook_private/

Note - This site requires an Oracle web account for access.

Click the name and model of your server. On the product page that opens for the server, click Full Components List for a list of supported components.

Installing the Server Into a Rack

This section 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.

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

Description	Links
Review safety precautions.	“Safety Precautions” on page 33
Review the compatibility requirements for your rack.	“Rack Compatibility” on page 34
Install mounting brackets onto the server.	“Install Mounting Brackets” on page 35
Attach the tool-less slide-rail assembly to the rack.	“Attach Slide-Rail Assemblies ” on page 36
Install the server into the slide-rail assembly.	“Install Server Into the Slide-Rail Assemblies” on page 40
(Optional) Install the cable management arm for routing server cables.	“Install Cable Management Arm” on page 43
Verify that the slide-rails and cable management arm are working correctly.	“Verify Operation of Slide-Rails and CMA” on page 48

Safety Precautions

This section describes safety precautions you must follow when installing the server into a rack.



Caution - Equipment damage or personal injury. 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 28.](#)



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 - Equipment damage or personal injury. 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 - Personal injury. 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 - Equipment damage. Slide-rail mounted equipment is not to be used as a shelf or a work space.

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 standards shown in the following table.

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.

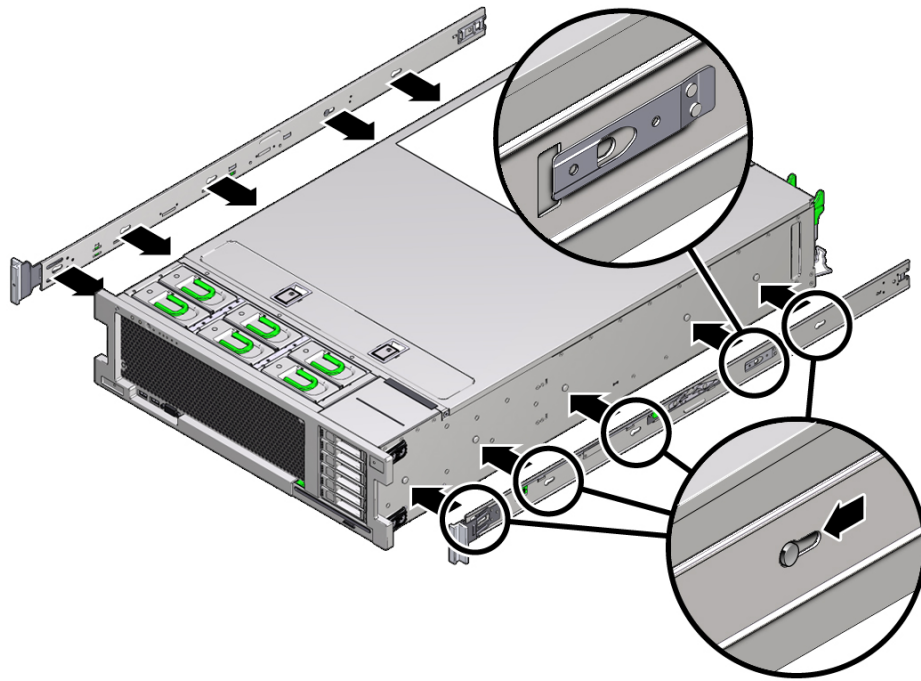
Item	Requirement
Distance between front and rear mounting planes	Minimum 610 mm and maximum 915 mm (24 inches to 36 inches).
Clearance depth in front of front mounting plane	Distance to front cabinet door is at least 25.4 mm (1 inch).
Clearance depth behind front mounting plane	Distance to rear cabinet door is at least 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 ejectors): 732 mm (28.8 inches).
	Width: (not including ears): 436.5 mm (17.2 inches).
	Height: 129.9 mm (5.1 inches).

▼ 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.**

Note - The mounting brackets are identical and can be installed on either side of the 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.
3. Verify that the rear locating pin has engaged the mounting bracket clip.
4. Repeat Steps 1 through 3 to install the remaining mounting bracket on the other side of the server.

▼ Attach Slide-Rail Assemblies

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.

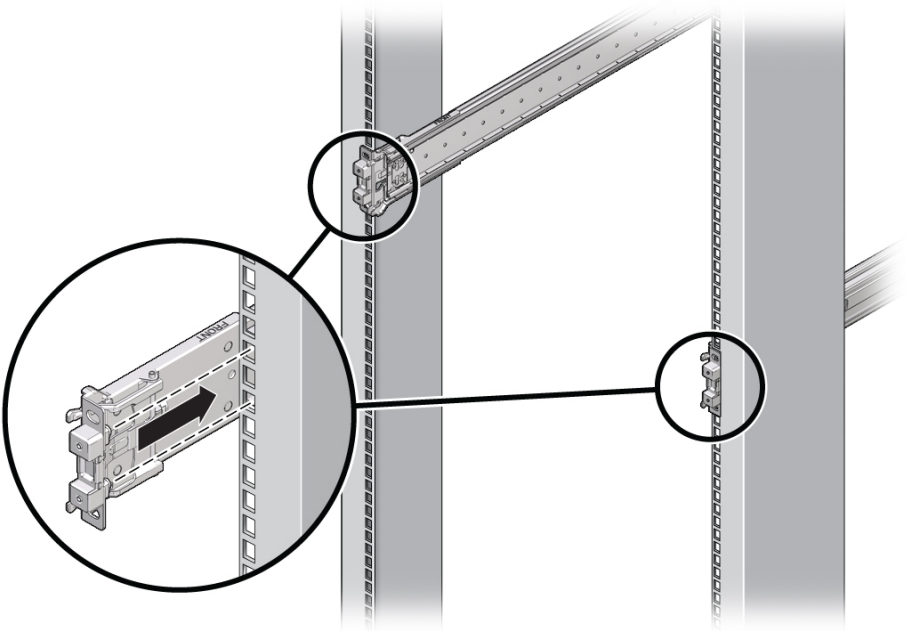
To attach slide-rail assemblies to the rack:

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.**

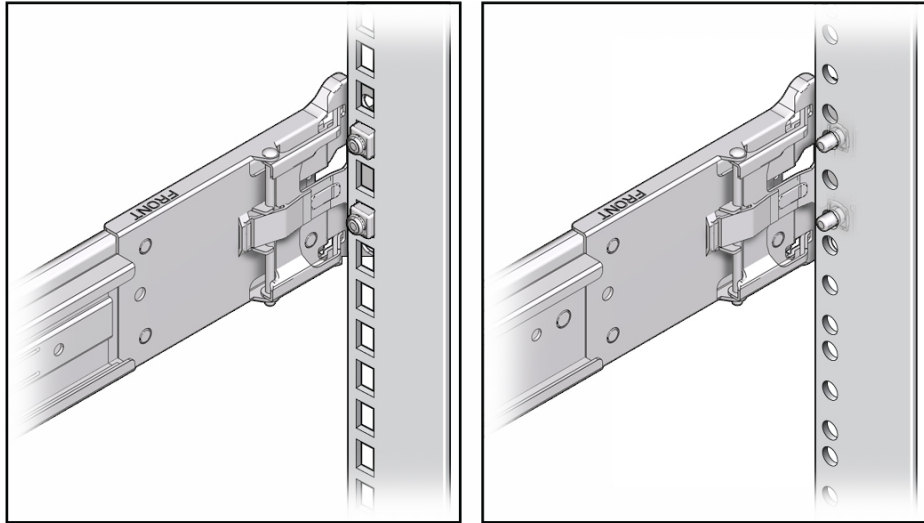
Refer to the *Rail Rackmount Kit Overview and Information* card for instructions on inserting these cage nuts. This card is included with the rack kit.

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.**
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.**

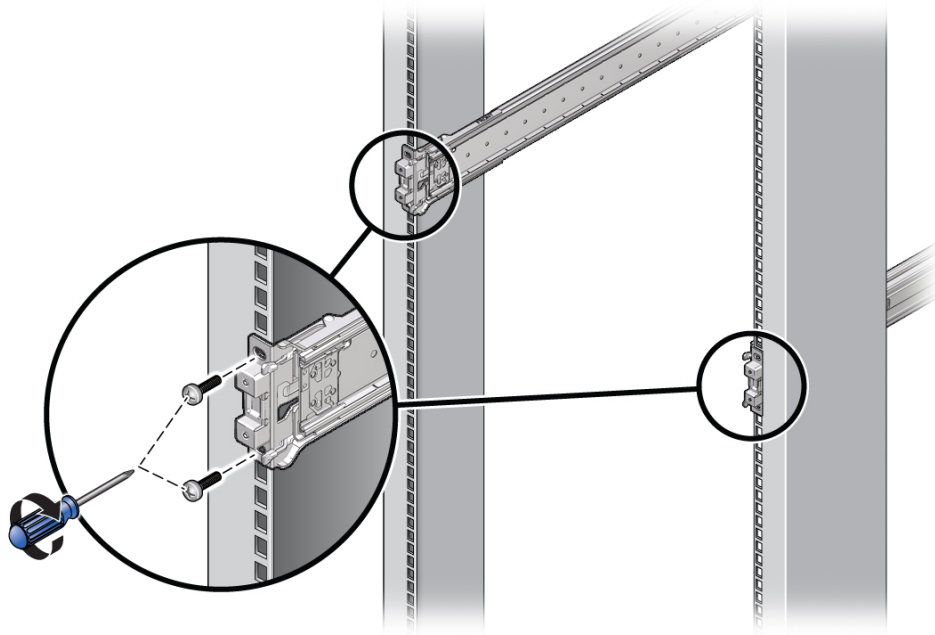
You will hear an audible click when the mounting pins engage the rack.



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.



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.



5. Repeat Steps 2 through 4 for the remaining slide-rail assembly.

▼ Install 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.



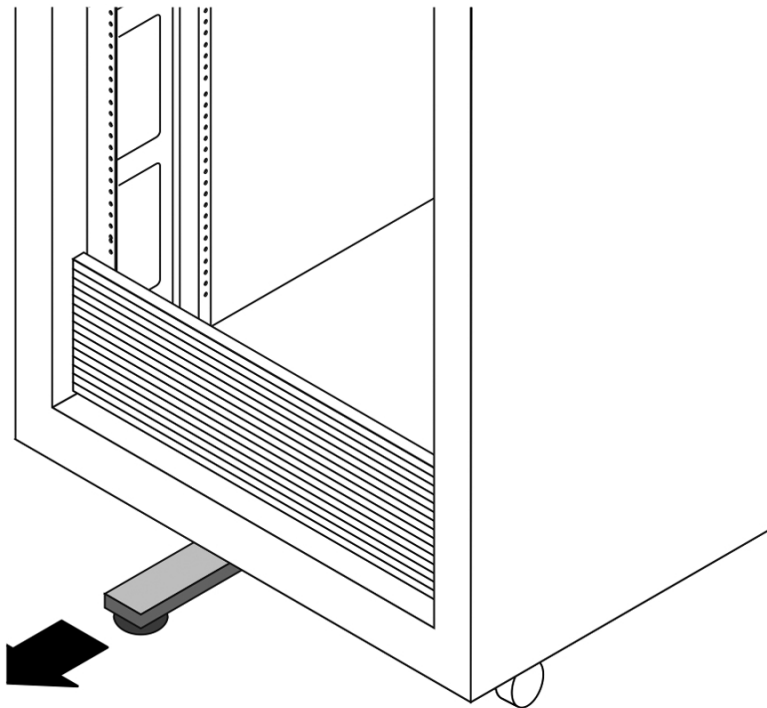
Caution - Equipment damage or personal injury. This procedure requires a minimum of two people because of the weight of the server. Attempting this procedure alone could result in equipment damage or personal injury.



Caution - Equipment damage or personal injury. 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.

1. **If available, extend the anti-tip bar at the bottom of the rack.**

Refer to your rack documentation for instructions.



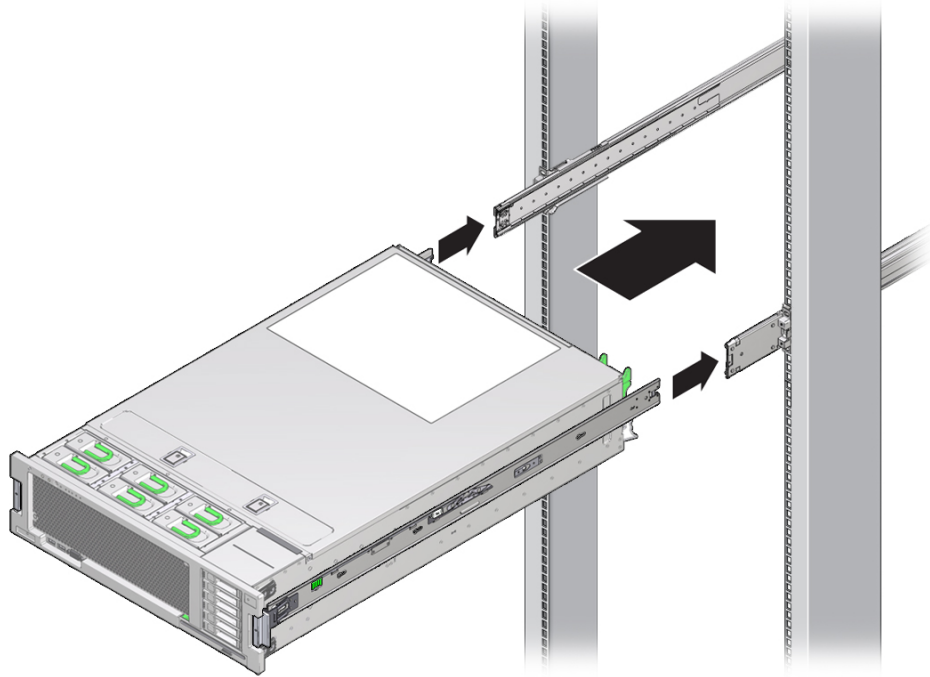
Caution - Equipment damage or personal injury If your rack does not have an anti-tip bar, the rack could tip over.

2. **Push the slide-rails into the slide-rail assemblies in the rack as far as possible.**
3. **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.**

4. **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).**

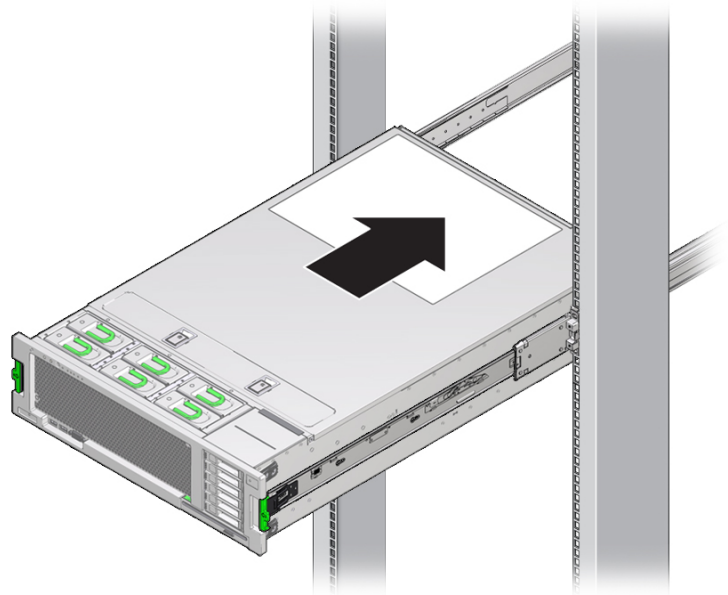


Caution - Equipment damage or personal injury. When inserting the server into the slide-rail, ensure that both the top and bottom mounting lips of the mounting brackets are inserted into the slide-rail. The server should slide forward and backward easily if correctly installed. If the unit does not slide 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.



5. **Simultaneously push and hold the green slide-rail release buttons on each mounting bracket while you push the server into the rack. 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.



Caution - Equipment damage or personal injury. Verify that the server is securely mounted in the rack and that the slide-rail locks are engaged with the mounting brackets before continuing.

