

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

Installation Guide for Windows Operating System



Part No.: E20786-03
September 2012

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Using This Documentation

This installation guide contains installation and configuration procedures for Windows operating systems. You perform these procedures to bring the server to a configurable and usable state.

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

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

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

For instructions, see [Chapter 5](#).

About This Documentation

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

Related Documentation

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

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

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

PART I

Windows Server Installations

This section lists the topics that describe how to install the Windows 2008 (SP2 or R2) operating systems on your server.

Description	Links:
Novice or Experienced Users: Use Oracle Hardware Installation Assistant to perform an assisted installation of the Windows operating system. Oracle Hardware Installation Assistant provides the appropriate system drivers and platform-specific software.	<ul style="list-style-type: none">• Chapter 1, Assisted OS Installation With Oracle Hardware Installation Assistant
Experienced Users. Manually install the Windows operating system and the required system drivers.	<ul style="list-style-type: none">• Chapter 2, Getting Started• Chapter 3, Windows Server 2008 Installation• Chapter 4, Post Installation of Windows Server 200
Experienced Users. Reference content for manual Windows operating system installations.	<ul style="list-style-type: none">• Appendix A, Supported Installation Methods• Appendix B, Supported Operating Systems• Appendix C, BIOS Defaults For New Installs• Appendix D, Incorporating Device Drivers Into WDS Images

Assisted OS Installation With Oracle Hardware Installation Assistant

The Oracle Hardware Installation Assistant makes operating system installation easy. With the Oracle Hardware Installation Assistant, all you need to begin is a licensed copy of Linux or Windows OS distribution media supported for your server. All software and required server-specific drivers are supplied by Oracle Hardware Installation Assistant. With a graphical wizard interface and flexible installation options, Oracle Hardware Installation Assistant brings simplicity, speed, and reliability to your server deployments.

To use Oracle Hardware Installation Assistant, simply boot the program from the server's CD drive, a USB flash drive, or from a network image. Check for the latest program updates available. Select your OS distribution from the menu and follow the on-screen instructions. Oracle Hardware Installation Assistant scans your system to ensure that it has the drivers it needs to configure your server components[1]. It also provides you the option of having the program check for the latest drivers available. Oracle Hardware Installation Assistant will prompt you for the appropriate media as needed and any other required information during the OS installation process (such as license keys).

Note – [1] Some option card drivers are downloaded to the server, but require manual installation. Feature enhancements are made to Oracle Hardware Installation Assistant regularly; therefore, you should check the Oracle Hardware Installation Assistant information page for the latest updates and supported features:
<http://www.oracle.com/goto/hia>.

Topics discussed in this chapter include:

- “Oracle Hardware Installation Assistant Task Overview” on page 4
- “How to Obtain Oracle Hardware Installation Assistant” on page 4
- “Oracle Hardware Installation Assistant Documentation Resources” on page 5

Oracle Hardware Installation Assistant Task Overview

You can perform the following tasks using Oracle Hardware Installation Assistant:

Note – The supported Oracle Hardware Installation Assistant installation and recovery tasks listed below are server-dependent and might vary.

- Perform an assisted installation of a Linux or Windows operating system on your Sun x86 server from Oracle. Oracle Hardware Installation Assistant provides the appropriate drivers and platform-specific software, eliminating the need to create a separate driver disk.
- Optionally create RAID-0 or RAID-1 volumes on internal storage devices.
- Optionally upgrade your system's Oracle Integrated Lights Out Manager (ILOM) service processor (SP), BIOS, and storage device firmware (regardless of the OS on your server).
- Optionally update your Oracle Hardware Installation Assistant session with the latest firmware and drivers.
- Optionally recover from a corrupt or inaccessible Oracle ILOM service processor.

How to Obtain Oracle Hardware Installation Assistant

Oracle Hardware Installation Assistant ships with the Sun Server X2-4 and is available in CD format or a web download. Regular updates are made available to ensure that the latest OS versions are supported. You can download, per your platform server, the latest version of Oracle Hardware Installation Assistant at:

<https://support.oracle.com>

Oracle Hardware Installation Assistant Documentation Resources

If you have determined that you want to install a Windows or Linux operating system on your Sun x86 server using Oracle Hardware Installation Assistant, refer to the following document for detailed installation instructions:

- *Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers* at:

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

Getting Started

This chapter describes how to get started installing the Microsoft Windows Server 2008 SP2 and the Microsoft Windows Server 2008 R2 operating systems manually on your server.

Note – The term “manually” refers to performing the installation by following the instructions provided in Chapters 2 through 4 of this guide, and not using the Oracle Hardware Installation Assistant. If you prefer to perform an assisted Windows installation by using Oracle Hardware Installation Assistant, see [Chapter 1](#) of this guide.

Topics discussed in this chapter include:

- [“Supported Windows Server Operating Systems” on page 7](#)
- [“Windows Installation Prerequisites” on page 8](#)
- [“Windows Server Installation Task Overview” on page 10](#)
- [“SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2” on page 11](#)

Supported Windows Server Operating Systems

The Sun Server X2-4 supports the following Microsoft Windows operating systems:

Windows OS	Edition
<ul style="list-style-type: none"> Windows Server 2008 SP2 	<ul style="list-style-type: none"> Standard Edition (64-bit) Enterprise Edition (64-bit) Datacenter edition (64-bit)
<ul style="list-style-type: none"> Windows Server 2008 R2 	<ul style="list-style-type: none"> Microsoft Windows Server 2008 R2, SP1 (64-bit) Standard Edition (64-bit) Enterprise Edition (64-bit) Datacenter edition (64-bit)

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

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

Windows Installation Prerequisites

Refer to the following important prerequisites before beginning the Windows Server 2008 operating system installation on your server.

TABLE 2-1 Windows Installation Prerequisites

Requirement	Description	For more information, see:
Server is set up and operational	The server is mounted and powered-on in the rack and communication to the SP has been established.	<ul style="list-style-type: none"> <i>Sun Server X2-4 Installation Guide</i>
Established deployment method that enables you to boot the Windows install program	Guidelines for selecting a local or remote deployment method for installing a Windows operating system.	<ul style="list-style-type: none"> Appendix A

TABLE 2-1 Windows Installation Prerequisites (*Continued*)

Requirement	Description	For more information, see:
RAID volume creation	<p>If you want to include your boot drive as part of a RAID configuration, you need to configure a RAID volume on it. Use the LSI integrated RAID controller setup utility before you install the operating system.</p> <p>If you are using the optional SGX-SAS6-R-INT- Z host bus adapter (HBA), you must use the LSI integrated RAID controller setup utility to configure a RAID volume. For instructions, see the <i>LSI MegaRAID SAS Software User's Guide</i>.</p> <p>If you are using the optional SGX-SAS6-INT-Z HBA, you must use the BIOS Configuration Utility to configure a RAID volume. For instructions, see the <i>Sun Storage 6 Gb SAS PCIe HBA Internal Installation Guide</i>.</p>	<ul style="list-style-type: none"> • <i>LSI MegaRAID Software SAS User's Guide</i> at: http://www.lsi.com/support/sun/ • <i>Sun Storage 6 Gb SAS HBA Internal Installation Guide</i> at: http://docs.oracle.com/cd/E19221-01/E22410/E22410.pdf
Verification of BIOS settings for new OS installations	Prior to installing the Windows Server 2008 operating system, you should verify that the BIOS factory-default properties are set.	<ul style="list-style-type: none"> • Appendix C
Installation of server-specific device drivers and optional supplemental software	<p>After performing the Windows Server 2008 installation, you might need to:</p> <ul style="list-style-type: none"> • Install server-specific device drivers to support additional hardware. <p>Note the Windows 2008 SP2 does not include the LSI mass storage drivers for the SAS PCIe host bus adapters (HBAs). If you have a SAS PCIe HBA option installed, the LSI mass storage driver for the SAS PCIe HBA option must be made accessible from the tools and drivers firmware DVD during installation. For a list of supported SAS PCIe HBAs, see TABLE 2-2.</p> <ul style="list-style-type: none"> • Install Windows Server optional supplemental software that is available for your x86 server. 	<ul style="list-style-type: none"> • Chapter 4 • “SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2” on page 11
Incorporate server-specific device drivers in a WIM image	Advanced users can incorporate the post installation system device drivers into WDS boot and install images.	<ul style="list-style-type: none"> • Appendix D
Access to late-breaking information and patches for OS installations	Review the <i>Sun Server X2-4 Product Notes</i> for late-breaking information about supported operating system software and patches.	<ul style="list-style-type: none"> • <i>Sun Server X2-4 Product Notes</i>

Windows Server Installation Task Overview

To manually install Windows Server 2008 (SP2 or R2), complete the following procedures in order:

1. Obtain the tools and drivers firmware by downloading the latest drivers and utilities available for your Sun x86 server platform as described in [Chapter 5](#).

The install program for the Windows Server 2008 SP2 does not include the LSI drivers for the Sun Storage SAS PCIe HBA options. Therefore, if you have a SAS PCIe HBA configured on your server and you are installing Windows 2008 SP2, the LSI mass storage driver for the SAS PCIe HBA option must be made accessible from the tools and drivers firmware DVD during the installation process.

For a list of SAS PCIe HBAs supported on the Sun Server X2-4, see “[SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2](#)” on page 11.

Note – Optionally, advanced users might prefer to incorporate the drivers into WDS images. For instructions on how to incorporate the drivers into WDS images, see [Appendix D](#).

