Sun Fire™ X2270 Server Windows Operating System Installation Guide

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Contents

Preface

The *Sun Fire X2270 Server Windows Operating System Installation Guide* contains operating system installation and initial software configuration procedures for bringing the server to a configurable and usable state.

This document is written for technicians, system administrators, authorized service providers (ASPs), and users who have experience with installing operating systems.

Product Updates

For product updates that you can download for the Sun Fire™ X2270 Server, visit the following web site:

`http://www.sun.com/download/index.jsp`

Find the Hardware Drivers section and click x64 Servers & Workstations. The Sun Fire X2270 Server site contains updates for firmware and drivers, as well as CD-ROM `.iso` images.

Related Documentation

Refer to the following table to identify other documentation that is currently available for the Sun Fire X2270. You can access these documents online at:

http://docs.sun.com/app/docs/prod/sf.2270

Title	Content	Part Number	Format
Sun Fire X2270 Server Product Notes	Late-breaking information about the server.	820-5608	PDF HTML
Sun Fire X2270 Server Getting Started Guide	Basic installation information for setting up the server.	820-5610	PDF Print
Sun Fire X2270 Server Installation Guide	Detailed installation information for setting up the server.	820-5604	PDF HTML Print option
Sun Fire X2270 Server Linux, VMware, OpenSolaris, and Solaris Operating Systems Installation Guide	Installation instructions for the Linux, VMware, OpenSolaris, and Solaris operating systems.	820-5606	PDF HTML
Sun Fire X2270 Server Windows Operating System Installation Guide	Installation instructions for the Windows Server operating system.	820-7143	PDF HTML
Sun Installation Assistant for Windows and Linux User's Guide	Instructions for using the Sun Installation Assistant to install the Windows and Linux operating systems.	820-3357	PDF HTML
Sun Fire X2270 Server Service Manual	Information and procedures for maintaining and upgrading the server.	820-5607	PDF HTML
Sun x64 Servers Diagnostics Guide	Information for diagnosing and troubleshooting the server.	820-6750	PDF HTML
x64 Servers Utilities Reference Manual	Information for using applications and utilities common to x64 servers and server modules.	820-1120	PDF HTML
Sun Integrated Lights Out Manager 2.0 User's Guide	ILOM features and tasks that are common to servers and server modules that support ILOM.	820-1188	PDF HTML

Title	Content	Part Number	Format
Sun Integrated Lights Out Manager (ILOM) 2.0 Supplement for Sun Fire X2270 Server	ILOM information that is specific to the server.	820-5609	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection	Information for the initial setup to ILOM, ILOM conceptual information, and procedures that can be performed using the ILOM web interface, command-line interface, SNMP, and IPMI.	820-5523 820-6410 820-6411 820-6412 820-6413	PDF HTML
Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X2270 Server	ILOM information that is specific to the server.	821-0039	PDF HTML
Sun Fire X2270 Server Safety and Compliance Manual	Hardware safety and compliance information for the server.	820-5605	PDF
Important Safety Information for Sun Hardware Systems	Multilingual hardware safety and compliance information for all Sun hardware systems.	816-7190	Print
Accessing Sun Product Documentation	Multilingual information that provides the URL to Sun online documentation.	820-0541	Print

Translated versions of some of these documents are available at the web site described above in French, Japanese, and Simplified Chinese. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

Documentation, Support, and Training

Sun Function	URL
Sun Documentation	`http://docs.sun.com`
Support	`http://www.sun.com/support/`
Training	`http://www.sun.com/training/`

Using UNIX Commands

This document might not contain information about basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. Refer to the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is at:

  http://docs.sun.com

Third-Party Web Sites

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Typographic Conventions

Typeface*	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, enter `rm` *filename*.

* The settings on your browser might differ from these settings.

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Please include the following document title and part number with your feedback:

Sun Fire X2270 Server Windows Operating System Installation Guide, 820-7143-11

CHAPTER 1

Planning the Operating System Installation

This chapter identifies the information you need to properly plan the installation of an operating system onto a Sun Fire X2270 Server.

This chapter contains the following topics:

Supported Operating Systems

The Sun Fire X2270 Server supports the installation and use of the following operating systems, or a subsequent release of the operating systems.

TABLE 1-1 Supported Operating Systems

Operating System	Supported Version	For More Information, See
Windows	• Microsoft Windows Server 2003 Enterprise Edition (R2 with SP2, or SP2) (32-bit and 64-bit) • Microsoft Windows Server 2003 Standard Edition (R2 with SP2, or SP2) (32-bit and 64-bit) • Microsoft Windows Server 2008, Standard Edition (32-bit or 64-bit) • Microsoft Windows Server 2008, Enterprise Edition (32-bit or 64-bit) • Microsoft Windows Server 2008, Datacenter Edition (32-bit or 64-bit) • Microsoft Windows Server 2008 R2, Standard Edition (32-bit or 64-bit) • Microsoft Windows Server 2008 R2, Enterprise Edition (32-bit or 64-bit) • Microsoft Windows Server 2008 R2, Datacenter Edition (32-bit or 64-bit)	• "Install Windows Server 2003 Operating System" on page 15 • "Install Windows Server 2008 Operating System" on page 37
Linux	• Red Hat Enterprise Linux (RHEL) 4.7 and 4.8 (32-bit and 64-bit) • RHEL 5.3 (64-bit) • SUSE Linux Enterprise Server (SLES) 10 SP2 (64-bit) • SLES 11 (64-bit)	• *Sun Fire X2270 Server Linux, VMware, OpenSolaris, and Solaris Operating Systems Installation Guide* (820-5606)
Solaris	• Solaris 10 10/08 and later	
OpenSolaris	• OpenSolaris 2009.06 and later	
VMware	• VMware ESX 3.5 Update 4 • VMware ESXi 3.5 Update 4 • VMware ESX 4.0 • VMware ESXi 4.0	

Preinstalled OpenSolaris or Solaris 10 Image

The OpenSolaris 2009.06 or Solaris 10 Operating System image, if ordered, is shipped preinstalled on the hard disk drive. If you need to install another operating system on this drive, you can choose to:

- Partition the local drive to remove the preinstalled OS image

or

- Partition the local drive to support a dual-boot operating system configuration

The Linux, OpenSolaris, and Solaris operating system installation procedures described later in this guide explain the appropriate point in the installation program where you can either partition the drive to remove the preinstalled OS image or to support a dual-boot operating system configuration.

Note – To configure the preinstalled OpenSolaris 2009.06 or Solaris 10 OS image, see either the OpenSolaris 2009.06 or the Solaris 10 OS Preinstalled OS chapter in the *Sun Fire X2270 Server Installation Guide* for details.

Installation Prerequisites

The following requirements must be met prior to installing an operating system.

TABLE 1-2 Windows OS Installation Prerequisites

Requirement	Mandatory or Optional	For More Information, See:
The server is mounted and powered-on in a rack.	Mandatory	• *Sun Fire X2270 Server Installation Guide*
For systems equipped with an SP, the SP network management port on the server is configured with an IP address.	Mandatory	• *Sun Fire X2270 Server Installation Guide* or • *Sun Integrated Lights Out Manager 2.0 User's Guide*
Select a console option and a media option for performing the installation, as well as an installation target.	Mandatory	• "Installation Methods" on page 5
Ensure that factory-default settings in the BIOS utility are set.	Recommended* *For local disk drive OS installation targets.	• "Verifying BIOS Settings for New Installations" on page 9

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

Requirement	Mandatory or Optional	For More Information, See:
Set up a RAID set on SATA disk drives and onboard Intel RAID controller.	Optional	• *Sun Fire X2270 Server Service Manual* for instructions for adding or replacing disk drives in the server • Sun Disk Management Overview For Sun Fire and Sun Blade Series Servers (820-6350) • "Configure RAID Controller in the BIOS Setup Utility" on page 71
Gather the applicable vendor operating system installation documentation. **Note -** Use operating system vendor documentation in conjunction with the operating system instructions in this guide.	Recommended	• Applicable operating system vendor documentation: •Microsoft Windows 2003 Product Documentation at: `http://www.microsoft.com/windowsserver2003/proddoc/default.mspx` •Microsoft Windows 2008 Product Documentation at `http://www.microsoft.com/windowsserver2008/en/us/product-documentation.aspx`
Ensure that you have the Tools & Drivers CD that was provided with your server. **Note -** If device drivers are required for your OS installation, the device drivers are provided on the Tools & Drivers CD.	Mandatory	• Sun Fire X2270 Server Tools & Drivers CD or • Download version of the Tools & Drivers CD for the Sun Fire X2270 Server is available at: `http://www.sun.com/servers/x64/x2270/downloads.jsp`
Review the *Sun Fire X2270 Server Product Notes* for late-breaking news about supported operating system software and patches.	Recommended	• *Sun Fire X2270 Server Product Notes*

Installation Methods

To determine which installation method is best for your infrastructure, consider the options and requirements summarized in the following sections:

Console Outputs

TABLE 1-3 lists the consoles that you can use to capture the output and input of the operating system installation.

TABLE 1-3 Console Options for Performing an OS Installation

Console	Description	Setup Requirement
Local Console	You can install the OS and administer the server by attaching a local console directly to the server SP. **Note -** An example of a local console is a serial console.	1. Attach a local console to the server. For details, see "Connecting the Cables" in the *Sun Fire X2270 Server Installation Guide*. 2. For systems without an SP, the video output is automatically routed to the local console. 3. For systems equipped with an SP, do the following: a. At the ILOM prompt, type your ILOM user name and password. b. For serial console connections only, establish a connection to the host serial port by typing **`start /SP/console`**. The video output is automatically routed to the local console. For further details about establishing a connection to the server SP, see the *Sun Integrated Lights Out Manager 2.0 User's Guide*.

TABLE 1-3 Console Options for Performing an OS Installation *(Continued)*

Console	Description	Setup Requirement
Remote Console* *For servers equipped with an SP	You can install the OS and administer the server from a remote console by establishing a network connection to the server SP. Examples of remote consoles include: • Web-based client connection using the Sun ILOM Remote Console application • SSH client connection using a serial console	1. Establish an IP address for the server SP. For details, see the *Sun Integrated Lights Out Manager 2.0 User's Guide*. 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 ILOM web interface; 3) redirect the video output from the server to the web client by launching the Sun ILOM Remote Console; then 4) enable device redirection (mouse, keyboard, etc.) in the Device menu. •For SSH client connection, perform these steps: 1) From a serial console, establish an SSH connection to the server SP (`ssh root@`*ipaddress*); 2) log in to the ILOM command-line interface, then 3) redirect the serial output from the server to the SSH client by typing **`start /SP/console`**. For additional information about establishing a remote connection to the ILOM SP or using the Sun ILOM Remote Console, see the *Sun Integrated Lights Out Manager 2.0 User's Guide*.

Installation Boot Media

You can start the operating system installation to a server by booting a local or remote installation media source. TABLE 1-4 identifies the supported media sources and the setup requirements for each source.

TABLE 1-4 Boot Media Options for Performing the OS Installation

Installation Media	Description	Setup Requirement
Local Boot Media	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, and, if applicable, floppy device driver media	• To perform this installation using local boot media, perform these steps: 1. If your server does not contain a built-in storage device, attach the appropriate storage device to the the server using a USB connector. 2. For more information about how to attach local devices to the server, see "Connecting the Cables" in the *Sun Fire X2270 Server Installation Guide*.

TABLE 1-4 Boot Media Options for Performing the OS Installation *(Continued)*

Installation Media	Description	Setup Requirement
Remote Boot Media* *For servers equipped with SP	Remote media requires you to boot the installation over the network. You can start the network installation 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 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 ISO device driver media • Automated installation image (requires PXE boot)	• To redirect the boot media from a remote storage device, perform these steps: 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 the ISO image(s) are readily available on a network shared location. •For device driver floppy ISO image, ensure that the ISO image, if applicable, is readily available on a network shared location or on a USB drive. •For device driver floppy media, if applicable, insert floppy media into the external floppy drive. 2.Establish a web-based client connection to the ILOM server SP and launch the Sun ILOM Remote Console application. For more details, see the Setup Requirements for web-based client connection in TABLE 1-3. 3.In the Device menu of the Sun 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. For more information about the Sun ILOM Remote Console, see the *Sun Integrated Lights Out Manager 2.0 User's Guide*.

TABLE 1-4 Boot Media Options for Performing the OS Installation *(Continued)*

Installation Media	Description	Setup Requirement
Remote Boot Media, *continued*	**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. Automated installations use a Pre-boot eXecution Environment (PXE) technology to enable the clients without an operating system to boot remotely to the automated installation server that performs the installation of the operating system.	• To perform the installation using PXE, perform these steps: 1.Configure the network server to export the installation using a PXE boot. 2.Make the OS installation media available for PXE boot. If you are using an automated OS installation image, you will need to create and provide the automated OS installation image, for example: •Solaris JumpStart Image •RHEL KickStart Image •SLES AutoYaST Image •Windows RIS or WDS Image For detailed instructions for automating the installation setup process, consult the operating system vendor documentation. 3.To boot the installation media, select the PXE boot interface card as the temporary boot device. For details, see the applicable PXE-based operating system installation procedure described later in this chapter.

