Sun Fire™ X4150, X4250 and X4450 Servers Windows Operating System Installation Guide

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Contents

Preface

This guide contains instructions for installing the Windows Server 2003 or Windows Server 2008 operating system onto a Sun Fire X4150, X4250 or X4450 server.

Related Documentation

For a description of the document set for the Sun Fire X4150, X4250 or X4450 server, see the *Where to Find Documentation* sheet that is packed with your system and also posted on the product's documentation site. Go to the following URL, then navigate to your product:

http://docs.sun.com/app/docs/prod/sf.x4150#hic

http://docs.sun.com/app/docs/prod/sf.x4250#hic

http://docs.sun.com/app/docs/prod/sf.x4450#hic

Translated versions of some of these documents may be available at the web site. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

For all Sun hardware, Solaris and other documentation, go to:

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; onscreen computer output	Use `dir` to list all files.
AaBbCc123	What you type, when contrasted with onscreen computer output	`>` **ipconfig** `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* have administrator privileges to do this. To delete a file, type `del` *filename*.
AaBbCc123	Titles of dialog boxes, text in dialog boxes, options, menu items and buttons.	**1. On the** File **menu, click** Extract All**.**

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

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Sun Fire X4150, X4250 and X4450 Servers Windows Operating System Installation Guide, part number 820-7141-11

CHAPTER **1**

Getting Started

This chapter describes the information you will need to know before installing the Microsoft Windows Server 2003 or Windows Server 2008 operating system on a Sun Fire X4150, X4250, or X4450 server.

Note – This chapter contains important guidelines and information to help you in the installation process. Make sure to read the remainder of this chapter before beginning the Windows Server installation.

The following sections are included in this chapter:

■ "About Windows Server Installation" on page 1
■ "Important Installation Considerations" on page 2
■ "Supported Windows Operating Systems" on page 3
■ "Assisted Installation Using Sun Installation Assistant (SIA)" on page 4
■ "Manual Installation" on page 5

About Windows Server Installation

The Sun Fire X4150, X4250 and X4450 servers require mass storage drivers that are not included with the Windows Server 2003 operating system. For Windows Server 2008, required mass storage drivers are included with the Windows Server 2008 distribution media.

The following chapters in this document describe how to install the Windows Server 2003 or Windows Server 2008 operating systems. The installation procedures apply to both the 32-bit and 64-bit versions of Microsoft Windows Server 2003 and Windows Server 2008.

Important Installation Considerations

Please note the following important considerations before beginning the Windows Server operating system installation on your Sun Fire server:

- When you install the Windows operating system, any data on the boot drive, including any preinstalled operating system, will be overwritten.

- If your server ships with an LSI™ SAS3081E-S RAID controller and you want to include your boot drive as part of a RAID configuration, you will need to configure a RAID volume(s) using the controller's BIOS configuration utility (accessible during server boot) before you install the Windows operating system. Details on doing this can be found in Appendix C.

- If you have an Sun StorageTek RAID controller (Adaptec™-based), you must create an array volume using the controller's configuration utility on any disk you want Windows to be able to access. If you are performing an initial installation of Windows and want to boot from mass storage connected to the controller (even if you do not want it part of a RAID), use the controller's BIOS configuration utility (accessible during server boot) to create an array volume on the disk before you install the Windows operating system. Details on doing this can be found in Appendix B.

- A primary consideration during installation is providing the mass storage drivers for the disk controller. Windows Server 2008 provides the mass storage drivers required to install the operating system. Windows Server 2003 media does not contain the mass storage drivers needed to install the operating system.

  - **If you install Windows using the Sun Installation Assistant,** all required drivers are supplied at the time of installation. SIA can install Windows via a local or remote CD/DVD. For more about SIA, see "Assisted Installation Using Sun Installation Assistant (SIA)" on page 4.

  - **If you install Windows manually,** using the Microsoft Windows Server 2003 installation media, the mass storage drivers must be delivered from a floppy disk (or a remote floppy image file). The Windows Server 2003 installation program can only read mass storage drivers from a floppy disk.

- For a manual installation, there are three methods that can be used to deliver the drivers for Windows Server installation:

  - Use a physical USB floppy drive connected to the Sun Fire server.

  - Use a remote KVMS (remote Keyboard, Video, Mouse, Storage—allows redirection of the server keyboard, video output, mouse and storage devices via a networked system) to redirect the floppy drive to a physical floppy drive on another system that is hosting the JavaRConsole (JavaRConsole system—a remote console run from a networked system).

- Use a remote KVMS to redirect the floppy to a floppy image file on another system that is hosting the JavaRConsole.

- For a manual installation, there are also three different methods for delivering the Windows Server distribution media for installation:

  - Use the physical CD/DVD drive connected to the Sun Fire server.

  - Use a remote KVMS to redirect the CD/DVD drive to a physical CD/DVD drive on the JavaRConsole system.

  - Use a remote KVMS to redirect the CD/DVD drive to a Windows CD/DVD image on the JavaRConsole system.

The installation procedures described in this document will guide you through the process of selecting the installation methods for the mass storage drivers and operating system media.

Note – If you use the RKVMS method for any of these installations, you will need to refer to the appropriate documentation. For servers with ILOM, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188) for details on setting up the hardware needed for the installation. For servers with ELOM, see the *Embedded Lights Out Manager Administration Guide* (820-3541) for further information.

Supported Windows Operating Systems

The Sun Fire X4150, X4250 and X4450 servers support the following Microsoft Windows operating systems at the time of publication of this document:

- Microsoft Windows Server 2003, SP1 or later, Standard Edition (32-bit)

- Microsoft Windows Server 2003, SP1 or later, Enterprise Edition (32-bit)

- Microsoft Windows Server 2003 R2 and R2 SP2, Standard x64 Edition (64-bit)

- Microsoft Windows Server 2003 R2 and R2 SP2, Enterprise x64 Edition (64-bit)

- Microsoft Windows Server 2008, Standard Edition (32 or 64-bit)

- Microsoft Windows Server 2008, Enterprise Edition (32 or 64-bit)

- Microsoft Windows Server 2008, Datacenter Edition (32 or 64-bit)

An updated list of supported operating systems is at the following server-specific URL:

For the Sun Fire X4150: http://www.sun.com/servers/x64/x4150/os.jsp

For the Sun Fire X4250: http://www.sun.com/servers/x64/x4250/os.jsp

For the Sun Fire X4450: http://www.sun.com/servers/x64/x4450/os.jsp

Assisted Installation Using Sun Installation Assistant (SIA)

The Sun Installation Assistant (SIA) is a tool supported for use with x64 Sun Fire and Sun Blade servers that assists in the installation of supported Linux and Microsoft Windows Server 2003 and Windows Server 2008 operating systems (OS). With SIA, you can install the OS, the appropriate drivers, and if necessary, additional system software by simply booting the SIA media and following the prompts.

SIA does not automate the OS installation process. You still need to follow the installation procedures for your OS, but you do not have to inventory your system hardware, search out and download device drivers most recently supported by Sun, nor will you need to create a separate driver CD. SIA does that work for you.

SIA Media Availability, Updates and Documentation

The Sun Installation Assistant CD/DVD ships with most new Sun servers that support the x64 processor architecture. For a complete list of supported Sun server platforms, refer to the SIA information page at:

http://www.sun.com/systemmanagement/sia.jsp

In addition, an ISO CD image of the Sun Installation Assistant is available for download from the Sun Download page at:

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

Updates to the SIA program can be obtained easily during the SIA installation by using the Remote Update option in the SIA.

Documentation describing how to use SIA can be found with the rest of the documentation for your server on the Sun documentation web site:

http://docs.sun.com/app/docs/prod/server.x64

Manual Installation

This method is for more advanced users that are planning to manually install Microsoft Windows Server 2003 or Windows Server 2008 locally, or remotely, on one or more servers.

Note – If you plan to install Windows Server using a Preboot Execution Environment (PXE) server, refer to Chapter 9, "Incorporate Sun Fire Drivers Into a RIS Image."

To install Windows Server 2003 or Windows Server 2008 from CD/DVD media onto your server, complete the following procedures in order:

1. Download server-specific driver packages (see Chapter 2).

2. Select the delivery methods (see Chapter 3).

3. Prepare for mass storage driver delivery (see Chapter 4).

4. Configure the JavaRConsole system, only required if you are planning to install Windows from a remote console (see Chapter 5).

5. Install Windows Server 2003 (see Chapter 6).

6. Install Windows Server 2008 (see Chapter 7).

7. Update the critical server-specific drivers (see Chapter 8).

After completing these procedures, you will have successfully installed the Windows Server operating system.

Download Server-Specific Driver Packages

This chapter describes how to download the server-specific driver and software packages needed for Windows Server 2003 or Windows Server 2008 installations.

Note – If you have the Tools and Drivers CD/DVD (minimum software release 2.1 for X4150 and X4450 servers, and release 1.2 for X4250 servers), you can skip this chapter and proceed to Chapter 3. You can use the CD for initial installation of the server-specific drivers. The latest version of the Tools and Drivers CD/DVD is also available as a downloadable image on the Sun download site.

To download the drivers:

1. **Go to the driver download site for your server.**

   For the Sun Fire X4150:
   http://www.sun.com/servers/x64/x4150/downloads.jsp

   For the Sun Fire X4250:
   http://www.sun.com/servers/x64/x4250/downloads.jsp

   For the Sun Fire X4450:
   http://www.sun.com/servers/x64/x4450/downloads.jsp

2. **Choose one of the following download options:**

   - **If you only need network drivers and the mass storage drivers required for Windows installation, download** Windows.zip **(the file may be named differently depending on the server) to a hard drive location or media that will be accessible during the installation.**

     –or–

   - **To ensure you have all of the drivers and supported software for your server, download the Tools and Drivers ISO image. The ISO image may be used in a system with a CD/DVD burner to create a CD that will be accessible during the installation.**

Note – The `windows.zip` package contains the drivers necessary for installing Windows, but it may not have all of the necessary software to provide all of the features for your server. The Tools and Drivers ISO image contains all of the software and drivers for your server. If you plan on doing a PXE installation from a RIS or WIM image, download the Tools and Drivers ISO image and create a CD to ensure you can copy over all of the necessary files for a successful deployment.

3. **Make sure that the driver packages are available as you begin the operating system installation. Refer to** Chapter 3 **for supported delivery methods.**

Select the Delivery Methods

In this chapter, you will decide on the delivery methods to provide the mass storage drivers and the Windows Server 2003 or Windows Server 2008 media for installation.

To select mass storage driver media and Windows OS (operating system) media delivery methods, complete the following procedures:

1. Select a Mass Storage Drivers Method.

2. Select a Windows OS Distribution Media Method.

3. **Make a note of the delivery methods that you selected and proceed to** Chapter 4.

Select a Mass Storage Drivers Method

Select a method listed in TABLE 3-1 that meets the need of your environment for providing the appropriate drivers for Windows Server operating system installation. Make note of the method you have selected.

Note – If you are installing Windows Server 2008 on your Sun Fire server, the required mass storage drivers are included with the Windows distribution media.

TABLE 3-1 Delivery Methods for Mass Storage Drivers During Windows 2003 Install

Mass Storage Drivers Delivery Method	Additional Requirements	Ease of Configuration and Installation
Floppy Disk Local: Uses a physical USB floppy drive directly connected to one of the server's USB ports.	• External USB floppy drive listed as "Designed for Windows"[*] on the Windows Marketplace site: http://www.windowsservercatalog.com/marketplace/ • Floppy disk	Easy
Floppy Disk Remote: Uses a remote KVMS to redirect to a physical floppy drive on the system hosting the JavaRConsole.	• JavaRConsole system with network access to your Sun Fire server's network management port and an attached floppy drive • Floppy disk	Medium: Installation time will be minimally increased over the Floppy Disk Local method.
Floppy Image: Uses a remote KVMS to redirect to a floppy image file on the system hosting the JavaRConsole.	• JavaRConsole system with network access to your Sun Fire server's management network port • Floppy image file	Medium: Installation time will be minimally increased over the Floppy Disk Local method.
Windows Server 2003 media CD created using Sun reburn script. This method creates a Windows media CD that includes all required mass storage drivers.	• System with CD/DVD burner • Tools and Drivers CD/DVD	Easy

[*] If you do not use a USB floppy drive designed for Windows, it might appear that the drivers are installed during the OS installation, but when you reboot the system, the graphical part of the Windows setup will be unable to find the drivers again and the installation will fail with an error message.