2. Choose and set up an installation method for deploying the Windows Server installation as described in [Appendix A](#).
3. Follow the instructions for performing a manual installation of the Windows Server operating system as described in [Chapter 3](#).
4. Follow the instructions for performing the Windows Server post installation tasks as described in [Chapter 4](#).

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

TABLE 2-2 identifies the SAS PCIe host bus adapter options that are supported on the Sun Server X2-4. If you have one of these SAS PCIe HBA options configured on your server and you are installing Windows Server 2008 SP2, you will need to load the LSI mass storage driver for the PCIe HBA option from the tools and drivers firmware DVD during installation.

Note – To determine which HBA option cards are supported and available for purchase on the Sun Server X2-4, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page: <http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>.

TABLE 2-2 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 \(SP2 or R2\) Using Local or Remote Media](#)” on page 14.

If you do not have the tools and drivers firmware, you can download the ISO image for the tools and drivers firmware. For details, see [Chapter 5](#).

Installing Windows Server 2008

This chapter provides information about manually installing the Windows Server 2008 SP2 or Windows Server 2008 R2 operating system.

Note – The term “manually” refers to performing the installation by following the instructions provided in Chapters 2 through 4 of this guide, and not using the Oracle Hardware Installation Assistant. If you prefer to perform an assisted Windows installation by using Oracle Hardware Installation Assistant, see [Chapter 1](#) of this guide for details.

This chapter includes the following topics:

- [“Before You Begin” on page 13](#)
- [“Installing Windows Server Using Local or Remote Media” on page 14](#)
- [“Windows Server Installation Using a PXE Network Boot” on page 24](#)

Before You Begin

Ensure that the following requirements are met before you proceed with the instructions in this chapter for manually installing the Windows Server operating system.

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see [“Windows Installation Prerequisites” on page 8](#).
- An installation method (for example: console output, boot media, and install target) should have been chosen and established prior to performing the installation. For more information about these setup requirements, see [Appendix A](#).

- Use the Microsoft Windows Server 2008 (SP2 or R2) operating system documentation in conjunction with the Windows Server operating system instructions provided in this chapter. You can obtain a copy of Microsoft's Windows Server 2008 installation documentation at:
<http://www.microsoft.com/windowsserver2008/en/us/product-documentation.aspx>

After completing this procedure, you should review and perform the required post installation tasks described later in this guide. For more details, see [Chapter 4](#).

Installing Windows Server Using Local or Remote Media

The procedure in this section describes how to boot the Windows Server 2008 (SP2 or R2) 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 (or subsequent release) CD or DVD
- Windows Server 2008 SP2 or Windows Server 2008 R2 (or subsequent release) ISO image

Note – The Windows Server 2008 (SP 2 or R2) 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 [“Windows Server Installation Using a PXE Network Boot”](#) on page 24 for instructions.

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

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

- **For Distribution CD/DVD.** Insert the Windows 2008 Distribution media (CD labeled number 1 or the single DVD) into the local or remote USB CD/DVD-ROM drive.

- **For ISO image.** Ensure that the ISO images are available and that the Oracle ILOM Remote Console application is aware of the first ISO image location.

For additional information about how to set up the installation media, see [“Boot Media Options for Performing the OS Installation”](#) on page 45.

2. Reset or power on the server.

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

For example:

- **From the Oracle ILOM web interface,** select Host Management > Power Control in the navigation tree. Then, select Power Cycle from the Select Action list box and click Save.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the Oracle ILOM CLI,** 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 power-on self-test screen, press F8 to specify a temporary boot device for the Windows installation.

The Please Select Boot Device menu appears.

Note – The dialog 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 option according to the Windows media installation method you elected to use, then press Enter.

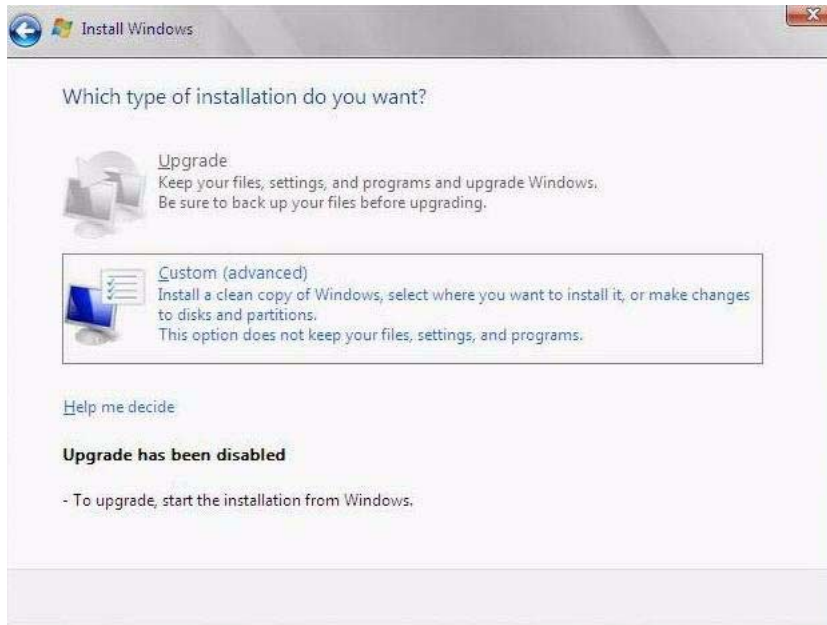
For example:

- If you elected to use the Windows local delivery method, select TEAC as the physical DVD device (or select CD/DVD if this option is shown in boot device dialog).
- If you elected to use the Oracle ILOM Remote Console delivery method, select Virtual CDROM.

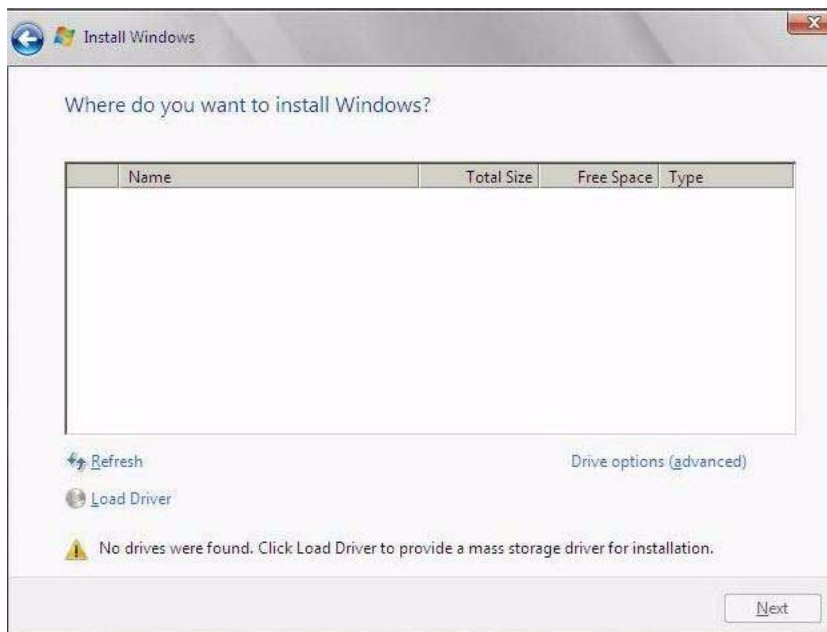
5. When prompted with Press any key to boot from CD, press any key.

The Windows installation wizard starts.

Continue the Windows installation wizard until the Installation Type dialog appears.



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



7. In the Where Do You Want to Install Windows dialog, perform one of the following tasks in the table below to specify a storage target for the Windows Server operating system edition.

For Windows Server Edition	Task
Windows Server 2008 SP2 (or subsequent Windows 2008 SP release)	<p>Perform one of the following:</p> <ul style="list-style-type: none"> • 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 then proceed to Step 8. - 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, then proceed to Step 9. - 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, then proceed to Step 10.
Windows Server 2008 R2 (or subsequent Windows 2008 R2 release)	<p>Perform one of the following:</p> <ul style="list-style-type: none"> • 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, then proceed to Step 9. - 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, then proceed to Step 10.

8. (Load HBA Storage Driver) In the Load Drive dialog, do the following:



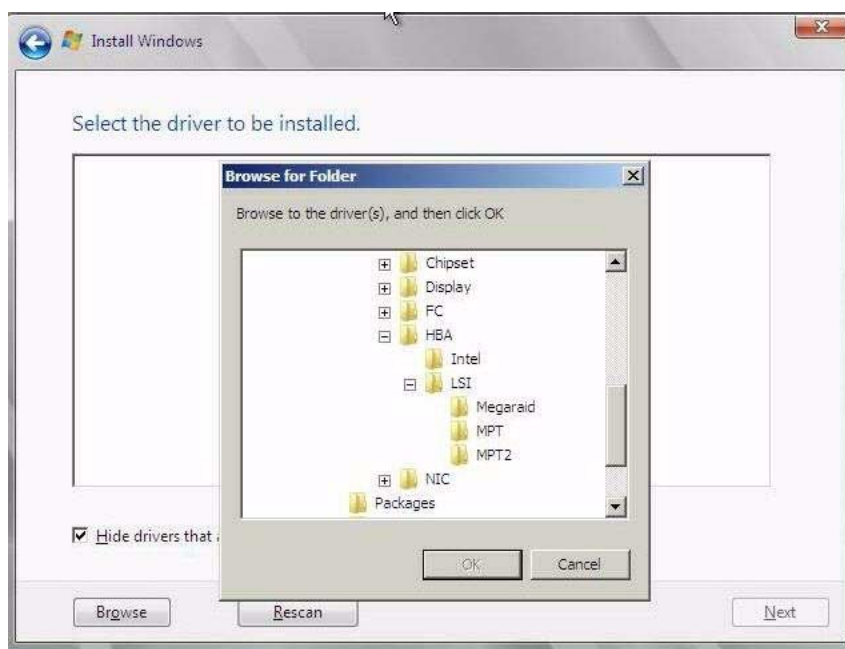
a. Ensure the storage driver(s) are accessible according to the installation method chosen (described in [Appendix A](#)).

