

Sun Server X3-2 (formerly Sun Fire X4170 M3)
Installation Guide for Windows Operating Systems



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Using This Documentation

This installation guide contains procedures for installing the Windows Operating System, and initial software configuration procedures for bringing the Sun Server X3-2 from Oracle to a configurable and usable state.

Note – The Sun Server X3-2 was formerly named the Sun Fire X4170 M3 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 written for technicians, system administrators, authorized service providers (ASPs), and users who have experience with installing operating systems.

This section describes how to get the latest software and firmware, documentation and feedback, and support and accessibility information.

- [“Getting the Latest Software and Firmware” on page vii](#)
- [“About This Documentation” on page viii](#)
- [“Related Documentation” on page viii](#)
- [“Feedback” on page viii](#)
- [“Access to Oracle Support” on page ix](#)

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.

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

- Oracle System Assistant – This is a new factory-installed option for Oracle x86 servers. It has all the tools and drivers you need and is built into the server.
- My Oracle Support: <http://support.oracle.com>
- Physical media request

For more information, see “Getting Server Firmware and Software” on page 61.

About This Documentation

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

A PDF version that includes all information on a particular 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 X3-2	http://www.oracle.com/pls/topic/lookup?ctx=SunServerX3-2
Oracle Integrated Lights Out Manager (ILOM) 3.1	http://www.oracle.com/pls/topic/lookup?ctx=ilom31
Oracle Hardware Management Pack 2.2	http://www.oracle.com/pls/topic/lookup?ctx=ohmp

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About Microsoft Windows Server Operating System Installs

Note – The Sun Server X3-2 was formerly named the Sun Fire X4170 M3 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 section contains an overview for installing a new Microsoft Windows Server 2008 or Windows Server 2012 operating system (OS) on your server.

Description	Links
Learn about Windows operating system installation steps.	“Windows OS Installation Task Map” on page 2
Learn about the supported Windows operating systems.	“Supported Windows Operating Systems” on page 3
Learn about storage driver requirements for SAS HBAs.	“SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2” on page 3
Learn about console display options and how to set them up.	“Selecting the Console Display Option” on page 4
Learn about boot media options and how to set them up.	“Selecting the Boot Media Option” on page 6
Learn about installation target options and how to set them up.	“Selecting the Installation Target Option” on page 9
Learn about operating system installation options.	“Windows OS Installation Options” on page 10
Learn about Oracle System Assistant	“Oracle System Assistant Overview” on page 12

Related Information

- [“Installing Windows Server Operating System” on page 21](#)

Windows OS Installation Task Map

The following table lists and describes the steps for installing the Windows Server operating system.

Step	Description	Links
1.	Install your server hardware and configure the Oracle ILOM service processor.	• <i>Sun Server X3-2 Installation Guide</i>, “Installing the Server Into a Rack” on page 21 • <i>Sun Server X3-2 Installation Guide</i>, “Cabling the Server” on page 59 • <i>Sun Server X3-2 Installation Guide</i>, “Connecting to Oracle ILOM” on page 65
2.	Obtain the Windows installation media.	Go to: http://technet.microsoft.com/en-us/windowsserver/default.aspx
3.	Review the product notes.	<i>Sun Server X3-2 Product Notes</i> at: http://www.oracle.com/pls/topic/lookup?ctx=SunServerX3-2
4.	Set up the console, the boot media, and the installation target that you will use to perform the installation.	• “Selecting the Console Display Option” on page 4 • “Selecting the Boot Media Option” on page 6 • “Selecting the Installation Target Option” on page 9
5.	Verify and, if necessary, configure BIOS.	“Setting Up BIOS” on page 15
6.	Install the Windows OS.	• “Install Windows Server Using Oracle System Assistant” on page 23 • “Install Windows Server 2008 (SP2 or R2 SP1) Using Local or Remote Media” on page 26 • “Install Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 (R2) Using PXE Network Boot” on page 52
7.	Perform the post installation tasks, if applicable.	“Post Installation Tasks for Windows Server” on page 57

Related Information

- “Preparing to Install the Operating System” on page 15

Supported Windows Operating Systems

The server supports the following Microsoft Windows operating systems:

Windows OS	Edition
• Windows Server 2008 SP2	• Standard Edition (64-bit) • Enterprise Edition (64-bit) • Datacenter edition (64-bit)
• Windows Server 2008 R2 SP1	• Standard Edition (64-bit) • Enterprise Edition (64-bit) • Datacenter Edition (64-bit)
• Windows Server 2012	• Standard Edition (64-bit) • Datacenter Edition (64-bit)
• Windows Server 2012 R2	• Standard Edition (64-bit) • Datacenter Edition (64-bit)

Additionally, you can install any other supported operating system or virtual machine software on your server. For a complete list of operating systems supported by the server, see the latest version of the *Sun Server X3-2 Product Notes* at <http://www.oracle.com/pls/topic/lookup?ctx=SunServerX3-2> for updated information.

Related Information

- [“Installing Windows Server Operating System” on page 21](#)

SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2

The following table identifies the SAS PCIe host bus adapter (HBA) options that are supported on the server at the time of this publication. If you have one of these SAS PCIe HBA options configured on your server and you are installing Microsoft Windows Server 2008 SP2, you will need to load the LSI mass storage driver for the

PCIe HBA option. This LSI mass storage driver is available on the internal Oracle System Assistant USB flash drive and Oracle System Assistant provides tools for loading it.

TABLE: Supported SAS PCIe HBAs Requiring LSI Mass Storage Driver

Supported SAS PCIe HBAs	Option Number	Driver Required During Installation
Sun Storage 6 Gb SAS PCIe RAID HBA, Internal	SG-SAS6-R-INT-Z	LSI MegaRAID SAS 92xx-xx
Sun Storage 6 Gb SAS PCIe HBA, Internal	SG-SAS6-INT-Z	LSI Adapter SAS 2008 Falcon
Sun Storage 6 Gb SAS PCIe HBA, External	SG-SAS6-EXT-Z	LSI Adapter SAS 2008 Falcon

Instructions for loading the LSI mass storage driver during the Windows Server 2008 SP2 installation are provided in Step 8 of the [“Install Windows Server 2008 \(SP2 or R2 SP1\) Using Local or Remote Media”](#) on page 26.

If your server does not have an internal Oracle System Assistant USB flash drive, you can download the ISO image that includes the LSI mass storage driver. For download instructions, see [“Getting Server Firmware and Software”](#) on page 61.

Selecting the Console Display Option

This section describes the options for connecting a console to perform the installation.

- [“Console Display Options”](#) on page 4
- [“Set Up the Local Console”](#) on page 5
- [“Set Up the Remote Console”](#) on page 5

Console Display Options

You can install the OS and administer the server by attaching a local console directly to the server’s service processor (SP). The server supports two types of local consoles:

- A terminal connected to the serial management port (SER MGT)
 - You can connect the terminal directly to the port or connect it to a terminal emulator that is connected directly to the port.

- A VGA monitor connected to the video port (VGA) and a USB keyboard and USB mouse connected to the two rear USB connectors

You can also install the OS and administer the server from a remote console by establishing a network connection to the server service processor (SP). There are two types of remote consoles:

- Web-based client connection using the Oracle ILOM Remote System Console application
- SSH client connection to the network management port (NET MGT)

▼ Set Up the Local Console

1. **To connect a local console, do one of the following:**
 - Connect a terminal to the serial management port (SER MGT) either directly or through a terminal emulator.
 - Connect a VGA monitor to the video port (VGA) and a keyboard and mouse to the USB ports.
2. **For serial management port (SER MGT) connections only, to establish a connection to the host serial port:**
 - a. **Press Enter to access Oracle Integrated Lights Out Manager (ILOM).**
The Oracle ILOM login prompt appears.
 - b. **Type your Oracle ILOM user name and password.**
 - c. **At the Oracle ILOM prompt, type:**
-> **start /HOST/console**
The serial management port output is automatically routed to the Linux host serial local console.

Related Information

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

▼ Set Up the Remote Console

1. **View or establish an IP address for the server SP.**
For instructions, see the *Sun Server X3-2 Installation Guide*, “Determining the IP Address of the Server SP” on page 69.

2. If you are using a web-based client connection, perform these steps; otherwise go to the next step.
 - a. In a web browser, type the IP address for the server SP.
 - b. Log in to the Oracle ILOM web interface.
 - c. Redirect the video output from the server to the web client by launching the Oracle ILOM Remote System Console.
 - d. If necessary, enable device redirection (mouse, keyboard, etc.) in the Devices menu.
3. If you are using a SSH client connection, perform these steps.
 - a. From a serial console, establish an SSH connection to the server SP (`ssh root@hostname`, where *hostname* can be the DNS name or the IP address for the server SP).
 - b. Log in to the Oracle ILOM command-line interface.
 - c. Redirect the serial output from the server to the SSH client by typing:
`-> start /HOST/console`

Related Information

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

Selecting the Boot Media Option

You can start the operating system installation to a server by booting a local or remote installation media source. This section identifies the supported media sources and the setup requirements for each source.

- “Boot Media Options Requirements” on page 6
- “Set Up the Local Boot Media Option” on page 7
- “Set Up the Remote Boot Media Option” on page 8

Boot Media Options Requirements

This section describes the requirements for using local and remote media.

- “Local Boot Media Requirements” on page 7

- [“Remote Boot Media Requirements” on page 7](#)

Local Boot Media Requirements

Local boot media requires a built-in storage device on the server, or an external storage device attached to the server.

Supported OS local boot media sources can include:

- CD/DVD-ROM installation media
- If applicable, floppy device driver media

Remote Boot Media Requirements

Remote media requires you to boot the install over the network. You can start the network install from a redirected boot storage device or another networked system that exports the installation over the network using a Pre-Boot eXecution Environment (PXE).

Supported OS remote boot media sources can include:

- CD/DVD-ROM installation media, and, if applicable, floppy device driver media
- CD/DVD-ROM ISO installation image, and, if applicable, floppy device driver media
- Automated installation image (requires PXE boot)

▼ Set Up the Local Boot Media Option

To set up the local boot media, perform these steps.

1. **If the server is equipped with an optional DVD drive, insert the Windows Server OS installation DVD into the DVD drive located on the front of the server; otherwise, proceed to the next step.**
2. **If your server does not contain a DVD drive, insert a USB flash drive that contains the Windows Server OS installation media into one of the external USB ports located on the front and rear of the server.**

Note – For information about the location of the server’s external USB ports, see the [Sun Server X3-2 Installation Guide, “About Server Features and Components” on page 5](#).

▼ Set Up the Remote Boot Media Option

To install the OS from media in a remote location, perform these steps.

1. **To redirect the boot media from a remote storage device, perform these steps; otherwise, go to the next step.**
 - a. **Mount or present the OS boot media so that it is accessible, for example:**
 - **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 ISO image**, ensure that ISO image, if applicable, is readily available on a network shared location or on a USB drive.
 - b. **Establish a web-based client connection to the server Oracle ILOM SP and launch the Oracle ILOM Remote System Console application.**

For more details, see the setup requirements for web-based client connection in [“Selecting the Console Display Option” on page 4](#).
 - c. **In the Devices menu of the Oracle ILOM Remote System Console application, specify the location of the boot media, for example:**
 - **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.
2. **To perform the installation using PXE, perform these steps.**
 - a. **Configure the network server to export the installation using PXE boot.**
 - b. **Make the OS install media available for PXE boot.**

If you are using an automated OS installation image, you will need to create and provide the automated OS install image.