Select a Windows OS Distribution Media Method

Select a method listed in TABLE 3-2 that meets the need of your environment for providing the Windows Server 2003 or Windows Server 2008 distribution media for the operating system installation on your server. Make a note of the method that you selected.

TABLE 3-2   Delivery Methods for Windows Server Distribution Media

Windows Media Delivery Method	Additional Requirements	Ease of Configuration and Installation
Windows Local: Uses a physical CD/DVD drive on the Sun Fire server.	The server's CD/DVD drive	Easy
Windows Remote: Uses a remote KVMS to redirect the CD drive to a physical CD drive on the system hosting the JavaRConsole.	JavaRConsole system with the network access to the Sun Fire server network management port and an attached CD/DVD drive	Medium: Installation time will be significantly increased over the Windows Local method.
Windows Image: Uses a remote KVMS to redirect the CD drive to a Windows media image file on the system hosting the JavaRConsole.	JavaRConsole system with network access to the Sun Fire server management network port	Medium: Installation time will be significantly increased over the Windows Local method.

Prepare for Mass Storage Driver Delivery

This chapter contains instructions on preparing the necessary mass storage drivers media for Windows Server 2003 installation.

Note – If you are installing Windows Server 2008 on your Sun Fire server, the required mass storage drivers are included with the Windows distribution media. You can skip this chapter.

Depending on the method selected in Chapter 3, you will use one of the following procedures in this chapter. See TABLE 4-1.

TABLE 4-1   Mass Storage Driver Delivery Methods for Windows 2003

Delivery Method	Section to Read
Floppy Disk Local	"Create a Drivers Floppy Disk" on page 14
Floppy Disk Remote	"Create a Drivers Floppy Disk" on page 14
Floppy Image	"Copy the Drivers Floppy Image File" on page 16
Windows Server 2003 media CD created using Sun reburn script. This method creates a Windows media CD that includes all required mass storage drivers.	"Create a Windows Server 2003 Media CD That Includes Mass Storage Drivers Using the Sun Reburn Script" on page 17

Create a Drivers Floppy Disk

For the *Floppy Disk Local* or *Floppy Disk Remote* delivery method, you need to create a floppy disk containing the mass storage drivers before proceeding with the Windows Server 2003 installation.

Ensure that the following system configurations and materials are readily available:

- System with a connected floppy drive
- Floppy disk
- `Windows.zip` (see "Download Server-Specific Driver Packages" on page 7 for details on accessing this package)

  –or–

- The latest Tools and Drivers CD/DVD for your Sun server (see "Download Server-Specific Driver Packages" on page 7 for details on accessing this package)

▼ To Create a Drivers Floppy Disk

Sun provides the necessary files to help you manually create the floppy disk required for Windows Server 2003 installation. Perform the steps listed below.

1. **If you have downloaded** `windows.zip` **from the Sun download site (see** "Download Server-Specific Driver Packages" on page 7**), proceed to** Step 2.

   –or–

   Insert the Tools and Drivers CD/DVD into a Windows system with a CD/DVD drive. The CD will autostart. At the main menu, click the Exit button. Then perform the following sub-steps.

   a. **Start Windows Explorer and navigate to the Tools and Drivers CD/DVD.**

   b. **Double-click the** `drivers` **folder to open it.**

   c. **Skip to** Step 9.

2. **On a system running Microsoft Windows with a floppy drive, copy the** `windows.zip` **file to a temporary directory.**

3. **Start Windows Explorer.**

4. **Navigate to the folder where you placed the downloaded file.**

5. **Select** `windows.zip`**.**

6. **Right-click on the file and select** Extract All**.**

Note – If your version of Windows Explorer does not natively support compressed folders, use a third-party utility to extract the contents of the zip file. Make sure to maintain the directory structure of the folders after extracting them.

7. **Extract the files into a new (empty) folder.**

8. **Start Windows Explorer and navigate to the folder containing the extracted files.**

9. **Double-click the** `windows` **folder to open it.**

10. **Double-click the** `RAID` **folder to open it (for the X4450, this folder may be under the** `boot` **folder).**

11. **If your server has a LSI SAS3081E-S RAID controller, skip to .**

    If your server has a Sun StorageTek RAID controller (Adaptec-based), do the following:

    a. **Double-click the** `StorageTEK` **folder.**

    b. **Double-click the Windows 2003 version folder for the 32-bit version files. If you are installing a 64-bit version of Windows Server 2003, the files can be found under the** `amd64` **subfolder.**

    c. **Insert a blank, formatted floppy disk in to the system's floppy drive.**

    d. **Copy all of the files (and subdirectories) in the folder to the blank floppy disk.**

12. **If your server has a LSI SAS3081E-S RAID controller, do the following:**

    a. **Double-click the** `LSI` **folder.**

    b. **Double-click the Windows 2003 version folder which matches your installation (32-bit or 64-bit Windows Server 2003).**

    c. **Insert a blank, formatted floppy disk in to the system's floppy drive.**

    d. **Copy all of the files in the folder to the blank floppy disk.**

13. **Do one of the following:**
    - If you are installing Windows remotely using the **Floppy Disk Remote** method, proceed to Chapter 5 to setup your remote console.
    - To begin installing Windows Server 2003 using the **Floppy Disk Local** method, proceed to Chapter 6.

Copy the Drivers Floppy Image File

Use this procedure if you choose the *Floppy Image* method to install the mass storage drivers.

Ensure that a JavaRConsole system is available to host the driver files. This system must have access to the `windows.zip` driver package downloaded from the driver download site or on the Tools and Drivers CD/DVD (system software release 2.1, or later) as shown in "Download Server-Specific Driver Packages" on page 7.

▼ To Copy the Drivers Floppy Image File

To copy the floppy image file using a Windows system:

1. **If you have downloaded** `windows.zip` **from the download site, skip to** Step 2.

   If you are using the Tools and Drivers CD/DVD to access the floppy package, do the following:

   a. **Insert the CD into the JavaRConsole system.**

   b. **Navigate to the appropriate directory (depending on the RAID controller in your server, Sun StorageTek or LSI):**

      ```
      drivers/windows/RAID/LSI/floppy
      ```
      —or—
      ```
      drivers/windows/RAID/StorageTEK/floppy/2003
      ```

      and then proceed to Step 3.

2. **If you have downloaded** `windows.zip` **from the download site, do the following to copy and extract the files:**

   a. **Copy the** `windows.zip` **file to a temporary directory.**

   b. **Start Windows Explorer.**

   c. **Navigate to the temporary folder where you placed the downloaded file.**

   d. **Select** `windows.zip`**.**

   e. **On the File menu, click Extract All.**

Note – If your version of Windows Explorer does not natively support compressed folders, use a third-party utility to extract the contents of the zip file. Make sure to maintain the directory structure of the folders after extracting them.

f. **Navigate to the folder where the extracted files reside, and then to the appropriate folder (depending on the RAID controller in your server, Sun StorageTek or LSI):**

   `windows/RAID/LSI/floppy`

   –or–

   `windows/RAID/StorageTEK/floppy/2003`

   Note: For the X4450, you may need to look under the `windows/boot` folder.

   Proceed to the next step.

3. **Copy the `.img` file to a folder on the JavaRConsole system that will be available during installation.**

   Note the `.img` file location.

4. **To install Windows remotely using the Floppy Image method, proceed to Chapter 5 to setup your remote console.**

Create a Windows Server 2003 Media CD That Includes Mass Storage Drivers Using the Sun Reburn Script

The Tools and Drivers CD/DVD contains a script that allows you to create a new Windows Server 2003 media CD with the necessary Sun StorageTek or LSI SAS3081E-S RAID controller drivers. After creating the new CD, you can boot from the CD and install Windows Server 2003 in the usual way. This CD will automatically identify and select the proper drivers during the installation.

Note – Using the Reburn CD makes it unnecessary to use a floppy disk to provide mass storage drivers during Windows Server 2003 installation. It does not install all of the critical server-specific drivers. This must be done after Windows is installed as described in Chapter 8.

Before You Begin

To create the 2003 Reburn CD, you need the following:

- A system running one of the following platforms:
  - A system running Solaris OS for x86 Platforms, Solaris OS (SPARC® Platform Edition), Red Hat Enterprise Linux 3 or 4, or SUSE Linux Enterprise System (SLES) 10

    –or–

  - A system running Microsoft Windows
- CD burner and a blank CD-R or CD-RW
- A Windows Server 2003 distribution media CD **(retail media only—not an OEM version)**
- The latest Tools and Drivers CD/DVD for your Sun server (see "Download Server-Specific Driver Packages" on page 7 for details on accessing this package)

For current information about the 2003 Reburn script, see the description at the top of the script, which is located in `/utilities/reburn` on the Tools and Drivers CD/DVD.

Proceed to the method that best suits your needs:

- "To Create a Reburn Windows Server 2003 Media CD Using the Wizard on a Windows System" on page 18
- "To Create a Reburn Windows Server 2003 Media CD Manually on a Windows System" on page 19
- "To Create a Reburn Windows Server 2003 Media CD Manually on a Linux or Solaris System" on page 21

▼ To Create a Reburn Windows Server 2003 Media CD Using the Wizard on a Windows System

1. **Insert the Tools and Drivers CD/DVD into the Windows system's CD/DVD drive. The CD will autostart.**

   The Tools and Drivers main menu displays.

FIGURE 4-1 Sun Fire X4150 Tools and Drivers Main Menu Example

2. **Click the Create 2003 Reburn Image option.**

   The Create 2003 Reburn wizard begins. Follow the on-screen instructions to create the Windows Server 2003 reburn installation CD.

3. **After you create the CD, do one of the following:**

   - If you are installing Windows remotely, proceed to Chapter 5 to setup your remote console.

   - To begin installing Windows Server 2003 using the CD you have just created, proceed to Chapter 6.

▼ To Create a Reburn Windows Server 2003 Media CD Manually on a Windows System

1. **Create a temporary folder on the Windows system with at least 1.2 GB of space, as follows:**

   ```
   c:\reburn
   ```

2. **Insert the Sun Fire Server Tools and Drivers CD/DVD into the system's CD/DVD drive. If the CD autostarts, click the Exit button at the main menu.**

3. **Using Windows explorer, navigate to the appropriate Tools and Drivers CD/DVD reburn folder:**

   cdromdrive:\utilities\reburn\2003reburn_W2K

   Where *cdromdrive* is the drive letter of the CD/DVD drive containing the Tools and Drivers CD/DVD.

4. **Copy the** `2003REBURN_`*version*`.zip` **file to the temporary folder you created previously.**

   Where *version* is the current version of the reburn script package.

5. **Right-click on the** `2003REBURN_`*version*`.zip` **file and select** `Extract All`**.**

   Extract the files to the current folder.

6. **Click Start from the Windows taskbar, and then click Run.**

7. **Enter the following command to run the** `reburn.bat` **file from the temporary folder:**

   `c:\reburn\2003Reburn.bat`

8. **Follow the prompts to create the file set needed for a Windows Server 2003 media CD with all the required mass storage drivers.**

   You will be prompted for the location of the `bootimg.ima` file (located in `c:\reburn_image\bootimg.ima`) and other information that will be needed for creation of an ISO image.

9. **Use CD-burning software to create an ISO image using the** `c:\reburn_image\bootimg.ima` **file as the source.**

Note – The windows reburn script DOES NOT generate the ISO image. This is because there is no native support in Windows XP or 2003 for burning CD-ROMS. You will need to obtain CD-burning software and use the contents of the `c:\reburn_image` folder to generate the bootable CD.

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10. **After you create the CD, do one of the following:**

    - If you are installing Windows remotely using the **Floppy Disk Remote** method, proceed to Chapter 5 to setup your remote console.

    - To begin installing Windows Server 2003 using the **Floppy Disk Local** method, proceed to Chapter 6.

