

Oracle® Server X5-8 Installation Guide



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Using This Documentation

This section describes how to get the latest firmware, software, and documentation for the Oracle Server X5-8. It also provides feedback links and a document change history.

- [“Oracle Server X5-8 Model Naming Convention” on page 9](#)
- [“Getting the Latest Firmware and Software” on page 9](#)
- [“Documentation and Feedback” on page 10](#)
- [“Contributors” on page 10](#)
- [“Change History” on page 10](#)

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

Oracle Server X5-8 Model Naming Convention

The Oracle Server X5-8 name identifies the following:

- X identifies an x86 product.
- The first number, 5, identifies the generation of the server.
- The second number, 8, identifies the maximum number of processors.

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 the following ways:

- Oracle System Assistant: This is a factory-installed option for Oracle x86 servers. It has all the tools and drivers you need and resides on a USB drive installed in most servers.
- You can download updates from My Oracle Support: <https://support.oracle.com>

Documentation and Feedback

Documentation	Link
All Oracle products	https://docs.oracle.com
Oracle Server X5-8	http://www.oracle.com/goto/X5-8/docs-videos
Oracle Integrated Lights Out Manager (ILOM). Refer to the Oracle ILOM documentation.	http://www.oracle.com/goto/ILOM/docs
Oracle Hardware Management Pack. Refer to the documentation for your supported version of Oracle HMP as 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>

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Change History

The following lists the release history of this documentation set:

- December 2015. Technical updates.
- August 2015. Technical updates to Oracle ILOM configuration.
- July 2015. Minor technical corrections.
- July 2015. Initial publication.

Installation Procedure Overview

The following table summarizes the tasks that you must perform to properly install the server:

Step	Description	Links
1	Review the Oracle Server X5-8 Product Notes for any late-breaking information about the server.	Oracle Server X5-8 Product Notes
2	Prepare to install the server.	“Preparing to Install the Server” on page 23
3	Review the server features.	“Server Features and Components” on page 13
4	Install any separately shipped optional components.	Oracle Server X5-8 Service Manual
5	Install the server into a rack.	“Rack Installation Instructions” on page 29
6	Attach data cables and power cords to the server.	“Cabling the Server” on page 43
7	Set up your system software and firmware using Oracle System Assistant.	“Launching Oracle System Assistant” on page 69
8	Connect to Oracle Integrated Lights Out Manager (ILOM).	“Connecting to Oracle ILOM” on page 51
9	Prepare server drives and configure RAID.	“Configure Storage Drives for OS Installation” on page 77
10	If applicable, configure a preinstalled operating system.	<ul style="list-style-type: none">■ “Configuring the Preinstalled Oracle Solaris OS” on page 105■ “Configuring the Preinstalled Oracle Linux OS” on page 117■ “Configuring the Preinstalled Oracle VM 3.X Software” on page 111
11	If applicable, install one of the following operating systems or virtual machine software.	Oracle Server X5-8 Installation Guide for Linux Operating Systems Oracle Server X5-8 Installation Guide for Oracle Solaris Operating System Oracle Server X5-8 Installation Guide for Oracle VM Server Oracle Server X5-8 Installation Guide for Windows Operating Systems
12	Review procedures for controlling system power.	“Controlling System Power” on page 129

Step	Description	Links
13	Troubleshoot installation issues.	“Troubleshooting Installation Issues” on page 133

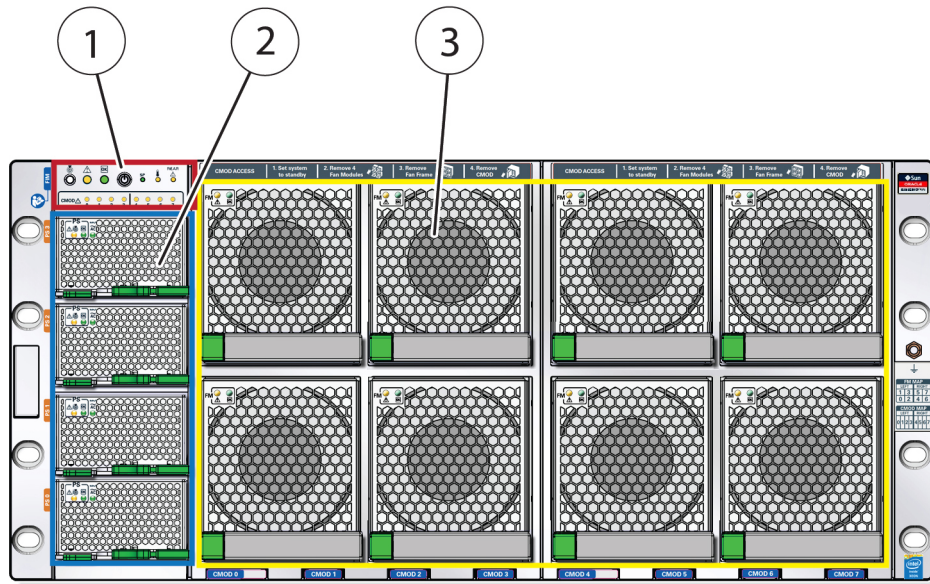
Server Features and Components

This section describes the Oracle Server X5-8 hardware. It includes.

Description	Links
Locate status indicators, connectors, and storage drives on the server front and back panels.	■ “Front Panel Features” on page 13 ■ “Back Panel Features” on page 17
Review server features and components.	“Server Supported Components” on page 20
Review server management software.	“Managing Your Server” on page 47

Front Panel Features

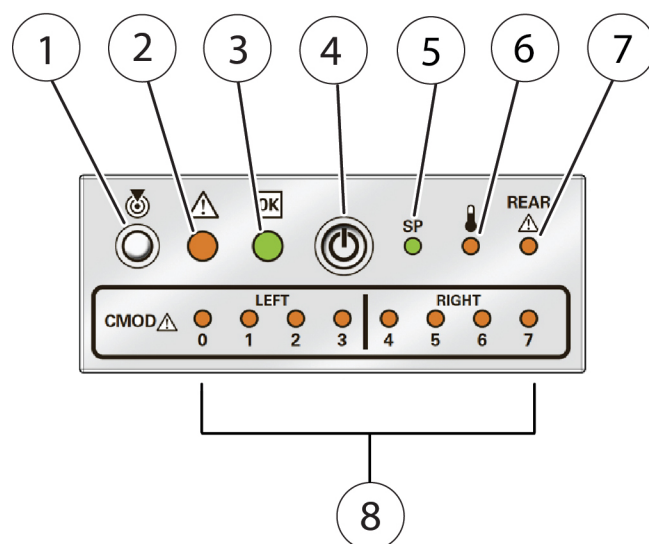
The following figure shows the Oracle Server X5-8 front panel and describes its components:



Callout	Description
1	Front indicator module
2	Power supplies 0 (bottom) through 3 (top)
3	Fan modules FM 0 through FM 7: <ul style="list-style-type: none"> ■ Top row: 1, 3, 5, 7 ■ Bottom row: 0, 2, 4, 6

Front Indicator Module

The following figure shows the controls and indicators on the front indicator module:

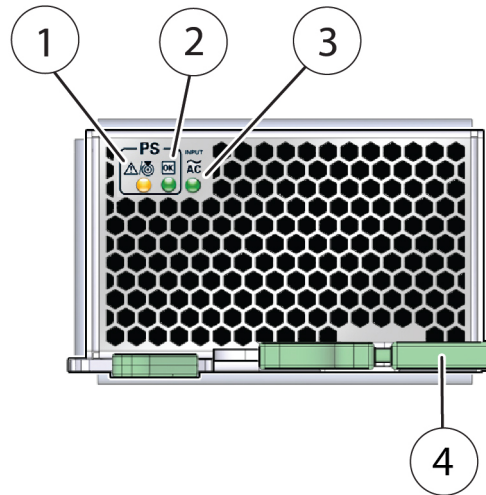


Callout	Description
1	Chassis Locator button and indicator
2	Chassis Service Action Required indicator
3	System OK indicator
4	Recessed Power button
5	Service processor (SP) OK indicator
6	Chassis temperature Service Action Required indicator
7	Chassis rear Service Action Required indicator
8	CMOD Service Action Required indicators 0 - 7 (from left to right) Note - The server contains either four or eight CMODs (compute modules). They are located behind the fans, and designated from left to right as CMOD 0 through CMOD 7. Each CMOD has a corresponding Service Action Required indicator.

Note - For more on system power and the related controls and indicators, see [“Controlling System Power” on page 129](#).

Power Supply Controls and Indicators

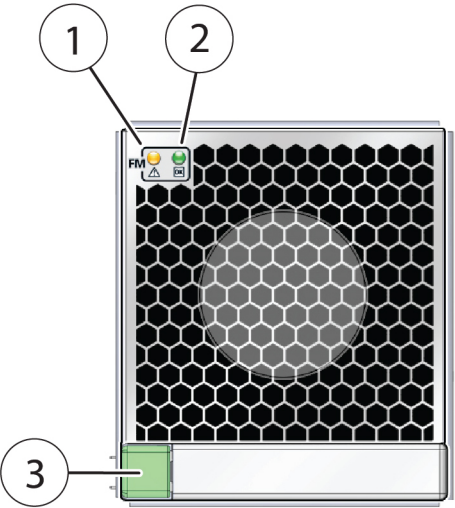
The following figure shows the power supply controls and indicators:



Callout	Description
1	Service Action Required/Locator indicator
2	OK indicator (power to host is OK)
3	AC OK indicator (AC input power is OK)
4	Release latch

Fan Module Controls and Indicators

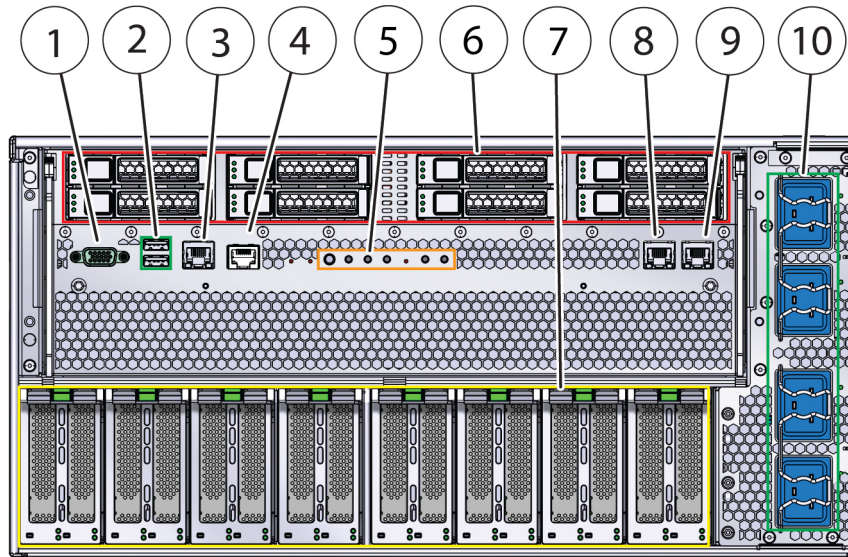
The following figure shows the controls and indicators on the fan module:



Callout	Description
1	Service Action Required indicator
2	OK indicator
3	Release latch

Back Panel Features

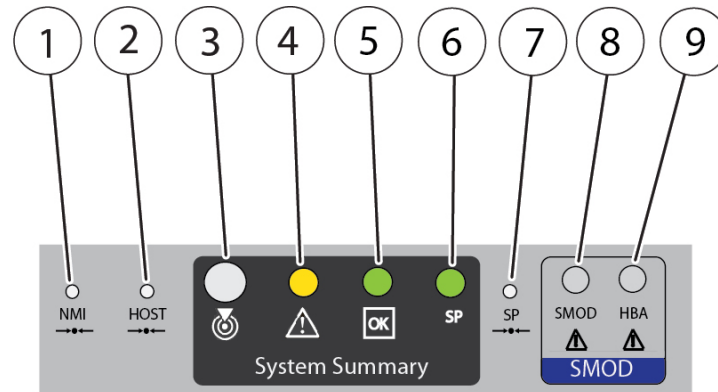
The following figure shows the Oracle Server X5-8 back panel and describes its components:



Callout	Description
1	DB-15 video port
2	USB 2.0 ports (2)
3	Net management port
4	Serial management port
5	Status indicators
6	HDD/SSD slots 0 through 7: <ul style="list-style-type: none"> ■ Top row : 7, 5, 3, 1 ■ Bottom row: 6, 4, 2, 0
7	PCIe card slots 1 through 16: <ul style="list-style-type: none"> ■ PCIe 1 is on the right ■ PCIe 16 is on the left <p>PCIe cards are mounted on dual PCIe card carriers (DPCC). Each DPCC houses two PCIe slots.</p>
8	Net 0 port
9	Net 1 port
10	AC inputs with cable clips (0 through 3): <ul style="list-style-type: none"> ■ AC input 3 is on top ■ AC input 0 is on the bottom

Back Panel Status Indicators and Buttons

The following figure shows the back panel indicators and buttons:

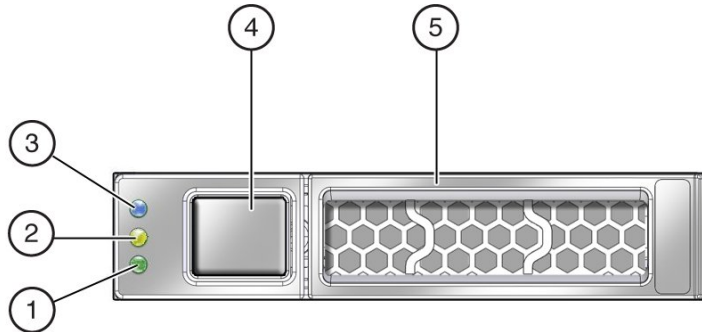


Callout	Description
1	Non-maskable interrupt (NMI) button – Used by Oracle service personnel.
2	Reset button – Used by Oracle service personnel.
3	Locator indicator – Used to identify the server. For details, see the <i>Oracle ILOM Documentation Library</i> at: http://www.oracle.com/goto/ILOM/docs
4	Chassis Service Action Required indicator – For details, refer to <i>Oracle Server X5-8 Service Manual</i> .
5	System OK – For details, see “Controlling System Power” on page 129.
6	SP OK – Steady on if SP is operating, blinks while SP is booting, off if SP has no power.
7	SP reset button.
8	SMOD Service Action Required indicator – Indicates a system module (SMOD) fault
9	HBA Service Action Required indicator – Indicates a host bus adaptor (HBA) fault

Note - For details on system power and the related controls and indicators, see “Controlling System Power” on page 129.

Storage Controls and Indicators

The following figure shows the storage controls and indicators:



Callout	Description
1	OK indicator
2	Service Action Required indicator
3	Ready to remove indicator
4	Storage drive release button
5	Storage drive lever

Server Supported Components

The following table lists and describes the components that are supported in the Oracle Server X5-8:

Component	Description
CPU module (CMOD)	<p>Four or eight CPU modules, each with one Intel Xeon® E7-8895 v3 18-core 2.6 GHz processor.</p> <p>Supported configurations:</p> <ul style="list-style-type: none"> ■ Four CPU modules installed in slots 0 through 3 ■ Eight CPU modules installed in slots 0 through 7 <p>For the latest information on CPU specifications, go to the Oracle x86 servers web site and navigate to the Oracle Server X5-8 page:</p>

Component	Description
	http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html
Memory	Up to 192 DIMMs, 24 per CPU module 16GB DDR3 ECC Registered DIMMs or 32GB DDR3 Registered ECC LRDIMMs 6 TB maximum memory capacity
Storage devices	Eight 2.5-inch back accessible, hot swappable SAS-3 hard disk drives (HDDs) or eight 2.5-inch eMLC SATA-3 solid state drives (SSDs) for up to 9.6 TB of internal storage
USB 2.0 ports	Four USB ports (two external, two internal)
VGA ports	One VGA 1280 x1024 8 MB @ 60 Hz graphics controller port
PCI Express 3.0 I/O slots	Eight dual PCIe card carriers (DPCC) each with two PCIe 3.0 card slots Sixteen PCIe 3.0 slots (eight x8 slots, eight x16 slots) hot-swappable using DPCC
PCI Express I/O cards	For a list of customer-orderable I/O cards, go to the Sun x86 servers web site and navigate to the Oracle Server X5-8 page: http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html
Ethernet ports	Two 1 Gbps onboard Ethernet ports
Service processor	Oracle Integrated Lights Out Manager (ILOM) uses an Emulex Pilot 3 baseboard management controller (BMC). It provides: <ul style="list-style-type: none"> ■ Remote Keyboard, Video, Mouse redirection ■ Full remote management through command-line, IPMI, and browser interfaces ■ Remote media capability (DVD, CD, ISO image) ■ Advanced power management and monitoring ■ Active Directory, LDAP, RADIUS support ■ Dual ILOM flash ■ Signed ILOM
Power supplies	Four redundant, hot-swappable front accessible power supplies
Cooling fans	Eight hot-swappable, redundant fan modules at chassis front; redundant fans in each power supply
Operating systems	<ul style="list-style-type: none"> ■ Oracle Solaris (preinstall option) ■ Oracle Linux (preinstall option) ■ Oracle VM (preinstall option) ■ Red Hat Enterprise Linux ■ Microsoft Windows Server ■ VMware ESXi <p>For more information on software go to:</p> <p>http://www.oracle.com/technetwork/server-storage/oracle-x86/overview/index.htm</p>
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 Enterprise Management Ops Center, downloadable from the Oracle site

Preparing to Install the Server

This section provides the information you need to know before you install the server into a rack. It includes.

Description	Links
Review the server physical, electrical, and environmental specifications.	“Server Specifications” on page 23
Review ventilation and cooling requirements for the rackmounted server.	“Ventilation Guidelines” on page 25
Unpack the server and verify the ship kit contents.	“Shipping Inventory” on page 26
Assemble the tools required for installation.	“Tools and Equipment Needed” on page 26
Review ESD requirements and take safety precautions.	“ESD Precautions” on page 27
Install any optional components into the server.	“Optional Component Installation” on page 27
Review the site planning checklists.	“Site Planning Checklists” on page 135

Server Specifications

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

Physical Specifications

The following table lists the physical specifications for the Oracle Server X5-8:

Parameter	Value
Height	5U / 219.25 mm (8.63 in.)
Width	445 mm (17.5 in.)
Depth	834 mm (32.8 in.)
Weight	114 kg (250 lbs)

Electrical Specifications

The following table lists the electrical specifications for the Oracle Server X5-8:

Note - For up-to-date information on power consumption, go to the Sun x86 Servers web site and navigate to the Oracle Server X5-8 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	200-240 VAC
Rated input current	23A @ 200 to 230 VAC
	12A max per cord
Maximum power consumption	3400 W
Maximum heat output	11600 BTU/Hr

Environmental Requirements

The following table lists the environmental requirements for the Oracle Server X5-8:

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)
Operating temperature	5° C to 35° C (4° F to 95° F)
Non-operating temperature	-40 °C to 70 °C (-40 °F to 158° F)
Operating humidity	10% to 90% relative humidity, non-condensing
Non-operating humidity	Up to 93% relative humidity, non-condensing
Operating altitude	Up to 3,000 m (9,840 ft), maximum ambient temperature is derated by 1 degree C per 300 m above 900 m, except in China where regulations may limit installations to a maximum altitude of 2,000 m
Non-operating altitude	0 m to 12,000 m (0 ft to 40,000 ft)
Acoustic noise	Acoustic noise: 7.7 B operating, 6.8 B idling - (LwAd: 1 B=10 dB)

Ventilation Guidelines

Rackmount servers and equipment, including the Oracle Server X5-8, typically draw cool air in from the front of the rack and let warm air out the back 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.

Pay special consideration 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 Oracle Server X5-8 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 back 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 back of the system for ventilation.
- Ensure unobstructed airflow through the chassis. The server uses internal fans that can achieve a total airflow of 100 CFM in normal operating conditions.
- Ensure that the 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 back doors have 80 percent perforations that provide a high level of airflow through the rack.
- Ensure that front and back clearance of the server allow a minimum of 1 inch (25.4 mm) at the front of the server and 3.15 inch (80 mm) at the back of the server when mounted.

These clearance values are based on the inlet and exhaust impedance (available open area) stated above 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 packaged with the Oracle Server X5-8:

- Power cords, packaged separately with country kit
- Rackmount kit containing shelf rails and installation instructions
- Miscellaneous hardware and cables
- [Oracle Server X5-8 Getting Started Guide](#)
- Legal and safety documents

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 to install server options, see the [“Optional Component Installation” on page 27](#).

Tools and Equipment Needed

To install the system, you need the following tools:

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

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 from static electricity. Use the following precautions when you install or service the server:

- Use a grounded antistatic wrist strap, foot strap, or equivalent safety equipment.
- Place components on an antistatic surface, such as an static discharge mat, an antistatic bag, or a disposable antistatic mat.



Caution - Equipment damage. Electrostatic damage can permanently disable the system or require repair by authorized service technicians.

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 they 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

To install optional components, refer to the service labels on the top cover of the CPU Module (CMOD) or the System Module (SMOD) and to the component service procedures in the *Oracle Server X5-8 Service Manual*.

