Sun Server X4-8 Installation Guide for Oracle® Solaris Operating System



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Contents

Using This Documentation	7
About Oracle Solaris OS Installation	. 9
Supported Oracle Solaris Operating Systems	. 9
Oracle Solaris Installation Task Table	
OS Installation Options	10
Single-Server Installation Methods	11
Oracle System Assistant	11
Preparing to Install the OS	15
Obtaining Oracle Solaris Documentation	15
Setting Up the Installation Session	15
▼ Set Up the Local Console	16
▼ Set Up the Remote Console	16
Setting Up the BIOS	22
▼ Load BIOS Optimal Default Settings	22
▼ Set the BIOS Boot Mode	23
Installing the Oracle Solaris OS	25
Installing Supported Versions of the Oracle Solaris OS	25
▼ Install the Oracle Solaris OS (Oracle System Assistant)	25
▼ Install the Oracle Solaris OS (Manually)	30
▼ Installing Server System Tools (Optional)	32
Index	35

Using This Documentation

This section describes how to get the latest firmware, software, and documentation for Oracle's Sun Server X4-8. It also provides feedback links and a document change history.

- "Sun Server X4-8 Model Naming Convention" on page 7
- "Getting the Latest Firmware and Software" on page 7
- "Documentation and Feedback" on page 8
- "About This Documentation" on page 8
- "Contributors" on page 8
- "Change History" on page 8

Sun Server X4-8 Model Naming Convention

The Sun Server X4-8 name identifies the following:

- X identifies an x86 product.
- The first number, 4, identifies the generation of the server.
- The second number, 8, identifies the number of processors.

Getting the Latest Firmware and Software

Firmware, drivers, and other hardware-related software for your server are updated periodically.

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

- Oracle System Assistant This is a new 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 https://support.oracle.com

Documentation and Feedback

Documentation	Link
All Oracle products	https://docs.oracle.com
Sun Server X4-8	http://www.oracle.com/goto/X4-8/docs
Oracle Integrated Lights Out Manager (ILOM). Refer to the documentation for your supported version of Oracle ILOM as listed in the <i>Product Notes</i> .	http://www.oracle.com/goto/ILOM/docs
Oracle Hardware Management Pack. Refer to the documentation for your supported version of Oracle HMP as listed in the <i>Product Notes</i> .	http://www.oracle.com/goto/ohmp/docs

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

About This Documentation

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

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Change History

The following lists the release history of this documentation set:

- April 2014. Initial publication.
- June 2014. Changes for product release.
- December 2015. Updates for Oracle Solaris 11.3.

About Oracle Solaris OS Installation

This section provides an overview of the installation process, supported OS versions, and installation options.

- "Supported Oracle Solaris Operating Systems" on page 9
- "Oracle Solaris Installation Task Table" on page 10
- "OS Installation Options" on page 10

Note - If you requested that the Oracle Solaris operating system (OS) be **preinstalled** on your server when you ordered the server, Oracle Solaris was preinstalled at the factory. If the Oracle Solaris OS is preinstalled on your server, but you do not want to use it, you can install any other supported operating system or virtual machine software on your server.

If the Oracle Solaris OS was preinstalled, it was installed with the server UEFI/BIOS Boot Mode set to Legacy. If you choose to boot the server with the UEFI/BIOS Boot Mode set to UEFI, the preinstalled image will not be accessible. If you want to use the Oracle Solaris OS with the UEFI/BIOS Boot Mode set to UEFI, you must perform a fresh installation.

Supported Oracle Solaris Operating Systems

The Sun Server X4-8 currently supports the following Oracle Solaris OS versions:

- Oracle Solaris 11.1 (SRU 12)
- Oracle Solaris 11.2
- Oracle Solaris 11.3

For the latest supported versions, refer to:

http://www.oracle.com/webfolder/technetwork/hcl/index.html

Oracle Solaris Installation Task Table

Use the following task table to install a supported version of Oracle Solaris on your Sun Server X4-8.