▼ To Create a Reburn Windows Server 2003 Media CD Manually on a Linux or Solaris System

1. **On a Solaris x86, Solaris OS (SPARC Platform Edition), Red Hat Enterprise Linux 5, or SLES 10 system, insert the Sun Fire Server Tools and Drivers CD/DVD into a CD or DVD drive.**

2. **Log in as root (superuser).**

3. **Create a temporary directory with at least 1.2 GB of space.**

   For example:

   # **mkdir /files**

4. **Copy the** 2003REBURN_*version*.zip **file to that directory.**

   version is the current version of 2003Reburn.

   For example:

   # **cp /utilities/reburn/2003reburn_linux/2003reburn_1.0.zip /files**

5. **Eject the Tools and Drivers CD/DVD, and insert your retail Windows Server 2003 distribution media CD.**

6. **Unzip the** 2003Reburn_*version*.zip **file.**

   For example:

   # **unzip -q 2003Reburn_1.0.zip**

7. **Run the** 2003Reburn **script.**

   For example:

   # **./files/2003Reburn -b**

Note – If your system does not have the ability to burn CDs, run the command *without* the -b option. This creates an ISO image which you can save to a system that has a CD burner.

The script displays the driver files it expects to be located in the current directory. When all four driver files have been downloaded into that directory, the script creates a new ISO image and then automatically burns that ISO image onto a CD (if the system has a CD burner).

8. **After you create the CD, do one of the following:**

   - If you are installing Windows remotely using the **Floppy Disk Remote** method, proceed to Chapter 5 to setup your remote console.
   - To begin installing Windows Server 2003 using the **Floppy Disk Local** method, proceed to Chapter 6.

Configure the JavaRConsole System

This chapter describes how to set up the JavaRConsole system to deliver the mass storage drivers and Windows Server 2003 or Windows Server 2008 media for operating system installation. If you do not plan on installing Windows from a remote system, you can skip this chapter.

Note – If you have chosen both the *Floppy Disk Local* (only required for Windows Server 2003 installations) and *Windows Local* delivery methods in Chapter 3, proceed to Chapter 6.

- You will need to set up a JavaRConsole system if you have chosen any one of the following mass storage driver or Windows Server 2003 or Windows Server 2008 media delivery methods described in Chapter 3:
  - Floppy Disk Remote
  - Floppy Image (Only available for server modules supporting ILOM. This method can not be used for server modules using ELOM.)
  - Windows Remote
  - Windows Image

Note – This procedure does not provide detailed instructions for setting up the JavaRConsole hardware. For Sun servers with ILOM, see the *Integrated Lights Out Manager (ILOM) Administration Guide* for further information. For Sun servers with ELOM, see the *Embedded Lights Out Manager Administration Guide* for further information. Note that there are multiple versions of LOM, be sure to refer to the guide that matches your server's installed version.

JavaRConsole System Requirements

The requirements for the JavaRConsole system are:

- Solaris, Linux, or Windows operating system is installed.
- The system must be connected to a network that has access to the Sun server Ethernet management port.
- Java Runtime Environment (JRE) 6.0 or later is installed.
- If the JavaRConsole system is running on Solaris, volume management must be disabled for JavaRConsole to access the physical floppy and/or CD/DVD-ROM drives.
- If the JavaRConsole system is running on Windows Server 2003 or Windows Server 2008, Internet Explorer Enhanced Security must be disabled.
- The JavaRConsole system and ILOM or ELOM service processor has been set up.

Setting Up the JavaRConsole System

This section describes how to setup the JavaRConsole system to deliver the mass storage drivers and operating system distribution media during a remote Windows installation. Follow the instructions that match your server's configuration:

▼ To Set Up the JavaRConsole System for Servers With ILOM

This section describes how to setup the JavaRConsole system using ILOM to deliver the mass storage drivers and Windows operating system distribution media during a remote Windows installation.

Note – This procedure assumes that the JavaRConsole system and ILOM service processor have been set up according to the instructions in the *Integrated Lights Out Manager (ILOM) Administration Guide* for your Sun Fire server.

---

1. **Start the remote console application by typing the IP address of the server's Integrated Lights Out Manager (ILOM) service processor into a browser on the JavaRConsole system.**

FIGURE 5-1   URL Sample
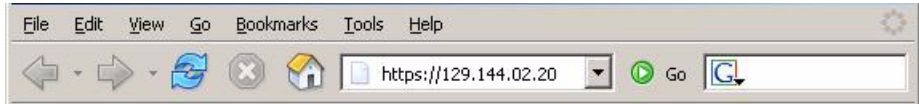
The Security Alert dialog box displays.

FIGURE 5-2   Security Alert Dialog Box

2. **Click Yes.**

   The ILOM login screen appears.

FIGURE 5-3   Login Screen

3. Enter the user name and password and click Log In.

The default user name is **root** and default password is **changeme**.

The ILOM Version Information screen appears.

FIGURE 5-4   ILOM WebGUI Interface Version Information Screen
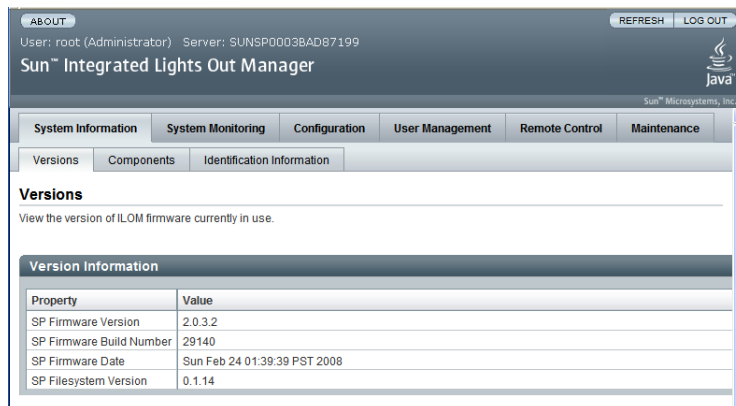
4. Click the Remote Control tab in the ILOM WebGUI.

The Launch Redirection screen appears.

Note – Make sure that the mouse mode is set to Absolute mode in the Mouse Mode Settings tab.

FIGURE 5-5   ILOM WebGUI Launch Redirection Screen
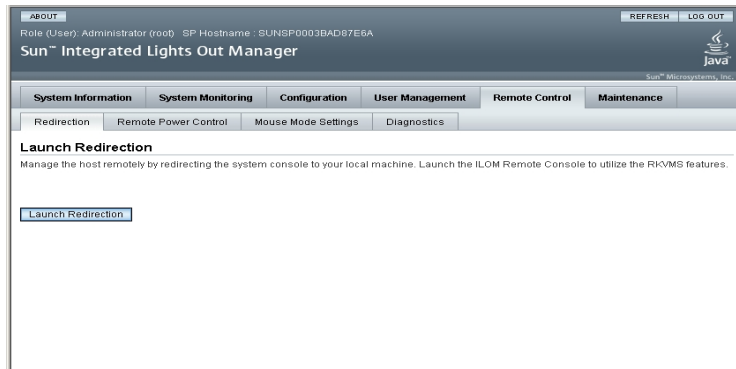
5. Click Launch Redirection.

Note – When using Windows for JavaRConsole system redirection, an additional warning appears after clicking Launch Redirection. If the Hostname Mismatch dialog box is displayed, click the Yes button.

FIGURE 5-6   Hostname Mismatch Dialog Box

The Remote Control dialog box appears.

FIGURE 5-7   Remote Control Login Dialog Box
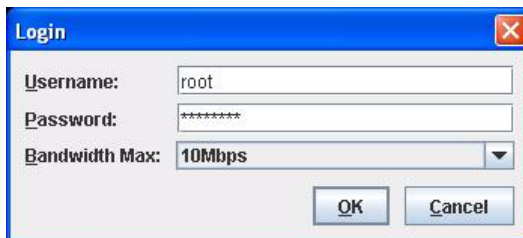
6. **In the Remote Control Login dialog box, enter your user name and password and click OK.**

The default user name is **root** and password is **changeme**.

After the login is successful, the JavaRConsole screen appears.

FIGURE 5-8 JavaRConsole Devices Menu
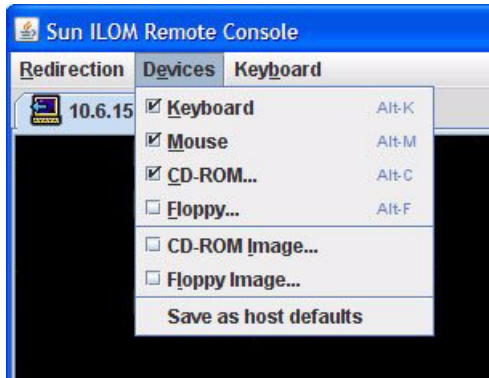
7. **From the Devices menu, select Floppy and/or CD-ROM according to the delivery method you have chosen.**

- **Floppy Disk Remote:** Select Floppy to redirect the server to the contents of the physical floppy drive attached to the JavaRConsole system.

- **Floppy Image:** Select Floppy Image to redirect the server to the mass storage drivers floppy .img image file located on the JavaRConsole system.

- **CD-ROM Remote:** Select CD-ROM to redirect the server to the operating system software CD/DVD contents from the CD/DVD-ROM drive attached to the JavaRConsole system.

- **CD-ROM Image:** Select CD-ROM Image to redirect the server to the operating system software .iso image file located on the JavaRConsole system.

Caution – Using the CD-ROM Remote or CD-ROM Image options to install the Windows Server 2003 or Windows Server 2008 will significantly increase the time necessary to perform the installation as the content of the CD-ROM is accessed over the network. The installation duration will depend on the network connectivity and traffic.

When done, proceed to the appropriate chapter for additional operating system installation instructions.

- To install Windows Server 2003, proceed to Chapter 6.

■ To install Windows Server 2008, proceed to Chapter 7.

▼ To Set Up the JavaRConsole System for Servers With ELOM

Use this procedure to start the remote console application from a browser by accessing the ELOM's web GUI. You might be presented with a series of questions. In each case, select Run.

Note – Each new ELOM system is delivered with DHCP set as the default. If an IP address is not found within 5 seconds, the system defaults to the IP address 192.168.1.2 to allow instant web access.

---

1. **Open your web browser.**

2. **In the address bar, type the IP address of the Sun server's ELOM.**

   The login screen appears.

3. **Type the default user name and password.**

   Username: **root**

   Password: **changeme**

4. **Click Login.**

   The ELOM displays the System Information screen.

   The following tabs are displayed: System Information, System Monitoring, Configuration, User Management, Remote Control, and Maintenance.

5. **Click the Remote Control tab.**

6. **Select Redirection.**

   The screen displays a Launch Redirection button.

7. **Click Launch Redirection.**

   A hostname mismatch message appears.

8. **Click Run.**

   Other security messages might appear.

9. **Click Run, OK, or Yes, as appropriate.**

The web browser downloads the embedded remote control application automatically, and the Remote Console screen appears. If the remote console does not appear, it might be blocked by web browser security controls. Reduce security configuration to allow the remote console to display.

The remote console application supports the redirection of the following types of devices:

- Video display – the server's video output is automatically displayed on the local console screen.
- Keyboard and mouse devices – Standard keyboards, mouse, and other pointing devices. Keyboard and mouse redirection is enabled by default.
- Storage devices – CD/DVD drives, Flash, DVD-ROM or floppy drives, hard drives, NFS. or ISO files.

10. **Select Storage from the menu bar and click Mount Device.**

   The Device Configuration Window displays. This enables the corresponding local storage device to connect to the remote server as though it were a storage device attached directly to that remote server.

