Sun Blade X4-2B Installation Guide

Part No: E37036–04
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140306@25097

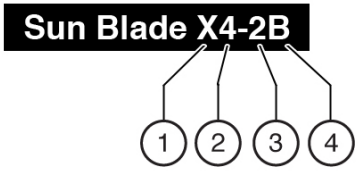
Contents

Using This Documentation

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

Sun Blade X4-2B Model Name

The name identifies the following:



- 1: The alpha character, X, identifies an x86 product.
- 2: The first number, 4, identifies the generation of the server.
- 3: The second number, 2, identifies the number of processors.
- 4: The alpha character, B, identifies the product as a blade server.

Getting the Latest Firmware and Software

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

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

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

- My Oracle Support – http://support.oracle.com
- Physical media request

For more information, see "Getting Server Firmware and Software Updates" on page 97.

Documentation and Feedback

Documentation	Link
All Oracle products	http://www.oracle.com/documentation
Sun Blade X4-2B server module	http://www.oracle.com/goto/X4-2B/docs
X4 server series system administration	http://www.oracle.com/goto/x86AdminDiag/docs
Oracle System Assistant	http://www.oracle.com/goto/x86AdminDiag/docs
Oracle Integrated Lights Out Manager (ILOM) 3.1	http://www.oracle.com/goto/ILOM/docs
Oracle Hardware Management Pack	http://www.oracle.com/goto/OHMP/docs
Chassis Sun Blade 6000 modular system	http://www.oracle.com/goto/SB6000/docs

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

About This Documentation

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

You can generate a PDF that includes all information about a particular topic subject (such as hardware installation or product notes) can be generated by clicking the PDF button in the upper left corner of the HTML page.

Support and Training

These web sites provide additional resources:

- Support: http://support.oracle.com
- Training: http://education.oracle.com

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Change History

The following lists the release history of this documentation set:

- September 2013. Initial publication.
- November 2013. Corrected links.
- March 2014. Software 1.1 update.

Product Description

This section provides an overview of Oracle's Sun Blade X4-2B features.

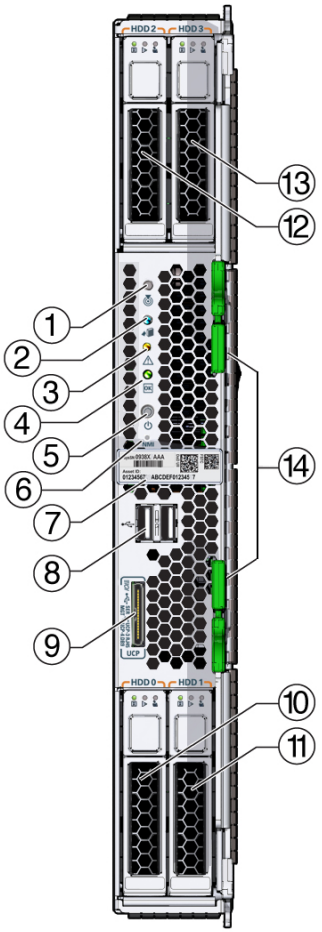
Sun Blade X4-2B Server Module Overview

Oracle's Sun Blade X4-2B server module consists of two processors (from the Intel ® Xeon ® processor E5-2600 V2 processor family), and 24 DIMM slots for a maximum of 768 GB of memory. The blade server module is inserted in to a Sun Blade 6000 chassis, which provides power and cooling to the blades. The Sun Blade X4-2B server module is an ideal blade for building enterprise cloud infrastructures.

Optional I/O modules can be installed. A RAID expansion module (REM) is installed on the Sun Blade X4-2B server module for RAID and SAS drive connectivity. A Fabric Expansion Module (FEM) is also installed on the server module. The FEM enables a connection to the Network Express Modules (NEMs) through the Sun Blade 6000 chassis' midplane. The Sun Blade X4-2B also features an on-board service processor (SP) to enable Oracle Integrated Lights Out Manager (ILOM). Oracle ILOM provides secure local and remote server management.

Front Panel Features

The following figure shows the Sun Blade X4-2B front panel components and status indicators.



1	Locate status indicator LED (white). Press button to identify server.
2	Ready to Remove status indicator LED (blue). Main power removed.
3	Service Action Required status indicator LED (amber). Fault condition detected.

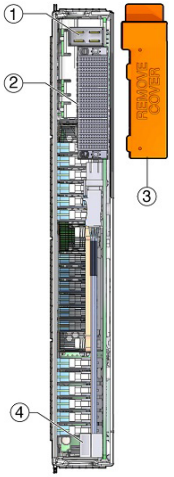
4	OK/Power status indicator LED (green). Modes: ■ SP booting – Fast blink, 0.125 second on, 0.125 second off. ■ Standby power – Blink, 0.1 second on, 2.9 seconds off. ■ Host booting – Slow blink, 0.5 second on, 0.5 second off. ■ Full power – Steady on.
5	Power button. Press briefly to toggle the server between standby and full power. **Caution –** Potential data loss. Pressing the Power button for more than four seconds when the server module is in full power initiates immediate shutdown to standby power.
6	NMI button — for Oracle Service use only.
7	Serial number label and RFID tag.
8	Two USB 2.0 ports.
9	Universal connector port (UCP). Connects to multi-port cable (dongle).
10, 11, 12, 13	Storage disk drives 0-3 (optional): 10=0, 11=1, 12=2, 13=3 Hard disk drives (HDDs) or solid state disks (SSDs).

Related Information

- "Supported Components" on page 13
- "Specifications" on page 12

Rear Panel Features

The following illustration shows the Sun Blade X4-2B rear features.



1	Power connector
2	I/O connector
3	Rear cover (remove)
4	USB internal ports 0, 1

Specifications

The following specifications provide information about Sun Blade X4-2B server module dimensions, electrical and environmental conditions.

Physical Specifications

Specification	Value
Height	12.87 inches (327 mm)
Width	1.69 inches (43 mm)
Depth	19.6 inches (497 mm)
Weight	20 lbs (9 kg)

Electrical Specifications

Specification	Value
Voltage (nominal)	12 V main from chassis backplane
	3.3 V AUX from chassis backplane
Power (maximum)	604 W (maximum operational)

Environmental Specifications

Specification	Value
Temperature (operating)	41 to 90 °F
	5 to 32 °C
Temperature (storage)	–40 to 158 °F
	–40 to 70 °C
Humidity	10 to 90% non-condensing
Operating altitude	Up to 9,840 feet (3,000 m*). Maximum ambient temperature is derated by 1° C per 300 m above 900 m. [1]

[1] * Except in China, where regulations may limit installations to a maximum altitude of 6,562 feet (2,000 m).

Related Information

- Specifications for the Sun Blade 6000 modular system chassis: *Site Planning Guide for Sun Blade 6000 and Sun Blade 6048 Modular Systems* at: `http://www.oracle.com/goto/SB6000/docs`
- To manage chassis and server module power using Oracle ILOM, refer to:

  `http://www.oracle.com/goto/ILOM/docs`

Supported Components

Refer to for the latest information on supported components.

The following table describes the components and capabilities of the Sun Blade X4-2B Server Module.

Feature	Description	Link
Chassis compatibility	Sun Blade 6000 modular system with PCIe 2.0 midplane (standard with models A90–B and A90–D). The minimum Oracle ILOM CMM firmware for each chassis is as follows: ■ A90-B: CMM ILOM 3.0.12.11b (software release 3.3.3) ■ A90-D: CMM ILOM 3.1 (software release 4.2)	*Sun Blade 6000 Modular System Product Notes* at `http://www.oracle.com/goto/SB6000/docs` Refer to this guide for the latest information about how to determine your chassis midplane version.
Chassis midplane and internal I/O	■ Two x8 PCIe 2.0 bus connections to a chassis PCIe EM slot ■ One x8 PCIe 2.0 bus connection to REM slot ■ Two x8 PCIe bus connections to FEM slots. PCIe port speeds vary by FEM ■ Two 10/100/1000 BASE-T Ethernet ports for NEMs from the (Powerville) NIC chip.	*Sun Blade X4-2B Product Notes* Refer to this guide for updated information about supported chassis firmware.
Processors	The Sun Blade X4-2B supports two E5 CPUs.	*Sun Blade X4-2B Product Notes* Refer to this guide for detailed information about supported CPUs.
Memory	Twenty-four registered DDR3 LR-DIMMs with ECC memory slots total (12 slots per CPU).	*Sun Blade X4-2B Product Notes* Refer to this guide for details on supported memory.
Storage drives	■ Four SAS–2 2.5-inch disk bays. ■ Two internal USB 2.0 drive ports.	*Sun Blade X4-2B Product Notes* Refer to this guide for details on supported drives. "6. Configure Server Module Drives for OS Installation" on page 63

Feature	Description	Link
Rear panel ports	Two internal USB 2.0 ports with rear panel access. One internal USB port might be preinstalled with a USB drive containing Oracle System Assistant. Oracle System Assistant USB stick is installed on server module USB drive port 0, in a standard configuration.	"5. Set up Server Module Software and Firmware (Oracle System Assistant)" on page 59 Refer to this section for information about setting up the server module using Oracle System Assistant. http://www.oracle.com/goto/x86AdminDiag/docs Refer to this library for more information about Oracle System Assistant. "Supported Components" on page 13 Refer to this section for more information about USB drive ports.
Front panel ports	Two USB 2.0 ports. A universal connector port (UCP) connects to a multi-port cable.	"About Front and Rear Panels" in *Sun Blade X4-2B Service Manual*
Multi-port cable	Each Sun Blade 6000 series chassis is typically shipped with a multi-port cable. The multi-port cable enables you to connect communication devices directly to the Sun Blade X4-2B. The multi-port cable provides the following interface connections to the front panel UCP: ■ VGA graphics port (2D embedded graphics controller) ■ RJ-45 serial management port ■ Two USB ports (keyboard, mouse, USB drive)	http://www.oracle.com/goto/SB6000/docs
Network express module (NEM) compatibility	Both 10 GbE and 1 GbE NEM interfaces are supported. **Note –** The procedures in this guide do not cover cabling of PCIe ExpressModules (PCIe EMs) or network express modules (NEMs) installed in the chassis and connected to the server module through the chassis midplane. Refer to the chassis, PCIe EM, or NEM documentation for instructions on cabling these components.	*Sun Blade X4-2B Product Notes* for details on supported NEMs. http://www.oracle.com/goto/SB6000/docs

Feature	Description	Link
RAID expansion module (REM) compatibility	Two optional LSI REM host bus adapters are supported: ■ Sun Storage 6Gb/s SAS REM HBA (SGX-SAS6-REM-Z) ■ Sun Storage RAID 6Gb/s SAS RAID REM HBA, (SGX-SAS6-**R**-REM-Z)	"6. Configure Server Module Drives for OS Installation" on page 63
Operating systems	Oracle Solaris can be optionally preinstalled on the server module. Oracle Linux can be optionally preinstalled on the server module. Installation of the following operating systems are supported. ■ Oracle Solaris 11.1 ■ Oracle Solaris 10 Update 1/13 ■ Oracle Linux 5.x (64-bit) ■ RHEL 6.4 (64-bit) ■ SUSE Enterprise Server 11 SP3 ■ Windows Server 2012 (x64)	`https://wikis.oracle.com/display/SystemsComm/Sun+Blade+Systems+Products#tab:Opera` for a complete list of supported OS versions.
Virtualization software	■ Oracle VM software is supported for the server module. ■ Oracle VM software can be optionally preinstalled on the server module. ■ VMware ESXi is also supported for the server module.	*Sun Blade X4-2B Product Notes* for information about specific versions supported. "Configuring Preinstalled Oracle VM Software" on page 83

Management software	■ Oracle System Assistant (OSA)
	■ Oracle Integrated Lights Out Manager (ILOM version 3.1)
	■ Oracle Hardware Management Pack (HMP)
		`http://www.oracle.com/goto/x86AdminDiag/docs` for more information about Oracle System Assistant.
		`http://www.oracle.com/goto/ILOM/docs`
		`http://www.oracle.com/goto/OHMP/docs`

Feature	Description	Link
Service processor (SP)	The server module includes an AST2300 service processor (SP). The SP provides IPMI 2.0-compliant remote management capabilities. SP connection options are: ■ Remote network connection: 10/100 management Ethernet port to midplane ■ Remote connection: keyboard, video, mouse, and storage (KVMS) over IP ■ Local connection: Oracle ILOM command-line access using a serial connection or local KVM	http://www.oracle.com/goto/ILOM/docs
Video	A maximum resolution of 1280 x 1024 is supported with 8 MB of video memory. Resolutions up to 1,280 x 1,024 x 16 bits @ 60 Hz and 1,024 x 768 when viewed remotely through ILOM RKVMS.	"Set Up Server Module Using Local KVM Connection" on page 42

Related Information

- "Specifications" on page 12
- "Front Panel Features" on page 10
- http://www.oracle.com/goto/SB6000/docs
- http://www.oracle.com/goto/ILOM/docs

Software Overview

The following sections describe Sun Blade X4-2B management software:

- "Oracle System Assistant Overview" on page 17
- "Oracle ILOM Overview" on page 18
- "UEFI BIOS Overview" on page 22

Oracle System Assistant Overview

Oracle System Assistant allows you to set up and manage the Sun Blade X4-2B. The Oracle System Assistant application is a task-based server provisioning tool that allows you to perform initial server setup and maintenance for Oracle x86 servers. Using Oracle System Assistant, you can install a supported Oracle Solaris, Oracle VM, Linux, or Windows operating system, update your server to the latest software release, and configure server hardware.

A Sun Blade X4-2B USB port might be preinstalled with a USB drive containing Oracle System Assistant.

Oracle System Assistant Example

A partial Oracle System Assistant System Overview screen is shown in the following image.

Oracle ILOM Overview

Oracle ILOM allows you to manage the Sun Blade X4-2B Server Module. Access Oracle ILOM to connect to either the chassis CMM or the server module's service processor.

Your server supports Oracle Integrated Lights Out Manager (ILOM) version 3.1 or later.

The following sections describe CMM and server management Oracle ILOM:

- "About Oracle ILOM CMM" on page 18
- "About Server Module SP Oracle ILOM" on page 20

About Oracle ILOM CMM

The Sun Blade 6000 modular system chassis has its own service processor, called a chassis monitoring module (CMM). Oracle ILOM CMM provides an Ethernet connection through the chassis to the server module service processor (SP). Oracle ILOM CMM software allows you to monitor and manage all chassis components, including installed server and storage blades.

The minimum Oracle ILOM CMM firmware version corresponds to the chassis model as follows:

- A90-B: CMM ILOM 3.0.12.11b (software release 3.3.3)
- A90-D: CMM ILOM 3.1 (software release 4.2)

For information about how to identify the chassis, refer to *Sun Blade X4-2B Product Notes*.

For more information, refer to the system chassis documentation at: `http://www.oracle.com/goto/SB6000/docs`.

Use the Sun Blade 6000 modular system chassis Oracle ILOM CMM to:

- Display a server module Oracle ILOM service processor IP address.

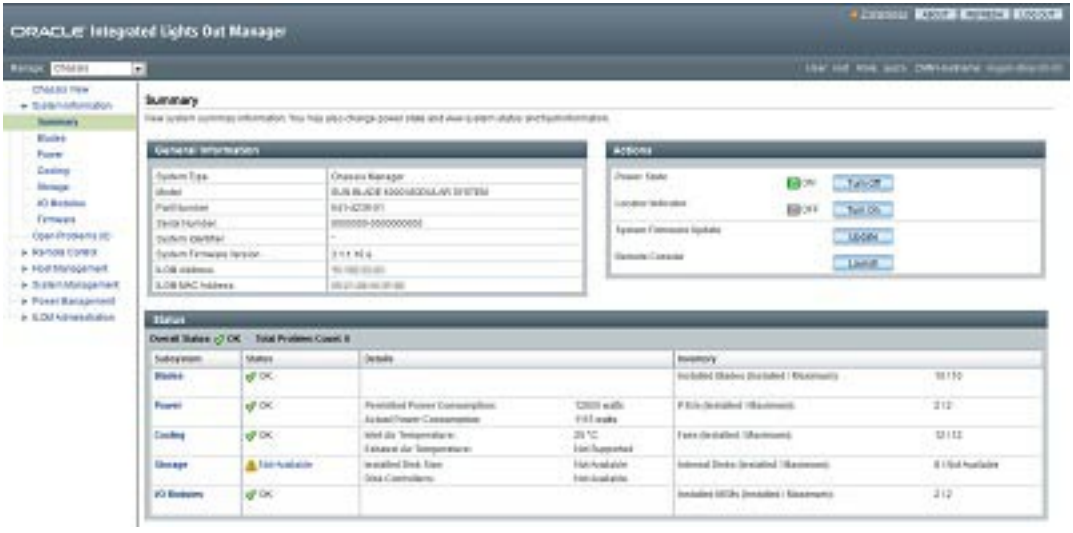
- Display a server module Oracle ILOM service processor network configuration.
- Verify that a server module's Oracle ILOM is working correctly.
- Verify that you can access a server module's Oracle ILOM through the Oracle ILOM CMM.