Step	Task	Link
1	Review the list of supported Solaris OS versions and learn how to obtain the latest and most up-to-date information about the server software and hardware.	"Supported Oracle Solaris Operating Systems" on page 9
2	Review the options for single server or multiple server OS installations.	"OS Installation Options" on page 10
3.	Obtain the Oracle Solaris installation software image.	Download an Oracle Solaris ISO image and copy it to a DVD or a network location. To download the image, go to:
		http://www.oracle.com/technetwork/server- storage/solaris11/downloads/index.html
4	Get an overview of Oracle System Assistant and how you can use it to manage your server.	"Oracle System Assistant" on page 11
4	Prepare for the operating system installation.	"Preparing to Install the OS" on page 15
5	Install the operating system.	"Installing the Oracle Solaris OS" on page 25

OS Installation Options

You can choose to install an OS on a single server or on multiple servers. The scope of this document is for single server OS installations. The following table provides information about these two installation options.

Option	Description
Multiple servers	For information on using Oracle Enterprise Manager Ops Center to install an OS on multiple servers, refer to:
	http://www.oracle.com/technetwork/oem/ops-center/index.html.
Single server	Install an OS to a single server using one of the following methods:
	■ Local installation : OS installation is performed locally at the server. Additional hardware is required.
	■ Remote installation : OS installation is performed from a remote location. Uses the Oracle ILOM Remote Console application to either access Oracle System Assistant to perform an assisted installation, or to perform a manual OS installation using the Solaris media.

Option	Description
	Note - Oracle System Assistant is the easiest method for local or remote single-server OS installations.

Related Information:

"Single-Server Installation Methods" on page 11

Single-Server Installation Methods

The single server installation methods include the following variations:

- Assisted or Manual:
 - Assisted using Oracle System Assistant. See "Install the Oracle Solaris OS (Oracle System Assistant)" on page 25.
 - Manual. See "Install the Oracle Solaris OS (Manually)" on page 30.
- Local or Remote: Both assisted and manual installations can be performed either locally or remotely:
 - A local installation is performed at the server. It requires an ISO image on a DVD.
 It also requires a USB DVD drive, a monitor, and a USB keyboard and mouse, all or which are attached to the USB ports of the local machine.
 - A **remote installation** is performed from a remote location. It requires either an ISO image mounted on a network, or a DVD drive and an ISO image located on a DVD.
- Network PXE Install: You can install Oracle Solaris using a PXE image available on the network. Refer to the Oracle Solaris documentation library: http://www.oracle.com/ technetwork/documentation/solaris-11-192991.html

Related Information:

- "Preparing to Install the OS" on page 15
- "Oracle System Assistant" on page 11

Oracle System Assistant

This section contains the following topics:

- "Oracle System Assistant Overview" on page 12
- "Oracle System Assistant OS Installation Task" on page 12

"Obtaining Oracle System Assistant" on page 12

Oracle System Assistant Overview

Oracle System Assistant is a single-server system setup and maintenance tool for Oracle x86 servers. It integrates Oracle's Single System Management products and a selection of related software to provide a suite of tools that allow for the quick and convenient startup and maintenance of the server. The components of Oracle System Assistant include:

- Oracle System Assistant application
- Oracle Hardware Management Pack
- User interface access to configuration and maintenance provisioning tasks (including the Install OS task)
- Oracle System Assistant command-line environment
- Operating system
- Server-specific firmware
- Server-related documentation

Oracle System Assistant is installed in the server and is maintained through online updates.

Related Information:

Oracle X4 Series Servers Administration Guide (http://www.oracle.com/goto/x86AdminDiag/docs).

Oracle System Assistant OS Installation Task

You can use the Oracle System Assistant to help you install a supported OS. You supply the OS installation media, and Oracle System Assistant guides you through the installation process.

You can access Oracle System Assistant locally or remotely.

If you just completed the installation of the server, then using Oracle System Assistant locally while physically present at the server can be a fast and efficient method of starting up the server. Once the server is operational, you can access Oracle System Assistant remotely.

Obtaining Oracle System Assistant

Oracle System Assistant is installed in the server in most cases.

To determine if Oracle System Assistant is installed on the server or to perform updates and recovery procedures, refer to the Oracle X4 Series Servers Administration Guide (http://www.oracle.com/goto/x86AdminDiag/docs).