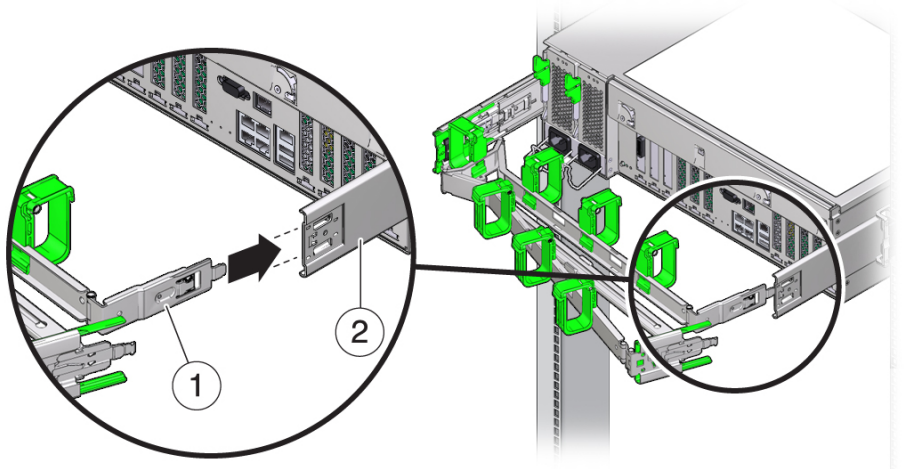
▼ Install Cable Management Arm

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

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.**

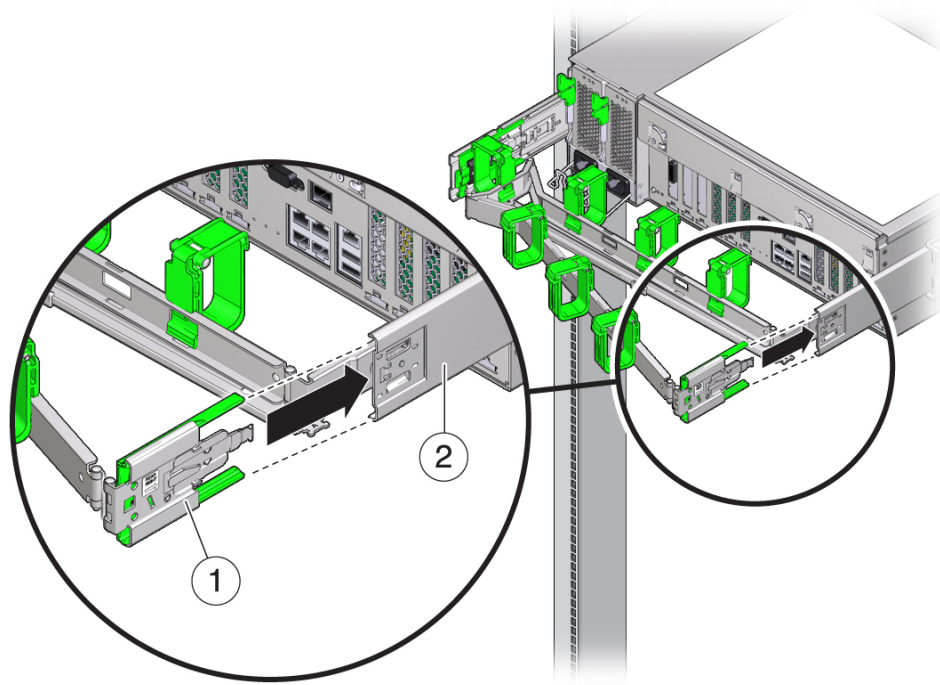
Note - References to “left” or “right” in this procedure assume that you are facing the back of the equipment rack.

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.



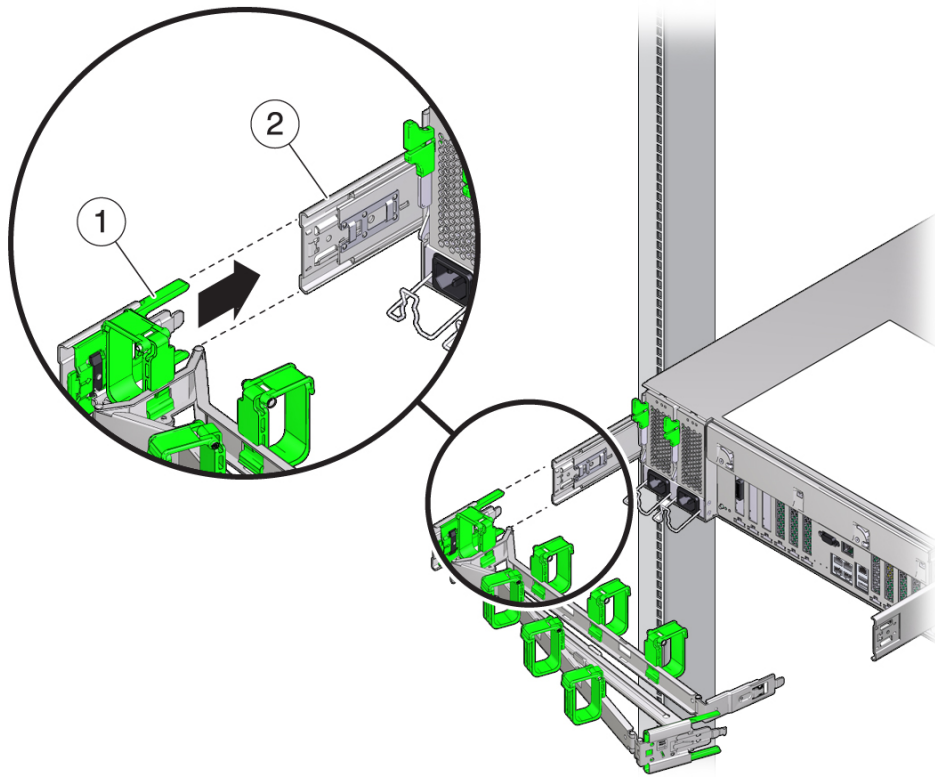
Callout	Description
1	CMA mounting bracket
2	Right slide-rail

5. Insert the right CMA slide-rail connector into the right slide-rail assembly until the connector locks into place with an audible click.



Callout	Description
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.



Callout	Description
1	CMA slide-rail connector
2	Left slide-rail

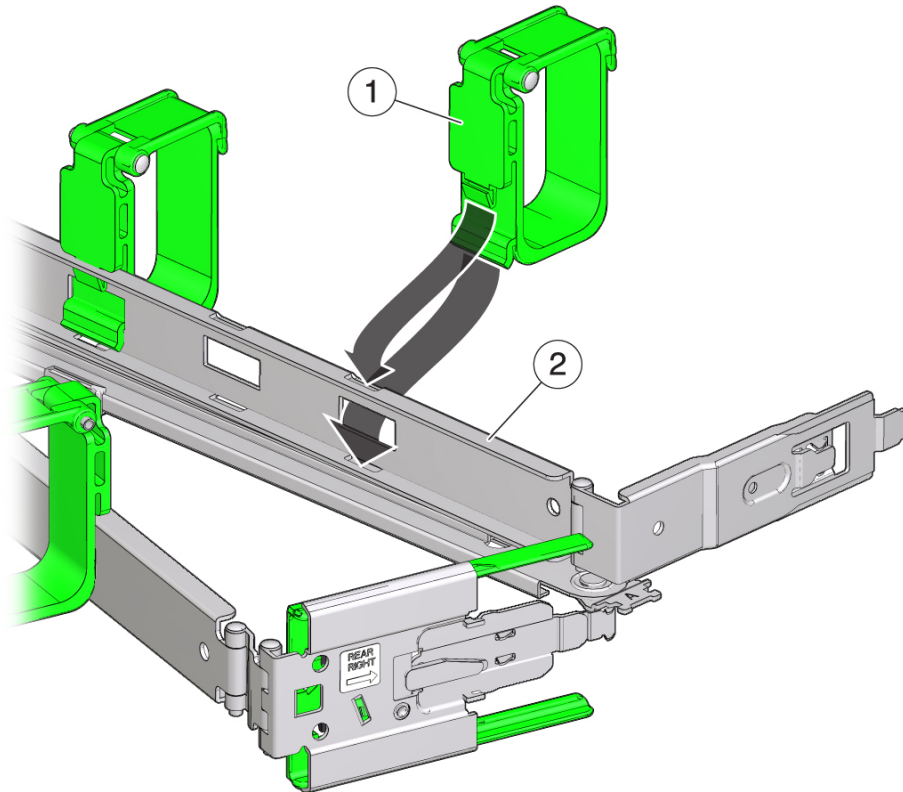
7. Install and route cables to your server, as required.

Note - Instructions for installing the server cables are provided in [“Cabling the Server” on page 49](#).

8. If required, attach the cable hook and loop straps to the CMA, and press them into place to secure the cables.

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.



Callout	Description
---------	-------------

1	CMA cable strap
2	CMA arm

▼ Verify Operation of Slide-Rails and CMA

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

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. **For the first set of stops, push in both green levers simultaneously and slide the server toward the rack.**

The first set of stops are levers are located on the inside of each slide-rail, just behind the back panel of the server.

The server should slide in approximately 18 inches (46 cm) and stop.
 - b. **Verify that the cables and the CMA retract without binding.**
 - c. **For the second set of stops, simultaneously push both of the green slide-rail release buttons, and push the server completely into the rack until both slide-rail locks engage.**

The second set of stops are the slide-rail release buttons, located at the front of the server.
5. **Adjust the cable straps and CMA, as required.**

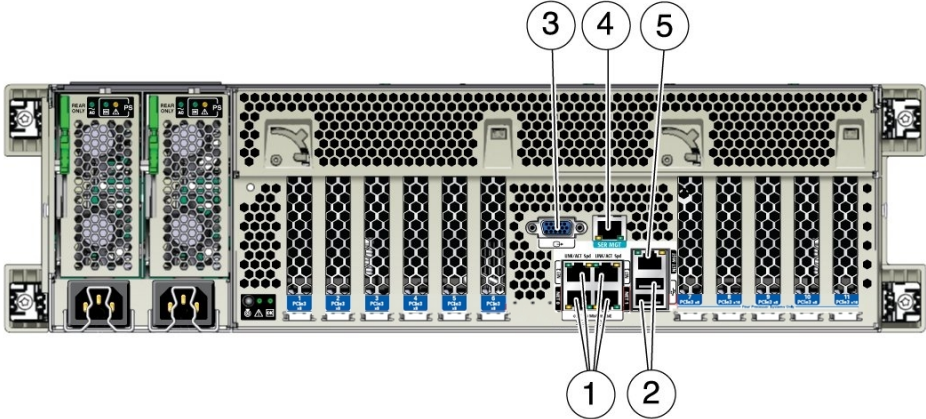
Cabling the Server

This section describes how to connect cables and power on the server for the first time. It includes the topics shown in the following table.

Description	Links
Connect data cables to the server.	“Cable the Server” on page 49
Connect power cords to the server.	“Connect the Power Cords” on page 50

▼ Cable the Server

The following figure shows the locations of the server back panel connectors and ports.



Callout	Description
1	Network 10 GbE ports: NET0–NET3

Callout	Description
2	USB 2.0 ports (2)
3	DB-15 video port
4	Service processor serial management (SER MGT)/RJ-45 serial port
5	Service processor network management (NET MGT) Ethernet port

1. **To make a direct KVM console connection, connect a mouse and keyboard to the server's USB ports [2], and a monitor to the DB-15 video port [3].**
2. **To make a management connection to the service processor:**
 - **Ethernet: If you plan to access the Oracle Integrated Lights Out Manager (ILOM) web or command-line interface over a network connection (separate management network recommended), connect an Ethernet cable to the network management port on the server labeled NET MGT [5].**

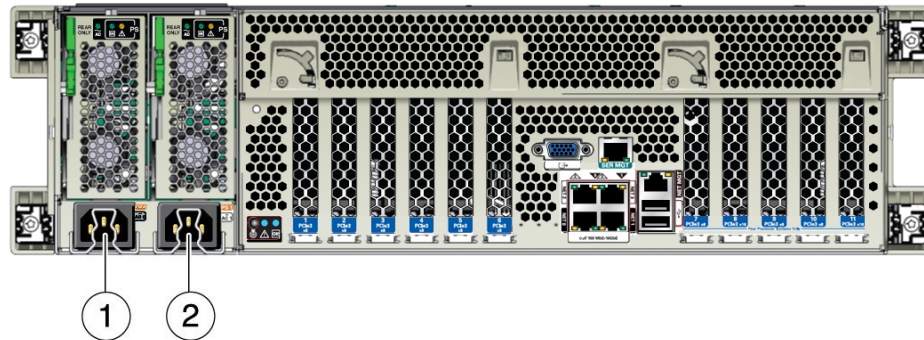
Note - The service processor (SP) uses the NET MGT (out-of-band) port by default. You can configure the SP to share one of the server's four 10 GbE Ethernet ports instead. The SP uses only the configured Ethernet port.

- **Direct serial: If you plan to access the Oracle ILOM command-line interface using the serial management port, connect a serial null modem cable from your terminal, or client running terminal emulation software, to the RJ-45 serial port on the server labeled SER MGT [4].**
3. **To connect the server to the network, connect Ethernet cables, as needed, to the 10 Gigabit Ethernet ports [1].**

Next Steps Proceed to [“Connect the Power Cords” on page 50.](#)

▼ Connect the Power Cords

Use this procedure to connect power cords to the server. When the power cords are connected, the server will be in standby power mode. The following figure shows the location of the AC power connectors.



Callout	Description
1	Power supply 0 AC inlet connector with cable clip
2	Power supply 1 AC inlet connector with cable clip

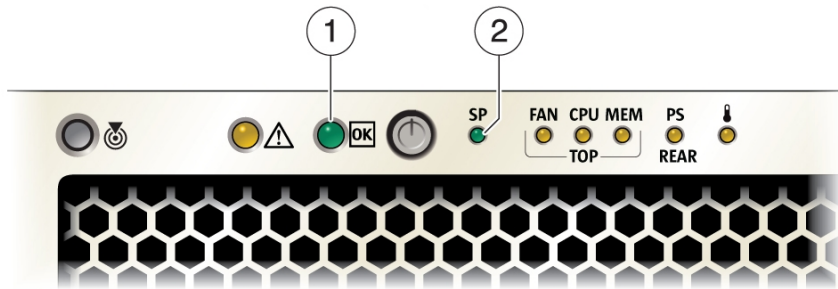
Note - A two-CPU system will operate from low-line 100 to 127 VAC or high-line 200 to 240 VAC sources. A four-CPU system will only operate from high-line 200 to 240 VAC sources.

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 [1 and 2 in the previous figure] and secure each cord using the connector's cable clip.**

When power is connected, the server boots into standby power mode:

- The SP OK indicator [2] flashes while the SP is starting, and the system OK indicator [1] remains off until the SP is ready.

- After a few minutes, the system OK indicator slowly flashes the standby blink pattern (0.1 seconds on, 2.9 seconds off), indicating that the SP (and Oracle ILOM) is ready for use. Note that the server is not initialized or fully powered on at this point.



Callout	Description
1	System OK indicator
2	SP OK indicator

3. Do not fully power on the server until instructed to do so. Proceed to the next tasks.

- Next Steps**
- [“Connecting to Oracle ILOM” on page 53](#)
 - [“Setting Up Software and Firmware Using Oracle System Assistant” on page 71](#)
 - [“Configure Server Drives for OS Installation” on page 79](#)

Connecting to Oracle ILOM

Oracle Integrated Lights Out Manager (ILOM) is an embedded tool you can use to monitor and manage server components. Oracle ILOM lets you perform the following tasks:

- Manage the server locally or remotely, with the server power on or off
- Monitor vital system information, view logged events, obtain notifications, and run troubleshooting tools
- View and edit server hardware configurations
- Manage Oracle ILOM user accounts using your company's secure infrastructure
- Access the host console remotely
- Backup Oracle ILOM and server BIOS configuration information

This section describes how to configure and access the Oracle ILOM command-line interface (CLI) or web browser user interface (BUI) to manage the server.