Oracle ILOM CMM can be access using a web or CLI interface. Choose a method of accessing Oracle ILOM CMM, as described in the following sections:

- "Log In to Oracle ILOM SP (Web Interface) " on page 52
- "Log In to Oracle ILOM SP (CLI) " on page 53

Oracle ILOM CMM Web Interface Example

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



Oracle ILOM CMM CLI Example

The following example uses the CMM command-line interface (CLI) to show information about the server module when you are logged in to the Oracle ILOM CMM. In this example, the server module is installed in chassis blade slot 1.

Note – The /CH target is hidden in the CMM CLI by default. In order to see this target and its sub-targets, use the following command: `/CMM/cli legacy_targets=enable`

```
-> show /CH/BL1

/CH/BL1
Targets:
HOST
System
SP

Properties:

Commands:
cd
show
```

Related Information

- http://www.oracle.com/goto/ILOM/docs

About Server Module SP Oracle ILOM

Oracle ILOM software resides on the server module service processor (SP). Use Oracle ILOM software to monitor and manage server module components. Oracle ILOM software functions include:

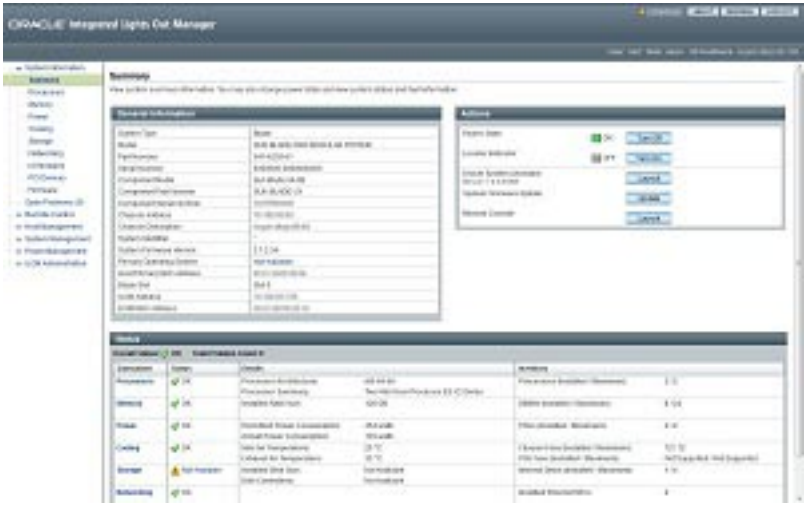
- Configuring network information
- Viewing and editing hardware configurations for the SP
- Monitoring vital system information and viewing logged events
- Managing Oracle ILOM user accounts

Choose a method of accessing the server module SP Oracle ILOM, as described in the following sections:

- "Log In to Oracle ILOM SP (Web Interface) " on page 52
- "Log In to Oracle ILOM SP (CLI) " on page 53

Server Module SP Oracle ILOM Web Interface Example

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



Server Module SP Oracle ILOM CLI Example

The following example shows server module properties after you log in to Oracle ILOM SP command-line interface (CLI).

```
-> show /System
/System
Targets:
Cooling
Processors
Memory
Power
Storage
PCI_Devices
Firmware
Networking
Open_Problems (1)
BIOS
IO_Modules
SP

Properties:
health = Service Required
health_details = /SYS (Motherboard) is faulty. Type 'show
/System/Open_Problems' for details.
open_problems_count = 1
power_state = Off
locator_indicator = Off
serial_number = 489089M-1122PR0000
model = ASSY,BLADE,SUN BLADE X4-2B
type = Blade
system_fw_version = ILOM: 3.1.0.0  BIOS: 20010900
host_primary_ip_address = (none)
host_primary_mac_address = (none)
system_identifier = (none)
```

```
primary_operating_system = (none)
actual_power_consumption = 10 watts
ilom_address = 10.000.000.000
ilom_mac_address = 00:00:00:BB:00:00
action = (none)

Commands:
cd
reset
show
start
stop
```

Related Information

- http://www.oracle.com/goto/ILOM/docs

UEFI BIOS Overview

The Sun Blade X4-2B contains a Unified Extensible Firmware Interface (UEFI)-compatible BIOS. UEFI BIOS provides more boot options and configuration capability for adapter cards than previous BIOS versions. It is based on the Unified Extensible Firmware Interface (UEFI) specification. The Sun Blade X4-2B supports UEFI BIOS, which controls the system from power-on until an operating system is booted.

- "UEFI BIOS Boot Mode Selection" on page 22

Refer to the *Oracle X4 Series Server Administration Guide* for more information about UEFI BIOS.

UEFI BIOS Boot Mode Selection

Two boot modes are available for UEFI BIOS: Legacy boot mode and UEFI boot mode. UEFI BIOS can be configured to support either UEFI or Legacy boot modes. However, some devices and operating systems do not yet support UEFI-based BIOS and can boot only from Legacy BIOS 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 command Save Changes and Reset.

For information about Oracle ILOM, refer to Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Collection: http://www.oracle.com/goto/ILOM/docs

Legacy BIOS Boot Mode

Choose Legacy BIOS boot mode to allow HBAs and Express Module devices to use option ROMs. Select legacy BIOS boot mode when software or adapters do not have UEFI drivers, or the system is using adapter option ROM. Legacy BIOS boot mode is the *default boot mode*.

In Legacy boot mode, only boot candidates that support Legacy BIOS boot mode appear in the Boot Options Priority list.

UEFI BIOS Boot Mode

Choose UEFI BIOS boot mode to use UEFI drivers when software and adapters have UEFI drivers. UEFI BIOS boot mode is manually selected during setup. To make the selection, see instructions for selecting Legacy BIOS Boot Mode or UEFI BIOS Boot Mode in the *Oracle X4 Series Servers Administration Guide* at http://www.oracle.com/goto/x86AdminDiag/docs.

In UEFI BIOS Boot Mode, only boot candidates that support UEFI BIOS boot mode appear on the BIOS Setup Utility screens in the Boot Options Priority list.

Currently, the following operating systems support UEFI BIOS boot mode. For updates to this list, refer to *Sun Blade X4-2B Product Notes*.

- Oracle Linux
- SUSE Linux Enterprise Server SP1
- RedHat Enterprise Linux
- Microsoft Windows

These operating systems can use either UEFI BIOS boot mode or Legacy BIOS boot mode. All other operating systems must use Legacy BIOS boot mode. However, after you choose a boot mode and install an operating system, an OS installation can be started only using the same mode that was used for the installation.

Installing the Server Module

Follow these steps to install the Sun Blade X4-2B server module.

Step	Installation Task	Link
1	Review the product and chassis documentation.	"1. Review Product Documentation" on page 25
2	Receive and unpack the Sun Blade X4-2B server module.	"2. Receive and Unpack the Server Module" on page 27
3	Insert the Sun Blade X4-2B server module into a chassis.	"3. Insert the Server Module Into a Chassis" on page 32
4	Set up the Sun Blade X4-2B server module Oracle ILOM (web interface or CLI).	"4. Access Server Module Management Tools" on page 37
5	Set up the Sun Blade X4-2B server module software and firmware.	"5. Set up Server Module Software and Firmware (Oracle System Assistant)" on page 59
6	Prepare the Sun Blade X4-2B server module storage drives for OS installation.	"6. Configure Server Module Drives for OS Installation" on page 63
7	Set up the Sun Blade X4-2B server module operating system (preinstalled OS or install supported OS).	"7. Set Up an Operating System and Drivers" on page 73

1. Review Product Documentation

Review the following information before installing the Sun Blade X4-2B server module.

Product	Documentation	Link
Sun Blade 6000 modular system	"Sun Blade 6000 Modular System Documentation Library" on page 26	`http://www.oracle.com/goto/SB6000/docs`
Sun Blade X4-2B server module	"Sun Blade X4-2B Documentation Library" on page 26	`http://www.oracle.com/goto/X4-2B/docs`

Sun Blade 6000 Modular System Documentation Library

Review the chassis information in the following table before installing the Sun Blade X4-2B server module.

Task	Link
Ensure that the Sun Blade 6000 modular system chassis in which you will install the server module is running with supported hardware and firmware and has no faults. Refer to the Sun Blade 6000 Modular System Documentation Library for information about: ■ Installing a Sun Blade 6000 chassis for the first time. ■ Installing chassis components. ■ Attaching cables to the chassis. ■ Powering on the chassis.	■ `http://www.oracle.com/goto/SB6000/docs` ■ "Sun Blade 6000 Modular System Documentation Library" on page 26
Verify that the chassis supports the Sun Blade X4-2B server module. The chassis midplane supports PCIe 2.0 (standard with model A90-B or A90-D).	■ *Sun Blade 6000 Modular System Product Notes* for the latest information about how to determine the chassis midplane version. ■ `http://www.oracle.com/goto/SB6000/docs`
Prepare the chassis.	■ "2. Receive and Unpack the Server Module" on page 27 ■ "Prepare the Site and Chassis" on page 31

Chassis NEMs

Verify that the network express modules (NEMs) that are supported for use with the Sun Blade X4-2B are installed in the chassis and are operating without faults. For more information about late breaking information, and supported components such as NEMs, refer to *Sun Blade X4-2B Product Notes* at `http://www.oracle.com/goto/X4-2B/docs`.

Related Information

- "Insert the Sun Blade X4-2B Server Module Into a Chassis" on page 33

Sun Blade X4-2B Documentation Library

The most up-to-date documents, including translations of some documents, are available online at: `http://www.oracle.com/goto/X4-2B/docs`

Review the Sun Blade X4-2B Documentation Library product information in the following table before installing the Sun Blade X4-2B server module.

Documentation	Link
Sun Blade X4-2B Documentation Library	`http://www.oracle.com/goto/X4-2B/docs`
ESD and safety precautions.	"ESD and Safety Precautions" on page 28
Sun Blade X4-2B Safety and Compliance Guide	Safety Information at `http://www.oracle.com/goto/X4-2B/docs`
Important Safety Information for Sun Hardware Systems	Printed documentation
Sun Blade X4-2B Product Notes	*Sun Blade X4-2B Product Notes* at `http://www.oracle.com/goto/X4-2B/docs`
Sun Blade X4-2B Installation Guide	Use this manual when installing the Sun Blade X4-2B for the first time.
Sun Blade X4-2B Service Manual	*Sun Blade X4-2B Service Manual* at `http://www.oracle.com/goto/X4-2B/docs`
Oracle X4 Series Server Administration Guide	`http://www.oracle.com/goto/x86AdminDiag/docs`

Oracle is interested in improving the product documentation and welcomes your comments and suggestions. You can submit feedback by going to this link: `http://www.oracle.com/goto/docfeedback`

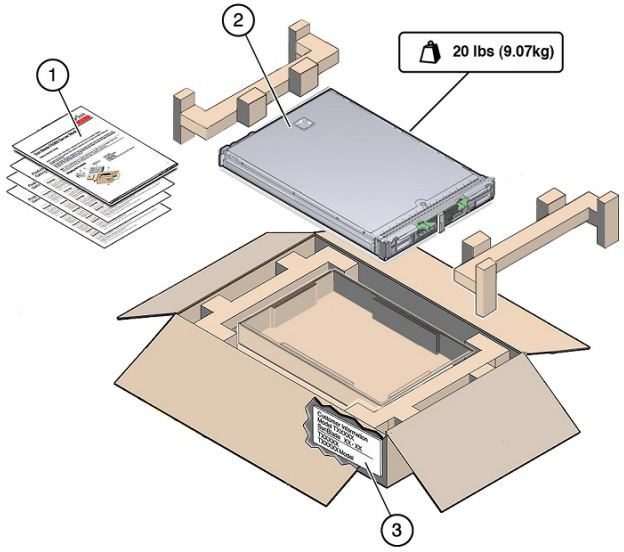
2. Receive and Unpack the Server Module

Review the information in the following sections before installing the Sun Blade X4-2B server module.

Inventory Shipping Kit

Standard configurations for the Sun Blade X4-2B server module are assembled at the factory and shipped ready for installation in a Sun Blade 6000 series chassis.

Standard server components found in the packing carton include:



No	Description
1	Documentation
2	Sun Blade X4-2B server module
3	Box, Customer Information Sheet (CIS)

Related Information

- "1. Review Product Documentation" on page 25

ESD and Safety Precautions

Caution – Potential system damage from electrostatic discharge, which can permanently disable the system or require repair by service technicians. Electronic equipment is susceptible to damage by static electricity.

Take the following ESD precautions to protect electronic components from electrostatic damage:

- Read safety information in the *Sun Blade X4-2B Safety and Compliance Guide* before installing the server module.
- Wear a grounded antistatic wriststrap, footstrap, or equivalent safety equipment to prevent ESD when you install or service the server.

- Wear an antistatic grounding strap connected to a metal surface on the chassis when you work on system components.
- Place components on an antistatic surface, such as an antistatic discharge mat, an antistatic bag, or a disposable antistatic mat.

Note – This server is fully compliant with the Reduction of Hazardous Substances (RoHS) Directive.

Related Information

- "Insert the Sun Blade X4-2B Server Module Into a Chassis" on page 33

Install Optional Components

Optional components for the Sun Blade X4-2B server module might be packaged and shipped separately. If applicable, install optional components before you install the server module into the system chassis (such as DIMMs or drives).

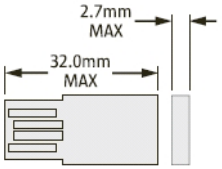
The following optional server module components can be ordered and purchased separately:

Optional component	Description
Processor assembly options	Refer to *Sun Blade X4-2B Service Manual*.
DDR3 DIMM memory kits	Refer to *Sun Blade X4-2B Service Manual*.
Storage drives	Refer to *Sun Blade X4-2B Service Manual*. ■ Hard drives (HDDs) ■ Solid state drives (SSDs)
USB sticks	The two internal USB ports are accessed from the Sun Blade X4-2B server module's rear panel. See *USB Stick* below.
Expansion Modules (EMs)	Refer to *Sun Blade X4-2B Service Manual*. ■ Fabric expansion modules (FEMs) ■ RAID expansion modules (REMs) **Note –** The procedures in this guide do not cover cabling of PCIe ExpressModules (PCIe EMs) or network express modules (NEMs) installed in the chassis and connected to the server module through the chassis midplane. Refer to the chassis, PCIe EM, or NEM documentation for instructions on cabling these components.

Optional component	Description
Multi-port cable	Each Sun Blade 6000 series chassis is typically shipped with a multi-port cable (dongle). Additional multi-port cables can be ordered. Multi-port cables are listed as 3-Cable Dongle II (part number X4622A-N).
Software media	For information about ordering software media, see *Getting Server Firmware and Software Updates*.

USB Stick

A USB flash stick with a standard USB 2.0 interface can be obtained from third-party sources. To avoid protruding past the rear panel, the USB flash stick must be no larger than 2.7 mm wide and 32.0 mm long, as shown in this illustration:



Caution – Physical damage hazard. Using a larger USB device could damage the USB port.

Related Information

- "Insert the Sun Blade X4-2B Server Module Into a Chassis" on page 33

Verify Supported Components

Supported components and their part numbers are subject to change over time and without notice.

To view the most up-to-date list of Sun Blade X4-2B supported components.

1. **Go to `https://support.oracle.com/handbook_private/`.**
2. **Enter required Oracle web account information.**
   This site requires an Oracle web account to access.
3. **Click the name and model of the server module (Sun Blade X4-2B).**

4. **After the server product page appears, click `Full Components List`.**

   A list of supported components displays.

5. **Install supported components.**

   For component installation instructions, refer to the service label on the Sun Blade X4-2B top cover or the *Sun Blade X4-2B Service Manual*.

▼ Prepare the Site and Chassis

To prepare to install the Sun Blade X4-2B server module in a supported Sun Blade 6000 modular system chassis.

1. **Confirm that the Sun Blade 6000 modular system chassis is ready to receive the server module.**

   A blank slot must be available.

   See "Specifications" on page 12, Sun Blade X4-2B Physical Specifications.

2. **Confirm that the physical site is ready to receive the server module.**

   See "Specifications" on page 12, Sun Blade X4-2B Environmental Specifications.

3. **Confirm that the power requirements are met.**

   The chassis must have sufficient reserve power to add the new server module to the chassis power load. See "Troubleshooting Server Power States" on page 111.

   See "Specifications" on page 12, Sun Blade X4-2B Electrical Specifications.

4. **Verify that the network express modules (NEMs) that are supported for use with the Sun Blade X4-2B have been installed in the chassis.**

   For more information about supported components such as NEMs, refer to *Sun Blade X4-2B Product Notes* at `http://www.oracle.com/goto/X4-2B/docs`.

5. **Ensure that the Sun Blade 6000 modular system chassis in which you will install the server module is operating with no faults.**

   Verify the following:

   a. **The chassis NEMs are operating without faults.**

   b. **Amber service LEDs are not illuminated on any chassis component.**

   c. **All required power cables to the chassis are attached.**

d. All required data cables to the chassis are attached.

If an amber service LED is illuminated on a chassis component, refer to Sun Blade 6000 modular system chassis documentation at: `http://www.oracle.com/goto/SB6000/docs`

6 Ensure that the Sun Blade 6000 modular system chassis in which you will install the server module is operating with supported hardware and firmware.

Verify the following:

a. The chassis midplane supports PCIe 2.0 (standard with model A90-B or A90-D).