FIGURE 5-9 Device Configuration Window
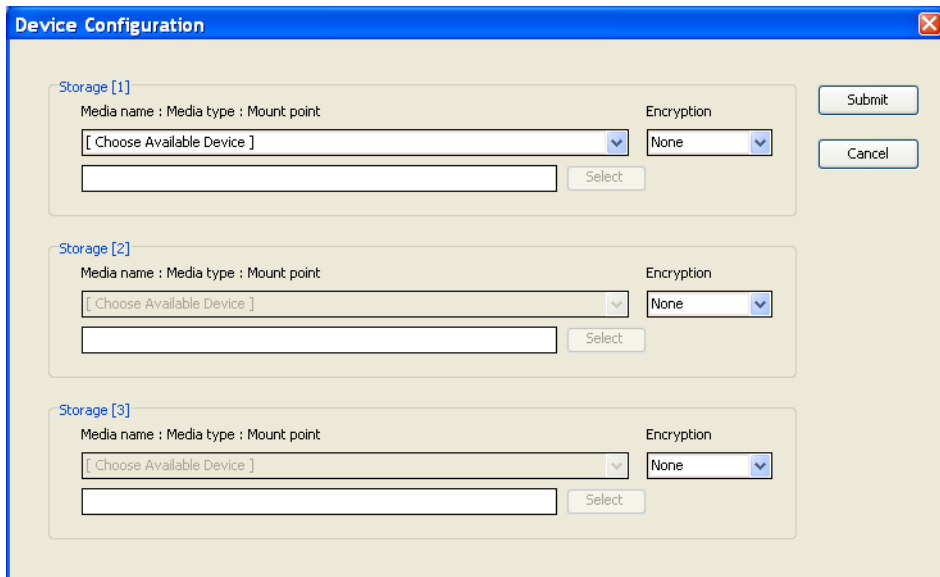
11. **From the Device Configuration window, select Floppy and/or CD-ROM according to the delivery method you have chosen.**

   - **Floppy Disk Remote:** Select Floppy to redirect the server to the contents of the physical floppy drive attached to the JavaRConsole system. This method may be used if you are installing the Windows Server 2003 on a Sun server equipped with a RAID controller.

   - **CD-ROM Remote:** Select CD-ROM to redirect the server to the operating system software CD/DVD contents from the CD/DVD-ROM drive attached to the JavaRConsole system.

   - **CD-ROM Image:** Select CD-ROM Image to redirect the server to the operating system software `.iso` image file located on the JavaRConsole system.

Caution – Using the CD-ROM Remote or CD-ROM Image options to install the Windows Server 2003 or Windows Server 2008 will significantly increase the time necessary to perform the installation as the content of the CD-ROM is accessed over the network. The installation duration will depend on the network connectivity and traffic.

---

12. **When you have made your selections, click Submit.**

   The devices are mounted and ready for the Windows install.

Proceed to the appropriate chapter for additional operating system installation instructions.

- To install Windows Server 2003, proceed to Chapter 6.
- To install Windows Server 2008, proceed to Chapter 7.

CHAPTER **6**

Install Windows Server 2003

This chapter describes how to install the Windows Server 2003 operating system directly onto your server using the Windows Server 2003 media.

Installation Requirements

Before beginning the operating system installation, make sure that the following requirements are met.

For all installation methods:

- Complete the procedures in the previous chapters of this document (Chapters 2 through 5).
- Verify that a keyboard and mouse are attached to the appropriate connections on your server. Make sure to leave a USB port free if you selected the **Floppy Disk Local** mass storage drivers installation method.
- Make a note of the server's mass storage controller. The instructions included in this chapter assume you are using one of these controllers. There are two possibilities, depending on your server:
  - **LSI-based integrated RAID controller** (you will see a banner for this displayed during POST)
  - **Adaptec-based integrated RAID controller** (you will see a banner for this displayed during POST)
- If your server uses an **LSI-based integrated RAID controller** and you want to include your boot drive as part of a RAID configuration, you will need to configure a RAID volume(s) using the controller's BIOS configuration utility (accessible by pressing Ctrl+C when prompted during server boot) before you install the Windows operating system.
- If your server uses an **Adaptec-based integrated RAID controller**, choose one of the following installation options that best matches your needs:

- If you want to include your boot disk as part of a RAID configuration, you must configure your RAID volume(s) using the controller's array configuration utility before you install the Windows operating system. The controller's BIOS configuration utility is accessible during the server boot process by pressing Ctrl+A when prompted.

- If you have a clean boot disk (no partitions) and do not want to make it part of a RAID, you must still create an array volume on it using the controller's BIOS configuration utility (accessible by pressing Ctrl+A when prompted during server boot) in order for Windows to be able to access the disk. This must be done before you install the Windows operating system. For more information, see Appendix B.

- If you have a disk with a preinstalled bootable array volume (and it is not part of an existing RAID that you want to keep) and you want to overwrite it to install Windows, no other disk preparation is required. During the Windows operating system installation you will be presented the option to overwrite any existing partition(s) within the array volume. The following figure shows an example of a system with an existing bootable array volume.

FIGURE 6-1 Example Startup Screen Showing Existing Adaptec-based Array Volume


```
Adaptec RAID BIOS V5.2-0 [Build 15594]
(c) 1998-2007 Adaptec, Inc. All Rights Reserved.

◀◀◀ Press <Ctrl><A> for Adaptec RAID Configuration Utility! ▶▶▶

Waiting for Controller to Start....Controller started

Controller #00: Sun STK RAID INT at PCI Slot:03, Bus:02, Dev:00, Func:00
Waiting for Controller to Start....Controller started
Controller monitor V5.2-0[15594], Controller kernel V5.2-0[15594]
Battery Backup Unit Present
Controller POST operation successful
Controller Memory Size: 256 MB
Controller Serial Number: 00724AA0061
Controller WWN: 5000E0CE2198A000

Array#0 - Volume      68.25 GB      Optimal
1 Array(s) Found
```

- For information about specific details of the operating system installation, refer to your Microsoft Windows documentation.

Note – The complete Microsoft Windows operating system installation process is not documented in this section. This section documents only the steps that are specific for installing Windows Server 2003 on your server.

For requirements specific to the mass storage driver and Windows media delivery methods that you have chosen, see TABLE 6-1.

TABLE 6-1   Requirements for Each Installation Method

Method	Action or items required
Floppy Disk Local	Insert the mass-storage drivers floppy disk into a USB floppy drive attached directly to one of the server's USB ports. Note that if you are using the floppy disk local installation method, the JavaRConsole floppy drive or floppy image devices must not be redirected.
Floppy Disk Remote	Connect the floppy drive to the JavaRConsole system (if necessary) and insert the mass-storage drivers floppy disk into the floppy drive.
Floppy Image	Ensure that the `floppy.img` file is accessible from the JavaRConsole system.
Windows Local	Make sure that the Microsoft Windows Server 2003 installation media and a DVD-ROM drive are available.
Windows Remote	Insert the Microsoft Windows Server 2003 installation media into the JavaRConsole system's CD or DVD-ROM drive.
Windows Image	Ensure that the Windows Server 2003 installation media is accessible from the JavaRConsole system.

Installing the Operating System

Follow these steps to install the Microsoft Windows Server 2003 software onto your server.

Note – The Solaris Operating System may be preinstalled on your server's boot disk. The Windows installation will format the boot disk and all data will be lost.

▼ To Install the Operating System

1. **Make sure that you have completed all of the requirements listed in** "Installation Requirements" on page 33.

2. **Power cycle your server.**

   The BIOS POST process begins.

3. **Press F8 when the** `Press F8 for BBS POPUP` **prompt appears on the BIOS POST screen (see** FIGURE 6-2**).**

The BBS POPUP menu will allow you to select a boot device.

FIGURE 6-2 F8 Prompt Example

4. **Once the BIOS POST process is complete, the Boot Device menu appears (see** FIGURE 6-3**). If you have selected the Windows Local installation method, insert the Windows media CD in the server's CD/DVD drive now.**

FIGURE 6-3 Boot Device Menu Example

5. **Select** `CD/DVDW` **from the Boot Device menu and press Enter.**

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

The Windows Setup process begins.

6. **If you are not using a Windows Server 2003 media CD created using the Sun reburn script, proceed to** Step 7**.**

If you are using a Windows Server 2003 media CD created using the Sun reburn script, do the following:

a. **Follow the Windows setup on-screen instructions to install the operating system.**

The required mass storage drivers have been copied to the Windows media CD by the reburn script and will be identified and installed for you during the installation process.

b. **After the initial installation of Windows, skip to** Chapter 8 **"Updating the Critical Server-Specific Drivers."**

7. **Press F6 when you see the following prompt at the bottom of the screen during the Windows Setup process:**

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

Note – The prompt is displayed in the early stages of Windows Setup and lasts for approximately five seconds and is easy to miss. If you do not press F6 while the prompt is being displayed, the screen allowing you to specify additional drivers is not displayed and the installation will fail. You will need to restart the system and go back to Step 3.

After pressing F6, a screen will appear providing you with the option to specify additional mass storage devices.

FIGURE 6-4 Specify Additional Device Screen


```
Setup could not determine the type of one or more mass storage devices
 installed in your system, or you have chosen to manually specify an adapte
 Currently, Setup will load support for the following mass storage devices(

    <none>

  * To specify additional SCSI adapters, CD-ROM drives, or special
    disk controllers for use with Windows, including those for
    which you have a device support disk from a mass storage device
    manufacturer, press S.

  * If you do not have any device support disks from a mass storage
    device manufacturer, or do not want to specify additional
    mass storage devices for use with Windows, press ENTER.



  S=Specify Additional Device   ENTER=Continue   F3=Exit
```

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

- **Floppy Disk Local:** Mass storage drivers floppy disk in floppy drive A on the server
- **Floppy Disk Remote:** Mass storage drivers floppy disk in the JavaRConsole server floppy drive
- **Floppy Image:** `floppy.img` available on the JavaRConsole system

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

   A screen appears listing the available drivers.

   FIGURE 6-5   Select Adapter Screen Example
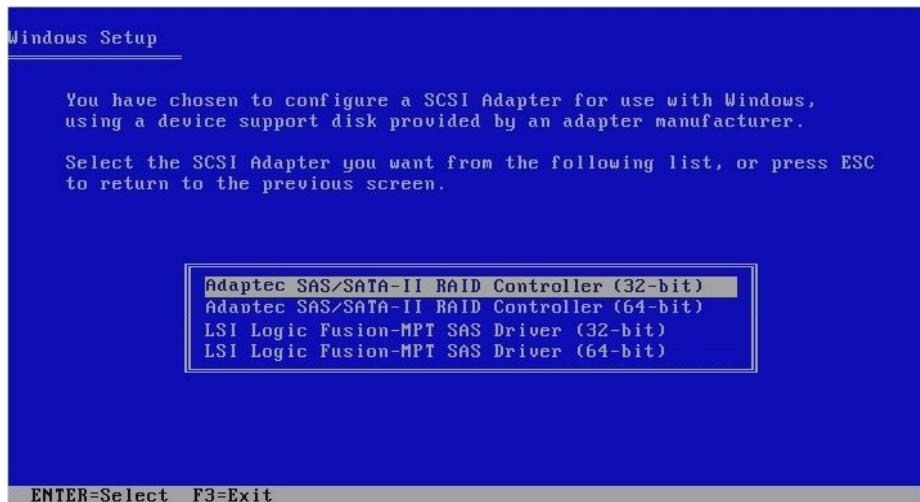
10. **Select the appropriate mass storage controller driver version depending on the version of Windows (32-bit or 64-bit) you are installing, and then press Enter:**

    - **For servers with an LSI-based integrated RAID controller, select:**
      ```
      LSI Logic Fusion - MPT SAS Driver (32-bit)
      or
      LSI Logic Fusion - MPT SAS Driver (64-bit)
      ```

    - **For servers with an Adaptec-based integrated RAID controller, select:**
      ```
      Adaptec SAS/SATA-II RAID Controller (32-bit)
      or
      Adaptec SAS/SATA-II RAID Controller (64-bit)
      ```

    Windows Setup will then display your selection.

11. **Windows Setup lists the driver to be installed. Press Enter to continue.**

FIGURE 6-6   Specify Additional Devices Screen Example


```
Windows Setup

Setup will load support for the following mass storage device(s):

    Adaptec SAS/SATA-II RAID Controller (32-bit)

  * To specify additional SCSI adapters, CD-ROM drives, or special
    disk controllers for use with Windows, including those for
    which you have a device support disk from a mass storage device
    manufacturer, press S.

  * If you do not have any device support disks from a mass storage
    device manufacturer, or do not want to specify additional
    mass storage devices for use with Windows, press ENTER.




    S=Specify Additional Device    ENTER=Continue    F3=Exit
```

12. **At the Welcome to Setup screen, press Enter to continue.**

    The Setup Selection screen is displayed.

13. **Select a setup mode (Express or Custom) and continue**.

    If you created a RAID volume on your boot disk as part of your prerequisite
    preparations for installing Windows, press C to select **Custom Setup** and
    manually partition the disk. Make sure to reserve a minimum of 200 MB of
    unpartitioned space at the end of the drive. Otherwise, press Enter to select
    Express Setup.