Preparing to Install the OS

This section describes the steps for preparing to install an OS. Use the following task table as a guide.

Step	Task	Link
1	Review the OS installation task table.	"About Oracle Solaris OS Installation" on page 9
2	Get the installation documentation.	"Obtaining Oracle Solaris Documentation" on page 15
3	Setup for the installation based on your selected installation method.	"Setting Up the Installation Session" on page 15
4	Set up the BIOS.	"Setting Up the BIOS" on page 22
5	Install and update the OS.	"Installing the Oracle Solaris OS" on page 25

Obtaining Oracle Solaris Documentation

Documentation for supported versions of the Oracle Solaris operating systems are available at:

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

Setting Up the Installation Session

This section describes how to set up a local or remote installation session.

A local OS installation is performed at the server. A remote OS installation is performed using the Oracle ILOM Remote Console Plus application, and a redirected DVD drive, or ISO image.

- "Set Up the Local Console" on page 16
- "Set Up the Remote Console" on page 16

Set Up the Local Console

Use this procedure to set up for a local Oracle System Assistant assisted installation or a local manual (unassisted) installation. A local OS installation is performed at the server.

The preferred local installation method is Oracle System Assistant's Install OS task.

Before You Begin

- Perform the server installation as described in the *Sun Server X4-8 Installation Guide*.
- Get the following items:
 - Video monitor with 15-pin (DB-15) connector capabilities
 - USB keyboard and mouse
 - ISO file on a DVD
 - USB DVD drive if your server does not have a built-in DVD drive
- To ensure that the server has the latest updates, server web access is recommended.
- 1. Ensure the server is in standby power state.
- Connect the video monitor to the video connector on the front of the server.
- Connect the keyboard and mouse to one of the USB connectors on the front of the server.
- 4. Connect the DVD drive to the other USB connector on the front of the server (only if your server did not come with a DVD drive built-in).

Next Steps "Setting Up the BIOS" on page 22

▼ Set Up the Remote Console

Use this procedure to set up for a remote Oracle System Assistant assisted installation or a remote manual (unassisted) installation. A remote OS installation is performed using the Oracle ILOM Remote Console Plus application and an ISO image on a redirected DVD drive or network location.

The preferred procedure for a remote installation is to use Oracle System Assistant's assisted Install OS task.

Note - Using the DVD-ROM or ISO image option to install the OS *significantly* increases the time necessary to perform the installation as the content of the DVD-ROM is accessed over the network. The installation duration depends on the network connectivity and traffic. This installation method also has a greater risk of issues due to transient network errors.

Before You Begin

The following requirements must be met:

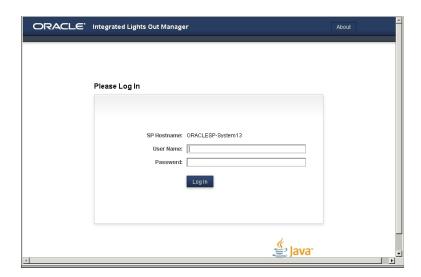
- Perform the server installation as described in the Sun Server X4-8 Installation Guide.
- Set up the server service processor (SP). Follow the instructions in the Oracle ILOM documentation for your server.
- The Oracle ILOM Remote Console Plus system can be any client with a browser connected to a network that has access to the Sun Server X4-8 Ethernet management port.
- Ensure that you have met the Java, browser, and configuration requirements to run Oracle ILOM Remote Console Plus on a remote client, as described in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* for your server's version of Oracle ILOM at: http://www.oracle.com/goto/ILOM/docs.

Note - Some of the screen images shown in this procedure might differ from the screens you see.

 To access Oracle ILOM, type the IP address of the service processor into a browser on the Oracle ILOM Remote Console Plus system.

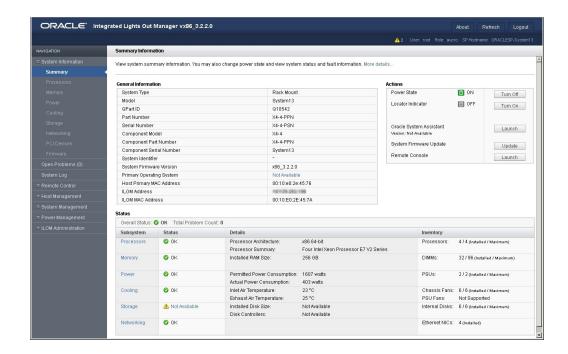
Answer any security prompts, as needed.