For example:

- **Floppy Disk Local.** Storage driver(s) on a floppy disk in floppy drive A on the server.
- **Floppy Disk Remote.** Storage driver(s) on a floppy disk in a floppy drive mounted as a device from the Oracle ILOM Remote Console.
- **Floppy Image.** Storage driver `floppy.img` file is mounted as a device from the Oracle ILOM Remote Console.
- **Non-floppy Media.** Storage driver(s) are on a local physical storage media (USB flash drive or CD/DVD) or virtual media mounted from the Oracle ILOM Remote Console.

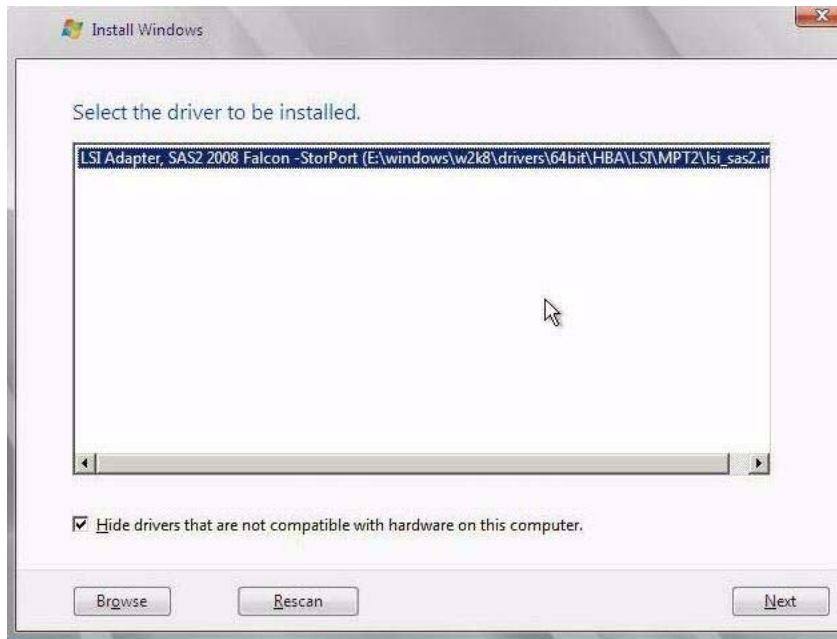
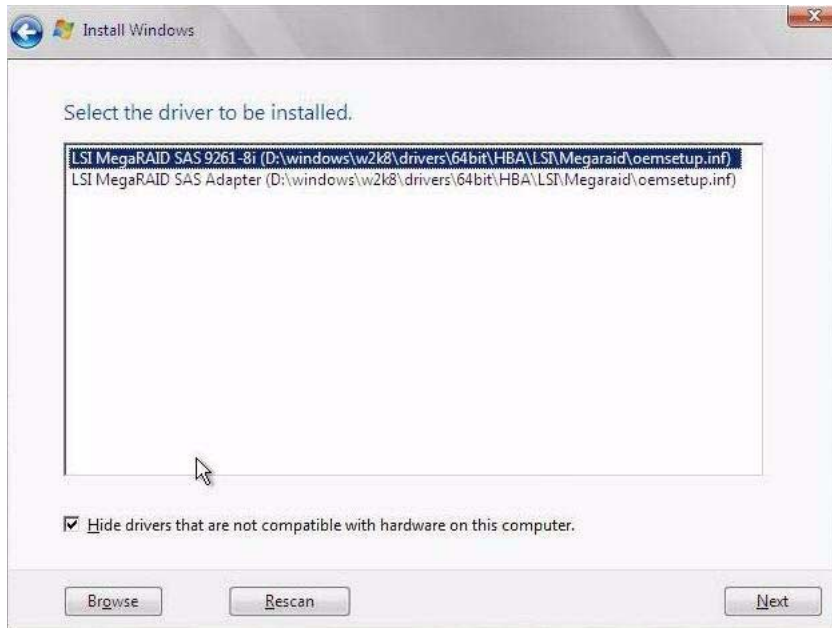
b. In the Load Driver dialog, click **Browse** to navigate to the appropriate driver media folder.

- For systems configured with the SAS PCIe HBA option card SG-SAS6-R-INT-Z, navigate to the following directory to load the appropriate LSI driver:
`windows/w2k8/drivers/64bit/hba/lsi/megaraid`
- For a system configured with either of these SAS PCIe HBA option cards—SG-SAS6-INT-Z or SG-SAS6-EXT-Z, navigate to the following directory to load the appropriate driver:
`windows/w2k8/drivers/64bit/hba/lsi/mpt2`



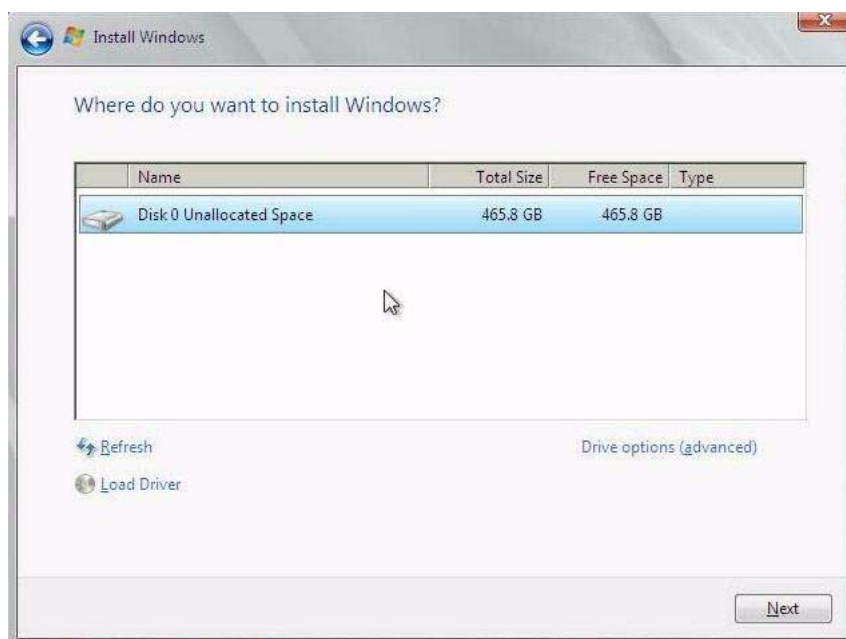
- c. In the **Browse for Folder** dialog, select the appropriate driver, then click **OK** to load the driver.

The selected driver appears in the **Select the Driver to Be Installed** dialog. Example dialogs follow showing a selected mass storage driver for a SAS PCIe HBA.



d. In the Select the Driver to Be Installed dialog, click **Next** to install the driver.

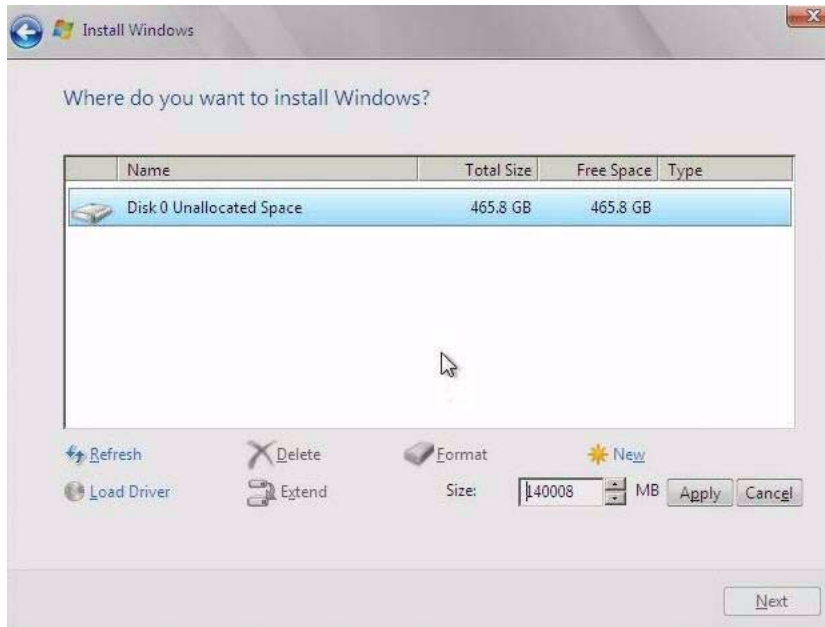
The Where Do You Want to Install Windows dialog appears.



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, then proceed to Step 10.
 - or -
 - Select the storage target listed and click **Drive Options (Advanced)** to view and change the default partition settings, then proceed to Step 9.
- The partition settings for the selected target appear at the bottom of the Where Do You Want to Install Windows dialog.

9. (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. Click **New** to create a new partition on the selected storage target.

d. In the **Size** scroll box, increase or decrease the partition size as needed, then click **Apply**.

The partition is created.

e. Click **Next** to install the operating system to the selected storage target.