Refer to the *Sun Blade 6000 Modular System Product Notes* at: `http://www.oracle.com/goto/SB6000/docs` for the latest information about how to determine the chassis midplane version.

b. Use CMM SP ILOM to verify that the chassis monitoring module (CMM) has the minimum firmware version that corresponds with the chassis model as follows:

- A90-B: CMM ILOM 3.0.12.11b (software release 3.3.3)
- A90-D: CMM ILOM 3.1 (software release 4.2)

c. The network express modules (NEMs) that are supported for use with your server module have been installed in the chassis.

For more information about supported NEMs, refer to:

- *Sun Blade 6000 Modular System Product Notes* at `http://www.oracle.com/goto/SB6000/docs`
- *Sun Blade X4-2B Product Notes*

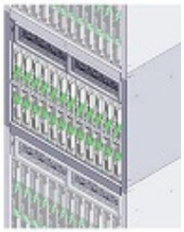
Next Steps

- "3. Insert the Server Module Into a Chassis" on page 32

3. Insert the Server Module Into a Chassis

Install the Sun Blade X4-2B server module into a blank Sun Blade 6000 modular system chassis slot.

The following illustration shows a Sun Blade 6000 modular system chassis:



▼ Insert the Sun Blade X4-2B Server Module Into a Chassis

1 **Locate a blank blade slot in the Sun Blade 6000 modular system chassis.**

`http://www.oracle.com/goto/SB6000/docs`

2 **Remove a slot filler panel.**

a. **Pinch together the ends of the ejector arm handle to unlock the slot filler panel.**

b. **Rotate the lever out to the open position.**

c. **Eject the filler panel.**

d. **Keep the filler panel for later use.**

Caution – Chassis shutdown hazard. Do not operate the chassis with empty slots for more than 60 seconds. Always insert a filler panel into an empty slot. If you are not installing a server module into a slot, do not remove a slot filler panel. The slot filler panel is required to meet FCC standards for electromagnetic interference (EMI).

3 **Remove the rear cover from the server module rear panel midplane connector.**

See "Rear Panel Features" on page 11 for the location of the rear cover.

The following illustration shows rear panel features on the Sun Blade X4-2B.

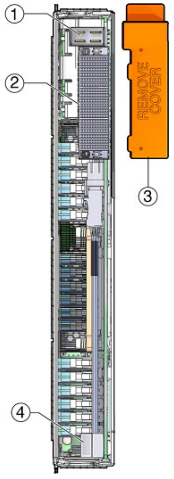


Figure Legend			
1	Power connector	2	I/O Connector
3	Rear cover (remove)	4	USB internal ports 0, 1

Caution – Drop hazard - Server modules can weigh up to 20 lbs (10kg). Use two hands to install or remove the server module from the chassis.

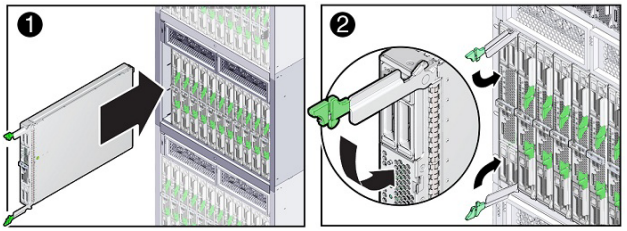
4 Open both of the server module ejector levers.

Position the server module vertically so that the ejectors are on the right.

5 Install the server module as follows:

a. Push the server module into the slot until the server module stops and is flush with the chassis (see 1).

b. Lock the server module into the chassis. Rotate the top ejector down while rotating the bottom ejector up until they both latch into place (see 2).



The server module is now locked in the chassis. After you install a server module into a powered-on chassis, the server module SP automatically boots using standby power from the chassis power supplies.

6 Verify server module status indicator LED activity.

Verify that the server module front panel indicators illuminate after plugging in the server module:

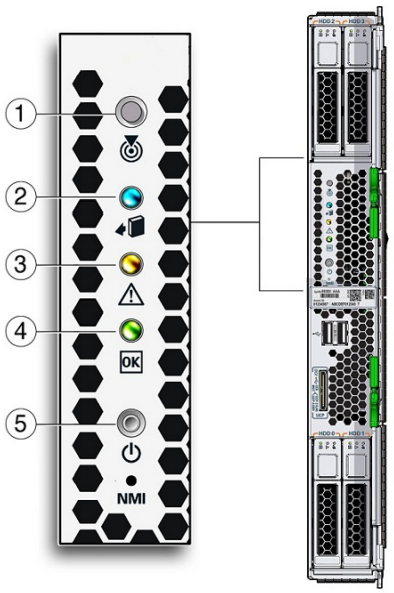
a. All four server module status indicators blink three times.

The blade has been powered on and the SP boot process has begun.

b. The green OK/Power status indicator blinks rapidly (0.125 seconds on, 0.125 seconds off) while the SP is booting.

c. The green OK/Power status indicator blinks briefly once every 3 seconds.

The server module is in standby power mode after the SP completes its boot cycle.



1	Locate status indicator LED (white). Press button to identify server.
2	Ready to Remove status indicator LED (blue). Main power removed.
3	Service Action Required status indicator LED (amber). A fault condition has occurred.
4	OK/Power status indicator LED (green). Modes: ■ SP booting - Fast blink, 0.125 second on, 0.125 second off. ■ Standby power – Blink, 0.1 second on, 2.9 seconds off. ■ Host booting – Slow blink, 0.5 second on, 0.5 second off. ■ Full power – Steady on.
5	Power button. Press briefly to toggle the server between standby and full power. **Caution –** Pressing the Power button for more than four seconds when the server module is in full power initiates immediate shutdown to standby power. Can cause data loss.

d. (Optional LED lamp test) Press and hold the Locate LED until all the front panel LEDs light up. The lamps remain lit for 15-20 seconds.

Refer to the *Sun Blade X4-2B Service Manual*.

Tip – For more front panel information, see "Front Panel Features" on page 10. For additional information about server module indicators, LED lamp test, server module removal, power procedures, and front panel cable connections, refer to the *Sun Blade X4-2B Service Manual* .

Next Steps

- "4. Access Server Module Management Tools" on page 37

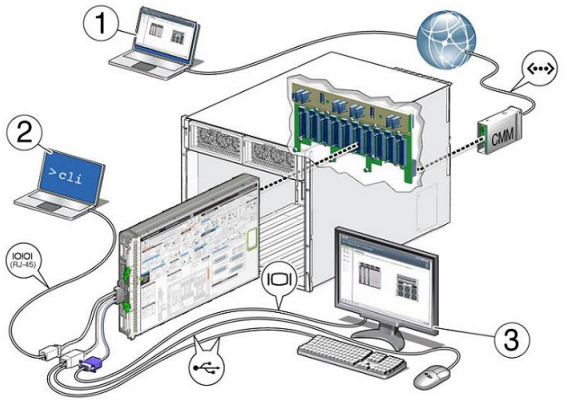
4. Access Server Module Management Tools

The following topics provide information about how to connect the server module for set up:

Connection Option Summary

Choose one of the options in this section to cable the management connection, after the server module is installed in the chassis. After connectivity is established, you can set up the server module through web interface or CLI commands. Use Oracle ILOM and Oracle System Assistant to perform server module administrative tasks.

The following illustration and table shows options to connect the server module.



Choose a method of connecting the server module to a console, as described in the following sections:

No	Set Up Option	Description	Link
1	Remote Ethernet network port console — access Oracle ILOM CLI, web interface, and Oracle System Assistant.	The Ethernet network CMM NET MGT port connects to your remote management network through an RJ-45 cable. From your network console, log in to Oracle ILOM on the CMM using the IP address of the CMM. After log in, navigate to any individual server module SP in a chassis and use Oracle ILOM web interface to administer any server module in the chassis.	"Set Up Server Module Remote Using Ethernet Network Connection" on page 38
2	Local serial terminal — access Oracle ILOM CLI only.	The server module SP UCP port connects through a required multi-port cable RJ-45 serial connector to a terminal device. From your terminal device, log in to the server module SP, using Oracle ILOM CLI, to administer the server module.	"Set Up Server Module Using Local Serial Connection" on page 40
3	Local KVM terminal — access Oracle ILOM CLI, web interface, and Oracle System Assistant.	A USB keyboard and mouse connects to a USB connector on the required multi-port cable. A VGA monitor connects to the 15-pin multi-port cable connector. The multi-port cable connects to the server module SP UCP port for a local KVM (keyboard, video, mouse) connection. From a KVM terminal, log in to Oracle ILOM on the server module SP using the SP CLI or the web interface, to administer the server module.	"Set Up Server Module Using Local KVM Connection" on page 42

▼ Set Up Server Module Remote Using Ethernet Network Connection

Set up a server module remote Ethernet network connection during a first-time chassis set up only. If you are adding a new server module to an operational chassis, skip this procedure.

You can access Oracle ILOM CLI, web interface, and Oracle System Assistant.

Before You Begin

This procedure requires you to have:

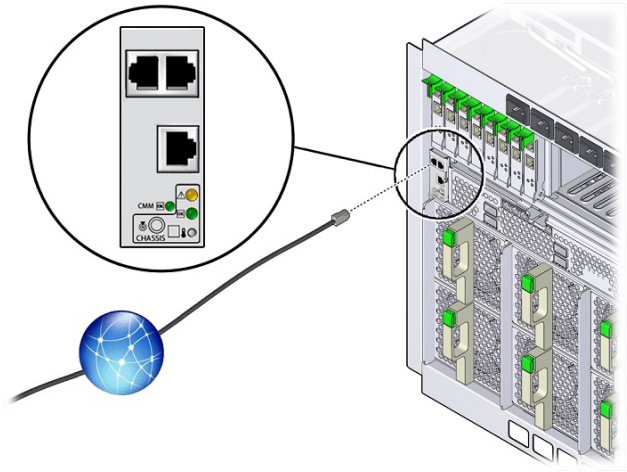
- Physical presence at the server module chassis.
- Access to an Administrator account to log in to Oracle ILOM CLI.
- Access to a network system.
- An SP IP address used to log in to Oracle ILOM with a network connection.

  Choose a method of obtaining a server module SP IP address, as described in the following sections:

  - "Display Server Module Oracle ILOM SP IP Address (Web Interface)" on page 45
  - "Display Server Module Oracle ILOM SP IP Address (CLI)" on page 49

1 Locate the NET MGT 0 port on the chassis CMM.

2 **Attach an RJ-45 Ethernet cable that is connected to the Internet to the CMM NET MGT 0 port.**



3 **Determine the server module Oracle ILOM SP IP Address.**

Skip this step if you have the server module Oracle ILOM SP IP Address available.

Choose a method of obtaining a server module SP IP address, as described in the following sections:

- "Display Server Module Oracle ILOM SP IP Address (Web Interface)" on page 45
- "Display Server Module Oracle ILOM SP IP Address (CLI)" on page 49

4 **Access the server module's service processor (SP).**

Choose a method to access the server module's service processor (SP) Oracle ILOM, as described in the following sections:

- "Log In to Oracle ILOM SP (Web Interface) " on page 52
- "Log In to Oracle ILOM SP (CLI) " on page 53

5 **After log in, navigate to any individual server module SP in a chassis and use Oracle ILOM CLI or web interface to administer any server module in the chassis.**

You can access Oracle ILOM CLI, web interface, and Oracle System Assistant.

More Information

Related Information

- "4. Access Server Module Management Tools" on page 37

▼ Set Up Server Module Using Local Serial Connection

Before You Begin

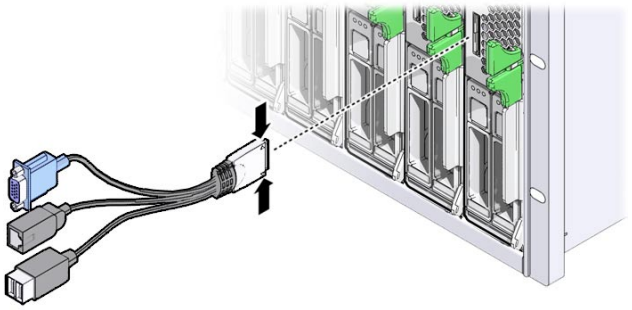
This procedure requires you to have:

- Physical presence at the server module chassis.
- Access to an Administrator account to log in to Oracle ILOM CLI.
- Access to a terminal device or terminal emulator and RJ-45 serial cable.
- A multi-port cable for server module connection.

You do not need an SP IP address to log in to Oracle ILOM using a serial connection and CLI.

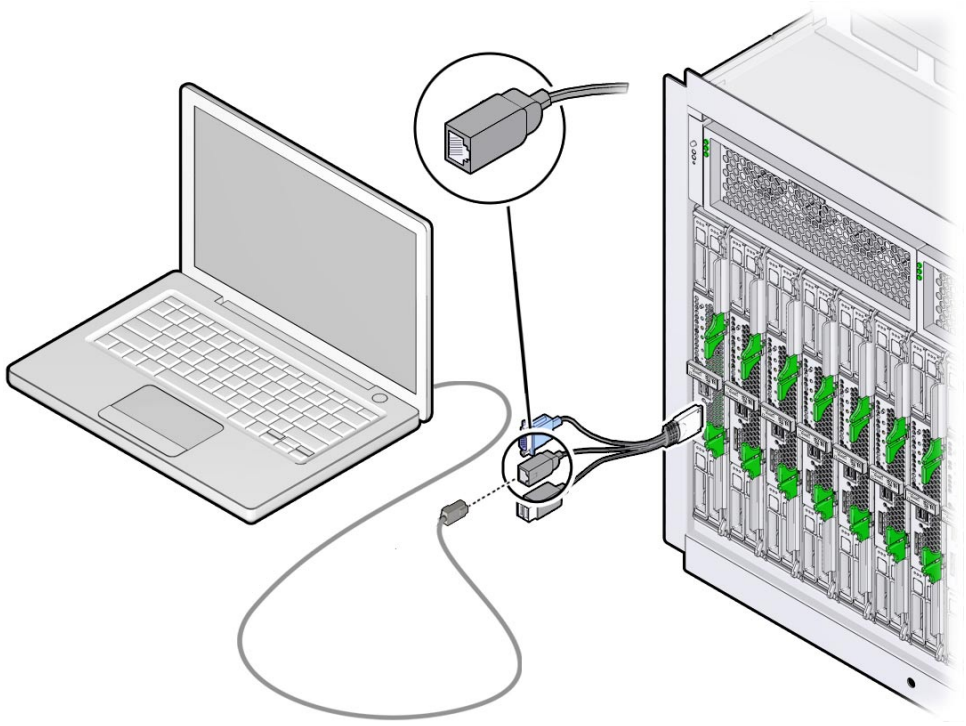
To set up the server module with Oracle ILOM CLI through a local front panel serial connection:

1 **Attach the multi-port universal connector port (UCP) connector to the UCP port on the server module front panel.**



Caution – Cable or connector damage hazard. Use the multi-port cable for configuration and service purposes. Disconnect the multi-port cable from the server module after the configuration or service operation is complete to avoid damaging the cable or connector.

2 **Attach a terminal device or terminal emulator RJ-45 serial cable to the SER MGT port on the multi-port cable.**



3 **Ensure that the following serial communication settings are configured at your terminal device or terminal emulator:**

- 8N1: eight data bits, no parity, one stop bit
- 9600 baud (default—do not change)
- Disable hardware flow control (CTS/RTS)

4 **Press Enter at the terminal device to establish a serial console connection to the server's Oracle ILOM.**

A login prompt for Oracle ILOM appears. For example:

`SP-`*`productserialnumber`* `login:`

5 **Type a user name and password for the Administrator account.**

The default Oracle ILOM Administrator account user name is **`root`** and the password is **`changeme`**.

The Oracle ILOM CLI prompt (`->`) appears.

You are now logged in to the server module Oracle ILOM CLI.

- **If the default Administrator account has been changed, contact your system administrator for an Oracle ILOM user account with administrator privileges.**

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

6 **Manage the server module and configure Oracle ILOM.**

For more information about how to use the CLI interface to configure Oracle ILOM, refer to the Oracle ILOM 3.1 documentation library at `http://www.oracle.com/goto/ILOM/docs`

7 **(Optional) Connect to the server module serial console host using Oracle ILOM command-line interface.**

See "Accessing the Host Console " on page 54.

▼ Set Up Server Module Using Local KVM Connection

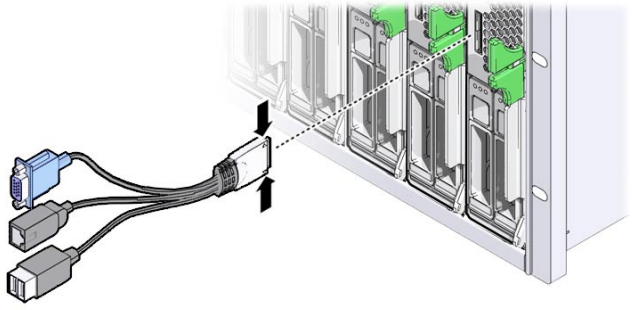
Before You Begin This procedure requires you to have:

- Physical presence at the server module chassis.
- Access to an Administrator account to log in to Oracle ILOM CLI.
- An SP IP address to log in to Oracle ILOM using a KVM connection.
- A VGA monitor available for KVM connection. A VGA monitor connects to the 15-pin multi-port cable connector.
- A USB keyboard and mouse available for KVM connection.
- A multi-port cable for server module connection.

You can access Oracle ILOM (CLI), Oracle ILOM (web interface), and Oracle System Assistant through KVM.