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

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

Rack Installation Instructions

This section provides instructions for placing the server into a rack using the shelf rail assembly in the rackmount kit.

The Oracle Server X5-8 does not have slide rails. Once it is installed in the rack, you cannot slide it out without uninstalling it. However almost all components can be accessed from the front or back, so uninstalling it is seldom necessary.

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 29
Review the compatibility requirements for your rack.	“Rack Compatibility” on page 30
Unpack the server and inventory the contents.	“Unpack the Server and Inventory the Contents” on page 31
Install the shelf rails and back mounting brackets.	“Install Shelf Rails and Back Mounting Brackets” on page 34
Add or remove shipping brackets (optional)	“Install Shipping Bracket (Optional)” on page 39
Install the server into a rack.	“Install the Server into the Rack” on page 41

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 does not become top-heavy and tip over. Deploy your rack's anti-tilt device to prevent the rack from tipping during equipment installation.



Caution - Component damage. 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. Always install 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 24](#).



Caution - Equipment damage. Install the equipment in a rack so that the amount of airflow required for safe operation of the equipment is not compromised.


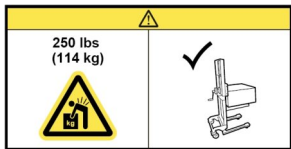


Caution - Circuit overloading. Give consideration to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate power ratings should be used when addressing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



Caution - Equipment damage. Maintain reliable earthing. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

The following table shows images that appear on the equipment to provide additional warnings:

Graphic	Description
	This sign warns you to avoid placing your hand in a place where you might receive an electric shock.
	This sign warns you to avoid lifting the server, and to use a mechanical lift instead.

Rack Compatibility

Check that your rack is compatible with the shelf rail assembly and back brackets. These components are compatible with equipment racks that meet the standards listed in the following table:

Item	Requirement
Structure	Four-post rack (mounting at both front and back). Two-post racks are not compatible.
Rack horizontal opening and unit vertical pitch	Conforms to ANSI/EIA 310-D-1992 or IEC 60927 standards. Only M6 tapped or 9.5 mm square holes are supported.
Distance between front and back 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 back 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 back mounting planes	Distance between structural supports and cable troughs is at least 456 mm (18 inches).
Server dimensions	See “Server Specifications” on page 23 .

See Also

- [“Unpack the Server and Inventory the Contents” on page 31](#)
- [“Install the Server into the Rack” on page 41](#)

▼ Unpack the Server and Inventory the Contents

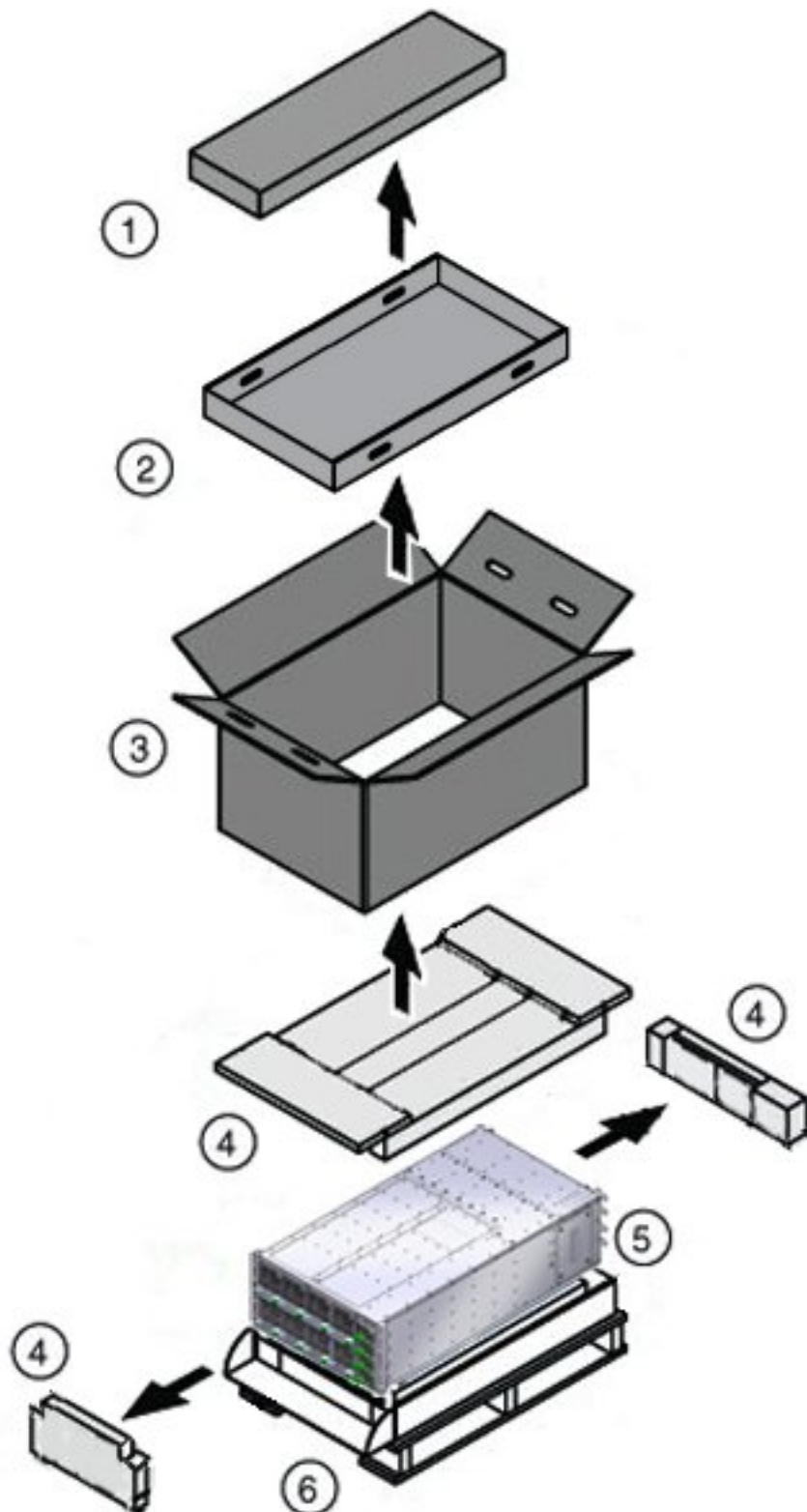
Use these instructions to remove the server from its container and inventory the contents.

The following items are packaged with the Oracle Server X5-8:

- Power cords, packaged separately with country kit
- Rackmount kit containing shelf rails and installation instructions
- Miscellaneous hardware and cables
- [Oracle Server X5-8 Getting Started Guide](#)
- Legal and safety documents

All required server components and most options are installed at the factory. However, some ordered options might be packaged separately.

The following figure shows the components of the shipping container:



Callout	Description
1	Rack mounting kit
2	Tray
3	Box
4	Foam inserts
5	Server
6	Pallet

Before You Begin This procedure requires a mechanical lift.



Caution - Equipment damage or personal injury. The server is heavy. Do not attempt to install the server without a mechanical lift.

1. 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.

2. Open the top of the box.

- a. Cut the straps.
- b. Cut or remove the tape.
- c. Open the flaps.

3. Remove the rack mounting kit and set it and its contents aside.

4. Remove the tray and set it aside.

5. Lift the box up and away from the server.

6. Remove the foam inserts.

- a. Fold the corrugated flap down to release the front foam insert.
- b. Remove the front and rear inserts.

7. Remove the anti-static wrapper from the server.

8. **To remove the server from the pallet, insert the blades of the lift in the gap between the server and the pallet.**

For rack mounting instructions, see [“Rack Installation Instructions”](#) on page 29.

Next Steps ■ [“Install Shelf Rails and Back Mounting Brackets”](#) on page 34

▼ **Install Shelf Rails and Back Mounting Brackets**

Before You Begin Identify the location in the rack where you plan to place the Oracle Server X5-8. It requires five rack units.

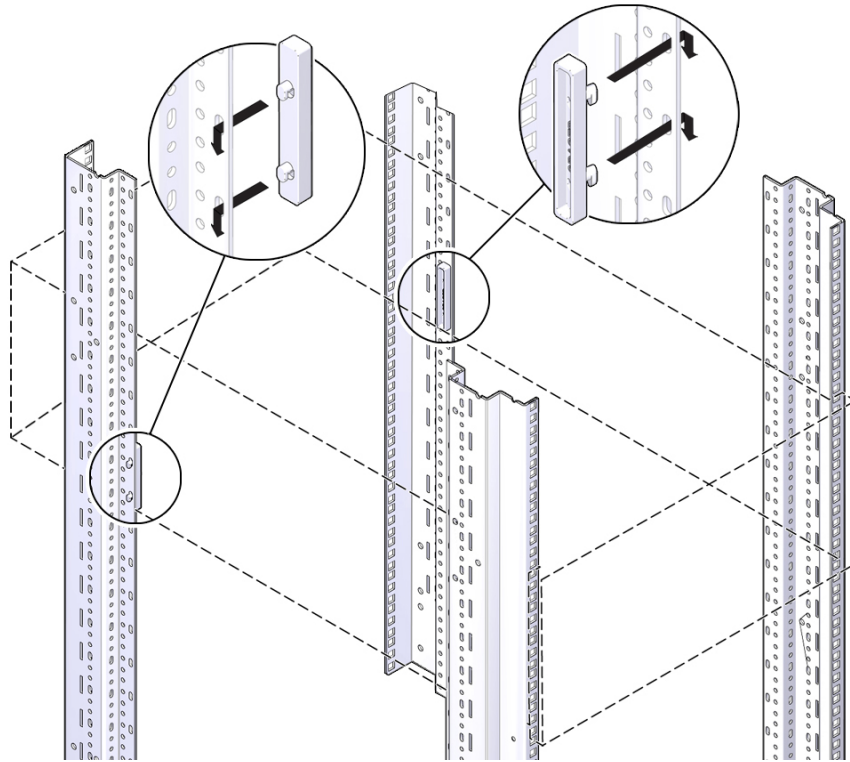
Ensure that your rack meets the requirements in [“Rack Compatibility”](#) on page 30.



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 device to prevent the rack from tipping during equipment installation.

1. **Determine your server location in the rack.**
The Oracle Server X5-8 requires five rack units.
2. **Install the two spacers in back rack rails.**

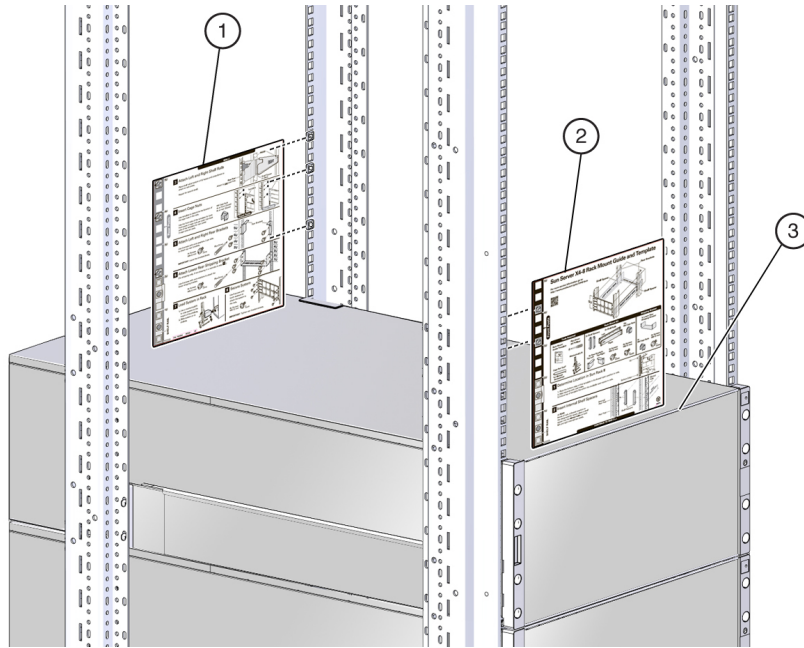
Studs on the spacers fit into the oval holes on the inside of the back rack rail. Align the bottom of the spacer with the bottom of the system's rack space.



3. **For square hole racks, place cage nuts in the locations indicated by the alignment template. For round-hole racks, go to Step 4.**
 - a. **Align the template with the holes where you intend to place the server.**

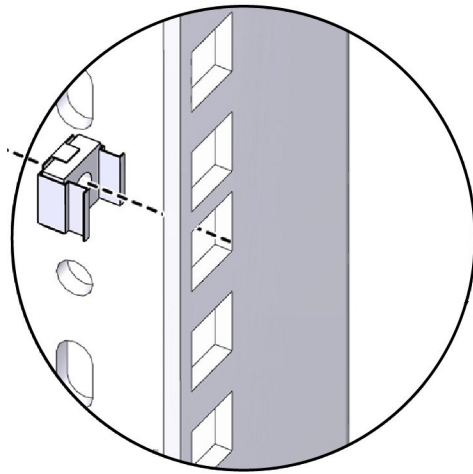
The template has rack alignment images on either side; one for the back rack alignment [1], and one for the front rack alignment [2].

Place the server directly above the rack unit below it [3] without any unfilled rack spaces.



- b. Place cage nuts in the locations indicated by the template.

Place the cage nuts on the inner-facing side of each rail. There should be two cage nuts in each front rail and three cage nuts in each back rail.



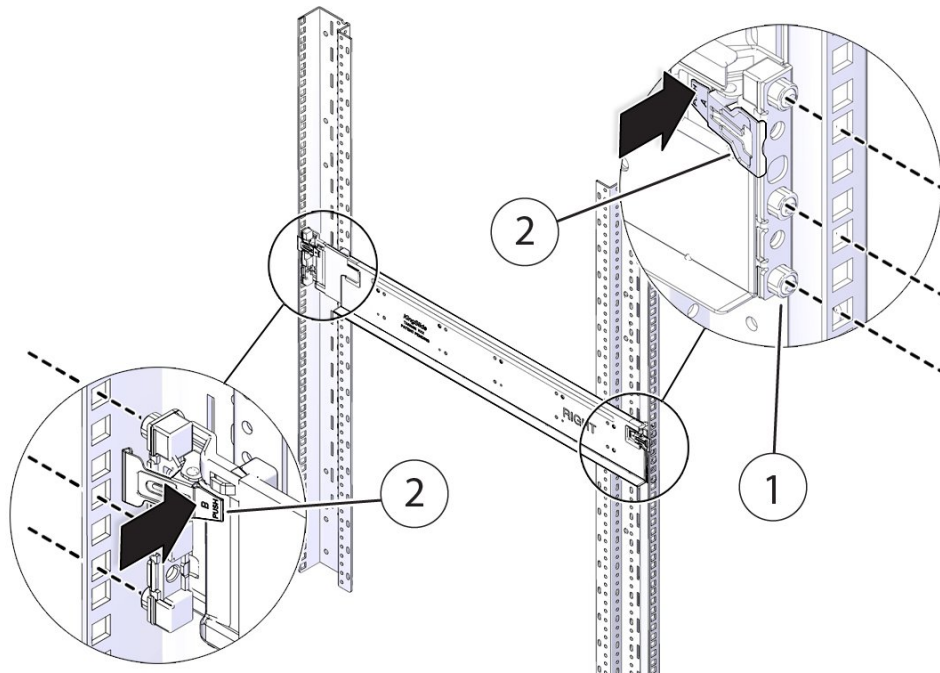
4. Install the left and right shelf rails.

The rails are labeled left and right, front and back.

The rails have studs and a latch at each end. For each rail:

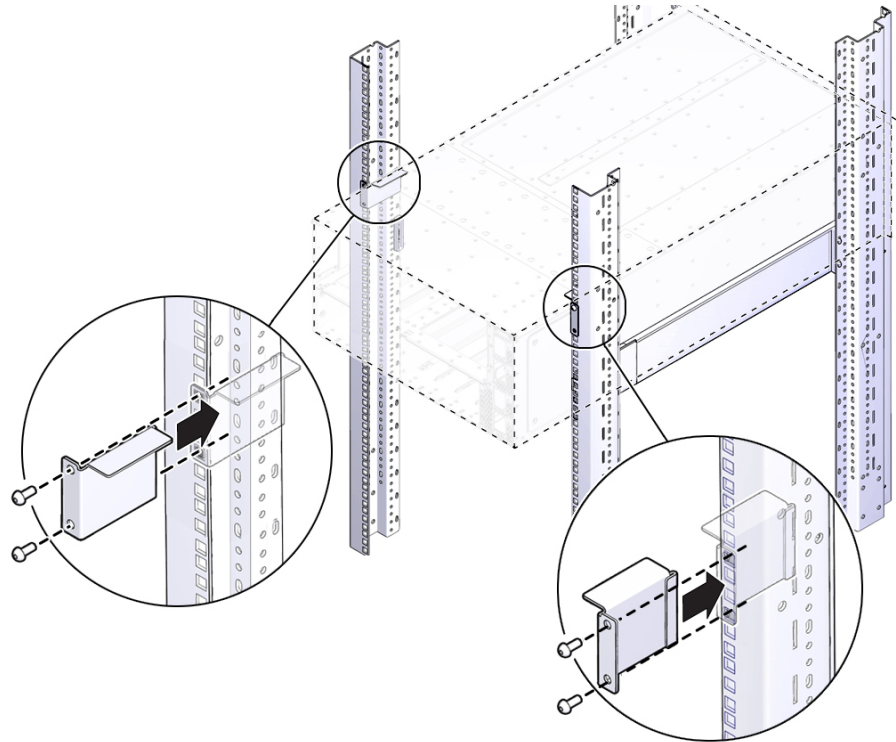
- a. Expand the shelf rail to fit the rack.**

- b. Insert the studs [1] into the holes on the rack, and then press the tab [2] to open the latch and fasten it to the rack.



- 5. **Attach the back mounting brackets.**
 - a. Align each bracket so that the flanges will go over the top of the server.
 - b. Use two screws to fasten each bracket to the rack.

Do not tighten the screws all the way.



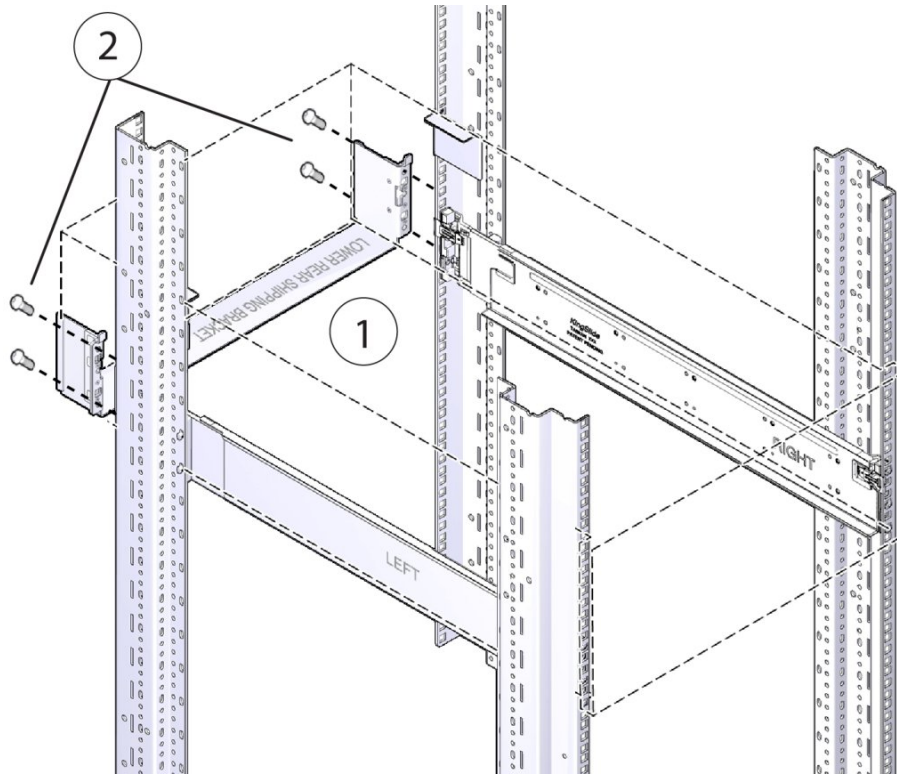
- Next Steps
- [“Install Shipping Bracket \(Optional\)” on page 39](#)
 - [“Cable the Server” on page 44](#)

▼ Install Shipping Bracket (Optional)

If you are going to ship your server in a rack, install the shipping bracket . You must install the shipping bracket before mounting the server in the rack.

- 1. Insert the shipping bracket directly above the shelf rails [1].**
Make sure that the horizontal part of the shipping bracket rests on the shelf rails.