For detailed instructions for automating the installation setup process, consult the Windows operating system documentation.
 - c. **To boot the installation media, select the PXE boot interface card as the temporary boot device.**

Selecting the Installation Target Option

This section describes how to set up the installation target.

- [“Installation Target Options” on page 9](#)
- [“Set Up a Local Storage Drive \(HDD or SSD\) as the Installation Target” on page 9](#)
- [“Set Up a Fibre Channel Storage Area Network Device as the Installation Target” on page 9](#)

Installation Target Options

With the exception of the embedded Oracle System Assistant USB flash drive (which is reserved for Oracle System Assistant), you can install the operating system on any of the storage drives installed in the server. These include hard disk drives (HDDs) and solid state drives (SSDs).

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.

▼ Set Up a Local Storage Drive (HDD or SSD) as the Installation Target

- **Ensure that the HDD or SSD is properly installed and powered on.**

For more information about installing and powering on a HDD or SSD, see the [Sun Server X3-2 Service Manual, “Servicing Storage Drives \(CRU\)” on page 49](#).

▼ Set Up a Fibre Channel Storage Area Network Device as the Installation Target

1. **Ensure that the PCIe host bus adapter (HBA) is properly installed in the server.**

For more information about installing a PCIe HBA option, see the [Sun Server X3-2 Service Manual, “Servicing PCIe Cards \(CRU\)” on page 88](#).

2. **Ensure that the storage area network (SAN) is installed and configured to make the storage device visible to the server’s host.**

For instructions, refer to the documentation supplied with the Fibre Channel HBA.

Windows 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 table below provides some information about these two installation options.

Option	Description
Multiple servers	You can use Oracle Enterprise Manager Ops Center to install an OS on multiple servers, For information, go to http://www.oracle.com/technetwork/ops-center/index.html
Single server	Install an OS to a single server using one of the following methods: • Locally: OS installation is performed locally at the server. This option is recommended if you have just completed the physical installation of the server in the rack. • Remotely: OS installation is performed from a remote location. Uses the Oracle ILOM Remote System Console application to access the Oracle System Assistant or to perform a manual OS installation. Note - Oracle recommends the use of Oracle System Assistant for single server OS installations.

For more information about single-server OS installation methods and Oracle System Assistant, see:

- [“Single-Server Installation Methods” on page 10](#)
- [“Oracle System Assistant Overview” on page 12](#)

Single-Server Installation Methods

Select a method for providing the Windows installation media. Use the following information to determine the local or remote OS installation that best serves your needs.

Media Delivery Method	Additional Requirements
Local guided OS installation – Uses Oracle System Assistant. (Recommended)	A monitor, USB keyboard and mouse, a USB device, and Windows distribution media. For more information, see “Guided OS Installation” on page 11.
Remote guided OS installation – Uses Oracle System Assistant. (Recommended)	Oracle ILOM Remote System Console application, a redirected CD/DVD drive or ISO image file, and Windows distribution media. For more information, see “Guided OS Installation” on page 11.
Local using a CD/DVD drive – Uses a physical CD/DVD drive connected to the server.	A monitor, USB keyboard and mouse, a USB CD/DVD drive, and Windows distribution media. For more information, see “Manual OS Installation” on page 11.
Remote using a CD/DVD drive or a CD/DVD ISO image – Uses a redirected physical CD/DVD drive on a remote system running the Oracle ILOM Remote System Console application.	A remote system with a browser, an attached physical CD/DVD drive, Windows distribution media, and network access to the server’s management port. For more information, see “Manual OS Installation” on page 11.
WDS WIM image – Uses a customized Windows Imaging Format (WIM) image on a Windows Deployment Services (WDS) server.	A server running WDS and a WIM image customized for your server. For more information, see “Windows Deployment Services OS Installation” on page 12.

Guided OS Installation

This is the recommended method for installing a supported OS on your server. This method involves using the Oracle System Assistant application. You deliver the Windows OS installation media on either a local or remote CD/DVD drive, USB device, or CD/DVD image, and Oracle System Assistant guides the installation process and gathers and installs the needed drivers when necessary. Your server must support Oracle System Assistant, and it must be installed in the server.

Manual OS Installation

With this method, you deliver the Windows distribution media on either a local or remote CD/DVD drive, USB device, or CD/DVD image. You also need to install any necessary drivers. The drivers for your server are available on the server’s internal

Oracle System Assistant flash drive (if installed) and from the My Oracle Support web site as either OS-specific and server-specific packages or as an ISO image file. To install the OS, use the distribution media's installation wizard.

Windows Deployment Services OS Installation

You can install the Windows OS from a deployment server environment. For the advanced user, you can create a customized Windows Imaging Format (WIM) image for your server on a system running Windows Deployment Services (WDS). Once this installation image file has been created, you can boot your server from its network card and select the image from the WDS system for unattended deployment. For more information about WDS, go to:

<http://technet.microsoft.com/en-us/library/cc770667%28WS.10%29.a.spx>.

Oracle System Assistant Overview

Oracle System Assistant is a server system management tool for Oracle x86 servers. It integrates Oracle's system management products, the Oracle System Assistant application, and a selection of related software to provide a suite of tools that allow for the quick and convenient startup and maintenance of your server.

You can access Oracle System Assistant locally, using a local console connection, or remotely, using the Oracle ILOM Remote System Console application.

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 configuring the server. Once the server is operational, you can conveniently access Oracle System Assistant remotely while still retaining full-featured functionality.

The components of Oracle System Assistant include:

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

- Server-related documentation

Oracle System Assistant resides inside the server as an embedded storage device (flash drive) and is factory configured with a server-specific version of tools and drivers that is maintained as such through use of online updates.

For more information about Oracle System Assistant, see the following topics:

- [“Oracle System Assistant Tasks” on page 13](#)
- [“Get Updates and Install OS Tasks” on page 14](#)
- [“Obtaining Oracle System Assistant” on page 14](#)

For more information about Oracle System Assistant, refer to the *Sun Server X3-2 Administration Guide*, [“Setting Up the Server Using Oracle System Assistant” on page 35](#).

Oracle System Assistant Tasks

The Oracle System Assistant application combines a selected set of the most common and useful single-server management provisioning tasks.

The following tasks allow for quick and convenient server startup and ongoing server management:

- System overview and system inventory information
- Online update acquisition for all components (including tools, drivers, and firmware)
- System firmware (BIOS and Oracle ILOM) and host bus adapter firmware updates
- RAID, Oracle ILOM, and BIOS configuration
- Assisted OS installation
- Network configuration
- Disable feature and embedded media integrity check
- Multilingual keyboard
- Oracle System Assistant shell terminal window allowing use of the runtime environment
- Oracle Hardware Management Pack access (using Oracle System Assistant shell)
- Oracle System Assistant recovery

Get Updates and Install OS Tasks

You can use the Oracle System Assistant Get Updates task to update the OS drivers and other firmware components, such as BIOS, Oracle ILOM, HBAs, and expanders, if applicable. You should perform the updates before you install the OS.

The Oracle System Assistant application's Install OS task provides a guided installation of a supported OS. You supply the OS installation media, and Oracle System Assistant guides you through the installation process. It then fetches the appropriate drivers based on your server hardware configuration. The Install OS task is not available for all server supported operating systems.

Obtaining Oracle System Assistant

Since your server supports Oracle System Assistant, the Oracle System Assistant USB flash drive might be already installed in your server. If it is installed, you can update to the latest software release using the Oracle System Assistant Get Updates task. If Oracle System Assistant is installed in your server, but it has been corrupted or overwritten, then download the OSA Updater image from the My Oracle Support site. For download instructions, see [“Getting Server Firmware and Software” on page 61](#).

Related Information

- [Sun Server X3-2 Administration Guide, “Setting Up the Server Using Oracle System Assistant” on page 35](#)

Preparing to Install the Operating System

This section describes how to prepare the server for installing the operating system.

Description	Links
Verifying and setting BIOS factory defaults.	“Setting Up BIOS” on page 15
Configuring RAID on the server.	“Configuring RAID” on page 20

Setting Up BIOS

Before you install the operating system, you should 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 BIOS to support the installation:

- [“Verify the BIOS Factory Defaults” on page 16](#)
- [“Switch Between Legacy BIOS and UEFI BIOS Mode” on page 18](#)

Related Information

- [“Installing Windows Server on a Single System Using Oracle System Assistant” on page 22](#)
- [“Installing Windows Server on a Single System Using Media” on page 26](#)

▼ Verify the BIOS Factory Defaults

Note – If the server is newly installed and this is the first time that an operating system has been installed, then BIOS is probably configured to its default settings and you do not have to perform this task.

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 (through F2) are permanent until the next time you change them.

In addition to using F2 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:

- The server is equipped with a hard disk drive (HDD) or solid state drive (SDD).
- The HDD or SDD is properly installed in the server. For instructions, see the [Sun Server X3-2 Service Manual, "Servicing Storage Drives \(CRU\)"](#) on page 49.
- A console connection is established to the server. For details, see ["Selecting the Console Display Option"](#) on page 4.

1. Reset or power on the server.

For example:

- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, and then press the Power button again to power on the server.
- **From the Oracle ILOM web interface**, click Host Management > Power Control and select Reset from the Select Action list box.
- **From the Oracle ILOM CLI**, type the following command from the prompt:
-> **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 menu appears.
6. **In the Boot menu, verify that the UEFI/BIOS Boot Mode is set to the appropriate value for your installation.**
To change the boot mode, use the up and down arrow keys to select the UEFI/BIOS Boot Mode field and use the + and - keys to toggle between UEFI and Legacy.

7. In the Boot menu, use the down arrow key to select `Boot Device Priority`, and 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.

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

Note – You can change the boot order for other devices in the list by repeating Steps 8a and 8b for each device entry you want to change.

9. 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 and Reset` on the `Save & Exit` menu. A message appears prompting you to save changes and exit setup. In the message dialog, select `OK`, and then press `Enter`.

Note – When using the Oracle ILOM Remote System 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 remote console application.

▼ Switch Between Legacy BIOS and UEFI BIOS Mode

The BIOS firmware supports both legacy BIOS and Unified Extensible Firmware Interface (UEFI) BIOS. The default setting is Legacy BIOS. Because the Windows Server 2008 and 2012 operating systems support both Legacy BIOS and UEFI BIOS, you have the option of setting BIOS to either Legacy BIOS Boot Mode or UEFI BIOS Boot Mode before you perform the installation.

Note – After you have installed the operating system, if you decide you want to switch from Legacy BIOS Boot Mode to UEFI BIOS Boot Mode or vice versa, you must remove all partitions and reinstall the operating system.

1. Reset or power on the server.

For example:

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

The BIOS screen appears.