FIGURE 6-7   Select Setup Screen


```
Windows Server 2003, Enterprise Edition Setup

  Windows Setup can automatically configure most aspects of your
  installation, requiring little or no input from you.  If you are
  configuring a computer with no local monitor or keyboard, you
  must use this feature or setup will not complete.

  If you would like to use this feature, please press ENTER now.

  If you would like to proceed with a manual installation, please
  press the C key now.



   ENTER=Express Setup  C=Custom Setup  F3=Quit
```

14. **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 JavaRConsole server.
    - **Floppy Image:** Deselect Floppy Image from the JavaRConsole Devices menu.

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

15. **Proceed to** Chapter 8 **"Updating the Critical Server-Specific Drivers."**

CHAPTER **7**

Install Windows Server 2008

This chapter describes how to install the Windows Server 2008 operating system directly onto your server using the Windows Server 2008 media.

Installation Requirements

Before beginning the operating system installation, make sure that the following requirements are met.

For all installation methods:

- Complete the procedures in the previous chapters of this document that apply (Chapters 2 through 5).

- Verify that a keyboard and mouse are attached to the appropriate connections on your server.

- Make a note of the integrated mass storage controller you received with your server. The instructions included in this chapter assume you are using one of these controllers. There are two possibilities, depending on your server:

  - **LSI-based integrated RAID controller** (you will see a banner for this displayed during POST)

  - **Adaptec-based integrated RAID controller** (you will see a banner for this displayed during POST)

- If your server uses an **LSI-based integrated RAID controller** and you want to include your boot drive as part of a RAID configuration, you will need to configure a RAID volume(s) using the controller's BIOS configuration utility (accessible by pressing Ctrl+C when prompted during server boot) before you install the Windows operating system.

- If your server uses an **Adaptec-based integrated RAID controller**, choose one of the following installation options that best matches your needs:

- If you want to include your boot disk as part of a RAID configuration, you must configure your RAID volume(s) using the controller's array configuration utility before you install the Windows operating system. The controller's BIOS configuration utility is accessible during the server boot process by pressing Ctrl+A when prompted.

- If you have a clean boot disk (no partitions) and do not want to make it part of a RAID, you must still create an array volume on it using the controller's BIOS configuration utility (accessible by pressing Ctrl+A when prompted during server boot) in order for Windows to be able to access the disk. This must be done before you install the Windows operating system. For more information, see Appendix B.

- If you have a disk with a preinstalled bootable array volume (and it is not part of an existing RAID that you want to keep) and you want to overwrite it to install Windows, no other disk preparation is required. During the Windows operating system installation you will be presented the option to overwrite any existing partition(s) within the array volume. The following figure shows an example of a system with an existing bootable array volume.

FIGURE 7-1 Example Startup Screen Showing Existing Adaptec-based Array Volume


```
Adaptec RAID BIOS V5.2-0 [Build 15594]
(c) 1998-2007 Adaptec, Inc. All Rights Reserved.

◀◀◀ Press <Ctrl><A> for Adaptec RAID Configuration Utility! ▶▶▶

Waiting for Controller to Start....Controller started

Controller #00: Sun STK RAID INT at PCI Slot:03, Bus:02, Dev:00, Func:00
Waiting for Controller to Start....Controller started
Controller monitor V5.2-0[15594], Controller kernel V5.2-0[15594]
Battery Backup Unit Present
Controller POST operation successful
Controller Memory Size: 256 MB
Controller Serial Number: 00724AA0061
Controller WWN: 5000E0CE2198A000

Array#0 - Volume     68.25 GB     Optimal
1 Array(s) Found
```

- For information about specific details of the operating system installation, refer to your Microsoft Windows documentation.

Note – The complete Microsoft Windows operating system installation process is not documented in this section. This section documents only the steps that are specific for installing Windows Server 2008 on your server.

For requirements specific to the Windows media delivery methods that you have chosen, see TABLE 7-1.

TABLE 7-1   Requirements for Each Installation Method

Method	Action or items required
Windows Local	Make sure that the Microsoft Windows Server 2008 installation media and a DVD-ROM drive are available.
Windows Remote	Insert the Microsoft Windows Server 2008 installation media into the JavaRConsole system's CD or DVD-ROM drive.
Windows Image	Ensure that the Windows Server 2008 installation media is accessible from the JavaRConsole system.

Installing the Operating System

Follow these steps to install the Microsoft Windows Server 2008 software onto your server.

Note – The Solaris Operating System may be preinstalled on your server's boot disk. The Windows installation will format the boot disk and all data will be lost.

▼ To Install the Operating System

1. **Make sure that you have completed all of the requirements listed in** "Installation Requirements" on page 41.

2. **Power cycle your server.**

   The BIOS POST process begins.

3. **Press F8 when the** `Press F8 for BBS POPUP` **prompt appears on the BIOS POST screen (see** FIGURE 7-2**).**

   The BBS POPUP menu will allow you to select a boot device.

FIGURE 7-2   F8 Prompt Example

```
Initializing USB Controllers .. Done.
Press F2 to run Setup (CTRL+E on Remote Keyboard)
Press F8 for BBS POPUP  (CTRL+P on Remote Keyboard)
Press F12 to boot from the network (CTRL+N on Remote Keyboard)
```

4. **Once the BIOS POST process is complete, the Boot Device menu appears (see FIGURE 7-3). If you have selected the Windows Local installation method, insert the Windows media DVD in the server's DVD drive now.**

FIGURE 7-3   Boot Device Menu Example
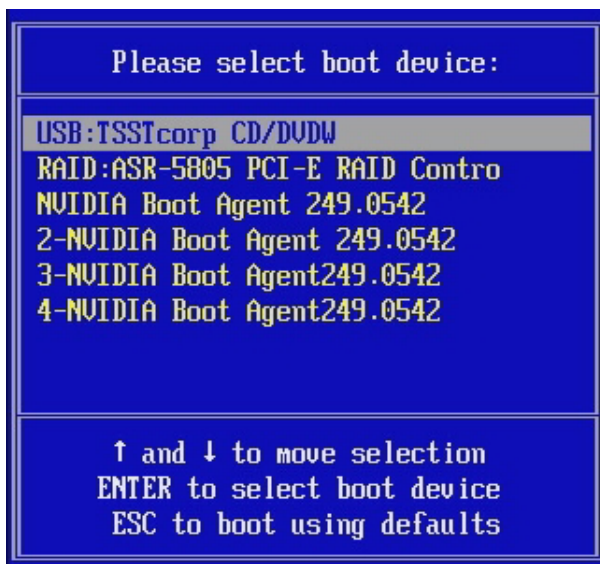
```
            Please select boot device:

USB:TSSTcorp CD/DVDW
RAID:ASR-5805 PCI-E RAID Contro
NVIDIA Boot Agent 249.0542
2-NVIDIA Boot Agent 249.0542
3-NVIDIA Boot Agent249.0542
4-NVIDIA Boot Agent249.0542


     ↑ and ↓ to move selection
     ENTER to select boot device
     ESC to boot using defaults
```

5. **Select** CD/DVDW **from the Boot Device menu and press Enter.**

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

6. **The Windows installation wizard starts. Proceed through the installation wizard until you see the Installation Type page displayed, and then click Custom (advanced).**
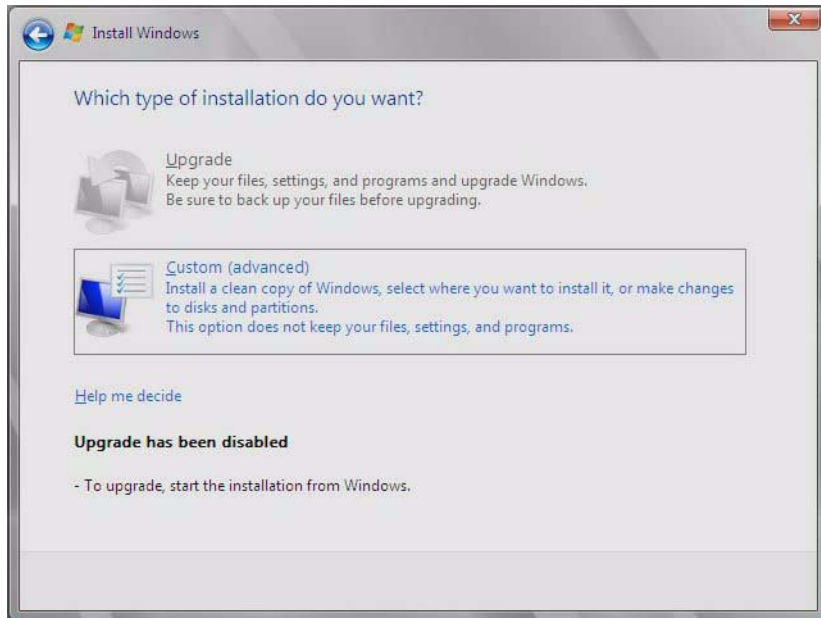
7. **You will then see the Where Do You Want to Install Windows page (see FIGURE 7-5), do one of the following:**

FIGURE 7-5   Where to Install Windows Page Example
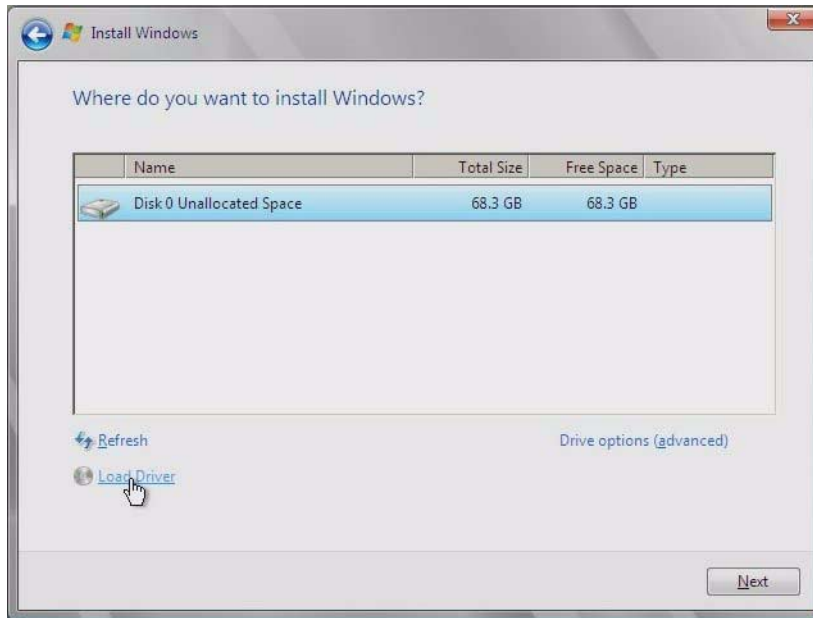
8. **Do one of the following:**

   - **If you *do not* want to override the Windows Default partition information, click Next and skip to** Step 10.

   - **If you *do* want to override the Windows default partition information, click the Driver Options (advanced) option and proceed to** Step 9.

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

9. **At the Advanced Driver Options page (see** FIGURE 7-6**), do the following:**

FIGURE 7-6 Windows Partition Management Page
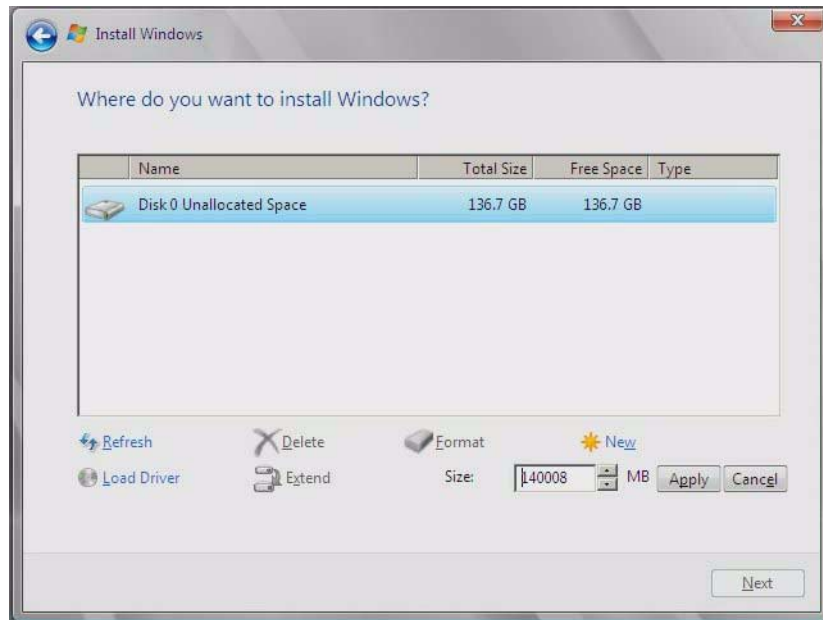
a. **Click Delete to delete the existing partition.**

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

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

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

10. **The Windows installation begins.**

    The server will reboot multiple times during the installation process.