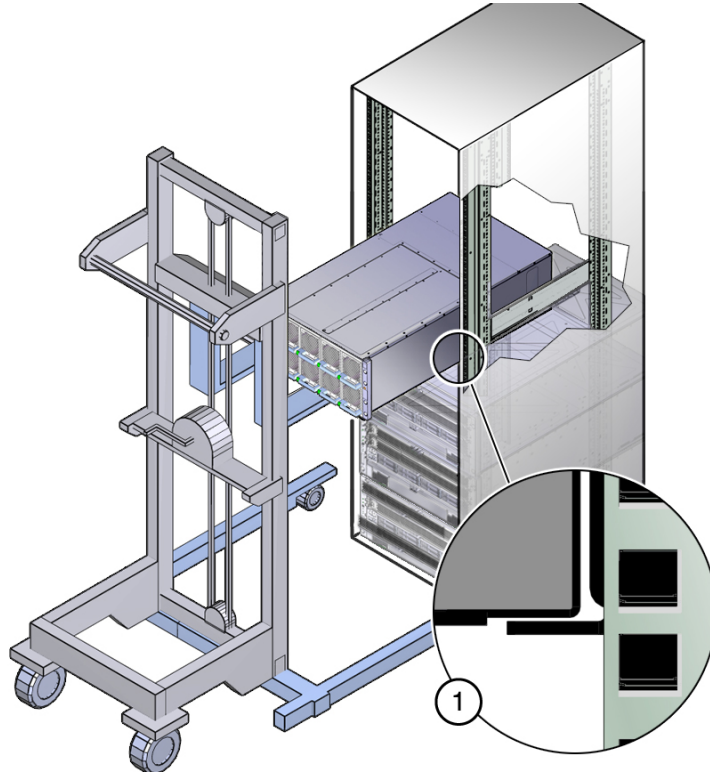
2. Fasten it to the rack using four M6 screws [2].



Next Steps ■ [“Install the Server into the Rack” on page 41](#)

▼ Install the Server into the Rack

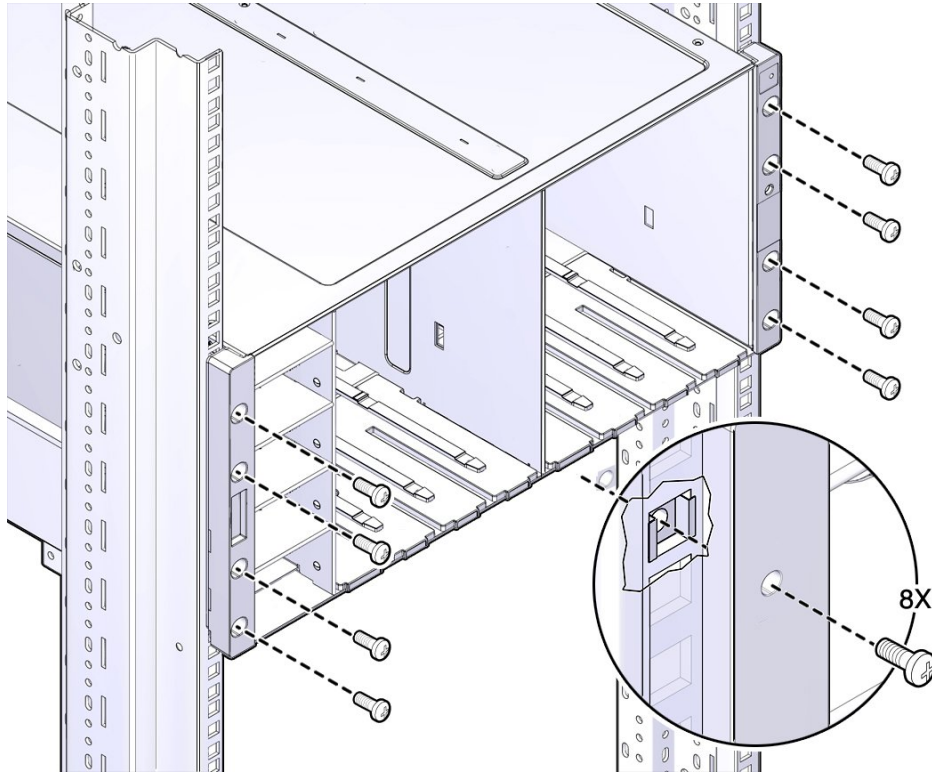
1. Use a lift to raise the server to its position in the rack.



Caution - Personal injury or damage to equipment. Be sure the server is firmly supported by the shelf rails before releasing it from the lift.

2. **Slowly slide the server into position on the shelf rails.**
Do not remove support from the lift until the server is fully supported by the shelf rails.
3. **Use eight M6 screws to attach the front of the server to the rack.**

The top two screws attach to cage nuts installed previously. The bottom screws attach to threaded holes in the shelf rails.



4. Press the back mounting brackets against the server and tighten the screws.

- See Also
- [“Install Shelf Rails and Back Mounting Brackets” on page 34](#)
 - [“Cable the Server” on page 44](#)

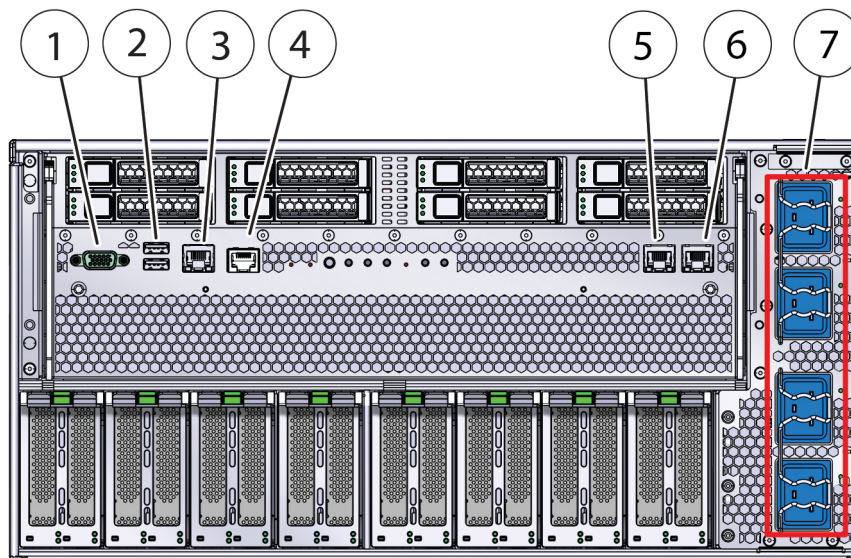
Cabling the Server

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

Description	Links
Review connector port locations.	“Back Panel Connectors and Ports” on page 43
Connect data cables to the server.	“Cable the Server” on page 44
Connect power cords to the server.	“Cable the Server” on page 44

Back Panel Connectors and Ports

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



Callout	Description
1	DB-15 video port
2	USB 2.0 ports (2)
3	Net management port (NET MGT)
4	Serial management port (SER MGT)
5	Net 0 port
6	Net 1 port
7	Power connectors 0 through 3. Connect to 200-240 VAC only.

▼ Cable the Server

Connect external cables to the server in the following order:

Note - The numbers in brackets [] correspond to callouts in the back panel figure in [“Back Panel Connectors and Ports”](#) on page 43.

1. **Connect an Ethernet cable to the Gigabit Ethernet (NET) ports, as needed [5-6]).**

2. **(Optional) If you plan to interact with the system console directly, connect any external devices, such as mouse and keyboard, to the server's USB ports [2], and a monitor to the DB-15 video port [1]].**
3. **To connect to Oracle Integrated Lights Out Manager (ILOM) over the network, connect an Ethernet cable to the Ethernet port labeled NET MGT [3]].**

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 two 10/100/1000 Ethernet ports instead.

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

For more information about viewing system output from a serial console see [“Log In to Oracle ILOM Using a Local Serial Connection” on page 53](#).

5. **Connect the server power cords to the AC connectors on the back panel of the server and secure each cord using the connector's cable clip [7].**

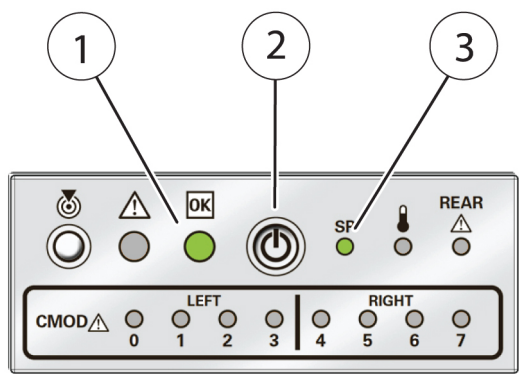
The AC must be grounded 200-240V.

To provide redundancy in case of power failure, and to prevent the system from overloading a circuit breaker, connect the top two power cords to a different circuit from the bottom two.

When power is connected, the SP boots into standby power mode.

- While the SP is booting, the SP OK/Service Action Required indicator [3] flashes and the main System OK indicator [1] remains off.
- When the SP has finished booting, the SP OK/Service Action Required indicator [3] remains on and the main System OK indicator flashes quickly once every three seconds.

The host is not initialized or powered on yet.



Callout	Description
1	System OK indicator
2	Recessed power button
3	SP OK indicator

See Also [“Controlling System Power” on page 129](#)

[“Log In to Oracle ILOM Using a Local Serial Connection” on page 53](#)

Managing Your Server

After you have installed your server, you can manage it using multiple server management tools or single server management tools.

- “Multiple Server Management Tools” on page 47
- “Single Server Management Tools” on page 47

Multiple Server Management Tools

Oracle provides several tools for managing multiple servers. These tools include:

- Use Oracle Enterprise Manager Ops if your server is one of many x86 and SPARC servers that you want to manage from a single interface. For more details, refer to <http://www.oracle.com/technetwork/oem/ops-center/index.html>.
- Use Sun Management Center to monitor your enterprise servers. 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>.

For more information refer to: <http://www.oracle.com/goto/system-management>.

Single Server Management Tools

The following table lists the tools available for managing a single server:

Tool/Link	Type and Environment	Function
“Oracle System Assistant” on page 48	Preinstalled. Embedded on a USB drive inside the server. No installation required.	Install supported operating systems and locally or remotely configure and update server hardware.

Tool/Link	Type and Environment	Function
	Boots on the host. Includes a graphical user interface and files that can be accessed from the host operating system using a file browser.	
“Oracle ILOM” on page 48	Preinstalled service processor (SP) utility. No installation required. Some initial configuration is required.	Configure and manage server components locally or remotely. Connect to a dedicated network port, a sideband port, or a local serial port.
	Operates independently of the host.	
	Provides a web interface and a command-line interface (CLI).	
“Oracle Hardware Management Pack” on page 49	Add-on software pack. Get it from Oracle System Assistant or download from http://www.oracle.com/goto/system-management .	Monitor hardware through the host operating system, either remotely using SNMP or locally using command-line interface tools.
	Provides commands and agents that operate at the operating system level, and can be used across multiple systems.	
“UEFI BIOS” on page 49	Accessed by booting system and interrupting the boot process. Provides a simple graphical user interface.	Provides hardware-level management of system functionality.

For more details about these tools, see the *Oracle x86 Administration Guide for X5 Series Servers* at: <http://www.oracle.com/goto/x86AdminDiag/docs>

Oracle System Assistant

Oracle System Assistant 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.

Oracle ILOM

Oracle ILOM is a built-in feature of your server that is used to monitor and manage server module components.

Oracle ILOM software 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 the server SP in either of the following ways:

- [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 53](#)
- [“Log In to Oracle ILOM Using a Local Serial Connection” on page 53](#)

Oracle Hardware Management Pack

Oracle Hardware Management Pack (HMP) provides command-line interface (CLI) tools for managing your servers, and an SNMP monitoring agent.

- You can use the Oracle Server CLI tools to configure Oracle servers. The CLI tools work with Oracle Solaris, Oracle Linux, Oracle VM, other variants of Linux, and Windows operating systems. The tools can be scripted to support multiple servers, as long as the servers are of the same type.
- With the Hardware Management Agent SNMP Plugins, you can use SNMP to monitor Oracle servers and server modules from the operating system using a single host IP address. This prevents you from having to connect to two management points (Oracle ILOM and the host).

The Hardware Management Agent fetches and pushes information to and from Oracle ILOM. The SNMP Plugins provides an industry-standard SNMP user interface.

Oracle Linux Fault Management Architecture (FMA) allows you to manage faults at the operating system level using commands similar to those in the Oracle ILOM Fault Management shell on systems with Oracle Linux 6.5 or newer. This feature is available on Hardware Management Pack 2.3.

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

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

UEFI BIOS

The Oracle Server X5-8 is equipped with a Unified Extensible Firmware Interface-compatible BIOS (UEFI BIOS), which avoids many of the limitations of the legacy BIOS. However some

operating systems cannot boot in UEFI boot mode, so the UEFI BIOS provides the ability to select between UEFI and legacy boot modes. The default is legacy boot mode.

If you change boot modes, the boot candidates from the previous mode disappear. The boot candidates from the new mode appear after you issue the BIOS Save Changes and Reset command.

Use the Oracle ILOM BIOS Backup and Restore function to preserve the configuration in case you want to switch back. For information about Oracle ILOM, refer to your Oracle Integrated Lights Out Manager (ILOM) documentation at: <http://www.oracle.com/goto/ILOM/docs>.

Once you choose a boot mode and install an operating system, if you reboot the server and select a different boot mode, the installed image is not accessible and cannot be used.

The table below describes the BIOS boot modes.

Boot Mode	Description
Legacy boot mode	Choose legacy boot mode to allow host bus adapters (HBAs) to use option ROMs, when software or adapters do not have UEFI drivers, or the system is using option ROM. Legacy boot mode is the default boot mode. In legacy boot mode, only boot candidates that support legacy boot mode appear in the BIOS Setup Utility screens in the Boot Options Priority list.
UEFI boot mode	Choose UEFI boot mode to use UEFI drivers when software and adapters have UEFI drivers. UEFI boot mode is manually selected during setup. For instructions for making the selection, refer to the <i>Oracle x86 Administration Guide for X5 Series Servers</i> at http://www.oracle.com/goto/x86AdminDiag/docs . In UEFI boot mode, only boot candidates that support UEFI boot mode appear on the BIOS Setup Utility screens in the Boot Options Priority list.

For more details on UEFI BIOS, see the *Oracle x86 Administration Guide for X5 Series Servers* at: <http://www.oracle.com/goto/x86AdminDiag/docs>

Connecting to Oracle ILOM

Oracle Integrated Lights Out Manager (ILOM) is an embedded tool used to monitor and manage the server. You can perform the following tasks with Oracle ILOM:

- Manage the server locally or remotely, with the host 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 the web interface to manage the server.

Description	Link
Learn about Oracle ILOM hardware and interfaces.	“Oracle ILOM Hardware and Interfaces” on page 52
Learn about network ports and defaults.	“Oracle ILOM Network Defaults” on page 52
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 53
Log in to Oracle ILOM over the network using an Ethernet connection.	“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 53
Configure Oracle ILOM network settings.	<ul style="list-style-type: none">■ “Modify IPv4 Network Settings From the Oracle ILOM CLI” on page 56■ “Modify Network Settings From the Oracle ILOM Web Interface” on page 61■ “Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI” on page 63■ “Test IPv4 or IPv6 Network Configuration From the Oracle ILOM Web Interface” on page 64
Exit Oracle ILOM.	“Exit Oracle ILOM” on page 65
Troubleshoot the service processor connection.	“Troubleshooting the Service Processor Connection” on page 66

See Also

- [“Launching Oracle System Assistant” on page 69](#)
- For complete instructions on using Oracle ILOM, refer to: <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 back panel external connections: NET MGT port Ethernet connection and SER MGT RJ-45 serial management port. See “Back Panel Features” on page 17.
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 Oracle Server X5-8 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, the server accepts the settings assigned by the DHCP server or IPv6 router.

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

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

See Also:

- [“Log In to Oracle ILOM Using a Local Serial Connection” on page 53](#)

- [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 53](#)

▼ Log In to Oracle ILOM Using a Local Serial Connection

This procedure does not require that you know the IP address of the server service processor (SP). It does require that you log in to an Oracle ILOM account with administrator privileges.

Note - The default Oracle ILOM administrator account is `root` and its password is `changeme`. If this default account has been changed, contact your system administrator for an Oracle ILOM user account with administrator privileges.

1. **Connect a terminal or a laptop with terminal software and a connection to the SER MGT port.**
For details, see [“Cabling the Server” on page 43](#).
2. **Configure the following terminal settings:**
 - **8N1:** eight data bits, no parity, one stop bit
 - **9600 baud**
 - **Disable hardware flow control (CTS/RTS)**
3. **Press Enter to establish a connection between your serial console and Oracle ILOM.**
A login prompt to Oracle ILOM appears.
4. **Log in to the Oracle ILOM command-line interface (CLI) using an Administrator account.**
Oracle ILOM displays a default command prompt (`->`), indicating that you have successfully logged in to Oracle ILOM.

▼ Log In to Oracle ILOM Using a Remote Ethernet Connection

This procedure provides instructions for logging into the Oracle ILOM web interface and the Oracle ILOM command line interface (CLI).

Before You Begin Obtain the following:

- An Oracle ILOM Administrator account and the corresponding password.

Note - The default the Oracle ILOM Administrator account is `root` and its password is `changeme`. If this default account has been changed, contact your system administrator for an Oracle ILOM user account with administrator privileges.

- The hostname and IP address of the server SP.
- A supported browser. For details, refer to: <http://www.oracle.com/goto/ILOM/docs>.
- A connection to the NET MGT port.
For details, see “Cabling the Server” on page 43.

1. Establish a connection to Oracle ILOM using the CLI or the web interface.

- **CLI: Initiate a secure shell session. Type:**

`ssh username@host`

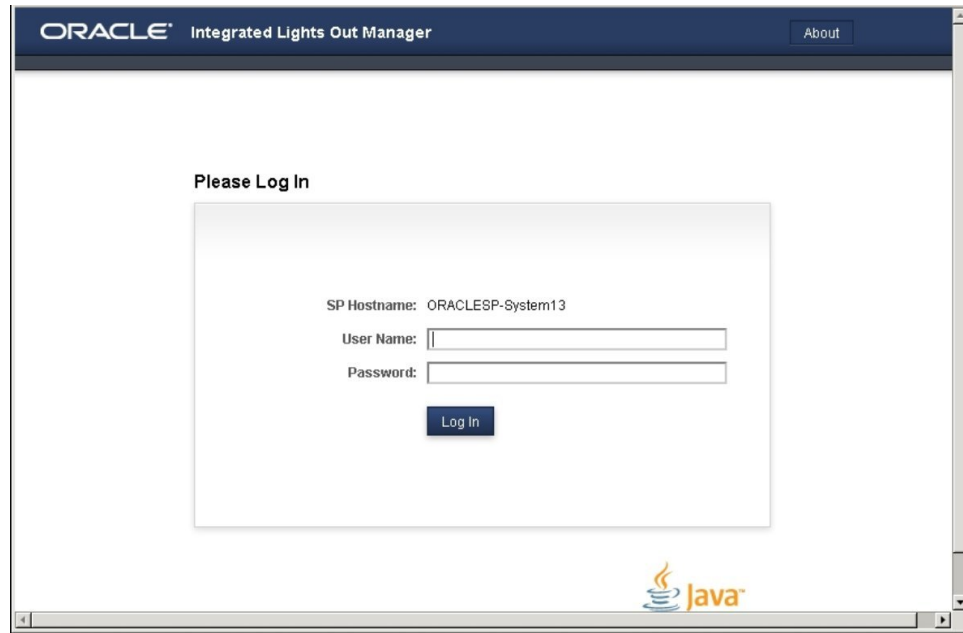
Where *username* is the user name of an account with Administrator privileges and *host* is either the IP address or hostname (when using DNS) of the server SP.

The Oracle ILOM password prompt appears.

Password:

- **Web interface: Type the IP address of the server in the address field of your web browser and press Enter.**

The Oracle ILOM login screen appears.



2. Log in to Oracle ILOM.

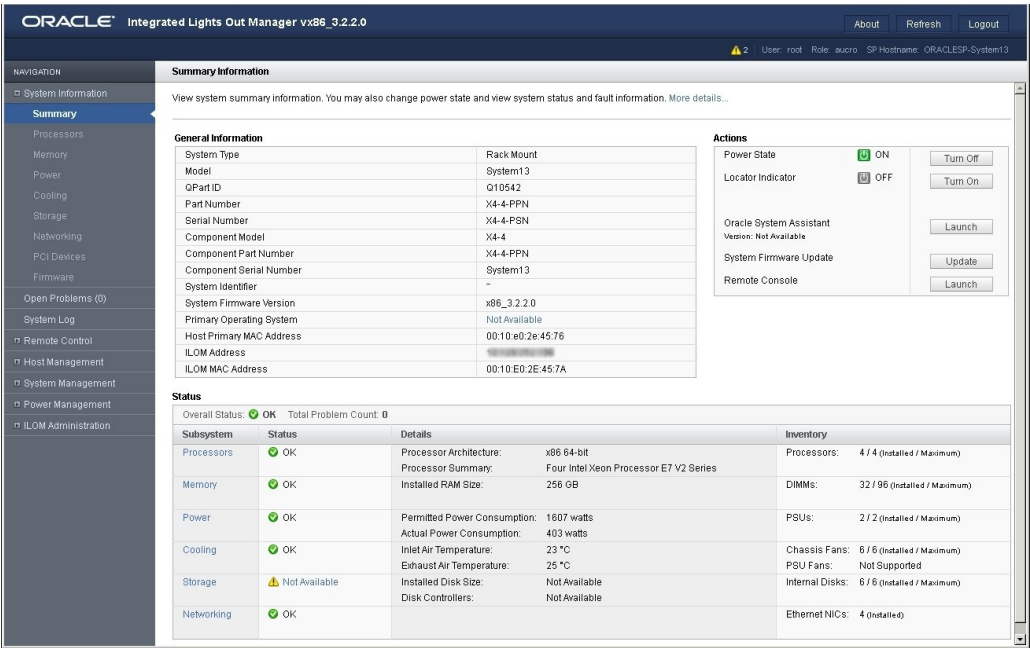
- **CLI:** At the Oracle ILOM password prompt, type your password and press Enter. For example:

Password: **changeme**

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

- **Web interface:** At the Oracle ILOM login screen, type your user name and password, and click Log In.