The Oracle ILOM login screen appears.



2. Type the user name and password and click Log In.

To use the Oracle ILOM Remote Console Plus feature, you need to log in using an account that has Console role privileges.



The Oracle ILOM System Summary screen appears.

3. Click the Remote Console Launch button.

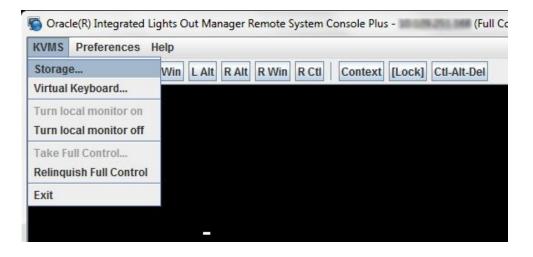
Answer any prompts that appear.

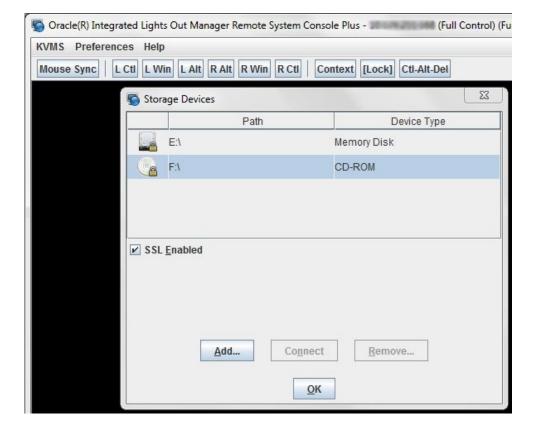
The Oracle ILOM Remote Console Plus screen appears.

- 4. To redirect storage media, perform the following actions:
 - a. Verify you have full-control privileges for the redirection session. If not, click Take Full-Control in the KVMS menu.

Note - If you are the primary user with full-control privileges, the option for Take Full-Control is disabled in the KVMS menu.

b. Click Storage in the KVMS menu.





The Storage Device dialog box appears.

Note - The Storage Device dialog box automatically displays storage drive devices (such as CD, DVD, floppy, and USB devices) detected on the Oracle ILOM Remote Console Plus client. If bootable media is not detected in the drive, a lock icon appears on the drive to indicate: 1) the drive is present, and 2) bootable media was not found in the drive.

- c. To add a storage image (such as a DVD drive) to the Storage Device dialog box, click Add.
- d. To redirect storage media from the Storage Device dialog box, select the storage media and click Connect.

Note - After clicking Connect in the Storage Device dialog, the label on the Connect button changes to Disconnect.

Next Steps

"Setting Up the BIOS" on page 22

Setting Up the BIOS

Before you install the operating system, ensure that BIOS settings are configured to support the type of installation you plan to perform. The following topics provide specific instructions on how to configure the BIOS to support the installation:

- "Load BIOS Optimal Default Settings" on page 22
- "Set the BIOS Boot Mode" on page 23

Load BIOS Optimal Default Settings



Caution - This procedure resets the BIOS settings to the default values and overwrites any previously customized settings. To retain customized settings, review each menu and make note of the customized values before loading the default values.

The BIOS Setup Utility contains an option to load the optimal BIOS settings for the server. Perform this procedure on a newly installed server to ensure that the BIOS is set to the optimal default values.

Before You Begin

- The server is equipped with a properly installed storage drive.
- A console connection is established to the server. For details, see "Setting Up the Installation Session" on page 15.
- 1. Power on the server.

POST message appears on the video (KVMS or RKVMS) console.

2. Watch the messages, and when prompted, press F2 to access the BIOS Setup Utility.

The BIOS Setup Utility main screen appears.