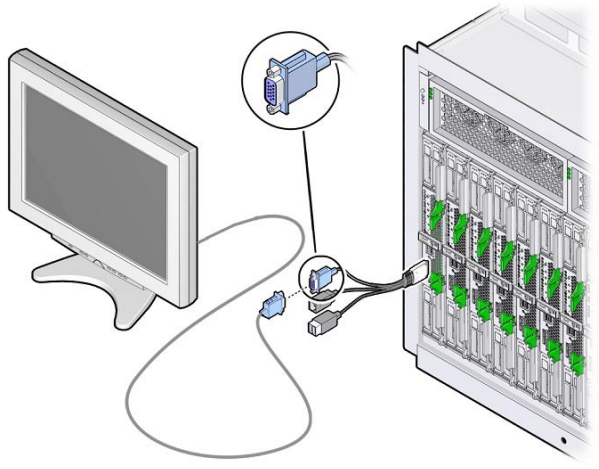
To set up the server module KVM console locally:

1 **Attach the multi-port cable's universal connector port (UCP) to the UCP port on the server module front panel.**

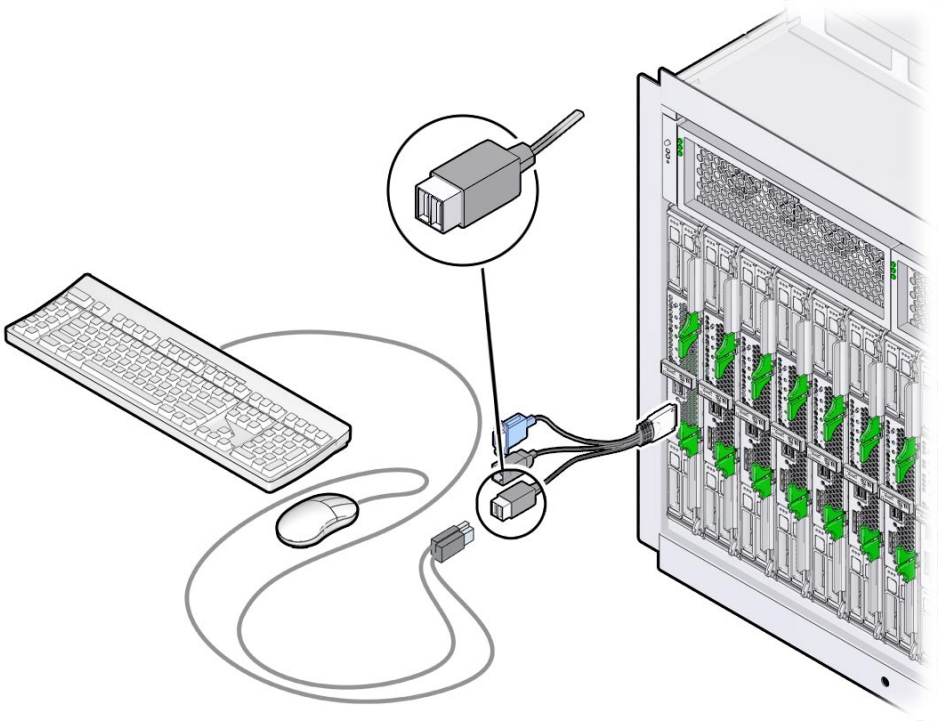


Caution – Cable or connector damage possible. Use the multi-port cable for configuration and service purposes. Disconnect the multi-port cable from the server module after the configuration or service operation is complete to avoid damaging the cable or connector.

2 **Attach the VGA monitor cable to the DB–15 video connector on the multi-port cable.**



3 Attach a USB keyboard and a USB mouse to the two USB connectors on the multi-port cable.



4 Determine the server module Oracle ILOM SP IP Address.

Skip this step if you have the server module Oracle ILOM SP IP Address.

Choose a method to obtain the server module SP IP address, as described in the following sections:

- "Display Server Module Oracle ILOM SP IP Address (Web Interface)" on page 45
- "Display Server Module Oracle ILOM SP IP Address (CLI)" on page 49

5 Log in to Oracle ILOM.

Choose a method to access the server module's service processor (SP) Oracle ILOM, as described in the following sections:

- "Log In to Oracle ILOM SP (Web Interface) " on page 52
- "Log In to Oracle ILOM SP (CLI) " on page 53

6 Manage the server module and configure Oracle ILOM.

Refer to the Oracle ILOM 3.1 documentation library for more information about how to configure Oracle ILOM, see `http://www.oracle.com/goto/ILOM/docs`.

Accessing Oracle ILOM

This section describes how to access the Oracle Integrated Lights Out Manager (ILOM) and set up the service processor (SP) network configuration for your server module.

The following table provides information about Oracle ILOM setup tasks.

Task	Link
Determine Server Module Oracle ILOM SP IP Address. (KVM and Network connections only)	"Determining Server Module Oracle ILOM SP IP Address" on page 45
Log in to Oracle ILOM web interface.	"Log In to Oracle ILOM SP (Web Interface) " on page 52
Log in to Oracle ILOM CLI.	"Log In to Oracle ILOM SP (CLI) " on page 53
Access the host console through Oracle ILOM. (Optional)	"Accessing the Host Console " on page 54

Determining Server Module Oracle ILOM SP IP Address

Before you access the server module service processor (SP) Oracle ILOM through a network or KVM connection, first obtain the server module's Oracle ILOM SP IP address.

Choose a method of obtaining a server module SP IP address, as described in the following sections:

- "Display Server Module Oracle ILOM SP IP Address (Web Interface)" on page 45
- "Display Server Module Oracle ILOM SP IP Address (CLI)" on page 49

The SP IP address is not required to connect to the server module serial port and log in to Oracle ILOM CLI. Skip this task and see "Log In to Oracle ILOM SP (CLI) " on page 53.

▼ Display Server Module Oracle ILOM SP IP Address (Web Interface)

1 Verify that the chassis CMM is:

- Connected to the network through the Ethernet management port.
- Configured
- Operational

- **If the chassis CMM network connection is not operational, refer to the chassis documentation at `http://www.oracle.com/goto/SB6000/docs`.**

2 Access a web browser.

3 **Type the IP address of Oracle ILOM chassis CMM in the web browser address field.**

Example: `http://10.153.55.140`, press Enter.

The Oracle ILOM web interface Login page appears.

4 **Type the user name and password.**

The default Oracle ILOM Administrator account user name is **`root`**, and the password is **`changeme`**.

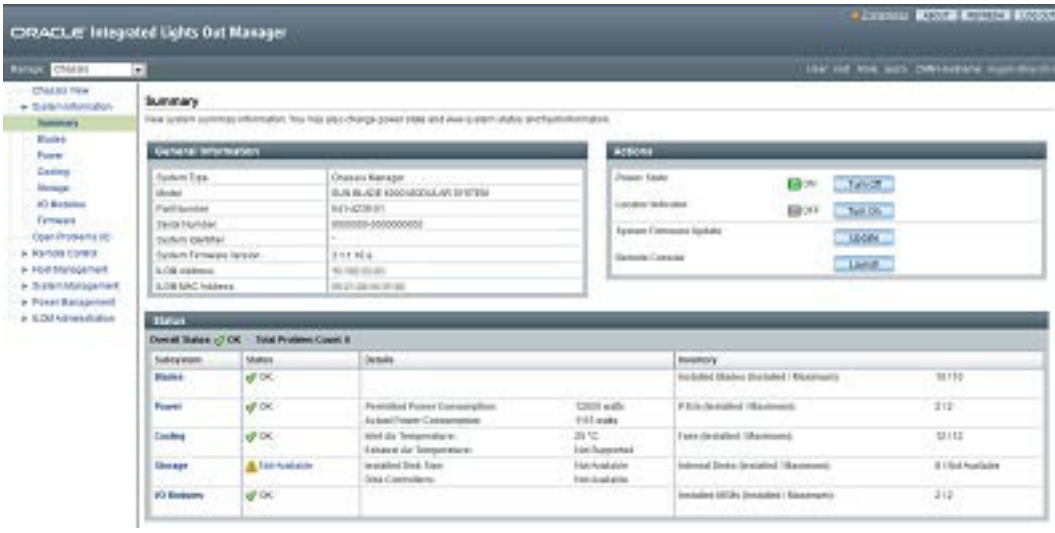
- **If this default Administrator account has been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.**

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

---

5 Click Log In.

The System Summary page appears.

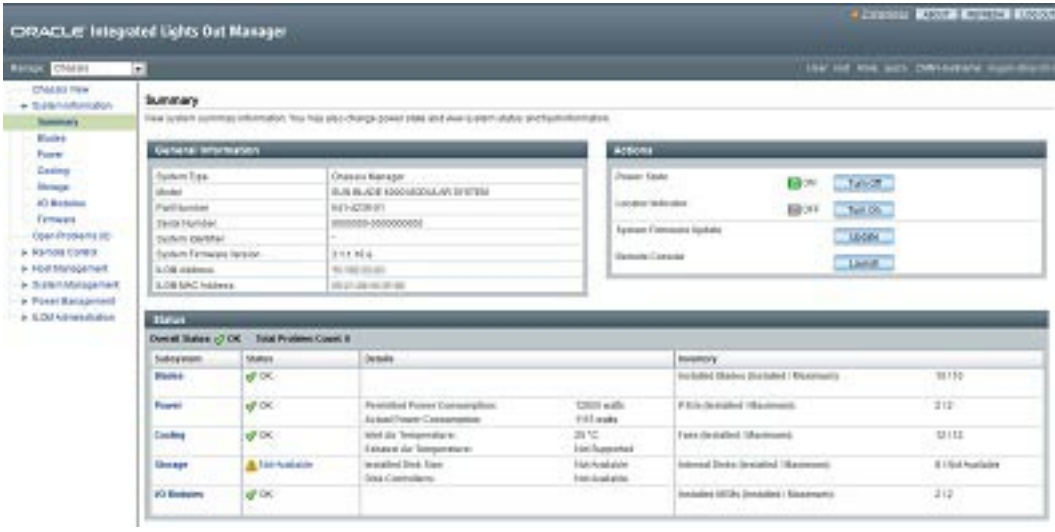


6 Click Chassis View in the upper left pane.

The Chassis View page appears with the blade server modules.

7 **Click the image of the blade in the chassis that you want to view.**

The blade Summary page appears.



The Oracle ILOM SP address appears in the General Information table, labeled ILOM Address.

8 **View the Oracle ILOM SP address in the General Information area, ILOM Address field.**

9 **Note the server module's SP IP address.**

You must have the server module SP IP address to log in directly to the server module Oracle ILOM over the network. The IP address of the server module SP is configured using DHCP.

Next Steps

- "Log In to Oracle ILOM SP (Web Interface) " on page 52

▼ Display Server Module Oracle ILOM SP IP Address (CLI)

Use the chassis Oracle ILOM CMM to:

- Display a server module service processor network configuration that includes the server module Oracle ILOM SP IP address.
- Verify that you can access a server module's Oracle ILOM SP through Oracle ILOM CMM.
- Verify that a server module's Oracle ILOM is working correctly.

To display the server module Oracle ILOM SP IP Address (CLI) by using the chassis Oracle ILOM CMM:

1 **Verify that the chassis Oracle ILOM CMM is operational:**

- Connected to the network through the Ethernet management port.
- Configured
- Operational

- **If the chassis Oracle ILOM CMM is not working correctly, refer to the chassis documentation at `http://www.oracle.com/goto/SB6000/docs`.**

2 Open a terminal window.

3 Log in to the chassis Oracle ILOM CMM using a Secure Shell (SSH) session.

For example, type:

`$ ssh` *username*`@`*CMMIPaddress*

where *username* is a user account with Administrator privileges and the *CMMIPaddress* is the IP address of the Oracle ILOM CMM. The default Oracle ILOM Administrator account user name is **`root`**.

- **If this default Administrator account has been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.**

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

After successful log in to Oracle ILOM CMM, the Oracle ILOM prompt (`->`) appears.

4 Type:

```
-> show /CH/BL0/SP/network
```

where `BL0` represents a Sun Blade X4-2B slot 0 in the chassis.

Oracle ILOM CMM displays properties of the server module, including its IP address and MAC address. The following example shows blade 0 server module information:

```
-> show /CH/BL0/SP/network
   /CH/BL0/SP/network
    Targets:
        interconnect
        ipv6
        test

    Properties:
        commitpending = (Cannot show property)
        dhcp_server_ip = 10.134.210.11
        ipaddress = 10.134.210.152
```

```
        ipdiscovery = dhcp
        ipgateway = 10.134.210.254
        ipnetmask = 255.255.255.0
        macaddress = 00:21:28:BB:D7:22
        managementport = /SYS/SP/NET0
        outofbandmacaddress = 00:21:28:BB:D7:22
        pendingipaddress = 10.134.210.152
        pendingipdiscovery = dhcp
        pendingipgateway = 10.134.210.254
        pendingipnetmask = 255.255.255.0
        pendingmanagementport = /SYS/SP/NET0
        sidebandmacaddress = 00:21:28:BB:D7:23
        state = enabled

    Commands:
        cd
        set
        show
->
```

5 **View the Oracle ILOM SP address in the Properties list.**

For example: `ipaddress = 10.134.210.152`.

6 **Note the network configurations, including the server module's SP IP address.**

You need to know the SP IP address to log in directly to a server module Oracle ILOM.

7 **(Optional) Set a static IP address.**

By default, the IP address of the server module SP is configured using DHCP.

- **To set a static IP address, refer to the Oracle ILOM 3.1 documentation.**
  `http://www.oracle.com/goto/ILOM/docs`

8 **To log out of Oracle ILOM CMM, type:**

```
-> exit
```

Next Steps

- "5. Set up Server Module Software and Firmware (Oracle System Assistant)" on page 59

Access Server Module SP Oracle ILOM

Choose a method to access a server module's service processor (SP) Oracle ILOM, as described in the following sections:

- "Log In to Oracle ILOM SP (Web Interface) " on page 52
- "Log In to Oracle ILOM SP (CLI) " on page 53

▼ Log In to Oracle ILOM SP (Web Interface)

To log to the server module Oracle ILOM SP web interface through an Ethernet Connection.

1 **Determine the server module SP IP address.**

If you do not know the server module SP IP address, see "Display Server Module Oracle ILOM SP IP Address (Web Interface)" on page 45 to view the server module SP IP address using Oracle ILOM CMM.

2 **Access a web browser.**

a. **To improve response times, disable the web browser proxy server (if used).**

3 **Type the Oracle ILOM SP IP address for the server module in the web browser. The Oracle ILOM web interface Login page appears.**

4 **Type your user name and password.**

The default Oracle ILOM Administrator account user name is **root**, and the password is **changeme**.

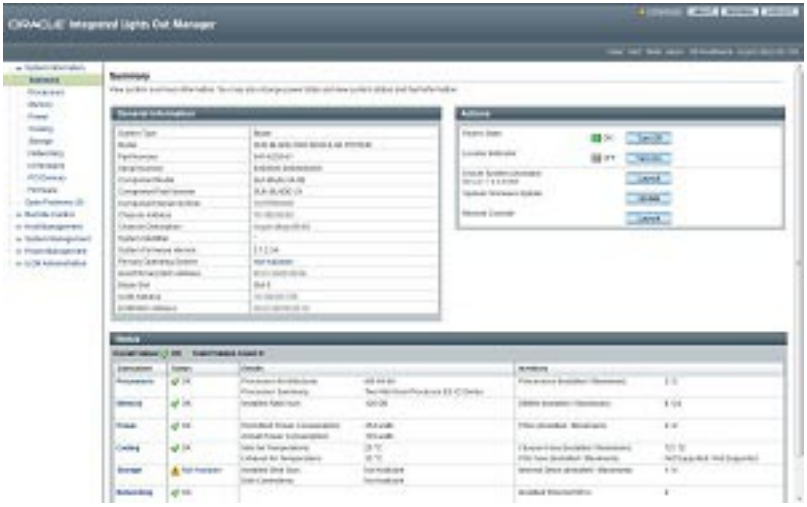
- **If this default Administrator account has been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.**

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

---

5 **Click Log In.**

The Summary page appears.



You are now logged in to the server module's Oracle ILOM web interface through an Ethernet Connection.

Refer to the Oracle ILOM 3.1 documentation library for more information about how to use Oracle ILOM web interface. See `http://www.oracle.com/goto/ILOM/docs`.

Next Steps

- "5. Set up Server Module Software and Firmware (Oracle System Assistant)" on page 59

▼ Log In to Oracle ILOM SP (CLI)

To log to the server module Oracle ILOM SP CLI Interface through an Ethernet connection.

1 **Determine the server module SP IP address.**

If you do not know the server module SP IP address, see "Display Server Module Oracle ILOM SP IP Address (CLI)" on page 49 to view the server module SP IP address using Oracle ILOM CMM.

2 **Access a terminal window.**

3 **Log in to the server module Oracle ILOM SP using a Secure Shell (SSH) session.**

For example, type:

```
$ ssh username@SPIPaddress
```

where *username* is a user account with Administrator privileges, and the *SPIPaddress* is the IP address of the server module service processor.

The default Oracle ILOM Administrator account user name is **root**, and the password is **changeme**.

After a successful log in to the server module Oracle ILOM, the Oracle ILOM prompt (->) appears.