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



▼ Modify IPv4 Network Settings From the Oracle ILOM CLI

Use this procedure to modify the server's IPv4 network settings using the Oracle ILOM CLI.

To modify IPv6 network settings, see [“Modify IPv6 Network Settings From the Oracle ILOM CLI” on page 58](#).

Note - You can also change network settings using the BIOS Setup Utility. For instructions, see the [Oracle Server X5-8 Service Manual](#).

1. **Log in to the Oracle ILOM CLI. See:**
 - [“Log In to Oracle ILOM Using a Local Serial Connection” on page 53](#)
 - [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 53](#)

Note - If you are logged in to Oracle ILOM using an Ethernet connection, your connection is terminated when you set `commitpending` to `true`. When this happens, log back in using the new settings.

2. Use the `cd` command to navigate to the `/SP/network` directory:

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

3. Do one of the following:

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

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

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

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

```
-> set /SP/network/ pendingipaddress=192.168.183.106
```

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

```
-> set /SP/network/ pendingipgateway=192.168.183.254
```

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

Note - These steps do not include all of the network configuration commands. For more complete information, see “[Configuring Service Processor Network Settings](#)” in *Oracle X5 Series Servers Administration Guide* or the Oracle ILOM documentation at <http://www.oracle.com/goto/ILOM/docs>.

Property	Set Property Value	Description
state	set state=enabled	<p>The state parameter modifies both IPv4 and IPv6 as follows:</p> <ul style="list-style-type: none"> ■ enabled - IPv4 enabled, IPv6 unchanged <p>Note - To enable IPv6, use <code>/SP/network/ipv6 state = enabled</code> or <code>/SP/network/ipv6_only</code>.</p> <ul style="list-style-type: none"> ■ ipv4_only - IPv4 enabled, IPv6 disabled

Property	Set Property Value	Description
		<ul style="list-style-type: none"> ■ ipv6_only - IPv4 disabled, IPv6 enabled ■ disabled - ipv4 disabled, IPv6 disabled <p>Note - On systems equipped with SW 1.0.1, you cannot enable IPv6 if IPv4 is disabled. To obtain the choices shown here, upgrade to SW 1.0.2 or newer.</p>
pendingipdiscovery	set pendingipdiscovery=static	To enable a static network configuration, set pendingipdiscovery to static.
		By default, pendingipdiscovery is set to dhcp.
pendingipaddress	set	To assign multiple static network settings, type the set command followed by the pending command for each property value (IP address, netmask, and gateway), then type the static value that you want to assign.
pendingipnetmask	pendingipaddress=<ip_address>	
pendingipgateway	pendingipnetmask=<netmask>	
	pendingipgateway=<gateway>	
commitpending	set commitpending=true	Type set commitpending=true to commit changes.

Note - If you are logged in to Oracle ILOM using an Ethernet connection, your connection is terminated when you set commitpending to true. When this happens, log back in using the new settings.

4. Test the IPv4 network configuration from Oracle ILOM using the Network Test Tool (Ping).

For details, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI” on page 63.](#)

▼ Modify IPv6 Network Settings From the Oracle ILOM CLI

Use this procedure to modify the server's IPv6 network settings using the Oracle ILOM CLI.

To modify IPv4 network settings, see [“Modify IPv4 Network Settings From the Oracle ILOM CLI” on page 56.](#)

Note - You can also change network settings using the BIOS Setup Utility. For instructions, see [“BIOS Setup Utility” in Oracle Server X5-8 Service Manual.](#)

1. Log in to the Oracle ILOM CLI. See:

- [“Log In to Oracle ILOM Using a Local Serial Connection” on page 53](#)
- [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 53](#)

Note - If you log in to Oracle ILOM using an Ethernet connection, your connection is terminated after you modify the network settings. You must log back in using the new settings.

2. **Use the `cd` command to navigate to the `SP/network/ipv6` directory:**

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

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

For example:

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

Properties:
state = enabled
autoconfig = stateless
dhcpv6_server_duid = (none)
link_local_ipaddress = 2001:db8:214:4fff:feca:5f7e/64
static_ipaddress = ::/128
ipgateway = 2001:db8:211:5dff:febe:5000/128
pending_static_ipaddress = ::/128
pending_static_ipgateway = ::
dynamic_ipaddress_1 2001:db8:8:b7:214:4fff:feca:5f7e/64

Commands:
cd
show
```

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

Note - These steps do not include all of the network configuration commands. For more complete information, see [“Configuring Service Processor Network Settings” in Oracle X5 Series Servers Administration Guide](#) or the Oracle ILOM documentation at <http://www.oracle.com/goto/ILOM/docs>.

Property	Set Property Value	Description
state	set state=enabled	<p>Use the state parameter to enable or disable IPv6:</p> <ul style="list-style-type: none"> ■ enabled - Enable IPv6 ■ disabled - Disable IPv6 <p>Note - With SW 1.0.2 or newer, you can use set /SP/network/state = ipv6-only to enable IPv6 and disable IPv4.</p> <p>Note - On systems equipped with SW 1.0.1, you must enable IPv4 and IPv6 individually, and you cannot enable IPv6 if IPv4 is disabled. To obtain the choices shown here, upgrade to SW 1.0.2 or newer.</p>
autoconfig	set autoconfig= <value>	<p>Specify this command followed by the autoconfig value you want to set.</p> <p>Options include:</p> <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 - You can enable the stateless option to run at the same time as the dhcpv6_stateless option or the dhcpv6_stateful option is enabled. However, do not enable dhcpv6_stateless and dhcpv6_stateful at the same time.

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

a. Specify the following property types:

Property	Set Property Value	Description
state	set state=enabled	The IPv6 network state is enabled by default. To enable a static IP address this state must be set to enabled.
pendingipaddress	set pending_static_ipaddress = <ipv6_address> / <subnet mask length in bits>	Type this command followed by the property value for the static IPv6 address and netmask that you want to assign to the device. IPv6 address example: 2001:db8:8: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 - Pending settings remain pending until you commit them. Assigning a new static IP address to the server ends all active Oracle ILOM sessions to the server. To log back in to Oracle ILOM, create a new session using the newly assigned IP address.

6. Test the IPv6 network configuration from Oracle ILOM using the Network Test Tool (Ping6).

For details, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI” on page 63.](#)

▼ Modify Network Settings From the Oracle ILOM Web Interface

To modify the network settings currently configured for the server from the Oracle ILOM web interface, use the following procedure:

Note - You can also change network settings using the BIOS Setup Utility. For instructions, see the [“BIOS Setup Utility” in Oracle Server X5-8 Service Manual.](#)

1. Log in to the Oracle ILOM web interface.

See [“Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 53.](#)

Note - When you log in to Oracle ILOM using an Ethernet connection, your connection is terminated after you modify the network settings. You must log back in using the new settings.

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

The Network Settings screen appears. Oracle ILOM displays the current settings.

Network DNS Serial Port

General Settings

MAC Address: 00:10:E0:39:F4:4A
 Out of Band MAC Address: 00:10:E0:39:F4:4A
 Sideband MAC Address: 00:10:E0:39:F4:4B
 Management Port: **MGMT**
 802.1Q Tagging: ☒ Enabled
 VLAN ID:
 The valid range is from 1-4079. The default is: Disabled

IPv4

State: ☒ Enabled
 IP Discovery Mode: ☐ DHCP ☒ Static
 DHCP Client ID: **None**
 SysID is the System Identifier configured on the [Identification Information](#) page.
 IP Address:
 Netmask:
 Gateway:

IPv6

State: ☒ Enabled
 Autoconfig: ☒ Stateless ☐ None
 DHCPv6 Autoconfig: ☐ Stateless ☐ Stateful ☒ None
 Link-Local IP Address: fe80::210:e0ff:fe39:f44a/64
 Static IP Address:
 Static Gateway:
 Gateway:

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

Note - On systems equipped with SW 1.0.1, there is a single Enabled button in General Settings, and it enables both IPv4 and IPv6. Also there is no IPv6 Static Gateway field. On these systems, you cannot enable IPv6 unless you also enable IPv4. Update to SW 1.0.2. or newer to obtain the selections shown here.

■ IPv4:

- To allow the DHCP server on your network to assign network settings, ensure that the DHCP radio button is selected and click Save.
- To assign network settings, select the Static radio button and fill in the IP Address, Netmask, and Gateway fields. Then, click Save.

■ IPv6:

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

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

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

For details, see [“Test IPv4 or IPv6 Network Configuration From the Oracle ILOM CLI” on page 63.](#)

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

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

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

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

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

Commands:
cd
```

set
show

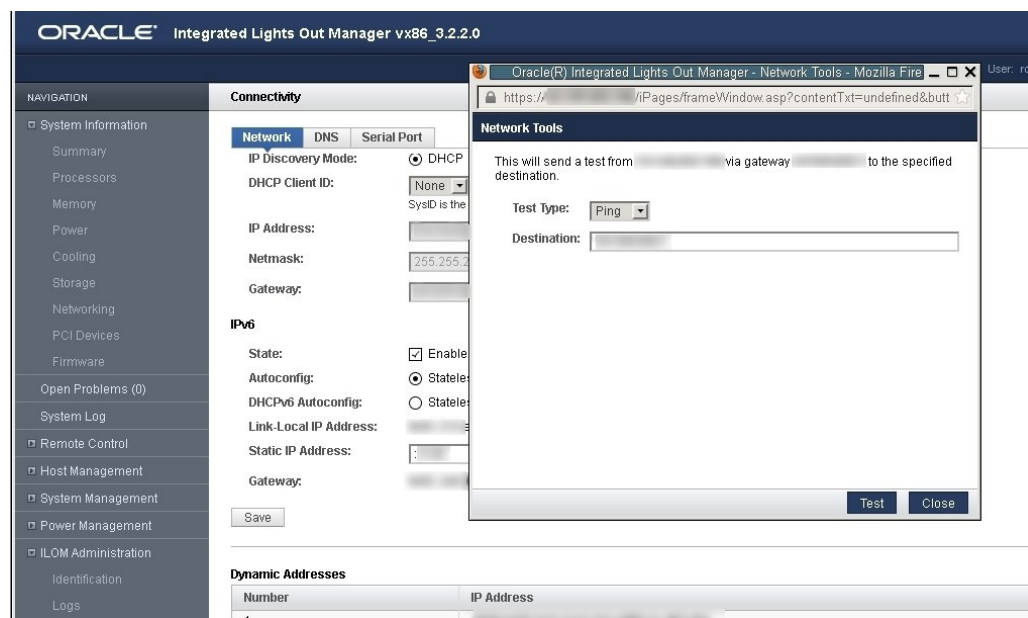
2. Use the `set ping` or `set ping6` command to send a network test from the device to a network destination specified in the following table:

Property	Set Property Value	Description
ping	set ping=<IPv4_address>	Type the set ping= command at the command prompt followed by the IPv4 test destination address. For example:-> set ping=192.168.10.106 Ping of 192.168.10.106 succeeded
ping6	set ping6= <IPv6_address>	Type the set ping6= command followed by the IPv6 test destination address. For example:-> set ping6=2001:db8:8:b7:214:4fff:feca:5f7e/64 Ping of 2001:db8:8:b7:214:4fff:feca:5f7e/64 succeeded

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

1. From the ILOM Administration > Connectivity screen, click the Tools button at the bottom of the screen.

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, the message 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 screen.

Troubleshooting the Service Processor Connection

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

- The Oracle ILOM SP becomes unresponsive 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 66](#)
- [“Reset the Service Processor Using the SP Reset Switch” on page 66](#)
- [“Recover Root Account Password” on page 67](#)

▼ Reset the Service Processor Using Oracle ILOM

- If the Oracle ILOM service processor (SP) becomes unresponsive, use one of the following methods to reset it:
 - From the Oracle ILOM command-line interface (CLI), type 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.

▼ Reset the Service Processor Using the SP Reset Switch

Use this step if the Oracle ILOM SP becomes unresponsive and you cannot reset it using the Oracle ILOM web interface or the Oracle ILOM CLI.

- **Use the Oracle ILOM reset switch to manually reset the Oracle ILOM SP.**
To locate the SP reset switch, see [“Back Panel Features” on page 17](#).