Installation Targets

TABLE 1-5 identifies the supported installation targets that you can use to install an operating system.

TABLE 1-5 Installation Targets for OS Installations

Installation 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 HDDs or SSDs 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 SDD, refer to the installation guide or the service manual provided with your server.	• All operating systems listed in TABLE 1-1

TABLE 1-5 Installation Targets for OS Installations *(Continued)*

Installation Target	Description	Setup Requirement	Supported OS
Mini DIMMs **Note -** This option is not available on all servers.	If your system is equipped with optional Mini DIMMs, you can choose to install a supported operating system to the Mini DIMMs.	• Ensure that the Mini DIMM options are properly installed in the server. For more information about installing this option, see the installation guide or the service manual supplied with your server.	• All operating systems listed in TABLE 1-1

Verifying BIOS Settings for New Installations

For all new operating system installations on a hard 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

In the BIOS Setup utility, you can set optimal defaults, as well as view and edit BIOS settings as needed. Note that all changes you make in the BIOS Setup utility (through F2) are permanent until the next time you change them.

Note – If necessary, you can specify a temporary boot device by pressing F8 during the BIOS start-up. Note that a temporary boot device setting is only in effect for the current system boot. After the system boots from a temporary boot device, the permanent boot device setting specified through F2 (in the BIOS) will be in effect.

Before You Begin

Ensure that the following requirements are met prior to accessing the BIOS Setup utility:

- Server is mounted and powered on in a rack. For details, see the *Sun Fire X2270 Server Installation Guide*.
- Server is equipped with a hard disk drive (HDD) or solid state disk drive (SSD).

- HDD or SSD is properly installed in the server. For details, see the *Sun Fire X2270 Server Service Manual.*
- Console connection is established to the server. For details, see "Console Outputs" on page 5.

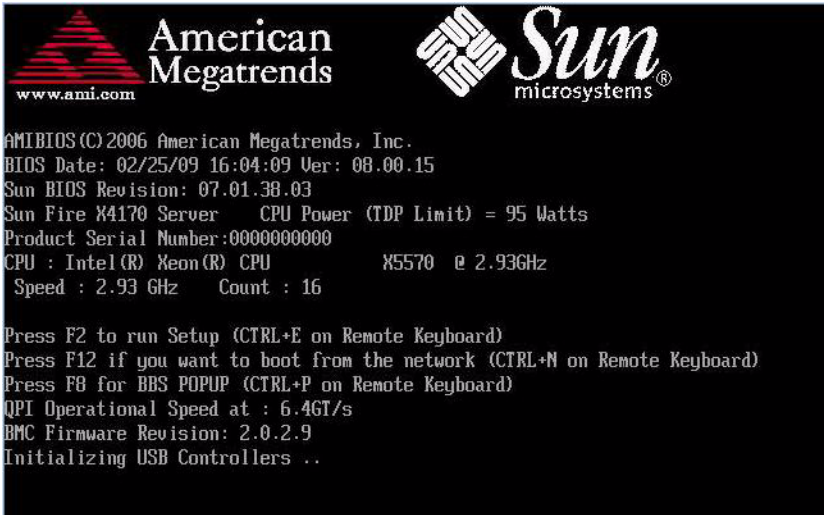
▼ View or Edit BIOS Settings for New Installations

1. **Reset the power on the server.**

   For example:

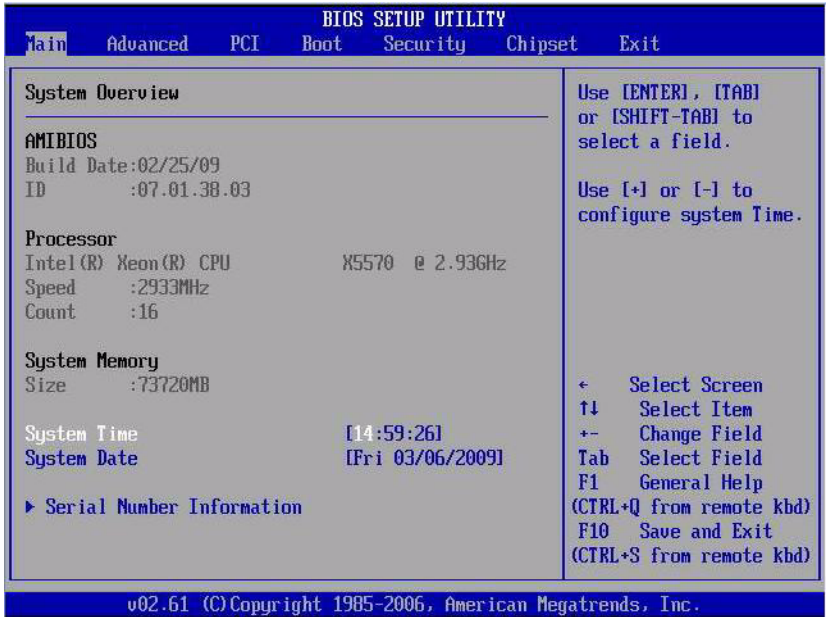
   - **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the `Power Cycle` option from the Host action drop-down list box.
   - **From the local server**, press the Power button on the front panel of the server module to turn the server module off, then press the Power button again to turn the server module on.
   - **From the ILOM CLI**, type: **`reset /SYS`**

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

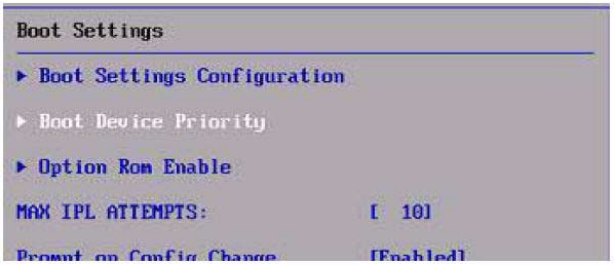
   b. **To change the values in the highlighted fields, use these keys:**

      - 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.

Note that the boot device order listed on your screen might differ from the device order shown in the sample screen below.

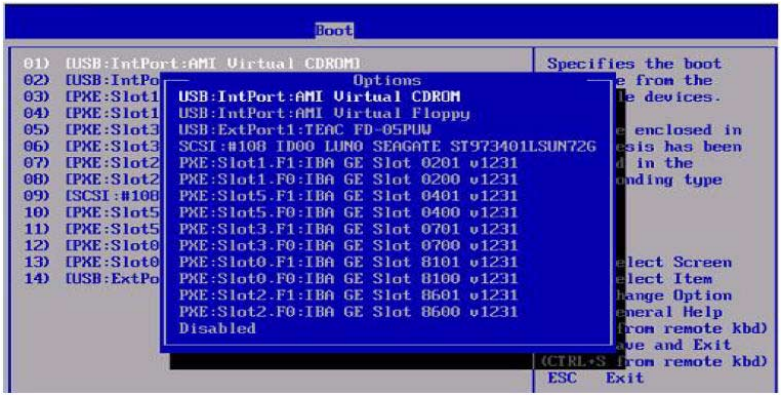
The **first device** in the list has the **highest boot priority**.

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 screen, use the up and down arrow keys to select the default permanent boot device, then press Enter.**

      Note that the boot options listed on your screen might differ from the options shown in the sample screen below.



The device strings listed on the Boot 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.

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

Note – When using the Sun 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 Remote Console.

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.

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

CHAPTER 2

Install Windows Server 2003 Operating System

This chapter provides information about installing the Windows Server 2003 Operating System (OS).

Note – If you want to create a RAID for your disk, the recommended procedure is to create a RAID before you install the OS. For more information and procedures, see "Configure RAID Controller in the BIOS Setup Utility" on page 71 and "Prepare RAID Drivers for Delivery" on page 19.

This chapter includes the following topics:

Task Map for the Windows 2003 Installation

Use TABLE 2-1 to preview the installation process defined as a series of tasks. The table identifies the tasks required and provides pointers to the instructions for performing that task.

TABLE 2-1 Task Map for the Windows 2003 Installation

Step	Task	Description	Relevant Topic(s)
1	Review installation prerequisites	Verify that all applicable requirements are met for installing an operating system to a server.	• TABLE 1-2 "Windows OS Installation Prerequisites" on page 3
2	Choose an installation method	Evaluate and select an installation method that meets the needs of your infrastructure.	• "Installation Methods" on page 5
3	Ensure that the BIOS factory defaults are set	Verify that the factory default settings in the BIOS are set prior to performing the operating system installation.	• "Verifying BIOS Settings for New Installations" on page 9
4	Gather the Windows installation media	The Windows OS is shipped with the CD and DVD media and documentation that you will need to install the Windows OS.	• You can download or order the media for Windows 2003 at `http://www.microsoft.com`
5	Download server-specific drivers or obtain drivers from Tools and Drivers CD	Depending on your system, some device drivers are required to be installed at boot time. You can obtain these drivers from the Tools & Drivers CD or from the Sun download site.	• "Installing Server-Specific Device Drivers" on page 49
6	(Optional) Configure RAID Controller	Follow the instructions to implement RAID using the BIOS Setup utility.	• "Configure RAID Controller in the BIOS Setup Utility" on page 71

TABLE 2-1 Task Map for the Windows 2003 Installation *(Continued)*

Step	Task	Description	Relevant Topic(s)
7	(Optional) Prepare RAID drivers for delivery	Produce the RAID drivers floppy required for the Windows 2003 installation.	• "Prepare RAID Drivers for Delivery" on page 19
8	Perform the Windows OS installation	Follow the instructions in this chapter to install the Windows 2003 operating system.	• "Install Windows Server 2003 Using Local or Remote Media" on page 21 • "Install Windows Server 2003 Using PXE Network Environment" on page 29
9	Install driver(s) and post supplemental software, post installation, if necessary	If the Windows operating system does not include the necessary device drivers to support your system, you may need to install additional device drivers. If your system includes RAID controllers, you may need to install supplemental software to support these controllers.	• "Post Installation" on page 49

Note – The complete Microsoft Windows operating system installation process is not documented in this section. This section walks you through the steps for booting the Windows Server 2003 media, installing drivers (if necessary) at boot, and partitioning the drive. For additional information, consult the Microsoft Windows Server 2003 product documentation at
`http://www.microsoft.com/windowsserver2003/proddoc/default.mspx`

Boot-Time Device Drivers

TABLE 2-2 identifies the device drivers that you may need to install at boot time while performing the Windows Server 2003 installation.

TABLE 2-2 Windows 2003 Server-specific Drivers Installed at Boot Time

Device Driver	Description
Intel SATA Driver	The Intel SATA device driver must be available at boot time if installing to a local SATA hard disk drive (HDD). **Note -** For Windows Server 2003, the default AHCI mode, which can be configured via the System BIOS, needs a boot driver. If configured for IDE mode, no boot driver is required for Intel SATA.
QLogic SAN Driver	The QLogic Fibre Channel (FC) device driver must be installed at installation boot time if your installation target is a QLogic FC Storage Area Network (SAN) device.
Emulex SAN Driver	The Emulex FC device driver must be installed at installation boot time if your installation target is a Emulex FC SAN device.

The boot-time device drivers listed in TABLE 2-2 are included on the Tools & Drivers CD that ships with the server. However, if you do not have the Tools & Drivers CD, you can download these same drivers from the Sun download site. For instructions on downloading the server-specific drivers package, which includes the boot-time device drivers, see "Installing Server-Specific Device Drivers" on page 49.

Prepare RAID Drivers for Delivery

The Sun-supplied hard disk drives for the X2270 are shipped without a RAID configuration. If a RAID configuration is required, you will need to (1) configure the RAID Controller in the BIOS Setup utility, (2) create a RAID driver floppy diskette, then (3) load the RAID driver into the system memory during the Windows Server 2003 installation.

RAID Requirements

- Follow the procedure "Configure RAID Controller in the BIOS Setup Utility" on page 71 to configure the RAID Controller for Windows Server 2003 installations.
- After completing the RAID Controller configuration in the BIOS Setup utility, you will need to prepare the RAID driver for installation. Depending on your chosen method, see either "Create Floppy Disk for RAID Driver Installation" on page 19 or "Create Floppy Image for RAID Driver Installation" on page 20.
- After preparing the RAID driver for installation, you will need to load the RAID driver into memory (using F6) during the Windows Server 2003 installation. Information describing when the RAID driver is loaded is provided later in "Install Windows Server 2003 Using Local or Remote Media" on page 22.

  If you are performing a Windows Server 2003 RIS image installation, you will need to add the RAID driver to the RIS image. For more information, see "Add Drivers to a RIS Image" on page 62.

▼ Create Floppy Disk for RAID Driver Installation

This section provides steps for creating a floppy diskette that contains the RAID driver required during the Windows Server 2003 installation. To prepare the RAID/AHCI driver for installation, you will need to copy the RAID/AHCI driver from the *Sun Fire X2270 Tools & Drivers CD* to a floppy diskette.