- **If the server module SP IP address is incorrect, see "Display Server Module Oracle ILOM SP IP Address (CLI)" on page 49 to view the server module SP IP address using Oracle ILOM CMM.**
- **If this default Administrator account has been changed, contact your system administrator for an Oracle ILOM user account with administrator privileges.**

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

---

4 **Use Oracle ILOM CLI to configure Oracle ILOM and manage the server module.**

Refer to Oracle ILOM 3.1 documentation for more information about how to use the CLI interface to configure Oracle ILOM. See `http://www.oracle.com/goto/ILOM/docs`.

Next Steps

- "5. Set up Server Module Software and Firmware (Oracle System Assistant)" on page 59

Accessing the Host Console

Connecting to a server module host console through Oracle ILOM allows you to perform actions as if you were at the host.

Connect to a server module host console to perform the following tasks:

- Access the server module BIOS setup program remotely
- Install an OS on the server module.
- Configure an OS on the server module.
- Configure or install other software on the server module.

To connect to a server module host console, choose one of the following methods:

- "Access Host Console (CLI)" on page 55
- "Access Remote Host Console" on page 55
- Access the server module serial console using Oracle ILOM command-line interface. See "Set Up Server Module Using Local Serial Connection" on page 40.

- Access the Remote Console feature of Oracle ILOM web interface.
  See "Access Remote Host Console" on page 55.

▼ Access Host Console (CLI)

To connect to the server module serial console using Oracle ILOM command-line interface:

1 **Log in to a server module's Oracle ILOM using an account with Administrator privileges.**

Choose one of the following methods:

- Serial management port, see "Log In to Oracle ILOM SP (CLI) " on page 53.
- Client system network SSH session, continue with this task.

2 **To access the host serial console, type:**

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

The serial console output appears on the screen.

Note – If the serial console is in use, stop the console session with the **`stop /HOST/console`** command followed by the **`start /HOST/console`** command.

---

3 **To return to the Oracle ILOM console, press Esc followed by the (character (Shift-9).**

Next Steps

- "Configuring Preinstalled Oracle Solaris OS" on page 75
- "Configuring Preinstalled Oracle VM Software" on page 83

▼ Access Remote Host Console

Before You Begin

Before you connect to the host console from a remote system, verify that the remote system meets the following requirements:

- An operating system, such as Oracle Solaris, Oracle Enterprise Linux, or Windows, is installed in the remote system.
  - If the remote system is running Oracle Solaris OS, disable volume management. Disabling allows the remote console to access the physical floppy and CD/DVD-ROM drives.
  - If the remote system is running Windows OS, disable Internet Explorer Enhanced Security.
- The remote system is connected to a network with access to the CMM Ethernet management port.
- Java Runtime Environment (JRE) 1.5 or later is installed.

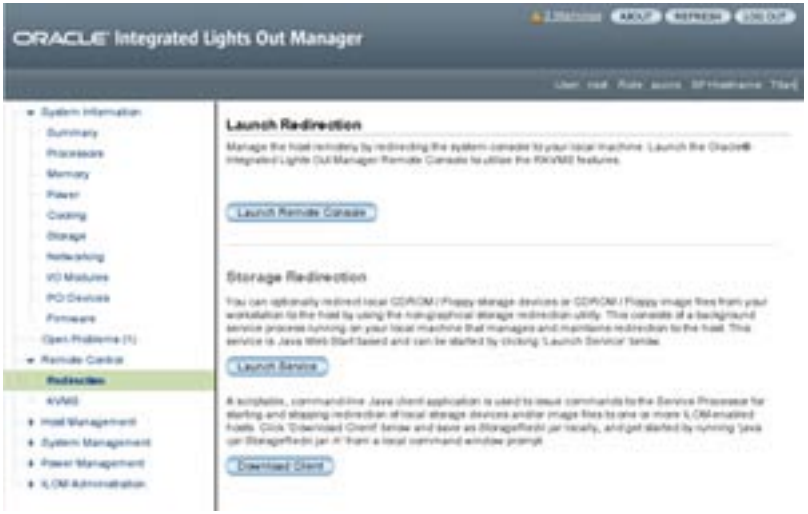
- If CD-ROM redirection is enabled, 32-bit Java is installed.
- The Remote Console system is operational.
- The server module Oracle ILOM service processor is operational. Refer to Oracle ILOM 3.1 documentation, see `http://www.oracle.com/goto/ILOM/docs`.

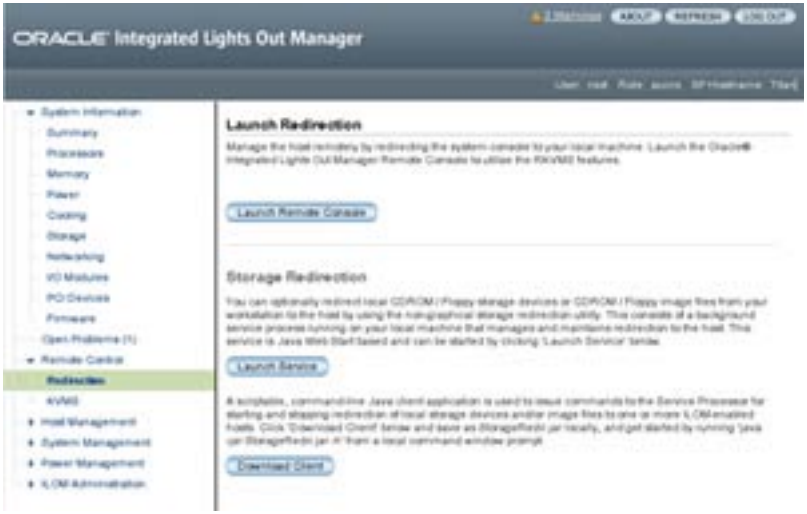
To connect to the host console from a remote system.

1. **Access a web browser on a remote system that meets the prerequisites.**

2. **Log in to a server module's Oracle ILOM from a web browser.**
   See "Log In to Oracle ILOM SP (Web Interface) " on page 52.

3. **Click Remote Control > Redirection.**
   The Launch Redirection screen appears.





4 **Verify that the mouse mode is set to Absolute mode in the Mouse Mode Settings tab.**

5 **Click Launch Remote Console.**

- **If a warning or login dialog box appears after you click Launch Remote Console, do the following:**
  - Hostname Mismatch warning dialog box when using a Windows system for Remote Console system redirection: Click the **Yes** button to clear.

  - Remote Control login dialog box:
    a. Reenter your user name.
    b. Reenter your password.
    c. Click OK.

The Oracle ILOM Remote Console screen appears.

6 **To redirect devices on your remote system to the host console.**

a. **Select the Devices menu**

b. **Check devices to redirect.**

The following table describes devices to redirect.

Devices	Select to redirect the server to the ...
Remote Physical Floppy Disk	Physical floppy drive attached to the remote system.
Remote Floppy Image	Floppy image file located on the remote system.
Remote Physical CD/DVD	Disc in the CD/DVD drive attached to the remote system.
Remote CD/DVD Image	`.iso` image file located on the remote system.

Note – Using CD/DVD physical or image options to install server software can significantly increase installation time. The installation duration depends on network connectivity and traffic because content is accessed over the network.

Next Steps ■ "5. Set up Server Module Software and Firmware (Oracle System Assistant)" on page 59

5. Set up Server Module Software and Firmware (Oracle System Assistant)

This section describes how to set up Sun Blade X4-2B server module software and firmware using Oracle System Assistant. Oracle System Assistant is the easiest method for setting up your server module software and firmware.

Use Oracle System Assistant to set up software and firmware as shown in the following table.

Task	Link
Launch Oracle System Assistant from Oracle ILOM or locally.	"Accessing Oracle System Assistant" on page 59
Use Oracle System Assistant to perform common setup tasks.	"Set Up Software and Firmware (Oracle System Assistant)" on page 62

Refer to the *Oracle X4 Series Server Administration Guide* for additional setup procedures if:

- Oracle System Assistant is not embedded on your server module,
- You prefer to use Oracle ILOM for system set up,
- You prefer to use Oracle Hardware Management Pack for system set up,

Accessing Oracle System Assistant

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

- "Launch Oracle System Assistant (Oracle ILOM)" on page 59
- "Launch Oracle System Assistant (Locally)" on page 61

▼ Launch Oracle System Assistant (Oracle ILOM)

To launch Oracle System Assistant, using Oracle ILOM, from a remote or local location:

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

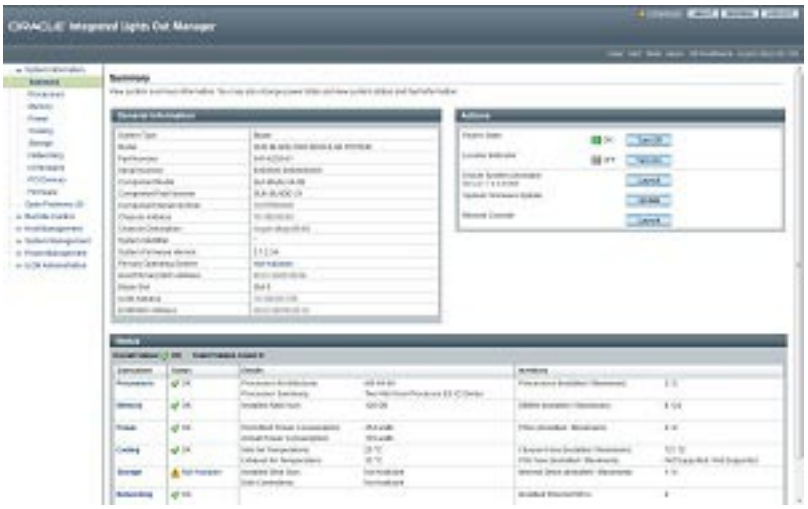
In server module standby mode, the Power/OK LED blinks slowly.

Verify that the Power/OK LED blinks slowly. See: "Front Panel Features" on page 10.

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

See "Log In to Oracle ILOM SP (Web Interface) " on page 52.

The System Summary screen appears.



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

   A dialog box that requests to run a Oracle ILOM Remote Console session appears.

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

   Please wait while the server initializes. This may take several minutes.

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

Next Steps

- "Set Up Software and Firmware (Oracle System Assistant)" on page 62

▼ Launch Oracle System Assistant (Locally)

Before you begin to launch Oracle System Assistant locally, you must be physically present with the Sun Blade X4-2B and have access to the following:

- Multi-port UCP cable
- VGA monitor
- USB Keyboard
- USB Mouse

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

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

Verify that the Power/OK LED blinks slowly. See: "Front Panel Features" on page 10

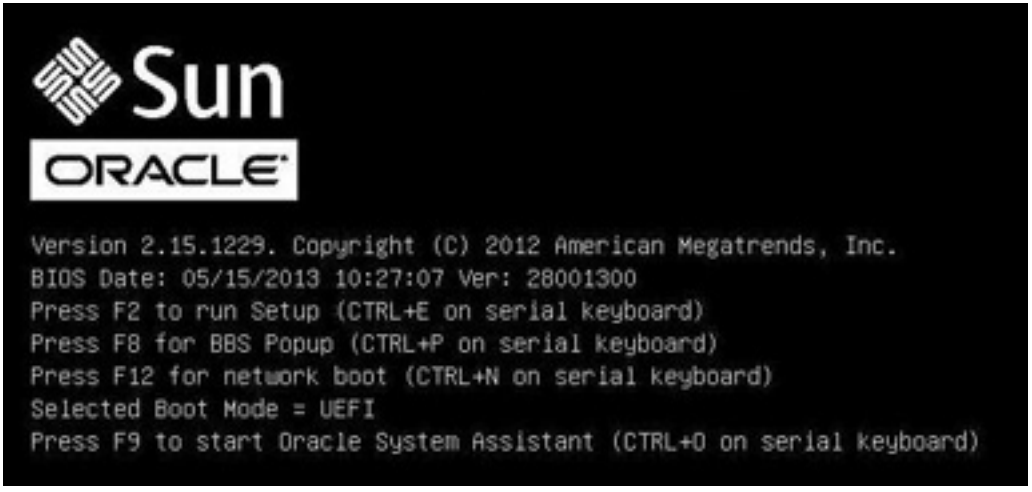
2 **Connect locally to the server module.**

See: "Set Up Server Module Using Local KVM Connection" on page 42.

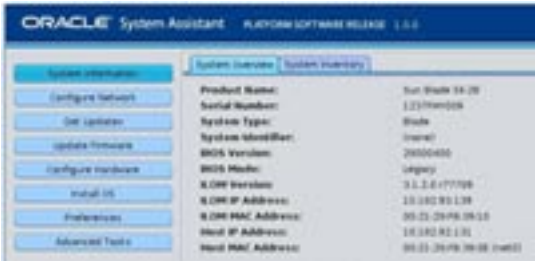
3 **Press the front-panel Power button to power on the server to full power mode.**

- The server module boots.
- POST messages appear on the monitor.

4 **After you see the POST message for Oracle System Assistant, press the F9 function key.**



- Oracle System Assistant boots.
- Oracle System Assistant main screen appears.



Next Steps

- "Set Up Software and Firmware (Oracle System Assistant)" on page 62

▼ Set Up Software and Firmware (Oracle System Assistant)

To set up software and firmware for the Sun Blade X4-2B using Oracle System Assistant.

1. **Launch Oracle System Assistant.**

   Choose one of the following methods:

   - "Launch Oracle System Assistant (Oracle ILOM)" on page 59
   - "Launch Oracle System Assistant (Locally)" on page 61

   The Oracle System Assistant application boots.

   The Oracle System Assistant main screen appears.

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

   Refer to *Oracle X4 Series Server Administration Guide* or the embedded help on Oracle System Assistant for more information about using Oracle System Assistant.

Step	Task	Oracle System Assistant Screen
1	Set up Oracle System Assistant network connection.	Network Configuration
2	Get latest software and firmware updates.	Get Updates
3	Update Oracle ILOM, BIOS, disk expander, or HBA firmware, if needed.	Update Firmware
4	Configure Oracle ILOM.	Configure Hardware > Service Processor Configuration
5	Configure RAID.	Configure Hardware > RAID Configuration
6	Install an operating system, such as Oracle Solaris, Linux, Windows, or Oracle VM software. **Note –** For more information, see the OS installation guide for the OS that you plan to install.	Install OS

Next Steps

- "6. Configure Server Module Drives for OS Installation" on page 63

6. Configure Server Module Drives for OS Installation

If you plan to install an operating system on the server module, you might need to prepare server module storage disk hard drives.

You typically create a volume using Oracle System Assistant. LSI configuration utilities can be used for most set up options also.

- "Identifying REM Host Bus Adapters" on page 64
- "SG-SAS6-R-REM-Z Host Bus Adapter" on page 65
- "SG-SAS6-REM-Z Host Bus Adapter" on page 67
- "Configure Storage Drives (LSI Configuration Utilities)" on page 68

Do *not* perform this task if you plan to:

Option	Link
Configure preinstalled Oracle Solaris operating system.	"Configuring Preinstalled Oracle Solaris OS" on page 75
Configure preinstalled Oracle Linux operating system.	"Configuring Preinstalled Oracle Linux OS" on page 91

Option	Link
Configure preinstalled Oracle VM software.	"Configuring Preinstalled Oracle VM Software" on page 83
Create RAID volumes after you have installed the OS.	*Sun Blade X4-2B Service Manual*.

Identifying REM Host Bus Adapters

The following REM host bus adapters (HBAs) are supported for the Sun Blade X4-2B. To configure server module drives, choose a topic link for the REM HBA option that is installed on your Sun Blade X4-2B server module from the following table.

Option	REM HBA Product Name	OSA Name	Link
1	SG-SAS6-**R**-REM-Z (Sun Storage 6 Gb SAS REM **RAID** HBA)	Sun Storage 6 Gb SAS PCIe RAID HBA	"SG-SAS6-R-REM-Z Host Bus Adapter" on page 65
2	SG-SAS6-REM-Z (Sun Storage 6 Gb SAS REM HBA)	SGXSAS6INTZ	"SG-SAS6-REM-Z Host Bus Adapter" on page 67

The following table describes both REM host bus adapter supported features for the Sun Blade X4-2B.

Feature	SG-SAS6-R-REM-Z	SG-SAS6-REM-Z
RAID 0	RAID 0 (OSA)	RAID 0 (OSA)
RAID 1	RAID 1 (OSA)	RAID 1 (OSA)
RAID 10	RAID 10 (OSA)	RAID 10 (OSA)
RAID 5, 6, 50, 60	RAID 5, 6, 50, 60 (LSI utility)	NA
Set volume as a boot device	Yes	No
Display if a volume is the boot device	Yes	No
Display disk state (good, bad, hotspare)	Yes	No
RAID volume configuration required	Yes	No

SG-SAS6-R-REM-Z Host Bus Adapter

Use this section to configure a storage drive for OS installation if you have the SG-SAS6-*R*-REM-Z (also known as Sun Storage 6 Gb SAS REM RAID HBA, Sun Storage 6 Gb SAS PCIe RAID HBA) installed on your server module.

Note – When using the SG-SAS6-R-REM-Z HBA, you *must* create a volume before installing an OS. The system BIOS does not recognize a drive connected to SG-SAS6-R-REM-Z unless it has a RAID volume on it (can be RAID0). If there is more than a single volume on the drive, install the OS on a bootable volume.

To create a RAID volume with the disk before installing an operating system, choose one of the following methods:

- "Configuring Storage Drives: SG-SAS6-R-REM-Z (Oracle System Assistant)" on page 65
- "Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69

The Sun Storage 6 Gb SAS PCIe RAID HBA name is supported by Oracle System Assistant.

