

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

Installation Guide for Oracle VM Software



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Using This Documentation

This guide contains installation procedures and configuration information for Oracle VM software.

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

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

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

Getting the Latest Software and Firmware

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

For instructions, see [Chapter 3](#).

About This Documentation

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

Related Documentation

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

Feedback

You can provide feedback on this documentation at:

<http://www.oracle.com/goto/docfeedback>

Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	http://support.oracle.com For hearing impaired: http://www.oracle.com/accessibility/support.html
Learn about Oracle's commitment to accessibility	http://www.oracle.com/us/corporate/accessibility/index.html

PART I Oracle VM Software Installation

This section lists the topics that describe how to install Oracle VM software on Oracle's Sun Server X2-4.

Description	Link(s)
Requirements. Refer to Chapter 1 to identify the installation considerations and requirements.	<ul style="list-style-type: none">• Chapter 1, Getting Started
Procedures. Refer to the appropriate chapter to install Oracle VM.	<ul style="list-style-type: none">• Chapter 2, Oracle VM Installation
References. Refer to these topics, as needed, to perform or complete the virtual machine software installation.	<ul style="list-style-type: none">• Appendix A, Supported Installation Methods• Appendix B, Supported Operating Systems• Appendix C, BIOS Defaults For New Installs

Getting Started

This chapter describes how to get started installing a supported version of the virtual machine software on your server.

Topics discussed in this chapter include:

- “Supported Virtual Machine Software” on page 3
- “Oracle VM Software Installation Prerequisites” on page 4
- “Oracle VM Software Installation Task Overview” on page 5

Supported Virtual Machine Software

The Sun Server X2-4 supports the following Oracle VM software.

Software	Supported Version
Oracle VM	Release 2.2.1 through 3.0.3

For a complete and updated list of all the supported operating systems on the Sun Server X2-4, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page:

<http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>

Oracle VM Software Installation Prerequisites

Refer to the following important considerations before beginning the Oracle VM software installation on your server.

TABLE 1-1 Oracle VM Software Installation Considerations

Requirements	Description	For More Information, See:
Server is set up and operational.	The server is mounted and powered-on in the rack and communication to the SP has been established.	<ul style="list-style-type: none"> • <i>Sun Server X2-4 Installation Guide</i>
Deployment method is established that enables you to boot the Oracle VM software install program.	Guidelines for selecting a local or remote deployment method for installing Oracle VM software.	<ul style="list-style-type: none"> • Appendix A
Oracle VM installation hardware requirements are met.	<p>Oracle VM requires two systems with static IP addresses.</p> <ul style="list-style-type: none"> • One system to install the Oracle VM Server. • One system for Oracle VM Manager with one of the following Linux operating systems installed: <ul style="list-style-type: none"> - Oracle Linux Release 4.5 or subsequent release - Red Hat Enterprise Linux Release 4 or subsequent release 	<ul style="list-style-type: none"> • Oracle VM Server Release Notes and the Oracle VM Manager Release Notes at: http://www.oracle.com/technetwork/documentation/vm-096300.html
RAID volume requirements are met.	<p>If you want to include your boot drive as part of a RAID configuration, you need to configure a RAID volume on it before you install the operating system.</p> <ul style="list-style-type: none"> • If you are using the optional SGX-SAS6-R-INT-Z host bus adapter (HBA), you must use the LSI integrated RAID controller setup utility to configure a RAID volume. For instructions, see the <i>Sun Storage 6 Gb SAS PCIe RAID HBA Internal Installation Guide</i>, and the <i>LSI MegaRAID SAS Software User's Guide</i> • If you are using the optional SGX-SAS6-INT-Z HBA, you must use the BIOS Configuration Utility to configure a RAID volume. For instructions, see the <i>Sun Storage 6 Gb SAS PCIe HBA Internal Installation Guide</i>. 	<ul style="list-style-type: none"> • <i>Sun Storage 6 Gb SAS PCIe RAID HBA Internal Installation Guide</i> at: http://docs.oracle.com/cd/E19221-01/index.html • <i>LSI MegaRAID SAS Software User's Guide</i> at: http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-int-z.aspx • <i>Sun Storage 6 Gb SAS PCIe HBA Internal Installation Guide</i> at: http://docs.oracle.com/cd/E19337-01/index.html