Before You Begin

Prior to performing the following procedure to create a floppy disk, ensure that the following requirements have been met:

- The system being used to create the floppy disk is connected to a USB floppy drive

- Floppy disk media is available
- *Sun Fire X2270 Tools & Drivers CD*, which contains the 32-bit/64-bit AHCI floppy drivers

To create the floppy diskette, perform the following steps:

1. **On a Windows system, do the following:**

   a. **Insert the** *Sun Fire X2270 Server Tools & Drivers CD* **into a CD/DVD-ROM drive.**

   b. **Insert a formatted floppy diskette into an attached floppy diskette drive.**

2. **Depending on your version of Windows, browse to one of the following directories in the** *Sun Fire X2270 Server Tools & Drivers CD***:**

   `drivers/windows/boot/AHCI/flpy/32bit`

   or

   `drivers/windows/boot/AHCI/flpy/64bit`

3. **Depending on your version of Windows, copy either the 32-bit or 64-bit files to the root directory of the floppy diskette.**

4. **Proceed to** "Install Windows Server 2003 Using Local or Remote Media" on page 21**.**

▼ Create Floppy Image for RAID Driver Installation

This section provides steps for creating floppy image media that contains the RAID driver required during the Windows Server 2003 installation. To prepare the RAID/AHCI driver for installation, you will need to copy the RAID/AHCI image file from the *Sun Fire X2270 Tools & Drivers CD* to an image file located on a local network shared directory location.

Before You Begin

Prior to performing the following procedure to prepare the floppy image for device driver installation, ensure that the following requirements have been met:

- *Sun Fire X2270 Tools & Drivers CD*, which contains the 32-bit/64-bit AHCI floppy driver image.

To create the floppy image, perform the following steps:

1. **On a Windows system, insert the** *Sun Fire X2270 Tools & Drivers CD* **into a CD/DVD-ROM drive.**
2. **Depending on your version of Windows, browse to one of the following directories in the** *Sun Fire X2270 Server Tools & Drivers CD***:**

   `drivers/windows/boot/AHCI/flp_image/32bit/ahcixx.img`

   or

   `drivers/windows/boot/AHCI/flp_image/64bit/ahcixx.img`
3. **Depending on your version of Windows, copy the either the 32-bit or 64-bit image file to a local or network shared location where the Sun ILOM Remote Console system can access it during the Windows installation.**

   For instructions for enabling image file media redirection in the Sun ILOM Remote Console, see the *Sun Integrated Lights Out Manager 2.0 User's Guide*.
4. **Proceed to** "Install Windows Server 2003 Using Local or Remote Media" on page 21**.**

Install Windows Server 2003 Using Local or Remote Media

The following procedure describes how to boot the Windows Server 2003 operating system from local or remote media. It assumes you are booting the Windows installation media from one of the following sources:

- Windows CD or DVD (internal or external CD/DVD)
- Windows 2003 ISO image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to "Install Windows Server 2003 Using PXE Network Environment" on page 29 for instructions.

Before You Begin

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

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see TABLE 1-2 "Installation Prerequisites" on page 3.

- An installation method (for example: console, boot media, and installation target) should have been chosen and established prior to performing the installation. For more information about these setup requirements, see "Installation Methods" on page 5.

After completing this procedure, you will need to perform the post installation tasks as described in "Post Installation" on page 49.

▼ Install Windows Server 2003 Using Local or Remote Media

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

   For example:

   - **For distribution CD/DVD** Insert the Windows Server 2003 Distribution media (CD labeled #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 ILOM Remote Console application is aware of the first ISO image location.

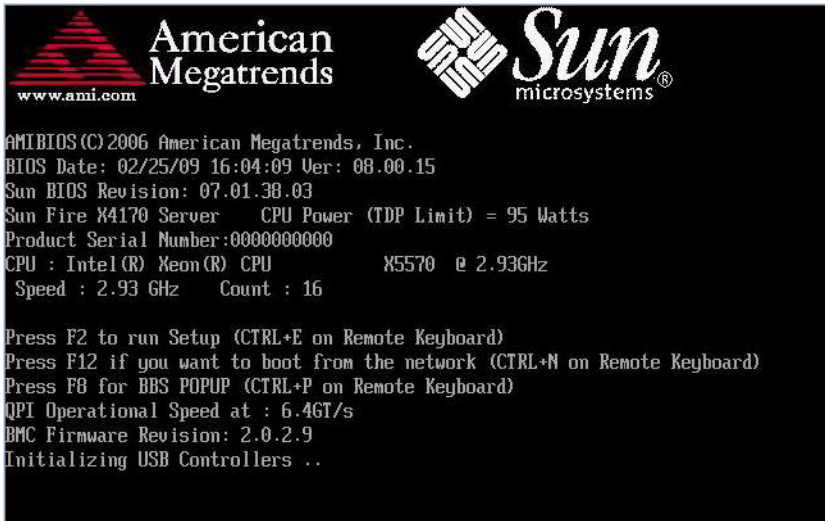
     For additional information about how to set up the install media, see TABLE 1-4 "Installation Boot Media" on page 6.
   - **USB floppy** Ensure that a USB floppy drive is attached to the local server with the diskette created in "Prepare RAID Drivers for Delivery" on page 19, or a floppy diskette or image is redirected using ILOM. For information, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188).

2. **Reset the power on the server.**

   For example:

   - **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the `Power Cycle` option from the Host action drop-down list box.
   - **From the local server**, press the Power button on the front panel of the server to turn the server off, then press the Power button again to turn the server on.
   - **From the ILOM CLI on server SP**, type: **`reset /SYS`**

   The BIOS screen appears.

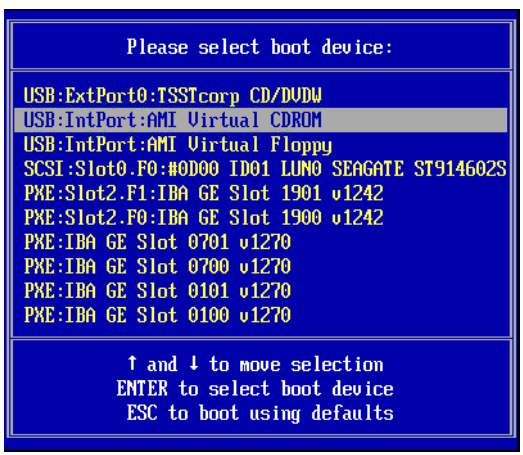


3. **When the** `Press F8 for BBS POPUP` **prompt appears on the BIOS POST screen, press F8.**

   The BBS POPUP menu allows you to select a boot device.

4. **Once the BIOS POST process is complete, the Boot Device menu appears.**

Note – The screen that appears in your installation may be different depending on the type of disk controller installed in your server.



5. **In the Boot Device menu, select a boot device based on the Windows media installation method you elected to use and press Enter.**

   For example:

   - If you elected to use the Windows local delivery method, select `CD/DVDW`.
   - If you elected to use the ILOM Remote Console method, select `Virtual CDROM`.
   - If you elected to use the Virtual Floppy method, select `Virtual Floppy`.

6. **When prompted with `Press any key to boot from CD`, quickly press any key.**

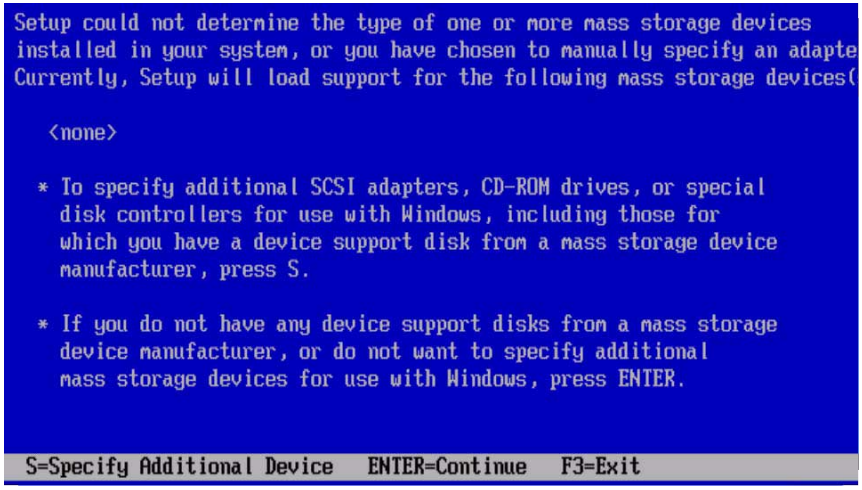
   The Windows Setup process begins.

7. **When you see the following prompt at the bottom of the Windows Setup dialog, quickly press F6:**

   ```
   Press F6 if you need to install a third party SCSI or RAID
   driver.
   ```

Note – The above prompt lasts for approximately five seconds and is easy to miss. If you do not press F6 while the prompt is displayed, the dialog allowing you to specify additional drivers is not displayed and the installation will fail. If this happens, restart the server on which you are performing the installation and go back to Step 3.

After pressing F6, the setup process continues and the following dialog appears. This dialog gives you the option of specifying additional mass storage devices.



8. **Make sure that the mass storage drivers are accessible according to the mass storage driver installation method that you have selected.**

- For **Floppy Disk Local** Mass storage drivers floppy disk is in floppy drive A on the server.
- For **Floppy Disk Remote** Mass storage drivers floppy disk is in the Sun ILOM Remote Console system floppy drive
- For **Floppy Image** `floppy.img` is accessible from the Sun ILOM Remote Console system

9. **Press `S` to specify additional devices.**

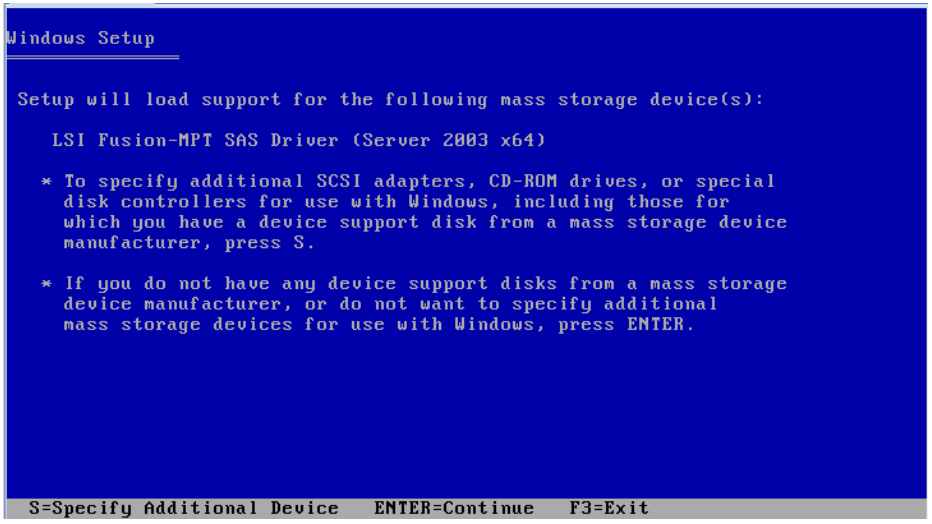
   A Select Adapter dialog appears listing the available drivers.

10. **In the Select Adapter dialog, select the appropriate mass storage controller driver version (Windows 32-bit or 64-bit) that you are installing, then press Enter.**

    For example, for the X2270 which contains an Intel-based integrated disk controller, select:

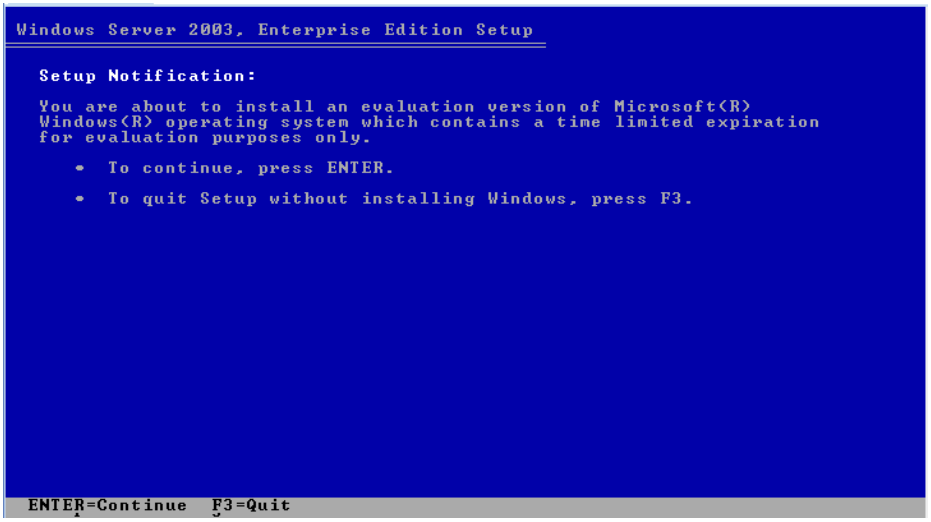
    ```
    Intel(R) ICH10R SATA AHCI Controller (32-bit or 64-bit)
    ```

    A dialog similar to the following appears stating that the setup will load support for the specified mass storage device.