The Sun Storage 6 Gb SAS PCIe RAID HBA set up in Oracle System Assistant has the following options:

- Supports RAID 0 with one or more hard drives
- Supports RAID 1 with two or more hard drives per volume
- Can set a volume as a boot device
- Can display if a volume is the boot device
- Can display the state of a disk (good, bad, hotspare)

See "Configure Storage Drives SG-SAS6-REM-Z (Oracle System Assistant)" on page 67 for instructions on preparing the storage drives with Oracle System Assistant.

▼ Configuring Storage Drives: SG-SAS6-R-REM-Z (Oracle System Assistant)

You can use the Oracle System Assistant RAID Configuration task to prepare a disk for operating system installation. Oracle System Assistant is the easiest way to prepare the disk for operating system installation.

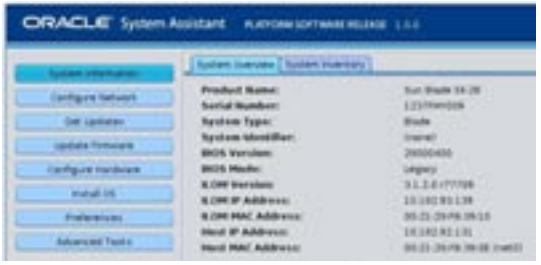
To prepare server hard drives for an OS installation, create a bootable volume for the REM. To configure the SG-SAS6-R-REM-Z, in Oracle System Assistant System, use RAID 0 or 1 only.

Before You Begin Verify that SG-SAS6-R-REM-Z is installed on the server. See "Identifying REM Host Bus Adapters" on page 64.

1 Launch Oracle System Assistant.

See "Accessing Oracle System Assistant" on page 59.

The Oracle System Assistant System Overview screen appears.



2 **Click `Configure Hardware`.**

The Configure Hardware RAID Configuration screen appears.

3 **From the HBA drop-down list, select the host bus adapter (HBA).**

SG-SAS6-R-REM-Z

4 **Select the RAID level.**

SG-SAS6-R-REM-Z: Use RAID 0, 1, or 10

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

5 **From the list in the Available Disks section, select the disks to include in the volume.**

6 **Click `Create Volume`.**

The volume appears in the Created Volumes section list after the volume is created.

7 **Click `Volume Details`.**

Type a volume name.

8 **(Optional for SG-SAS6-R-REM-Z HBA) Set the volume as bootable.**

- **In the Created Volumes section, select the volume that you just created.**
- **Click `Set Volume for Boot`.**

Note – Skip this step for the SG-SAS6-REM-Z HBA.

Next Steps

- "7. Set Up an Operating System and Drivers" on page 73

SG-SAS6-REM-Z Host Bus Adapter

Use this section to configure a storage drive for OS installation if you have the Sun Storage 6 Gb SAS REM HBA (SG-SAS6-REM-Z) host bus adapter (HBA) installed on your Sun Blade X4-2B server module.

Creating a RAID volume is optional. You do not need to set the boot disk for the SG-SAS6-REM-Z HBA. For a drive connected to the SG-SAS6-REM-Z HBA, you can install the operating system on an individual disk without creating a RAID volume. The system BIOS automatically recognizes the disk as bootable. The disk will appear in the system BIOS utility as a bootable disk.

The REM SGXSAS6INTZ HBA **cannot**:

- Create a RAID volume level 5, 6, 10, 50, or 60 using Oracle System Assistant
- Set a bootable drive
- Display a bootable drive
- Display the disk state (for example: good, bad, hotspare)

To create a RAID volume with the disk before installing an operating system, choose one of the following methods:

SG-SAS6-REM-Z Installation Options	Link
Create a bootable volume for the REM SGXSAS6INTZ HBA using RAID 0.	"Configure Storage Drives SG-SAS6-REM-Z (Oracle System Assistant)" on page 67
Create a RAID volume level 5, 6, 10, 50, or 60	Not supported.

▼ Configure Storage Drives SG-SAS6-REM-Z (Oracle System Assistant)

Oracle System Assistant is the easiest way to create a RAID 0 volume when two or more hard drives and a SGXSAS6INTZ HBA are installed on the server module. To prepare server hard drives for an OS installation, create a bootable volume for the REM SGXSAS6INTZ HBA using RAID 0.

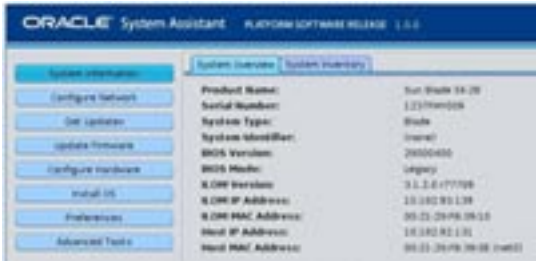
See "Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69 for more set up options.

Before You Begin Verify that SG-SAS6-REM-Z is installed on the server. See "Identifying REM Host Bus Adapters" on page 64.

1. **Launch Oracle System Assistant.**

   See "Accessing Oracle System Assistant" on page 59.

The Oracle System Assistant System Overview screen appears.



2. **Click `Configure Hardware`.**
   The Configure Hardware RAID Configuration screen appears.
3. **From the HBA drop-down list, select the host bus adapter (HBA):**
   SG-SAS6-REM-Z (SGXSAS6INTZ)
4. **Select the RAID level.**
   Use the following configuration for SGXSAS6INTZ: RAID 0
5. **From the list in the Available Disks section, select the disks to include in the volume.**
6. **Click `Create Volume`.**
   The volume appears in the Created Volumes section list after the volume is created.
7. **Click `Volume Details`.**
   Type a volume name.

Next Steps

- "7. Set Up an Operating System and Drivers" on page 73

Configure Storage Drives (LSI Configuration Utilities)

This section contains the following LSI configuration utilities and related tasks to configure storage drives:

To create a RAID volume (virtual drive) with the disk before installing an operating system, choose one of the following methods:

Create a RAID volume (virtual drive) when you:	Link
Use a server configuration RAID volume level 5, 6, 10, 50, or 60 that is not supported by Oracle System Assistant.	"Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69

Create a RAID volume (virtual drive) when you:	Link
Have created more than one RAID volume (virtual drive) with an SG-SAS6-R-REM-Z HBA only after using the LSI WebBIOS Configuration Utility.	"Set RAID Volume (Virtual Drive) as Bootable SG-SAS6-R-REM-Z HBA (LSI WebBIOS Utility)" on page 70
Plan to create RAID volume level 1 or 10 using drives that you will install the OS on.	"Create a RAID Volume using LSI SAS 2 BIOS Configuration Utility " on page 73
Configure a server that does not have Oracle System Assistant installed.	"Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69 or "Create a RAID Volume using LSI SAS 2 BIOS Configuration Utility " on page 73
Prefer not to use Oracle System Assistant.	"Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69 or "Create a RAID Volume using LSI SAS 2 BIOS Configuration Utility " on page 73
Plan to create a RAID volume before installing the OS on the disk.	"Create a RAID Volume using LSI SAS 2 BIOS Configuration Utility " on page 73

▼ Configure Storage Drives (LSI WebBIOS Configuration Utility)

You can use the LSI WebBIOS Configuration Utility instead of Oracle System Assistant to prepare the storage drive for the following conditions:

- The server does not have Oracle System Assistant installed or active.
- You prefer not to use Oracle System Assistant for set up.
- You require a server configuration that is not supported by Oracle System Assistant. Oracle System Assistant supports only RAID 0 and RAID 1 configurations for SAS6-R-REM-Z. For example, use the LSI WebBIOS Configuration Utility to create a RAID volume level 5, 6, 10, 50, or 60 on the disk where the OS will be installed.

To configure storage drives for OS installation using the LSI WebBIOS Configuration Utility:

1 Access the LSI WebBIOS Configuration Utility.

The LSI WebBIOS Configuration Utility resides on the HBA firmware.

Refer to the *MegaRAID SAS Software User's Guide* at:

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

2 **Create one or more RAID volumes (virtual drives).**

Refer to *MegaRAID SAS Software User's Guide* at:

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

3 **(Optional for SG-SAS6-R-REM-Z HBA with more than one RAID volume (virtual drive) only). Select one RAID volume (virtual drive) as the boot volume.**

See "Set RAID Volume (Virtual Drive) as Bootable SG-SAS6-R-REM-Z HBA (LSI WebBIOS Utility)" on page 70.

Note – Follow the instructions in this installation guide at "Set RAID Volume (Virtual Drive) as Bootable SG-SAS6-R-REM-Z HBA (LSI WebBIOS Utility)" on page 70. The *MegaRAID SAS Software User's Guide* does not include instructions to make a drive bootable. The link on the LSI web page is to the *MegaRAID SAS Software User's Guide*.

Next Steps

- "Set RAID Volume (Virtual Drive) as Bootable SG-SAS6-R-REM-Z HBA (LSI WebBIOS Utility)" on page 70

▼ Set RAID Volume (Virtual Drive) as Bootable SG-SAS6-R-REM-Z HBA (LSI WebBIOS Utility)

Perform this procedure to make a RAID volume (virtual drive) bootable only when you have created more than one RAID volume (virtual drive) with an SG-SAS6-R-REM-Z HBA using the LSI BIOS Configuration Utility, as described in "Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69.

Do *not* perform this procedure if you have:

- An SG-SAS6-REM-Z HBA installed.
- Used Oracle System Assistant to create a RAID volume (virtual drive) and made that volume bootable.
- Created only one RAID volume (virtual drive) using the LSI BIOS Configuration Utility.

Before You Begin

Create at least one RAID volume (virtual drive) on the SG-SAS6-R-REM-Z HBA using the LSI BIOS Configuration Utility. See "Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69.

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

2 **Access the LSI SG-SAS6-R-REM-Z HBA BIOS.**

Choose one of the following methods.

- **Skip this step if you have accessed the WebBIOS screen.**

  Note – If you have just created a virtual drive using "Configure Storage Drives (LSI WebBIOS Configuration Utility)" on page 69, you might already be at the WebBIOS screen. If you have exited the WebBIOS utility, restart the WebBIOS main menu.

- **If your system BIOS is running in UEFI boot mode, access the LSI BIOS through the system BIOS Setup utility.**

  Refer to the *Oracle X4 Series Server Administration Guide* for more information.

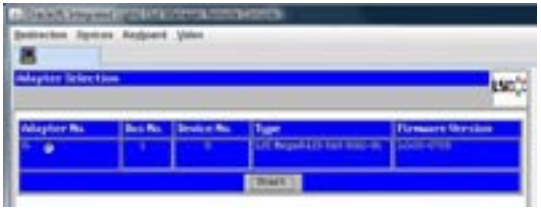
- **If your system BIOS is running in Legacy boot mode:**

  a. **Boot the system, watch the messages as they appear on the screen, and wait for the LSI banner.**

  b. **When prompted on the banner page, press the Control+H key combination.**

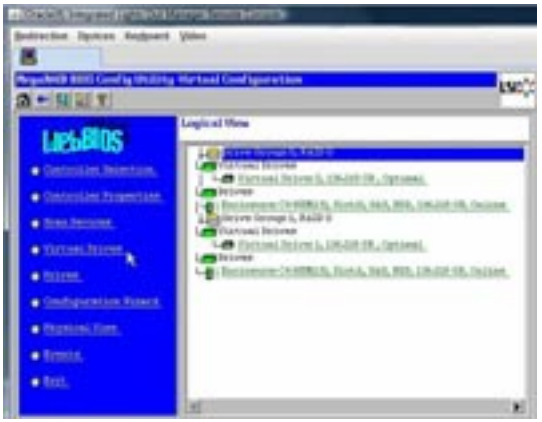
3 **Access the WebBIOS main menu.**

The Adapter Selection screen appears.



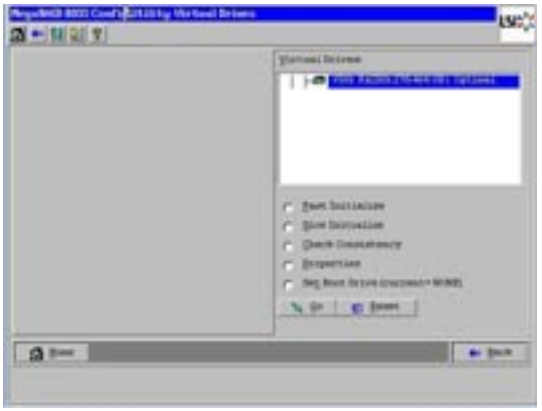
4 **In the Adapter Selection screen, click Start.**

The MegaRAID BIOS Config Utility Virtual Configuration screen appears.



5 **Click Virtual Drives.**

The Virtual Drives screen appears.



6 **Select the virtual drive that you want to make bootable.**

7 **Click Set Boot Drive, and then click Go.**

When the operation is successfully completed, the Set Boot Drive value for this virtual drive shows `(current=selected VD)`.

Next Steps

- "7. Set Up an Operating System and Drivers" on page 73

▼ Create a RAID Volume using LSI SAS 2 BIOS Configuration Utility

The LSI SAS2 BIOS Configuration Utility resides in the HBA firmware. Use the LSI SAS2 BIOS Configuration Utility to create a RAID volume before installing an OS when you want to:

- Create a RAID volume before installing the OS on the disk.
- Create RAID volume level 1 or 10 using the drives that you want to install the OS on (Oracle System Assistant supports only RAID 0 for the SG-SAS6-REM-Z).
- Not use Oracle System Assistant.
- Configure a server does not have Oracle System Assistant installed.

To create a volume with the LSI SAS2 BIOS Configuration Utility:

1. **Refer to the LSI document `SAS Integrated RAID Solutions User's Guide` at: `http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-rem-z.aspx`**
2. **Follow the instructions.**

Next Steps

- "7. Set Up an Operating System and Drivers" on page 73

7. Set Up an Operating System and Drivers

You can configure the preinstalled operating system (OS), or install a supported OS for your server. The following table shows options for installing or configuring an OS.

Installation Options	Link:
Configure preinstalled Oracle Solaris OS	"Configuring Preinstalled Oracle Solaris OS" on page 75
Configure preinstalled Oracle VM	"Configuring Preinstalled Oracle VM Software" on page 83
Configure preinstalled Oracle Linux	"Configuring Preinstalled Oracle Linux OS" on page 91
Install Oracle VM, Windows, or Linux OS Use Oracle System Assistant.	*Oracle X4 Series Server Administration Guide*
Install Oracle Solaris OS	*x86: Sun Blade X4-2B Installation Guide for Oracle Solaris Operating System*
Install VMware ESX	*x86: Sun Blade X4-2B Installation Guide for VMware ESXi*
Install OS drivers for any supported OS	"Install OS or Drivers" on page 74

Install OS or Drivers

To install any supported OS, refer to the instructions in the appropriate OS installation guide:

- *x86: Sun Blade X4-2B Installation Guide for VMware ESXi*
- *x86: Sun Blade X4-2B Installation Guide for Linux Operating Systems*
- *x86: Sun Blade X4-2B Installation Guide for Oracle Solaris Operating System*
- *Sun Blade X4-2B Installation Guide for Oracle VM Server*
- *Sun Blade X4-2B Installation Guide for Windows Operating Systems*

Configuring Preinstalled Oracle Solaris OS

If you plan to use an optional preinstalled Oracle Solaris OS image for your server module, finish the installation by configuring the preinstalled Solaris OS. The Solaris OS image contains all of the necessary drivers for your server.

Note – For information about available versions of preinstalled Oracle operating systems, go to `https://wikis.oracle.com/display/SystemsComm/Sun+Blade+Systems+Products#tab:Operating-Systems`.

The following table describes the tasks necessary for configuring the preinstalled Oracle Solaris OS.

Step	Task	Link
1	Review the BIOS boot mode restriction on the Oracle Solaris preinstalled image.	"Preinstalled Oracle Solaris 11.1 Image BIOS Boot Mode Restriction" on page 75
2	Review RAID limitations on the preinstalled operating system.	"Preinstalled Operating System RAID Limitations" on page 76
3	Review the Solaris OS documentation.	"Oracle Solaris OS Documentation" on page 76
4	Fill out the configuration worksheet for your server environment.	"Configuration Worksheet" on page 76
5	Configure preinstalled Oracle Solaris.	"Configure Preinstalled Oracle Solaris 11" on page 79

Preinstalled Oracle Solaris 11.1 Image BIOS Boot Mode Restriction

The Oracle Solaris 11.1 operating system (OS) image is preinstalled on the server in the Legacy BIOS Boot Mode. Therefore, to use the preinstalled image, you must boot the server in the Legacy BIOS Boot Mode (the default). If you boot the server in the UEFI BIOS Boot Mode, the

server will not boot the Oracle Solaris preinstalled image and it cannot be used. If you want to switch to UEFI BIOS Boot Mode and use Oracle Solaris 11.1, you have to do a fresh install of the Oracle Solaris 11.1 OS.