TABLE 1-1 Oracle VM Software Installation Considerations (Continued)

Requirements	Description	For More Information, See:
BIOS settings for new OS installations are verified.	Prior to installing the Oracle VM software, you should verify that the BIOS factory-default properties are set.	• Appendix C
Late-breaking information and updates for OS installations are obtained.	Review the <i>Sun Server X2-4 Product Notes</i> and the Oracle VM software release notes for late-breaking information about supported software and updates.	• <i>Sun Server X2-4 Product Notes</i>

Oracle VM Software Installation Task Overview

To install the virtual machine software, complete the following procedures in order:

1. Gather the media for installing the Oracle VM software.
 - An ISO image of the Oracle VM installation program is available as a download at:

<http://www.oracle.com/virtualization>

Note – You can use the Oracle VM software ISO image for remote installation or for creating an installation CD or DVD.

2. Choose and set up an installation method for deploying the installation of the Oracle VM software as described in [Appendix A](#).
3. Follow the instructions for installing the Oracle VM software as described in “[Installing Oracle VM Using Local or Remote Media](#)” on page 7.
4. Review and perform the applicable post installation tasks as described in “[Oracle VM Post Installation Tasks](#)” on page 10.

Installing Oracle VM

This chapter summarizes the necessary steps for installing Oracle VM software.

Topics discussed in this chapter include:

- [“Installing Oracle VM Using Local or Remote Media” on page 7](#)
- [“Oracle VM Post Installation Tasks” on page 10](#)

Installing Oracle VM Using Local or Remote Media

The procedures in this section summarize the steps for installing the Oracle VM software. The procedures assume that you are booting the Oracle VM installation software from one of the following sources:

- Oracle VM CD or DVD media set (internal or external CD or DVD)
- Oracle VM ISO software image (network repository)

Note – The Oracle VM ISO image can be used for remote installation or for creating an installation CD or DVD.

Refer to the following procedures to install the Oracle VM software:

- [“Install Oracle VM Server From Local or Remote Media” on page 8](#)
- [“Install Oracle VM Manager” on page 9](#)

Before You Begin

Prior to performing the installation, the following requirements must be met:

- All applicable installation considerations for installing the Oracle VM Server and Manager should have been met. For details, see [Chapter 1](#).
- Gather the Oracle VM documentation. This documentation should be used in conjunction with the installation procedures presented in this chapter.

The Oracle VM documentation is available at:

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

▼ Install Oracle VM Server From Local or Remote Media

1. Ensure that the Oracle VM Server install media is available to boot.

- **For CD/DVD.** Insert the Oracle VM Server media boot disk into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disc image (CD labeled number 1 or DVD) has been selected in the Oracle ILOM Remote Console application (Devices > CD-ROM Image).

For additional information about how to set up the installation media, see [Appendix A](#).

2. Reset the power on the server.

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

For example:

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

Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Watch carefully for these messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the Oracle VM Server installation.

The Please Select Boot Device menu appears.

4. In the Please Select Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed in the Boot Device menu are in the following format: *device type*, *slot indicator*, and *product ID string*.

After a few seconds, the splash screen for the Oracle VM Manager installation program appears.

5. Follow the prompts to install Oracle VM Server and Oracle VM Agent.

At this time the Oracle VM installation program installs the Oracle VM Server and the Oracle VM Agent.

6. Log in to Oracle VM Server as the `root` user, with the password you set during the installation.

Note – The Oracle VM installation will require two passwords: one for the `root` Oracle VM Server account and one for the Oracle VM Agent. When necessary, refer to the *Oracle VM Server Installation Guide* for further details about how to complete the Oracle VM Server installation.

7. Perform one of the following:

- If you do not have an Oracle VM Manager configured to manage the Oracle VM Server, you will need to install the Oracle VM Manager.

To install Oracle VM Manager, see [“Install Oracle VM Manager”](#) on page 9.

- If you do have an Oracle VM Manager configured to manage the Oracle VM Server, proceed to [“Oracle VM Post Installation Tasks”](#) on page 10.