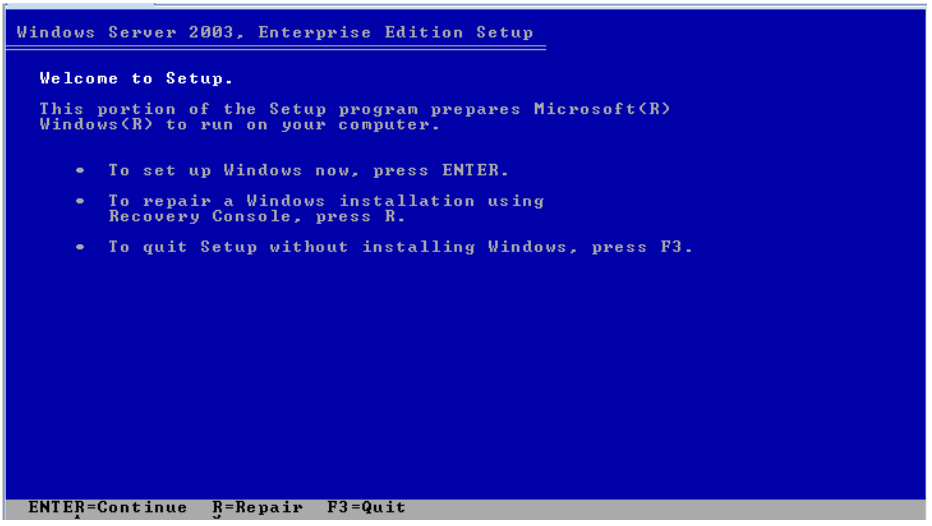
11. **Press Enter to continue.**

    The Windows setup process continues and a Setup Notification dialog appears.



12. **At the Setup Notification dialog, press Enter to continue.**

    The Welcome to Setup dialog appears.



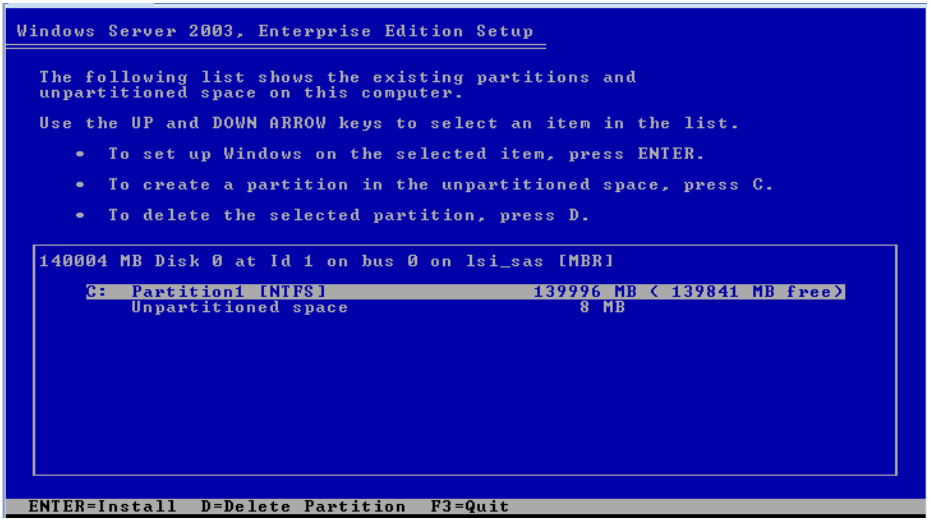
13. **At the Welcome to Setup dialog, press Enter to continue.**

    The Windows Licensing Agreement dialog appears.

14. **To accept the license agreement, press F8.**

    A dialog appears that shows the existing partitions on the server and the unpartitioned space.

Note – Any previous installations on the server's boot disk will cause the partitioning dialog to appear.



15. **To delete the existing partition, press D.**

    A confirmation dialog appears to verify that you really want to delete the partition.

16. **Press Enter to continue.**

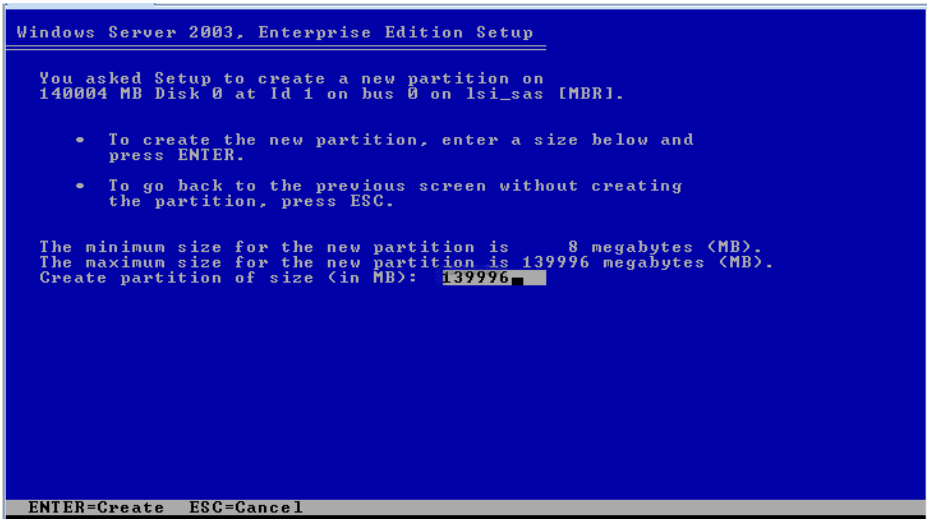
    A confirmation dialog with a caution notice appears and describes the partition that you are about to delete.

17. **Press L to delete the partition.**

    The partition is deleted and the a dialog appears that shows the unpartitioned space on the server's disk.

18. **To create a partition in the unpartitioned space, press C.**

    A dialog appears that allows you to specify the size of the new partition.



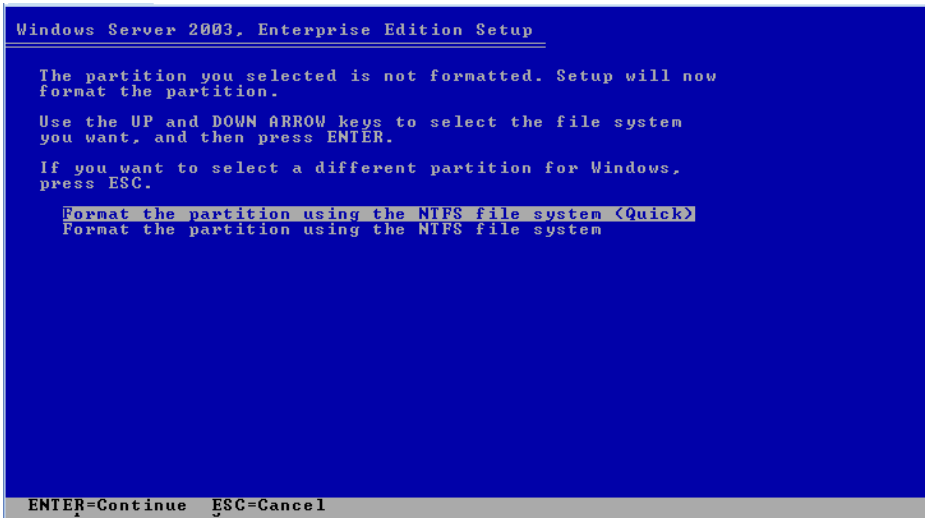
19. **Either accept the default size of the partition to be created or use the Back Space key to delete the size specified and enter a new size and press Enter.**

    A recommended size of 40,000 megabytes is usually sufficient for a Windows installation. This will leave adequate space on the disk for installations of other media.

    A partition confirmation windows appears.

20. **Press Enter to accept the partition.**

    A partition formatting dialog appears.



21. **Use the up and down arrow keys to select the <Quick> menu option and press Enter to format the partition.**

    The setup process formats the partition and copies the files to the Windows installation folders. This process might take several minutes

22. **Follow the on-screen instructions to complete the initial setup of Windows Server 2003 until you are prompted with the following message:**

    ```
    Remove disks or other media. Press any key to restart.
    ```

    When this message appears you will need to complete one of the following steps, depending on which driver delivery method you have chosen, to complete the installation:

    - **Floppy Disk Local** Remove the floppy disk from the floppy drive on the server.
    - **Floppy Disk Remote** Remove the floppy disk from the Sun ILOM Remote Console system.
    - **Floppy Image** Deselect Floppy Image from the Sun ILOM Remote Console Devices menu.

    Then, press any key to restart the system and complete the Windows Server 2003 Installation.

23. **Proceed to** "Post Installation" on page 49**.**

Install Windows Server 2003 Using PXE Network Environment

This section explains the initial information you will need to install the Windows Server 2003 operating system software over an established PXE-based network via a customer-provided Windows 2003 Remote Installation Services (RIS) image.

Note – As an alternative, you can install the Windows 2003 operating system over an established PXE-based network via a customer-provided Windows Deployment Services (WDS) image.

After completing this procedure, you will need to perform the post installation tasks as described in "Post Installation" on page 49.

Before You Begin

The following requirements must be met prior to performing the Windows Server 2003 installation from a RIS image.

- 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 Sun server MAC network port address to boot from the PXE configuration.
  - Configure Dynamic Host Configuration Protocol (DHCP).
- To use a RIS image to perform the installation, you must:
  - Create the RIS installation image.

    Follow the RIS installation instructions in the Windows Server 2003 documentation.
  - Add the required system device drivers to the RIS installation image.

    For instructions, see Appendix A "Incorporate Sun Fire Drivers Into a WIM or RIS Image" on page 57.
  - Obtain a RIS Administrator password.

▼ Install Windows Server 2003 Using PXE

1. **Ensure that the PXE network environment is properly set up and the Windows Server 2003 installation media is available for PXE boot.**

Note – Information concerning how to properly set up and deploy a RIS network environment is outside the scope of this installation guide. For these details, see Microsoft's documentation for deploying and using Remote Installation Services.

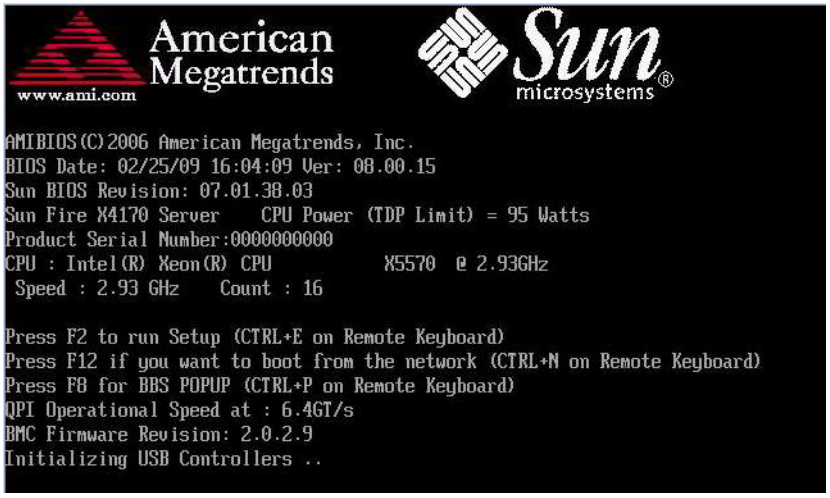
---

2. **Reset or power on the server.**

   For example:

   - **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the `Power Cycle` option from the Host action drop-down list box.
   - **From the local server**, press the Power button on the front panel of the server to turn the server off, then press the Power button again to turn the server on.
   - **From the ILOM CLI on server SP**, type: **`reset /SYS`**

   The BIOS Screen appears.



Note – The next events occur very quickly, so 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.

---

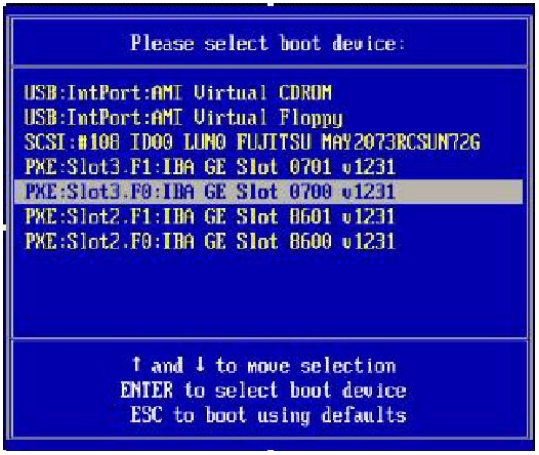
3. **Press F8 to specify a temporary boot device.**

   The Please Select Boot Device menu appears.

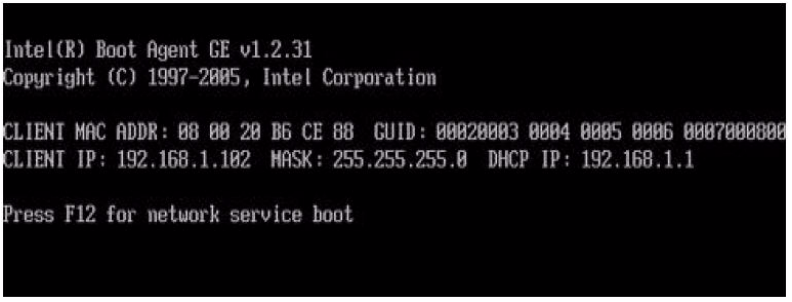
4. **In the Please Select Boot Device menu, select the appropriate PXE installation boot device and press Enter.**

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

Note – The boot device options shown on the following Select Boot Device dialog may be different from the options listed on your screen.



The Boot Agent dialog appears.