▼ 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 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-0000000000 login: default
```

Press and release the physical presence button

Press return when this is completed...

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

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

For the location of the Locator button, see [“Front Panel Features” on page 13](#).

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

The password prompt appears.

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

This section provides instructions for starting Oracle System Assistant, preparing Oracle System Assistant for use, and preparing the server for operating system installation.

Description	Link
Launch Oracle System Assistant	“Launching Oracle System Assistant” on page 69
Configure Oracle System Assistant network interfaces (one time only)	“Configure Oracle System Assistant Networking” on page 73
Complete a list of tasks required before you can install an operating system.	“Preparing the Server for OS Installation” on page 74

Launching Oracle System Assistant

This section describes how to launch 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 most 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.

Description	Links
Launch Oracle System Assistant from Oracle ILOM.	“Launch Oracle System Assistant Using the Oracle ILOM Web Interface” on page 70
Launch Oracle System Assistant locally.	“Launch Oracle System Assistant Locally” on page 72

See Also

- For additional information about Oracle System Assistant, see: [Oracle x86 Administration Guide for X5 Series Servers](http://www.oracle.com/goto/x86AdminDiag/docs) (<http://www.oracle.com/goto/x86AdminDiag/docs>)

▼ Launch Oracle System Assistant Using the Oracle ILOM Web Interface

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

When the server is in standby power mode, the Service Processor OK indicator is on, and the Power/OK indicator blinks slowly. See [“Front Panel Features” on page 13](#) for the location of these indicators.

2. Log in to the Oracle ILOM web interface.

In your browser's address field, enter the server's SP IP address. If you have not yet set up Oracle ILOM for network access, see [“Connecting to Oracle ILOM” on page 51](#).

The System Summary screen appears.

ORACLE Integrated Lights Out Manager vx85_3.2.2.0

NAVIGATION: Summary Information

Summary

View system summary information. You may also change power state and view system status and fault information. More details...

General Information

System Type	Rack Mount
Model	System13
QPart ID	Q10542
Part Number	X4-4-PPN
Serial Number	X4-4-PSN
Component Model	X4-4
Component Part Number	X4-4-PPN
Component Serial Number	System13
System Identifier	-
System Firmware Version	x86_3.2.2.0
Primary Operating System	Not Available
Host Primary MAC Address	00:10:e0:2e:45:76
ILOM Address	10.10.10.10
ILOM MAC Address	00:10:E0:2E:45:7A

Actions

Power State: ☒ ON

Locator Indicator: ☐ OFF

Oracle System Assistant Version: Not Available

System Firmware Update

Remote Console

Status

Overall Status: ☒ OK Total Problem Count: 0

Subsystem	Status	Details	Inventory
Processors	<input checked="" type="checkbox"/> OK	Processor Architecture: x86 64-bit Processor Summary: Four Intel Xeon Processor E7 V2 Series	Processors: 4 / 4 (Installed / Maximum)
Memory	<input checked="" type="checkbox"/> OK	Installed RAM Size: 256 GB	DIMMs: 32 / 96 (Installed / Maximum)
Power	<input checked="" type="checkbox"/> OK	Permitted Power Consumption: 1607 watts Actual Power Consumption: 403 watts	PSUs: 2 / 2 (Installed / Maximum)
Cooling	<input checked="" type="checkbox"/> OK	Intel Air Temperature: 23 °C Exhaust Air Temperature: 25 °C	Chassis Fans: 6 / 6 (Installed / Maximum) PSU Fans: Not Supported
Storage	<input type="checkbox"/> Not Available	Installed Disk Size: Not Available Disk Controllers: Not Available	Internal Disks: 6 / 6 (Installed / Maximum)
Networking	<input checked="" type="checkbox"/> OK		Ethernet NICs: 4 (Installed)

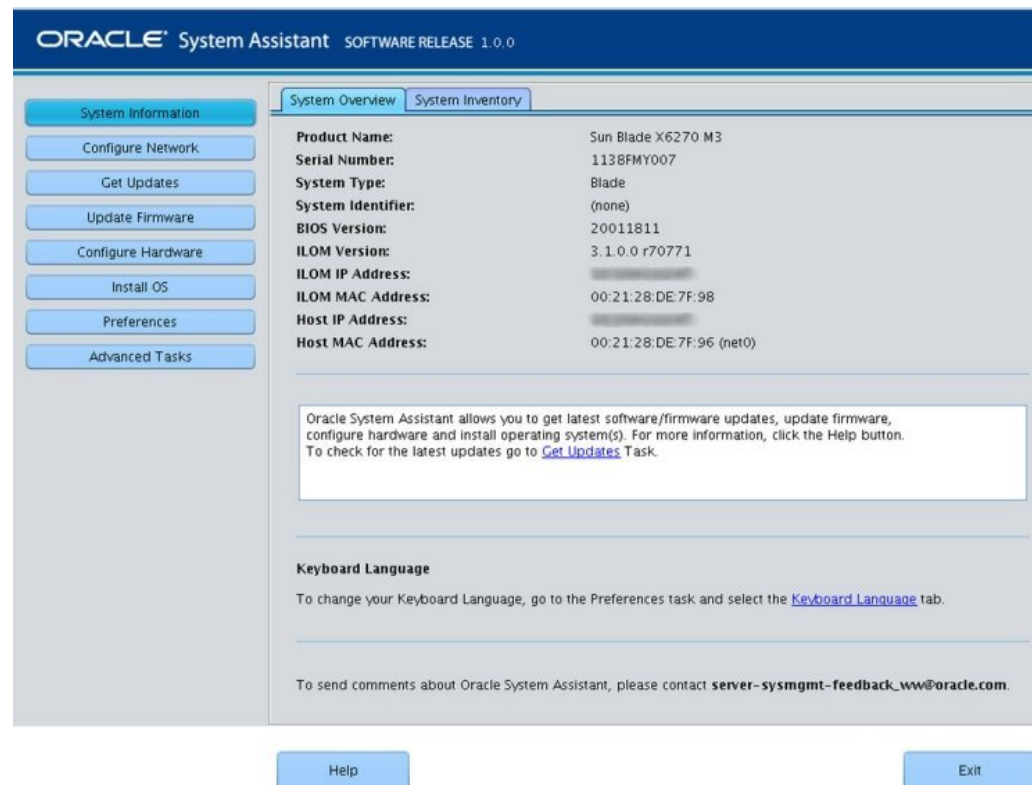
3. Click the Oracle System Assistant Launch button in the upper right panel.

If you try to launch Oracle System Assistant and the server is not in standby power mode but is fully powered on, it prompts you to shut down the host first. See [“Power Host On and Off Using Oracle ILOM” on page 131](#). Once the host is powered down, continue with this step.

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

The server boots. This might take several minutes.

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



See Also ■ [“Prepare the Server for OS Installation” on page 75](#)

▼ Launch Oracle System Assistant Locally

Before You Begin To launch Oracle System Assistant locally, you must be physically present at the server and you must attach a VGA monitor, a USB keyboard, and a USB mouse to the system.

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

Verify that the Power/OK indicator blinks slowly. For indicator locations, see [“Front Panel Features” on page 13](#).

- 2. Connect locally to the server.**

See: [“Log In to Oracle ILOM Using a Local Serial Connection” on page 53](#).

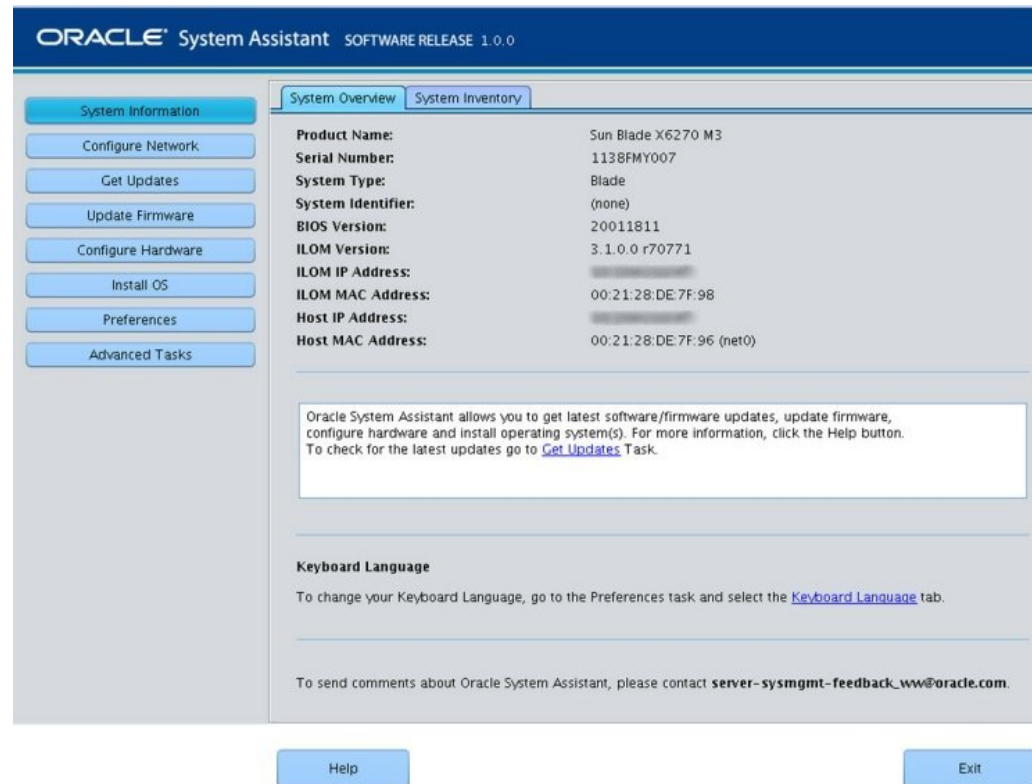
- 3. Press and release the front-panel Power button to power on the server to full power mode.**

The server boots and 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 and the Oracle System Assistant main screen appears.



See Also ■ [“Prepare the Server for OS Installation” on page 75](#)

▼ Configure Oracle System Assistant Networking

This section describes how to configure a network connection so you can use Oracle System Assistant.

When Oracle System Assistant starts, it tries to connect to DHCP on Net 0.

- If Net 0 is connected to a network that is DHCP enabled, and auto configuration succeeds, no more configuration is necessary.

- If Net 0 is connected to a network that is not DHCP enabled, you must configure a network connection.

These settings normally need to be set once, the first time you use Oracle System Assistant.

1. **Launch Oracle System Assistant as described in “[Launching Oracle System Assistant](#)” on page 69.**
2. **Select the Network Configuration tab.**
3. **Fill in the network configuration details.**

For details, see *Configure Network Interface Settings (Oracle System Assistant)* in [Oracle x86 Administration Guide for X5 Series Servers \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs).

Preparing the Server for OS Installation

This section describes how to prepare your server for operating system installation.

A number of tasks must be completed before you can install an operating system. These include:

- Getting firmware and software updates
- Installing firmware updates
- Configuring Oracle ILOM network addresses
- Configuring RAID

Once these things are done, you can install the operating system.

You can do these things using Oracle System Assistant, or using other methods. Oracle recommends that you use Oracle System Assistant.

- To use Oracle System Assistant, see “[Prepare the Server for OS Installation](#)” on page 75.
- To prepare the server for OS installation using other methods, see:
[Oracle x86 Administration Guide for X5 Series Servers \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs)

Note - For Oracle Solaris installations, Oracle System Assistant does not install recommended drivers or tools. For Linux, Oracle VM, and Windows, Oracle System Assistant installs 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.

See Also

- [“Launching Oracle System Assistant” on page 69](#)
- [“Prepare the Server for OS Installation” on page 75](#)

▼ Prepare the Server for OS Installation

1. **Launch Oracle System Assistant as described in [“Launching Oracle System Assistant” on page 69](#).**
2. **Use Oracle System Assistant to perform the tasks shown in the following table:**

Refer to the [Oracle x86 Administration Guide for X5 Series Servers \(http://www.oracle.com/goto/x86AdminDiag/docs\)](http://www.oracle.com/goto/x86AdminDiag/docs) or the help on Oracle System Assistant for more information about Oracle System Assistant.

Step	Task	Oracle System Assistant Screen	For More Information
1	Set up Oracle System Assistant network connection.	Network Configuration	“Configure Oracle System Assistant Networking” on page 73
2	Get latest software and firmware updates that will be used by Oracle System Assistant.	Get Updates	“Getting Server Firmware and Software” on page 123
3	Update Oracle ILOM, BIOS, disk expander, or HBA firmware, if needed. Oracle recommends using the latest supported BIOS and firmware versions available.	Update Firmware	“Installing Updates” on page 126
4	Configure Oracle ILOM. This helps prepare your service processor for access.	Configure Hardware > Service Processor Configuration	“Connecting to Oracle ILOM” on page 51
5	Configure RAID. Use the Oracle System Assistant RAID configuration utility to create volumes on your disks. Caution - Data loss. Do not use this option on a disk with a preinstalled OS.	Configure Hardware > RAID Configuration	You might have done this. “Configuring RAID Using Oracle System Assistant” on page 78.
6	Install an operating system using the Oracle System Assistant Install OS wizard.	Install OS	Refer to your operating system installation guide for details.

Prepare the Server for OS Installation

Step	Task	Oracle System Assistant Screen	For More Information
	Supported operating systems include Oracle Solaris, Linux, Windows, or Oracle VM software. Caution - Data loss. Do not use this option on a disk with a preinstalled OS.		

Configure Storage Drives for OS Installation

This section describes how to prepare a server boot disk for operating system installation.

Description	Links
Learn about storage drive configuration options.	“Storage Drive Configuration” on page 77
Configure server storage drives into RAID volumes using Oracle System Assistant.	“Configuring RAID Using Oracle System Assistant” on page 78
Configure server storage drives into RAID volumes using the BIOS RAID configuration utilities.	“Configuring RAID Using the BIOS RAID Configuration Utilities” on page 85
Learn about the operating system installation and update tasks.	“Set Up an Operating System and Drivers” on page 103

See Also

- Host Bus Adapter (HBA) Documentation Collection at: <http://www.oracle.com/technetwork/documentation/oracle-storage-networking-190061.html>

Storage Drive Configuration

Your server is equipped with an Oracle Storage 12 Gb/s SAS PCIe RAID HBA, internal. This HBA requires a RAID volume to install and boot an operating system (OS).

To prepare a drive for operating system installation:

Preinstalled Operating System: On systems with a preinstalled OS, the drives are configured at the factory. Proceed to one of the following sections:

- [“Configuring the Preinstalled Oracle Solaris OS” on page 105](#)
- [“Configuring the Preinstalled Oracle Linux OS” on page 117](#)
- [“Configuring the Preinstalled Oracle VM 3.X Software” on page 111](#)

New Operating System: To install an OS, you must ensure that the drive where you will install the OS is visible to the system. This requires that a RAID volume be created on the drive.

If you do not wish to use a RAID array, configure a drive as a RAID 0 volume.

Note - Drives shipped from Oracle might have a RAID 0 volume preinstalled, however it might not be bootable. Before installing on OS on it, ensure that a drive has a volume, and if you've using legacy boot mode, ensure that it is bootable.

To check the RAID configuration and to configure the drive:

- To use Oracle System Assistant, see [“Configuring RAID Using Oracle System Assistant” on page 78](#)
- To use the BIOS configuration utility, see [“Configuring RAID Using the BIOS RAID Configuration Utilities” on page 85](#)

The following table lists the requirements for each supported RAID level:

RAID Level	Number of Disks Required	Installation Tool
0	1	Oracle System Assistant or BIOS
1	2	Oracle System Assistant or BIOS
5	3	Oracle System Assistant or BIOS
6	3	BIOS
10	4	Oracle System Assistant or BIOS
50	6	BIOS
60	6	BIOS

Once you have created a bootable RAID volume, install the OS. For details, refer to the corresponding operating system installation guide in <http://www.oracle.com/goto/X5-8/docs-videos>.

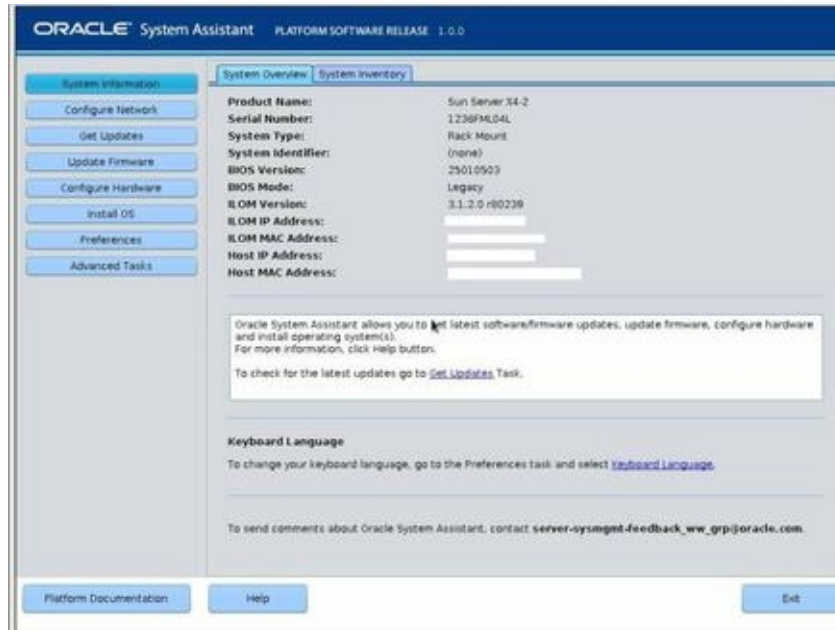
▼ Configuring RAID Using Oracle System Assistant

Use Oracle System Assistant to prepare a server hard drive for an OS installation by configuring it as a RAID volume and making it bootable.

1. Launch Oracle System Assistant.

See [“Launching Oracle System Assistant” on page 69](#).

The Oracle System Assistant System Overview screen appears.



2. In the System Overview screen, verify that the BIOS Mode is set to the correct boot mode (UEFI or Legacy BIOS).

Note - The BIOS boot mode used for the RAID configuration must match the mode that you use when you install the operating system. Additionally, not all supported operating systems support UEFI boot mode. For a list of operating systems that support UEFI boot mode, see “UEFI BIOS” on page 49.

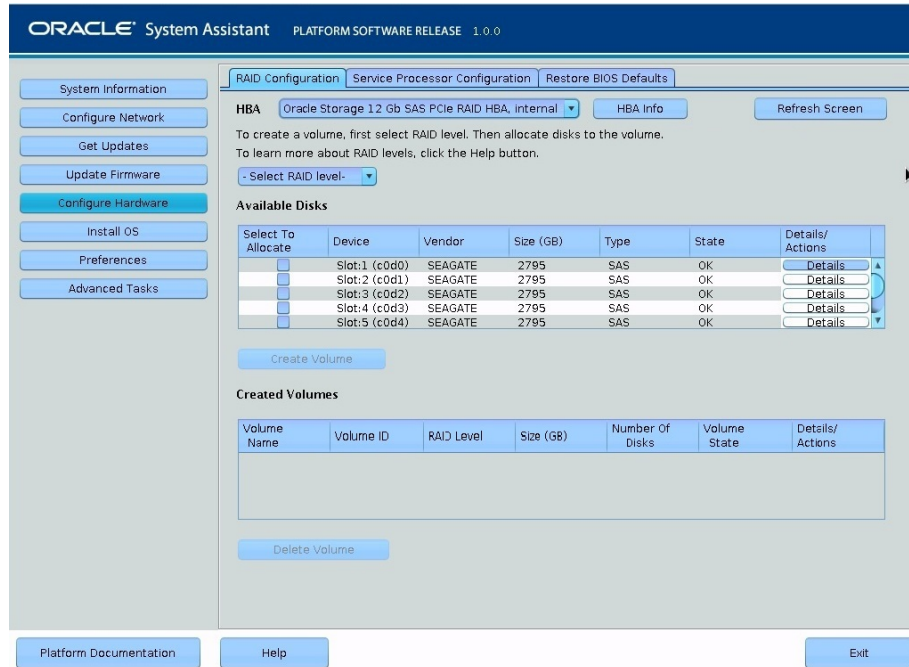
To switch between UEFI and legacy boot modes, see the *Oracle x86 Administration Guide for X5 Series Servers* at <http://www.oracle.com/goto/x86AdminDiag/docs>.

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

The RAID Configuration screen appears. The Created Volumes list shows any existing volumes.

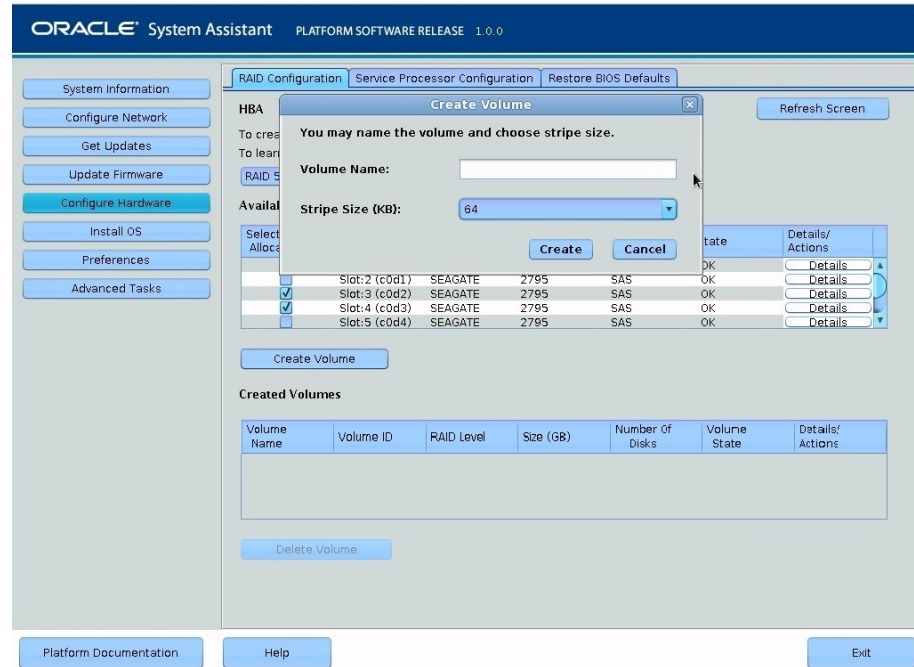
Note - Some drives are shipped with RAID 0 preinstalled. If your drives are already configured as RAID volumes, and you do not wish to change the configuration, you can proceed to Step 8.