10. The Windows installation program begins and will reboot the server multiple times during the installation process.

11. When the Windows installation is complete, Windows starts and prompts you to change the user password.

12. In the user password dialog, click **OK** and set up the initial user login account.

Note – Windows Server 2008 enforces stronger 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.

13. Proceed to [Chapter 4](#) to perform the post installation tasks.

Windows Server Installation Using a PXE Network Boot

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

Topics included in this section:

- [“Before You Begin” on page 24](#)
- [“Install Windows Server 2008 \(SP2 or R2\) Using PXE Network Boot” on page 25](#)

Note that the procedure presented in this section documents the initial steps to install Windows Server 2008 over the network using a 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 the Windows Server 2008 operating system, see Microsoft’s Windows Deployment Services documentation.

Before You Begin

- 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).
- 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 guidelines for adding drivers to the WIM installation image(s), see [Appendix D](#).

- Obtain the WIM Administrator password.

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

1. Reset or power on the server.

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

For example:

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

2. Press F8 to specify a temporary boot device.

The Please Select Boot Device menu appears.

3. In the Please Select Boot Device menu, select the appropriate PXE installation boot device and press Enter.

The PXE installation boot device is the physical network port configured to communicate with your network installation server.

The Boot Agent dialog appears.

4. In the Boot Agent dialog, press F12 for a network service boot.

5. Continue the normal Windows Server 2008 SP2 or 2008 R2 WDS network installation.

For additional information, consult Microsoft's Windows Deployment Services product documentation.

6. When the installation completes, proceed to [Chapter 4](#) to perform the post installation tasks.

Post Installation of Windows Server 2008

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

- [“Installing Critical Device Drivers and Supplemental Software” on page 28](#)
- [“Installing Supplemental Software” on page 29](#)
- [“Configuring Support for TPM” on page 31](#)
- [“Configuring Intel NIC Teaming” on page 31](#)

Before You Begin

The procedures in this chapter assume that you have:

- Installed the Microsoft Windows Server operating system
- Obtained a copy of the Tools and Drivers firmware DVD

If you do not have a copy of the tools and drivers firmware, you can download the latest tools and drivers firmware from the My Oracle support site. For Instructions see, [Chapter 5](#).

Installing Critical Device Drivers and Supplemental Software

An installation wizard is provided on the Tools and Drivers firmware DVD to install server-specific device drivers and Supplemental Software. The server-specific device drivers are provided to support optional hardware devices that can be installed on your server.

▼ Install Server-Specific Device Drivers

1. **Insert the Tools and Drivers firmware DVD into a local or remote USB DVD drive and do one of the following:**
 - **If the DVD automatically starts**, click `Install Drivers and Supplement Software`.
 - **If the DVD does not automatically start**, navigate to one of the following folders containing the appropriate `InstallPack` file (for example, `InstallPack_1_0_1.exe`), and double-click it.
 - `<DVD>/Windows/W2K8/Packages`
 - `<DVD>/Windows/W2K8R2/Packages`The Server Installation Package 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. **In the Install Pack notice dialog, read the message, then click `Next`.**

The Welcome to the Sun Fire Installation Wizard appears.
4. **In the Welcome to the Sun Fire Installation Wizard dialog, click `Next`.**

The End User License Agreement page appears.
5. **In the End User License Agreement page, select `I Accept This Agreement`, then click `Next`.**

The platform-specific drivers are installed. A green check mark verifies that each driver was installed successfully.

6. In the Driver Installation Pack dialog, click **Finish**.
The System Settings Change dialog appears.

Note – If you plan on installing Supplemental Software (highly recommended), do not restart your system at this time. Once the Supplemental Software has been installed, you will be prompted to restart the system.

7. Perform one of the following:
- If you accepted the default installable settings in Step 2, click **No** to proceed to “Installing Supplemental Software” on page 29.
 - If you are not installing the Supplemental Software, click **Yes** to restart your computer.

Installing Supplemental Software

There are several Supplemental Software components available for your Sun Server X2-4. You have two options for installation:

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

TABLE 4-1 identifies the optional Supplemental Software components available for your server.

TABLE 4-1 Install Pack Optional Supplemental Software

Available Supplemental Software Components	Servers With LSI Integrated RAID Controller	Servers With Intel Integrated Disk Controller
LSI MegaRAID Storage Manager , click Yes to restart your computer Enables you to configure, monitor, and maintain RAID on the SAS internal RAID host bus adapter.	Typical	Not applicable
IPMItool command-line utility The IPMItool command-line utility reads the sensor data repository (SDR) and displays sensor values, system event log (SEL), and field-replaceable unit (FRU) inventory information; gets and sets LAN configuration parameters; and performs chassis power control operations via the BMC, which is also called the service processor (SP).	Typical	Typical

TABLE 4-1 Install Pack Optional Supplemental Software (*Continued*)

Available Supplemental Software Components	Servers With LSI Integrated RAID Controller	Servers With Intel Integrated Disk Controller
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	Typical

▼ Install the Supplemental Software



Caution – If you have already installed the Supplemental Software, running the installation again will not necessarily reinstall the Supplemental Software. It might result in the components being removed. Carefully review the dialog boxes during Supplemental Software installation to ensure that the results are as expected.

1. **Do one of the following:**
 - If you *did not* select the **Supplemental Software** when you ran the procedure “Installing Critical Device Drivers and Supplemental Software” on page 28, refer back to that procedure and run it again, but this time accept the default settings in Step 2 (the default is to install the Supplemental Software), and select **No** in Step 7. Then proceed to Step 2 of this procedure.
 - If you *did* select **Supplemental Software** at the Server Installation Package dialog box in Step 2 of “Installing Critical Device Drivers and Supplemental Software” on page 28, and selected **No** in Step 7, the Install Pack Supplemental Software dialog appears. Proceed to Step 2 of this procedure.
2. **In the Install Pack Supplemental Software dialog, click `Next` to accept the typical settings; or select `Custom` to choose the options to install (see descriptions of the Supplemental Software in TABLE 4-1).**

The Component Installation wizard will guide you through the installation of each of the selected Supplemental Software components.
3. **After the Supplemental Software has been installed, click `Finish`.**
4. **Click `Yes` at the System Setting Change dialog to restart your system.**

If you ran the Sun Server Installation Package software from the Tools and Drivers firmware DVD, remove the DVD from your system.

Configuring Support for TPM

If you intend to use the Trusted Platform Module (TPM) feature set that is provided in Windows Server 2008, you must configure your server to support this feature. For instructions, see the service manual for your server:

- *Sun Server X2-4 Service Manual*

Note – TPM enables you to administer the TPM security hardware in your server. For additional information about implementing this feature, refer to the Windows Trusted Platform Module Management documentation provided by Microsoft.

Configuring Intel NIC Teaming

For more information on setting up 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.

- [“Firmware and Software Updates” on page 33](#)
- [“Firmware and Software Access Options” on page 34](#)
- [“Available Software Release Packages” on page 34](#)
- [“Accessing Firmware and Software” on page 35](#)
- [“Installing Updates” on page 39](#)

Firmware and Software Updates

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

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

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

Firmware and Software Access Options

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

- **Oracle Hardware Installation Assistant** – Oracle Hardware Installation Assistant is a factory-installed feature for the Sun Server X2-4 that allows you to easily update server firmware and software.
- For more information about Oracle Hardware Installation Assistant, refer to the *Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers* at <http://www.oracle.com/pls/topic/lookup?ctx=hia>.
- **My Oracle Support** – All system firmware and software are available from the My Oracle Support web site.

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

For instructions on how to download software releases from My Oracle Support, see “[Download Firmware and Software Using My Oracle Support](#)” on page 35.

- **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 36.

Available Software Release Packages

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

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

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

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

Accessing Firmware and Software

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

- “Download Firmware and Software Using My Oracle Support” on page 35
- “Requesting Physical Media” on page 36

▼ Download Firmware and Software Using My Oracle Support

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

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

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

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

Expand the folders to see all available software releases.

7. Click Search.

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

See [“Available Software Release Packages” on page 34](#) for a description of the available downloads.

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

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

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

The File Download dialog box appears.

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

The patch file downloads.

Requesting Physical Media

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

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

Description	Link
Gather information you will need to provide for the request.	“Gathering Information for the Physical Media Request” on page 36
Make the physical media request either online or by calling Oracle Support.	“Request Physical Media (Online)” on page 37 “Request Physical Media (By Phone)” on page 38

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 35 to determine the latest software release and view available downloads (patches). After viewing the list of patches, you can navigate away from the Patch Search Results page, if you do not want to continue with the download steps.
- *If you do not have access to My Oracle Support* – Use the information in “[Available Software Release Packages](#)” on page 34 to determine which packages you want, then request those packages for the latest software release.
- **Have the shipping information ready.** You will need to provide a contact, phone number, email address, company name, and shipping address as part of the request.

▼ Request Physical Media (Online)

Gather the information described in “[Gathering Information for the Physical Media Request](#)” on page 36 before making the request.

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

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

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

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

7. Click Next.

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

You do not need to supply any information.

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

10. Click Submit.

▼ Request Physical Media (By Phone)

Gather the information described in “[Gathering Information for the Physical Media Request](#)” on page 36 before making the request.