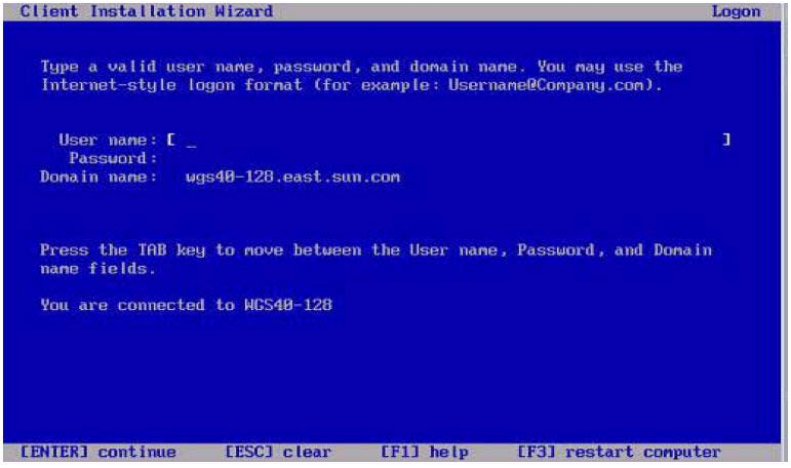


5. **In the Boot Agent dialog, press F12 for a network service boot.**

   The Welcome to Client Installation wizard appears.

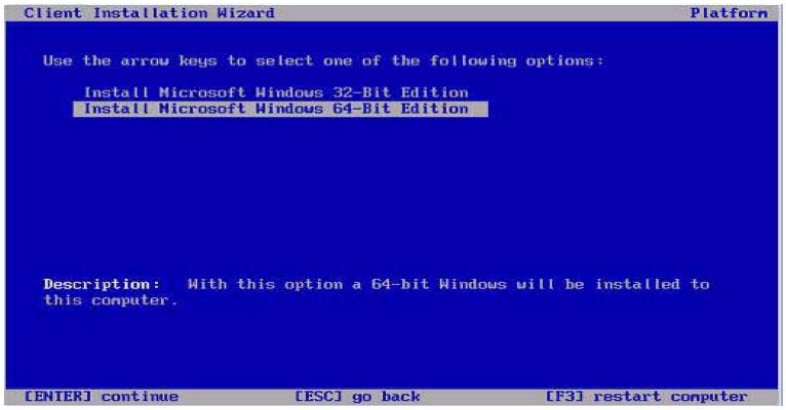
6. **In the Welcome to Client Installation wizard, press Enter to continue.**

   The next dialog prompts you for a user name, password, and domain name.



7. **In the user name and password dialog, type your user name and password, then press Enter.**

   Use the Tab key to move between fields. The Windows Server 2003 version dialog appears.



8. **In the Windows Server 2003 version dialog, select the version (32-bit or 64-bit) you are installing, then press Enter.**

   The Windows Server 2003 operating system choice dialog appears.

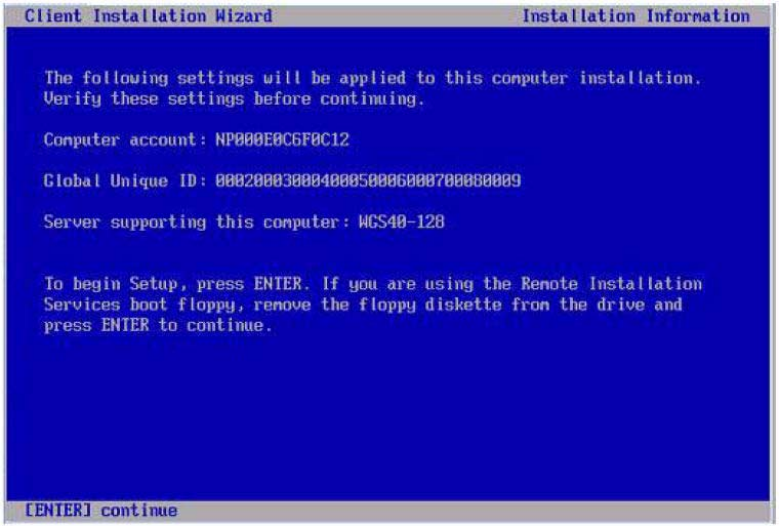
9. **In the OS choice dialog, select the OS option you are installing, then press Enter.**

Note – The OS choice dialog identifies the names of the OS images that are available for you to install from your RIS server. The OS choice dialog from your RIS server will list different options from the ones shown in the example dialog below.

A Caution dialog appears.

10. **In the Caution dialog, press Enter to continue.**

    The Installation Information dialog appears.

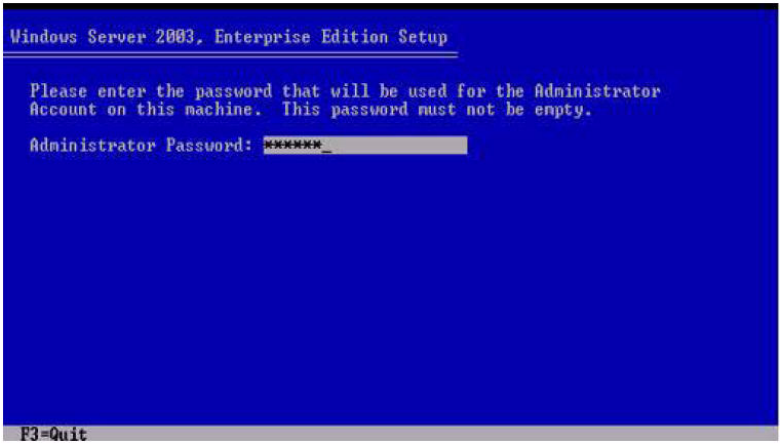


11. **In the Installation Information dialog, press Enter to continue.**

    The Administrator Password dialog appears.

12. **In the Administrator Password dialog, specify an OS Administrator password and press Enter.**

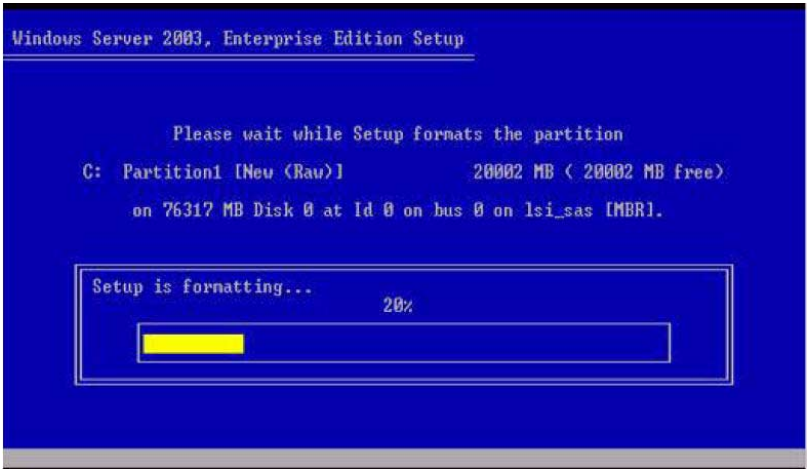
    Note that this password is assigned to the OS installation target.



    You will be asked to confirm the password.

13. **In the Administrator Password Confirmation dialog, retype the password and press Enter.**

    The Windows Setup starts and a message appears that the setup is formatting the partition.



14. **Proceed to** "Post Installation" on page 49**.**

CHAPTER 3

Install Windows Server 2008 Operating System

This chapter provides information about installing the Windows Server 2008 and Windows Server 2008 R2 Operating Systems (OS).

Note – If you want to create a RAID for your disk, the recommended procedure is to create a RAID before you install the OS. For more information, see "Configure RAID Controller in the BIOS Setup Utility" on page 71.

This chapter includes the following topics:

Task Map for the Windows Server 2008 Installation

Use TABLE 3-1 to preview the installation process defined as a series of tasks. The table defines the required tasks, describes them, and provides pointers to the instructions for performing that task.

TABLE 3-1 Task Map for the Windows Server 2008 Installation

Step	Task	Description	Relevant Topic(s)
1	Review installation prerequisites	Verify that all applicable requirements are met for installing an operating system to a server.	• TABLE 1-2 "Windows OS Installation Prerequisites" on page 3
2	Choose an installation method	Evaluate and select an installation method that meets the needs of your infrastructure.	• "Installation Methods" on page 5
3	Ensure that the BIOS factory defaults are set	Verify that the factory default settings in the BIOS are set prior to performing the operating system installation.	• "Verifying BIOS Settings for New Installations" on page 9
4	Gather the Windows installation media	The Windows OS is shipped with the CD and DVD media and documentation that you will need to install the Windows OS.	• You can download or order the media for Windows 2003 at `http://www.microsoft.com`
5	(Optional) Configure RAID Controller	Follow the instructions to implement RAID using the BIOS Setup utility.	• "Configure RAID Controller in the BIOS Setup Utility" on page 71
6	Perform the Windows 2008 OS installation	Follow the instructions in this chapter to install the Windows 2008 operating system.	• "Install Windows Server 2008 Using Local or Remote Media" on page 39 • "Install Windows Server 2008 Using PXE Network" on page 45
7	Install driver(s) and supplemental software post installation, if applicable	If necessary, install the updated server-specific drivers and the server supplemental software.	• "Post Installation" on page 49

Note – The complete Microsoft Windows operating system installation process is not documented in this section. This section walks you through the steps for booting the Windows Server 2008 media, installing drivers (if necessary) at boot, and partitioning the drive. For additional information, consult the Microsoft Windows 2008 Product Documentation at:
`http://www.microsoft.com/windowsserver2008/en/us/product-documentation.aspx`

Install Windows Server 2008 Using Local or Remote Media

The following procedure describes how to boot the Windows Server 2008 operating system from local or remote media. It assumes you are booting the Windows installation media from one of the following sources:

- Windows 2008 CD or DVD (internal or external CD/DVD)
- Windows 2008 ISO image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to "Install Windows Server 2008 Using PXE Network" on page 45 for instructions.

Before You Begin

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

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see TABLE 1-2 "Installation Prerequisites" on page 3.
- An installation method (for example: console, boot media, and installation target) should have been chosen and established prior to performing the installation. For more information about these setup requirements, see "Installation Methods" on page 5.

After completing this procedure, you will need to perform the post installation tasks as described in "Post Installation" on page 49.

▼ Install Windows Server 2008 Using Local or Remote Media

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

   For example:

   - **For distribution CD/DVD**. Insert the Windows 2008 Distribution media (CD labeled #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 ILOM Remote Console application is aware of the first ISO image location.

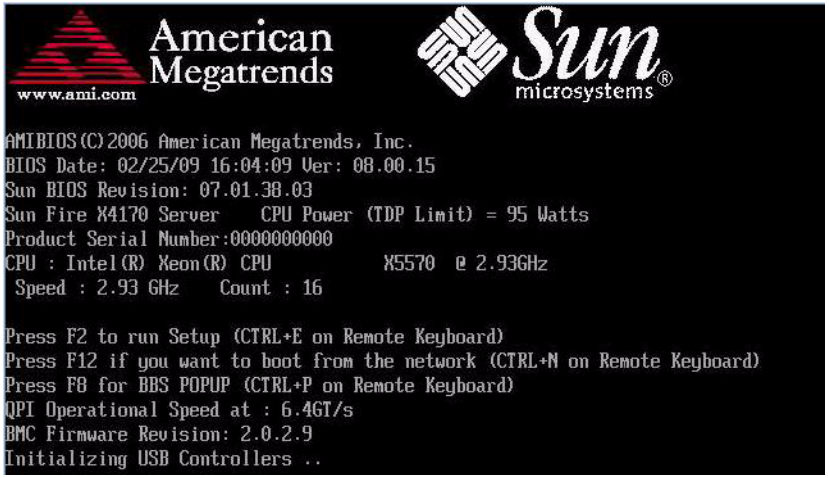
   For additional information about how to set up the installation media, see TABLE 1-4 "Installation Boot Media" on page 6

2. **Reset or power on the server.**

   For example:

   - **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the `Power Cycle` option from the Host action drop-down list box.
   - **From the local server**, press the Power button on the front panel of the server to turn the server off, then press the Power button again to turn the server on.
   - **From the ILOM CLI on the server SP**, type: **`reset /SYS`**

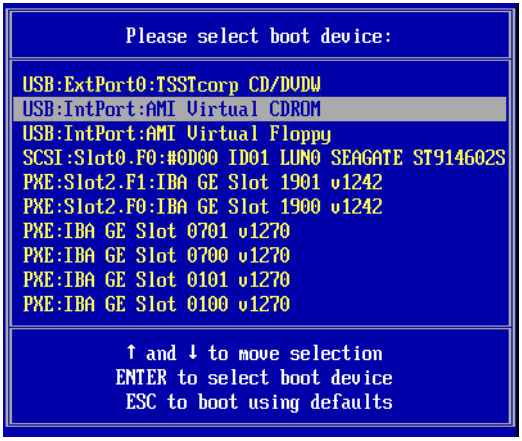
   The BIOS screen appears.



3. **When the `Press F8 for BBS POPUP` prompt appears on the BIOS POST screen, press F8 to select a boot device.**

   The Boot Device dialog appears.