4. In the HBA list box, select Oracle Storage 12 Gb SAS PCIe RAID HBA, Internal.



5. In the Select RAID Level list box, select the desired RAID level.
Oracle System Assistant supports RAID 0, RAID 1, RAID 5, and RAID 10.
6. 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.



7. Fill in the Create Volume dialog information:

a. (Optional) Enter the Volume Name.

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

b. Select the volume Stripe Size or accept the default stripe size.

c. Click Create.

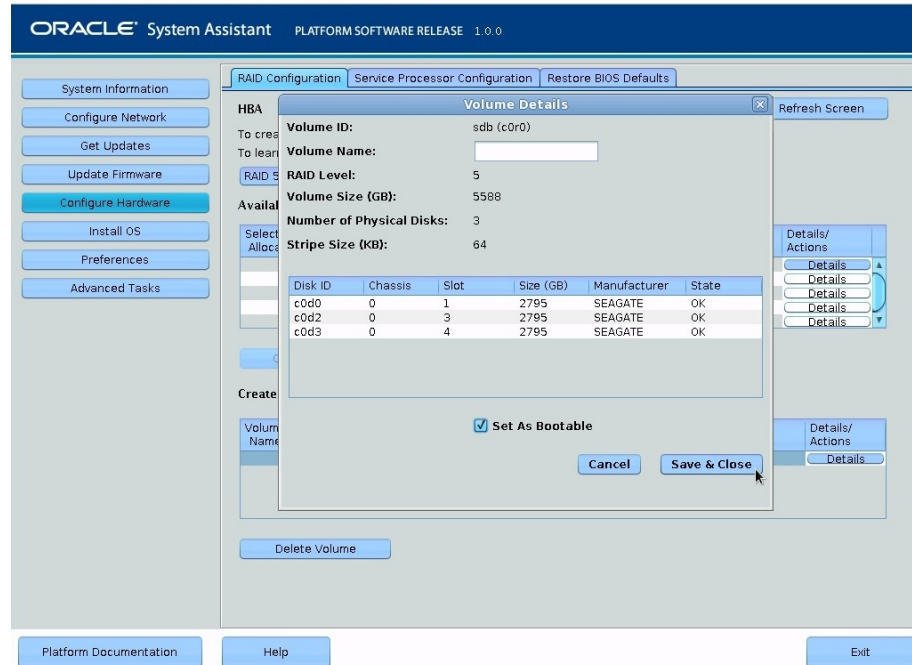
The Creating RAID Volume information box appears.

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

8. If you plan to install an OS on the volume, set it as bootable using the following steps:

- a. In the Details/Actions column of the Created Volumes table, click the Details button for the volume you want to set as bootable.

The Volume Details dialog box appears.



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

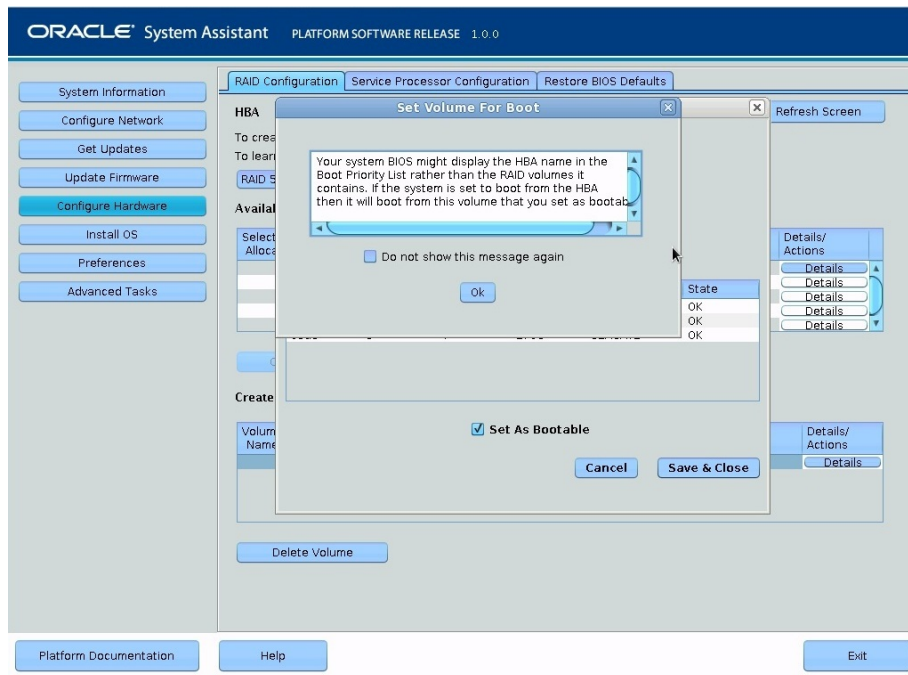
If you did not enter a volume name earlier, the Volume Details dialog box gives you a second chance to do so. If you entered a volume name earlier, you can modify it here; however, you cannot delete the name entirely.

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. Select the Set As Bootable check box.

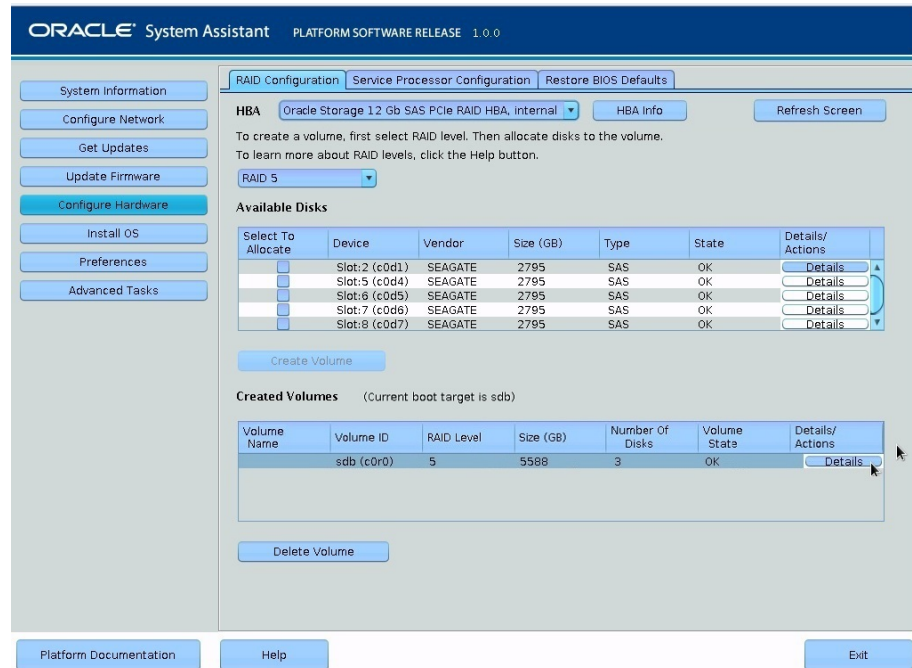
d. **Click Save & Close.**

The Set Volume For Boot confirmation dialog appears.



e. **Click OK.**

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



9. To designate one or more disks as global hot spares, perform the following steps:
 - a. In the Details/Actions column of the Available Disks table, click the Details button for the disk you want to set as a global hot spare.

The Disk Details dialog box appears.

- b. Select the Set as Hot Spare check box.

Note - You can create a maximum of 256 hot spares.

- c. Click Save.

The Disk Details dialog box closes.

10. **To delete a volume, perform the following steps:**
 - a. **Select the volume you want to delete in the Created Volumes table.**
 - b. **Click the Delete Volume button.**
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 quit Oracle System Assistant, click Exit.

See Also ■ [“Set Up an Operating System and Drivers” on page 103](#)

Configuring RAID Using the BIOS RAID Configuration Utilities

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

Note - Some operating systems and virtual machine software only support legacy boot mode.

Use one of the following procedures to configure RAID:

- For systems in UEFI boot mode, use [“Configure RAID in UEFI Boot Mode” on page 85](#)
- For systems in legacy boot mode, use [“Configure RAID in Legacy Boot Mode” on page 93](#)

▼ Configure RAID in UEFI Boot Mode

This procedure configures a RAID volume where you can install an operating system.

Note - The steps and screens in this procedure are examples. What you actually see might be different depending on your system's equipment and configuration.

1. Configure the server for a one-time boot to BIOS.

- a. **Access the Oracle ILOM web interface.**
- b. **Navigate to Host Management > Host Control.**
- c. **Select BIOS from the drop-down list, and then select Save.**

The server is configured to boot to BIOS on the next boot.

2. From the Summary window, select Remote Console > Launch and answer the dialogs.

The remote console screen appears.

3. Power on or reset the host.

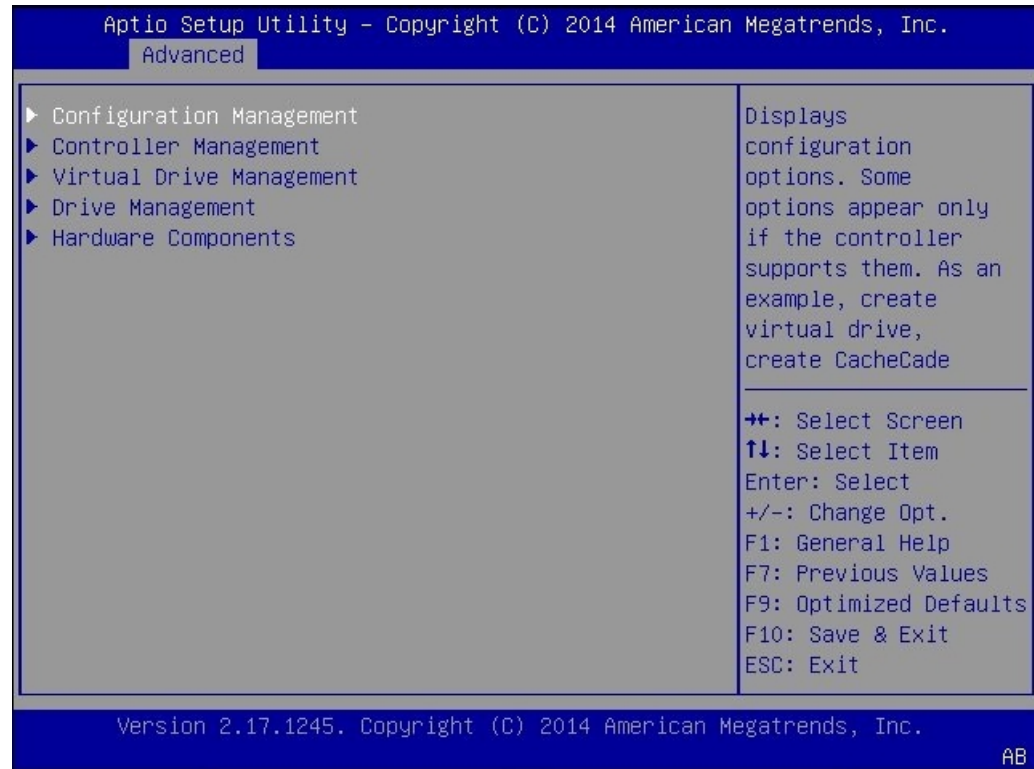
For example, to reset the host, do one of the following:

- From the local server, press the Power button (approximately 1 second) on the front panel of the server to power off the host, then press the Power button again to power it back on.
- 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 setup utility appears.

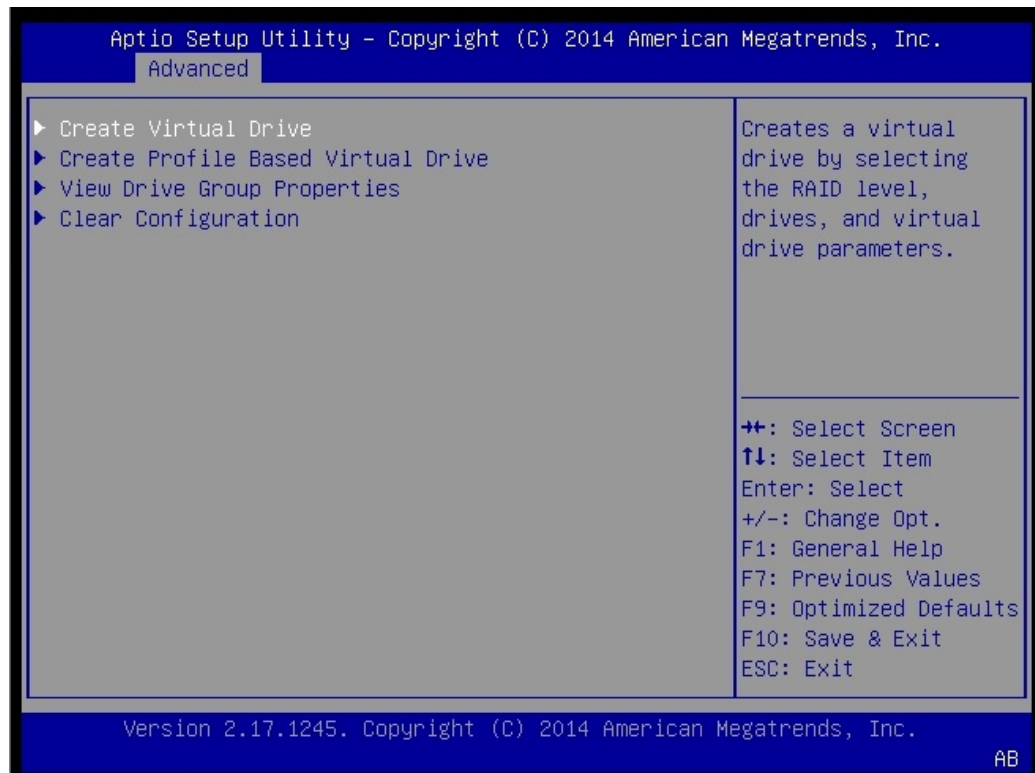
4. Navigate to the Advanced tab, select LSI MegaRAID Configuration Utility <LSI MegaRAID 9361-8i>, and then press Enter.

The following screen appears:



5. **Select Configuration Management and then select Enter.**

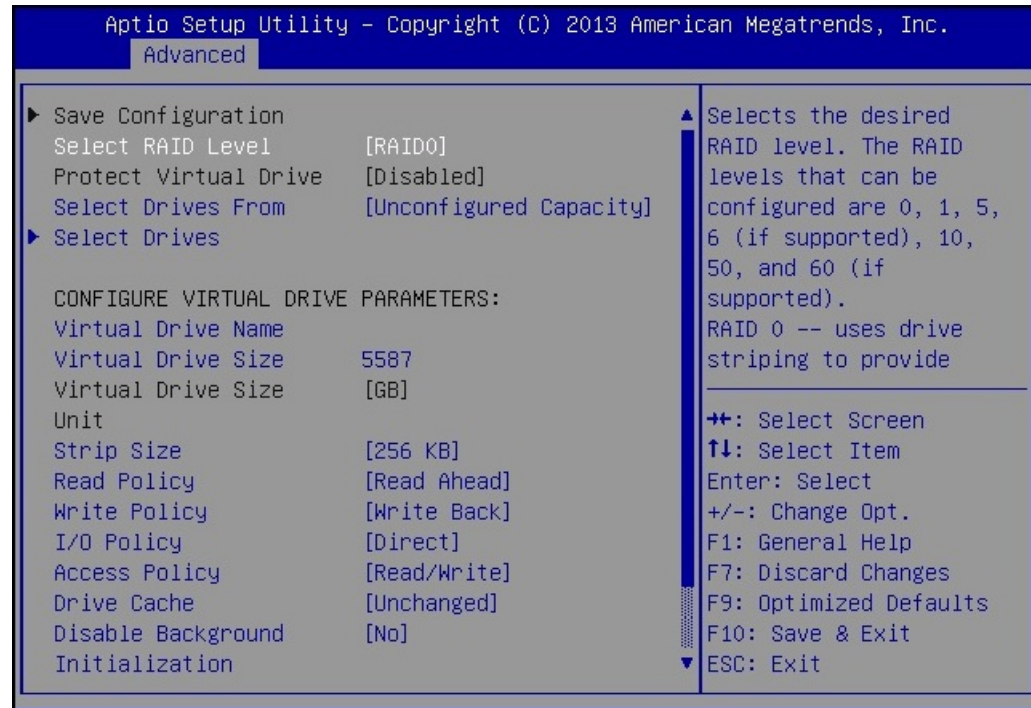
The following screen appears:



6. Select Create Virtual Drive > Advanced, and then press Enter.

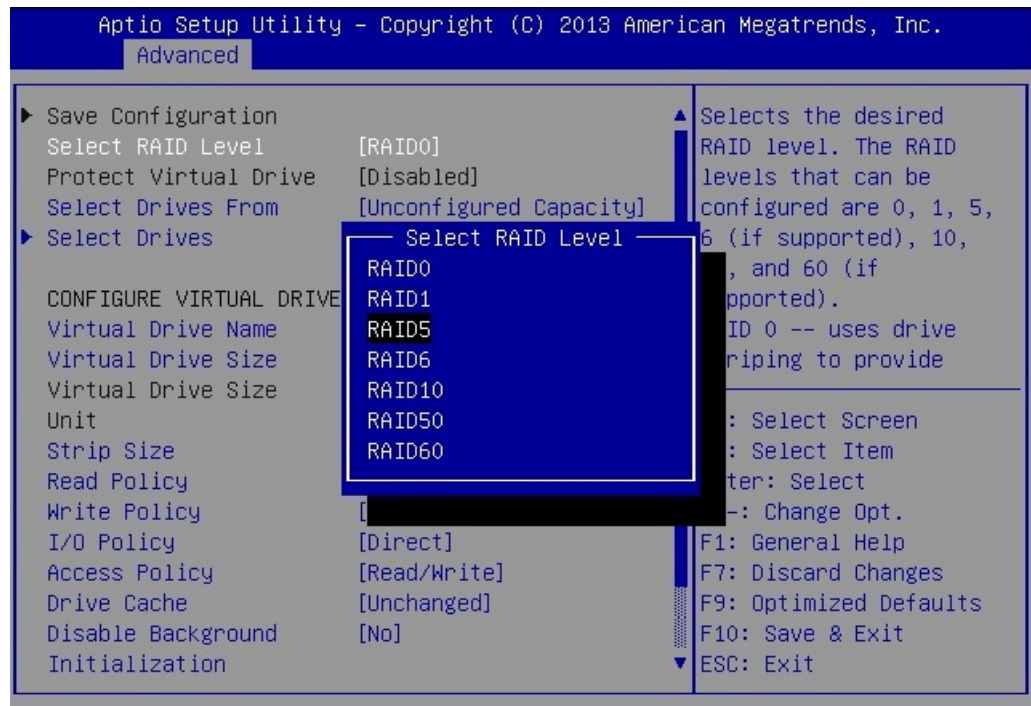
Alternatively, you can select the Create Virtual Drive option, which provides a RAID configuration wizard. You cannot configure advanced settings for a virtual drive in the Create Virtual Drive screen.

The Create Virtual Drive > Advanced screen appears.



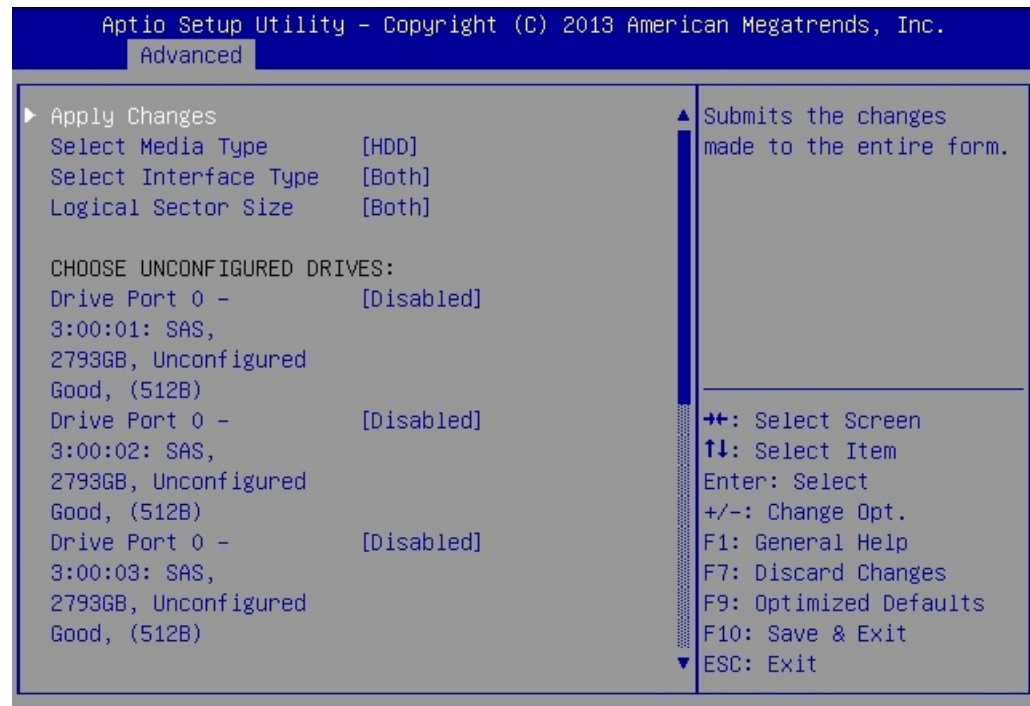
7. Select the Select RAID Level option, and then press Enter.

The Select RAID Level dialog box appears.



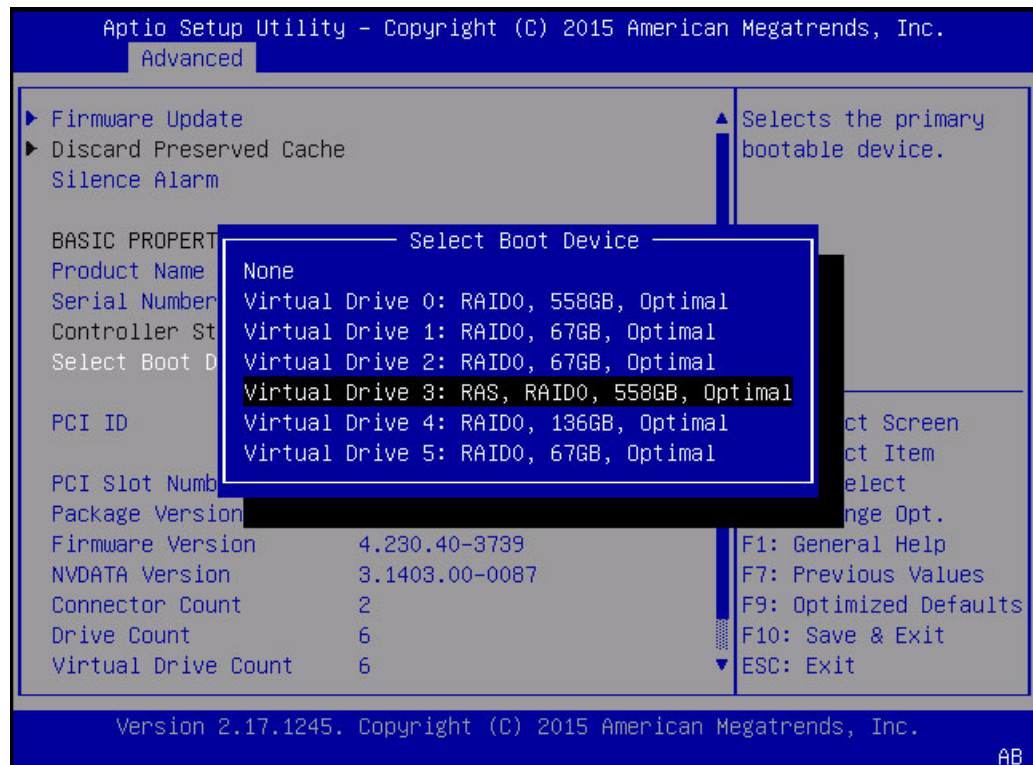
8. Select the desired RAID level, and then press Enter.
9. Select the Select Drives option, and then press Enter.

The Drive Selection screen appears.



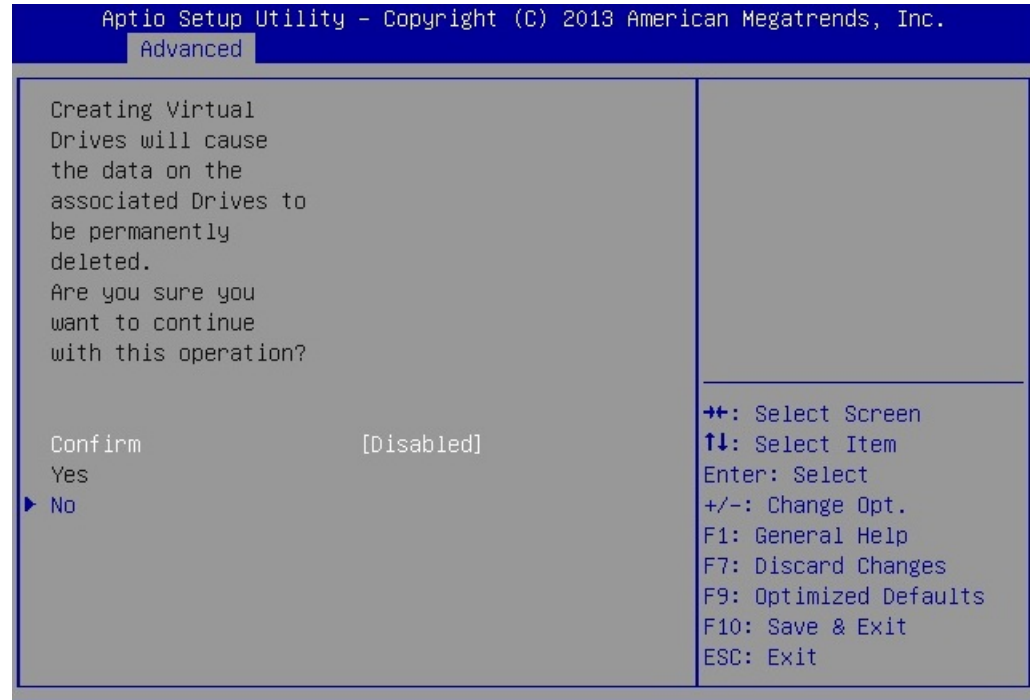
10. In the Drive Selection screen, select the media type, the interface type, and the drives to be included in the RAID configuration.

11. **Select Select Boot Device, then select a boot drive from the drop-down list.**



12. **Select Apply Changes, and then press Enter.**
The RAID Configuration Confirmation screen appears.
13. **Select Save Configuration and then press Enter.**

The RAID Configuration Confirmation screen appears.



14. **To confirm your RAID configuration, select Confirm and then select Yes.**

The Confirmation screen appears.

15. **Select OK to continue.**

16. **Press F10 to save your changes and exit.**

This completes the RAID configuration. You can now install an operating system on the drive that you have created.

▼ Configure RAID in Legacy Boot Mode

Use this task to create a logical drive on an x86 system in legacy boot mode, and to define it as bootable. This prepares the drive so that you can install an operating system onto it.

In the following procedure, drives 2 and 3 are used to create a RAID 1 volume.

1. Power on or reset the host.

For example, to reset the host, do one of the following:

- From the local server, press the Power button (approximately 1 second) on the front panel of the server to power off the host, then press the Power button again to power it back on.
- 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 boot messages appear.

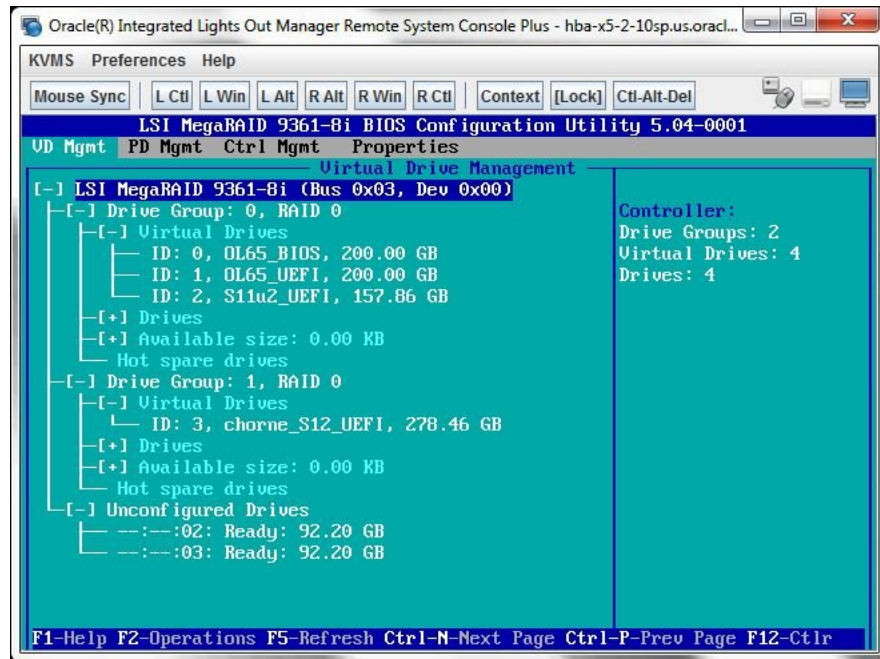
2. Type CTRL+R during the boot process to launch the BIOS Configuration Utility.

The LSI MegaRAID BIOS Configuration Utility appears.

3. Review the listed drives determine which drives are available for logical drive creation.

If this page includes a drive group where you want to install an OS, you can skip to Step 12. Otherwise continue.

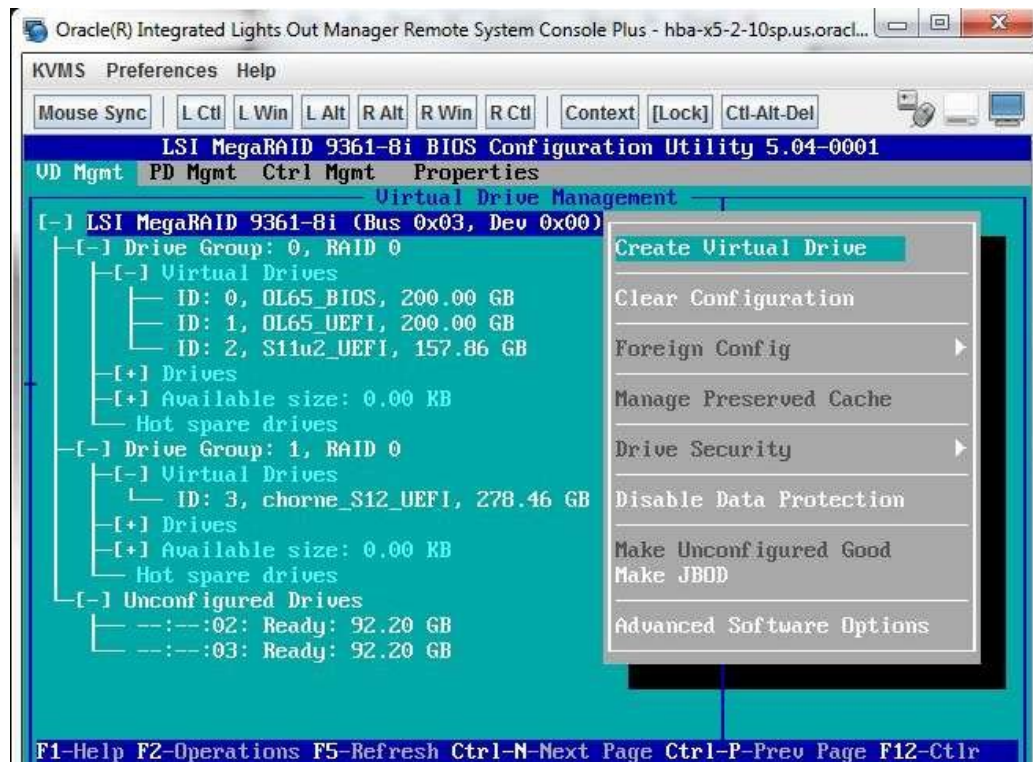
The following figure shows two unconfigured drives, drives 02 and 03. These can be used to create a virtual drive.



4. Use the arrow keys to navigate to the HBA, and then press F2

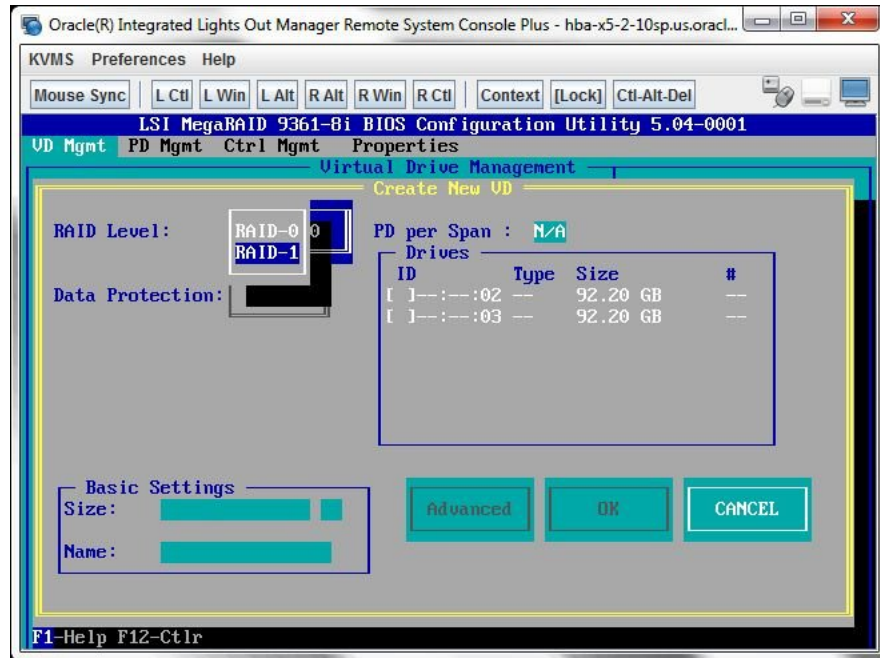
The Operations menu appears.

5. Use the arrow keys to navigate to the Create Virtual Drive menu option, and then press Enter.



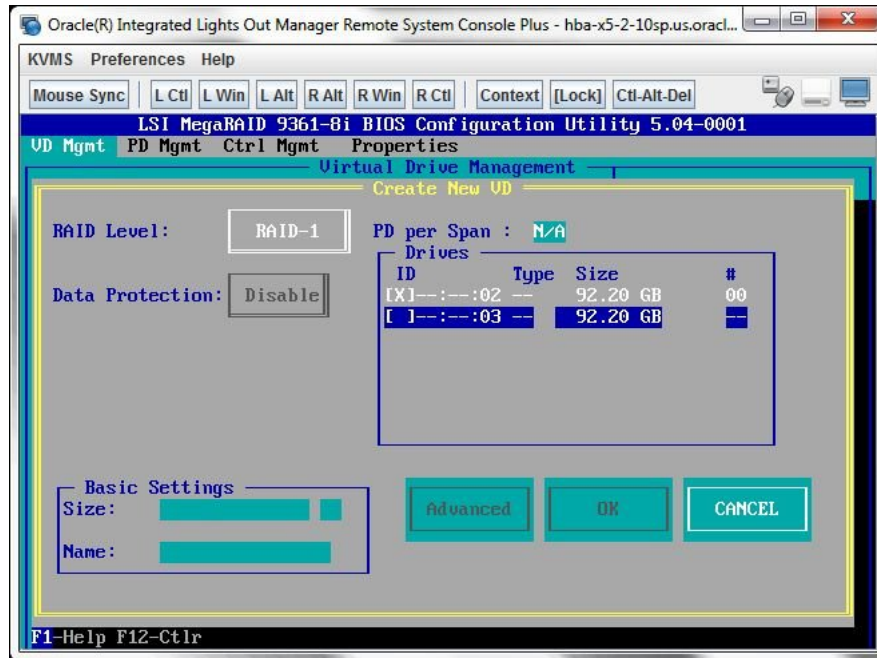
6. From the page that is displayed:
 - a. Press Enter on the RAID Level field
A popup appears.
 - b. Use the arrow keys to select a RAID level.

- c. Press Enter to exit the popup window

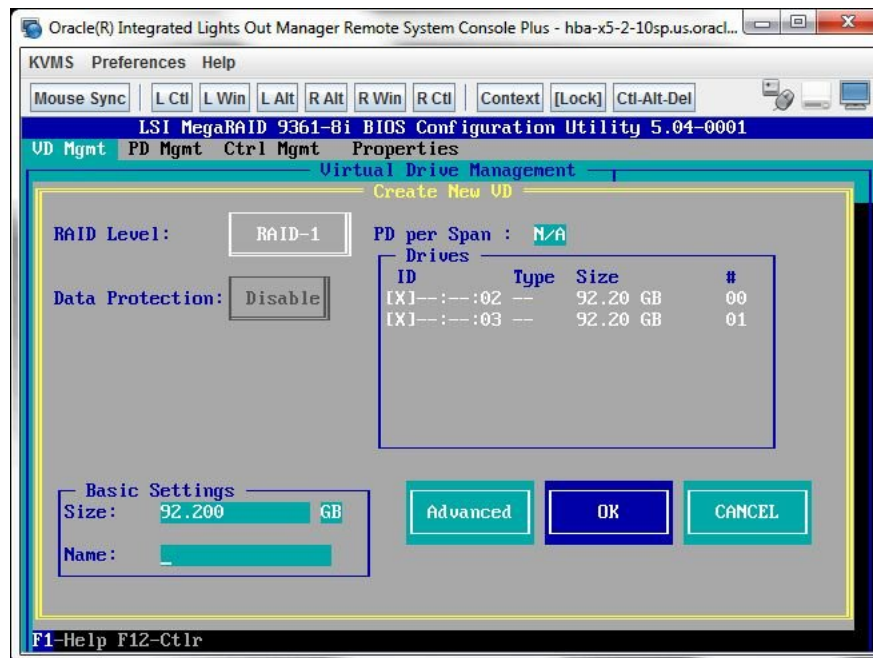


7. Use the arrow keys to navigate to the Drives box.
The Drives box displays a list of drives that are available to be configured in a logical drive.
8. For each drive that you want in the logical drive, navigate to the drive and press Enter in its ID field to produce an X in the field.

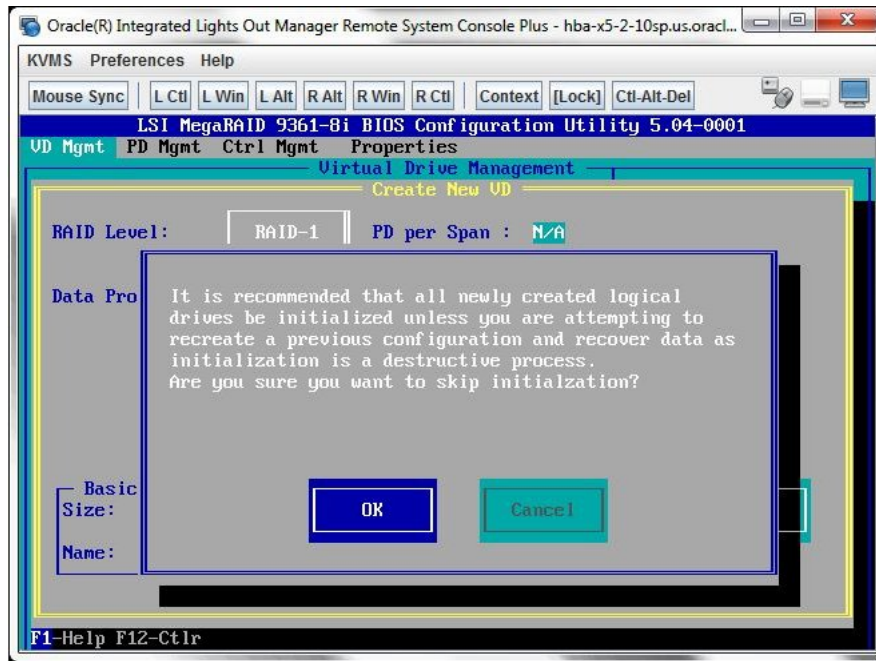
This selects the drive to be included in the logical drive configuration.



9. After you select all the drives that you want included in the logical drive, use the arrow keys to navigate to the OK button, and then press Enter.



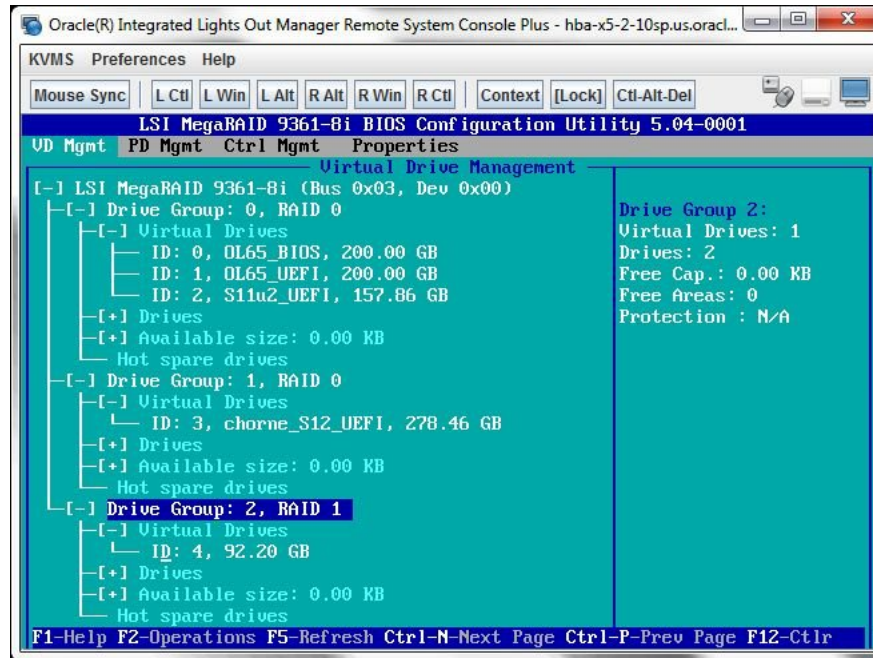
10. On the next page that is displayed, use the arrow key to move to the OK button, and press Enter.



The logical drive is now created.

11. To verify the logical drive creation, review the drive groups on the main page of the BIOS Configuration Utility and note the new drive group that is now displayed on the page.

In this example, Drive Group 2, RAID 1 is created.



12. Use the following steps to make a drive bootable.

This places a boot sector on the drive so that you can install an operating system on it.

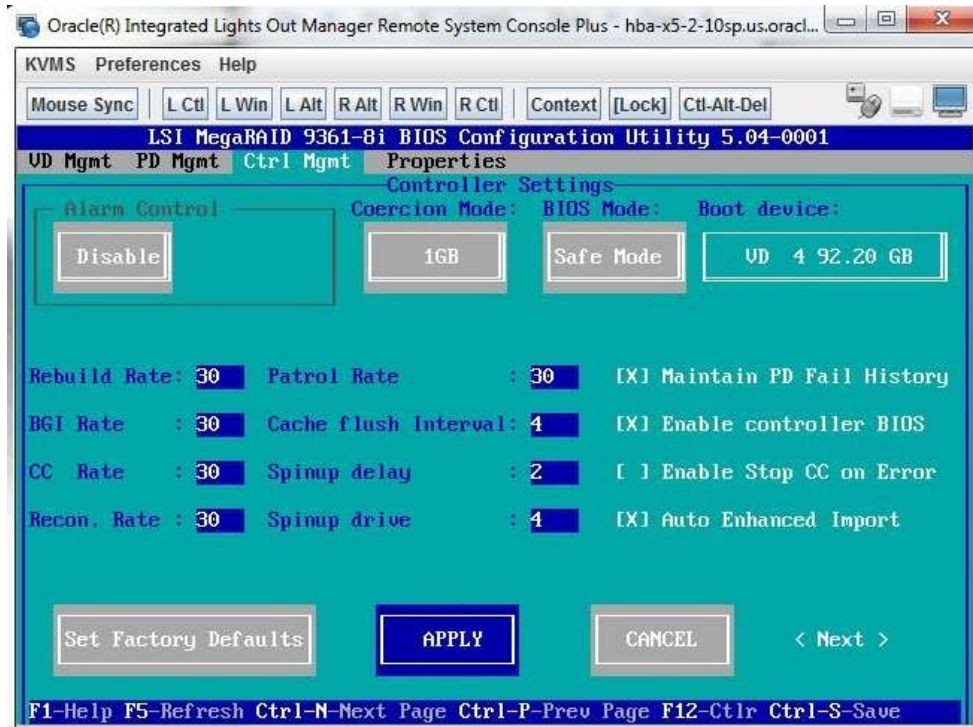
- a. Select Ctrl Mgmt to open the Control Management page.
- b. From the Ctrl Mgmt page, use the arrow keys to navigate to the Boot device field, and press Enter.

A boot device popup window appears.



- c. Use the arrow keys to navigate to the logical drive you wish to make bootable, and then press Enter.

- d. Use the arrow keys to navigate to the Apply button, and then press Enter.



- e. Type CTRL+S to save the configuration.

The creation of a bootable logical drive is complete.

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?	Use this tool or documentation
Configure a preinstalled OS	<ul style="list-style-type: none">■ “Configuring the Preinstalled Oracle Solaris OS” on page 105■ “Configuring the Preinstalled Oracle Linux OS” on page 117■ “Configuring the Preinstalled Oracle VM 3.X Software” on page 111
Install an OS and update drivers	<p>Refer to the corresponding operating installation guide:</p> <ul style="list-style-type: none">■ Oracle Server X5-8 Installation Guide for Oracle Solaris Operating System■ Oracle Server X5-8 Installation Guide for Oracle VM Server■ Oracle Server X5-8 Installation Guide for Linux Operating Systems■ Oracle Server X5-8 Installation Guide for Windows Operating Systems

Configuring the Preinstalled Oracle Solaris OS

This section provides the steps for configuring the Oracle Solaris Operating System (OS) that is preinstalled on the server, if ordered.

Note - For up-to-date information about supported versions of the preinstalled Oracle Solaris Operating System, see the *Oracle Server X5-8 Product Notes* at <http://www.oracle.com/goto/x5-8/docs-videos>.

Perform the procedures in the following sections:

Step	Task	Links
1	Prepare for the Oracle Solaris OS installation and fill out the configuration worksheet for your server environment.	“Preparing for the Oracle Solaris Configuration” on page 105
2	Configure the preinstalled Oracle Solaris OS.	“Configure the Preinstalled Oracle Solaris 11 Operating System” on page 108
3	Reinstall Oracle Solaris, or install a different version of Oracle Solaris.	“Reinstalling the Oracle Solaris Operating System” on page 110
4	Find the Oracle Solaris OS documentation	“Oracle Solaris 11 Operating System Documentation” on page 110

Preparing for the Oracle Solaris Configuration

Before you start to configure the preinstalled Oracle Solaris operating system, complete the Oracle Solaris OS configuration worksheet.

Oracle Solaris OS Configuration Worksheet

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

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 type="checkbox"/> Non-networked*
DHCP	Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	<input 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 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 type="checkbox"/> No*
		If yes, gather this information: Default realm: Administration server: First KDC: (Optional) Additional KDCs:
Name service	Name service If applicable, choose a name service for this system.	<input type="checkbox"/> NIS+ <input type="checkbox"/> NIS

Information for Installation	Description or Example	Your Answers: Defaults (*)
		<ul style="list-style-type: none"> ■ DNS ■ LDAP ■ None*
Domain name	Provide the name of the domain in which the system resides. DNS or NIS	
NIS+ and NIS	<p><i>If you chose NIS+ or NIS, do you want to specify a name server, or let the installation program find one?</i></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><i>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.</i></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	<i>If you chose LDAP, provide information about your LDAP profile:</i>	<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*

Information for Installation	Description or Example	Your Answers: Defaults (*)
Time zone	How do you want to specify your default time zone?	<ul style="list-style-type: none"> ■ Geographic region* ■ Offset from GM ■ Time zone file
Root password	Choose a root password for the system.	

▼ Configure the Preinstalled Oracle Solaris 11 Operating System

After you have completed the Oracle Solaris OS configuration worksheet, in [“Preparing for the Oracle Solaris Configuration” on page 105](#), use the following procedure to configure the preinstalled Oracle Solaris 11 OS.

- Before You Begin** Ensure the server is in standby power mode with ILOM powered on and the host is powered off.
1. **Log in to Oracle ILOM web interface or CLI.**
See [“Connecting to Oracle ILOM” on page 51](#).
 2. **Power on the host using one of the following methods:**
 - **From the Oracle ILOM web interface:**
 - Select System Information > Summary from the navigation tree.
 - In the Actions section of the Summary screen, click the Turn On button next to Power State.
 - **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
The server begins the boot process.
 3. **Start the Remote Console using one of the following methods:**
 - **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 host 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
```