3. To ensure that the factory defaults are set, press F9.

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

Next Steps "Set the BIOS Boot Mode" on page 23

▼ Set the BIOS Boot Mode

The Unified Extensible Firmware Interface (UEFI) BIOS firmware supports both legacy BIOS boot mode and UEFI BIOS boot mode; the default setting is Legacy BIOS boot mode. Oracle Solaris 11.1 and later operating systems support UEFI BIOS boot mode and legacy BIOS boot mode.

Follow these instructions for setting the BIOS boot mode before installing the OS:

1. Power on the server.

POST messages appear on the console.

2. Watch the messages, and when the prompt appears, press F2 to access the BIOS Setup Utility.

The BIOS Setup Utility main screen appears.

3. In the BIOS Setup Utility, use the left or right arrow keys to navigate to the Boot menu.

The Boot Menu screen appears.

- 4. Use the down arrow key to select the UEFI/BIOS Boot Mode field.
- 5. Press Enter and use the up or down arrow keys to select the BIOS boot option.
- 6. To save the changes, and exit the BIOS Setup Utility, press F10.

Next Steps "Installing the Oracle Solaris OS" on page 25

Installing the Oracle Solaris OS

This section describes how to install the Oracle Solaris operating system.

Step	Task	Link
1	Start the installation.	"Installing Supported Versions of the Oracle Solaris OS" on page 25
2	Install the Oracle Solaris OS system tools and access the drivers (if required) that are included with Oracle System Assistant software and the downloaded software package.	"Installing Server System Tools (Optional)" on page 32

Installing Supported Versions of the Oracle Solaris OS

This section contains the following procedures:

- "Install the Oracle Solaris OS (Oracle System Assistant)" on page 25
- "Install the Oracle Solaris OS (Manually)" on page 30

▼ Install the Oracle Solaris OS (Oracle System Assistant)

The Oracle System Assistant Install OS task provides assisted OS installation of a supported versions of the Oracle Solaris OS.

Before You Begin

- Prepare the server storage drives. For more information, refer to the *Sun Server X4-8 Installation Guide*.
- Perform the steps in "Preparing to Install the OS" on page 15.

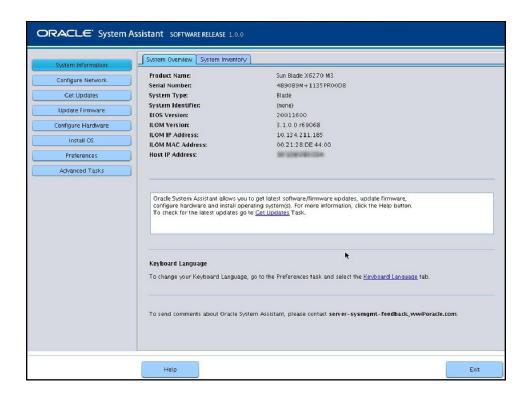
- During the OS installation and configuration process, you might need to provide logical and physical network names. For more information, see "Install the Oracle Solaris OS (Manually)" on page 30.
- **For local installation**, have a DVD with an ISO image available to insert into the attached physical DVD-ROM drive when prompted.
- **For remote installation**, insert the DVD with an ISO image into the Remote Console system's DVD-ROM drive. Make sure you have selected CD-ROM from the Remote Console Device menu.
 - If you are using an ISO image on a network, ensure that the it is accessible from the Remote Console system. Select CD-ROM Image from the Remote Console Device menu.
- Server web access is required to update Oracle System Assistant.

 For more information about how to setup Oracle System Assistant network access, refer to the Oracle X4 Series Servers Administration Guide (http://www.oracle.com/goto/x86AdminDiag/docs).
- 1. Ensure that the server is in standby power.
- 2. Boot the server.

Watch the video monitor or Remote Console screen for the prompt to press the F9 key to access Oracle System Assistant.

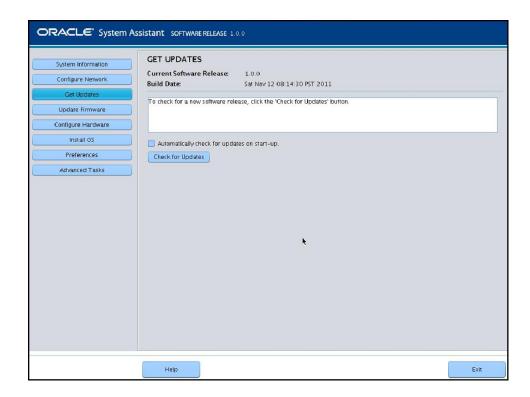
3. When the prompt appears, press the F9 key.