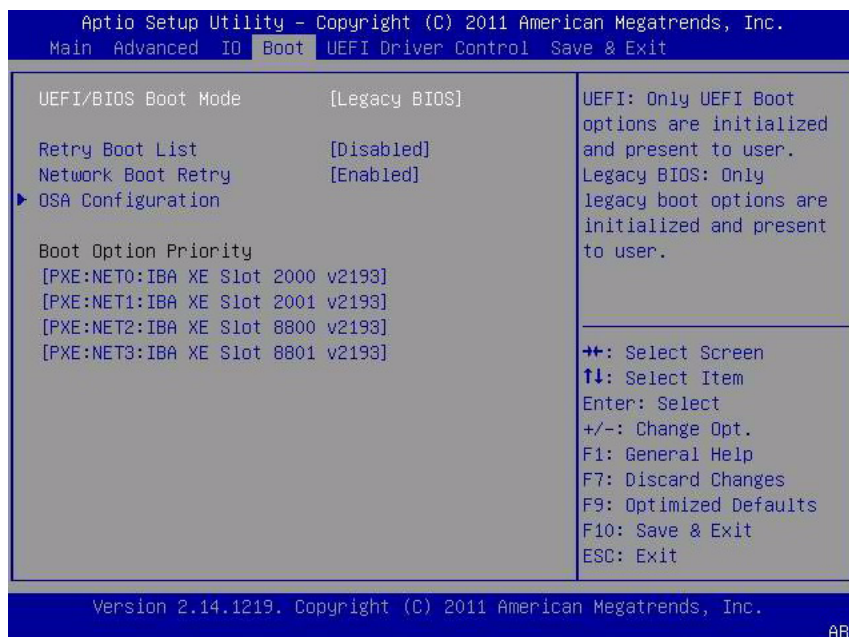


2. When prompted in the BIOS screen, press F2 to access the BIOS Setup Utility.

After a few moments, the BIOS Setup Utility appears.

3. In the BIOS Setup Utility, select Boot from the top menu bar.

The Boot menu screen appears.



4. Select the UEFI/BIOS Boot Mode field and use the +/- keys to change the setting to either UEFI or Legacy BIOS.
5. To save changes and exit BIOS, press the F10 key.

Configuring RAID

If you want to configure the server storage drives in a redundant array of independent disks (RAID) configuration, configure RAID on your server before you install a Windows OS. For instructions for configuring RAID, refer to the [Sun Server X3-2 Installation Guide](#), “Configuring Server Drives for OS Installation” on page 91.

Related Information

- [Sun Server X3-2 Administration Guide](#), “Configuring RAID” on page 101

Installing Windows Server Operating System

This section provides instructions for installing the Microsoft Windows Server 2008 (SP2 and R2 SP1) and Windows Server 2012 (R2) operating systems.

Description	Links
Before you begin the OS install.	“Before You Begin” on page 21
Using Oracle System Assistant to install the Windows operating system.	“Installing Windows Server on a Single System Using Oracle System Assistant” on page 22
Using media to install the Windows operating system.	“Installing Windows Server on a Single System Using Media” on page 26

Before You Begin

Ensure that the following requirements are met:

- If you want to configure RAID (redundant array of independent disks) on the server’s storage drives, you must do so before you install the operating system. For instructions for configuring RAID, see the [Sun Server X3-2 Installation Guide, “Configuring Server Drives for OS Installation” on page 91](#).

Note – If the server is equipped with the Sun Storage 6 Gb SAS PCIe RAID, Internal HBA (SGX-SAS6-R-INT-Z), you must create a RAID volume and make it bootable before installing the operating system; otherwise, the HBA will not be able to identify the server’s storage drives.

- Verify that the BIOS settings are set to the defaults. For instructions on how to verify and, if necessary, set the BIOS settings, see [“Verify the BIOS Factory Defaults” on page 16](#).

- Ensure that BIOS is configured for the desired mode: Legacy BIOS or UEFI BIOS. For instructions on how to set the BIOS mode, see [“Switch Between Legacy BIOS and UEFI BIOS Mode”](#) on page 18.
- The console display option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see [“Selecting the Console Display Option”](#) on page 4.
- The boot media option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see [“Selecting the Boot Media Option”](#) on page 6.
- The installation target option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see [“Selecting the Installation Target Option”](#) on page 9.
- For local installation, insert the Windows installation media into the attached physical CD/DVD-ROM drive.
- For remote installation, insert the Windows installation media into the Oracle ILOM Remote System Console system’s CD/DVD-ROM drive. Ensure that you have selected CD-ROM from the Oracle ILOM Remote System Console system’s Devices menu.
- For a Windows image installation, ensure that the Windows ISO image is accessible from the Oracle ILOM Remote System Console system. Ensure that you have selected CD-ROM Image from the Oracle ILOM Remote System Console system’s Devices menu.
- Gather the Microsoft Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 (R2) operating system documentation so that you can use it in conjunction with the Windows Server operating system instructions provided in this section. You can obtain a copy of Microsoft Windows Server 2008 and 2012 installation documentation at:
<http://technet.microsoft.com/en-us/windowsserver/default.aspx>.

Installing Windows Server on a Single System Using Oracle System Assistant

The Oracle System Assistant application’s Install OS task is the recommended method for installing a supported Microsoft Windows Server OS on the server.

- [“Install Windows Server Using Oracle System Assistant”](#) on page 23

▼ Install Windows Server Using Oracle System Assistant

Before you begin the OS installation, ensure that the following prerequisites are met:

- You have performed the steps in [“Preparing to Install the Operating System”](#) on page 15.
- If you want to configure the boot drive (that is, the storage drive onto which you are installing the Windows Server OS) for RAID, you must do so before you install the OS. For instructions on how to configure RAID on your server, see the [Sun Server X3-2 Installation Guide, “Configuring Server Drives for OS Installation”](#) on page 91.

1. Ensure that the installation media is available to boot.

- **For Distribution CD/DVD.** Insert the Windows Server Distribution media (CD labeled number 1 or the single DVD) into the local or external USB CD/DVD-ROM drive.
- **For ISO image.** Ensure that the ISO images are available and that the Oracle ILOM Remote System Console application is aware of the first ISO image location.

For additional information about how to set up the installation media, see [“Selecting the Boot Media Option”](#) on page 6.

2. To launch Oracle System Assistant directly from the Oracle ILOM web interface (recommended), perform the following steps; otherwise proceed to [Step 3](#).

- a. In the Actions Panel on the Oracle ILOM web interface Summary page, click the Oracle System Assistant Launch button.

The screenshot shows the Oracle Integrated Lights Out Manager (ILOM) web interface. The top navigation bar includes the title "ORACLE Integrated Lights Out Manager" and a user/role indicator "User: root Role: auroc SP H". A left sidebar lists various system information categories: System Information (Summary, Processors, Memory, Power, Cooling, Storage, Networking, PCI Devices, Firmware), Open Problems (0), Remote Control, Host Management, System Management, Power Management, and ILOM Administration.

The main content area is titled "Summary" and includes a subtitle "View system summary information. You may also change power state and view system status and fault information." It is divided into three main sections:

- General Information:** A table listing system details.

General Information	
Model	SUN FIRE X4170 M3
Serial Number	012345678
System Type	Rack Mount
System Identifier	OSA Team Test Nashua
System Firmware Version	ILOM: 3.1.0.0 BIOS: 17010608
Primary Operating System	-
Host Primary MAC Address	-
ILOM Address	10.153.55.202
ILOM MAC Address	00:21:28:D5:C0:CE
- Actions:** A panel with controls for Power State (ON/OFF), Locator Indicator (ON/OFF), Oracle System Assistant (Launch), System Firmware Update (Update), and Remote Console (Launch).
- Status:** A section showing overall status (OK) and a table of subsystems.

Status	
Overall Status: ✔ OK Total Problem Count: 0	
Subsystem	Status
Processors	✔ OK
Memory	✔ OK
Power	✔ OK

Oracle System Assistant is launched, and the Overview screen appears.

b. Proceed to [Step 4](#).

3. To launch Oracle System Assistant using the Oracle ILOM Remote System Console and BIOS, perform the following steps:

a. From the Oracle ILOM web interface Summary page, click the Remote Console Launch button.

The Oracle ILOM Remote System Console screen appears.

b. Reset or power on the server.

For example:

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

c. Press the F9 key.

Oracle System Assistant is launched, and the Overview screen appears.

4. To update to the latest software release package, click the Get Updates button.

This action ensures that the application has the latest software release package installed before you begin the OS installation.

Note – Server web access is required to update Oracle System Assistant.

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

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

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

The Install OS screen appears.

7. **From the Supported OS drop-down list, select your OS.**

8. **In the Select a BIOS mode if applicable portion of the screen, select the BIOS mode (UEFI or Legacy BIOS) that you want to use for the OS installation.**

9. **Indicate the location of the installation media in the Select your media location section.**

This is the location of the OS distribution media. The options are CD/DVD devices.

Note – Oracle System Assistant does not support Preboot eXecution Environment (PXE) installs.

10. **Click View Installation Options.**

The Installation Options dialog appears.

11. **In the Installation Options dialog, deselect any items that you do not want to install.**

Note – In the Installation Options dialog, the OS and Drivers options are mandatory and cannot be deselected.

12. **Click the OS Install button at the bottom of the Operating System Installation screen.**

13. **Follow the prompts until the installation is finished.**

The server boots.

Installing Windows Server on a Single System Using Media

This section provides instructions for installing the Microsoft Windows Server 2008 (64-bit) operating system.

- [“Install Windows Server 2008 \(SP2 or R2 SP1\) Using Local or Remote Media” on page 26](#)
- [“Install Windows Server 2012 \(R2\) Using Local or Remote Media” on page 37](#)
- [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 \(R2\) Using PXE Network Boot” on page 52](#)

▼ Install Windows Server 2008 (SP2 or R2 SP1) Using Local or Remote Media

This procedure describes how to boot the Microsoft Windows Server 2008 (SP2 or R2 SP1) operating system from local or remote media. It assumes that you are booting the Windows installation media from one of the following sources:

- Windows Server 2008 SP2 or Windows Server 2008 R2 SP1 CD or DVD
- Windows Server 2008 SP2 or Windows Server 2008 R2 SP1 ISO image

Note – The Windows Server 2008 (SP 2 or R2 SP1) ISO image can be used for remote installation or for creating an installation CD or DVD.

Note – If you are booting the installation media from a PXE environment, refer to [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 \(R2\) Using PXE Network Boot” on page 52](#) for instructions.

1. Ensure that the installation media is available to boot.

- **For Distribution CD/DVD.** Insert the Windows Server 2008 Distribution media (CD labeled number 1 or the single DVD) into the local or remote CD/DVD-ROM drive.
- **For ISO image.** Ensure that the ISO images are available and that the Oracle ILOM Remote System Console application is aware of the ISO image location.

For additional information about how to set up the installation media, see [“Selecting the Boot Media Option” on page 6](#).

2. Reset or power on the server.

For example:

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

The BIOS screen appears.



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.