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

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

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

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

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

Installing Updates

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

- “Installing Firmware” on page 39
- “Installing Hardware Drivers and OS Tools” on page 40

Installing Firmware

Updated firmware can be installed using one of the following:

- **Oracle Hardware Installation Assistant** – Oracle Hardware Installation Assistant can download and install the latest firmware from Oracle.
- For more information about Oracle Hardware Installation Assistant, refer to the *Oracle Hardware Installation Assistant 2.5 User’s Guide for x86 Servers* at:
<http://www.oracle.com/pls/topic/lookup?ctx=hia>
- **Oracle Enterprise Manager Ops Center** – Ops Center Enterprise Controller can automatically download the latest firmware from Oracle, or firmware can be loaded manually into the Enterprise Controller. In either case, Ops Center can install the firmware onto one or more servers, blades, or blade chassis.

For more information, go to:

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

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

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

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

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

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

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

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

Installing Hardware Drivers and OS Tools

Updated hardware drivers and operating system (OS)-related tools, such as Oracle Hardware Management Pack, can be installed using the **Oracle Enterprise Manager Ops Center**. For more information, go to:

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

PART II

Windows Server System Administrator
References

Refer to the following system administrator references as needed to perform or complete the installation of the Windows Server 2008 (SP2 or R2) operating system.

Description	Link
Guidelines for selecting and setting up an installation environment for deploying the Windows Server installation program	Appendix A
A complete list of operating systems supported on the Sun Server X2-4 at the time of this publication	Appendix B
Instructions for ensuring that the BIOS default properties are set prior to performing the Windows Server installation	Appendix C
Instructions for advanced users who prefer to incorporate the server-specific drivers in a Windows Imaging Format (WIM) file	Appendix D

Supported Installation Methods

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

- [“Console Outputs” on page 43](#)
- [“Installation Boot Media” on page 45](#)
- [“Installation Targets” on page 47](#)

Console Outputs

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

TABLE A-1 Console Options for Performing an OS Installation

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

Installation Boot Media

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

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

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

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

Installation Media	Description	Setup Requirement
Remote boot media	<p>Remote media requires you to boot the install over the network. You 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).</p> <p>Supported OS remote media sources can include:</p> <ul style="list-style-type: none">• CD/DVD-ROM installation media, and, if applicable, floppy device driver media• CD/DVD-ROM ISO installation image and, if applicable, floppy ISO device driver media• Automated installation image (requires PXE boot)	<p>To redirect the boot media from a remote storage device, perform these steps:</p> <ol style="list-style-type: none">1. Insert the boot media into the storage device, for example: For CD/DVD-ROM, insert media into the built-in or external CD/DVD-ROM drive. For CD/DVD-ROM ISO image, ensure that ISO image(s) are readily available on a network shared location. For device driver floppy media, if applicable, insert floppy media into the external floppy drive. For device driver floppy ISO image, ensure that ISO image, if applicable, is readily available on a network shared location or on a USB drive.2. Establish a web-based client connection to the server Oracle ILOM SP and launch the Oracle ILOM Remote Console application. For more details, see the Setup Requirements for web-based client connection in TABLE A-1.3. In the Devices menu of the Oracle ILOM Remote Console application, specify the location of the boot media, for example: For CD/DVD-ROM boot media, select CD-ROM. For CD/DVD-ROM ISO image boot media, select CD-ROM Image. For floppy device driver boot media, if applicable, select Floppy. For floppy image device driver boot media, if applicable, select Floppy Image. <p>For more information about the Oracle ILOM Remote Console, see the Oracle Integrated Lights Out Manager (ILOM) 3.0 or 3.1 Documentation Libraries.</p>

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

Installation Media	Description	Setup Requirement
Remote Boot Media (continued)	<p>Note - An automated installation image enables you to perform the OS installation on multiple servers. By using an automated image, you can ensure configuration uniformity among many systems.</p> <p>Automated installations use a Pre-boot eXecution Environment (PXE) technology to enable the clients without an operating system to boot remotely to the automated install server that performs the installation of the operating system.</p>	<p>To perform the installation using PXE, perform these steps:</p> <ol style="list-style-type: none">1. Configure the network server to export the installation via PXE boot.2. Make the OS install media available for PXE boot. <p>Note that if you are using an automated OS installation image, you will need to create and provide the automated OS install image, for example:</p> <ul style="list-style-type: none">- Windows WDS Image <p>For detailed instructions for automating the installation setup process, consult the operating system vendor documentation.</p> <ol style="list-style-type: none">3. To boot the installation media, select the PXE boot interface card as the temporary boot device.

Installation Targets

TABLE A-3 identifies the supported installation targets you can use to install an operating system.

TABLE A-3 Installation Targets for OS Installations

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

Supported Operating Systems

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

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

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



Supported Operating Systems

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

TABLE B-1 Supported Operating Systems

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

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

Operating System	Supported Version	Additional Information
Oracle Solaris	<ul style="list-style-type: none">• Oracle Solaris 11 11/11• Oracle Solaris 10 8/11• Oracle Solaris 10 9/10	<ul style="list-style-type: none">• <i>Sun Server X2-4 Installation Guide for Oracle Solaris Operating System</i>
Oracle VM Software	<ul style="list-style-type: none">• Oracle VM 2.2.1 through 3.0.3	<ul style="list-style-type: none">• <i>Sun Server X2-4 Installation Guide for Oracle VM Software</i>
Windows	<ul style="list-style-type: none">• Microsoft Windows Server 2008 SP2, Standard Edition (64-bit)• Microsoft Windows Server 2008 SP2, Enterprise Edition (64-bit)• Microsoft Windows Server 2008 SP2, Datacenter Edition (64-bit)• Microsoft Windows Server 2008 R2, SP1 (64-bit)• Microsoft Windows Server 2008 R2, Standard Edition (64-bit)• Microsoft Windows Server 2008 R2, Enterprise Edition (64-bit)• Microsoft Windows Server 2008 R2, Datacenter Edition (64-bit)	<ul style="list-style-type: none">• Chapter 3

BIOS Defaults for New Installations

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

- System time
 - System date
 - Boot order
-

Verification of BIOS Factory Defaults

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

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

Before You Begin

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

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

- A console connection is established to the server. For details, see “Console Options for Performing an OS Installation” on page 44.

▼ View or Edit BIOS Settings for New Installations

1. Reset the power on the server.

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

For example:

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

The BIOS screen appears.

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

After a few moments, the BIOS Setup Utility appears.

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

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

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

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

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

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

a. Highlight the values you want to change.

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

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

- PLUS (+) to increment the current value shown

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

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

The Boot Settings menu appears.

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

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

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

- a. Use the up and down arrow keys to select the first entry in the list, then press Enter.
- b. In the Options menu, use the up and down arrow keys to select the default permanent boot device, then press Enter.

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

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

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

Alternatively, you can save the changes and exit the BIOS Setup Utility by selecting Save on the Exit menu. A message appears prompting you to save changes and exit setup.

In the message dialog, select OK, then press Enter.

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

Incorporating Device Drivers Into Windows Server 2008 WIM Images for Windows Deployment Services

This section is for advanced system administrators who need to incorporate Windows Server 2008 (SP2 or R2) device drivers into Windows Imaging Format (WIM) files.

This appendix assumes that the system administrator is using Microsoft's Windows Deployment Services (WDS) to deploy the installation of Windows Server 2008 (SP2 or R2) over a network.

Note – This appendix is not intended as a tutorial for WDS or Microsoft's Windows System Imaging Manager (WSIM). For detailed information about WDS or WSIM, refer to Microsoft's WDS and WSIM documentation.

Topics in this section include:

- [“Getting Started” on page 56](#)
 - [“Location of Device Drivers on Tools and Drivers Firmware DVD” on page 56](#)
 - [“Which Device Drivers to Incorporate Into WIM Image\(s\)” on page 57](#)
 - [“Prerequisites and Task Overview” on page 58](#)
- [“Procedures for Incorporating Drivers Into WIM Image\(s\)” on page 60](#)
 - [“Create an ImageUnattend.xml Setup Script – Windows Server 2008 \(SP2 or R2\)” on page 61](#)
 - [“Add Device Driver\(s\) to Boot WIM – Windows Server 2008 SP2 Only” on page 65](#)
 - [“Map ImageUnattend.xml Setup Script to Windows Server 2008 \(SP2 or R2\) Install Image” on page 67](#)

Getting Started

Topics included in this section include:

- “Location of Device Drivers on Tools and Drivers Firmware DVD” on page 56
- “Which Device Drivers to Incorporate Into WIM Image(s)” on page 57
- “Prerequisites and Task Overview” on page 58

Location of Device Drivers on Tools and Drivers Firmware DVD

TABLE D-1 identifies the location of the device driver directories on the Tools and Drivers firmware DVD.

Note – To obtain the latest device drivers available for the Sun Server X2-4, download the ISO image for the tools and drivers firmware from the My Oracle support web site at: <http://support.oracle.com>. For instructions, see [Chapter 5](#).