11. **When Windows installation is complete, Windows starts and prompts you to change the user password. Click OK and proceed to setup the initial user login account.**

Note – Windows 2008 enforces stronger password schemes for user accounts. Password standards include restrictions on length, complexity and history. If you need more details, click the Accessibility link at the account creation page.

Once the initial user account is created, the Windows Server 2008 desktop is displayed.

12. **Proceed to** Chapter 8 **"Updating the Critical Server-Specific Drivers" to install server-specific software and the latest Sun-supported drivers.**

Update the Critical Server-Specific Drivers

This chapter describes how to update the Windows Server installation with server-specific device driver software.

This chapter contains the following sections:

The procedures in this chapter assume that you already:

- Installed the Microsoft Windows Server 2003 or Windows Server 2008 operating system.
- Have your server's latest Tools and Drivers CD/DVD. An ISO image of the Tools and Drivers CD/DVD may also be downloaded from the Sun download site as described in Chapter 2.

Updating the Server-Specific Drivers

Sun provides a wizard to install Sun server-specific drivers and supplemental software. The Sun Fire Installation Package wizard may be started from the main menu of your server's Tools and Drivers CD/DVD. You may also choose to install the drivers manually from the Tools and Drivers CD/DVD from a command line.

Follow the directions for using either method are described below:

▼ To Update the Server-Specific Drivers Using the Installation Wizard

1. **Insert the Tools and Drivers CD/DVD into the server's CD/DVD drive. The CD will autostart.**

   The Tools and Drivers main menu displays.

FIGURE 8-1 Sun Fire X4150 Tools and Drivers Main Menu Example

2. **At the main menu, click Software and Driver Installation.**

   The Driver Installation/Update screen displays.

FIGURE 8-2   Sun Fire X4150 Driver Installation/Update Page Example

3. Click the Install/Update drivers option.

The Install/Update drivers wizard begins. Follow the on-screen instructions to install the critical drivers for your server.

Note – To utilize the additional features of the Intel PROSet network interface software, such as NIC teaming, fault tolerance, load balancing, etc., refer to the section "Additional Information for Supplemental Software" on page 56 after you have completed updating the critical server drivers and installing supplemental software.

---

4. When done, proceed to "Installing Supplemental Software" on page 54**.**

▼ To Update Server-Specific Drivers Manually

If your server has an on-board DVD drive, you can manually install the drivers directly on the server using the Sun Fire Server Tools and Drivers CD/DVD.

1. Insert the Sun Fire Server Tools and Drivers CD/DVD into the CD/DVD drive. If the CD autostarts, click the close icon at the main menu.

2. Using Windows explorer, navigate to the chipset drivers:

cdromdrive:\drivers\windows\chipset

Where *cdromdrive* is the drive letter of the CD/DVD drive containing the Tools and Drivers CD/DVD.

3. Double-click on the `.exe` **executable file to start the installation process.**

Follow the on-screen instructions to install the chipset drivers. When done, proceed to the next step.

4. Using Windows explorer, navigate to the Ethernet drivers:

cdromdrive:`\drivers\windows\IntelNIC`

- Double-click on the `.exe` file and follow the on-screen instructions to install the ethernet drivers. When done, proceed to Step 5.

  –or–

- Install the drivers using the Windows Device Manager, as follows:

a. Open the Device Manager.

b. Right-click on the NIC with the yellow bang (!) and choose Update.

c. Select No, not at this time, and click Next.

d. Select Install from a List or Specific Location, and click Next.

e. Click Browse, and point to the NIC driver on the CD/DVD path:

`d:\drivers\windows\IntelNIC\2003\2003_`*version*

Where *version* is the version of Windows, 32-bit/64-bit.

Note – To utilize the additional features of the Intel Proset software, such as NIC teaming, fault tolerance, load balancing, etc., refer to the section "Additional Information for Supplemental Software" on page 56 after you have completed updating the critical server drivers and installing supplemental software.

---

5. Using Windows explorer, navigate to the TPM drivers:

cdromdrive:`\drivers\windows\tpm`

a. Extract the `.zip` **file.**

b. Double-click on the executable.

Follow the installation wizard to install TPM drivers. When done, proceed to the next step.

6. Using Windows explorer, navigate to the AST2000 display drivers:

cdromdrive:`\drivers\windows\display\`*version*

Where *version* is the version of Windows: 2003 32-bit/64-bit, or 2008 32-bit/64-bit.

a. Open the Windows Device Manager.

b. Right-click the display driver, and choose Update.

c. **The Hardware Update Wizard appears.**

d. **Select No, not at this time, and click Next.**

e. **In the dialog box that follows, select Install from a list or specific location and click Next.**

f. **Click Browse and navigate to the following directory on the Tools and Drivers CD/DVD:**

   cdromdrive:\drivers\windows\display*version*

   Where *version* is the version of Windows: 2003 32-bit/64-bit, or 2008 32-bit/64-bit.

g. **Click OK, and then click Next.**

   The AST2000 driver is installed.

7. **For Windows Server 2003 SP1 installations, use Windows explorer to navigate to the IPMI driver:**

   cdromdrive:\utilities\ipmitool\Windows*version*

   Where *version* is the version of Windows Server 2003 SP1: 32-bit or 64-bit.

   a. **Double-click the** ipmievd-*version*.exe **executable to install the IPMI Management Driver.**

      Where *version* is the version number for the software.

   b. **Double-click the** ipmitool-*version*.exe **executable to install the IPMItool.**

Note – Additional setup may be required to use the IPMItool. Refer to "Completing the IPMItool Installation" on page 61 for additional instructions.

---

8. **Reboot the server.**

9. **Proceed to** "Installing Supplemental Software" on page 54**.**

Installing Supplemental Software

There are supplemental software components available for your Sun Fire server. The software supported for your server is listed in the following table.

TABLE 8-1   Supplemental Software

Available Components	Servers with LSI-based Integrated RAID Controller	Servers with Adaptec-based Integrated RAID Controller
LSI MegaRAID Storage Manager—Allows you to configure, monitor, and maintain RAID on the LSI SAS3081E-S integrated RAID controller. Refer to "Managing RAID Using the MegaRAID Storage Manager (MSM)" on page 57.	Supported	Not applicable
LSI SAS-IR Storage SNMP Agent—Captures SNMP data on the LSI SAS3081E-S integrated RAID controller. Requires the Windows Component for SNMP service for operation.	Supported	Not applicable
Sun STK RAID Manager—Allows you to configure, administer and monitor RAID on the Sun StorageTek integrated RAID controller (Adaptec-based). Refer to "Managing RAID Using the StorageTek RAID Manager" on page 57.	Not applicable	Supported

Choose a method for installing supplemental software on your server:

-
-

▼ To Install Supplemental Software Using the Installation Wizard

1. **Insert the Tools and Drivers CD/DVD into the server's CD/DVD drive. The CD will autostart.**

   The Tools and Drivers main menu displays.

FIGURE 8-3   Sun Fire X4150 Tools and Drivers Main Menu Example

2. At the main menu, click Software and Driver Installation.

The Driver Installation/Update screen displays.

FIGURE 8-4   Sun Fire X4150 Driver Installation/Update Page Example

3. Do one of the following:

- If you have an LSI 3081E-S RAID controller, click `Install LSI 3081E Mgmt Software`.

  –or–

- If you have a Sun StorageTek RAID controller (Adaptec-based), click `Install SunStorageTEK Mgmt Software`.

4. **Follow the on-screen instructions to install the management software for your RAID controller.**

When done, proceed to "Additional Information for Supplemental Software" on page 56 to learn more about your supplemental software.

▼ To Install the Supplemental Software Manually

If your server has an integrated DVD drive, you can manually install the supplemental software for your integrated RAID controller directly on the server using the Sun Fire Server Tools and Drivers CD/DVD.

1. **Insert the Sun Fire Server Tools and Drivers CD/DVD into the CD/DVD drive. If the CD autostarts, click the close icon at the main menu.**

2. **Using Windows explorer, navigate to the appropriate RAID controller software directory:**
   - Sun StorageTek RAID software:

     cdromdrive`:\RAIDmgmt\StorageTEK\windows\`*version*

   --or--
   - LSI SAS3081E-S RAID software:

     cdromdrive`:\RAIDmgmt\LSI\windows\`*version*

   Where *cdromdrive* is the drive letter of the CD/DVD drive containing the Tools and Drivers CD/DVD, and *version* is the version number for the software.

3. **Double-click on the** `.exe` **executable file to start the installation process.**

   Follow the onscreen instructions to install the software.

When done, proceed to "Additional Information for Supplemental Software" on page 56 to learn more about your supplemental software.

Additional Information for Supplemental Software

This section lists additional information about Sun supplemental software for your server. This information includes:

Managing RAID Using the MegaRAID Storage Manager (MSM)

The MSM program enables you to configure the LSI-based integrated RAID controller, physical disk drives, and virtual disk drives on your system. The Configuration Wizard in the MSM program simplifies the process of creating disk groups and virtual disk drives by guiding you through several simple steps to create your storage configurations.

MSM works with the appropriate operating system (OS) libraries and drivers to configure, monitor, and maintain storage configurations attached to x64 servers. The MSM GUI displays device status in the form of icons, which represent the controllers, virtual disk drives, and physical disk drives on your system. Special icons appear next to the device icons on the screen to notify you of disk failures and other events that require immediate attention. System errors and events are recorded in an event log file and are displayed on the screen.

For information on using MSM, refer to the *Sun LSI 106x RAID User's Guide* for your server on the Sun product documentation web site at:

http://docs.sun.com/app/docs/coll/sf-hba-lsi

Managing RAID Using the StorageTek RAID Manager

For Sun servers with an Adaptec-based internal RAID controller, you can use the Sun StorageTek RAID Manager graphical user interface (GUI), command line interface (CLI) or the Adaptec Configuration Utility to build your storage space.

■ The Sun StorageTek RAID Manager software is an application that helps you build a storage space for your online data. Your storage space can include direct-attached or internal RAID storage. With the Sun StorageTek RAID Manager software, you can group disk drives into logical drives and build in redundancy to protect your data and improve system performance. You can also use the software to monitor and manage all the HBAs, enclosures, and disk drives in your storage space from a single location.

- The Adaptec Configuration Utility is a BIOS-based utility that enables you to create and manage controllers, disk drives and other devices, and arrays using the integrated RAID controller (Adaptec-based). If you use the BIOS Configuration Utility to create arrays, the Sun StorageTek RAID Manager GUI detects those arrays and displays them as logical drives in the GUI.

- The `arrconf` command-line interface (CLI) can be used with the Sun StorageTek SAS RAID HBA to perform many of the same tasks provided with the StorageTek RAID Manager GUI.

Available documentation for the above components may be found on the Sun documentation web site at:

http://docs.sun.com/app/docs/coll/dsk-cntrl

Using Intel NIC Teaming

Intel® PROSet for Windows Device Manager is an extension to the Windows Device Manager. When you update the critical drivers for your Sun Fire server, Intel PROSet software configuration tabs are automatically added to the network adapters listed in Device Manager. Intel PROSet includes features such as teaming of your network interface ports, fault tolerance, load balancing, link aggregation, and Virtual LAN (VLAN) tagging.

Note – For information about identifying the active network connections on your server, refer to Appendix A.

▼ To Access Intel NIC Teaming Configuration Settings

To access the functions available for your server's network interface, do the following:

1. **From the Taskbar, click Start, and then click Run.**

   The run dialog box is displayed.

2. **In the Open list, type** `devmgmt.msc`**, and then click OK.**

   The Device Manager dialog box is displayed.