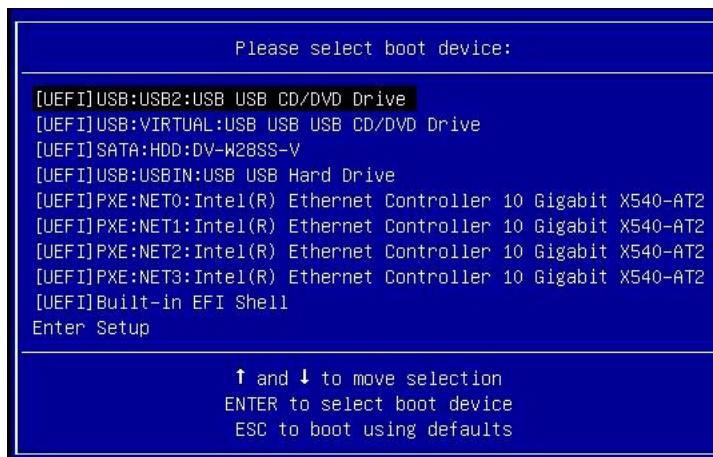
3. In the BIOS screen, press F8 to specify a temporary boot device for the Windows installation.

The Please Select Boot Device menu appears. The screen that appears will be different depending on whether you have BIOS configured for Legacy BIOS Boot Mode or UEFI BIOS Boot Mode.

- For Legacy BIOS Boot Mode, a screen similar to the following appears:



- For UEFI BIOS Boot Mode, a screen similar to the following appears:



Note – The boot device menu that appears in your installation might differ depending on the type of disk controller installed in your server.

4. In the Please Select Boot Device menu, select the menu item according to the Windows media installation method and BIOS mode you elected to use, and then press Enter.

For example:

- If you elected to use the Windows local delivery method, select SATA:HDD:P4 DV-W28SS-V from the Legacy BIOS screen or [UEFI]USB2:USB USB CD/DVR Drive from the UEFI BIOS screen.

- If you elected to use the Oracle ILOM Remote System Console delivery method, select `USB:VIRTUAL:AMI VIRTUAL CDROM 1.00` from the Legacy BIOS screen or `[UEFI]USB:VIRTUAL:USB USB CD/DVD Drive` from the UEFI BIOS screen.

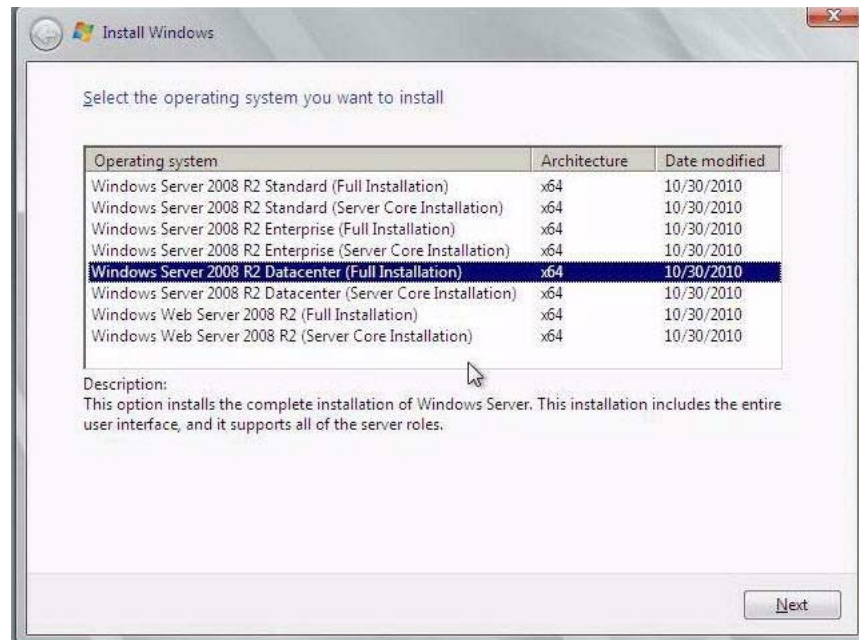
5. If prompted with Press any key to boot from CD, press any key.

The Windows installation wizard starts.

Continue the Windows installation wizard until the Language Localization dialog appears.

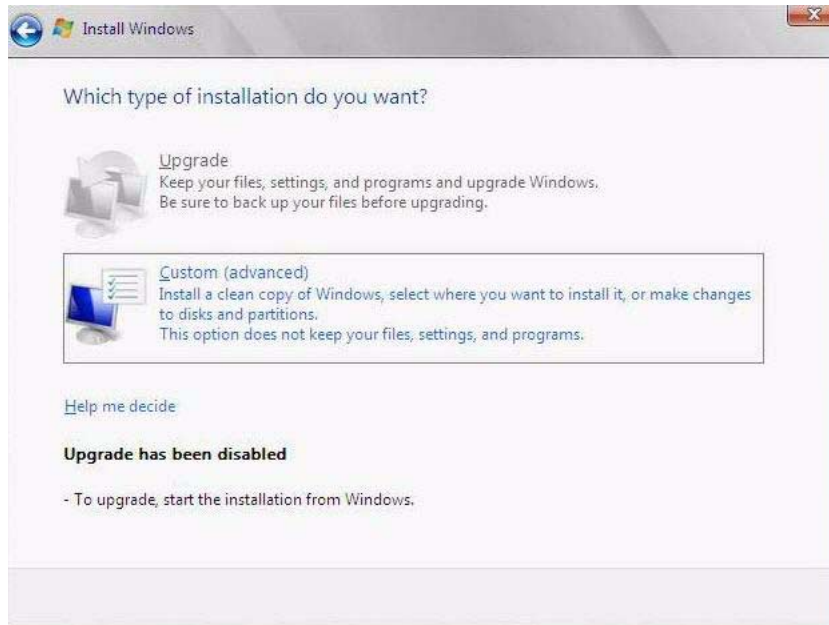


6. **Select your language and other preferences, and then click Next to continue.**
The Select the Operating System You Want to Install dialog appears.



Note – The above dialog varies depending on the type of Windows software license: Educational, Volume, or Retail.

7. **In the Select the Operating System You Want to Install dialog, select the desired operating system, and then click Next to continue.**
The Installation Type dialog appears.



8. In the **Installation Type** dialog, click **Custom (advanced)**.
The **Where Do You Want to Install Windows** dialog appears.



9. In the Where Do You Want to Install Windows dialog, perform one of the following tasks:

- **(This task only applies to Windows Server 2008 SP2 installations)** If you do not see any storage targets listed and have a Sun Storage SAS PCIe RAID HBA option configured on your server, click Load Driver, and then proceed to [Step 10](#).
- or -
- If you see the storage target where you want to install the operating system but want to change the default partition settings associated with that target, select the target, click Drive Options (advanced), and then proceed to [Step 11](#).
- or -
- If you see the storage target where you want to install the operating system and do not want to change the default partition settings for that target, select the target and click Next, and then proceed to [Step 12](#).

10. (Load Driver) In the Load Driver dialog, do the following:



- a. Ensure that the driver(s) are accessible according to the installation method chosen (described in [“Selecting the Boot Media Option”](#) on page 6).

For example:

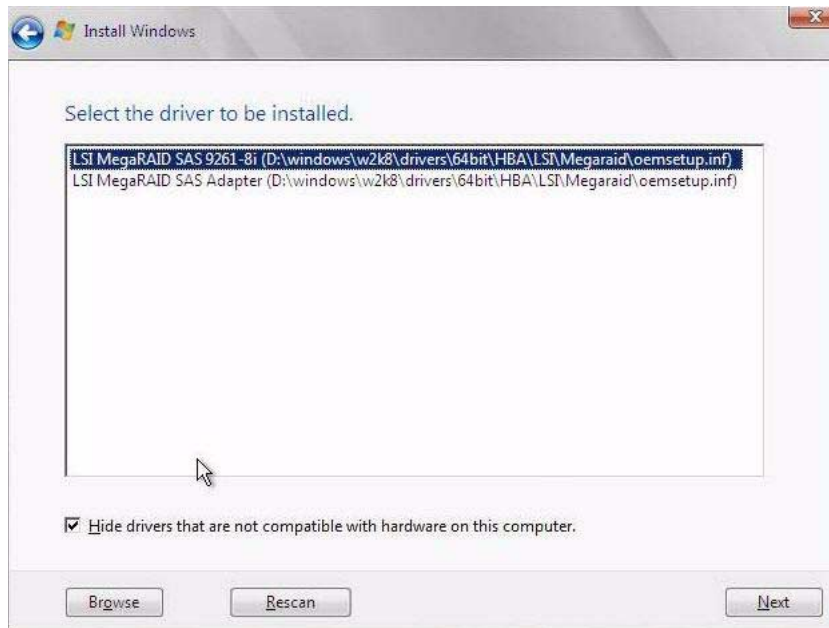
- Storage driver(s) are on a disk mounted as a device from the Oracle ILOM Remote System Console.

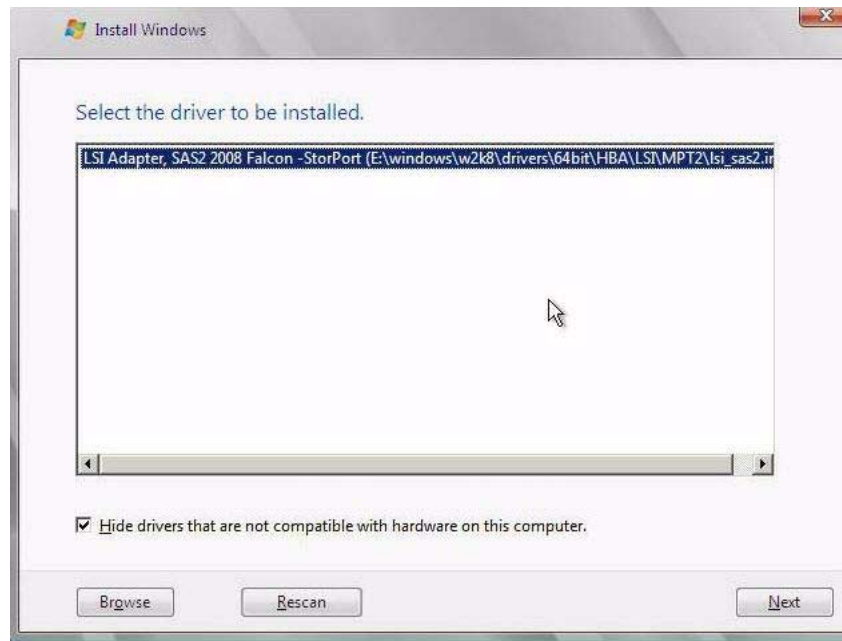
- Storage driver(s) are on a local physical storage media, such as the Oracle System Assistant USB flash drive (if installed), which is mounted internally in the server's chassis, a CD/DVD, or virtual media mounted from the Oracle ILOM Remote System Console.
- b. In the Load Driver dialog, click *Browse* to navigate to the appropriate driver media folder as described below.**
- For systems configured with the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS6-R-INT-Z), navigate to the following directory on the internal Oracle System Assistant USB flash drive to load the appropriate LSI driver: `windows/w2k8/drivers/LSI-HBA-MegaSAS2`
 - For a system configured with either of these Sun Storage 6 Gb SAS PCIe HBA options: SG-SAS6-INT-Z or SG-SAS6-EXT-Z, navigate to the following directory on the internal Oracle System Assistant USB flash drive to load the appropriate LSI driver: `windows/w2k8/drivers/LSI-HBA-MPT2`
- c. In the Browse for Folder dialog, select the appropriate driver, and then click *OK* to load the driver.**

The selected driver appears in the Select the Driver to Be Installed dialog.