Description	Link
Learn about Oracle ILOM hardware and interfaces.	“Oracle ILOM Hardware and Interfaces” on page 54
Learn about network ports and defaults.	“Oracle ILOM Network Defaults” on page 54
Log in directly to Oracle ILOM using a terminal connected to the serial port.	“Log In to Oracle ILOM Using a Local Serial Connection” on page 55
Log in to Oracle ILOM over the network using an Ethernet connection.	“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 56
Configure Oracle ILOM network settings.	<ul style="list-style-type: none">■ “Modify Network Settings From the Oracle ILOM CLI” on page 59■ “Modify Network Settings From the Oracle ILOM Web Interface” on page 62■ “Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI” on page 64■ “Test IPv4 or IPv6 Network Configuration From the Oracle ILOM Web Interface” on page 65
Exit Oracle ILOM.	“Exit Oracle ILOM” on page 66
Troubleshoot the service processor connection.	“Troubleshooting the Service Processor Connection” on page 67

See Also

- For information on configuring Oracle ILOM through Oracle System Assistant, see “[Setting Up Software and Firmware Using Oracle System Assistant](#)” on page 71
- For complete instructions on using Oracle ILOM, refer to the documentation for your supported version of Oracle ILOM (supported versions are listed in the *Sun Server X4-4 Product Notes*): <http://www.oracle.com/goto/ILOM/docs>

Oracle ILOM Hardware and Interfaces

The following table lists the components and functions of Oracle ILOM.

Component	Function
Hardware	<ul style="list-style-type: none">■ Embedded service processor (SP) chipset that monitors the status and configuration of components such as fans, storage drives, and power supplies.■ Two rear panel external connections: NET MGT port (Ethernet connection) and SER MGT (RJ-45 serial connection).
Interfaces	<ul style="list-style-type: none">■ Web browser interface■ SSH command-line interface (CLI)■ IPMI v2.0 CLI■ SNMP v3 interface

Oracle ILOM Network Defaults

The Sun Server X4-4 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 default settings.

Note - To determine an automatically assigned IP address or host name for your server, use the network tools provided with the DHCP server or IPv6 router.

Logging In to Oracle ILOM

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 55](#).
- 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 56](#).

▼ 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.

Before You Begin You must have already connected a serial cable from a terminal (or terminal emulation client) to the SER MGT port on the back of the server. For more information on this connection, see [“Cable the Server” on page 49](#).

1. **At the terminal (or terminal emulation client), 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)**
2. **At the terminal keyboard, press Enter to establish the serial console connection to Oracle ILOM.**

A login prompt to Oracle ILOM appears.

3. **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. Steps for logging in using the command-line interface (CLI) or web interface are described below.

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.

Before You Begin You must have already connected a network cable from your management network to the NET MGT port on the back of the server. For more information on this connection, see [“Cable the Server” on page 49](#).

1. **Establish a connection to Oracle ILOM using one of the following methods:**

- **From the Oracle ILOM CLI, initiate a secure shell session. Enter the command:**

```
ssh username@host
```

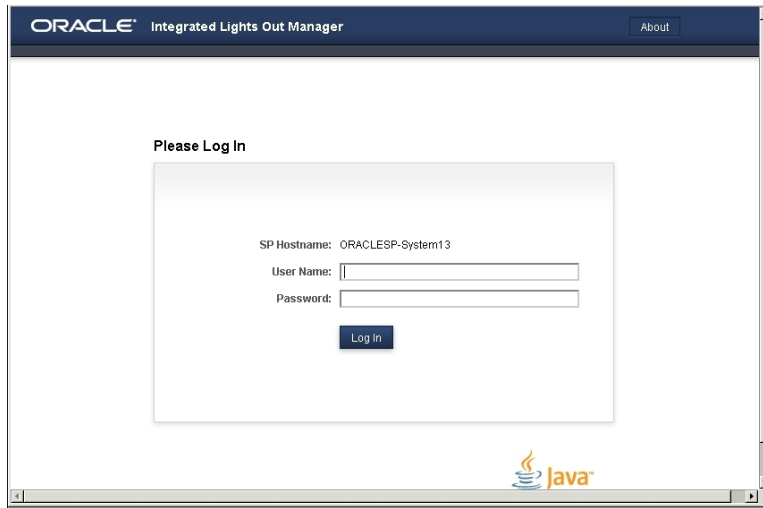
Where *username* is the user name of an account with Administrator privileges (the default administrator account is `root`) and *host* is either the IP address or hostname (when using DNS) of the server SP.

The Oracle ILOM password prompt appears.

Password:

- **From the Oracle ILOM web interface, 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. Log in to Oracle ILOM using one of the following methods:

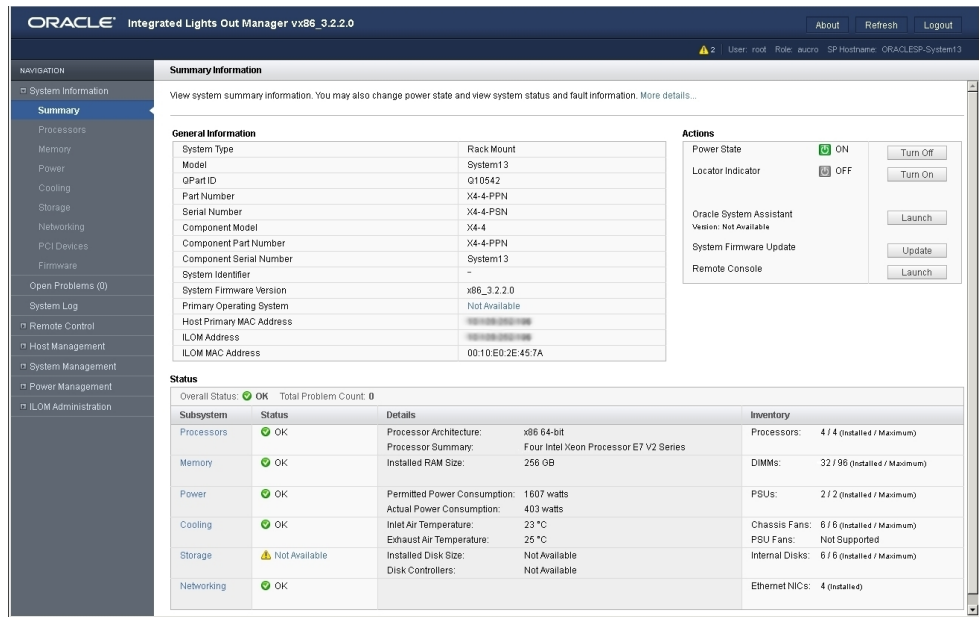
Note - To enable first-time login and access to Oracle ILOM, a default Administrator account and its password are provided with the system. To build a secure environment, you must change the default password (changeme) for the default Administrator account (root) after your initial login to Oracle ILOM. If this default Administrator account has since been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.

- **From the Oracle ILOM CLI, at the password prompt, type your password and press Enter.**

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

- **From the Oracle ILOM web interface, type your user name and password at the login page, and click Log In.**

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



Modifying Network Settings for Oracle ILOM

The procedures in this section describe how to modify Oracle ILOM network settings.

- To modify network setting from the Oracle ILOM CLI, see [“Modify Network Settings From the Oracle ILOM CLI”](#) on page 59.
- To log in remotely, use the IP address, hostname, or IPv6 local link name assigned to the server SP and follow the instructions in [“Modify Network Settings From the Oracle ILOM Web Interface”](#) on page 62.

▼ 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, refer to [“Access the BIOS Setup Utility” in Sun Server X4-4 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 55 or “[Log In to Oracle ILOM Using a Remote Ethernet Connection](#)” on page 56.**
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 and Step 4.**
 - **To view or configure IPv6 network settings, perform Steps 5 through 8.**
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
```
 - **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 pendingipdiscovery=static
-> set pendingipaddress=10.8.183.106
-> set pendingipnetmask=255.255.255.0
-> set pendingipgateway=10.8.183.254
-> set commitpending=true
```

Property	Value to Set	Description
state	enabled or disabled	The network state is enabled by default. Disabling the network connection to the SP will mean that you can only access Oracle ILOM using the serial management port.
pendingipdiscovery	static or dhcp	Network discovery options include <code>static</code> for a static IP address or <code>dhcp</code> for an IP address assigned by a DHCP server (default).
pendingipaddress	<ip_address>	To assign multiple static network settings type the <code>set</code> command for each property (IP address, netmask, and gateway) along with the static value that you want to assign.
pendingipnetmask	<netmask>	
pendingipgateway	<gateway>	
commitpending	true	Type <code>set commitpending=true</code> 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.

To test the IPv4 or IPv6 network settings, see Step 9.

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. For example:

```
-> set state=enabled
-> set autoconfig=dhcpv6_stateless
```

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

Note - The IPv6 configuration options take effect 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 property types. For example:

```
-> set state=enabled
-> set pending_static_ipaddress=fec0:a:8:b7:214:4fff:feca:5f7e/64
```

Property	Value to Set	Description
state	enabled or disabled	The IPv6 network state is enabled by default. To enable a static IP address this state must be set to enabled.
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:b7:214:4fff:feca:5f7e/64

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

```
-> set /SP/network 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 64.](#)

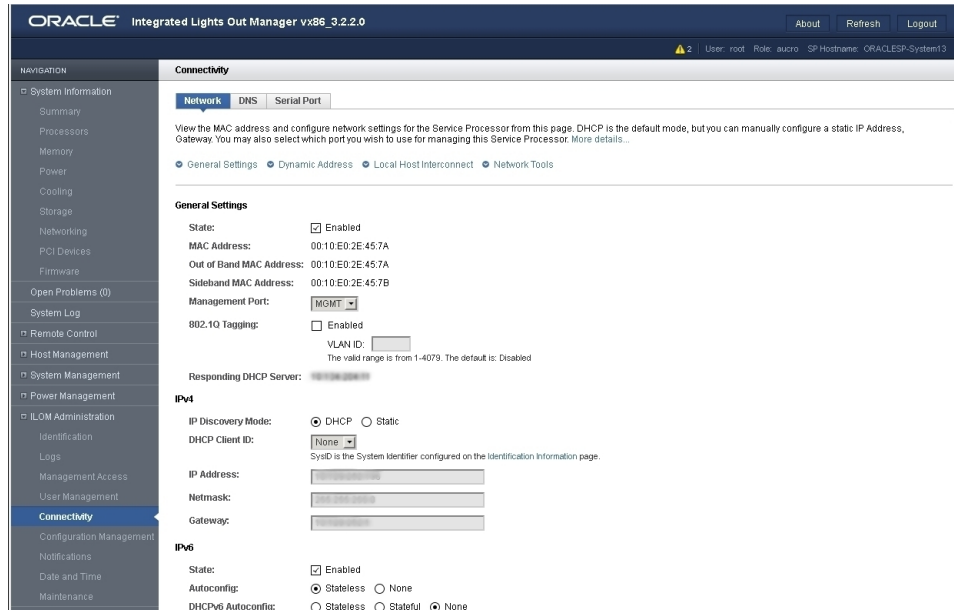
▼ Modify Network Settings From the Oracle ILOM Web Interface

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, refer to [“Access the BIOS Setup Utility” in Sun Server X4-4 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 56.](#)

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 and 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 static address in the format *ipv6_address/subnet mask length in bits* in the Static IP Address field (for example: `fec0:a:8:b7:214:4f ff:feca:5f7e/64`) 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 Web Interface”](#) on page 65.

Testing Network Settings for Oracle ILOM

The procedures in this section describe how to test Oracle ILOM network settings.

- To test network setting from the Oracle ILOM CLI, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI”](#) on page 64.
- To test network settings from the Oracle ILOM web interface, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM Web Interface”](#) on page 65.

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

1. **Use the `cd` command to navigate to the `/SP/network/test` directory:**

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

2. **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

3. Use the `set ping` or `set ping6` command to send a network test from the device to a network destination. For example:

-> `set ping=device_ipv4_address_on_network`

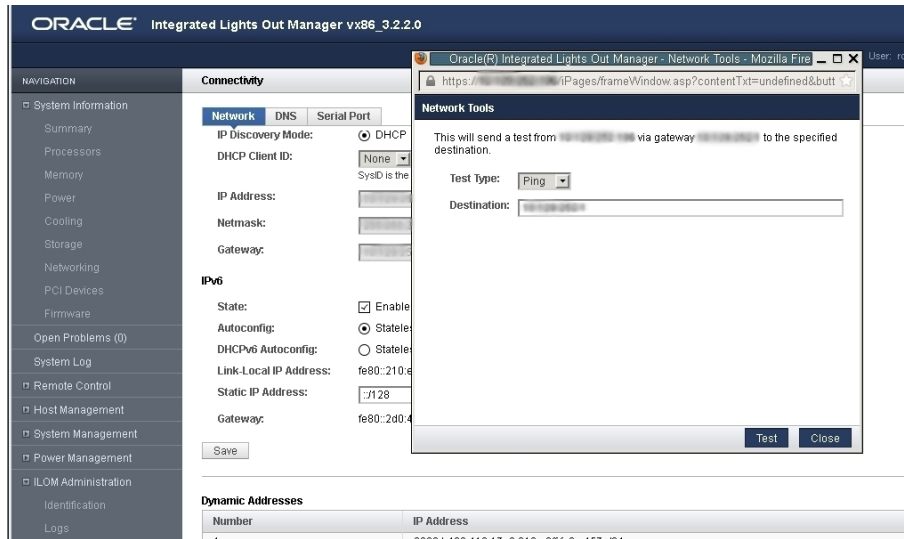
-> `set ping6=device_ipv6_address_on_network`

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

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

1. From the ILOM Administration > Connectivity 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.**

Troubleshooting the Service Processor Connection

This section addresses two issues that might occur regarding the Oracle ILOM service processor (SP):

- The Oracle ILOM SP is hung and needs to be reset.
- As the system administrator, you have forgotten the root account password and you need to recover it.

For instructions on how to handle each of these problems, see the following sections:

- [“Reset the Service Processor Using Oracle ILOM” on page 67](#)
- [“Resetting the Service Processor Using the SP Reset Switch” on page 68](#)
- [“Recover Root Account Password” on page 68](#)

▼ Reset the Service Processor Using Oracle ILOM

Before You Begin The Host Control and Reset (r) role is required to reset a service processor.

1. **Log in to the Oracle ILOM using the relevant method in [“Log In to Oracle ILOM Using a Local Serial Connection” on page 55](#) or [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 56](#).**
2. **Reset the Oracle ILOM service processor (SP) using one of the following methods:**
 - **From the Oracle ILOM CLI, enter the command:**

```
reset /SP
```
 - **From the Oracle ILOM web interface, click Administration > Maintenance > Reset SP.**

Note - Resetting the Oracle ILOM SP disconnects your current Oracle ILOM session. You must log in again to continue working in Oracle ILOM.

Resetting the Service Processor Using the SP Reset Switch

If the Oracle ILOM SP hangs and you cannot reset it using the Oracle ILOM web interface or the Oracle ILOM CLI command, there is a pinhole reset switch on the server that can be used. For information on the location and use of this switch, refer to the [Sun Server X4-4 Service Manual](#).

▼ Recover Root Account Password

If necessary, system administrators can recover the preconfigured Oracle ILOM local root account or the password for the local root account by using the preconfigured Oracle ILOM default password.

To recover the root account password you need a local serial management port (SER MGT) connection to Oracle ILOM. In addition, if the Physical Presence State is enabled (the default) in Oracle ILOM, you must prove that you are physically present at the server.

To recover the root account or root account password, perform these steps:

- 1. Establish a local serial management connection to Oracle ILOM and log in to Oracle ILOM using the default user account. For example:**