The Oracle System Assistant main screen appears.



4. To update the Oracle System Assistant application, click the Get Updates button.

This action ensures that the application has the latest firmware and drivers before you begin the OS installation.

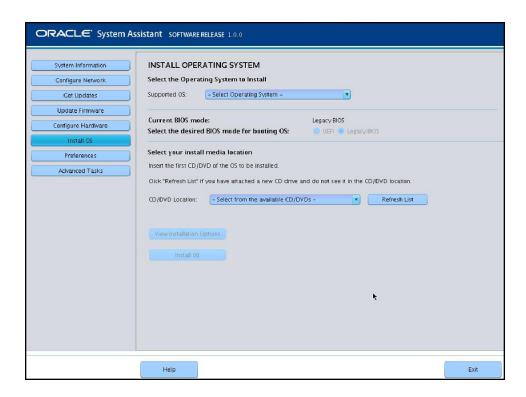


5. To update the server firmware, click the Update Firmware button.

This action ensures that the server has the latest firmware before you begin the OS installation.

6. To install the OS, click the Install OS button.

The Install OS screen appears.



- 7. From the Select Operating System drop-down list, select the OS.
- 8. Select the BIOS boot mode. See "Set the BIOS Boot Mode" on page 23.

For more information, refer to the Oracle X4 Series Servers Administration Guide (http://www.oracle.com/goto/x86AdminDiag/docs).

9. In the Select your install media location section, select the location of the installation media.

This is the location of the installation ISO image. If you attached a DVD drive, you might need to click the Refresh button to see it in the drop-down list.

10. To select the device on which to install the OS, click View Installation Options.



Caution - Loss of data. The OS installation erases the contents of the disk. All data on the selected disk is erased.

- 11. To begin the OS installation, click Install OS.
- 12. Follow the prompts until the installation is finished.

The server boots.

Next Steps

"Installing Server System Tools (Optional)" on page 32

▼ Install the Oracle Solaris OS (Manually)

Use this procedure to install the OS locally or remotely.

Before You Begin

- Review Oracle Solaris OS installation documentation at: http://www.oracle.com/ technetwork/documentation/solaris-11-192991.html
- You should have already selected your BIOS boot mode (Legacy or UEFI) as described in "Preparing to Install the OS" on page 15.
- You should have already done the preparation for a local or remote installation as described in "Preparing to Install the OS" on page 15. Then perform one of the following:
 - **Local installation**: Have a DVD with an ISO image available to insert into the attached physical DVD-ROM drive.
 - **Remote installation**: If you are using a DVD with an ISO image, insert it into the remote client's DVD-ROM drive and mount it through the Oracle ILOM Remote Console KVMS > Storage menu.

If you are using an ISO image on a network, ensure that the image is mounted through the Oracle ILOM Remote Console KVMS > Storage menu.

- 1. If you are using an ISO image on a DVD, insert the DVD into the DVD drive.
- 2. Power on or reboot the server.

If you are using the remote installation method, you can power on or reboot the server through Oracle ILOM.

BIOS messages appear.



Watch the screen until you see a list of selections and then press F8 to select "BBS Popup."

Note - BIOS messages, including the BIOS menu selection list, can go by quickly. If you miss the messages, power cycle the server and hold down the F8 key during boot until the BBS Popup menu appears.

After a delay, a "select boot device" menu appears with a list of possible boot devices.

4. Select a boot device from the list, as follows:

- For a local installation, select the Oracle Solaris media from the list of devices and press Enter.
- For a remote installation, select the client's remotely mounted virtual DVD drive or ISO image from the list of devices and press Enter.

Control passes to the OS installation program on the media.

Note - If a message about mounting an OS instance appears, select **q**. You should not mount any OS instance.