TABLE D-1 Device Driver Directory Location on Tools and Drivers Firmware DVD

Device Drivers	Directory Location on Tools and Driver Firmware DVD
Intel Network Driver	<ul style="list-style-type: none">• For Windows 2008 R2: windows\W2K8R2\drivers\NIC\intel• For Windows 2008 SP2: windows\w2K8\drivers\NIC\intel
Aspeed Driver	<ul style="list-style-type: none">• For Windows 2008 R2: windows\W2K8R2\drivers\display\aspeed• For Windows 2008 SP2: windows\w2K8\drivers\display\aspeed

TABLE D-1 Device Driver Directory Location on Tools and Drivers Firmware DVD

Device Drivers	Directory Location on Tools and Driver Firmware DVD
LSI MegRAID Driver: <ul style="list-style-type: none">• Sun Storage 6 Gb SAS PCIe RAID HBA, SG-SAS6-R-INT-Z	<ul style="list-style-type: none">• windows/w2k8/drivers/64bit/hba/lsi/megaraid
LSI MPT2 Driver: <ul style="list-style-type: none">• Sun Storage 6 Gb SAS PCIe HBA, SG-SAS6-INT-Z• Sun Storage 6 Gb SAS PCIe HBA, SG-SAS6-EXT-Z	<ul style="list-style-type: none">• windows/w2k8/drivers/64bit/hba/lsi/mpt2
Intel ICH10 Controller	<ul style="list-style-type: none">• For Windows 2008 R2: windows\W2K8R2\drivers\64bit\HBA\intel• For Windows 2008 SP2: windows\w2K8\drivers\64bit\HBA\intel

Which Device Drivers to Incorporate Into WIM Image(s)

TABLE D-2 identifies the device drivers to incorporate in the Windows Server 2008 (SP2 or R2) WIM image(s). Note that the boot WIM image identified in TABLE D-2 is only required for Windows Server 2008 SP2 installations, and the install WIM image identified in TABLE D-2 is required for both Windows Server 2008 SP2 and Windows Server 2008 R2 installations.

Note – To determine which SAS PCIe HBA option cards are supported and available for purchase on the Sun Server X2-4, go to the Sun x86 Servers web site and navigate to the Sun Server X2-4 page: <http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html>.

TABLE D-2 Device Drivers to Add to WIM Image(s)

Device Drivers to Incorporate	Windows Server 2008 (SP2 and R2) Add to install.wim	Windows Server 2008 SP2 Only Add to boot.wim
Intel Network Drivers	X	X
Aspeed Graphic Driver	X	
SAS PCIe HBA option card installed on server: <ul style="list-style-type: none"> • Sun Storage 6 Gb SAS PCIe RAID HBA, SG-SAS6-R-INT-Z • Sun Storage 6 Gb SAS PCIe HBA, SG-SAS6-INT-Z • Sun Storage 6 Gb SAS PCIe HBA, SG-SAS6-EXT-Z 	X	X
Intel ICH10 Controller	X	

Prerequisites and Task Overview

Prior to creating the device driver WIM image(s) for Windows Server 2008 (SP2 or R2), ensure that the following tasks are completed in the order specified.

1. Install and configure the Windows Deployment Services on a server in your network. For details, you can download *Microsoft's Windows Deployment Services Step-by-Step Guide* at:

<http://www.microsoft.com/downloads/details.aspx?familyid=14CA18B1-B433-4F62-8586-B0A2096460EB&displaylang=en>.

2. Install the Windows Automated Installation Kit (WAIK). The WAIK contains applications to mount and modify WIM images as well as applications to create and modify XML unattended setup scripts.

Microsoft provides separate WAIK downloads for Windows Server 2008 SP2 and Windows Server 2008 R2. The URLs for these downloads are as follows.

- Windows Server 2008 SP2 at:

<http://www.microsoft.com/downloads/details.aspx?FamilyID=94BB6E34-D890-4932-81A5-5B50C657DE08&displaylang=en>

- Windows Server 2008 R2 at:

<http://www.microsoft.com/downloads/details.aspx?familyid=696DD665-9F76-4177-A811-39C26D3B3B34&displaylang=en>

3. Locate the Windows device drivers on the Tools and Driver firmware DVD. For information about where the device drivers on the Tools and Drivers firmware DVD are located, see [“Location of Device Drivers on Tools and Drivers Firmware DVD” on page 56](#).

4. Establish a network-shared device driver repository. For example:

- Create a device driver repository containing the Windows Server 2008 (SP2 or R2) device drivers.

Note that for Windows Server 2008 WDS installation environments, a device driver repository is provided, which you can modify. For Windows Server 2003 SP2 WDS installation environments, a device driver repository is not provided and you must manually create one. The following is an example of how you might want to set up the directory structure for a new device driver repository:

C:\unattend\drivers\{w2k8|W2k8R2}\catalogs\vendor\version

Where:

- unattend is the unattend device driver store
 - drivers is the name for device driver directory
 - {W2K8 or W2K8R2} is the name for Windows Server 2008 (SP2 or R2) device drivers directory
 - catalogs is the name for Windows Server 2008 (SP2 or R2) catalog files
 - vendor is the name of directory for device driver vendor
 - version is the name of directory for device driver version
- Ensure that the directories (folders) in the device driver repository are shared and accessible to the Windows Deployment Services (WDS) during the network installation.

For example, the device driver repository network shares referenced in this appendix are set up as follows:

Repository Folder	Network Shares
C:\Unattended\Drivers\W2K8	\\wds-server\W2K8-Drivers
C:\Unattended\Drivers\W2K8R2	\\wds-server\W2K8R2-Drivers

- Extract the Windows Server 2008 device drivers on the Tools and Drivers firmware DVD and place them into the device driver repository.

For details about where the Windows Server 2008 device drivers are located on the Tools and Drivers firmware DVD, see [“Location of Device Drivers on Tools and Drivers Firmware DVD” on page 56](#).

If you do not have a copy of the tools and drivers firmware, you can download the ISO image for the Tools and Drivers firmware. For details, see [Chapter 5](#).

The following example demonstrates the directory structure of the device driver repository after copying a SAS PCIe HBA driver (example version number: 1.19.2.64) from the Tools and Drivers firmware DVD to the device driver repository:

Operating System	Tools and Drivers Firmware DVD	Device Driver Repository
Windows Server 2008 SP2	DVDDevice:\windows\W2K8\drivers\64bit\hba\lsi\mpt2	C:\unattend\drivers\W2K8\lsi\1.19.2.64
Windows Server 2008 R2	DVDDevice:\windows\W2K8R2\drivers\64bit\hba\lsi\mpt2	C:\unattend\drivers\W2K8R2\lsi\1.19.2.64

5. Create an `imageunattend.xml` Setup Script for Windows Server 2008 (SP2 or R2). For details, see [“Create an ImageUnattend.xml Setup Script – Windows Server 2008 \(SP2 or R2\)” on page 61](#).
6. For Windows Server 2008 SP2 (only) installations, add the required boot device drivers described in [TABLE D-2](#) to `boot.wim`. For details about adding the device drivers to the `boot.wim`, see [“Add Device Driver\(s\) to Boot WIM – Windows Server 2008 SP2 Only” on page 65](#).
7. Map the `imageunattend.xml` Setup Script to the Windows Server 2008 image. For details, see [“Map ImageUnattend.xml Setup Script to Windows Server 2008 \(SP2 or R2\) Install Image” on page 67](#).
8. For Windows Server 2008 SP2 and Windows Server 2008 R2 installations, add the required device drivers described in [TABLE D-2](#) to the `install.wim` image.

Procedures for Incorporating Drivers Into WIM Image(s)

The following procedures are guidelines you can use to add device drivers to the WIM image file(s). These procedures should be performed in the order described.

- [“Create an ImageUnattend.xml Setup Script – Windows Server 2008 \(SP2 or R2\)” on page 61](#)
- [“Add Device Driver\(s\) to Boot WIM – Windows Server 2008 SP2 Only” on page 65](#)
- [“Map ImageUnattend.xml Setup Script to Windows Server 2008 \(SP2 or R2\) Install Image” on page 67](#)

Before you Begin

Prior to performing the procedures in this section, you should ensure that all the prerequisites as described in [“Prerequisites and Task Overview” on page 58](#) have been met.

▼ Create an ImageUnattend.xml Setup Script – Windows Server 2008 (SP2 or R2)

Follow these steps to create an ImageUnattend.xml Setup Script for a Windows Server 2008 (SP2 or R2) installation. After the Setup Script is generated, it will be saved to the device driver repository.

Note – The ImageUnattend.xml Setup Script (in a later procedure described in this section) will be mapped to a Windows Server 2008 (SP2 or R2) install image. After the setup script is mapped to the install image, the install image will install the specified device drivers during the Windows Server 2008 (SP2 or R2) network installation.

1. **Insert the Windows Server 2008 (SP2 or R2) DVD media into the DVD reader of the system that is hosting the Windows Deployment Services.**
2. **Copy all the Windows Server 2008 (SP2 or R2) catalog files into the Catalogs folder of the device driver repository.**

For example:

```
copy DVDDrive:\source\*.clg C:\Unattend\Drivers\{WSK8|W28R2}\Catalogs
```

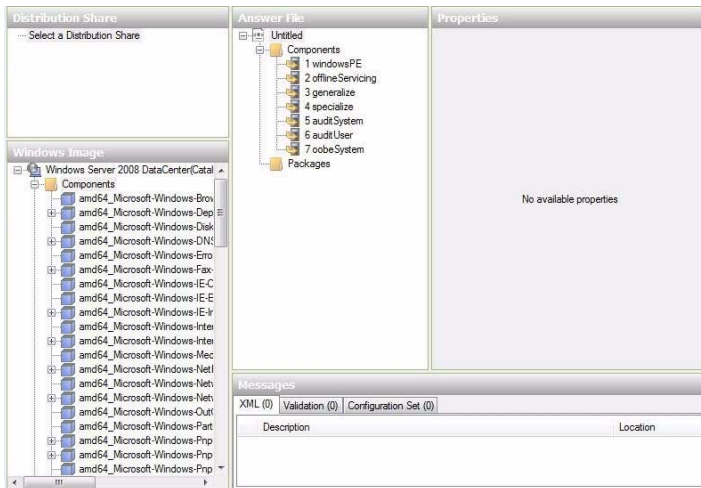
3. **Launch the Windows System Manager application and create a new ImageUnattend.xml Setup Script by doing the following:**
 - a. **Click** Start-->All Programs -->Microsoft Windows AIK -->Windows System Image Manager.
 - b. **In the Answer File pane, right-click and select** New Answer File.
 - c. **If a message dialog appears asking to open a new Windows image now, click** No.
4. **Do the following to specify the Windows Server 2008 (SP2 or R2) Catalog file that matches the Windows Server 2008 (SP2 or R2) edition (Standard, Datacenter, or Enterprise) that you are installing:**
 - a. **In the Windows Image pane, right-click and select** Select Windows Image.