For example:

- Two example dialogs follow that show the selected driver to be installed for the two SAS PCIe HBA options. Note that the SAS PCIe HBA drivers are required only for Windows Server 2008 SP2 installations.





- d. In the **Select the Driver to Be Installed** dialog, click **Next** to install the driver.
The **Where Do You Want to Install Windows** dialog appears.

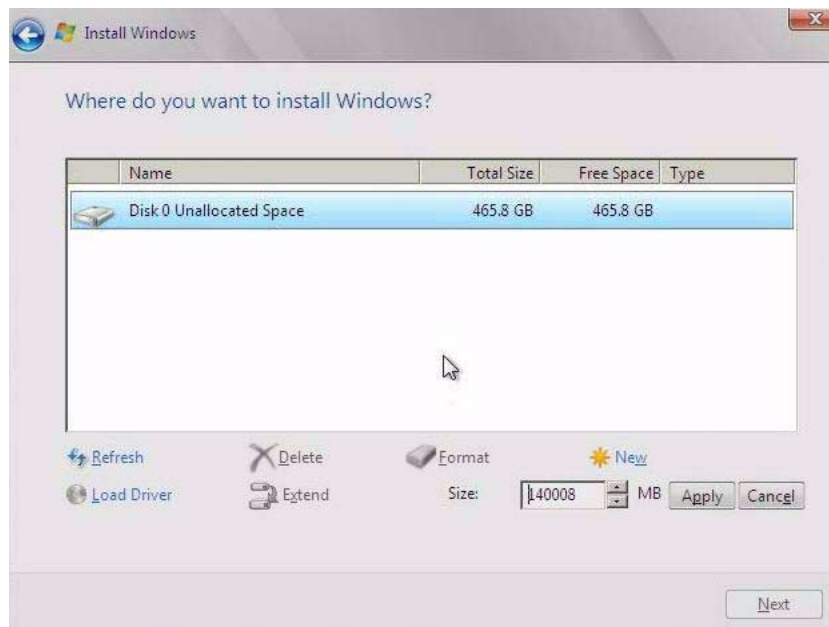


Note – If you previously removed or unmounted the Windows Server installation media to load the drivers from the internal Oracle System Assistant USB flash drive, you might see the following message: **Windows Cannot be installed to this disk.** If this message appears, insert or re-mount the Windows install media, and then click Refresh.

e. In the **Where Do You Want to Install Windows** dialog, do one of following:

- Select the storage target listed and click **Next** to install the operating system, and then proceed to [Step 12](#).
- or -
- If any partitions exist on your target disk, it is recommended that you allow setup to create the appropriate partitions. To delete pre-existing partitions, proceed to [Step 11](#).

11. (Partition Drive, advanced) In the lower portion of the Where Do You Want to Install Windows dialog, do the following:



a. Click **Delete** to delete the selected storage target existing partition configuration.

A confirmation window appears.

b. Click **OK** to confirm the partition deletion.

c. If any additional partitions exist on the target disk, repeat [Step a](#) and [Step b](#).

- d. Click **Next** to install the operating system to the selected storage target.
12. The Windows installation program begins and will reboot the server multiple times during the installation process.
13. When the Windows installation is complete, Windows starts and prompts you to change the user password.
14. In the user password dialog, click **OK** and set up the initial user login account.

Note – Windows Server 2008 enforces stricter password schemes for user accounts. Password standards include restrictions on length, complexity, and history. For more details, click the [Accessibility](#) link at the account creation page.

After the initial user account is created, the Windows Server 2008 desktop appears.

15. Proceed to [“Post Installation Tasks for Windows Server”](#) on page 57 to perform the post installation tasks.

▼ Install Windows Server 2012 (R2) Using Local or Remote Media

This procedure describes how to boot the Microsoft Windows Server 2012 operating system from local or remote media. It assumes that you are booting the Windows installation media from one of the following sources:

- Windows Server 2012 CD or DVD
- Windows Server 2012 ISO image

Note – The Windows Server 2012 ISO image can be used for remote installation or for creating an installation CD or DVD.

Note – If you are booting the installation media from a PXE environment, refer to [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 \(R2\) Using PXE Network Boot”](#) on page 52 for instructions.

1. **Ensure that the installation media is available to boot.**
 - **For Distribution CD/DVD.** Insert the Windows 2012 Distribution media (CD labeled number 1 or the single DVD) into the local or remote CD/DVD-ROM drive.

- **For ISO image.** Ensure that the ISO image is available and that the Oracle ILOM Remote System Console application is aware of the ISO image location. For additional information about how to set up the installation media, see [“Selecting the Boot Media Option” on page 6.](#)

2. Reset or power on the server.

For example:

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

The BIOS screen appears.



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.

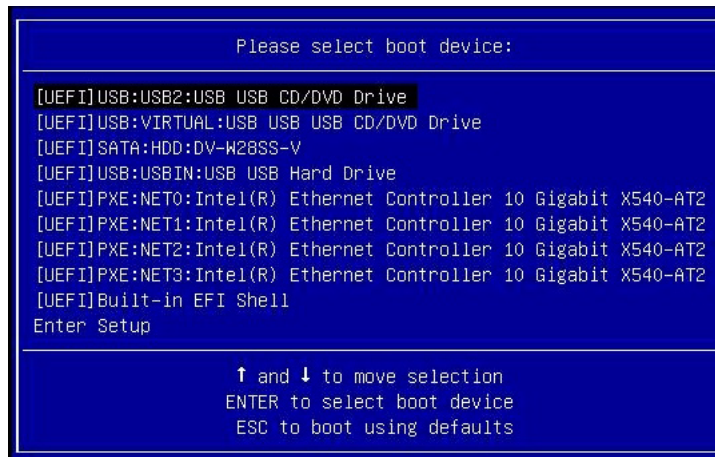
3. In the BIOS screen, press F8 to specify a temporary boot device for the Windows installation.

The Please Select Boot Device menu appears. The screen that appears will be different depending on whether you have BIOS configured for Legacy mode or UEFI mode.

- For Legacy BIOS, a screen similar to the following appears:



- For UEFI BIOS, a screen similar to the following appears:



Note – The boot device menu that appears in your installation might differ depending on the type of disk controller installed in your server.

4. In the Please Select Boot Device menu, select the menu item according to the Windows media installation method and BIOS mode you elected to use, and then press Enter.

For example:

- If you elected to use the Windows local delivery method, select SATA:HDD:P4 DV-W28SS-V from the Legacy BIOS screen or [UEFI]USB2:USB USB CD/DVR Drive from the UEFI BIOS screen.

- If you elected to use the Oracle ILOM Remote System Console delivery method, select `USB:VIRTUAL:AMI VIRTUAL CDROM 1.00` from the Legacy BIOS screen or `[UEFI]USB:VIRTUAL:USB USB CD/DVD Drive` from the UEFI BIOS screen.

5. If prompted with Press any key to boot from CD, press any key.

The Windows installation wizard starts and the Loading files... screen appears.

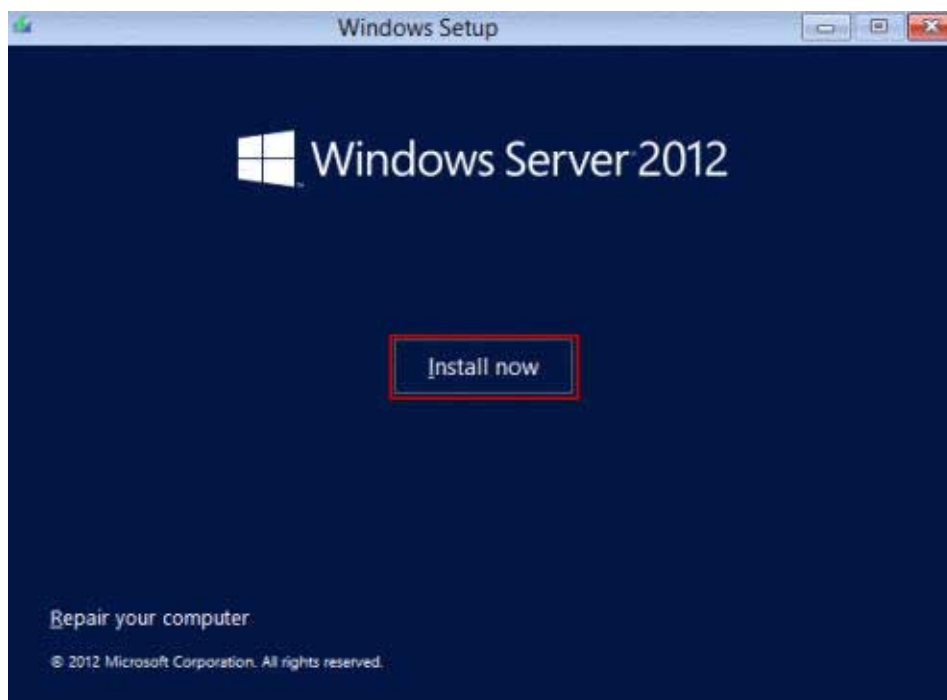


The Windows installation wizard continues until the Language Localization dialog appears.



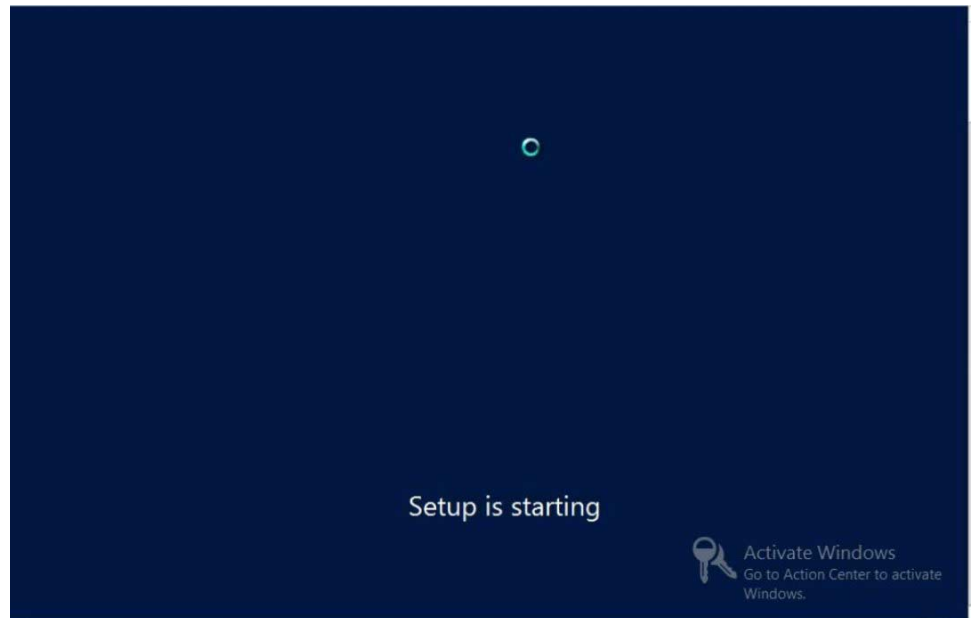
6. Select your language and other preferences, and then click **Next** to continue.
The Install Now screen appears.