Preinstalled Operating System RAID Limitations

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

Oracle Solaris OS Documentation

For information about using your Oracle Solaris operating system, go to:
`http://www.oracle.com/technetwork/server-storage/solaris11/documentation/index.html`

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—an asterisk (*) identifies the default
Language	Select from the list of available languages for the OS.	English*
Locale	Select your geographic region from the list of available locales.	English (C - 7-bit ASCII)*
Terminal	Select the type of terminal that you are using from the list of available terminal types.	
Network connection	Is the system connected to a network?	■ Networked ■ Non-networked*
DHCP	Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	■ Yes ■ No*

Required Installation Information	Description	Your Answers—an asterisk (*) identifies the default
If you are not using DHCP, supply the network information	Supply a static IP address for the system. Example: 129.200.9.1	
	Supply the netmask of the subnet. Example: 255.255.0.0	255.255.0.0*
	Enable IPv6 on this machine?	■ Yes ■ No*
Host name	Choose a host name for the system.	
Kerberos	Do you want to configure Kerberos security on this machine? If yes, gather this information: ■ Default realm ■ Administration server ■ First KDC ■ Additional KDCs (optional)	■ Yes ■ No*

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

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

Next Step

"Configure Preinstalled Oracle Solaris 11" on page 79

▼ Configure Preinstalled Oracle Solaris 11

Before You Begin Gather the necessary organizational and network environment information needed to configure the OS. Refer to "Configuration Worksheet" on page 76.

1 Access Oracle ILOM.

If you are not already logged in to Oracle ILOM, log in either locally from a direct serial connection or remotely from an Ethernet connection. See "4. Access Server Module Management Tools" on page 37.

2. **Power on or restart the server:**

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

     - **Oracle ILOM web interface: Click Host Management > Power Control, and then select Power On from the menu.**

     - **Oracle ILOM CLI:**

       a. **Type the following command from the ILOM prompt:**

          ```
          -> start /System
          ```

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

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

          Starting /System
          ```

   - **To restart the server, choose *one* of the following methods:**

     - **Oracle ILOM web interface: Click Host Management > Power Control, and then select Reset from the menu.**

     - **Oracle ILOM CLI:**

       a. **Type the following command from the ILOM prompt:**

          ```
          -> reset /System
          ```

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

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

          Performing hard reset on /System
          ```

   The server module begins the host boot process.

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

   - **Oracle ILOM web interface: Click Remote Control > Launch Remote Console.**
     After the server boots, the GRUB menu appears.

   - **From the Oracle ILOM CLI:**

     a. **Type: `-> start /HOST/console`**

b. When prompted, type y to confirm:

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

The server module boots. After the server boots, the GRUB menu appears.

4 Press the up or down arrow to pause at the GRUB menu.

If you do not press a key within 10 seconds, the default selection is applied (serial port).

```
GNU GRUB Version 0.97 (607K lower / 2087168K)
Oracle Solaris 11 11/11 X86 - Serial Port (ttya)
Oracle Solaris 11 11/11 X86 - Graphics Adapter
```

5 From the GRUB menu, use the up and down arrow keys to select a display option, and press Enter.

You can choose whether you want to continue to direct the display to the serial port or direct the display to a device connected to the video port.

- **To display output to the serial port:**

  ```
  Oracle Solaris 11 11/11 X86 - Serial Port (tty)
  ```

- **To display output to the video port:**

  ```
  Oracle Solaris 11 11/11 X86 - Graphics Adapter
  ```

Note – If you choose to display output to the video port, you must connect a VGA display and input device (USB keyboard and mouse) to a multi-port cable attached to the server module's UCP port. See "Connection Option Summary" on page 37 for information about attaching devices to the server.

---

6 Follow the Oracle Solaris 11 installer onscreen prompts to configure the software using the information you collected earlier about your organization and network environment.

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

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

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

More Information

Related Information

- "Oracle Solaris OS Documentation" on page 76
- "Configuration Worksheet" on page 76

Configuring Preinstalled Oracle VM Software

If you plan to use the optional preinstalled Oracle VM software image on your server module, finish the installation by configuring the pre-installed software. The preinstalled software image contains all of the necessary drivers for your server.

Note – This procedure only pre-installs OVM 3.x Server. Download OVM 3.x Manager, templates and guest OSes from websites.

Note – For information about available Oracle pre-installed operating system versions, go to `https://wikis.oracle.com/display/SystemsComm/Sun+Blade+Systems+Products#tab:Operating-Systems`.

The following table describes the tasks necessary for configuring the pre-installed Oracle VM.

Step	Task	Link
1	Preinstalled Oracle VM Image BIOS Boot Mode Restriction	“Preinstalled Oracle VM Image BIOS Boot Mode Restriction ” on page 84
2	Fill out the Oracle VM Server configuration worksheet for your server environment.	“Oracle VM Server Configuration Worksheet” on page 84
3	Configure preinstalled Oracle VM software.	“Configure Preinstalled Oracle VM Server” on page 85
4	Update the Oracle VM software.	“Updating Oracle VM Software” on page 88
5	Use the Oracle VM operating system.	“Getting Started With Oracle VM” on page 88

Preinstalled Oracle VM Image BIOS Boot Mode Restriction

The Oracle VM Server software image is preinstalled on the server in the Legacy BIOS Boot Mode. Therefore, to use the preinstalled image, you must boot the server in the Legacy BIOS Boot Mode (the default). If you boot the server in the UEFI BIOS Boot Mode, the server will not boot the Oracle VM preinstalled image and it cannot be used. Oracle VM does not support UEFI BIOS. If you want to switch to UEFI BIOS Boot Mode, you must install an operating system that supports UEFI BIOS.

Oracle VM Server 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 VM Server passwords	■ Choose a root password; there are no restrictions on the characters or length. ■ Choose an Oracle VM agent password; password must be at least six characters.	
Network interface	Supply the interface to be used to manage the server.	
Network configuration	Supply the IP address for the server. *A static IP address is required.* 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). *One (and only one) DNS is required.*	
Host name	Supply the fully qualified domain name for the server. Example: *hostname*.oracle.com	

Related Information

- "Configure Preinstalled Oracle VM Server" on page 85

▼ Configure Preinstalled Oracle VM Server

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

Before You Begin Gather the necessary organizational and network environment information needed to configure the software. See "Oracle VM Server Configuration Worksheet" on page 84.

1. **Log in to the server module's Oracle ILOM.**

   Skip this step if you are already logged in to the server module's Oracle ILOM.

   Choose *one* of the following methods:

   - **Remotely from an Ethernet connection**

     See "Set Up Server Module Remote Using Ethernet Network Connection" on page 38.

   - **Locally from a direct serial connection**

     See "Set Up Server Module Using Local Serial Connection" on page 40.

2. **Start the host console.**

   Choose*one* of the following methods:

   - **Oracle ILOM web interface:**

     a. **Click Remote Control > Launch Remote Console.**

     b. **Wait while the server boots, and the GRUB menu appears.**

   - **Oracle ILOM CLI:**

     a. **Type: `-> start /HOST/console`**

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

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

     c. **Wait while the server boots, and the GRUB menu appears.**

     d. **Press the up or down arrow to pause at this menu.**

Note – If you do not press a key within five seconds, the default selection (serial port) is used.

See "Accessing Oracle ILOM" on page 45 for more information about connecting to the Oracle ILOM console web interface.

For more information about connecting to Oracle ILOM console CLI, see "Set Up Server Module Using Local Serial Connection" on page 40.

3 Power on or restart the server:

Choose *one* of the following methods:

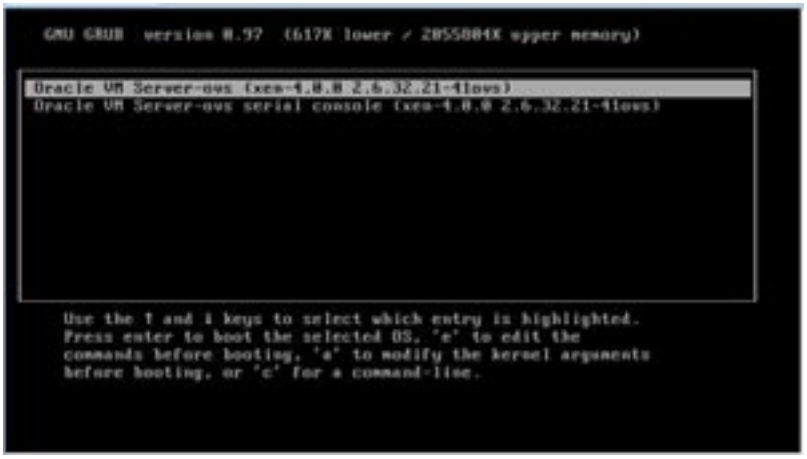
- **Power on the server:**
  - **Oracle ILOM web interface:**
    a. **Click Host Management > Power Control.**
    b. **Click Power On from the menu.**
  - **Oracle ILOM CLI:**
    a. **Type:`-> start /System`**
    b. **When prompted, type y to confirm:**

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

Starting /System
```

- **Restart the server:**
  - **Oracle ILOM web interface:**
    a. **Click Host Management > Power Control,**
    b. **Click Reset from the menu.**
  - **Oracle ILOM CLI:**
    a. **Type `-> reset /System`.**
    b. **When prompted, type y to confirm:**

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

Performing hard reset on /System
```

The server module begins the host boot process. The server boots. The GRUB menu appears.



4 **To pause at the GRUB menu, press any key, other than Enter, within five seconds.**

Note – If you do not press a key within five seconds, the GRUB menu disappears from the screen and the display is directed to the serial port by default.

---

5 **From the GRUB menu, use the up and down arrow keys to select a display option, and press Enter.**

Choose one of the following options.

- **To display output to the video port, select the first option on the list and press Enter:**

  ```
  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 and press Enter:**

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

  Note – If you choose to display output to the video port, you must connect a VGA display and input device (USB keyboard and mouse) to a multi-port cable attached to the server module's UCP port. See "4. Access Server Module Management Tools" on page 37 for information about attaching devices to the server.

  ---

6 **Follow the Oracle VM installer onscreen prompts to configure the software using the organization and network information you collected earlier.**

7. **When installation is complete, end your console session using *one* of the following methods:**
   - **Oracle ILOM web interface: Close the Remote Console window, and then log out of Oracle ILOM.**
   - **Oracle ILOM CLI: Press Esc followed by the (character (Shift+9) to terminate the serial redirect session, and then log out of Oracle ILOM.**
8. **Update your Oracle VM software, if necessary.**
   See "Updating Oracle VM Software" on page 88.

More Information Related Information

- Obtaining Oracle VM Server software. Go to:
  `http://edelivery.oracle.com/linux`
- Obtaining Oracle VM Templates. Go to:
  `http://www.oracle.com/technetwork/server-storage/vm/templates-101937.html`

Updating Oracle VM Software

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

For information about upgrading the Oracle VM software, refer to the Oracle VM documentation. The Oracle VM documentation is available at: `http://www.oracle.com/technetwork/documentation/vm-096300.html`

Getting Started With Oracle VM

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

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

Here are some tips on setting up your Oracle VM environment:

- Two VMs are installed on the server as part of the preinstalled software configuration process: Oracle Solaris and Oracle Linux.
  - The default root password for the Oracle Linux VM is `ovsroot`.

You configure the root password for the Oracle Solaris VM as part of the Oracle Solaris installation procedure.

- The default console password for both VMs is `oracle`.

- Adding your server to an existing server pool, or creating a new one.

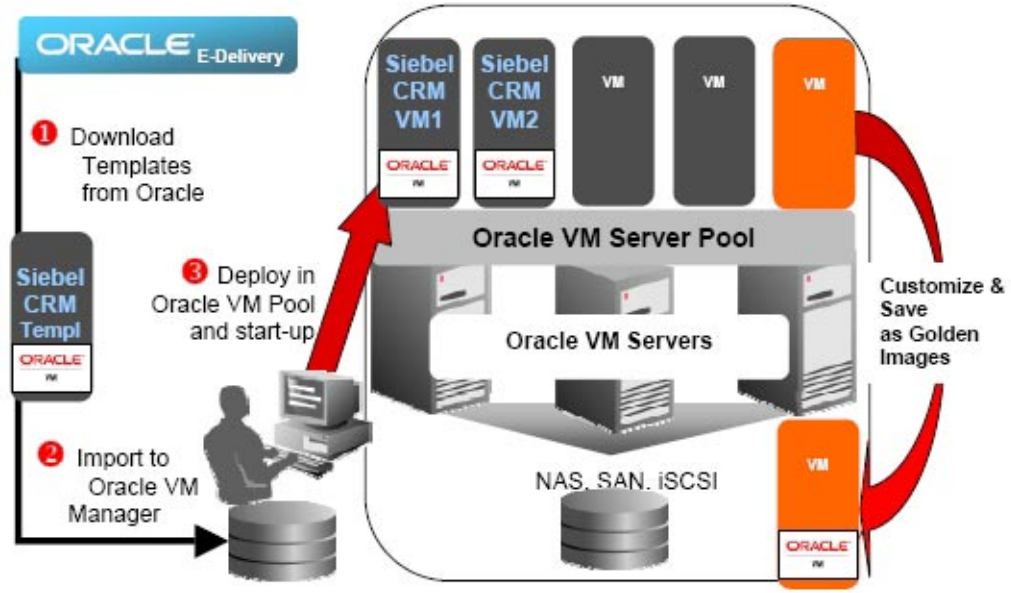
  In a typical Oracle VM deployment, multiple Oracle VM Servers are grouped into server pool. Every server has access to external shared storage. With Oracle VM Server software pre-installed, you can quickly place your server in a pool with shared storage.

  For Oracle VM 3.0, more information about storage and server pools can be found in the Oracle VM documentation at:

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

- Downloading and installing the appropriate Oracle VM Templates for your guest VMs.

  Oracle provides templates that can be used to easily deploy a prebuilt, preconfigured, pre-patched guest virtual machine (or multiple machines depending on the application). Templates are downloaded from Oracle and deployed through Oracle VM Manager.



Templates can contain a complete Oracle software solution, such as Siebel CRM or Oracle Database, including the operating system (Oracle Enterprise Linux) and internally developed or third-party software. You can customize the templates for your specific environment. For more information, go to:

`http://www.oracle.com/technetwork/server-storage/vm/templates-101937.html`

Related Information

- “Oracle VM Server Configuration Worksheet” on page 84
- “Configure Preinstalled Oracle VM Server” on page 85

Configuring Preinstalled Oracle Linux OS

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

Note – For information about available Oracle pre-installed operating system versions, go to `https://wikis.oracle.com/display/SystemsComm/Sun+Blade+Systems+Products#tab:Operating-Systems`.

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

Step	Task	Link
1	Review the BIOS boot mode restriction on the Oracle Linux preinstalled image.	"Preinstalled Oracle Linux Image BIOS Boot Mode Restriction" on page 91
2	Complete the Oracle Linux configuration worksheet for your server environment.	"Oracle Linux Configuration Worksheet" on page 92
3	Configure the preinstalled Oracle Linux OS.	"Configure the Preinstalled Oracle Linux OS" on page 92
4	Update and register the Oracle Linux OS.	■ "Register and Update Your Oracle Linux OS" on page 95 ■ "Registering Oracle Linux and Activating Automatic Update" on page 96

Preinstalled Oracle Linux Image BIOS Boot Mode Restriction

The Oracle Linux 6.x operating system (OS) image is preinstalled on the server in the Legacy BIOS Boot Mode. Therefore, to used the preinstalled image, you must boot the server in the Legacy BIOS Boot Mode (the default). If you boot the server in the UEFI BIOS Boot Mode, the server will not boot the Oracle Linux preinstalled image and it cannot be used. If you want to switch to UEFI BIOS Boot Mode and use Oracle Linux 6.x, you have to do a fresh install of the Oracle Linux 6.x OS.

Oracle Linux Configuration Worksheet

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

Required Installation Information	Description	Your Answers
Oracle Linux root password	Choose a root password that you will use to replace the factory default password; there are no restrictions on the characters or length.	
Network interface	Choose a interface on the server (`eth#`) that will be connected to your network. (Once Linux is up and running, the `ifconfig -a` command can be used to help identify server network ports.)	
Network configuration (if you are not using DHCP)	Supply the IP address for the server. Example: 172.16.9.1	
	If the server is part of a subnet, supply the netmask of the subnet. Example: 255.255.0.0	
	If the server is accessed through a gateway, supply the IP address of the gateway.	
	Supply the IP address for the domain name server (DNS). *One (and only one) DNS is required.*	

Related Information

- "Configure the Preinstalled Oracle Linux OS" on page 92

▼ Configure the Preinstalled Oracle Linux OS

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

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

See "4. Access Server Module Management Tools" on page 37.

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

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

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

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

       ```
       -> start /System
       ```

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

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

       Starting /System
       ```

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

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

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

       ```
       -> reset /System
       ```

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

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

       Performing hard reset on /System
       ```

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.
     ```

4. **The server begins the host boot process. After the server boots, the GRUB menu appears (see example below). Press a key other than Enter to pause, or in 5 seconds the highlighted selection will be 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.
```

5 **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.

---

6 **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**).

7 **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 92.
- Configure a proxy, as needed, for Internet access.
- Register and update your server. See "Register and Update Your Oracle Linux OS" on page 95.
- Install desired packages.

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

- **From the Oracle ILOM web interface, close the Remote Console window, and then log out of Oracle ILOM.**

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

▼ 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, along with information on updates and support policies. If you are a licensed Oracle customer with an active Oracle Linux support subscription, you will receive an Oracle Linux CSI (customer support identifier) number. Use this number to register your server on ULN. Registration requires a CSI number and a valid email address.