- b. In the Files Type list box, select Catalog files (*.clg), then click Browse to specify the Catalogs folder in the device driver repository.**

Ensure that you select the Catalog file that matches the Windows Server 2008 (SP2 or R2) edition you are installing.

For example, for Windows Server 2008 SP2 Datacenter, select:

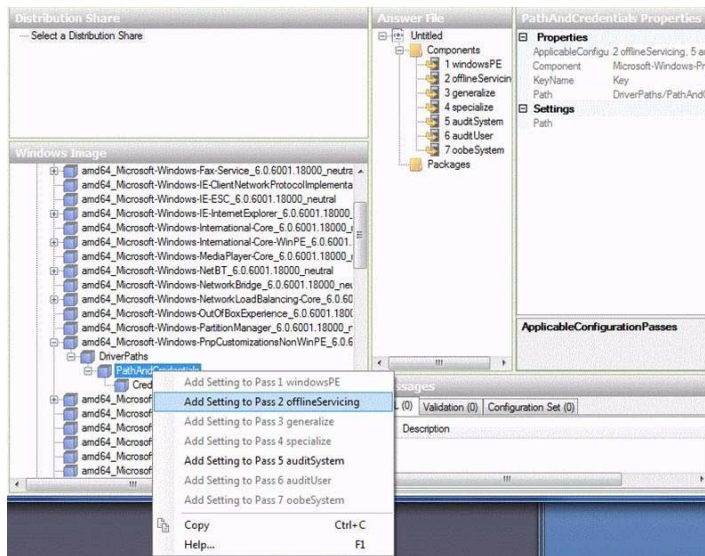
C:\Unattend\Drivers\{W2K8|W2K8R2}\Catalogs\
install_Windows_Server_2008_SERVERDATACENTER.clg



- 5. Do the following to set the component packages to pass 2 offlineServicing.**

- a. In the Windows Image pane, click and expand the architecture_Microsoft-Windows-PnPCustomizationNonWinPE_version.**

- b. Right-click PathAndCredentials and select Add Setting to Pass 2 OfflineServicing.**



6. Repeat Step 5 for each device driver you want installed during the Windows Server 2008 (SP2 or R2) installation.

Refer to [TABLE D-2](#) for the list of device drivers to include in the `install.wim` file.

7. Do the following to specify an installation key value.

a. In the Answer File pane, click and expand
`2 offlineServicing,architecture_Microsoft-Windows-PnPCustomizationsNonWinPE_version`.

b. Click and expand PathAndCredentials and enter a sequence key value as well as the UNC device driver path in the repository.

For example, to add the device driver for the Sun Storage PCIe SAS RAID HBA option, enter:

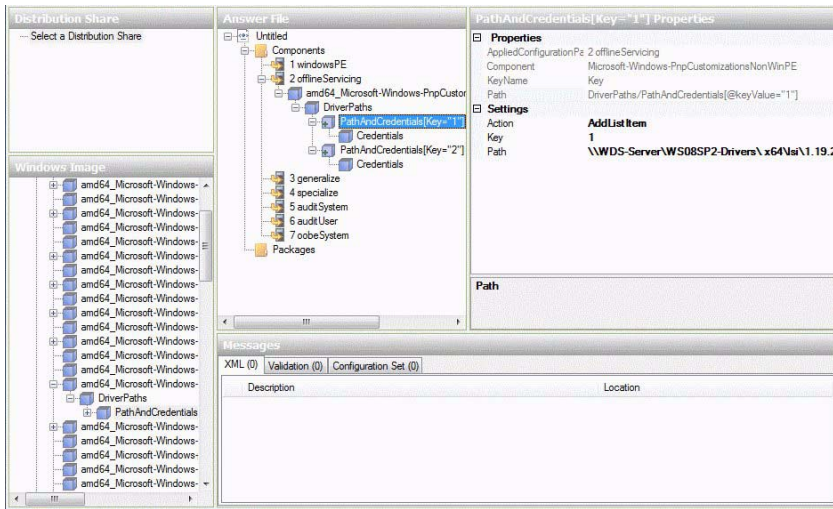
Key 1

Path \\wds-server\W2K8-Drivers\Lsi\1.19.2.64

c. In the Credential section for each PathAndCredentials component, click and expand the component to insert the UNC domain, logon, and password (if required), which allow access to the device drivers stored in the repository.

For example:

Domain	UNC_domain
Password	UNC_password
Username	UNC_username



d. Repeat Steps 7a through 7c for each device driver you want installed during the Windows Server 2008 (SP2 or R2) installation.

8. Validate the ImageUnattend.xml file using the Windows System Image Manager application:

- In the Windows System Image Manager application, click the **Tools** menu and select **Validate Answer File**.

A message appears in the Message pane indicating that No Warnings or Errors are found.

9. Save the .xml Setup Script as ImageUnattend.xml using the Windows System Image Manager application:

- a. In the Windows System Image Manager application, click the **File** menu and select **Save Answer File as**.

- b. Save the .xml Setup Script in the device driver repository as:

c:\Unattend\Drivers\W2K8\Catalogs\ImageUnattend.xml

- c. Exit the Windows System Image Manager application.

10. The creation of the ImageUnattend.xml Setup Script is complete. Proceed to one of the following:

- For Windows Server 2008 R2 installation, proceed to [“Map ImageUnattend.xml Setup Script to Windows Server 2008 \(SP2 or R2\) Install Image”](#) on page 67.
- For Windows Server 2008 SP2 installations, proceed to [“Add Device Driver\(s\) to Boot WIM – Windows Server 2008 SP2 Only”](#) on page 65 prior to mapping the ImageUnattend.xml Setup Script to the install.wim image.

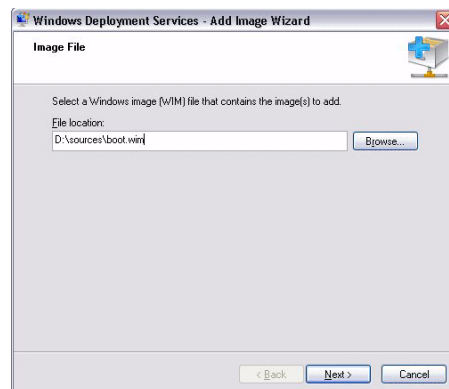
▼ Add Device Driver(s) to Boot WIM – Windows Server 2008 SP2 Only

Note – If you are performing a Windows Server 2008 R2 installation, skip this procedure. Device drivers are not required at boot time for Windows Server 2008 R2 installations.

For Windows Server 2008 SP2 installations only, perform the following steps to add the appropriate PCIe SAS HBA LSI device driver (MegaRAID or MPT2) to the boot.wim image. Note that if the required PCIe SAS HBA device driver (as described in [TABLE D-1](#) and [TABLE D-2](#)) is not added to the boot.wim image, the Windows Server 2008 SP2 installation will fail.

1. **Insert the Windows Server 2008 SP2 DVD media into the DVD reader of the system that is hosting the Windows Deployment Services.**
2. **Perform the following to launch the Windows Deployment Services Administration tool and import the Windows Server 2008 SP2 Boot WIM.**
 - a. **Click Start -->All Programs -->Windows Deployment Services.**
 - b. **Right-click Boot Images and select Add a Boot Image, then click Browse to specify the Windows Server 2008 SP2 boot WIM file.**

For example: DVDDrive:\sources\boot.wim
 - c. **Click Open then Next.**



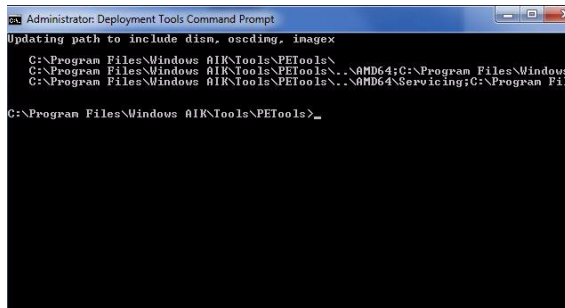
3. **To import the Windows Server 2008 SP2 boot image, click Next twice then click Finish.**
4. **Disable the Windows Server 2008 SP2 boot WIM using the Windows Deployment Services Administration:**

- Click and expand **Boot Images**, right-click **Microsoft Windows Server (Setup) x64**, then select **Disable**.

5. Launch and run the Deployment Tools Command Prompt as Administrator.

For example:

- Click **Start --> All Programs --> Microsoft Windows AIK**, then right-click **Deployment Tools Command Prompt**, and select **Run as Administrator**.



6. In the Deployment Tools Command Prompt, perform the following:

- a. Use the **mkdir** command to create a temporary directory mount point to mount the Windows Server 2008 SP2 boot WIM image.

For example:

```
mkdir C:\Mnt
```

- b. Use the **cd** command to change the directory to the folder containing the Windows Server 2008 SP2 boot WIM.