▼ Install Oracle VM Manager

1. Start up the supported Linux operating system on the system on which you want to install the Oracle VM Manager.
2. Ensure that the Oracle VM Manager install media is mounted.
3. As the `root` user, run the following script:

```
# sh runInstaller.sh
```

4. Follow the prompts to install Oracle VM Manager.

You will be required to log in to the management interface using the Oracle VM Agent password.

When necessary, refer to the *Oracle VM Server Installation Guide* for further details about how to complete the Oracle VM Manager installation.

5. After completing the Oracle VM Manager installation, do the following:

a. Log in to the web Oracle VM Management interface as an Administrator.

You will need to enter the password that was created during the installation of the Oracle VM Manager.

b. In the web management interface, use the options available to create and manage server pools, as well as create, configure, and manage the virtual machines.

6. Review and perform the applicable post installation tasks as described in “Oracle VM Post Installation Tasks” on page 10.

Oracle VM Post Installation Tasks

After completing the Oracle VM software installation, review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- “Update the Oracle VM Software” on page 10
- “Manage Oracle VM Resources” on page 10

Update the Oracle VM Software

The Oracle VM installation media might not contain the most up-to-date versions of the software. If necessary, update the Oracle VM software with the latest software releases. For download instructions, go to this web site:

<http://www.oracle.com/virtualization>

Manage Oracle VM Resources

To learn how to configure, access, and manage Oracle VM resources, refer to the Oracle VM Documentation Library at:

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

Getting Server Firmware and Software

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

- [“Firmware and Software Updates”](#) on page 13
- [“Firmware and Software Access Options”](#) on page 14
- [“Available Software Release Packages”](#) on page 14
- [“Accessing Firmware and Software”](#) on page 15
- [“Installing Updates”](#) on page 19

Firmware and Software Updates

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

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

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

Firmware and Software Access Options

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

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

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

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

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

For instructions on how to download software releases from My Oracle Support, see “Download Firmware and Software Using My Oracle Support” on page 15.

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

For information see, “Requesting Physical Media” on page 16.

Available Software Release Packages

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

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

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

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

Accessing Firmware and Software

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

- “Download Firmware and Software Using My Oracle Support” on page 15
- “Requesting Physical Media” on page 16

▼ Download Firmware and Software Using My Oracle Support

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

5. In the Product field, select the product from the drop-down list.

Alternatively, type a full or partial product name (for example, Sun Server X2-4) until a match appears.

6. In the Release field, select a software release from the drop-down list.

Expand the folders to see all available software releases.

7. Click Search.

The software release comprises a set of downloads (patches).

See [“Available Software Release Packages”](#) on page 14 for a description of the available downloads.

8. To select a patch, click the check box next to the patch name. (You can use the Shift key to select more than one patch.)

A pop-up action panel appears. The panel contains several action options.

9. To download the update, click Download in the pop-up panel.

The File Download dialog box appears.

10. In the File Download dialog box, click on the patch zip file.

The patch file downloads.

Requesting Physical Media

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

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

Description	Link
Gather information you will need to provide for the request.	“Gathering Information for the Physical Media Request” on page 16
Make the physical media request either online or by calling Oracle Support.	“Request Physical Media (Online)” on page 17 “Request Physical Media (By Phone)” on page 18

Gathering Information for the Physical Media Request

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

Before you make the PMR, gather the following information:

- **Obtain product name, software release version, and patches required.** It will be easier to make the request if you know the latest software release and the name of the download packages (patches) that you are requesting.
 - *If you have access to My Oracle Support* – Follow the instructions in “[Download Firmware and Software Using My Oracle Support](#)” on page 15 to determine the latest software release and view available downloads (patches). After viewing the list of patches, you can navigate away from the Patch Search Results page, if you do not want to continue with the download steps.
 - *If you do not have access to My Oracle Support* – Use the information in “[Available Software Release Packages](#)” on page 14 to determine which packages you want, then request those packages for the latest software release.
- **Have the shipping information ready.** You will need to provide a contact, phone number, email address, company name, and shipping address as part of the request.

▼ Request Physical Media (Online)

Gather the information described in “[Gathering Information for the Physical Media Request](#)” on page 16 before making the request.

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

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

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

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

7. Click Next.

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

You do not need to supply any information.

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

10. Click Submit.

▼ Request Physical Media (By Phone)

Gather the information described in “[Gathering Information for the Physical Media Request](#)” on page 16 before making the request.