1. **Create your ULN account, if you do not already have one.**

   Go to: `http://linux.oracle.com/register`

   Enter your email address and a CSI number to create a password.

   (After password creation, you use your email address and password to login to ULN.)

2. **Run the following command 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 (for example, 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.

More Information

Related Information

- 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:

  `http://linux.oracle.com/`

Registering Oracle Linux and Activating Automatic Update

After configuring Oracle Linux, you should register your system and activate your subscription with Oracle to receive automatic updates to the software. This will ensure that the server is running the latest version of the operating system. For instructions, go to:

http://www.oracle.com/technetwork/articles/servers-storage-admin/yum-repo-setup-1659167.html (`http://www.oracle.com/technetwork/articles/servers-storage-admin/yum-repo-setup-1659167.html`)

Getting Server Firmware and Software Updates

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

Description	Link
Learn about server firmware and software updates.	"Firmware and Software Updates" on page 97
Learn about options for accessing firmware and software.	"Firmware and Software Access Options" on page 98
Review available firmware and software releases.	"Software Releases" on page 98
Learn how to get firmware and software using Oracle System Assistant, My Oracle Support, or Physical Media Request.	"Getting Firmware and Software From MOS or PMR" on page 99
Install firmware and software updates using other methods.	"Installing Updates Using Other Methods" on page 103

Firmware and Software Updates

Firmware and software for your server are updated periodically. These updates are made available as software releases. The software releases are a set of downloadable files (patches) that include all available firmware, software, hardware drivers, tools, and utilities for the server. All these files have been tested together and verified to work with your server.

You should update your server firmware and software as soon as possible after a new software release becomes available. Software releases often include bug fixes, and updating your server ensures that your server has the latest firmware and software.

The ReadMe document that is included with each patch in a software release contains information about the patch, such as what has changed or not changed from the prior software release, as well as bugs that are fixed with the current release.

The product notes that are part of the server documentation identify which server software release is the latest release supported on your server.

Firmware and Software Access Options

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

- **Oracle System Assistant** - Oracle System Assistant is a factory-installed option for Oracle servers that enables you to easily download and install the latest software releases.

  For information about using Oracle System Assistant, see *Oracle X4 Series Server Administration Guide*.

- **My Oracle Support** – All system software releases are available from My Oracle Support at `http://support.oracle.com`.

  For information about what is available on the My Oracle Support web site, see "Download Firmware and Software Using My Oracle Support" on page 100.

  For instructions on how to download software releases from My Oracle Support, see "Requesting Physical Media" on page 101.

- **Physical Media Request (PMR)** - You can request a DVD that contains one or more of the software releases that are available from My Oracle Support.

  For information, see "Requesting Physical Media" on page 101.

- **Other Methods** – You can use Oracle Enterprise Manager Ops Center, Oracle Hardware Management Pack, or Oracle ILOM to update your server software and firmware.

  For information, see "Installing Updates Using Other Methods" on page 103.

Software Releases

Software releases on My Oracle Support are grouped by product family (such as Sun Server), then the product (the specific server or blade), and finally the software release version. A software release contains all the updated software and firmware for your server or blade as a set of downloadable files (patches), including firmware, drivers, tools, or utilities, all tested together to be compatible with your server.

Each patch 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.

My Oracle Support provides the set of software releases for your server as described in the following table. You can obtain these software releases by downloading the files from My Oracle Support or by submitting to Oracle a physical media request (PMR). Alternatively, you can download the same firmware and software to your server using Oracle System Assistant.

Package Name	Description	When to Download This Package
X4-*x* SW *release* – Firmware Pack	Contains all system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
X4-*x* SW *release* – OS Pack	Includes a package of all tools, drivers, and utilities for a specific OS. An OS Pack is available for each supported operating system version. Software includes Oracle Hardware Management Pack and LSI MegaRAID software. For the Windows OS, the OS Pack also includes Intel Network Teaming and Install Pack.	You need to update OS-specific tools, drivers, or utilities.
X4-*x* SW *release* – 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.
X4-*x* SW *release* – Diagnostics	Includes Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.
X4-*x* SW *release* – Oracle System Assistant Updater	Includes Oracle System Assistant recovery and ISO update image.	You need to manually recover or update Oracle System Assistant.

Getting Firmware and Software From MOS or PMR

You can use Oracle System Assistant to easily download and then use the latest software release. For further information, see the *Oracle X4 Series Server Administration Guide*.

However, you can also obtain updated firmware and software by using My Oracle Support (MOS) or by submitting to Oracle a physical media request (PMR). For information, see:

- "Download Firmware and Software Using My Oracle Support" on page 100
- "Requesting Physical Media" on page 101

▼ Download Firmware and Software Using My Oracle Support

1. **Go to the My Oracle Support web site: `http://support.oracle.com`.**
2. **Sign in to My Oracle Support.**
3. **At the top of the page, click the Patches & Updates tab.**

   The Patch Search pane appears at the right of the screen.
4. **Within the Search tab area, click Product or Family (Advanced).**

   The Search tab area appears with search fields.
5. **In the Product field, select the product from the drop-down list.**

   Alternatively, type a full or partial product name (for example, Sun Server X4-2) until a match appears.
6. **In the Release field, select a software release from the drop-down list.**

   Expand the list to see all available software releases.
7. **Click Search.**

   The Patch Advanced Search Results screen appears, listing the patches for the software release.

   See "Software Releases" on page 98 for a description of the available software releases.
8. **To select a patch for a software release, click the patch number next to the software release version.**

   You can use the Shift key to select more than one patch.

   A pop-up action panel appears. The panel contains several action options, including the ReadMe, Download, and Add to Plan options. For information about the Add to Plan option, click the associated button and select "Why use a plan?".
9. **To review the ReadMe file for this patch, click ReadMe.**
10. **To download the patch for the software release, click Download.**
11. **In the File Download dialog box, click the patch zip file name.**

    The patch for the software release downloads.

Requesting Physical Media

If your processes do not allow downloads from Oracle web sites, you can receive the latest software release packages by submitting to Oracle a physical media request (PMR). The preferred method for submitting a PMR is through the My Oracle Support (MOS) web site.

The high-level tasks for submitting a physical media request are described in these sections:

- "Gathering Information for the Physical Media Request" on page 101
- "Request Physical Media (Online)" on page 101
- "Request Physical Media (By Phone)" on page 103

Gathering Information for the Physical Media Request

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

Before you make the PMR, do the following:

- **Obtain the product name, software release version, and patches required.** It will be easier to make the request if you know the latest software release version and the name of the patches for the software release that you are requesting.
  - *If you have access to My Oracle Support* – Follow the instructions in "Download Firmware and Software Using My Oracle Support" on page 100 to determine the latest software release version and view available software release packages (patches). After viewing the list of patches, you can navigate away from the Patch Advanced Search Results screen, if you do not want to continue with the download steps.
  - *If you do not have access to My Oracle Support* – Use the information in "Software Releases" on page 98 to determine which patches for the software release you want, and then request those patches for the latest software release version.
- **Have the shipping information ready.** You will need to provide a contact name, phone number, email address, company name, and shipping address as part of the request.

▼ Request Physical Media (Online)

Before You Begin Gather the information described in "Gathering Information for the Physical Media Request" on page 101 before making the request.

1. **Go to the My Oracle Support web site: `http://support.oracle.com`.**
2. **Sign in to My Oracle Support.**
3. **Click on the Contact Us link in the upper right corner of the page.**

   The Create Service Request: Problem screen appears.

4. **Describe your request as follows:**

   a. **In the Problem Summary field, type `PMR for latest software release`.**

   b. **From the Problem Type drop-down list, select Software & OS Media Requests.**

   c. **In the Support Identifier field, type the Customer Support Identifier associated with your support contract.**

5. **Skip the Create Service Request: Solutions screen by clicking the Next button in the upper right corner of the screen twice.**

   The Create Service Request: More Details screen appears.

6. **Provide more information about your request as follows:**

   a. **In the Additional Information section, answer the questions listed in the following table:**

Question	Your Answer
Is this a physical software media shipment request?	Yes
Which product line does the media request involve?	Sun Products
Are you requesting a required password for a patch download?	No
Are you requesting a patch on CD/DVD?	Yes
If requesting a patch on CD/DVD, please provide the patch number and OS/platform?	Enter the patch number for each download that you want for the software release.
List the product name and version requested for the physical media shipment?	*Product Name:* Sun Server X4-*x* *Version:* Latest software release number
What is the OS/platform for the requested media?	If you are requesting OS-specific downloads, specify the OS here. If you are requesting system firmware only, enter Generic.
Are any languages required for this shipment?	No

   b. **Fill in the ship-to contact information, which includes a contact name, phone number, email address, company name, and shipping address.**

7. **Click the Next button.**

   The Create Service Request: Severity/Contact screen appears.

8. **Enter your contact phone number and preferred method of contact.**

9 **Click the Submit button.**

This completes the physical media request. It can take up to seven business days to receive the physical media.

▼ Request Physical Media (By Phone)

Before You Begin Gather the information described in "Gathering Information for the Physical Media Request" on page 101 before making the request.

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

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

2 **Tell Oracle support that you want to make a physical media request (PMR) for the Sun Server X4-*x*.**

- If you are able to find the specific software release package and patch number information from My Oracle Support, provide this information to the support representative.
- If you are unable to find the software release package information, request the latest software release package for the Sun Server X4-*x*.

Installing Updates Using Other Methods

In addition to using Oracle System Assistant and My Oracle Support, you can install updated firmware and software using one of the following methods:

- **Oracle Enterprise Manager Ops Center** – You can use Ops Center Enterprise Controller to 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 information, go to:

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

- **Oracle Hardware Management Pack** – You can use the `fwupdate` CLI Tool within the Oracle Hardware Management Pack to update firmware within the system.

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

  `http://www.oracle.com/goto/OHMP/docs`

- **Oracle ILOM** – You can use the Oracle ILOM web interface or command-line interface to update Oracle ILOM and BIOS firmware.

  For information, refer to the Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at:

http://www.oracle.com/goto/ILOM/docs

Controlling System Power

This section describes methods to control server module power.

For more information, refer to the *Sun Blade X4-2B Service Manual*.

Note – Graceful shutdown procedures cause ACPI-enabled operating systems to perform an orderly shutdown of the operating system. Servers not running ACPI-enabled operating systems shut down to standby power state immediately.

Power States

The server module can be in one of these power states:

Power State	Description
No power applied	No power is applied to the server. For example, when the power cords are not connected, a server module is partially removed from chassis, or the data center power breaker is off.
Standby	Power is applied to the server and the SP is running, but main power is not applied to the host. You can access Oracle ILOM running on the SP in Standby state.
Fully powered on	The host is powered on and you can access Oracle ILOM. Once the server boots the OS, you can also access Oracle ILOM and the OSs.

Powering Off the Server Module

If you need to power off the server module, you can perform a graceful shutdown or an immediate shutdown.

▼ Graceful Shutdown (Power Button)

- **Press and release the Power button on the front panel of the server module.**

Note – To completely power off the server, you must remove the server module from the chassis.

More Information Related Information

- "Resetting the Server" on page 108

▼ Graceful Shutdown (Oracle ILOM Web Interface)

1. **Log in to the Oracle ILOM web interface for the server module SP or CMM.**
2. **Click Host Management > Power Control.**
   The Power Control page appears.
3. **Use one of the following commands for orderly system shutdown:**
   - **From the server module SP web interface Actions menu, select Graceful Shutdown and Power Off.**
   - **From the CMM web interface, click the radio button next to /CH/BL*n*/System, and select Graceful Shutdown and Power Off from the Actions list.**
     where *n* is the chassis slot that the blade is installed in.

More Information Related Information

- "Resetting the Server" on page 108

▼ Graceful Shutdown (Oracle ILOM CLI)

To shutdown the server module in an orderly method using Oracle ILOM CLI.

1. **Log in to the Oracle ILOM CLI.**
   Choose one of the following methods:
   - **Oracle ILOM server module SP**
   - **Oracle ILOM CMM**
2. **Choose one of the following methods:**
   - **Server module SP CLI:**
     Type: **`stop /System`**.
   - **CMM CLI:**
     Type: **`stop /CH/BL`***n*`/System`**
     where *n* is the chassis slot that the blade is installed in.

More Information Related Information

- "Resetting the Server" on page 108

▼ Immediate Shutdown (Power Button)

Caution – Data loss hazard. Immediate shutdown will cause unsaved data on the server to be lost.

- **Press and hold the Power button for five seconds to force power off and to enter standby power mode.**

Note – To completely power off the server, you must remove the server module from the chassis. Refer to the *Sun Blade X4-2B Service Manual*.

More Information Related Information

- "Resetting the Server" on page 108

▼ Immediate Shutdown (Oracle ILOM CLI)

Caution – Data loss hazard. Immediate shutdown will cause unsaved data on the server to be lost.

1. **Log in to the Oracle ILOM CLI for the server module SP or CMM.**
2. **Use one of the following commands for orderly system shutdown:**
   - **From the server module SP CLI, type:**
     `stop –force /System`
   - **From the CMM CLI, type:**
     `stop -force /CH/BL`*n*`/System`
     where *n* is the chassis slot that the blade is installed in.

More Information Related Information

- "Resetting the Server" on page 108

Powering On the Server Module

If you need to power on the server module, refer to the *Sun Blade X4-2B Service Manual*.

Resetting the Server

It is not necessary to power the server off and on to simply reset the server.

The procedures in the following sections describe how to reset the server.

- "Reset the Server (Oracle ILOM CLI)" on page 109
- "Reset the Server (Oracle ILOM Web Interface)" on page 109

▼ Reset the Server (Oracle ILOM CLI)

1. **Log in to the Oracle ILOM CLI for the server module or CMM.**
2. **Use one of the following commands for orderly system shutdown:**
   - **From the server module SP CLI, type:**
     `reset /System`
   - **From the CMM CLI, type:**
     `reset /CH/BL`*n*`/System`
     where *n* is the chassis slot that the blade is installed in.

More Information Related Information

- "Resetting the Server" on page 108

▼ Reset the Server (Oracle ILOM Web Interface)

1. **Log in to the Oracle ILOM web interface for the server module SP or CMM.**
2. **Click Host Management > Power Control.**
   The Power Control page appears.
3. **Use one of the following commands for orderly system shutdown:**
   - **From the server module SP web interface, select Reset from the Actions menu.**
   - **From the CMM web interface, click the radio button next to /CH/BL*n*, and select Reset from the Actions list**
     where *n* is the chassis slot that the blade is installed in.

More Information Related Information

- "Resetting the Server" on page 108

Troubleshooting Installation Issues

This section describes how to troubleshoot installation issues.

The following table describes the tasks related to troubleshooting the server module.

Task	Links
Identify server faults.	"Identifying Server Faults" on page 111
Troubleshoot server power states.	"Troubleshooting Server Power States" on page 111
Record server information before contacting Service.	"Technical Support Information Worksheet" on page 112
Locate the system serial number before contacting Service.	"Locating the Server Module Serial Number" on page 113

Identifying Server Faults

If the Service Action Required LED lights when the server is powered on, check Oracle ILOM for system faults.

For more information about identifying server module faults, refer to the *Sun Blade X4-2B Service Manual*.

Troubleshooting Server Power States

When a server module powers on in a Sun Blade 6000 modular system, the server module queries the CMM to verify that sufficient is power available from the chassis power supply units (PSUs) to power on the server module.

If the chassis cannot supply enough power to power on the server module:

- The CMM prevents the server module from receiving main power.
- The OK/Power LED on the front panel of the server module remains at standby blink.

To troubleshoot this power issue, follow these guidelines:

- Review the Oracle ILOM event log messages to determine whether the server module has permission to power on. An event message is recorded in the log any time there is inadequate amount of power available from the chassis PSUs to power on a server module.

  For more information about the Oracle ILOM event log or monitoring power consumption, refer to the Oracle Integrated Lights Out Manager (ILOM) 3.1 documentation library. `http://www.oracle.com/goto/ILOM/docs`
- Ensure that the chassis has the proper number of power supplies installed to support powering on all the chassis components that are currently installed.

  Refer to the system chassis documentation for information about the number of power supplies required to power on chassis components, see `www.oracle.com/goto/SB6000/docs`.
- To avoid power loss, use the *default* CMM power management settings in Oracle ILOM for power supplies.

  For more information about power management, refer to the Oracle ILOM 3.1 documentation.

Note – When power-on permissions become available, the OK/Power LED on the front panel of the server module illuminates a standby blink.

- As needed, refer to `http://www.oracle.com/goto/x86AdminDiag/docs` for instructions on how to run start up diagnostic tools provided with the server module.

Related Information

- `www.oracle.com/goto/SB6000/docs`

Technical Support Information Worksheet

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

System Configuration Information Needed	Your Information
Service contract number	
System model	
Operating system	
System serial number	
Peripherals attached to the system	

System Configuration Information Needed	Your Information
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 Module Serial Number

The serial number is located on the server module front panel label. You must have the server module serial number to obtain Oracle warranty support for your server module.

To view support and warranty information for your product, go to:

`http://support.oracle.com`

Locating the Chassis Serial Number

You may also need the chassis serial number to obtain Oracle warranty support.

The chassis serial number (and also the server module serial number) can be viewed from Oracle ILOM CMM.

For more information about using Oracle ILOM CMM, see "About Oracle ILOM CMM" on page 18.

Related Information

- `www.oracle.com/goto/SB6000/docs`

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