For example:

```
cd DVDDrive:\RemoteInstall\Boot\x64\images
```

- c. Use the **imgex** command to mount the Windows Server 2008 SP2 boot WIM with read/write permissions to the temporary directory mount point.

For example:

```
imgex /mountw boot.wim 2 C:\Mnt
```

- d. Use the **cd** command to change the directory to the device driver repository containing the Windows Server 2008 SP2 device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS-R-INT-Z):

For example, to change to the directory containing the LSI device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS-R-INT-Z), type:

```
cd C:\Unattend\Drivers\W2K8\lsi\1.19.2.64
```

- e. Use the `peimg` command to add the LSI MegaRAID device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS-R-INT-Z) to the Windows Server 2008 SP2 boot WIM image.

For example, to add the LSI MegaRAID device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS-R-INT-Z), type:

```
peimg /INF=*.inf C:\Mnt\Windows
```

- f. Repeat Steps 7d and 7e for each additional device driver (as described in [TABLE D-2](#)) that is required in the boot WIM image:
 - Sun Storage 6 Gb SAS PCIe HBA option (SG-SAS-INT-Z or SG-SAS-EXT-Z)
 - Intel Network Driver
- g. Use the `imagex` command to unmount and commit the modified Windows Server 2008 SP2 boot WIM image.

For example:

```
imagex /unmount/commit C:\Mnt
```

7. To enable the Windows Server 2008 SP2 boot WIM image, do the following.
 - a. Launch the Windows Deployment Services administration tool.
Click Start-->All Programs-->Windows Deployment Services.
 - b. In the Windows Deployment Services (WDS) Administration tool, click and expand **Boot Images**.
 - c. Right-click **Microsoft Windows Server (Setup) x64** and select **Enable**.
8. The modifications to include the device drivers into the `boot.wim` image are complete. Exit the Deployment Tools Command Prompt and the WDS Administration tool, then proceed to “[Map ImageUnattend.xml Setup Script to Windows Server 2008 \(SP2 or R2\) Install Image](#)” on page 67.

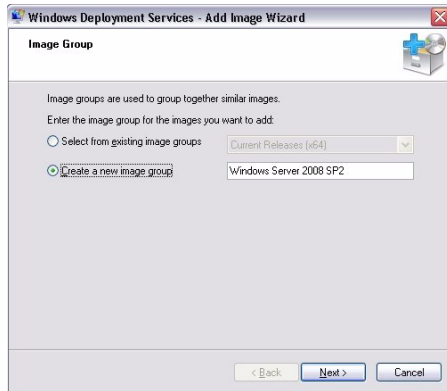
▼ Map ImageUnattend.xml Setup Script to Windows Server 2008 (SP2 or R2) Install Image

Follow the steps in this procedure to map the ImageUnattend.xml Setup Script (created in an earlier procedure in this section) to the Windows Server 2008 (SP2 or R2) `install.wim`.

1. Insert the Windows Server 2008 SP2 DVD media into the DVD reader of the system that is hosting the Windows Deployment Services.
2. Perform the following to launch the Windows Deployment Services administration tool and import the Windows Server 2008 SP2 install WIM.
 - a. Click Start-->All Programs -->Windows Deployment Services.

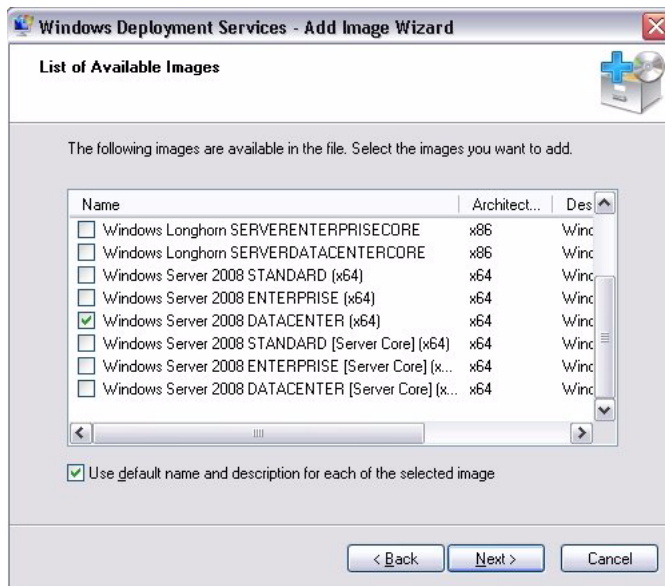
b. Right-click Install Images and select Add Install Image.

Note that if no image groups exist, create a new image group named Windows Server 2008 SP2 or Windows Server 2008 R2 and click Next.



c. Click Browse to select the Windows Server 2008 SP2 Install WIM image located at: DVDDrive:\sources\install.wim; then proceed by clicking Open then Next.

d. Select the Windows Server 2008 (SP2 or R2) edition (Data Center, Standard, or Enterprise) to import into Windows Deployment Services, then click Next.



e. To import the specified Windows Server 2008 (SP2 or R2) edition install image, click Next twice, then click Finish.

3. Launch the Deployment Tools Command Prompt as Administrator.

For example:

- Click Start-->All Programs -->Microsoft Windows AIK, then right-click Deployment Tools Command Prompt, and select Run as Administrator.

4. In the Deployment Tools Command Prompt, perform the following:

- a. Use the `cd` command to change the directory to the folder containing the Windows Server 2008 SP2 install WIM image.

For example, the Windows Server 2008 SP2 Datacenter (x64) edition WIM image would be located at:

```
cd Drive:\RemoteInstall\images\Windows Server 2008 SP2
```

- b. Use the `mkdir` command to create a directory with the exact same spelling and case as the imported Windows Server 2008 (SP2 or R2) WIM image.

```
mkdir install
```

Note – Selecting the defaults when importing the install image for Windows Server 2008 (SP2 or R2) will create an installation WIM file called `install.wim`.

- c. Use the `cd` command to change the directory to the imported Windows Server 2008 (SP2 or R2) folder, then use the `mkdir` command to create an Unattend directory.

For example:

```
cd install
```

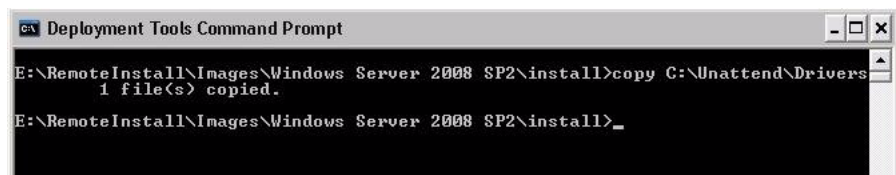
```
mkdir Unattend
```

- d. Use the `cd` command to change the directory to the Unattend directory, then use the `copy` command to copy the ImageUnattend.xml Setup Script (created in an earlier procedure in this appendix) to the Unattend directory.

For example:

```
cd Unattend
```

```
copy C:\Unattend\Drivers\{W2K8|W2k8R2}\Catalogs\  
ImageUnattend.xml
```



5. Perform the following steps to open the Windows Server 2008 (SP2 or R2) image properties.

a. Launch the Windows Deployment Services administration tool.

Click Start-->All Programs-->Windows Deployment Services.

b. In the Windows Deployment Services (WDS) Administration tool, click and expand the Windows Server 2008 (SP2 or R2) image group.

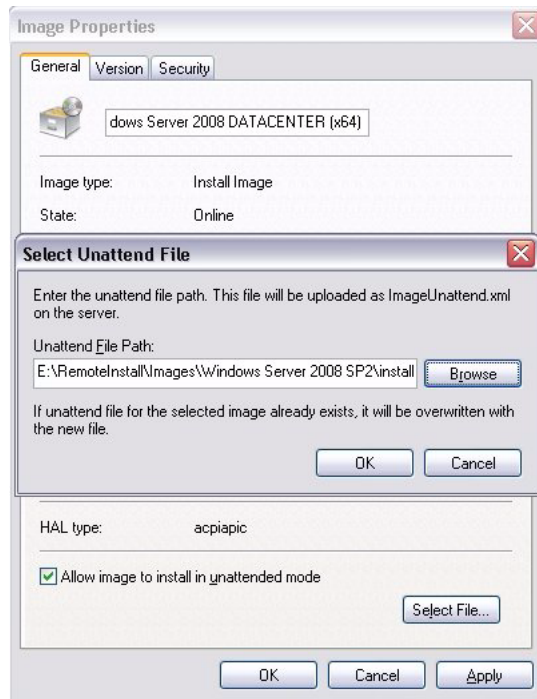
c. Right-click Microsoft Windows Server (SP2 or R2) and select Properties.

6. Perform the following steps to map the ImageUnattend.xml Setup Script to the Windows Server 2008 (SP2 or R2) image.

a. In the General Tab of the Windows Server 2008 (SP2 or R2) image properties, check Allow image to install in unattended mode and click Select File.

b. Browse to the following location (specified in Step 4d) then click OK.

Drive:\RemoteInstall\images\{W2K8|W2K8R2}\install\Unattend\ImageUnattend.xml



- c. **Click OK to map the ImageUnattend.xml Setup Script to the Windows Server 2008 (SP2 or R2) WIM image.**

The Windows Server 2008 (SP2 or R2) WIM image is ready to be installed using the Windows Deployment Services.

- d. **Exit the Deployment Tools Command Prompt and the Windows Deployment Services Administration tool.**

7. **To deploy the Windows Server 2008 (SP2 or R2), refer to the following procedure:**

[“Install Windows Server 2008 \(SP2 or R2\) Using PXE Network Boot”](#) on page 25.

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