- **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.
```

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 the Oracle ILOM Remote Console (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 installer on-screen prompts to configure the OS.

To help you enter the system and network settings, use the information gathered in [“Preparing for the Oracle Solaris Configuration” on page 105](#).

The screens might 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**
- [“Reinstalling the Oracle Solaris Operating System” on page 110.](#)
 - For information on using the Oracle Solaris OS, including registration, see [“Oracle Solaris 11 Operating System Documentation” on page 110.](#)

Reinstalling the Oracle Solaris Operating System

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

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

- To download the Oracle Solaris 11 operating system, go to:
<http://www.oracle.com/technetwork/server-storage/solaris11/downloads/index.html>
- To download Oracle Solaris patches, go to:
<https://support.oracle.com>

See Also

- [“Configure the Preinstalled Oracle Solaris 11 Operating System” on page 108](#)
- [“Oracle Solaris 11 Operating System Documentation” on page 110](#)

Oracle Solaris 11 Operating System Documentation

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

The Oracle Solaris 11 Information Library is available at:

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

For detailed instructions about installing the Oracle Solaris 11 OS see *Installing Oracle Solaris 11 Systems: Preparing for the Installation* and *Installing Oracle Solaris 11 Systems: Automated Installations That Boot From Media*.

For patch and other late-breaking information, refer to the [Oracle Server X5-8 Product Notes](#).

For patches and patch installation instructions, go to the My Oracle Support web site at: <https://support.oracle.com>

Configuring the Preinstalled Oracle VM 3.X Software

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

Note - For more up-to-date information about supported versions of the preinstalled Oracle VM, see [“Oracle VM Issues” in Oracle Server X5-8 Product Notes](#).

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

Step	Tasks	Links
1	Review requirements for Oracle VM software.	“Preinstalled Oracle VM Server Compatibility Requirements” on page 111
2	Gather the information you will need during the configuration process.	“Oracle VM Configuration Worksheet” on page 112
3	Configure the preinstalled Oracle VM software.	“Configure the Preinstalled Oracle VM Server” on page 112
4	Get started using Oracle VM.	“Oracle VM Documentation” on page 116

Preinstalled Oracle VM Server Compatibility Requirements

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

For information about upgrading the Oracle VM software, see the *Oracle VM Installation and Upgrade Guide*. The Oracle VM documentation is available at: <http://www.oracle.com/technetwork/documentation/vm-096300.html>

Oracle VM Configuration Worksheet

Before configuring the Oracle VM server, use the worksheet in this section to gather the information you 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 operational to support the virtual machine environment.

Before You Begin Ensure that the server is in standby power mode, with Oracle ILOM powered on and the host powered off.

1. **Log in to Oracle ILOM, either locally from a serial connection or remotely using an Ethernet connection.**

See [“Connecting to Oracle ILOM” on page 51](#).

2. **Power on the host, as follows:**

- **From the Oracle ILOM web interface**, select System Information > Summary from the navigation panel. 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
```