```
SUNSP-000000000 login: default
```

Press and release the physical presence button

Press return when this is completed...

For additional information logging in through the serial management port, see [“Log In to Oracle ILOM Using a Local Serial Connection” on page 55](#).

- 2. Prove physical presence at the server.**

To prove physical presence at the server, press the Locate button on the front of the server.

For the location of the Locate button, see [“Front Panel Features” on page 15](#).

- 3. Return to your serial console and press Enter.**

You will be prompted for a password.

- 4. Enter the password for the default user account: defaultpassword**

5. **Reset the account password or re-create the root account.**

Setting Up Software and Firmware Using Oracle System Assistant

Oracle System Assistant is the preferred application for setting up your system software and firmware. Oracle System Assistant is an embedded, task-based server provisioning tool that enables you to perform initial server setup and maintenance for some Oracle x86 servers. Using Oracle System Assistant, you can install a supported Oracle Solaris, Linux, Oracle VM, or Windows operating system, update your server to the latest software release, and configure server hardware.

Note - For Oracle Solaris installations, Oracle System Assistant does not additionally install recommended drivers or tools. Updates to the Oracle Solaris OS are accomplished using Oracle Solaris package update software. For Linux, Oracle VM, and Windows, Oracle System Assistant can additionally install the recommended drivers and tools that are supported by the specific operating system or virtual machine software.

For the list of optional software that can be installed when you use Oracle System Assistant to install operating systems, refer to the Oracle System Assistant ReadMe.

This section describes how to set up the software and firmware for the server using Oracle System Assistant, as follows:

Description	Links
Launch Oracle System Assistant remotely from Oracle ILOM.	“Launch Oracle System Assistant Using the Oracle ILOM Web Interface” on page 72
Launch Oracle System Assistant locally.	“Launch Oracle System Assistant Locally” on page 74

See Also

- For additional information about Oracle System Assistant, see the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs)

▼ Launch Oracle System Assistant Using the Oracle ILOM Web Interface

Before You Begin You should have already set up Oracle ILOM for remote Ethernet access “[Connecting to Oracle ILOM](#)” on page 53

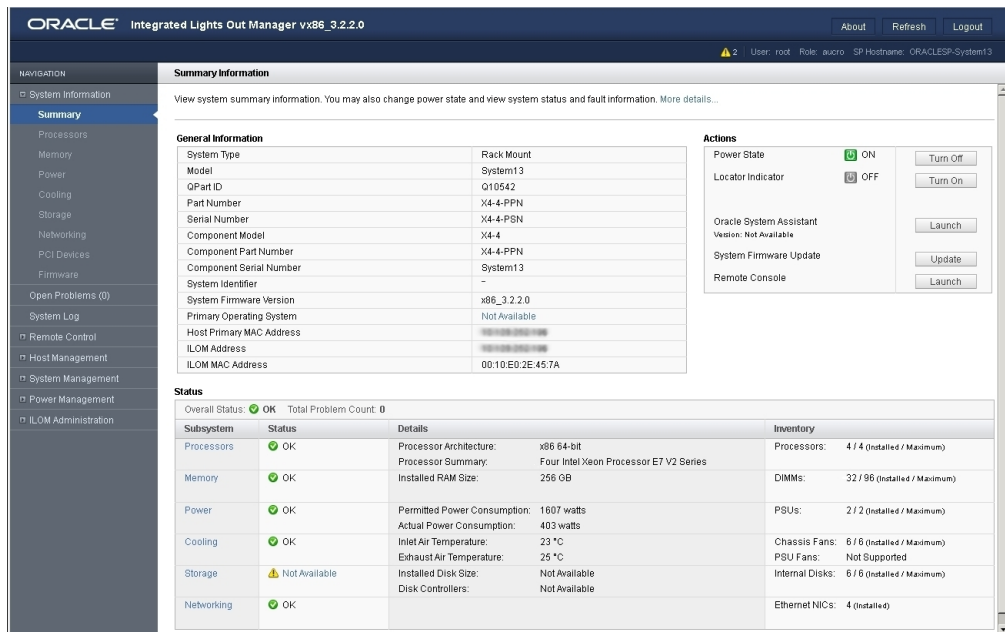
1. Ensure that the server is in standby power mode.

In server standby mode, the Power/OK indicator blinks slowly. See “[Front Panel Features](#)” on page 15 for the location of the Power/OK indicator.

2. Log in to the server SP Oracle ILOM web interface.

In your browser's address field, enter the server's SP IP address.

The System Summary screen appears.



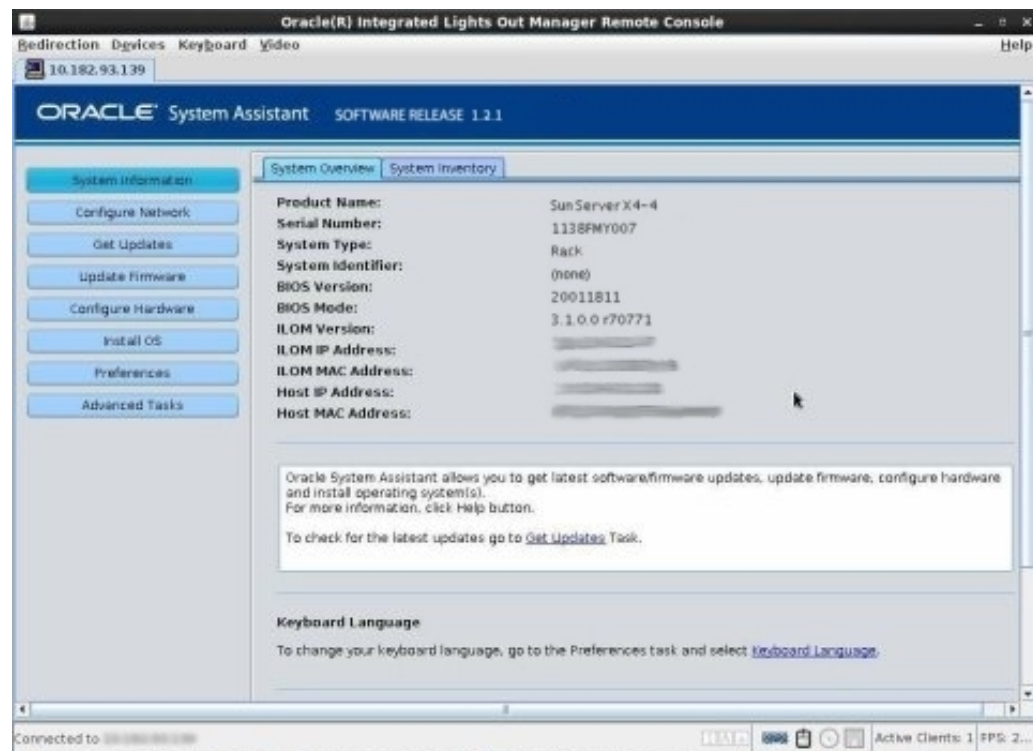
3. Click the Oracle System Assistant Launch button in the upper right panel.

Note - If the system is not in standby mode but is fully powered on, you will be prompted to shut it down first. See: [“Use the Oracle ILOM Web Interface for Orderly Shutdown” on page 137](#). Once the system is powered off, continue with this step.

4. To continue to launch Oracle System Assistant, click Yes.

Wait while the server initializes. This might take several minutes.

- The server powers on.
- Oracle System Assistant application boots.
- Oracle System Assistant main screen appears.



5. Use Oracle System Assistant to perform the tasks shown in the following table in order.

Refer to the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs) or the embedded help on Oracle System Assistant for more information about using Oracle System Assistant.

Step	Task	Oracle System Assistant Screen
1	Set up Oracle System Assistant network connection.	Network Configuration
2	Get latest software and firmware updates.	Get Updates
3	Update Oracle ILOM, BIOS, disk expander, or HBA firmware, if needed.	Update Firmware
4	Configure Oracle ILOM.	Configure Hardware > Service Processor Configuration
5	Configure RAID. Note - Do not use this option on a disk with a preinstalled OS.	Configure Hardware > RAID Configuration Additional details for performing this task are listed in “Configuring RAID Using Oracle System Assistant” on page 81.
6	Install an operating system using the Oracle System Assistant Install OS wizard. Supported operating systems include Oracle Solaris, Linux, Windows, or Oracle VM software. Note - Do not use this option if your system came with a preinstalled OS.	Install OS

Next Steps ■ [“Configure Server Drives for OS Installation”](#) on page 79

▼ Launch Oracle System Assistant Locally

Before you begin to launch Oracle System Assistant locally, you must be physically present with the Sun Server X4-4 and have access to the following:

- VGA monitor
- USB keyboard
- USB mouse

Choose a method to launch Oracle System Assistant locally on a server module, as described in the following sections:

1. **Ensure that the server is in standby power mode.**
Verify that the Power/OK indicator blinks slowly. See: [“Front Panel Features”](#) on page 15.
2. **Connect locally to the server.**

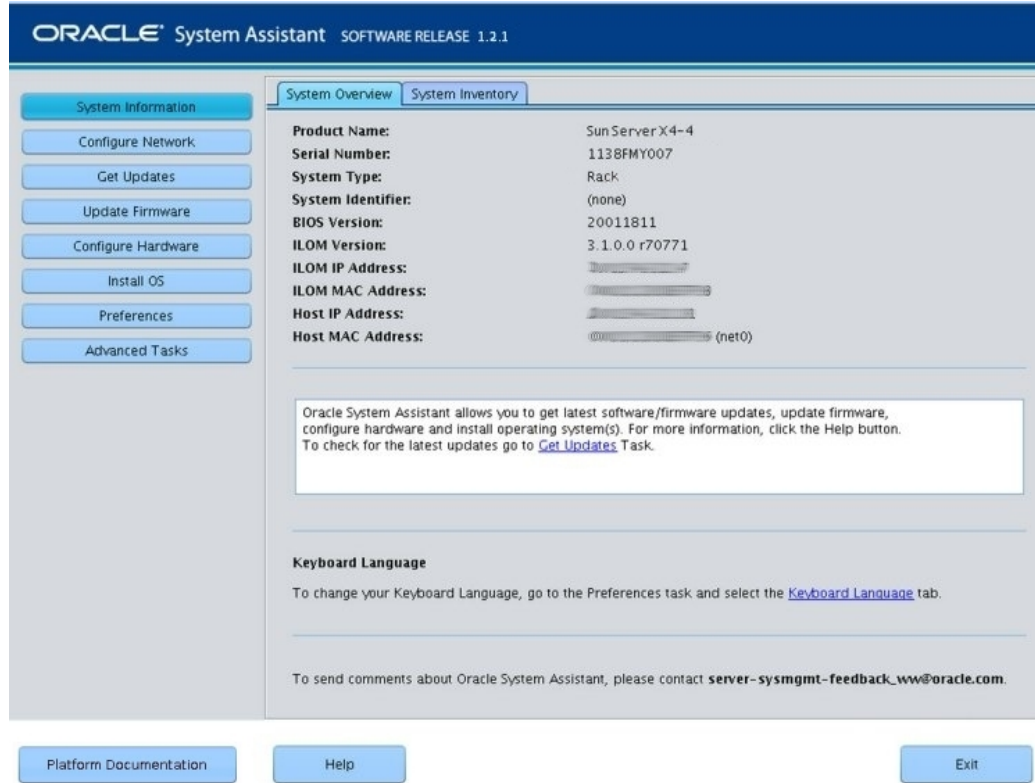
See: [“Log In to Oracle ILOM Using a Local Serial Connection”](#) on page 55.

3. **Press the front-panel Power button to power on the server to full power mode.**
 - The server boots.
 - POST messages appear on the monitor.
4. **After you see the POST message for Oracle System Assistant, press the F9 function key.**



- Oracle System Assistant boots.

- Oracle System Assistant main screen appears.



5. Use Oracle System Assistant to perform the tasks shown in the following table in order.

For more information about using Oracle System Assistant, click the Help button or refer to the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

Step	Task	Oracle System Assistant Screen
1	Set up Oracle System Assistant network connection.	Network Configuration
2	Get latest software and firmware updates.	Get Updates
3	Update Oracle ILOM, BIOS, disk expander, or HBA firmware, if needed.	Update Firmware

Step	Task	Oracle System Assistant Screen
4	Configure Oracle ILOM.	Configure Hardware > Service Processor Configuration
5	Configure RAID. Note - Do not use this option on a disk with a preinstalled OS.	Configure Hardware > RAID Configuration Additional details for performing this task are listed in “Configuring RAID Using Oracle System Assistant” on page 81.
6	Install an operating system using the Oracle System Assistant Install OS wizard. Supported operating systems include Oracle Solaris, Linux, Windows, or Oracle VM software. Note - Do not use this option if your system came with a preinstalled OS.	Install OS

Next Steps ■ [“Configure Server Drives for OS Installation”](#) on page 79

Configure Server Drives for OS Installation

This section describes how to configure a server boot disk for operating system installation and configure RAID.

Description	Links
Learn about storage drive configuration options. Supported options depend on your server's host bus adapter (HBA), requirements for RAID, and whether or not you have a preinstalled OS.	"Drive Configuration Options" on page 79
Configure server storage drives into RAID volumes using Oracle System Assistant.	"Configuring RAID Using Oracle System Assistant" on page 81
Configure server storage drives into RAID volumes using the BIOS RAID configuration utilities.	"Configuring RAID Using the BIOS RAID Configuration Utilities" on page 93
Learn about the operating system installation and update tasks.	"Set Up an Operating System and Drivers" on page 104

Drive Configuration Options

Preparing a system drive to be a boot device for an operating system (OS) is a critical step in the server set up process. The procedures used to configure RAID depend on which supported SAS HBA is installed in the server and which server BIOS boot mode is selected (UEFI or Legacy, see ["UEFI BIOS" on page 24](#) for details). You can use either Oracle System Assistant (recommended) or BIOS/option ROM-based RAID configuration utilities to configure RAID. Once you have installed your operating system, supported OS-based RAID management utilities included with your server can be used to manage RAID storage drives.

Choose an option for configuring your server storage drives:

- **Option 1** - If you have purchased an optional factory preinstalled OS or virtual machine software image, a boot drive containing the image has already been created for you. You cannot configure the disk with the preinstalled OS image as a RAID volume because that

would destroy the preinstalled image. For systems with a preinstalled OS image, proceed to one of the following sections:

- [“Configuring the Preinstalled Oracle Solaris OS” on page 107](#)
- [“Configuring the Preinstalled Oracle Linux OS” on page 113](#)
- [“Configuring the Preinstalled Oracle VM Software ” on page 119](#)
- **Option 2** - If you are going to do a fresh OS install and you want to configure multiple server storage drives into one or more RAID volumes, you must configure the server storage drives into RAID volumes *before* you install the OS.
 - If your server is equipped with Oracle System Assistant, proceed to [“Configuring RAID Using Oracle System Assistant” on page 81](#) and select the task that matches the internal HBA that is installed in your server.
 - If your server is not equipped with Oracle System Assistant, proceed to [“Configuring RAID Using the BIOS RAID Configuration Utilities” on page 93](#).
- **Option 3** - Your server has the **Sun Storage 6 Gb SAS PCIe RAID Internal HBA (SGX-SAS6-R-INT-Z)** installed and you are going to do a fresh OS install, but you do not want to configure multiple storage drives into RAID volumes. For this option, you *must* configure a single storage drive with a RAID 0 volume (also called a "virtual disk") and make that volume bootable.
 - If your server is equipped with Oracle System Assistant, proceed to [“Configure RAID With a Sun Storage 6 Gb SAS PCIe RAID Internal HBA” on page 86](#) and configure a RAID 0 volume on a single storage drive.
 - If your server is not equipped with Oracle System Assistant, proceed to [“Configuring RAID Using the BIOS With the Sun Storage 6 Gb SAS PCIe RAID Internal HBA” on page 96](#) and configure RAID 0 volume on a single storage drive.

Note - If you choose option 3, you must configure a single storage drive with a RAID 0 volume and make that volume bootable; otherwise, the internal HBA will not be able to identify the storage drive.

- **Option 4** - Your server has the **Sun Storage 6 Gb SAS PCIe Internal HBA (SGX-SAS6-INT-Z)** installed and you are going to do a fresh OS install, but you do not want to configure the server storage drives into RAID volumes. For this option, refer to the installation guide for the OS you want to install:
 - [Sun Server X4-4 Installation Guide for Oracle Solaris](#)
 - [Sun Server X4-4 Installation Guide for Linux](#)
 - [Sun Server X4-4 Installation Guide for Oracle VM](#)
 - [Sun Server X4-4 Installation Guide for Microsoft Windows](#)
 - [Sun Server X4-4 Installation Guide for VMware ESXi](#)

Configuring RAID Using Oracle System Assistant

Use Oracle System Assistant to configure RAID on the server. If your server does not have Oracle System Assistant, you can use the BIOS Utilities to configure RAID.

See the following procedures:

- [“Configure RAID With a Sun Storage 6 Gb SAS PCIe Internal HBA” on page 81](#)
- [“Configure RAID With a Sun Storage 6 Gb SAS PCIe RAID Internal HBA” on page 86](#)

▼ Configure RAID With a Sun Storage 6 Gb SAS PCIe Internal HBA