Note – The Install Now screen allows you to continue the installation or access an optional Repair menu (see lower left of the screen) for troubleshooting.

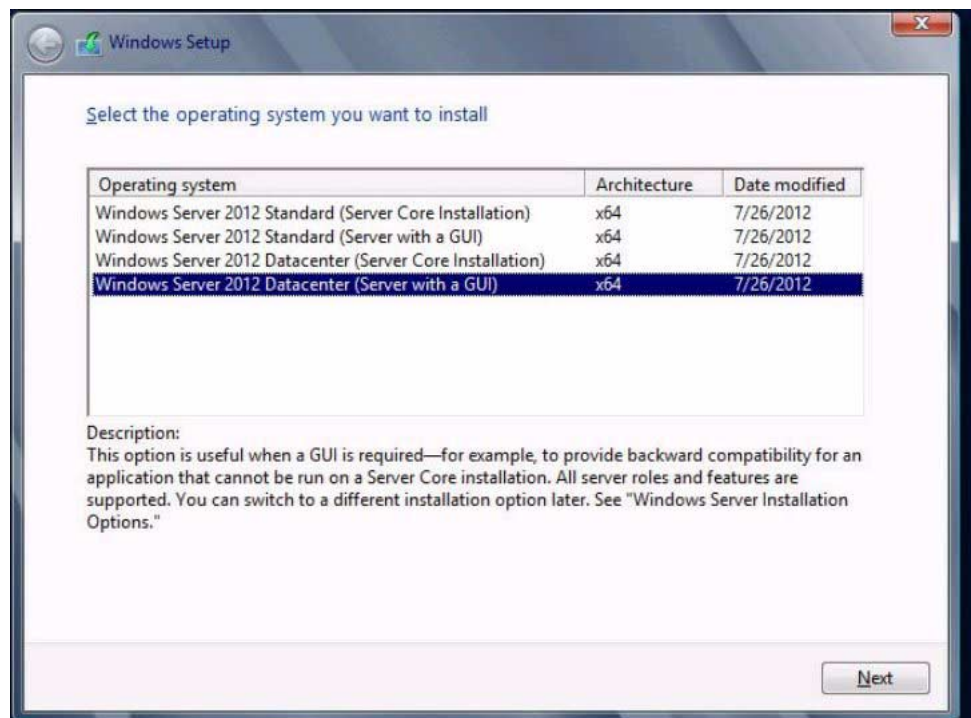


7. **Click** Install now.

The Setup Is Starting screen appears.



Then the Select Operating System dialog appears.

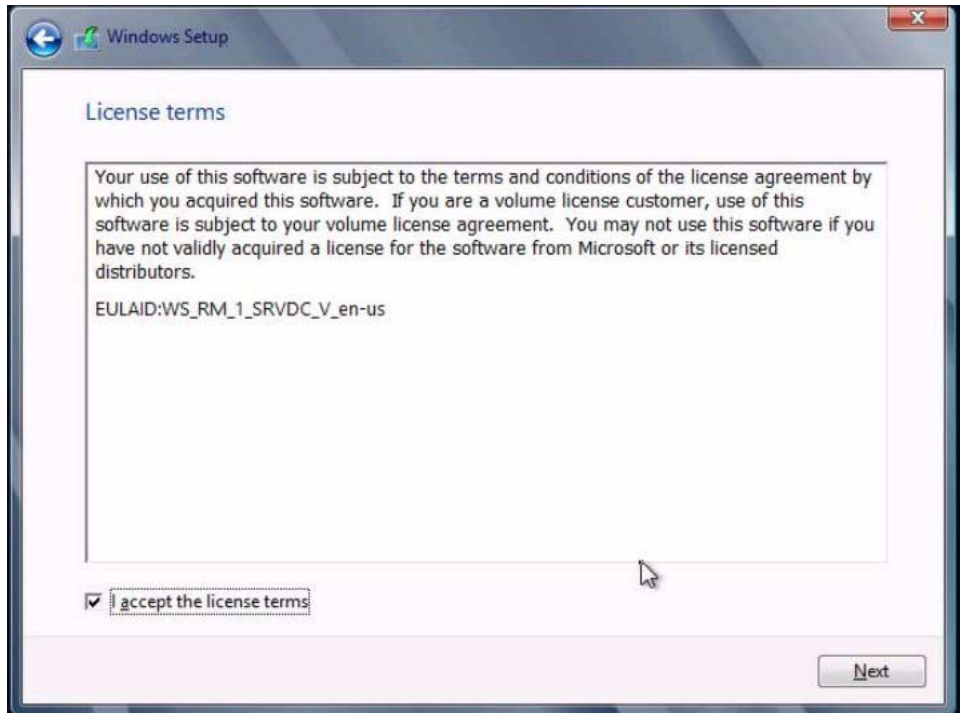


8. In the Select Operating System dialog, select the desired operating system, and then click **Next** to continue.

For most installs, select Windows Server 2012 Datacenter (Server with GUI) at the bottom of the list.

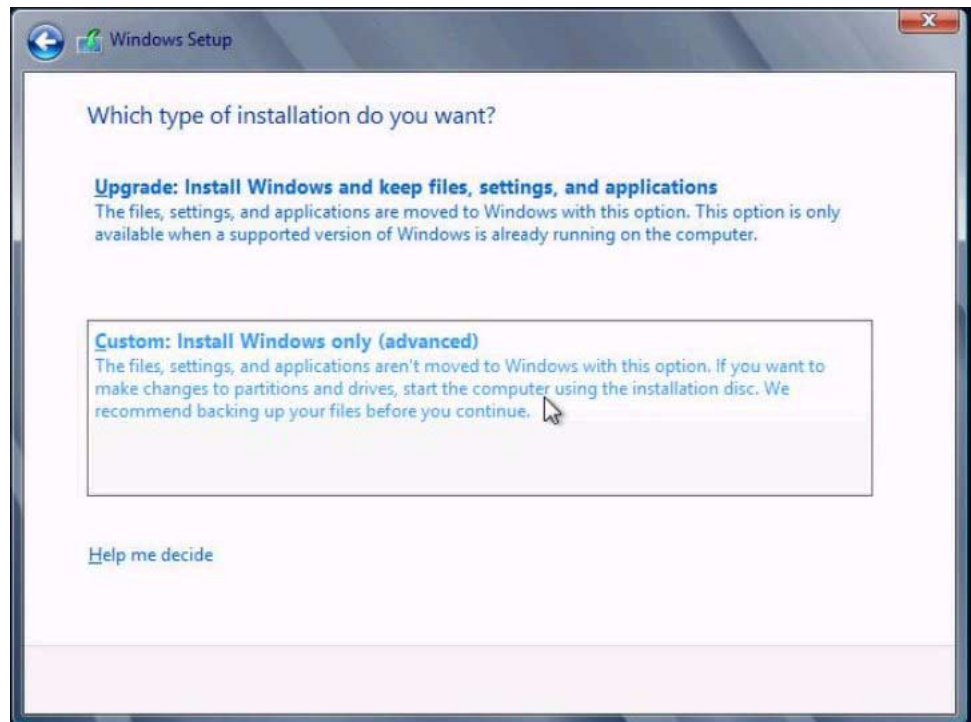
For more information on the different types of Windows operating systems, see the Windows 2012 documentation at <http://technet.microsoft.com/en-us/windowsserver/default.aspx>.

The License Terms screen appears.

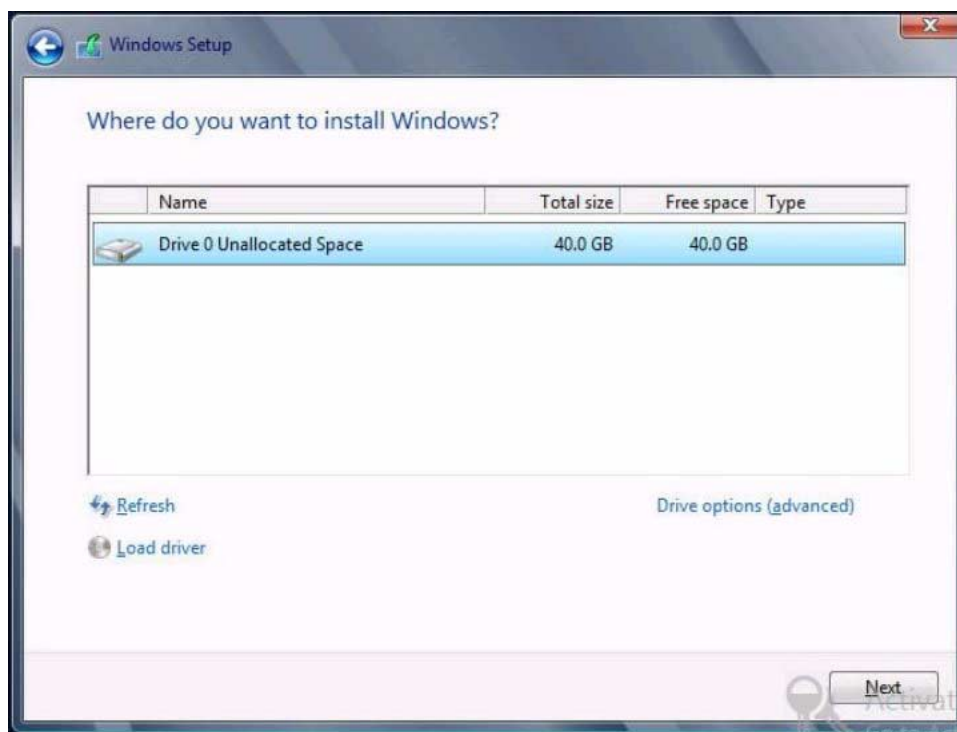


9. In the License Terms screen, check the **I accept the license terms** box, and then click **Next** to continue.

The Which Type of Installation Do You Want dialog appears.

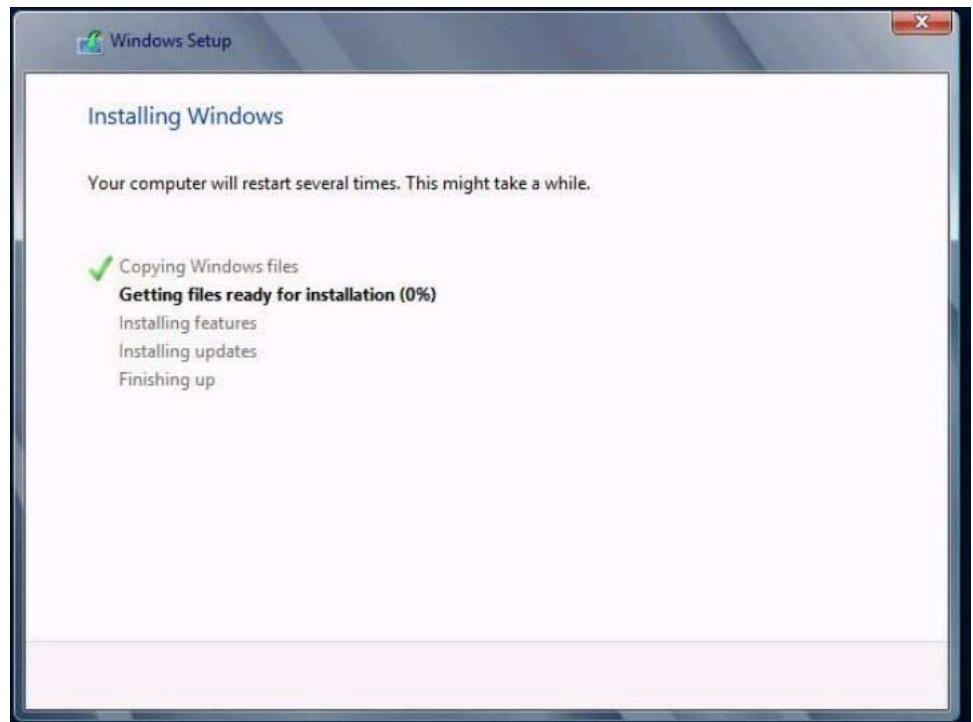


10. For all new installations, in the Which Type of Installation Do You Want dialog, click Custom: Install Windows only (advanced)
The Where Do You Want to Install Windows dialog appears.