Note – The dialog that appears in your installation may be different depending the type of disk controller installed in your server.



4. **In the Boot Device dialog, select the menu item according to the Windows media installation method you elected to use and press Enter.**

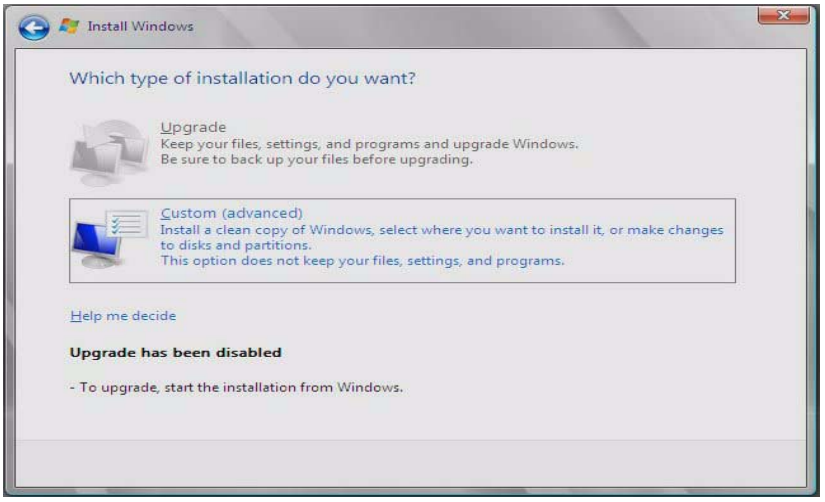
   For example:

   - If you elected to use the Windows Local delivery method, select `CD/DVDW`.
   - If you elected to use the Sun ILOM Remote Console delivery method, select `Virtual CDROM`.

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

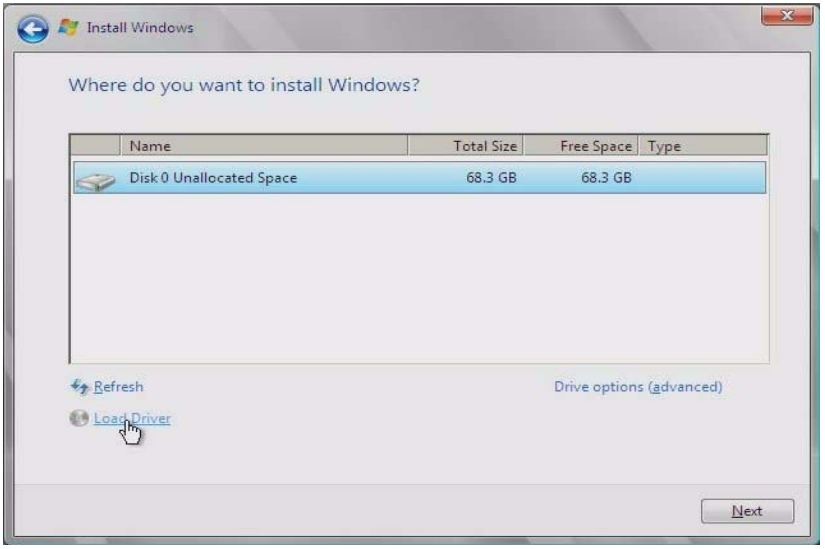
   The Windows installation wizard starts.

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



6. **In the Installation Type dialog, click Custom (advanced).**

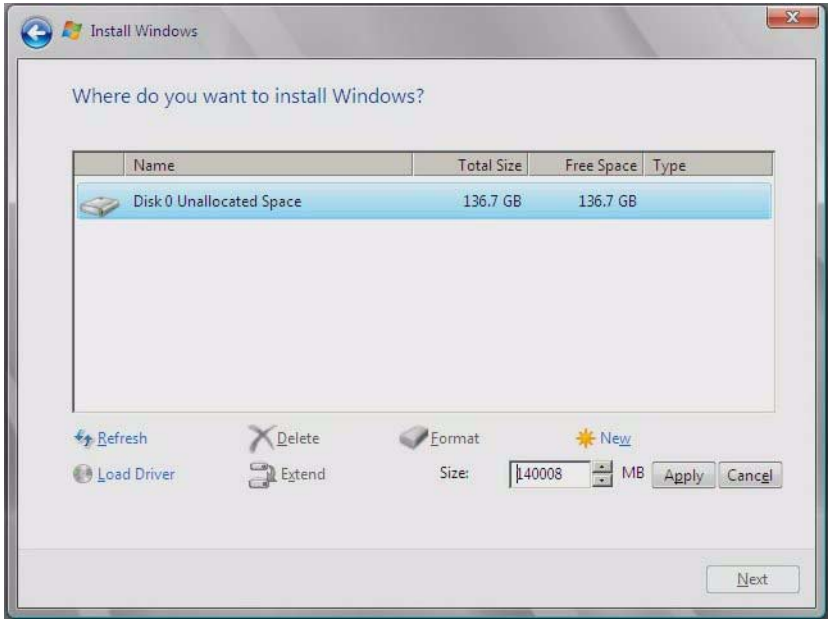
   The Where Do You Want To Install Windows dialog appears.



7. **In the Where Do You Want To Install Windows dialog, do one of the following:**
   - **If you *do not* want to override the Windows Default partition information, click Next then skip to** Step 9**.**
   - **If you *do* want to override the Windows default partition information, click the Drive Options (advanced) option and proceed to** Step 8**.**

Caution – Formatting or re-partitioning a pre-existing partition will destroy all data on the partition.

The Where To Install Windows dialog appears.



8. **In the Where to Install Windows dialog, do the following:**

   a. **Click Delete to delete the existing partition.**

      A confirmation window appears.

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

   c. **Click New to create the new partition.**

   d. **Change partition size settings as needed, and then click Apply.**

      The partition is created.

e. **Click Next and proceed to the next step.**

The Windows installation begins.

The server will reboot multiple times during the installation process. This process could take several minutes.

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

10. **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.

11. **Proceed to** "Post Installation" on page 49**.**

Install Windows Server 2008 Using PXE Network

This section explains the initial information you will need to install the Windows Server 2008 operating system over an established PXE-based network via a customer-provided Windows Deployment Services (WDS) image.

Topics included in this section:

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

After completing this procedure, you will need to perform the post installation tasks as described in "Post Installation" on page 49.

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 Sun server MAC network port address to boot from the PXE configuration.
  - Configure Dynamic Host Configuration Protocol (DHCP).
- To use a WIM image to perform the installation, you must:
  - Create the WIM installation image.

    Follow the WIM installation instructions in the Windows Server 2008 documentation.
  - Add the required system device drivers to the WIM installation image.

    For instruction, see Appendix A "Incorporate Sun Fire Drivers Into a WIM or RIS Image" on page 57.
  - Obtain a WIM Administrator password.

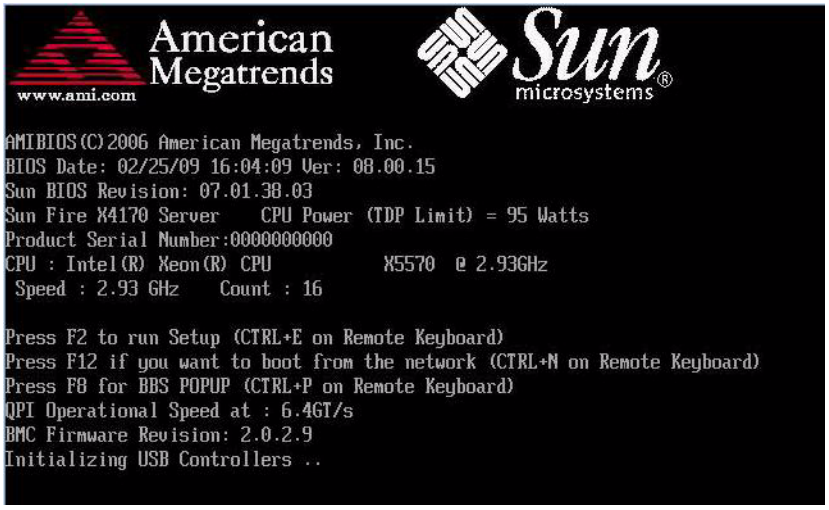
▼ Install Windows Server 2008 Using PXE

1. **Reset the power on the server.**

   For example:

   - **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the `Power Cycle` option from the Host action drop-down list box.
   - **From the local server**, press the Power button on the front panel of the server to turn the server off, then press the Power button again to turn the server on.
   - **From the ILOM CLI on server SP**, type: **`reset /SYS`**

   The BIOS screen appears.

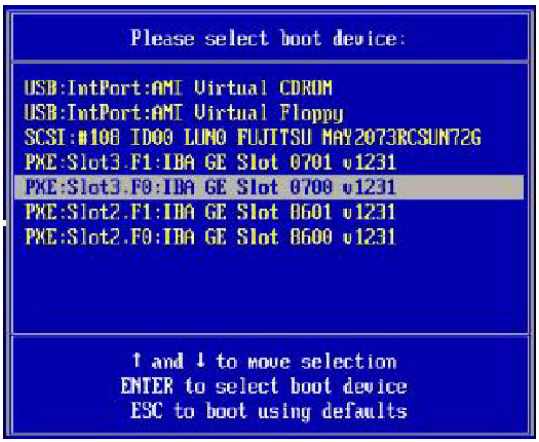


Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Watch carefully for these messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

---

2. **Press F8 to specify a temporary boot device.**

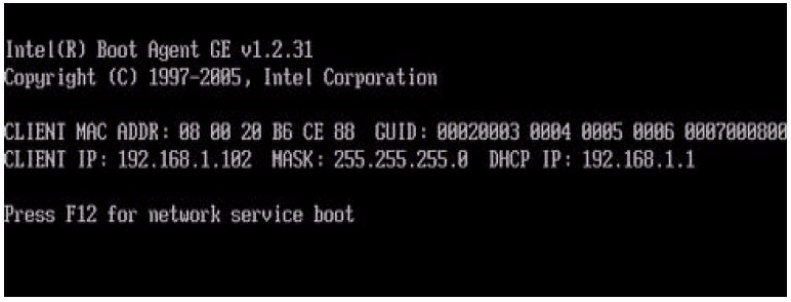
   The Please Select Boot Device menu appears.



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 WDS network installation. For additional information, consult Microsoft's Windows Deployment Services product documentation.**

6. **Proceed to** "Post Installation" on page 49**.**

CHAPTER 4

Post Installation

After completing the Windows 2003 or Windows 2008 installation and rebooting the operating system, you should review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

Installing Server-Specific Device Drivers

This section describes how to install server-specific device drivers to support optional devices that you added to the server when you completed the hardware installation. The following device drivers must be installed in the order specified.

1. **Intel Chipset**
2. **Ethernet driver**
3. **AST2100 VGA driver (for systems that contain an SP module)**
4. **Trusted Platform Module (TPM) security driver**
5. **AHCI RAID software**

Note – The *Sun Fire X2270 Tools & Drivers CD* is required to complete the procedures in this section. If you do not have a copy of the CD, you can download the latest version as a downloadable image on the Sun download site: `http://www.sun.com/servers/x64/X2270/downloads.jsp`.

You can choose the install device drivers using one of the following methods:

- Externally attached CD/DVD-ROM drive containing the Tools & Drivers CD
- Virtual CD/DVD containing the Tools & Drivers CD that can be accessed from the Sun ILOM Remote Console
- `Windows.zip` file downloaded from the Sun download web site. The `Windows.zip` file contains the Windows drivers from the Tools & Drivers CD.

▼ Install the Device Drivers Using the Tools & Drivers CD

1. **Insert the Tools & Drivers CD into the server's CD/DVD-ROM drive or a virtual CD/DVD drive on the client hosting the Sun ILOM Remote Console application.**

   Note that if you are using the Sun ILOM Remote Console application to perform the installation, ensure that the `CD-ROM` option is selected in the `Device` menu of the Sun ILOM Remote Console application.

   For more information about redirecting storage devices from the Sun ILOM Remote Console, see "Installation Boot Media" on page 6.

   A list of menu options available on the Tools & Drivers CD appears.

2. **You can choose to automatically or manually install the system device drivers. Depending on your chosen method, select either:**

   - `Drivers Installation/Update and Optional Packages` to automatically install device drivers; continue with Step 3.

     or

   - `Explore the DVD` to manually install device drivers. If you choose this option, navigate to each of the following directories and perform the following:
     - **`drivers/windows/intelNIC`**: Click on `autorun.exe` and follow the directions in the Installation Wizard.
     - **`drivers/windows/chipset`**: Click on `setup.exe` and follow the directions in the Installation Wizard.
     - **`drivers/windows/tpm`**: 1) Copy the contents of the directory to the host server; 2) start the host Windows Device Manager; 3) locate the device in the Device Manger window and click it to open the Properties dialog; 4) select the Driver tab; 5) select Update Driver and follow the instructions in the Hardware Update Wizard.

- **`drivers/windows/display`**: 1) Copy the contents of the directory to the host server; 2) start the host Windows Device Manager; 3) locate the device in the Device Manger window and click it to open the Properties dialog; 4) select the Driver tab; 5) select Update Driver and follow the instructions in the Hardware Update Wizard.