3. **Expand the Network adapters group and select the first adapter.**

4. **Right-click the selection and click Properties.**

   The adapter properties dialog box is displayed.

FIGURE 8-5   Intel NIC Adapter Properties

5. **To setup NIC teaming, click the Teaming tab.**

   The teaming options are displayed (see FIGURE 8-5).

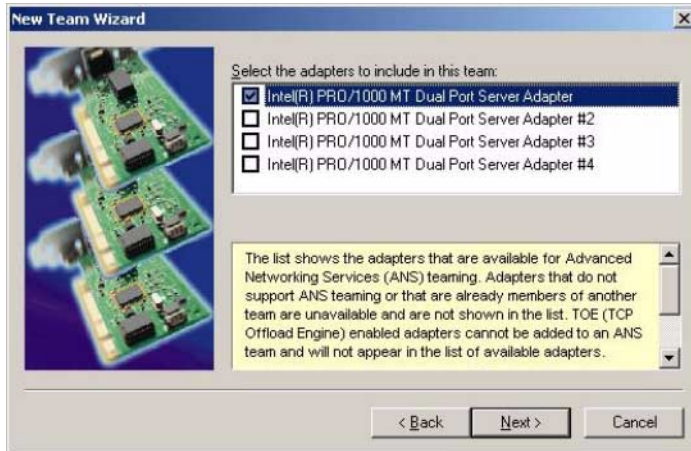6. **Select Team with other adapters and then click New Team.**

   The New Team Wizard is displayed.

FIGURE 8-6 New Team Wizard

7. Click Next. The Adapter Selection page is displayed.

FIGURE 8-7 Adapter Selection Page

8. Select the adapters to be included in the team from the list of installed adapters and then click Next.

The wizard will guide you through the configuration and setup of your team.

Learning More About Intel NIC Teaming

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

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

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

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

Completing the IPMItool Installation

The IPMItool is a command line utility that reads the sensor data repository (SDR) and displays sensor values, System Event Log (SEL), Field Replaceable Unit (FRU) inventory information, gets and sets LAN configuration parameters, and performs chassis power control operations via the server's service processor (SP). IPMItool is supplemental software and may be installed using the server's Tools and Drivers CD/DVD (described earlier in this chapter).

Once installed, the IPMItool may be used to access your server's service processor (or another Sun server's Service Processor) in the following ways:

- Through the server's ILOM (*Integrated Lights Out Manager*) or ELOM (*Embedded Lights Out Manager*) interface. For details on using ILOM or ELOM, refer to your server's documentation.
- Through the server's Windows operating system. To use the IPMItool with Windows, it must be used in conjunction with the IPMI System Management driver (available with Windows Server 2003 R2 or R2 SP2, or as a Sun supplemental software component for Windows Server 2003 SP1). To make sure you have what you need to use the IPMItool with Windows Server 2003, refer to the requirements listed below.

Requirements

To use IPMItool, ensure that you have completed the requirements specified for your Windows Server 2003 version:

For Windows Server 2003 SP1:

- Install the IPMI tool as described in "To Install Supplemental Software Using the Installation Wizard" on page 54.
- Install the Sun IPMI System Management driver as described in "To Install Supplemental Software Using the Installation Wizard" on page 54.

■ No configuration is required. IPMITool is ready for use.

For Windows Server 2003 R2 and R2 SP2:
- ■ Install the IPMI tool as described in "To Install Supplemental Software Using the Installation Wizard" on page 54.
- ■ Install Microsoft's IPMI System Management driver in Windows Server 2003 R2 or R2 SP2.
- ■ Configuration is required. Perform the steps described in "To Install Microsoft's IPMI System Management Driver (Windows Server 2003 R2 and R2 SP2)" on page 62.

For Windows Server 2008:
- ■ Install IPMI tool as described in "To Install Supplemental Software Using the Installation Wizard" on page 54.
- ■ No configuration is required. IPMITool is ready for use.

▼ To Install Microsoft's IPMI System Management Driver (Windows Server 2003 R2 and R2 SP2)

Do the following before attempting to use IPMItool through the Windows operating system:

1. Install 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 Management and Monitoring Tools component, and then click Details.

   The Management and Monitoring Tools page is displayed.

   d. Do one of the following:
   - ■ **If the Select the Hardware Management subcomponent check box is already selected, skip to** Step 2.
   - ■ **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.

2. **Instantiate the IPMI System Management driver.**

3. **On the Taskbar, click Start, and then click Run.**

   The Run dialog box is displayed.

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

   ```
   rundll32 ipmisetp.dll,AddTheDevice
   ```

5. **Click OK.**

   The IPMI System Management driver is instantiated.

6. **To ensure that the IPMI System Management driver is installed, repeat steps 1a through 1c, 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, please see:

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

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 9-1.

TABLE 9-1   Server-specific Drivers Required for WIM or RIS Images

Driver/Device	Incorporate for Windows Server 2003		Incorporate for Windows Server 2008	
	32-bit	64-bit	32-bit	64-bit
Aspeed Graphic Driver	Yes	Yes	Yes	Yes
Disk Controller Driver (server dependant):				
• Intel ESB-2 integrated disk controller	Yes	Yes	No	No
--or--				
• LSI Logic Fusion-MPT RAID HBA	Yes	Yes	Yes	Yes
--or--				
• StorageTek SG-XPCIESAS-R (also referred to as Adaptec RAID controller)	Yes	Yes	Yes	Yes
Intel ESB-2 Chipset Drivers	Yes	Yes	No	No
Intel ESB-2 SP Drivers	Yes	Yes	No	No
Infineon TPM Drivers	Yes	Yes	No	No
Intel NIC Drivers	Yes	Yes	Yes	Yes

Add Drivers to a WIM Image

This section contains information on adding server-specific drivers for your Sun Fire X4150, X4250 or X4450 server to a WIM image.

Note – The procedures in the section assume the Windows Deployment Services are running on a system with Windows Server 2003.

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.

- Have the latest Tools and Drivers CD/DVD for your server, see "Download Server-Specific Driver Packages" on page 7.

Note – All examples below are for a Sun Fire X4150 server with version 2.1.0 of the Tools and Drivers CD/DVD. For the Sun Fire X4250 and X4450, the same instructions apply, but file paths on the Tools and Drivers CD/DVD may differ.

▼ 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 and Drivers CD/DVD 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 X4150 Server Tools and Drivers CD/DVD, 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 and Drivers CD/DVD:

```
Tools & Drivers CD/DVD Windows Server 2003 32-bit files:
cdromdrive:\drivers\windows\Chipset\win2003
                    ...\Chipset\win2003\SP
                    ...\Chipset\AHCI\2003_32
                    ...\Display\2003_32
                    ...\RAID\LSI\2003_32
                    ...\RAID\StorageTEK\2003
                    ...\TPM\2003_32\TPM_Driver
                    ...\IntelNIC\PROXGB\Win32
                    ...\InetlNIC\PRO1000\Win32
```

```
Tools & Drivers CD/DVD Windows Server 2003 64-bit files:
cdromdrive:\drivers\windows\Chipset\
                      ...\Chipset\win2003\SP
                      ...\Chipset\AHCI\2003_64
                      ...\Display\2003_64
                      ...\RAID\LSI\2003_64
                      ...\RAID\StorageTEK\2003\amd64
                      ...\TPM\2003_64\TPM_Driver
                      ...\IntelNIC\PROXGB\Winx64
                      ...\InetlNIC\PRO1000\Winx64




Tools & Drivers CD/DVD Windows Server 2008 32-bit files:
cdromdrive:\drivers\windows\Display\2008_32
                      ...\RAID\LSI\2003_32
                      ...\RAID\StorageTEK\2008
                      ...\IntelNIC\PROXGB\Win32
                      ...\InetlNIC\PRO1000\Win32




Tools & Drivers CD/DVD Windows Server 2008 64-bit files:
cdromdrive:\drivers\windows\Display\2008_64
                      ...\RAID\LSI\2003_64
                      ...\RAID\StorageTEK\2008\amd64
                      ...\IntelNIC\PROXGB\Winx64
                      ...\InetlNIC\PRO1000\Winx64
```

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, `DriverPack\x64` is for 64-bit Windows, and `DriverPack\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 and Drivers CD/DVD).** See examples below:

```
Windows Server 2003 32-bit WIM folder structure:
\\yourshare\share\DriverPack\x86\Chipset
                              ...\Display\
                              ...\RAID\AHCI
                              ...\RAID\LSI
                              ...\RAID\StorageTEK
                              ...\TPM
                              ...\IntelNIC\PROXGB
                              ...\InetlNIC\PRO1000
```

```
Windows Server 2003 64-bit WIM folder structure:
\\yourshare\share\DriverPack\x64\Chipset
                              ...\Display\
                              ...\RAID\AHCI
                              ...\RAID\LSI
                              ...\RAID\StorageTEK
                              ...\TPM
                              ...\IntelNIC\PROXGB
                              ...\InetlNIC\PRO1000
```

```
Windows Server 2008 32-bit WIM folder structure:
\\yourshare\share\DriverPack\x86\Display
                              ...\RAID\LSI
                              ...\RAID\StorageTEK
                              ...\IntelNIC\PROXGB
                              ...\InetlNIC\PRO1000
```

```
Windows Server 2008 64-bit WIM folder structure:
\\yourshare\share\DriverPack\x64\Display
                           ...\RAID\LSI
                           ...\RAID\StorageTEK
                           ...\IntelNIC\PROXGB
                           ...\InetlNIC\PRO1000
```

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 version (**`x86` **or** `x64`**) folder in the** `DriverPack` **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*`\DriverPack\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\DriverPack\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 X4150, X4250, or X4450 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

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

Note – All examples below are for a Sun Fire X4150 server with version 2.1.0 of the Tools and Drivers CD/DVD. For the Sun Fire X4250 and X4450, the same instructions apply, but file paths on the Tools and Drivers CD/DVD may differ.

▼ 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 SP1 32-bit on the RIS server by doing the following:**

   a. **Insert Windows Server 2003 SP1 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 SP1 32-bit CD in it, and then click Next.**

   g. **Type a descriptive name for the stored Windows 2003 SP1 32-bit CD, and then click Next.**

      For example: `X4150_Windows_2003_SP1_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** **with the RIS Intel Ethernet drivers for Windows 2003 SP1 32-bit.**

   The RIS Intel Ethernet drivers can be found on the Tools and Drivers CD/DVD.

   a. Insert the Tools and Drivers CD/DVD into the RIS server.

   b. Copy the Windows 2003 SP1 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 and Drivers CD/DVD.