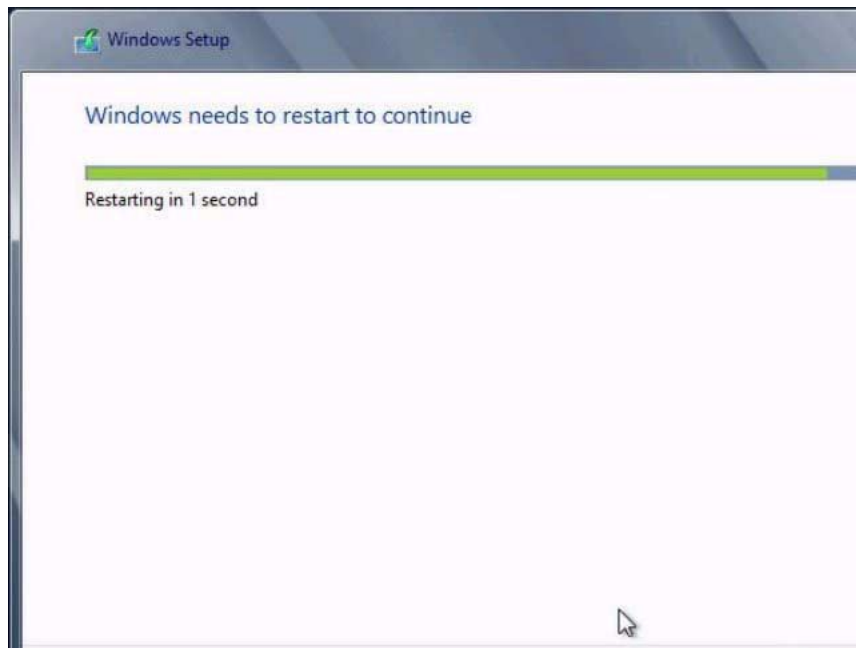


11. **Select (highlight) the disk to which you want to install Windows, and then click Next.**

The Installing Windows screen appears.

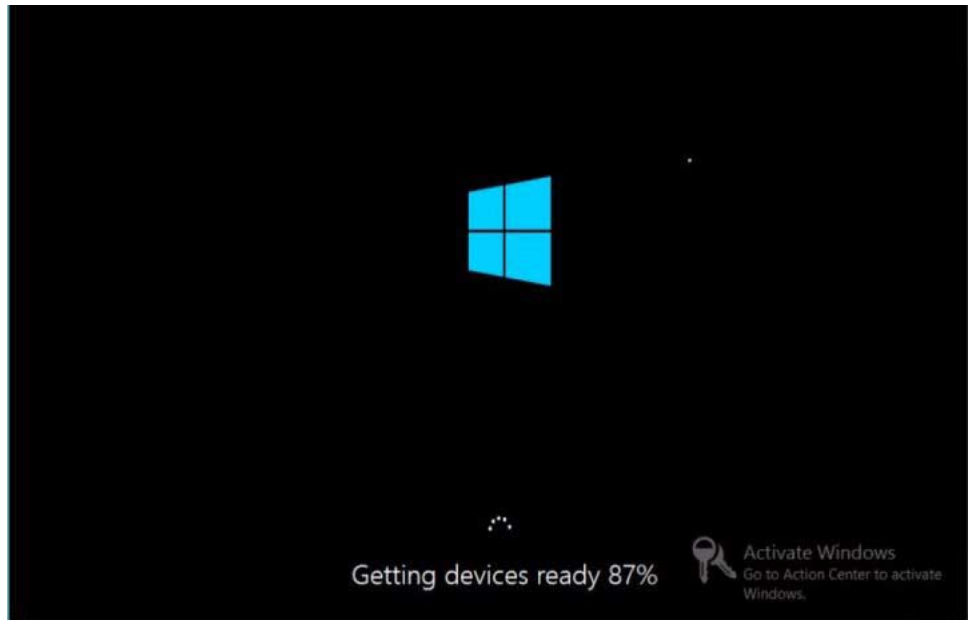


The setup and installation process begins and files are copied to the target. The Windows Needs to Restart to Continue screen appears.

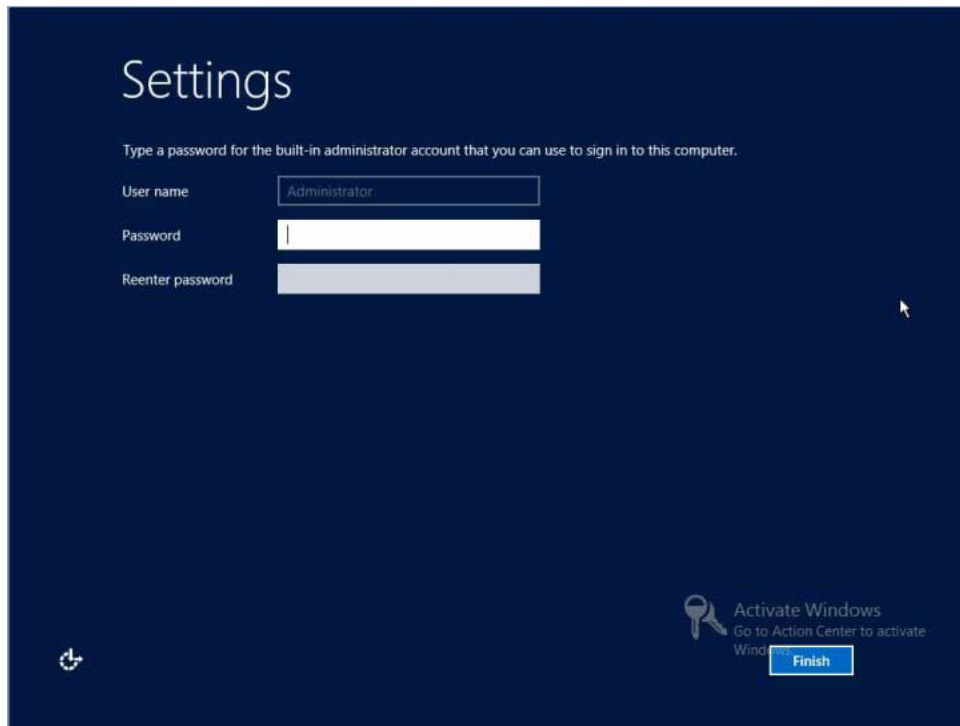


The system reboots.

12. After the system reboots, the Getting Devices Ready screen appears and the Windows Installation Wizard configures the device settings.



After the devices are configured, the system reboots again and the Settings screen appears.



13. Enter the Administrator user name and password, and then click Finish.

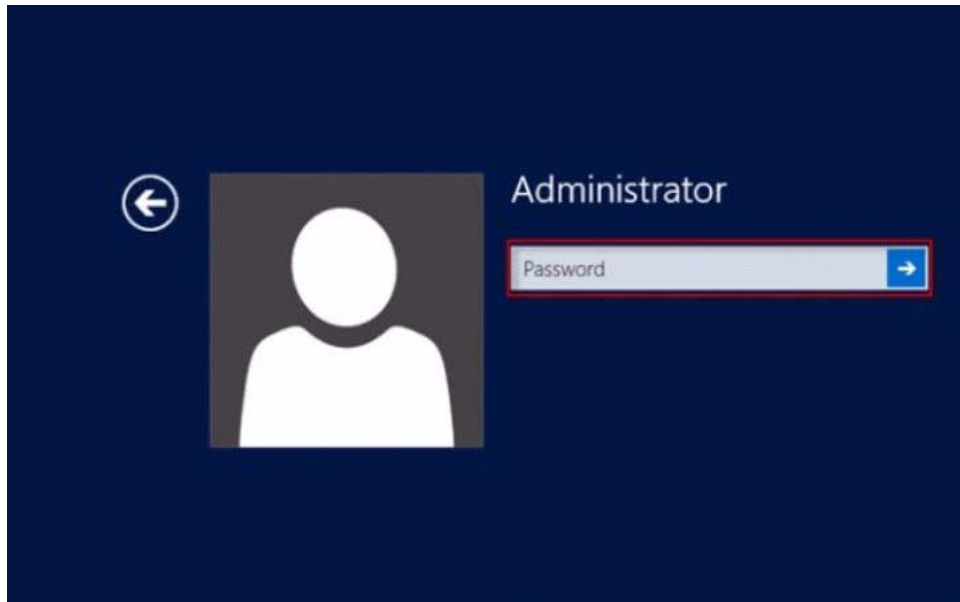
The Finalizing Your Settings screen appears.

This screen indicates that the Windows operating system has been installed.



14. After the installation completes, type Ctrl+Alt+Delete to log in.

The Administrator log in screen appears.



15. Enter the Administrator password, and then click the arrow to log in.
The Windows Server 2012 desktop appears.
This completes the installation.
16. Proceed to [“Post Installation Tasks for Windows Server”](#) on page 57 and perform the post installation tasks.

▼ Install Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 (R2) Using PXE Network Boot

This section explains the initial information you will need and provides the instructions you need to follow to install the Windows Server 2008 (SP2 or R2 SP1) or Windows 2012 (R2) operating system over an established PXE-based network using a customer-provided Windows Imaging Format (WIM) image.

Note that the procedure presented in this section documents the initial steps to install Windows Server over the network using Windows Deployment Services (WDS). Specifically, it explains the steps for selecting the server PXE network interface card that will communicate with your WDS installation server. For further information about using WDS to install Windows Server 2008 or Windows Server 2012, see Microsoft’s Windows Deployment Services documentation.

- To use PXE to boot the installation media over the network, you must:
 - Configure the network (NFS, FTP, HTTP) server to export the installation tree.
 - Configure the files on the TFTP server that are necessary for PXE booting.
 - Configure the server's MAC network port address to boot from the PXE configuration.
 - Configure Dynamic Host Configuration Protocol (DHCP), if needed.
- To use WDS to perform the installation, you must:
 - Add the required system device drivers to the `install.wim` image and, if necessary, the `boot.wim` image.

For instructions for adding drivers to the WIM installation image(s), see the Microsoft Windows Deployment Services documentation.
 - Obtain the WIM Administrator password.

1. Ensure that the PXE network environment is properly set up and the Windows installation media is available for PXE boot.

2. Reset or power on the server.

For example:

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

The BIOS screen appears.



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.