Use Oracle System Assistant to prepare a server hard drive for an OS installation by creating a bootable RAID 0 volume.

Before You Begin You should have already selected a BIOS boot mode (UEFI or Legacy) from the BIOS Setup Utility.

Note - The BIOS boot mode used for the RAID configuration must match the mode that you will use when you install the operating system; otherwise, the RAID configuration will not be visible or usable.

Not all supported operating systems support UEFI mode. For a list of operating systems that support UEFI mode, see [“UEFI BIOS” on page 24](#).

For instructions for switching the BIOS boot mode from UEFI to Legacy BIOS, or Legacy BIOS to UEFI, refer to [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

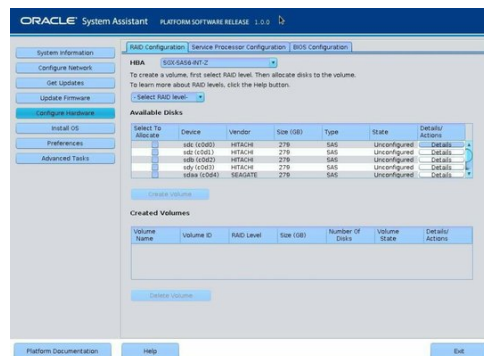
1. Launch Oracle System Assistant.

See [“Setting Up Software and Firmware Using Oracle System Assistant” on page 71](#).

The Oracle System Assistant System Overview screen appears.

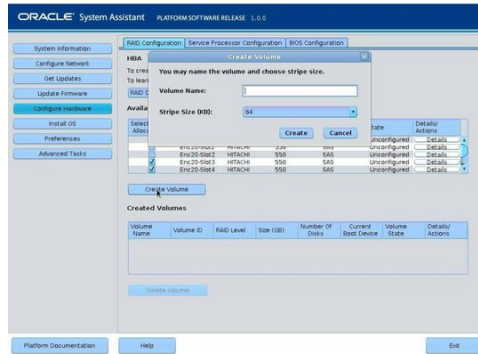


2. Click the **Configure Hardware** button, then select the **RAID Configuration** tab. The RAID Configuration screen appears.



3. In the **HBA list box**, select the **SGX-SAS6-INT-Z HBA**. This is the Sun Storage 6 Gb SAS PCIe Internal HBA.
4. In the **Select RAID Level list box**, select **RAID-0**.
5. In the **Available Disks table**, select the storage drives that you want to add to the RAID volume, and click the **Create Volume** button.

The Create Volume dialog box appears.



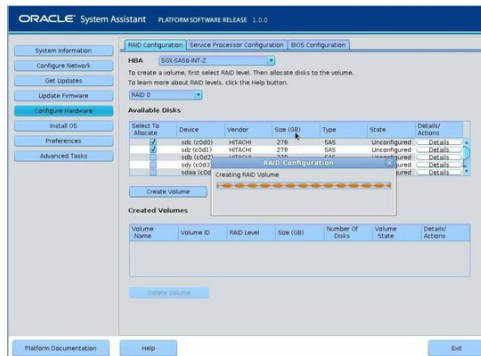
6. In the Create Volume dialog box:

a. (Optional) Enter the volume name.

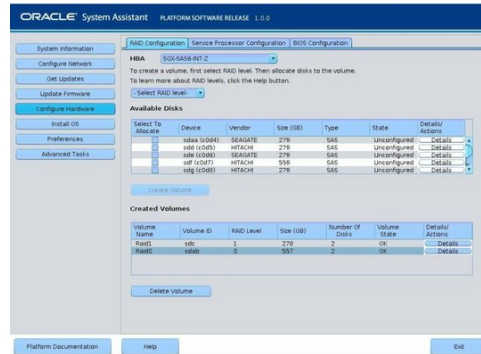
Entering a volume name is optional. If you do not name the volume, Oracle System Assistant creates a volume without a name.

b. Click Create.

The Creating RAID Volume information box appears.

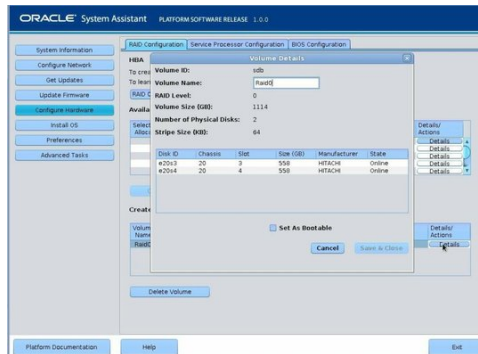


After the volume is created, it is displayed in the Created Volumes table.



7. In the Details/Action column of the Created Volumes table, click the Details button.

The Volume Details dialog box appears.



8. In the Volume Details dialog box:
 - a. Review the volume details.
 - b. (Optional) In the Volume Name field, enter a volume name or modify it.

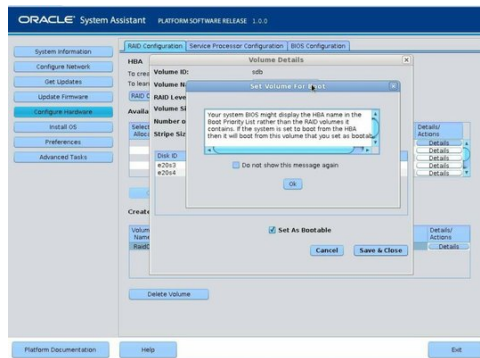
If you did not enter a volume name earlier, the Volume Details dialog box gives you a second chance to do so. If you entered a volume name earlier, you can modify it here; however, you cannot delete the name entirely.

Note - Naming the volume is optional. If you do not name the volume, Oracle System Assistant creates a volume without a name. Additionally, if at any time you want to change the volume name, you can do so by clicking on the Details button in the Created Volumes table; however, once a volume name is assigned, you cannot delete it.

c. **Check the Set As Bootable box.**

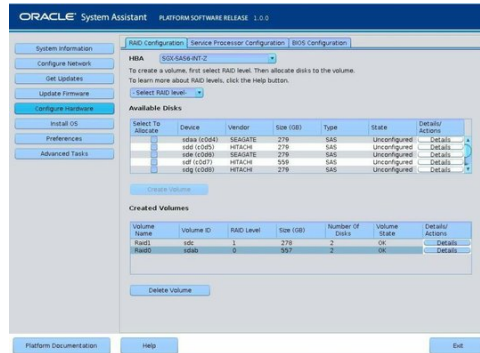
d. **Click Save & Close.**

The Set Volume For Boot confirmation dialog appears.



9. **Click OK.**

The RAID Configuration screen appears and lists the RAID volume as the current boot device.



10. If you want to delete a volume, select it and click the Delete Volume button.

This completes the RAID configuration task.

11. Do one of the following:

- To select any other Oracle System Assistant task, click the corresponding button in the left panel menu. For example, after configuring RAID, you might want to select the Install OS task and perform an operating system installation.
- To return to the Oracle System Assistant System Overview screen, click System Information in the left menu panel.
- To quit Oracle System Assistant, click Exit.

Next Steps ■ [“Set Up an Operating System and Drivers” on page 104](#)

▼ Configure RAID With a Sun Storage 6 Gb SAS PCIe RAID Internal HBA

For systems with the Sun Storage 6 Gb SAS PCIe RAID Internal HBA, if you are not using a preinstalled OS from Oracle you *must* create a bootable volume on a drive before installing an OS. The system does not recognize a drive unless it has a volume on it created by the Sun Storage 6 Gb SAS PCIe RAID Internal HBA.

If there is more than a single volume on the drive that you intend to use as the boot drive, the volume that the OS will be installed on should be set as the boot device.

Before You Begin You should have already selected a BIOS boot mode (UEFI or Legacy) from the BIOS Setup Utility.

Note - The BIOS boot mode used for the RAID configuration must match the mode that you will use when you install the operating system; otherwise, the RAID configuration will not be visible or usable.

Not all supported operating systems support UEFI mode. For a list of operating systems that support UEFI mode, see [“UEFI BIOS” on page 24](#).

For instructions for switching the BIOS boot mode from UEFI to Legacy BIOS, or Legacy BIOS to UEFI, refer to the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

1. Launch Oracle System Assistant.

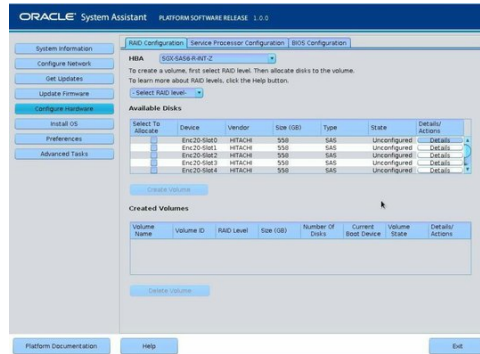
See [“Setting Up Software and Firmware Using Oracle System Assistant” on page 71](#).

The Oracle System Assistant System Overview screen appears.



2. Click the Configure Hardware button, then select the RAID Configuration tab.

The RAID Configuration screen appears.



3. In the HBA list box, select the SGX-SAS6-R-INT-Z HBA.

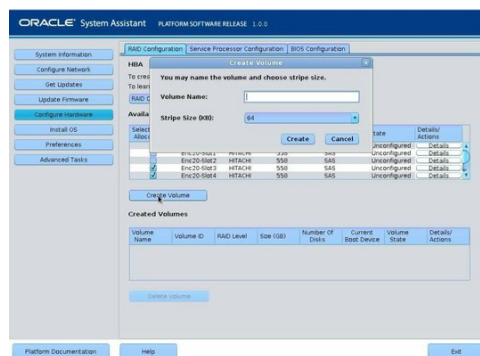
This is the Sun Storage 6 Gb SAS PCIe RAID Internal HBA.

4. In the Select RAID Level list box, select the desired RAID level.

Oracle System Assistant supports RAID-0, RAID-1, and RAID-10.

5. In the Available Disks table, select the storage drives that you want to add to the RAID volume, and click the Create Volume button.

The Create Volume dialog box appears.



6. In the Create Volume dialog box:

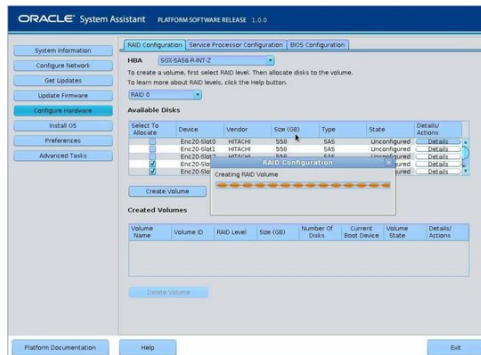
a. **(Optional) Enter the volume name.**

Entering a volume name is optional. If you do not name the volume, Oracle System Assistant creates a volume without a name.

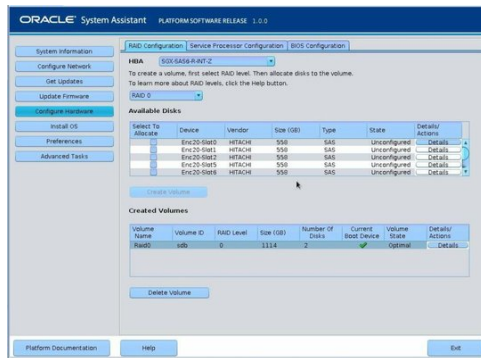
b. **Select the volume stripe size.**

c. **Click Create.**

The Creating RAID Volume information box appears.

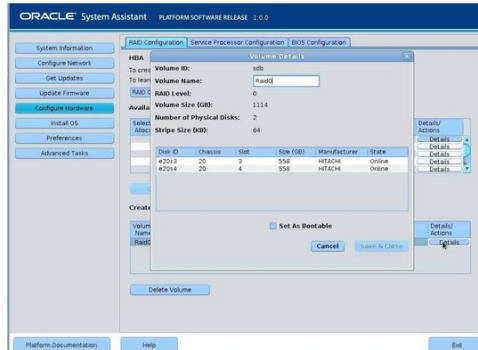


After the volume is created, it is displayed in the Created Volumes table.



7. In the Details/Action column of the Created Volumes table, click the Details button.

The Volume Details dialog box appears.



8. In the Volume Details dialog box:

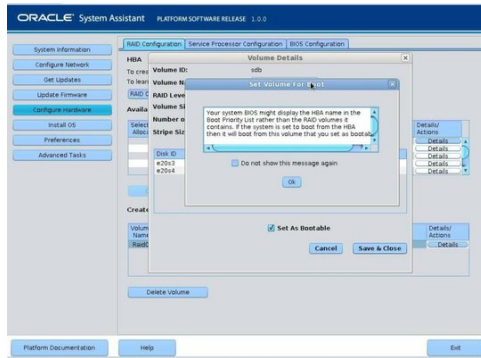
- a. Review the volume details.
- b. (Optional) In the Volume Name field, enter a volume name or modify it.

If you did not enter a volume name earlier, the Volume Details dialog box gives you a second chance to do so. If you entered a volume name earlier, you can modify it here; however, you cannot delete the name entirely.

Note - Naming the volume is optional. If you do not name the volume, Oracle System Assistant creates a volume without a name. Additionally, if at any time you want to change the volume name, you can do so by clicking on the Details button in the Created Volumes table; however, once a volume name is assigned, you cannot delete it.

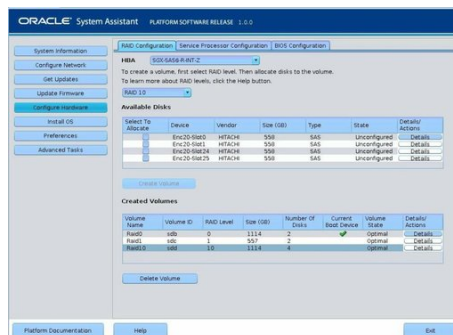
- c. Check the Set As Bootable box.
- d. Click Save & Close.

The Set Volume For Boot confirmation dialog appears.



9. **Click OK.**

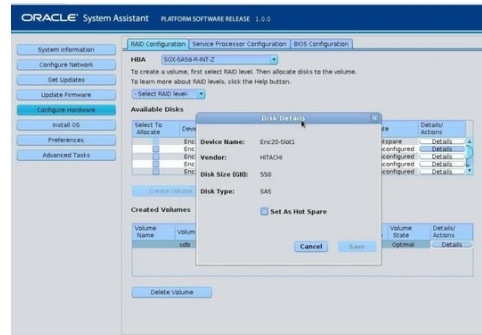
The RAID Configuration screen appears and lists the RAID volume as the current boot device.



10. **If you want to designate the created volume as a global hot spare, perform the following steps; otherwise, proceed to [Step 11](#).**

- a. **Click the Details button in the Details/Actions column.**

The Disk Details dialog box appears.



b. Check the Set as Hot Spare box.

Note - With the Sun Storage 6 Gb SAS PCIe RAID Internal HBA, you can create a maximum of 256 hot spares.

c. Click Save.

The Disk Details dialog box closes.

11. If you want to delete a volume, select it and click the Delete Volume button.

This completes the RAID configuration task.

12. Do one of the following:

- **To select any other Oracle System Assistant task**, click the corresponding button in the left panel menu. For example, after configuring RAID, you might want to select the Install OS task and perform an operating system installation.
- **To return to the Oracle System Assistant System Overview screen**, click System Information in the left menu panel.
- **To quit Oracle System Assistant**, click Exit.

Next Steps ■ [“Set Up an Operating System and Drivers” on page 104](#)

Configuring RAID Using the BIOS RAID Configuration Utilities

If Oracle System Assistant is not available, you can use the BIOS RAID configuration utilities that reside in the HBA firmware. The procedures for configuring RAID differ depending on the type of HBA installed the server.

For instructions on how to use these utilities, see the following sections:

- [“Configuring RAID Using the BIOS With the Sun Storage 6 Gb SAS PCIe Internal HBA” on page 93](#)
- [“Configuring RAID Using the BIOS With the Sun Storage 6 Gb SAS PCIe RAID Internal HBA” on page 96](#)

See Also

- [“Drive Configuration Options” on page 79](#)
- [“Configuring RAID Using Oracle System Assistant” on page 81](#)

Configuring RAID Using the BIOS With the Sun Storage 6 Gb SAS PCIe Internal HBA

The BIOS RAID configuration utilities support configuring RAID with the server set to UEFI BIOS Boot Mode or Legacy BIOS Boot Mode. A separate utility is provided for each boot mode.

Note - Some operating systems and virtual machine software only support the Legacy BIOS Boot Mode. For a list of operating systems that support UEFI BIOS Boot Mode, see [“UEFI BIOS” on page 24](#).

- [“Configure RAID in UEFI BIOS Boot Mode” on page 93](#)
- [“Configure RAID in Legacy BIOS Boot Mode” on page 95](#)

▼ Configure RAID in UEFI BIOS Boot Mode

1. **Power on or reset the server.**

For example, to reset the server:

- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the Oracle ILOM web interface**, select **Host Management > Power Control**, then select **Reset** from the **Select Action** list box.
- **From the Oracle ILOM CLI**, type: `reset /System`

The BIOS screen appears.

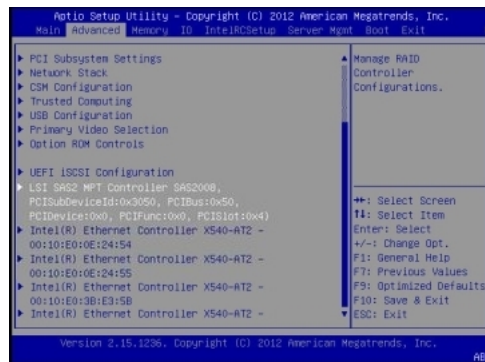
2. **When prompted in the BIOS screen, press F2 to access the BIOS Setup Utility.**

After a few moments, the BIOS Setup Utility appears.

3. **Use the right arrow key to navigate to the Advanced menu.**

The Advanced menu appears.

4. **Use the up and down arrow keys to navigate to the LSI SAS2 MPT Controller menu option, and press Enter.**



5. **Use the BIOS configuration utility to configure RAID on the server.**

For instructions on how to use the BIOS configuration utilities to configure RAID in UEFI BIOS Boot Mode, refer to instructions for creating a bootable drive on x86/64 systems in the *Sun Storage 6 Gb SAS PCIe HBA, Internal Installation Guide For HBA Models SGX-SAS6-INT-Z and SG-SAS6-INT-Z* at: <http://docs.oracle.com/cd/E19337-01/index.html>.

Next Steps ■ [“Set Up an Operating System and Drivers” on page 104](#)

▼ Configure RAID in Legacy BIOS Boot Mode

1. Power on or reset the server.

For example, to reset the server:

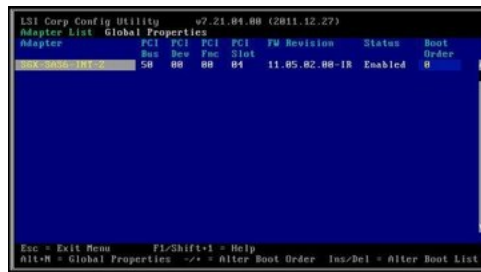
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the Oracle ILOM web interface**, select **Host Management > Power Control**, then select **Reset** from the **Select Action** list box.
- **From the Oracle ILOM CLI**, type: `reset /System`

The BIOS screen appears.

2. During the boot process, the BIOS initialization banner lists information about the discovered SAS adapters and devices that are attached to the discovered HBAs in the system.

3. Upon seeing the prompt Press Ctrl-C to start LSI Corp Configuration Utility..., immediately press Ctrl+C to access the LSI Corp Config Utility.

The LSI Corp Config Utility menu appears.