5. Use the text- or GUI-based installation program to install the OS.

For more information on installation, refer to the Oracle Solaris documentation: http://www.oracle.com/technetwork/documentation/solaris-11-192991.html

Installing Server System Tools (Optional)

Server system tools, which include LSI MegaRAID Storage Manager (LSI MSM), MegaCLI, and Oracle Hardware Management Pack, are available with the Oracle System Assistant software and the downloaded Solaris OS software package. Use this procedure to access and install the server system tools.

Note - Additional software for Oracle Solaris can be installed with the Oracle Solaris Image Packaging System (IPS). For more more information, refer to *Adding and Updating Software* in the corresponding Oracle Solaris documentation library:

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

1. Do one of the following:

- If your system has Oracle System Assistant:
 - a. From the OS, open a file browser, and navigate to the Oracle System Assistant USB device.

The USB device is named: ORACLE SSM

For USB mounting instructions, refer to the Oracle X4 Series Servers Administration Guide (http://www.oracle.com/goto/x86AdminDiag/docs).

b. Navigate to the appropriate Solaris OS Tools folder:

Solaris/*OS_name*/Tools where *OS_name* is the installed Solaris OS.

- If your system does not have Oracle System Assistant:
 - a. Download the latest server system tools and drivers package from the My Oracle Support site.

For more information, refer to "Getting Server Firmware and Software" in *Sun Server X4-8 Installation Guide*.

- b. Unzip the downloaded tools and drivers package to the server.
- c. Within the unzipped file system, navigate to the Solaris OS Tools folder:

Solaris/OS_name/Tools

where *OS_name* is the installed Solaris OS.

2. The following table lists the procedures for installing the tools:

Tool	Instructions	
LSI MSM	1. Navigate to the MSM/disk directory and run the install.sh file.	
	This starts the installation script.	
	2. Follow the progress of the script until the installation is finished.	
	For more information, refer to the LSI MSM installation instructions at:	
	http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-rem-z.aspx	
	Note - The readme.txt file in Tools/MSM directory contains important installation information.	
MegaCLI	Navigate to the MegaCLI directory and run the MegaCLI file.	
	Note - The readme.txt file in Tools/MSM directory contains important installation information.	
Oracle Hardware	Refer to the hmp-prerequisite-installation.txt ReadMe file in the hmp-tools/oracle-	
Management Pack	hmp-version/SOFTWARE directory (where version is the version of Oracle Hardware Management Pack).	
	For more information, refer to the Oracle Hardware Management Pack documentation at:	
	http://www.oracle.com/goto/OHMP/docs	

Index

A	Solaris, 32	
assisted OS installation	installing OS	
Solaris, 25	Solaris, 9	
В	L	
BIOS	legacy BIOS	
boot modes	boot mode	
settings, 22	Solaris, 23	
boot modes, setting (Solaris), 23	local installation	
loading optimal defaults	setting up	
Solaris, 22	Solaris, 16	
D	M	
documentation	MegaCLI	
Oracle Solaris OS, 15	installing, 32	
	MegaRAID Storage Manager	
	installing, 32	
I	multiple server vs single server, 10	
installing		
local set up		
Solaris, 16	0	
MegaCLI	operating system	
Solaris, 32	preinstalled, 9	
MegaRAID Storage Manager	supported versions	
Solaris, 32	Solaris, 9	
Oracle Hardware Management Pack	optimal defaults	
Solaris, 32, 32	loading	
Oracle System Assistant, 32	Solaris, 22	
remote set up	Oracle ILOM	
Solaris, 16	remote console	
tools and drivers	Solaris, 16	

```
Oracle Solaris operating system
                                                           boot mode
  preinstalled, 9
                                                              Solaris, 23
Oracle Solaris OS
  documentation, 15
  installing manually, 25
   Oracle System Assistant, 25
   OS installation, 25
Oracle System Assistant
  installing, 32
  OS installation
     Solaris, 25
   Solaris, 12
overview
  OS installation
     Solaris, 25
preinstalled operating system, 9
R
remote installation
  setting up
     Solaris, 16
S
single-server installation, 11
Solaris See Oracle Solaris
supported operating systems
  Oracle Solaris, 9
Т
tools and drivers
   installing, Solaris, 32
```

Unified Extensible Firmware Interface (UEFI) BIOS