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

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

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

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

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

Installing Updates

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

- “Installing Firmware” on page 19
- “Installing Hardware Drivers and OS Tools” on page 20

Installing Firmware

Updated firmware can be installed using one of the following:

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

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

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

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

For more information, go to:

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

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

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

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

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

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

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

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

Installing Hardware Drivers and OS Tools

Updated hardware drivers and operating system (OS)-related tools, such as Oracle Hardware Management Pack, can be installed using Oracle Enterprise Manager Ops Center.

For more information, go to:

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

PART II Oracle VM System Administrator References

Refer to the following system administrator references as needed to perform or complete the installation of the Oracle VM software.

Description	Link
Guidelines for selecting and setting up an installation environment for deploying the Oracle VM software installation program	Appendix A
A complete list of operating systems supported on the Sun Server X2-4 at the time of this publication	Appendix B
Instructions for ensuring that the BIOS default properties are set prior to performing the Oracle VM software installation	Appendix C

Supported Installation Methods

To determine which installation method is best for you when installing the Oracle VM software on your server, consider the following options summarized in this appendix:

- [“Console Outputs” on page 23](#)
- [“Installation Boot Media” on page 25](#)
- [“Installation Targets” on page 26](#)

Console Outputs

[TABLE A-1](#) lists the consoles you use to capture the output and input of the operating system installation.

TABLE A-1 Console Options for Performing an OS Installation

Console	Description	Setup Requirement
Local console	<p>You can install the OS and administer the server by attaching a local console directly to the server SP.</p> <p>Examples of local consoles include:</p> <ul style="list-style-type: none"> • Serial console • VGA console, with USB keyboard and mouse 	<ol style="list-style-type: none"> 1. Attach a local console to the server. For details, see “Attaching Cables to the Server” in the <i>Sun Server X2-4 Installation Guide</i>. 2. At the Oracle ILOM prompt, type your Oracle ILOM user name and password. 3. For a serial console connection only, establish a connection to the host serial port by typing start /SP/console. The video output is automatically routed to the local console. <p>For more information about establishing a connection to the server SP, refer to the Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at: http://www.oracle.com/pls/topic/lookup?ctx=ilom31</p> <p>If you are using Oracle ILOM 3.0, you can access the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Library at: http://www.oracle.com/pls/topic/lookup?ctx=ilom30</p>
Remote console	<p>You can install the OS and administer the server from a remote console by establishing a network connection to the server SP.</p> <p>Examples of remote consoles include:</p> <ul style="list-style-type: none"> • Web-based client connection using the Oracle ILOM Remote Console application • SSH client connection using a serial console 	<ol style="list-style-type: none"> 1. Establish an IP address for the server SP. For details, see the <i>Sun Server X2-4 Installation Guide</i>. 2. Establish a connection between a remote console and the server SP: For web-based client connection, perform these steps: 1) In a web browser, type the IP address for the server SP; 2) log in to the Oracle ILOM web interface; 3) redirect the video output from the server to the web client by launching the Oracle ILOM Remote Console; 4) enable device redirection (mouse, keyboard, etc.) using the Devices menu. For SSH client connection, perform these steps: 1) From a serial console, establish an SSH connection to the server SP (ssh root@ILOM_SP_ipaddress); 2) log in to the Oracle ILOM command-line interface; 3) redirect the serial output from the server to the SSH client by typing start /SP/console. <p>For additional information about establishing a remote connection to the ILOM SP or using the ILOM Remote Console, see the Oracle Integrated Lights Out Manager (ILOM) 3.0 or 3.1 Documentation Libraries.</p>

Installation Boot Media

You can start the operating system installation to a server by booting a local or remote installation media source. [TABLE A-2](#) identifies the supported media sources and the setup requirements for each source.

TABLE A-2 Boot Media Options for Performing the OS Installation

Installation Media	Description	Setup Requirement
Local boot media	<p>Local boot media requires a built-in storage device on the server, or an external storage device attached to the server.</p> <p>Supported OS local boot media sources can include:</p> <ul style="list-style-type: none">• CD/DVD-ROM or USB installation media, and, if applicable, floppy device driver media	<ol style="list-style-type: none">1. If your server does not contain a built-in storage device, attach the appropriate storage device to the front or rear panel of the server.2. For more information about how to attached local devices to the server, see “Attaching Cables to the Server” in the <i>Sun Server X2-4 Installation Guide</i>.