```

LSI Corp Config Utility v7.21.04.00 (2011.12.27)
Adapter List Global Properties
Adapter List Global Properties
Adapter PCI Bus PCI Slot FW Revision Status Boot Order
SGX-SAS6-INT-Z 58 08 08 04 11.05.02.08-IR Enabled 0
  
```

4. Use the LSI Corp Config Utility to configure RAID on the server.

For instructions on how to use the BIOS configuration utilities to configure RAID in Legacy BIOS Boot Mode, refer to instructions for creating a bootable drive on x86/64 systems in the *Sun Storage 6 Gb SAS PCIe HBA, Internal Installation Guide For HBA Models SGX-SAS6-INT-Z and SG-SAS6-INT-Z* at: <http://docs.oracle.com/cd/E19337-01/index.html>.

Next Steps ■ “Set Up an Operating System and Drivers” on page 104

Configuring RAID Using the BIOS With the Sun Storage 6 Gb SAS PCIe RAID Internal HBA

The BIOS RAID configuration utilities support configuring RAID with the server set to UEFI BIOS Boot Mode and Legacy BIOS Boot Mode. A separate utility is provided for each boot mode.

Note - Some operating systems and virtual machine software only support the Legacy BIOS Boot Mode. For a list of operating systems and virtual machine software that do not support UEFI BIOS Boot Mode, see [“UEFI BIOS” on page 24](#).

- [“Configure RAID in UEFI BIOS Boot Mode” on page 96](#)
- [“Configure RAID in Legacy BIOS Boot Mode” on page 101](#)

▼ Configure RAID in UEFI BIOS Boot Mode

1. Power on or reset the server.

For example, to reset the server:

- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the Oracle ILOM web interface**, select **Host Management > Power Control**, then select **Reset** from the **Select Action** list box.
- **From the Oracle ILOM CLI**, type: `reset /System`

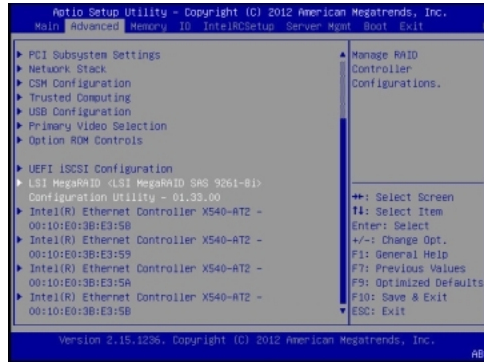
The BIOS screen appears.

2. When prompted in the BIOS screen, press F2 to access the BIOS Setup Utility.

After a few moments, the BIOS Setup Utility appears.

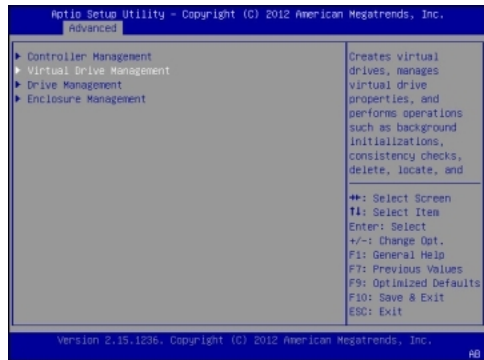
3. Use the right arrow key to navigate to the Advanced menu.

The Advanced menu appears.



4. Use the up and down arrow keys to navigate to the LSI MegaRAID Configuration Utility menu option, and press Enter.

The LSI MegaRAID Configuration Utility menu appears.



5. Use the Up and Down keys to select the Virtual Drive Management option and press Enter.

The Virtual Drive Management menu screen appears.



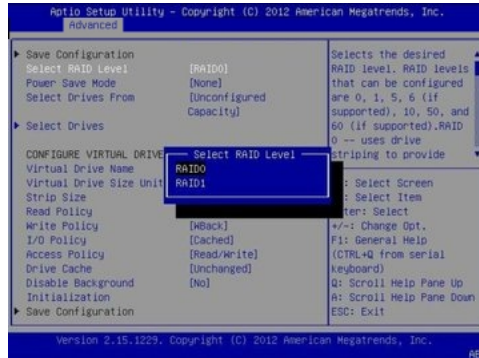
6. Use the Up and Down Arrow keys to select the Create Configuration option and press Enter.

The Create Configuration menu screen appears.



7. Use the Up and Down arrow keys to select the Select RAID Level option and press Enter.

The Select RAID Level dialog box appears.



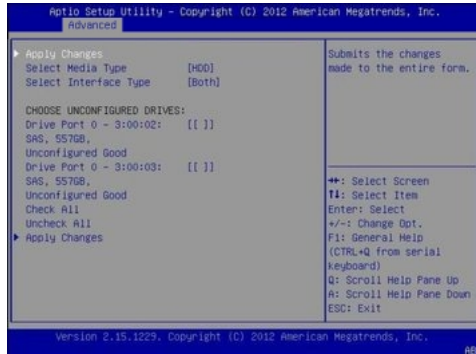
8. Use the Up and Down arrow keys to select the desired RAID level and press Enter.

The Create Configuration menu screen appears.



9. Use the Up and Down arrow keys to select the Select Drives option and press Enter.

The Drive Selection screen appears.



10. In the Drive Selection screen, select the media type, the interface type, and the drives to be included in the RAID configuration, then select the Apply Changes option and press Enter.

The RAID Configuration Confirmation screen appears.



11. Select OK and press Enter to accept the RAID confirmation.

This completes the RAID configuration.

Next Steps ■ [“Set Up an Operating System and Drivers” on page 104](#)

▼ Configure RAID in Legacy BIOS Boot Mode

Before You Begin The BIOS RAID Configuration Utilities reside in the HBA firmware. Use this procedure under either of the following conditions:

- You want to configure RAID on the intended OS installation hard drive and the server does not have Oracle System Assistant or you do not want to use it.
- If you want to create a RAID volume level 5, 6, 50, or 60 using the storage drive on which you plan to install the operating system.

Note - Oracle System Assistant only supports RAID 0, 1, and 10 for the SGX-SAS6-R-INT-Z HBA.

- You do not want to create a RAID volume, but the intended OS installation hard drive has not been initialized.

1. Create one or more RAID volumes (virtual drives).

Refer to the instructions for creating a storage configuration using the WebBIOS Configuration Utility in the MegaRAID SAS Software User's Guide located at:

http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-rem-z.aspx

Note - The *MegaRAID SAS Software User's Guide* does not include instructions for making a virtual drive bootable. To make a drive bootable, proceed to the next step in this section after you've created your virtual drive.

2. Make a virtual drive bootable, first power on or reset the server.

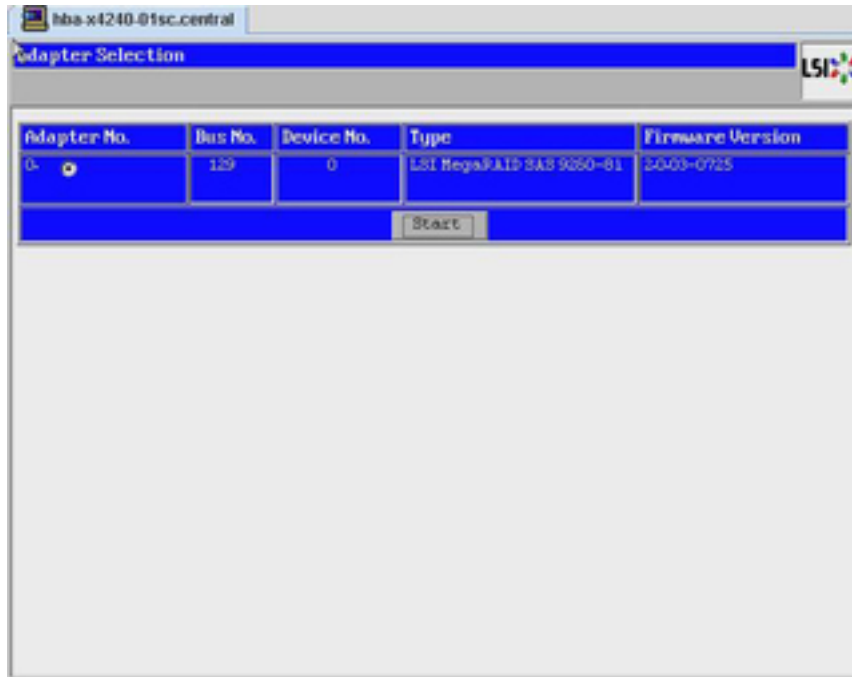
For example, to reset the server:

- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the Oracle ILOM web interface**, select **Host Management > Power Control**, then select **Reset** from the **Select Action** list box.
- **From the Oracle ILOM CLI**, type: `reset /System`

The BIOS screen appears.

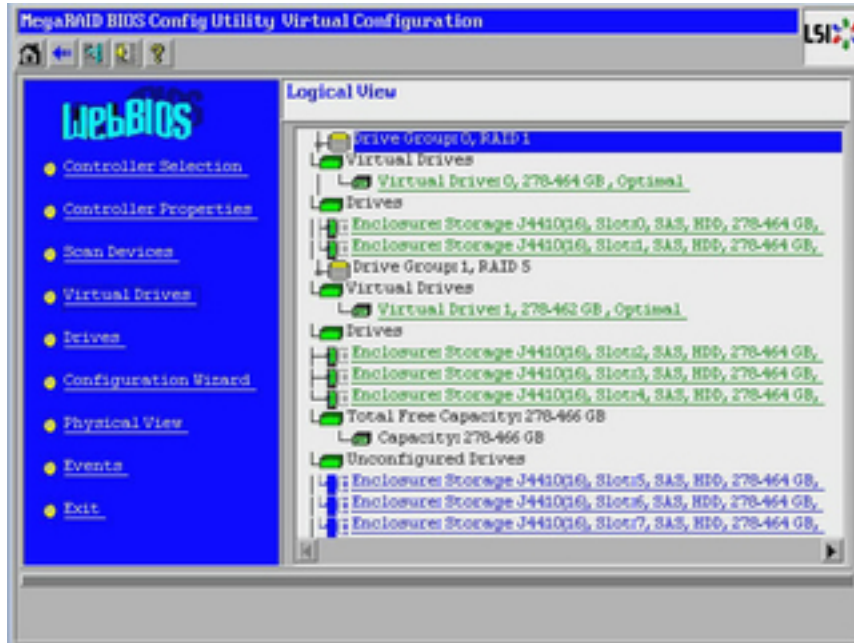
3. Upon seeing the prompt `Press Ctrl<H> for WebBIOS...`, immediately press the **Ctrl+H** key combination to access the LSI MegaRAID utility.

The Adapter Selection screen appears.



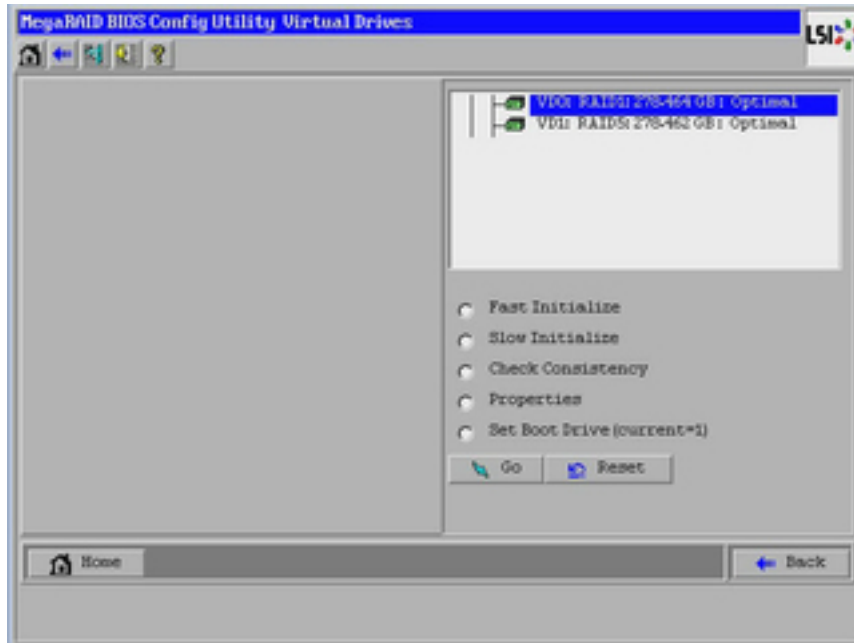
4. In the Adapter Selection screen, click Start.

The LSI MegaRAID BIOS Config Utility Virtual Configuration screen appears.



5. Click Virtual Drives.

The Virtual Drives screen appears.



6. **Select the virtual drive that you want to make bootable.**
7. **Click Set Boot Drive, then click Go.**

For more information on performing this task, refer to the *LSI MegaRAID SAS Software User's Guide* located at: http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-rem-z.aspx.

Set Up an Operating System and Drivers

You can configure a preinstalled operating system (OS), or install a supported OS for your server. The following table describes how to access information about installing or configuring an OS.

What do you want to do?	Refer to this documentation
Configure a factory preinstalled OS	<ul style="list-style-type: none"> ■ “Configuring the Preinstalled Oracle Solaris OS” on page 107

What do you want to do?	Refer to this documentation
Install a supported OS and update drivers	<ul style="list-style-type: none"> ■ “Configuring the Preinstalled Oracle Linux OS” on page 113 ■ “Configuring the Preinstalled Oracle VM Software” on page 119 ■ Sun Server X4-4 Installation Guide for Oracle Solaris ■ Sun Server X4-4 Installation Guide for Linux ■ Sun Server X4-4 Installation Guide for Oracle VM ■ Sun Server X4-4 Installation Guide for Microsoft Windows ■ Sun Server X4-4 Installation Guide for VMware ESXi

Configuring the Preinstalled Oracle Solaris OS

At initial release, the Sun Server X4-4 offers the option of a preinstalled Oracle Solaris 11.1.x operating system (OS) image on your server. If you purchased this option, finish the installation by configuring the preinstalled software. The preinstalled OS image contains all of the necessary drivers for your server model.

Note - For up-to-date information about supported versions of the preinstalled Oracle Solaris OS, see the *Sun Server X4-4 Product Notes* at <http://www.oracle.com/goto/X4-4/docs>.

Perform the procedures in the following sections in the order listed:

Step	Task	Links
1	Fill out the configuration worksheet for your server environment.	“Oracle Solaris OS Configuration Worksheet” on page 107
2	Configure the preinstalled Oracle Solaris OS.	“Configure the Preinstalled Oracle Solaris Operating System” on page 110
3	Review the Oracle Solaris OS documentation for information about registering, updating and using the Oracle Solaris OS.	“Oracle Solaris Operating System Documentation” on page 112

Oracle Solaris OS Configuration Worksheet

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

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.

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?	<input type="checkbox"/> Networked <input checked="" type="checkbox"/> Non-networked*
DHCP	Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*
Host name	Choose a host name for the system.	
Kerberos	Do you want to configure Kerberos security on this machine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*
		If yes, gather this information: Default realm: Administration server: First KDC: (Optional) Additional KDCs:
Name service	Name service If applicable, which name service should this system use?	<input checked="" type="checkbox"/> NIS+ <input type="checkbox"/> NIS <input type="checkbox"/> DNS <input type="checkbox"/> LDAP <input type="checkbox"/> None*
Domain name	Provide the name of the domain in which the system resides. DNS or NIS	

Information for Installation	Description or Example	Your Answers: Defaults (*)
NIS+ and NIS	<p>If you chose NIS+ or NIS, do you want to specify a name server, or let the installation program find one?</p> <p>If you choose NIS:</p> <ul style="list-style-type: none"> ■ Specify a NIS domain, or ■ Indicate whether to specify a NIS server or search for one. 	<ul style="list-style-type: none"> ■ Specify One ■ Find One*
DNS	<p>If you chose DNS, provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses.</p> <p>You can also enter a list of DNS domains to search when a DNS query is made.</p>	<p>Search domain:</p> <p>Search domain:</p> <p>Search domain:</p>
LDAP	<p>If you chose LDAP, provide information about your LDAP profile.</p>	<p>Profile name:</p> <p>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:</p> <p>Proxy-bind password:</p>
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	<p>How do you want to specify your default time zone?</p>	<ul style="list-style-type: none"> ■ Geographic region* ■ Offset from GM

Information for Installation	Description or Example	Your Answers: Defaults (*)
Root password	Choose a root password for the system.	<ul style="list-style-type: none"> ■ Time zone file

▼ Configure the Preinstalled Oracle Solaris Operating System

After you have completed the [“Oracle Solaris OS Configuration Worksheet” on page 107](#), use the following procedure to configure the preinstalled Oracle Solaris Operating System.

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 [“Connecting to Oracle ILOM” on page 53](#).

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 to launch video console redirection.**

After the server boots, the GRUB menu appears. For example (your preinstalled version might be different):