The host boots.

3. **Start the Remote Console.**

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

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

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

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

```
Serial console started.
```

As the host boots, the GRUB menu appears. From the GRUB menu, you can choose whether you want to continue to direct the display to the serial port, or whether you want to direct the display to a device connected to the video port. For example:

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

```
Oracle VM server-ovs (xen-4.0.0 2.6.32.21-41ovs)
```

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

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

To pause at the GRUB menu, press any key other than Enter. Then select the option you want to use and press Enter to continue.

Note - If you do not select an option on the GRUB menu, after a delay, the GRUB menu is no longer available and the system continues with the output directed to the serial port.

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

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

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

Oracle VM server-ovs (xen-4.0.0 2.6.32.32-41ovs)

- **To display output to the serial port, select the second option on the list:**

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

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



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

Configuring Oracle VM...

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.

7. 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

```

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

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

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

```

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

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

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

```

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

Oracle VM Documentation

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

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

Configuring the Preinstalled Oracle Linux OS

If you purchased an optional preinstalled Oracle Linux OS image, finish the installation by configuring the preinstalled software. The preinstalled OS image contains all of the necessary drivers for your server.

The following table describes the tasks necessary for configuring the preinstalled Oracle Linux OS:

Step	Task	Links
1	Fill out the Oracle Linux configuration worksheet for your server environment.	“Oracle Linux Configuration Worksheet” on page 117
2	Configure the preinstalled Oracle Linux OS.	“Configure the Preinstalled Oracle Linux OS” on page 118
3	Update and register the Oracle Linux OS.	“Register and Update Your Oracle Linux OS” on page 120

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 to replace the factory default password; there are no restrictions on the characters or length.	
Network interface	Choose a interface on the server (eth#) that will be connected to your network. (Once Linux is operational, the <code>ifconfig -a</code> command can be used to help identify server network ports.)	

Required Installation Information	Description	Your Answers
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 118](#)

▼ Configure the Preinstalled Oracle Linux OS

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

Before You Begin Ensure the server is in standby power mode with ILOM powered on and the host is powered off.

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 51](#).

2. **Power on the host using one of the following methods:**

- **From the Oracle ILOM web interface:**

- Select System Information > Summary from the navigation tree.
- In the Actions section of the Summary screen, click the Turn On button next to Power State.

- **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
```

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.
```

As the host boots, the GRUB menu appears (see example below). Press a key other than Enter to pause, or in 5 seconds the highlighted selection is used.

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

+-----+
  Oracle Linux Server-uek (2.6.39-200.24.1.el6uek.x86_64)
  Oracle Linux Server (2.6.32-279.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.
```

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. For example:

```
Oracle Linux Server-uek (2.6.39-200.24.1.el6uek.x86_64)
```

- The Red Hat Compatible Kernel. For example:

```
Oracle Linux Server (2.6.32-279.el6.x86_64)
```

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

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

```
Oracle Linux Server release 6.3
Kernel 2.6.39-200.24.1.el6uek.x86_64 on an x86_64
```

systemname login:

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

5. 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 117](#).
- Configure a proxy, as needed, for Internet access.
- Register and update your server. See [“Register and Update Your Oracle Linux OS” on page 120](#).
- Install desired packages.

6. 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 + (or Esc + Shift 9 to terminate the serial redirect session, and then log out of Oracle ILOM.

See Also ■ [“Register and Update Your Oracle Linux OS” on page 120](#)

▼ Register and Update Your Oracle Linux OS

Before You Begin The Unbreakable Linux Network (ULN) is a comprehensive resource for Oracle Linux support subscribers, offering access to Linux software patches, updates and fixes, and information on updates and support policies.

If you are a licensed Oracle customer with an active Oracle Linux support subscription, use your Oracle Linux CSI (customer support identifier) number to register your server on ULN.

1. **If you don't already have one, create your ULN account. Use your email address and CSI and create a password.**

<https://linux.oracle.com/register>

Once your account is configured, use your email address and password to login to ULN.

2. **Once you have an account, run the command below on the server as the root user in a terminal window or on the command line:**

`uln_register`

The `uln_register` wizard collects machine information and uploads it to Oracle.

Executing the above command chooses the default channel of `ol6_<arch>_latest`.

The `_latest` channels provide RPMs for all the packages in the distribution, including those errata also provided in the `_patch` channels. The version of any RPM downloadable on the `_latest` channels is always the most recent available. You can subscribe to other channels using the web interface, after you have registered.

See Also ■ For more information about the registration process, see:

<http://www.oracle.com/technetwork/topics/linux/yum-repository-setup-085606.html>

■ For more information about the Oracle Unbreakable Linux Network, see:

<https://linux.oracle.com/>

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 123
Learn about the options for accessing firmware and software.	“Firmware and Software Access Options” on page 124
View the available firmware and software packages.	“Available Software Release Packages” on page 124
Access the firmware and software packages through Oracle System Assistant or My Oracle Support.	“Accessing Firmware and Software” on page 125
Install firmware and software updates.	“Installing Updates” on page 126

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.

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 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, see the *Oracle x86 Administration Guide for X5 Series Servers* at <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, see <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 125.

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
Oracle Server X5-8 SW <i>version</i> – Firmware Pack	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
Oracle Server X5-8 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.	
Oracle Server X5-8 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.
Oracle Server X5-8 SW <i>version</i> – Diagnostics	Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.
Oracle Server X5-8 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 provides 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, see the *Oracle x86 Administration Guide for X5 Series Servers* at <http://www.oracle.com/goto/x86AdminDiag/docs>.

You can also obtain updated firmware and software from My Oracle Support. See “[Download Firmware and Software Using My Oracle Support](#)” on page 125.

▼ 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, Oracle Server X5-8) 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 124](#) 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 126](#)
- [“Installing Hardware Drivers and OS Tools” on page 127](#)

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 x86 Administration Guide for X5 Series Servers* at <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 x86 Administration Guide for X5 Series Servers* at <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

This chapter describes how to power the server on and off. It includes:

- [“Powering the Server On and Off” on page 129](#)
- [“Power Off Host Using the Power Button” on page 130](#)
- [“Power On Host Using the Power Button” on page 130](#)
- [“Power Host On and Off Using Oracle ILOM” on page 131](#)

Powering the Server On and Off

Your server has three power states: power off, standby power, and full power.

Power State	Description	Indicators	Action
Power off	The server is completely powered off when the AC power cords are disconnected.	All indicators are off. The server is disconnected from all power sources.	Disconnect power cords to completely remove power. Caution - Equipment damage. Do not disconnect power cords when system is in full power mode.
Standby power	When the server is in standby power mode, the service processor is powered on but the host is powered off.	The system OK indicator blinks. The service processor OK indicator is steady on.	If the server is completely powered off, plug in the power cords to apply standby power. If the server is in full power mode, use Oracle ILOM or the recessed power button to remove host power. You can power the host off gracefully, or immediately. Caution - Data loss: To prevent data loss, prepare the operating system for shutdown before performing an immediate power off. Note - If you updated the system firmware and selected the Delay BIOS Upgrade option, when you reset or power off your server, Oracle ILOM installs the BIOS firmware upgrade. This causes a reset to take longer than normal and causes the server to power cycle during the

Power State	Description	Indicators	Action
			reset. This is normal, expected behavior during a delayed BIOS upgrade.
Full power	When you power on the host, the server enters full power mode.	In full power mode, the system OK indicator is steady on.	Use Oracle ILOM or the recessed power button to apply host power.

See Also:

- [“Power Off Host Using the Power Button” on page 130](#)
- [“Power On Host Using the Power Button” on page 130](#)
- [“Power Host On and Off Using Oracle ILOM” on page 131](#)

▼ Power Off Host Using the Power Button

1. **Locate the recessed Power button on the server front panel.**
2. **Press the recessed Power button.**
 - **To perform a graceful shutdown, press and release the power button.**
ACPI-enabled operating systems perform an orderly shutdown. Systems not running ACPI-enabled operating systems might ignore this event, and fail to shut down the host. The system OK indicator blinks. The service processor indicator is steady on.
 - **To perform an immediate shutdown, press and hold the Power button for at least 5 seconds.**
The system OK indicator blinks. The service processor indicator is steady on.



Caution - Data loss. An immediate shutdown abruptly closes all applications and files without saving changes.

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

▼ Power On Host Using the Power Button

1. **Verify that the server is in standby power mode.**

The host is powered off but the SP is powered on. The power supplies are connected to a power source and the OK status indicator blinks.

2. Locate the recessed Power button on the front panel.

3. Press the recessed Power button.

The host boots and the server enters full power mode. The system OK indicator goes steady ON when the host is fully booted.

▼ Power Host On and Off Using Oracle ILOM

This procedure provides web and command-line interface (CLI) instructions for a server service processor (SP).

You can use Oracle Integrated Lights Out Manager (ILOM) to remotely power on or power off the Host.



Caution - Data loss. An immediate shutdown abruptly closes all applications and files without saving changes.

- **Control power using the Oracle ILOM web interface or the Oracle ILOM CLI.**

You must be logged on with administrator privileges. For details, see [“Connecting to Oracle ILOM” on page 51](#).

- **From the Oracle ILOM web interface, perform one of the following:**

Note - These commands affect power to the host but not to the SP. To completely power off the server, you must disconnect the power cords from the back panel of the server.

- a. **Click Host Management > Power Control.**

- b. **From the Settings drop-down menu, select one of the following:**

- **Reset:** Reset the operating system without removing power.
- **Immediate Power-Off:** Turn off power to the host immediately.
- **Graceful Shutdown and Power Off:** Shut down the operating system gracefully and then remove power.
- **Power On:** Turn on full power.

- Power Cycle: Turn off power to the host immediately, and then turn it back on.

■ **From the Oracle ILOM CLI, enter one of the following commands:**

- `reset /SYSTEM`: Reset the host without removing power.
- `stop /SYSTEM`: Shut down the host gracefully and then remove power.
- `stop -f /SYSTEM`: Turn off power to the host immediately.
- `start /SYSTEM`: Turn on full power

See Also ■ Controlling Host Power, *Oracle ILOM Configuration and Maintenance Guide*.

Troubleshooting Installation Issues

This section provides information for troubleshooting installation issues.

Description	Links
Learn about troubleshooting and obtain diagnostic reference information.	“Troubleshooting and Diagnostic References” on page 133
Record server information before contacting Service.	“Technical Support Information Worksheet” on page 133
Locate the system serial number before contacting Service.	“Locating the Server Serial Number” on page 134

Troubleshooting and Diagnostic References

The [Oracle Server X5-8 Service Manual](#) provides product-specific troubleshooting information.

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, collect the following information before calling for support:

System Configuration Information Needed	Your Information
Service contract number	

System Configuration Information Needed	Your Information
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

Use one of the following methods to locate the serial number of your server. Record this number for future use.

- Look on the front panel at the middle left of the bezel.
- Locate the yellow Customer Information Sheet (CIS) attached to your server Oracle Oracle Server X5-8 packaging. This sheet includes the serial number.
- From Oracle ILOM:
 - Using the web interface, log in and view the Summary page.
 - Look on the Oracle System Assistant Summary/System Information screen.
 - Using the CLI, log in and enter the command:


```
show /System
```

Site Planning Checklists

Complete the checklists in this section to ensure the site is prepared for the server.

- [“Access Route and Data Center Checklist” on page 135](#)
- [“Data Center Environment Checklist” on page 136](#)
- [“Facility Power Checklist” on page 137](#)
- [“Rackmount Checklist” on page 137](#)
- [“Safety Checklist” on page 139](#)
- [“Auto Service Request Checklist” on page 139](#)
- [“Logistics Checklist” on page 140](#)

Access Route and Data Center Checklist

Review the following facility checklist before installing the server:

Data Center Room Considerations	Yes	No	N/A	Comment
Has the access route been checked for clearances of the packaged equipment?				
Do all the doors and entry ways conform to the width and height requirements for transportation, including the width of the unpacked unit?				
Are there any ramps, stairs, or thresholds that are in the moving path for the new hardware?				
Have you confirmed that the access route is free of any obstacles that would expose the device to shock?				
If there are stairs, then is a loading elevator accessible for moving the equipment?				
Has the rack location been allocated?				
Is there a vacant space in the rack for the new server?				
Does the floor layout meet the equipment maintenance access requirements?				

Data Center Room Considerations	Yes	No	N/A	Comment
Is there adequate space available for server maintenance?				
Have cabinet stabilization measures been considered?				
Will the hardware location require any non-standard cable lengths?				
Is the floor to ceiling height a minimum of 2914 mm or 2.9 m (9.6 feet)?				
Is the depth of the raised floor a minimum of 460 mm (18 inches)?				

See Also

- [“Server Specifications” on page 23](#)

Data Center Environment Checklist

Complete the following checklist to ensure that the data center environment requirements are met for the server:

Data Center Environment Considerations	Yes	No	N/A	Comment
Does the computer room air handling meet temperature and humidity requirements?				
Does the installation floor layout satisfy the ventilation requirements?				
Will the equipment be positioned so that the exhaust air of one rack does not enter the air intake of another rack?				
Are the perforated floor tiles each rated at 400 CFM or greater?				
Do the data center air conditioners provide sufficient front to back airflow?				
Is airflow adequate to prevent hot spots?				
Can the data center continuously satisfy environmental requirements?				
Can more vented floor tiles be obtained if required?				

See Also

- [“Ventilation Guidelines” on page 25](#)

Facility Power Checklist

Complete the following checklist to ensure that the facility power requirements are met for the data center in which the server is installed:

Facility Power Considerations	Yes	No	N/A	Comment
Do you know the required operating voltage and electric current level of the server?				
Are enough power outlets provided within 2 meters (6.5 feet) for each rack?				
Do the power outlets have appropriate socket receptacles?				
Will optional ground cables be attached to the rack?				
Are the circuit breakers for the equipment suitable in terms of voltage and current-carrying capacities?				
Does the power frequency meet the equipment specifications?				
Will system power be delivered from two separate power grids?				
Is there a UPS to power the equipment?				
Do you have the minimum required power sources to support the power load for the new hardware? Use kilowatt (kW)/kilovolt (kVA) to express power load.				

See Also

- [“Server Specifications” on page 23](#)

Rackmount Checklist

Complete the following checklist prior to installing the server into a rack or cabinet:

Rackmount Considerations	Yes	No	N/A	Comment
Is the distance between the front and rear mounting planes between the minimum of 610 mm and the maximum 915 mm (24 inches to 36 inches)?				
Is the clearance depth in the front of the front mounting plane (distance to the front cabinet door) at least 25.4 mm (1 inch)?				

Rackmount Considerations	Yes	No	N/A	Comment
Does the target rack meet the following minimum load capacity: <ul style="list-style-type: none"> ■ 19 kg/rack unit ■ 785 kg total 				
Is the rack a four-post rack (mounting at both front and rear)? Two-post racks are not compatible.				
Does the rack's horizontal opening and unit vertical pitch conform to ANSI/EIA 310-D-1992 or IEC 60927 standards?				
Does the rack have RETMA rail support?				
Does the rack support Oracle cable management arms (CMAs)?				
Does the rack support installation of Oracle vented and solid filler panels?				
Is there sufficient space for a cable harnesses and the power distribution units (PDUs) in the rack, if required?				
Can a label with the server serial number be printed and attached to the target rack?				
Did you run the required network cables from your network equipment to the location where the server will be installed?				
Did you label the network cables that will connect to the server?				
Does the rack support installation of standard Oracle PDUs? If not, then complete this checklist.				
Can the customer provide equivalent PDUs?				
Can the customer provide a single PDU and its circuits to support the power requirements in case on PDU fails?				
Can the customer ensure power loads are evenly distributed across all circuits of a single PDU?				
Can the customer provide appropriate power drops for the PDUs?				

See Also

- [“Server Specifications” on page 23](#)

Safety Checklist

Complete the following checklist to ensure that the safety requirements are met for the data center in which the server will be installed:

Safety Checklist Considerations	Yes	No	N/A	Comment
Is there an emergency power shut off?				
Is there a fire protection system in the data center room?				
Is the computer room adequately equipped to extinguish a fire?				
Is antistatic flooring installed?				
Is the floor below the raised floor free of obstacles and blockage?				

See Also

- [“Server Specifications” on page 23](#)

Auto Service Request Checklist

Complete the following checklist if you are planning to use Auto Service Request with the server:

Auto Service Request Considerations	Yes	No	N/A	Comment
Do you have a My Oracle Support Online Account to register Auto Service Request?				
Do you have your My Oracle Support Customer Support Identifier (CSI) number?				
Do you have the host name and IP address for the server that will have Auto Service Request Manager?				
Will the system need a proxy server? If so, what is the host name and IP address for the proxy server?				
Do you have the Technical Contact information for Auto Service Request? This information includes the first name, last name, and e-mail address of the contact.				

Logistics Checklist

Complete the following checklist to ensure that the logistics requirements are met for the data center in which the server will be installed:

Logistics Checklist Considerations	Yes	No	N/A	Comment
Do you have contact information for the data center personnel?				
Is there security or access control for the data center?				
Are there any security background checks or security clearances required for vendor personnel to access the data center? If yes, then do you have a recommended agency?				
How many days in advance must background checks be completed?				
Are there any additional security access issues?				
Is computer room access available for installation personnel?				
Are laptops, cell phones, and cameras allowed in the data center?				
Does the building have a delivery dock?				
Is there a delivery/unpacking/staging area?				
Is the delivery inside?				
If the delivery is not inside, then is the site prepared for uncrating?				
Is the unpacking/staging area protected from the elements?				
Does the building have adequate receiving space?				
Is the unpacking area air-conditioned to avoid thermal shock for various hardware components?				
Will sufficient moving personnel be available to install the hardware?				
Are you prepared for uncrating and trash removal?				
Are there any restrictions on delivery and trash removal?				
Are there any restrictions on delivery truck length, width or height?				
Does the customer allow cardboard boxes and other packing material in the computer room?				
Is there a time constraint on dock access? If yes, then provide time constraints.				
Is tail lift required on delivery carrier to unload the equipment at the delivery dock?				
Will any of the following be required to place equipment in computer room?				
Stair walkers				

Logistics Checklist Considerations	Yes	No	N/A	Comment
Lifters				
Ramps				
Steel plates				
Floor covers				
Does the delivery carrier require any special equipment, such as non-floor damaging rollers, transport dollies, pallet jacks, or fork lifts?				

See Also

- [“Server Specifications” on page 23](#)
- [“Unpack the Server and Inventory the Contents” on page 31](#)

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