3. **In the Tools & Drivers CD menu, select** `Drivers Installation/Update and Optional Packages`**.**

   A list of menu options available on the Tools & Drivers CD appears.

4. **In the Driver Installation/Update and Optional Software menu, select** `Install/Update drivers`**.**

   The required system device drivers for Windows 2003 or Windows 2008 are automatically installed on the server.

5. **Click Yes to reboot the server.**

6. **Once the server has rebooted, reinsert the Tools & Drivers CD into the server's CD/DVD-ROM drive or a virtual CD/DVD drive on the client hosting the Sun ILOM Remote Console application.**

   A list of menu options available on the Tools & Drivers CD appears.

7. **In the Tools & Drivers CD menu, select** `Drivers Installation/Update and Optional Packages`**, then select** `Install Intel RAID Management Software`**.**

   The RAID management software is automatically installed on the server.

▼ Install the Device Drivers Using the `Windows.zip` File

To install the device drivers, perform the following steps:

1. **If you have not already downloaded the file, download the** `Windows.zip` **file from the Sun download web site:**

   `http://www.sun.com/servers/x64/X2270/downloads.jsp.`

   Download `Windows.zip` to a hard drive location or media that will be accessible during the installation.

2. **From your download location, navigate to each of the following directories and perform the following:**
   - **`drivers/windows/intelNIC`**: Click on `autorun.exe` and follow the directions in the Installation Wizard.
   - **`drivers/windows/chipset`**: Click on `setup.exe` and follow the directions in the Installation Wizard.
   - **`drivers/windows/tpm`**: 1) Copy the contents of the directory to the host server; 2) start the host Windows Device Manager; 3) locate the device in the Device Manger window and click it to open the Properties dialog; 4) select the Driver tab; 5) select Update Driver and follow the instructions in the Hardware Update Wizard.
   - **`drivers/windows/display`**: 1) Copy the contents of the directory to the host server; 2) start the host Windows Device Manager; 3) locate the device in the Device Manger window and click it to open the Properties dialog; 4) select the Driver tab; 5) select Update Driver and follow the instructions in the Hardware Update Wizard.

3. **If prompted to perform a reboot, click Yes to reboot the server.**

Configuring Microsoft's IPMI System Management Driver for Windows Server 2003 SP2 R2

If you are running Windows Server 2003 SP2 R2 and you have installed the supplemental software driver for the IPMItool, you need to configure this driver before you can use the IPMItool.

▼ Configure Microsoft's IPMI System Management Driver for Windows Server 2003 R2 SP2

Follow these steps to configure the IMPI driver on the Windows Server 2003 R2 SP2 operating system.

1. **If you have not yet installed the supplemental software for the IPMI driver, you need to do this before performing the following steps in this procedure.**

   The latest version of IPMItool software is located on the Sun Fire X2270 Tools & Drivers CD in `Utilities/IPMItool/Windows` directory.

2. **On your Windows Server 2003 SP2 R2 system, perform the following steps to configure the Microsoft IPMI System Management driver:**

   a. **In Control Panel, open Add/Remove Programs.**

      The Add/Remove Programs dialog is displayed.

   b. **Click Add/Remove Windows Components.**

      The Windows Components Wizard dialog is displayed.

   c. **Highlight the Management and Monitoring Tools component, and then click Details.**

      The Management and Monitoring Tools page is displayed.

   d. **In the Management and Monitoring Tools page, perform one of the following:**

      - If the `Select the Hardware Management` subcomponent check box is already selected, skip to Step 3.
      - If the `Select the Hardware Management` subcomponent check box is not selected, select it.

      The "3rd Party Drivers" warning dialog appears.

e. **Read the warning and then click OK.**

   The Management and Monitoring Tools page is displayed.

f. **Click OK.**

   The Windows Components Wizard dialog is displayed.

g. **Click Next.**

   The Hardware Management component is installed.

3. **Initiate the IPMI System Management driver.**

   a. **In the Taskbar, click Start, and then click Run.**

      The Run dialog box is displayed.

   b. **In the Open list, type:**

      `rundll32 ipmisetp.dll,AddTheDevice`

   c. **Click OK.**

      The IPMI System Management driver is initiated.

4. **To verify that the IPMI System Management driver is configured, repeat Steps 2a through 2c above.**

For information about using the IPMItool, refer to your *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188). For more information on standard IPMItool commands, see:

`http://ipmitool.sourceforge.net/manpage.html`

APPENDIX **A**

Incorporate Sun Fire Drivers Into a WIM or RIS Image

This chapter is intended for advanced system administrators who need to incorporate the server-specific drivers into a Windows Imaging Format (WIM) image or a Remote Installation Service (RIS) image.

WIM files are installed using Windows Deployment Services (WDS). RIS images can be deployed using either WDS in legacy mode or RIS.

This chapter is not a tutorial on WDS or RIS; it provides guidance on how to incorporate the server-specific drivers into a WIM or RIS image. This chapter contains the following sections:

Determine Required Drivers

The server-specific drivers that must be incorporated into a WIM or RIS image are shown in TABLE A-1.

TABLE A-1 Server-specific Drivers Required for WIM or RIS Images

	Incorporate for Windows Server 2008	
Driver/Device	**32-bit**	**64-bit**
Aspeed Graphic Driver	Yes	Yes
Disk Controller Driver (server dependant):		
Intel ICH10R integrated disk controller	Yes	Yes

TABLE A-1 Server-specific Drivers Required for WIM or RIS Images

	Incorporate for Windows Server 2008	
Driver/Device	**32-bit**	**64-bit**
Intel ICH10R Chipset Drivers	Yes	Yes
Infineon TPM Drivers	Yes	Yes
Intel NIC Drivers	Yes	Yes

Add Drivers to a WIM Image

This section contains information adding server-specific drivers for your Sun Fire X2270 Server to a WIM image.

Before you Begin

Before creating your WIM image, you need to do the following:

- The Windows Automated Installation Kit (Windows AIK or WAIK) must be installed. The kit can be downloaded from Microsoft. Sun recommends using version 2.0 or later of the WAIK.
- Read the Windows AIK documentation.
- Windows Remote Installation Services must be are running on a Windows Server. Read the Windows Deployment Services snap-in documentation.
- Locate `windows.zip` for Windows Server 2008.

  You can obtain the `windows.zip` from the Tools & Drivers CD or you can download them from the Sun download site:
  `http://www.sun.com/servers/x64/X2270/downloads.jsp`.

▼ To Add Drivers to the WIM Image

1. **Copy all of the appropriate files for a 32-bit or 64-bit Windows installation out of the version folders on the Tools & Drivers CD to the appropriate folder structure on a network share. See Step a and Step b below:**

a. Identify the appropriate version files.

The following examples are from the Sun Fire X2270 Server Tools & Drivers CD, depending on your server model, the file paths may differ. In the examples below, `cdromdrive` is the driver letter of the CD/DVD drive that contains the Tools & Drivers CD:

```
Tools & Drivers CD/DVD Windows 2008 32-bit files:
cdromdrive:\drivers\windows\Display\32bit
                        ...\IntelNIC\RIS\2003_32
                        ...\TPM\32bit
                        ...\Chipset\All
                        ...\boot\AHCI\32bit
```

```
Tools & Drivers CD/DVD Windows 2008 64-bit files:
cdromdrive:\drivers\windows\Display\64bit
                        ...\IntelNIC\RIS\2003_64
                        ...\TPM\64bit
                        ...\Chipset\All
                        ...\boot\AHCI\64bit
```

b. Copy the files identified in Step a out of their version folders and into the appropriate folder structure on your network share.

In the examples below, `\\yourshare\share` is the share path you have set up on the network, `windows\x64` is for 64-bit Windows, and `windows\x86` is for 32-bit Windows. **All files must reside directly under the `x64` or `x86` folder or component subfolder (there should be no version subfolders as found on the Tools & Drivers CD).** See examples below:

```
Windows 2008 32-bit WIM folder structure:
\\yourshare\share\windows\x64\Display
                              ...\nic
                              ...\AHCI
                              ...\Chipset
                              ...\TPM
```

```
Windows 2008 64-bit WIM folder structure:
\\yourshare\share\windows\x64\Display
                              ...\nic
                              ...\AHCI
                              ...\Chipset
                              ...\TPM
```

2. Select the service image to update and export the image:

a. Click Start, click Administrative Tools, and then click Windows Deployment Services.

b. Find the image to service. Right-click the image and then click Disable.

c. Right-click the image and click Export Image. Follow the Wizard directions to export the image to the location of your choice.

3. Mount the Windows image you just exported. For example,

```
imagex /mountrw C:\windows_distribution\sources\install.wim 1
C:\win_mount
```

The first Windows image in the `Install.wim` file is mounted to `C:\wim_mount`

4. Use Windows System Image Manager (Windows SIM, available in Windows AIK) to create an answer file that contains the paths to the device drivers that you intend to install. See the Microsoft documentation for the Windows Automated Installation Kit for the details of starting the Windows SIM application.

5. **Add the** `Microsoft-Windows-PnpCustomizationsNonWinPE` **component to your answer file in the** `offlineServicing` **pass.**

6. **Expand the** `Microsoft-Windows-PnpCustomizationsNonWinPE` **node in the answer file. Right-click** `DevicePaths`**, and then select Insert New PathAndCredentials.**

   A new PathAndCredentials list item appears.

7. **In the** `Microsoft-Windows-PnpCustomizationsNonWinPE` **component, specify the path to the architecture (**`x86` **or** `x64`**) folder in the** `windows` **folder on the network share, and the credentials used to access the network share.**

   For example, the path and credentials for a 64-bit image might be:

   `<Path>\\`*yourshare*`\`*share*`\windows\x64</Path>`

   ```
   <Credentials>
       <Domain>MyDomain</Domain>
       <Username>MyUserName</Username>
       <Password>MyPassword</Password>
       </Credentials>
   ```

8. **Save the answer file and exit Windows SIM. The answer file must be similar to the following sample. The sample assumes a 64-bit Windows installation (for the** `processorArchitecture` **component ID parameter, supported values are** `x86` **for 32-bit Windows, or** `amd64` **for 64-bit Windows).**

```
<?xml version="1.0" ?>
<unattend xmlns="urn:schemas-microsoft-com:asm.v3" xmlns:wcm=
"http://schemas.microsoft.com/WMIConfig/2002/State">
   <settings pass="offlineServicing">
      <component name="Microsoft-Windows-PnpCustomizationsNonWinPE"
processorArchitecture="amd64" publicKeyToken="31bf3856ad364e35"
language="neutral" versionScope="nonSxS">
         <DriverPaths>
            <PathAndCredentials wcm:keyValue="1">
               <Path>\\yourshare\share\windows\x64</Path>
               <Credentials>
                  <Domain>MyDomain</Domain>
                  <Username>MyUserName</Username>
                  <Password>MyPassword</Password>
               </Credentials>
            </PathAndCredentials>
         </DriverPaths>
      </component>
   </settings>
</unattend>
```

9. **Use Package Manager to apply the unattended installation answer file to the mounted Windows image. Specify a location for the log file to create. For more information about using Package Manager, see the Microsoft Windows AIK documentation. For example,**

   ```
   pkgmgr /o:"C:\wim_mount\;C:\wim_mount\Windows" /n:"C:\
   unattend.xml" /l:"C:\pkgmgrlogs\logfile.txt"
   ```

   The `.inf` files referenced in the path in the answer file are added to the Windows image. A log file is created in the directory `C:\Pkgmgrlogs\`.

10. **Review the contents of the `%WINDIR%\Inf\` directory in the mounted Windows image to ensure that the `.inf` files were installed. Drivers added to the Windows image are named `oem*.inf`. This is to ensure unique naming for new drivers added to the computer. For example, the files `MyDriver1.inf` and `MyDriver2.inf` are renamed `oem0.inf` and `oem1.inf`.**

11. **Unmount the `.wim` file and commit the changes. For example:**

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

12. **Replace the service image and Enable the image.**

    a. **If the Windows Deployment Services snap-in is not running, click Start, click Administrative Tools, and then click Windows Deployment Services.**

    b. **Find the image to service. Right-click the image and then click Replace Image. Follow the Wizard directions to replace the service image with the Windows image that was updated.**

    c. **Right-click the service image and then click Enable.**

    The service image is now available and all the server-specific drivers are added to the image.

Add Drivers to a RIS Image

This section contains instructions for performing a Remote Installation Services (RIS) network installation for the Windows Server 2003 OS onto the Sun Fire X2270 Server. Choose the section that corresponds to the version of Windows Server 2003 that you wish to install:

- "Installing Windows Server 2003 32-bit Version Using RIS" on page 63.
- "Installing Windows Server 2003 64-bit Version Using RIS" on page 66.

Installing Windows Server 2003 32-bit Version Using RIS

Perform the following task to create a Windows Server 2003 32-bit RIS image for your server.