```
GNU GRUB Version 1.99 ,5.11.0.175.1.0.0.24.2
```

```
Oracle Solaris 11.1 - Serial Port ttya
```

```
Oracle Solaris 11.1 - Graphics Adapter
```

Note - When the GRUB menu appears, you have five seconds to make a selection.

4. From the GRUB menu, do one of the following:

- **If you are using the Oracle ILOM CLI, use the up/down arrow keys to select the Serial Port (ttya) option and press Enter.**
- **If you are using Oracle ILOM Remote Console Plus (or a direct video port connection), use the up/down arrow keys to select the Graphics Adapter option and press Enter.**

Note - If you do not make a selection, Serial Port (ttya) is used by default. This means that for the remainder of the OS configuration process, the system will direct output to the serial port and not to the video port.

Note - If needed, at the GRUB menu you can type e to edit commands before booting, or type c for a command line.

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

Use the information gathered in [“Oracle Solaris OS Configuration Worksheet” on page 107](#) 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.

See Also For information on using the Oracle Solaris OS, including updating and registration, see [“Oracle Solaris Operating System Documentation” on page 112](#).

Oracle Solaris Operating System Documentation

Oracle Solaris operating system documentation is available from the Oracle documentation web site at:

<http://www.oracle.com/technetwork/documentation/solaris-11-192991.html>

Configuring the Preinstalled Oracle Linux OS

At initial release, the Sun Server X4-4 offers the option of a preinstalled Oracle Linux 6.x operating system (OS) image on your server. If you purchased this option, finish the installation by configuring the preinstalled software. The preinstalled OS image contains all of the necessary drivers for your server model.

Note - For up-to-date information about supported versions of the preinstalled Oracle Linux OS, see the *Sun Server X4-4 Product Notes* at <http://www.oracle.com/goto/X4-4/docs>.

Perform the procedures in the following sections in the order listed.

Step	Task	Links
1	Fill out the Oracle Linux configuration worksheet for your server environment.	“Oracle Linux Configuration Worksheet” on page 113
2	Configure the preinstalled Oracle Linux OS.	“Configure the Preinstalled Oracle Linux OS” on page 114
3	Review the Oracle Linux 6 documentation for information about registering, updating and using the Oracle Linux OS.	“Oracle Linux Operating System Documentation” on page 117

Oracle Linux Configuration Worksheet

Gather the following information and have it ready for when you begin the configuration process. You need to collect only the information that applies to your organization and network environment.

Required Installation Information	Description	Your Answers
Oracle Linux root password	Choose a root password that you will use to replace the factory default password; there are no restrictions on the characters or length.	

Required Installation Information	Description	Your Answers
Network interface	Choose a interface on the server (eth#) that will be connected to your network. (Once Linux is up and running, the <code>ifconfig -a</code> command can be used to help identify server network ports.)	
Network configuration (if you are not using DHCP)	Supply the IP address for the server. Example: 172.16.9.1 If the server is part of a subnet, supply the netmask of the subnet. Example: 255.255.0.0 If the server is accessed through a gateway, supply the IP address of the gateway. Supply the IP address for the domain name server (DNS). <i>One (and only one) DNS is required.</i>	

See Also

- [“Configure the Preinstalled Oracle Linux OS” on page 114](#)

▼ Configure the Preinstalled Oracle Linux OS

These instructions describe how to configure the preinstalled Oracle Linux on your server.

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

See [“Connecting to Oracle ILOM” on page 53](#).

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

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

- **From the Oracle ILOM web interface, click Host Management > Power Control, and then click Power On from the menu.**

- **From the Oracle ILOM CLI, type:**

```
-> start /System
```

When prompted, type `y` to confirm:

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

```
Starting /System
```

- **To restart the server, use *one* of the following methods:**
 - **From the Oracle ILOM web interface, click Host Management > Power Control, and then select Reset from the menu.**

- **From the ILOM CLI, type:**

```
-> 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 host boot process.

3. From Oracle ILOM, start the host console using *one* of the following methods:

- **From the Oracle ILOM web interface, click Remote Control > Launch Remote Console.**

- **From the Oracle ILOM CLI, type:**

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

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

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

```
Serial console started.
```

After the server boots, the GRUB menu appears. For example (your preinstalled version might be different):

```
GNU GRUB version 0.97 (612K lower / 2082932K upper memory)
```

```
+-----+
```

```
Oracle Linux Server Unbreakable Enterprise Kernel (3.8.13-16.2.1.el6uek.x86_64)
```

```
Oracle Linux Server Red Hat Compatible Kernel (2.6.32-431.el6.x86_64)
```

```
+-----+
```

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the
commands before booting, 'a' to modify the kernel arguments
before booting, or 'c' for a command-line.

The highlighted entry will be booted automatically in 5 seconds.

Note - When the GRUB menu appears, you have five seconds to make a selection.

4. From the GRUB menu, use the up and down arrow keys to select an installation option, and press Enter.

Options include:

- The Unbreakable Enterprise Kernel
- The Red Hat Compatible Kernel

Note - Oracle recommends the use of Oracle Linux Server with the Unbreakable Enterprise Kernel for all enterprise applications.

5. Once an installation option has been selected, Linux starts. When done, you will see the Linux system login.

For example:

```
Oracle Linux Server release 6.5  
Kernel 3.8.13-16.2.1.el6uek.x86_64 on an x86_64
```

```
systemname login:
```

For the first time login, use the **root** account and factory default password (**root**).

6. Once logged in, complete the configuration of your server using standard Linux tools. Tasks include:

- For security, change the factory default password for **root**.
- Configure your server for the network (if DHCP is not used). See [“Oracle Linux Configuration Worksheet” on page 113](#).
- Configure a proxy, as needed, for Internet access.
- Register and update your server. See [“Oracle Linux Operating System Documentation” on page 117](#).
- Install desired packages.

7. When configuration is complete, end your console session using one of the following methods:

- From the Oracle ILOM web interface, close the Remote Console window, and then log out of Oracle ILOM.
- From the Oracle ILOM CLI, press Esc followed by the (character (Shift+9) to terminate the serial redirect session, and then log out of Oracle ILOM.

See Also For information on using the Oracle Linux OS, including updating and registration, see [“Oracle Linux Operating System Documentation” on page 117](#).

Oracle Linux Operating System Documentation

Oracle Linux 6 operating system documentation is available from the Oracle documentation web site at:

http://docs.oracle.com/cd/E37670_01/index.html

Configuring the Preinstalled Oracle VM Software

At initial release, the Sun Server X4-4 offers the option of a preinstalled Oracle VM Server 3.2.x software image on your server. If you purchased this option, finish the installation by configuring the preinstalled software. The preinstalled software image contains all of the necessary drivers for your server model.

Note - For up-to-date information about supported versions of the preinstalled Oracle VM software, refer to the *Sun Server X4-4 Product Notes* at <http://www.oracle.com/goto/X4-4/docs>.

Perform the procedures in the following sections in the order listed.

Step	Tasks	Links
1	Review requirements for Oracle VM software.	“Preinstalled Oracle VM Server Compatibility Requirements” on page 119
2	Gather the information you will need during the configuration process.	“Oracle VM Configuration Worksheet” on page 120
3	Configure the preinstalled Oracle VM software.	“Configure the Preinstalled Oracle VM Server” on page 121
4	Review the Oracle VM documentation for information about registering, updating and using Oracle VM.	“Oracle VM Documentation” on page 124

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 Server or Oracle VM Manager so that they are at 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.

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

▼ 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.**
See [“Connecting to Oracle ILOM” on page 53](#).
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. **From Oracle ILOM, start the host console using *one* of the following methods:**
 - **From the Oracle ILOM web interface**, click Remote Control > Launch Remote Console.

■ **From the Oracle ILOM CLI, type:**

-> **start /HOST/console**

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

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

After the server boots, the GRUB menu appears. For example (your preinstalled version might be different):

```
GNU GRUB version 0.97 (612K lower / 2082932K upper memory)  
  
+-----+  
Oracle VM Server-ovs (xen-4.1.3 2.6.39-300.32.6.el5uek)  
Oracle VM Server-ovs serial console (xen-4.1.3 2.6.39-300.32.6.el5uek)  
  
+-----+  
Use the ^ and v keys to select which entry is highlighted.  
Press enter to boot the selected OS, 'e' to edit the  
commands before booting, 'a' to modify the kernel arguments  
before booting, or 'c' for a command-line.  
  
The highlighted entry will be booted automatically in 5 seconds.
```

Note - When the GRUB menu appears, you have five seconds to make a selection.

4. **From the GRUB menu, do one of the following:**

- **If you are using the Oracle ILOM CLI, use the up/down arrow keys to select the serial console option and press Enter.**
- **If you are using Oracle ILOM Remote Console Plus (or a direct video port connection), use the up/down arrow keys to select the option that does *not* specify "serial console" and press Enter.**

Note - If you do not make a selection, serial console is used by default. This means that for the remainder of the OS configuration process, the system will direct output to the serial port and not to the video port.

Note - If needed, at the GRUB menu you can type `e` to edit commands before booting, or type `c` for a command line.

5. When prompted, enter the root password and the Oracle VM Agent password.

For example:

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

Configuring Oracle VM...              [ OK ]

Enter new root password:
Confirm password:

Enter new Oracle VM Agent password:
Confirm password:

Configuring network.
```

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 OVM 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 OVM management.
These interfaces will be configured for redundancy.
eth1

7. If all of the configuration settings are correct, type `y` when prompted and press Enter to save the settings.

When all settings have been entered and saved, the system loads an Oracle VM Server Console session. For example:

```
|Oracle VM Server 3.2.X 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.

See Also For information on using Oracle VM, including updating and registration, see [“Oracle VM Documentation” on page 124](#).

Oracle VM Documentation

For complete information about using Oracle VM, refer to the Oracle VM documentation available at:

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

Getting Server Firmware and Software

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

Description	Links
Learn about server firmware and software updates.	“Firmware and Software Updates” on page 125
Learn about the options for accessing firmware and software.	“Firmware and Software Access Options” on page 126
View the available firmware and software packages.	“Available Software Release Packages” on page 126
Access the firmware and software packages through Oracle System Assistant or My Oracle Support.	“Accessing Firmware and Software” on page 127
Install firmware and software updates.	“Installing Updates” on page 128

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 System Assistant** – Oracle System Assistant is a new factory-installed option for Oracle servers that allows you to easily download and install server firmware and software.

For more information about using Oracle System Assistant, refer to [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

- **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, refer to <https://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 127.

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. The same firmware and software can also be downloaded using Oracle System Assistant.

Package Name	Description	When to Download This Package
Sun Server X4-4 SW <i>version</i> – Firmware Pack	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
Sun Server X4-4 SW <i>version</i> – OS Pack	An OS Pack is available for each supported operating system version. Each OS Pack includes a package of all tools, drivers, and utilities for that version of the OS.	You need to update OS-specific drivers, tools, or utilities.

Package Name	Description	When to Download This Package
	Software includes Oracle Hardware Management Pack and LSI MegaRAID software. For the Windows OS, this OS Pack also includes Intel Network Teaming and Install Pack.	
Sun Server X4-4 SW <i>version</i> – All Packs	Includes the Firmware Pack, all OS Packs, and all documents. This pack does not include Oracle VTS or the Oracle System Assistant image.	You need to update a combination of system firmware and OS-specific software.
Sun Server X4-4 SW <i>version</i> – Diagnostics	Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.
Sun Server X4-4 SW <i>version</i> – Oracle System Assistant	Oracle System Assistant recovery and ISO update image.	You need to manually recover or update Oracle System Assistant.