TABLE A-2 Boot Media Options for Performing the OS Installation (Continued)

Installation Media	Description	Setup Requirement
Remote boot media	<p>Remote media requires you to boot the install over the network. You must initiate the network install from a redirected boot storage device.</p> <p>Supported OS remote media sources can include:</p> <ul style="list-style-type: none"> • CD/DVD-ROM installation media, and, if applicable, floppy device driver media • CD/DVD-ROM ISO installation image and, if applicable, floppy ISO device driver media 	<p>To redirect the boot media from a remote storage device, perform these steps:</p> <ol style="list-style-type: none"> 1. Insert the boot media into the storage device, for example: <ul style="list-style-type: none"> For CD/DVD-ROM, insert media into the built-in or external CD/DVD-ROM drive. For CD/DVD-ROM ISO image, ensure that ISO image(s) are readily available on a network shared location. For device driver floppy media, if applicable, insert floppy media into the external floppy drive. For device driver floppy ISO image, ensure that ISO image, if applicable, is readily available on a network shared location or on a USB drive. 2. Establish a web-based client connection to the server Oracle ILOM SP and launch the Oracle ILOM Remote Console application. For more details, see the Setup Requirements for web-based client connection in TABLE A-1. 3. In the Devices menu of the Oracle ILOM Remote Console application, specify the location of the boot media, for example: <ul style="list-style-type: none"> For CD/DVD-ROM boot media, select CD-ROM. For CD/DVD-ROM ISO image boot media, select CD-ROM Image. For floppy device driver boot media, if applicable, select Floppy. For floppy image device driver boot media, if applicable, select Floppy Image. <p>For more information about the Oracle ILOM Remote Console, see the Oracle Integrated Lights Out Manager (ILOM) 3.0 or 3.1 Documentation Libraries.</p>

Installation Targets

[TABLE A-3](#) identifies the supported installation targets you can use to install an operating system.

TABLE A-3 Installation Targets for OS Installations

Install Target	Description	Setup Requirement	Supported OS
Local hard disk drive (HDD) or Solid state drive (SSD)	You can choose to install the operating system to any of the hard disk drives or solid state drives installed in the server.	Ensure that the HDD or SSD is properly installed and powered-on in the server. For more information about installing and powering on an HDD or SSD, refer to the <i>Sun Server X2-4 Service Manual</i> .	All supported operating systems listed in Appendix B .
Fibre Channel (FC) Storage Area Network (SAN) device	For servers equipped with Fibre Channel PCIe host bus adapters (HBAs), you can choose to install the operating system to an external FC storage device.	<ul style="list-style-type: none">• Ensure that the FC PCIe HBA is properly installed in the server. For more information about installing a PCIe HBA option in your server, refer to the <i>Sun Server X2-4 Service Manual</i>.• The SAN must be installed and configured to make the storage visible to the host. For instructions, refer to the documentation supplied with the FC HBA.	All operating systems listed in Appendix B .

Supported Operating Systems

TABLE B-1 in this appendix describes the operating systems supported on the Sun Server X2-4 at the time this document was published.

For an up-to-date list of the operating systems supported on the Sun Server X2-4, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page:

<http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>

Supported Operating Systems

The Sun Server X2-4 supports the installation and use of the following operating systems, or a subsequent release of the operating system.

TABLE B-1 Supported Operating Systems

Operating System	Supported Version	Additional Information
Oracle Virtual Machine Software	<ul style="list-style-type: none"> • Oracle VM 2.2.1 through 3.0.3 	<i>Sun Server X2-4 Installation Guide for Oracle VM Software</i>
Oracle Solaris	<ul style="list-style-type: none"> • Oracle Solaris 11 11/11 • Oracle Solaris 10 8/11 • Oracle Solaris 10 9/10 	<i>Sun Server X2-4 Installation Guide for Oracle Solaris Operating Systems</i>