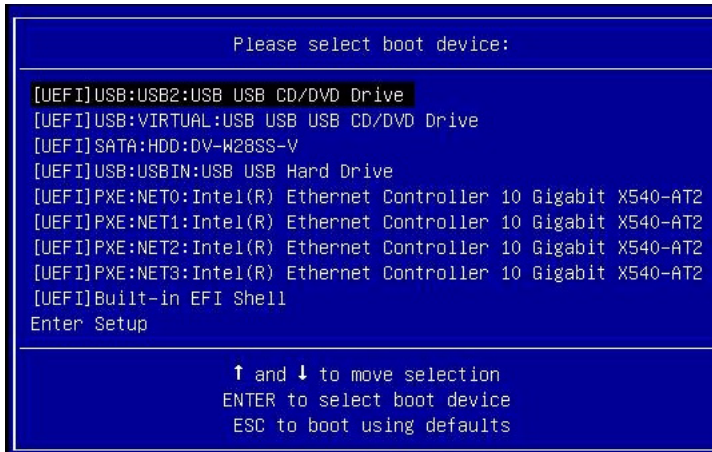
3. In the BIOS screen, press F8 to specify a temporary boot device.

The Please Select Boot Device menu appears. The screen that appears will be different depending on whether you have BIOS configured for Legacy BIOS Boot Mode or UEFI BIOS Boot Mode.

- For Legacy BIOS Boot Mode, the following screen appears:



- For UEFI BIOS Boot Mode, the following screen appears:



Note – The boot device menu that appears in your installation might differ depending on the type of disk controller installed in your server.

4. In the Boot Device menu, select the network port that is configured to communicate with your PXE network installation server.

The network bootloader loads and a boot prompt appears. After a few seconds the installation kernel will begin to load.

5. To complete the installation, do one of the following, depending on which version of Windows Server you are installing:

- For Windows Server 2008, refer to Step 5 of [“Install Windows Server 2008 \(SP2 or R2 SP1\) Using Local or Remote Media”](#) on page 26.
- For Windows Server 2012, refer to Step 5 of [“Install Windows Server 2012 \(R2\) Using Local or Remote Media”](#) on page 37.

Post Installation Tasks for Windows Server

Note – The procedures in this section assume that you installed the Microsoft Windows Server operating system using the manual procedure, that is, you did not use Oracle System Assistant. If you used Oracle System Assistant to install your operating system, you can skip this section because Oracle System Assistant performed these post installation tasks for you.

After completing a manual installation of Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 (R2) and rebooting the server, you should review the following post installation tasks and, if necessary, perform the tasks that are applicable to your server.

Description	Link
Learn about supplemental software.	“Supplemental Software Component Options” on page 57
Install device drivers and supplemental software.	“Installing Device Drivers and Supplemental Software” on page 58
Configure NIC teaming.	“Configuring Intel NIC Teaming” on page 60

Supplemental Software Component Options

Oracle System Assistant makes several Supplemental Software components available for the server. You have two options for installation:

- Typical: Installs all Supplemental Software applicable for your server.
- Custom: Installs only the Supplement Software selected for installation.

The following table identifies the optional Supplemental Software components that Oracle System Assistant makes available for your server.

TABLE: Optional Supplemental Software

Available Supplemental Software Components	Description	LSI Integrated RAID Controller
LSI MegaRAID Storage Manager	Enables you to configure, monitor, and maintain RAID on the SAS internal RAID host bus adapter (HBA).	Typical
Hardware Management Pack	The Hardware Management Pack provides tools to help you manage and configure your server. It enables you to: • Use a management agent at the operating system level to enable in-band monitoring of your server hardware over Simple Network Management Protocol (SNMP). You can use this information to integrate your server into your data center management infrastructure. • Use a management agent to enable in-band monitoring of your server's storage devices, including RAID arrays. You can view this information from the Oracle Integrated Lights Out Manager (ILOM) web interface or command-line interface (CLI). • Use a BIOS configuration tool, which runs on the host operating system and configures the host BIOS CMOS settings, host boot order, and some service processor (SP) settings. • Use IPMItool to access the server's service processor via the IPMI protocol and perform management tasks.	Not typical
Intel NIC Teaming	Enables the network interfaces on a server to be grouped together into a team of physical ports called a virtual interface.	Typical

Installing Device Drivers and Supplemental Software

The InstallPack application provides an installation wizard for installing platform-specific device drivers and supplemental software. This application is included in Oracle System Assistant and is also available for download from My Oracle Support. For download instructions, see [“Getting Server Firmware and Software”](#) on page 61.

If your server is equipped with Oracle System Assistant and you used it to install the operating system, then the required platform-specific device drivers and supplemental software are installed for you. However, if your server is not equipped with Oracle System Assistant, then you can use InstallPack, which is included in the OS (operating system) Pack, to install the platform-specific device drivers and supplemental software. For instructions on obtaining the OS Pack, refer to [“Getting Server Firmware and Software” on page 61](#).

The following procedure describes how to use InstallPack to install the device drivers and supplemental software.

- [“Install Server-Specific Device Drivers and Supplemental Software” on page 59](#)

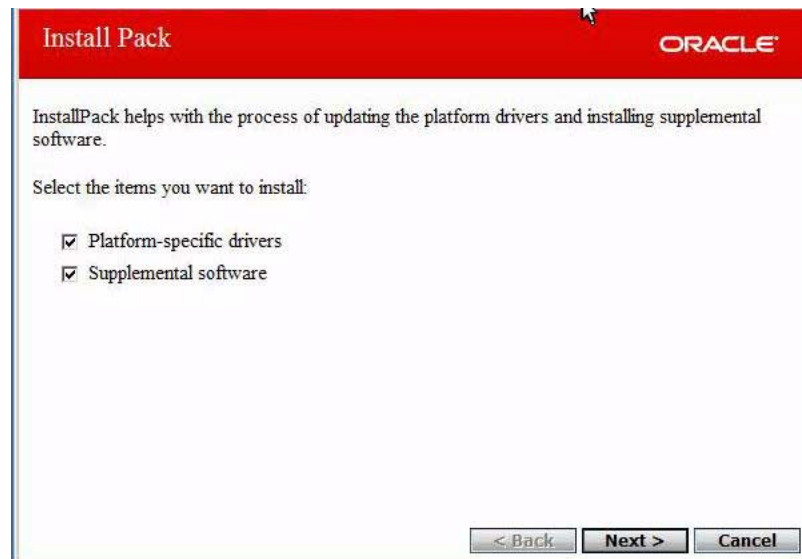
Related Information

- [“Supplemental Software Component Options” on page 57](#)

▼ Install Server-Specific Device Drivers and Supplemental Software

1. **Click on the Install Pack wizard executable:** `InstallPack.hta`.

The Install Pack dialog appears.



2. In the Install Pack dialog, click `Next` to accept the default installable items.

Note – You should always accept the “default installable items” to ensure that the most recent versions of the drivers are installed.

The Install Pack notice dialog appears.

3. **Follow the on-screen prompts to complete the installation of the device drivers and supplemental software.**

Configuring Intel NIC Teaming

For more information on setting up Intel NIC teaming for your environment, refer to the Intel Connectivity web page on Advanced Networking Services Teaming at:

<http://support.intel.com/support/network/sb/CS-009747.htm>

Additionally, you can download the complete set of Intel Network Connections User Guides for your server’s network adapters at:

<http://support.intel.com/support/network/sb/cs-009715.htm>

Getting Server Firmware and Software

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

Description	Links
Learn about server firmware and software updates.	“Firmware and Software Updates” on page 61
Learn about the options for accessing firmware and software.	“Firmware and Software Access Options” on page 62
View the available firmware and software packages.	“Software Releases” on page 63
Access the firmware and software packages through Oracle System Assistant, My Oracle Support, or Physical Media Request.	“Getting Firmware and Software from MOS or PMR” on page 64
Install firmware and software updates.	“Installing Updates Using Other Methods” on page 68

Firmware and Software Updates

Firmware and software for your server are updated periodically. These updates are made available as a software release. The software releases are a set of downloadable files (patches) that includes all available firmware, 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 within 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 new factory-installed option for Oracle servers that enables you to easily download and install server firmware and software.

For more information about using Oracle System Assistant, see the *Sun Server X3-2 Administration Guide*, “Setting Up the Server Using Oracle System Assistant” on page 35.

- **My Oracle Support** – All system software is available from My Oracle Support at <http://support.oracle.com>.

For more information about what is available on the My Oracle Support web site, see “Software Releases” on page 63.

For instructions on how to download software releases from My Oracle Support, see “Download Firmware and Software Using My Oracle Support” on page 64.

- **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 65.

- **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 68.

Software Releases

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

Each path is a zip file that contains a ReadMe file and a set of subdirectories containing firmware or software files. The ReadMe file provides details on the components that have changed since the prior software release and bugs that are 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 firmware and software for your server using Oracle System Assistant.

Package Name	Description	When to Download This Package
Sun Server X3-2 (X4170 M3) SW ^{version} – Firmware Pack	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
Sun Server X3-2 (X4170 M3) SW ^{version} – OS Pack	An OS Pack is available for each supported operating system version. Each OS Pack includes a package of all tools, drivers, and utilities for that version of the OS. Software includes Oracle Hardware Management Pack and LSI MegaRAID software. For the Windows OS, this OS Pack also includes Intel Network Teaming and Install Pack.	You need to update OS-specific drivers, tools, or utilities.
Sun Server X3-2 (X4170 M3) SW ^{version} – 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.

Package Name	Description	When to Download This Package
Sun Server X3-2 (X4170 M3) SW _{version} – Diagnostics	Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.
Sun Server X3-2 (X4170 M3) SW _{version} – Oracle System Assistant	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 [Sun Server X3-2 Administration Guide](#), “Setting Up the Server Using Oracle System Assistant” on page 35.

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 64
- [“Requesting Physical Media”](#) on page 65

▼ Download Firmware and Software Using My Oracle Support

1. **Go 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 & 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 X3-2) 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 packages.

7. Click Search.

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

See [“Software Releases” on page 63](#) 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 pop-up panel contains several action options, including the ReadMe, Add to Plan, and Download options. For information about the Add to Plan option, click on the associated drop-down button and select “Why use a plan?”

9. To review the ReadMe file for the selected patch, click ReadMe.

10. To download the patch for the software release, click Download.

The File Download dialog box appears.

11. In the File Download dialog box, click the patch zip file name.

The patch file 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 65](#)
- [“Request Physical Media \(Online\)” on page 66](#)
- [“Request Physical Media \(By Phone\)” on page 67](#)

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 64 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 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 “[Software Releases](#)” on page 63 to determine which packages you want, and 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 65 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.**
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 for Sun Server X3-2.**
 - b. **From the Problem Type drop-down menu, select Software & OS Media Request.**
 - c. **In the Support Identifier field, type the Customer Support Identifier associated with your support contract.**
5. **Skip the Create Service Request: Selections 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 from the software release.
List the product name and version requested for the physical media shipment?	<i>Product Name:</i> Sun Server X3-2. <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

- 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)

Gather the information described in [“Gathering Information for the Physical Media Request” on page 65](#) 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 server.
 - 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 server.
-

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

<http://www.oracle.com/pls/topic/lookup?ctx=ilom31>.

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