Each of the downloads is a zip file that contains a ReadMe file and a set of subdirectories containing firmware or software files. The ReadMe file contains details on the components that have changed since the prior software release and the bugs that have been fixed.

Accessing Firmware and Software

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

You can use Oracle System Assistant to easily download and use the latest software release. For further information, refer to the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

You can also obtain updated firmware and software by using My Oracle Support. See [“Download Firmware and Software Using My Oracle Support” on page 127](#).

▼ Download Firmware and Software Using My Oracle Support

1. Go to the following web site: <https://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 X4-4) until a match appears.
- 6. In the Release field, select a software release from the drop-down list.**
- 7. Click Search.**

The patches available for downloading are listed.

See [“Available Software Release Packages” on page 126](#) for a description of the available downloads.
- 8. To select a patch for downloading, click on it (you can use the shift key to select more than one patch).**

A pop-up action panel appears. The pop-up panel contains several action options, including the Add to Plan and Download options. For information about the Add to Plan option, click on the associated drop-down button and select “Why use a plan?”
- 9. To download the patch(es), click Download in the pop-up action panel.**

The File Download dialog box appears.
- 10. In the File Download dialog box, click on the patch zip file.**

The patch file downloads.

Installing Updates

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

- [“Installing Firmware” on page 129](#)
- [“Installing Hardware Drivers and OS Tools” on page 129](#)

Installing Firmware

Updated firmware can be installed using one of the following:

- **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/technetwork/oem/ops-center/index.html>.

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

For more information, see the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

- **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/goto/ohmp/docs>

- **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 documentation for your supported version of Oracle Lights Out Manager (ILOM) Documentation Library at: <http://www.oracle.com/goto/ILOM/docs>

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/technetwork/oem/ops-center/index.html>

- **Oracle System Assistant**

For more information, see the [Oracle X4 Series Servers Administration Guide \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

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

For more information, refer to your operating system documentation.

Controlling System Power and Viewing BIOS Messages

This section describes how to control system power and view BIOS messages. It includes the topics shown in the following table:

Description	Links
Power on the server and view BIOS messages.	“Powering On the Server and Viewing BIOS Messages” on page 131
Power off the server if an error occurs.	<ul style="list-style-type: none">■ “Powering Off the Server for Orderly Shutdown” on page 135■ “Powering Off the Server for Immediate Shutdown” on page 138
Reset the server.	“Reset the Server” on page 140

Powering On the Server and Viewing BIOS Messages

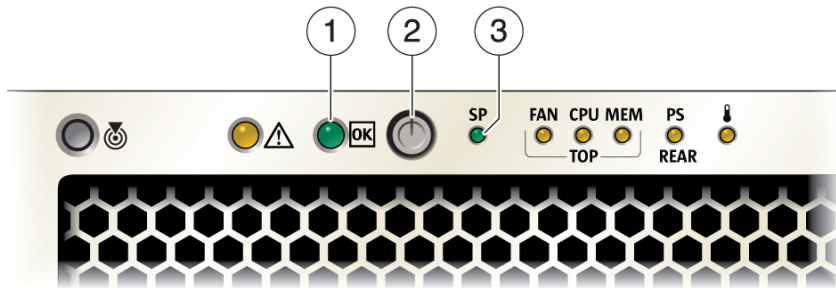
Use the procedures in one of the following sections to apply main power to the server and view BIOS messages.

- [“Use the Power Button to Power On the Server” on page 131](#)
- [“Use the Oracle ILOM CLI to Power On the Server” on page 132](#)
- [“Use the Oracle ILOM Web Interface to Power On the Server” on page 133](#)
- [“Viewing BIOS Messages” on page 133](#)

▼ Use the Power Button to Power On the Server

Before You Begin The power cords must be connected and the server in standby power mode before applying main power. See [“Connect the Power Cords” on page 50](#).

1. **Confirm that the system is ready to power on by checking to see if the SP indicator [3] is steady on.**



Callout	Description
1	System OK indicator
2	Power button
3	SP OK indicator

2. **Press the main power button [2].**

The system OK indicator [1] blinks as the server enters the boot process.

Next Steps [“Viewing BIOS Messages” on page 133](#)

▼ Use the Oracle ILOM CLI to Power On the Server

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

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

2. **From the CLI prompt, type the following command:**

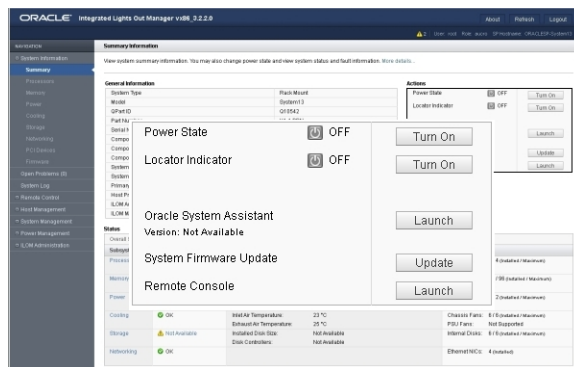
```
-> start /System
```

The main power mode is applied to the server.

Next Steps [“Viewing BIOS Messages” on page 133](#)

▼ Use the Oracle ILOM Web Interface to Power On the Server

1. **Log in to the Oracle ILOM web interface using an Administrator account.**
The Oracle ILOM web interface System Information > Summary page appears.
2. **From the Summary page, click the Turn On button from the Actions box.**



Main power is applied to the server. After a short period, the power state Off indicator lights green and the Turn On button changes to a Turn Off button.

Next Steps [“Viewing BIOS Messages” on page 133](#)


▼ Viewing BIOS Messages

Before You Begin The BIOS startup messages can be viewed at the server using a KVM, or remotely using the Oracle ILOM Remote Console Plus feature.

1. **When the system is powered on, the initial BIOS screen is displayed.**

This screen provides information about the BIOS and server. At this time, internal resources such as CPUs and memory are scanned and trained. Progress is displayed at the bottom of the screen along with checkpoint status codes. Resets might also occur during this process. Refer to the *Service Manual* for status code information.

Note - Time to completion depends on the amount of CPU and memory resources installed.



```
ORACLE
Copyright (c) 2012,2013, Oracle and/or its affiliates. All rights reserved.
BIOS Version : 24010201
Product Name : Sun Server X4-4

25 percent done. Status Code: AF 00
```

2. **After the initial resource checks are done, the BIOS splash screen is displayed. Utility hot-keys are listed and a system Power On Self Test (POST) is performed.**

Hot keys to access the BIOS setup program, option ROM utilities (HBA and network cards), temporary boot device selection menu (BBS popup), and Oracle System Assistant are presented, if available. The POST codes are displayed on the bottom right of the screen.

Note - If the boot mode is UEFI, some of these options are only be available in the BIOS Setup Utility.



3. **Once POST completes, the system attempts to boot from either the default boot device, or the temporary boot device selected from the BBS Popup menu. If available, an operating system is loaded.**

The system is ready for use.

Powering Off the Server for Orderly Shutdown

Use the procedures in one of the following sections to perform an orderly shutdown. These procedures cause ACPI-enabled operating systems to perform an orderly shutdown of the operating system. Servers not running ACPI-enabled operating systems shut down to standby power mode immediately.

Note - To completely power off the server, you must disconnect the power cords from the back panel of the server.

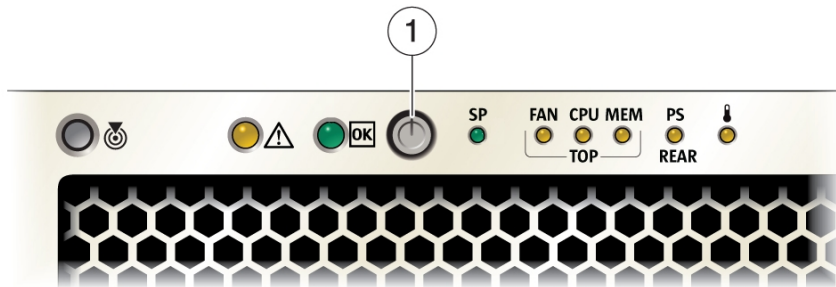
- [“Use the Power Button for Orderly Shutdown” on page 136](#)

- [“Use the Oracle ILOM CLI for Orderly Shutdown” on page 137](#)
- [“Use the Oracle ILOM Web Interface for Orderly Shutdown” on page 137](#)

▼ Use the Power Button for Orderly Shutdown

1. Momentarily press and release the Power button [1] 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.



Callout	Description
1	Power button

Once main power shuts down, the system goes into standby mode. The system OK indicator blinks in standby power mode.

2. To completely power off the server from standby power mode, disconnect the power cables from the server.

The server powers down completely.

- See Also**
- [“Front Panel Features” on page 15](#)
 - [“Use the Oracle ILOM CLI for Orderly Shutdown” on page 137](#)
 - [“Use the Oracle ILOM Web Interface for Orderly Shutdown” on page 137](#)
 - [“Use the Power Button for Immediate Shutdown” on page 138](#)

▼ Use the Oracle ILOM CLI for Orderly Shutdown

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

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

2. **From the CLI prompt, type the following command:**

```
-> stop /System
```

The server performs an orderly shutdown to standby power mode.

3. **To completely power off the server from standby power mode, disconnect the power cables from the server.**

The server powers down completely.

- See Also
- [“Use the Power Button for Orderly Shutdown” on page 136](#)
 - [“Use the Oracle ILOM Web Interface for Orderly Shutdown” on page 137](#)

▼ Use the Oracle ILOM Web Interface for Orderly Shutdown

1. **Log in to the Oracle ILOM web interface using an Administrator account.**

The Oracle ILOM web interface System Information > Summary page appears.

2. **In the left pane, click Host Management > Power Control, and select Graceful Shutdown and Power Off from the Select Action list box.**

3. **Click Save, and then click OK.**

The host server performs an orderly shutdown to standby power mode.

4. **To completely power off the server from standby power mode, disconnect the power cables from the server.**

The server powers down completely.

- See Also
- [“Use the Power Button for Orderly Shutdown” on page 136](#)
 - [“Use the Oracle ILOM CLI for Orderly Shutdown” on page 137](#)

Powering Off the Server for Immediate Shutdown

Use the procedures in one of the following sections to perform an immediate shutdown.



Caution - Possible data loss. The immediate shutdown method will cause any unsaved data on the server to be lost.

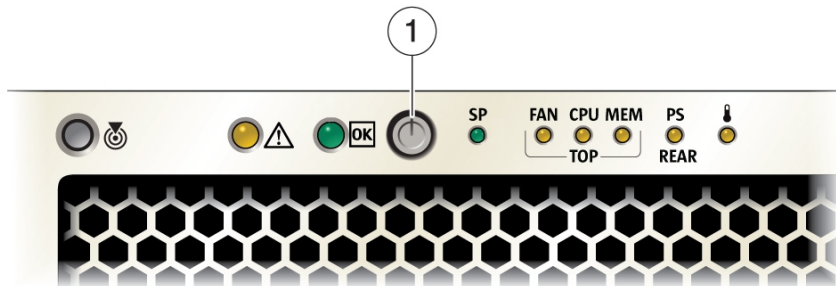
Note - To completely power off the server, you must disconnect the power cords from the back panel of the server.

- [“Use the Power Button for Immediate Shutdown” on page 138](#)
- [“Use the Oracle ILOM CLI for Immediate Shutdown” on page 139](#)
- [“Use the Oracle ILOM Web Interface for Immediate Shutdown” on page 139](#)

▼ Use the Power Button for Immediate Shutdown

1. **Press and hold down the Power button until the main power shuts off.**

You need to hold down the power button for several seconds. The server powers down to standby power mode. The system OK indicator blinks in standby power mode.



Callout	Description
1	Power button

2. **To completely power off the server from standby power mode, disconnect the power cables from the server.**

The server powers down completely.

- See Also**
- [“Use the Oracle ILOM CLI for Immediate Shutdown” on page 139](#)
 - [“Use the Oracle ILOM Web Interface for Immediate Shutdown” on page 139](#)

▼ Use the Oracle ILOM CLI for Immediate Shutdown

- 1. Log in to the Oracle ILOM command-line interface (CLI) using an Administrator account.**
Oracle ILOM displays the default command prompt (->), indicating that you have successfully logged in to Oracle ILOM.
- 2. From the CLI prompt, type the following command:**

```
-> stop -f /System
```

The server immediately powers down to standby power mode.
- 3. To completely power off the server from standby power mode, disconnect the power cables from the server.**
The server powers down completely.

- See Also**
- [“Use the Power Button for Immediate Shutdown” on page 138](#)
 - [“Use the Oracle ILOM Web Interface for Immediate Shutdown” on page 139](#)

▼ Use the Oracle ILOM Web Interface for Immediate Shutdown

- 1. Log in to the Oracle ILOM web interface using an Administrator account.**
The Oracle ILOM web interface System Information > Summary page appears.
- 2. In the left pane, click Host Management > Power Control, and select Immediate Power Off from the Select Action list box.**
- 3. Click Save, and then click OK.**
The server immediately powers down to standby power mode.
- 4. To completely power off the server from standby power mode, disconnect the power cables from the server.**

The server powers down completely.

- See Also**
- [“Use the Power Button for Immediate Shutdown” on page 138](#)
 - [“Use the Oracle ILOM CLI for Immediate Shutdown” on page 139](#)

Reset the Server

Use the procedures in one of the following sections to reset the server.



Caution - Possible data loss. Resetting the server will cause any unsaved data on the server to be lost.

- [“Use the Oracle ILOM CLI to Reset the Server” on page 140](#)
- [“Use the Oracle ILOM Web Interface to Reset the Server” on page 140](#)

▼ Use the Oracle ILOM CLI to Reset the Server

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

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

2. **From the CLI prompt, type the following command:**

```
-> reset /System
```

The server resets.

- See Also**
- [“Use the Oracle ILOM Web Interface to Reset the Server” on page 140](#)

▼ Use the Oracle ILOM Web Interface to Reset the Server

1. **Log in to the Oracle ILOM web interface using an Administrator account.**

The Oracle ILOM web interface System Information > Summary page appears.

2. **In the left pane, click Host Management > Power Control, and select Reset from the Select Action list box.**
3. **Click Save, and then click OK.**
The host server resets.

See Also ■ [“Use the Oracle ILOM CLI to Reset the Server” on page 140](#)

Troubleshooting Installation Issues

This section provides information to aid in troubleshooting installation issues with your server.

Description	Links
Learn about troubleshooting and diagnostic reference information.	“Troubleshooting and Diagnostic References” on page 143
Record server information before contacting Service.	“Technical Support Information Worksheet” on page 143
Locate the system serial number before contacting Service.	“Locating the Server Serial Number” on page 144

Troubleshooting and Diagnostic References

The *Sun Server X4-4 Service Manual* provides product-specific information about troubleshooting problems, see [“Troubleshooting and Diagnostics” in *Sun Server X4-4 Service Manual*](#) .

The *Oracle x86 Server Diagnostics Guide* (<http://www.oracle.com/goto/x86AdminDiag/docs>) provides information about a wide variety of tools available for Oracle's x86 servers.

Knowledge articles, white papers, and product updates are available through the Oracle Support portal:

<https://support.oracle.com>

Technical Support Information Worksheet

If the troubleshooting information fails to solve your problem, use the following table to collect information that you might need to communicate to the support personnel.

System Configuration Information Needed	Your Information
Service contract number	
System model	
Operating system	
System serial number	
Peripherals attached to the system	
Email address and phone number for you and a secondary contact	
Street address where the system is located	
Superuser password	
Summary of the problem and the work being done when the problem occurred	
IP address	
Server name (system host name)	
Network or Internet domain name	
Proxy server configuration	

Locating the Server Serial Number

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

- On the front panel of the server, look at the bottom left of the bezel to locate the server's serial number.
- Locate the yellow Customer Information Sheet (CIS) attached to your server packaging. This sheet includes the serial number.
- From Oracle ILOM:
 - Using the Web interface, log in and view the Summary page.
 - Using the CLI, log in and enter the command:
`show /SYS`

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