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

Operating System	Supported Version	Additional Information
Linux	<ul style="list-style-type: none">• Oracle Linux 5.5 through 6.2 (64-bit)• Oracle Unbreakable Enterprise Kernel for Linux 5.6 through 6.1• Red Hat Enterprise Linux (RHEL) 5.5 through 6.0 (64-bit)• SUSE Linux Enterprise Server (SLES) 11 SP1 (64-bit)• SUSE Linux Enterprise Server (SLES) 11 SP2 (64-bit)	<i>Sun Server X2-4 Installation Guide for Linux Operating Systems</i>
Windows	<ul style="list-style-type: none">• Microsoft Windows Server 2008 SP2, Standard Edition (64-bit)• Microsoft Windows Server 2008 SP2, Enterprise Edition (64-bit)• Microsoft Windows Server 2008 SP2, Datacenter Edition (64-bit)• Microsoft Windows Server 2008 R2, SP1 (64-bit)• Microsoft Windows Server 2008 R2, Standard Edition (64-bit)• Microsoft Windows Server 2008 R2, Enterprise Edition (64-bit)• Microsoft Windows Server 2008 R2, Datacenter Edition (64-bit)	<i>Sun Server X2-4 Installation Guide for Windows Operating Systems</i>

BIOS Defaults for New Installations

When installing a new operating system on a disk drive, you should verify that the following BIOS settings are properly configured before you perform the operating system installation:

- System time
 - System date
 - Boot order
-

Verification of BIOS Factory Defaults

In the BIOS Setup Utility, you can set optimal defaults, as well as view and edit BIOS settings as needed. Any changes you make in the BIOS Setup Utility (by pressing F2) are permanent until the next time you change them.

In addition to using the F2 key to view or edit the system's BIOS settings, you can use F8 during the BIOS start-up to specify a temporary boot device. If you use F8 to set a temporary boot device, this change is only in effect for the current system boot. The permanent boot device specified through F2 will be in effect after booting from the temporary boot device.

Before You Begin

Ensure that the following requirements are met prior to accessing the BIOS Setup Utility.

- The server is equipped with a hard disk drive (HDD) or solid state drive (SSD).
- The HDD or SSD is properly installed in the server. For details, see the *Sun Server X2-4 Service Manual*.

- A console connection is established to the server. For details, see “Console Options for Performing an OS Installation” on page 24.

▼ View or Edit BIOS Settings for New Installations

1. Reset the power on the server.

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

For example:

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

The BIOS screen appears.

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

After a few moments, the BIOS Setup Utility appears.

3. To ensure that the factory defaults are set, do the following:

a. Press F9 to automatically load the optimal factory default settings.

A message appears prompting you to continue this operation by selecting OK or to cancel this operation by selecting CANCEL.

b. In the message, highlight OK then press Enter.

The BIOS Setup Utility screen appears with the cursor highlighting the first value in the system time field.

4. In the BIOS Setup Utility, do the following to edit the values associated with the system time or date.

a. Highlight the values you want to change.

Use up or down arrow keys to change between the system time and date selection.

b. To change the values in the highlighted fields, use these keys:

- PLUS (+) to increment the current value shown

- MINUS (-) to decrement the current value shown
- ENTER to move the cursor to the next value field

5. To access the boot settings, select the Boot menu.

The Boot Settings menu appears.

6. In the Boot Settings menu, use the down arrow key to select Boot Device Priority, then press Enter.

The Boot Device Priority menu appears listing the order of the known bootable devices. The first device in the list has the highest boot priority.

7. In the Boot Device Priority menu, do the following to edit the first boot device entry in the list:

a. Use the up and down arrow keys to select the first entry in the list, then press Enter.

b. In the Options menu, use the up and down arrow keys to select the default permanent boot device, then press Enter.

The device strings listed on the Boot Device Priority menu and Options menu are in the format of: *device type*, *slot indicator*, and *product ID string*.

Note – You can change the boot order for other devices in the list by repeating Step 7a and Step 7b for each device entry you want to change.

8. To save changes and exit the BIOS Setup Utility, press F10.

Alternatively, you can save the changes and exit the BIOS Setup Utility by selecting Save on the Exit menu. A message appears prompting you to save changes and exit setup. In the message dialog, select OK, then press Enter.

Note – When using the Oracle ILOM Remote Console, F10 is trapped by the local OS. You must use the F10 option listed in the Keyboard drop-down menu that is available at the top of the console.

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