▼ To Install Windows Server 2003 32-bit Using RIS

1. **Install RIS support on a Windows Server 2003 system. For a complete set of instructions on how to install RIS on Windows Server 2003 go to:**

   `http://support.microsoft.com/default.aspx?scid=kb;en-us;325862`

2. **Install Windows Server 2003 SP2 R2 32-bit on the RIS server by doing the following:**

   a. **Insert Windows Server 2003 SP2 R2 32-bit CD into the RIS server CD/DVD drive.**

   b. **From the Start menu choose Run.**

   c. **Type `risetup.exe` in the Run field.**

      The Welcome to the Remote Installation Services Setup Wizard screen appears.

   d. **Click Next.**

   e. **Select Add a new OS image to this remote installation server, and then click Next.**

   f. **Select the drive location that has the Windows 2003 SP2 R2 32-bit CD in it, and then click Next.**

   g. **Type a descriptive name for the stored Windows 2003 SP2 R2 32-bit CD, and then click Next.**

      For example: **`X2270_Windows_2003_SP2R2_32bit`**

   h. **Type a description and Help text for the end user, and then click Next to continue.**

   i. **Select Use the old client installation screens, and then click Next.**

   j. **Review the settings, and then click Finish to install the image.**

   k. **Click Done when the image is installed on the server.**

3. **Update the RIS image created in Step 2 with the RIS Intel Ethernet drivers for Windows 2003 SP2 R2 32-bit.**

   The RIS Intel Ethernet drivers can be found on the Tools & Drivers CD.

a. **Insert the Tools & Drivers CD into the RIS server.**

b. **Copy the Windows 2003 SP2 R2 32-bit RIS Intel Ethernet driver files locally to the RIS server as follows:**

> **copy** *cdrom_drive***:\drivers\windows\IntelNIC\RIS\2003_32* C:\temp\intel**

Where *cdrom_drive* is the media drive that contains the Tools & Drivers CD.

c. **Copy all the files in** `c:\temp\intel` **directory to the RIS image on the RIS server. For example:**

> **copy C:\temp\intel*.* D:\RemoteInstall\Setup\English\Images***image_dir***\i386**

4. **Modify the** `ristndrd.sif` **file, located in** `D:\RemoteInstall\Setup\English\Image\`*image_dir*`\i386\templates` **(***image_dir* **is the directory on the RIS server that contains the RIS image), by adding the following:**

```
[Unattended]
OemPreinstall=yes
[GuiUnattended]
AdminPassword="password"
```

5. **Based on your controller card, edit the file to include one of the following:**

- For the onboard Intel ICH10R HBA controller, add the following entries:

```
[Unattended]
DriverSigningPolicy = Ignore
OemPnPDriversPath = "\drivers\nic;\drivers\chipset;\drivers\
video;\drivers\tpm"

[MassStorageDrivers]
"Intel(R) ICH10R SATA AHCI Controller"="OEM"
"Intel(R) ICH8R/ICH9R/ICH10R/D0 SATA RAID Controller"="OEM"

[OEMBootFiles]
txtsetup.oem
iaahci.cat
iaahci.inf
iaStor.inf
iaStor.sys

[UserData]
ProductKey = XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

[Identification]
JoinWorkgroup = WORKGROUP
```

6. **Add the** `$oem$` **directory and its subdirectories to the RIS image.**

   a. **Add the** `$oem$` **subdirectory to the RIS image located at**
   `d:\RemoteInstall\Setup\English\Images\`*image_dir*

   image_dir The directory on the RIS server that contains the RIS image.

   b. **Create the following subdirectories under the** `$oem$` **directory:**

   $1

   textmode

   c. **Create the following subdirectory under the** `$1` **directory:**

   drivers

   d. **Create the following subdirectories under the** `drivers` **directory:**

   chipset

   nic

   tpm

   video

7. **Copy driver files into the** `$oem$` **directory tree.**

   The Tools & Drivers CD has the Windows 2003 SP2 R2 32-bit drivers located at one of the following:

   - For the onboard Intel ICH10R HBA controller, copy the files as shown:

```
> Copy cdrom_drive:\drivers\windows\boot\AHCI\32bit\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\textmode

> Copy cdrom_drive:\drivers\windows\chipset\all\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
chipset

> Copy cdrom_drive:\drivers\windows\IntelNIC\PRO1000\Win32\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
nic

> Copy cdrom_drive:\drivers\windows\TPM\32bit\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
tpm

> Copy cdrom_drive:\drivers\windows\Display\2003\32bit\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
video
```

8. **Stop and start the Remote Installation Service (BINLSVC) on the RIS server by entering the following at a command prompt:**

   ```
   net Stop binlsvc
   net Start binlsvc
   ```

9. **Install the image onto the Sun Fire server.**

Installing Windows Server 2003 64-bit Version Using RIS

Perform the following task to create a Windows Server 2003 64-bit RIS image for your server.

▼ To Install Windows Server 2003 64-bit Using RIS

1. **Install RIS support on a Windows Server 2003 system. For a complete set of instructions on how to install the RIS on Windows Server 2003 go to**

   http://support.microsoft.com/default.aspx?scid=kb;en-us;325862.

2. **Install Windows Server 2003 SP1 64-bit on the RIS server:**

   a. **Insert Windows Server 2003 SP1 64-bit CD into the RIS server CD/DVD drive.**

   b. **Type `risetup.exe` in the Run field.**

      The Welcome to the Remote Installation Services Setup Wizard screen appears.

   c. **Click Next.**

   d. **Select Add a new OS image to this remote installation server, and then click Next.**

   e. **Select the drive location that has the Windows 2003 SP1 64-bit CD in it, and then click Next.**

   f. **Type a descriptive name for the stored Windows 2003 SP1 64-bit CD, then click Next.**

      For example: **`X2270_Windows_2003_64bit`**

   g. **Type a description and Help text for the end user, then click Next.**

   h. **Select Use the old client installation screens, and overwrite the old ones, and then click Next.**

i. **Review the settings in the Review Settings window, and then click Finish.**

j. **Click Done when the image is installed on the server.**

3. **Update the RIS image created in** Step 2 **with the RIS Intel Ethernet drivers for Windows 2003 SP1 64-bit.**

   The RIS Intel Ethernet drivers can be found on the Tools & Drivers CD.

   a. **Insert the Tools & Drivers CD into the RIS server.**

   b. **Copy the Windows 2003 SP1 64-bit RIS Intel Ethernet driver files locally to the RIS server as follows:**

      copy *cdrom-drive*`:\drivers\windows\IntelNIC\RIS\2003_64\* C:\temp\intel`

      Where *cdrom_drive* is the media drive that contains the Tools & Drivers CD.

   c. **Copy all the files in** `c:\temp\intel` **directory to the RIS image on the RIS server. For example:**

      ```
      copy C:\temp\intel\*.* D:\RemoteInstall\Setup\English\
         Images\image_dir\amd64
      ```

      image_dir The directory on the RIS server that contains the RIS image.

4. **Modify the** `ristndrd.sif` **file, located in** `D:\RemoteInstall\Setup\English\Image\`*image_dir*`\amd64\templates` **(***image_dir* **is the directory on the RIS server that contains the RIS image), by adding the following:**

   ```
   [Unattended]
   OemPreinstall = yes
   [GuiUnattended]
   AdminPassword = "password"
   ```

5. **Based on your controller card, edit the file to include one of the following:**

- For the onboard Intel ICH10R HBA controller, use the following:

```
[Unattended]
DriverSigningPolicy = Ignore
OemPnPDriversPath = "\drivers\nic;\drivers\chipset;\drivers\
video;\drivers\tpm"

[MassStorageDrivers]
"Intel(R) ICH10R SATA AHCI Controller"="OEM"
"Intel(R) ICH8R/ICH9R/ICH10R/D0 SATA RAID Controller"="OEM"

[OEMBootFiles]
txtsetup.oem
iaahci.cat
iaahci.inf
iaStor.inf
isStor.cat
iaStor.sys

[UserData]
ProductKey = XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

[Identification]
JoinWorkgroup = WORKGROUP
```

6. **Add the** `$oem$` **directory and its subdirectories to the RIS image.**

   a. **Add the** `$oem$` **subdirectory to RIS image located at**
   `d:\RemoteInstall\Setup\English\Images\`*image_dir*
   image_dir The directory on the RIS server that contains the RIS image.

   b. **Create the following subdirectories under the** `$oem$` **directory:**
   $1
   textmode

   c. **Create the following subdirectory under the** `$1` **directory:**
   drivers

   d. **Create the following subdirectories under the** `drivers` **directory:**
   chipset
   nic
   tpm
   video

7. **Copy driver files into the `$oem$` directory tree.**

   The Tools & Drivers CD has the Windows 2003 SP1 64-bit drivers located at one of the following:

   - For the onboard Intel ICH10R HBA controller, use the following:

```
> Copy cdrom_drive:\drivers\windows\boot\AHCI\64bit\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\textmode

> Copy cdrom_drive:\drivers\windows\chipset\all\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
chipset

> Copy cdrom_drive:\drivers\windows\IntelNIC\PRO1000\Winx64\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
nic

> Copy cdrom_drive:\drivers\windows\TPM\64bit\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
tpm

> Copy cdrom_drive:\drivers\windows\Display\2003\64bit\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
video
```

8. **Start and stop the Remote Installation Service (BINLSVC) on the RIS server by typing the following at a command prompt:**

   ```
   net Stop binlsvc
   net Start binlsvc
   ```

9. **Install the image onto the server.**

Installing the RIS Image on a Client System

This procedure describes how to install the RIS image that you created and modified to a Sun Fire server. Before you perform this procedure, you must configure the RIS image as described in "Add Drivers to a RIS Image" on page 62.

Once configured, the RIS image contains the Windows Server 2003 operating system (you can configure either the 32-bit or the 64-bit version) and the server-specific drivers that are included on the Tools & Drivers CD for the server.

Note – A RIS image can be installed on any computer that contains a network adapter that supports PXE DHCP-based boot ROM. The Sun Fire server module has this type of network adapter.

▼ To Install the RIS Image on a Client System

1. **Verify that the network adapter is set as the primary boot device in the computer BIOS.**
2. **Restart the client computer from the network adapter.**
3. **When you are prompted to do so, press F12 to start the download of the Client Installation Wizard.**
4. **At the Welcome screen, press Enter.**
5. **Type the user name of an account that has permissions to add computer accounts to the domain, and then type the domain name and password for the account and press Enter.**
6. **When you receive a warning message that states that all data on the client computer hard disk will be deleted, press Enter.**

Caution – The Solaris Operating System is preinstalled on the Sun Fire server boot disk. The Windows installation will format the boot disk and all data will be lost.

7. **A computer account and a global unique ID for this workstation are displayed.**
8. **Press Enter to start Setup.**
9. **If you are prompted to do so, follow the instructions on the screen to complete the client operating system installation.**

APPENDIX **B**

Configure RAID Controller in the BIOS Setup Utility

The Sun-supplied hard disk drives for the Sun Fire X2270 are shipped without a RAID configuration. If a RAID configuration is required, you will need to configure the RAID Controller in the BIOS Setup utility prior to beginning your Windows Server operating system (OS) installation.

After completing the RAID Controller configuration in the BIOS Setup utility, and depending on the operating system and method that you are using to install the OS, continue with the installation procedure that is appropriate for your OS:

- **Windows Server 2003**: "Prepare RAID Drivers for Delivery" on page 19
- **Windows Server 2008**: "Install Windows Server 2008 Using Local or Remote Media" on page 39 or "Install Windows Server 2008 Using PXE Network" on page 45

▼ Configure RAID Controller in BIOS

1. **Reboot the server and press F2 when the Sun Logo appears.**

   The BIOS Setup utility dialog appears.

2. **In the BIOS Setup utility dialog, select** `Advanced --> IDE Configuration`**.**

   The IDE Configuration menu appears.

3. **In the IDE Configuration menu, select** `Configure SATA AS`**, then press Enter.**

   A menu appears listing the SATA options: IDE, RAID, and AHCI. AHCI is set by default.

4. **In the SATA Options menu, select** `RAID`**, then press Enter.**

5. **Press F10 to save your changes, exit the BIOS utility, and reboot the server.**

6. **While the server is rebooting, press <Ctrl-I> to access the RAID configuration.**

   The Intel Matrix Storage Manager option ROM dialog appears.

7. **In the main menu of the Intel Matrix Storage Manager option ROM dialog, select** `(1) Create RAID Volume`**, then press Enter.**

   The Create RAID Volume menu appears.

8. **In the Create RAID Volume menu, do the following:**

   a. **Provide a name for the RAID volume and press Enter, or press Enter to accept the default name.**

   b. **Select either** `RAID 1 (Mirror)` **or** `RAID 0 (Stripe)` **as the RAID level, then press Enter.**

      Use the up and down arrow keys to scroll through the available RAID level values.

   c. **Specify the volume capacity and press Enter, or press Enter to accept the default volume capacity.**

   d. **Select** `Create Volume`**, then press Enter.**

      A warning message appears stating that all data could be lost. `Are you sure you want to create this volume? Y or N.`

   e. **In the warning message press** `Y` **to confirm the volume creation.**

      The new RAID volume is created. Information describing the RAID volume appears (for example, the RAID ID, Volume Name, Level, Status).

9. **Select** `EXIT` **and press Enter to exit the Intel Matrix Storage Manager utility.**

   A confirmation message appears confirming that you want to exit the Intel Matrix Storage Manager utility.

10. **In the confirmation message, press** `Y` **to confirm the exit.**

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