   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 LSI SAS3081E-S RAID controller, add the following entries:

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

[MassStorageDrivers]
"LSI Logic Fusion-MPT SAS Driver (Server 2003 32-bit)"="OEM"

[OEMBootFiles]
txtsetup.oem
cocpyinf.dll
lsi_sas.cat
lsi_sas.inf
lsi_sas.sys
lsi_sas.tag
lsipseud.inf
symmpi.inf
symmpi.sys

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

[Identification]
JoinWorkgroup = WORKGROUP
```

- For the Sun StorageTek RAID controller, add the following entries:

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

[MassStorageDrivers]
"Adaptec SAS/SATA-II RAID Controller"="OEM"

[OEMBootFiles]
txtsetup.oem
raiddisk1
arcsas.cat
arcsas.inf
arcsas.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*

      Where *image_dir* is 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 and Drivers CD/DVD has the Windows 2003 SP1 32-bit drivers located at one of the following:

- For the LSI SAS3081E RAID controller, copy the files as shown:

```
> Copy cdrom_drive:\drivers\windows\RAID\LSI\2003_32\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\textmode

> Copy cdrom_drive:\drivers\windows\chipset\win2003\*
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\2003_32\TPM_Driver\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
tpm

> Copy cdrom_drive:drivers\windows\Display\2003_32\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
video
```

- For the Sun StorageTek RAID controller, copy the files as shown:

```
> Copy cdrom_drive:\drivers\windows\RAID\StorageTEK\2003\* D:\
remoteinstall\setup\english\images\image_dir\$oem$\textmode

> Copy cdrom_drive:\drivers\windows\chipset\win2003\*
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\2003_32\TPM Driver\* D:\
remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\tpm

> Copy cdrom_drive:\drivers\windows\Display\2003_32\* D:\
remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\video
```

8. **Modify the** txtsetup.oem **file.**

   a. **In a text editor, open the** D:\RemoteInstall\Setup\English\Images\
   image_dir\oem\textmode\txtsetup.oem file**.**

   Where *image_dir* is the directory on the RIS server that contains the RIS image.

b. **Comment out the** dll **files in the** [Files.scsi.RAIDClASS] **and** [Files.scsi.BUSDRV] **sections by adding a semicolon at the beginning of each line.**

c. **Save the changes and exit the file.**

9. **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

10. **Install the image onto your 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.

Note – All examples below are for a Sun Fire X4150 server with version 2.1.0 of the Tools and Drivers CD/DVD. For the Sun Fire X4250 and X4450, the same instructions apply, but file paths on the Tools and Drivers CD/DVD may differ.

▼ 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: **`X4150_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** **with the RIS Intel Ethernet drivers for Windows 2003 SP1 64-bit.**

   The RIS Intel Ethernet drivers can be found on the Tools and Drivers CD/DVD.

   a. **Insert the Tools and Drivers CD/DVD 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 and Drivers CD/DVD.

   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`

      Where *image_dir* is 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 LSI SAS3081E-S RAID controller, use the following:

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

[MassStorageDrivers]
"LSI Logic Fusion-MPT SAS Driver (Server 2003 x64)"="OEM"

[OEMBootFiles]
txtsetup.oem
s2k3am64.cat
lsi_sas.sys
lsi_sas.inf
lsinodrv.inf

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

[Identification]
JoinWorkgroup = WORKGROUP
```

- For the Sun StorageTek RAID controller, use the following:

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

[MassStorageDrivers]
"Adaptec SAS/SATA-II RAID Controller"="OEM"
"Adaptec RAID Controller (x64 device drivers)"="OEM"

[OEMBootFiles]
txtsetup.oem
raiddisk1
arcsas.cat
arcsas.inf
arcsas.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 and Drivers CD/DVD has the Windows 2003 SP1 64-bit drivers located at one of the following:

   ■ For the LSI SAS3081E-S RAID controller, use the following:

```
> Copy cdrom_drive:\drivers\windows\RAID\LSI\2003_64\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\textmode

> Copy cdrom_drive:\drivers\windows\chipset\*
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\2003_64\TPM Driver\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
tpm

> Copy cdrom_drive:\drivers\windows\Display\2003_64\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
video
```

■ For the Sun StorageTek RAID controller, use the following:

```
> Copy cdrom_drive:\drivers\windows\RAID\StorageTEK\2003\amd64\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\textmode

> Copy cdrom_drive:\drivers\windows\chipset\* 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\2003_64\TPM_Driver\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
tpm

> Copy cdrom_drive:drivers\windows\Display\2003_64\*
D:\remoteinstall\setup\english\images\image_dir\$oem$\$1\drivers\
video
```

8. **Modify the** txtsetup.oem **file.**

   a. **In a text editor, open the** D:\RemoteInstall\Setup\English\Images\
      image_dir\oem\textmode\txtsetup.oem **file.**

      Where *image_dir* is the directory on the RIS server that contains the RIS image.

   b. **Save and exit the file.**

9. **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

10. **Install the image onto your Sun Fire 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 72.

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 and Drivers CD/DVD 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.**

Configure Windows Network Communication Settings With Multiple Network Interfaces

This appendix provides information you should consider when configuring the Windows network communication settings with multiple server network interfaces.

Topics in this appendix include:

- "Determine Which Network Data Ports Are Actively Connected to a Network" on page 86.
- "Confirm Physical Port MAC Addresses and Match Them to Window Device Names" on page 87.

▼ Determine Which Network Data Ports Are Actively Connected to a Network

By using Microsoft's Network Connections folder, you can visually determine which network interface ports are actively connected to a network. To access the Network Connections folder, follow this step:

● **Click Start -> Settings -> Control Panel-> Network Connections.**

The Network Connections folder appears identifying the actively connected data ports.
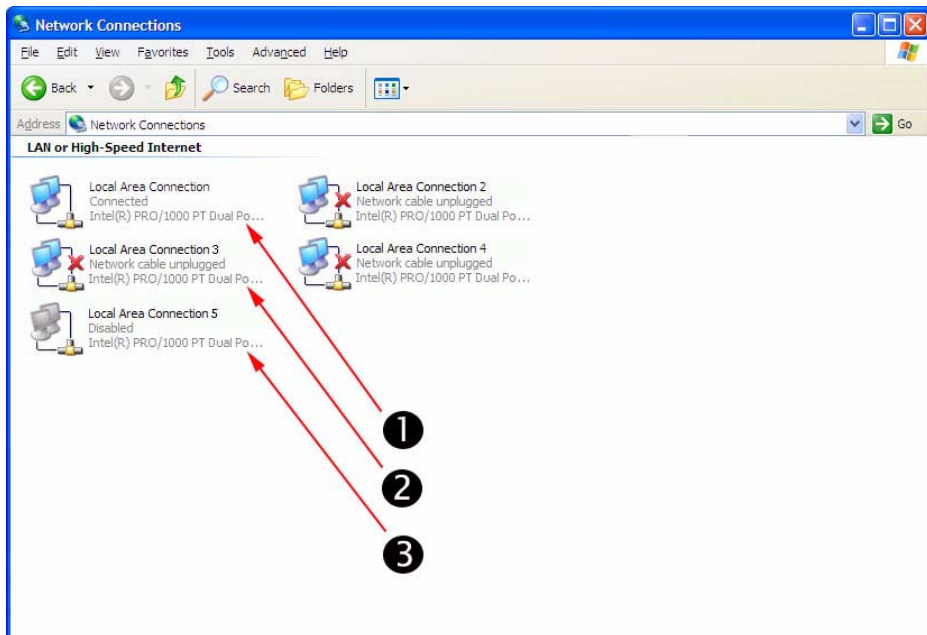
Illustration Key

1. An active port connection.
2. A red X marks the port connections that are currently inactive.
3. The port has been manually disabled (right-click to re-enable).

▼ Confirm Physical Port MAC Addresses and Match Them to Window Device Names

To confirm the MAC addresses of installed network interface ports and to match them to the Windows Device Friendly Names, you will need to open a command prompt and run `ipconfig /all`.

To open a Windows command prompt and run `ipconfig /all` follow these steps:

1. **Click -> Start -> Run.**

   The Run dialog box appears.

2. **In the Run dialog box, type `cmd` then click OK.**

   The cmd.exe DOS window appears.

3. **In the cmd.exe DOS window, type `ipconfig /all`.**

   The output from the `ipconfig /all` command identifies the installed network interface ports by the connection name in the order of enumeration.

Note – The output does not necessarily follow an alpha or numeric order. You can customize the connection name in the Network Connections folder for details, see Microsoft's documentation. The output below illustrates how the Windows operating system, by default, assigns logical names to network interfaces.

Illustration Key

1. Second Ethernet adapter port.
2. First Ethernet adapter port.

In the sample output:

- `Ethernet Adapter Local Area Connection` is the Windows default logical name (friendly name) assigned to a network interface.

  Note that the first *Ethernet Adaptor Local Area Connection* appears with a null value. This entry identifies the connection-specific DNS suffix (for example, `east.sun.com`) and the physical MAC address for that port.

- `Ethernet Adapter Local Area Connection 2` identifies a disconnected media state, a description, and the physical MAC address for that port.

- The numeric value following the Windows logical friendly name refers to the network connection number.

Preparing Adaptec-Based Integrated RAID Controller Disks for the Operating System

If your Sun Fire server uses an Adaptec-based integrated RAID controller (also known as the Sun StorageTek SAS RAID Internal HBA, SG-XPCIESAS-R-INT-Z), you will need to prepare its disks so that Windows will be able to access them. This is done using the controller's BIOS configuration utility, which is accessible during server boot.

The Adaptec RAID Configuration Utility can be used to create single volume disks, or to create a RAID configuration using multiple disks. You can create up to 20 volumes. Each volume can contain a single disk or a RAID (RAID levels 0, 1, 1E, 10, 5, 5EE, 50, 6, or 60—with global or dedicated hot spares).

Note – If you have a disk using this controller with a preinstalled bootable array volume (and it is not part of an existing RAID that you want to keep) and you want to overwrite it to install Windows, no other disk preparation is required. During the Windows operating system installation you will be presented the option to overwrite any existing partition(s) within the array volume.

Using the Adaptec Configuration Utility

To prepare a disk to allow Windows to access it, do the following:

1. **Power down and restart your server.**

2. **During the BIOS POST process, press Ctrl-A when prompted to launch the** `Adaptec RAID Configuration Utility`**.**

3. **At the RAID Configuration Utility main menu, under options, select** `Array Configuration Utility`.

4. **Select** `Initialize Drives`.

5. **Select the boot drive (at the top of the list, typically:** `Dev01`**).**

6. **Press the Insert key and press Enter.**

7. **At the warning dialog box, press** `Y`.

   The drive is initialized.

8. **At the main menu, select** `Create Array` **and press Enter.**

9. **Select the boot drive.**

10. **Press the Insert key and press Enter.**

11. **At the Array Properties screen, set boot drive properties as appropriate for your setup (or choose the defaults).**

    Press F1 help for details on available properties.

12. **Select Done and press Enter.**

    Note that in order for Windows to see other the hard disk drives in your server, you will need to first initialize them and create an array volume or RAID using the Adaptec RAID Configuration Utility. Each volume created by the Adaptec RAID Configuration Utility will be seen by the operating system and the server's BIOS as a single disk drive.

13. **At the main menu, press ESC, and then press ESC again.**

14. **Select** `Yes` **to exit the utility.**

    The system will reboot. The disk is now ready to be used by Windows.

Additional Information

For more information on using your Adaptec-based integrated RAID controller, refer to the following documents on the Sun documentation web site:

- *Sun Intel/Adaptec BIOS RAID Utility User's Manual* (820-4708)
- *Sun StorageTek SAS RAID HBA Installation Guide* (820-1847)
- *Sun StorageTek RAID Manager Software User's Guide* (820-1177)

To obtain these documents, navigate to:

http://docs.sun.com/app/docs/coll/dsk-cntrl

Appendix B   Preparing Adaptec-Based Integrated RAID Controller Disks for the Operating System   **91**

Preparing LSI-Based Integrated RAID Controller Disks for the Operating System

If you want to install your OS on disks that are part of a RAID, there is an LSI RAID configuration utility that is entered from the server's BIOS and can be used for any operating system.

1. **Power off your server and then power it back on. The BIOS screen appears. Watch for the LSI Logic Corp. screen.**

FIGURE C-1   Opening Screen of the Server BIOS
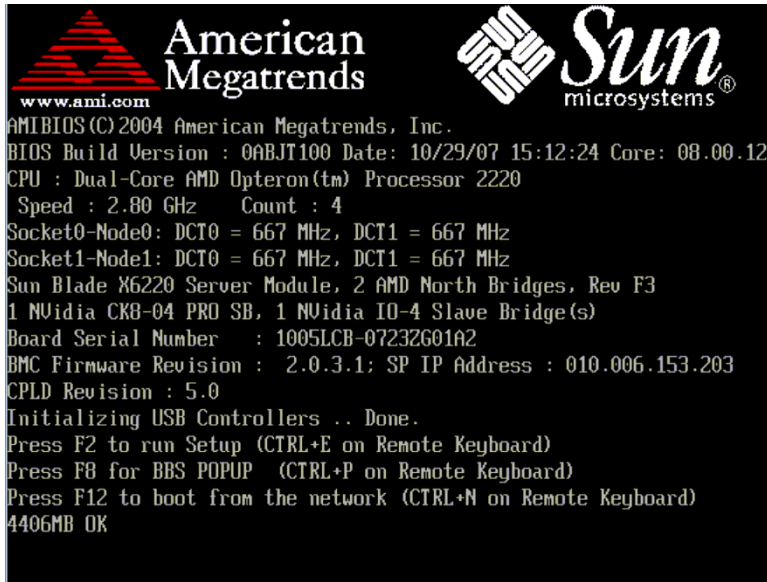
Watch for the LSI Logic prompt to press Ctrl+C.

2. **When the BIOS screen shows the LSI Logic Corp. message, press Ctrl+C to start the LSI Logic Configuration Utility (see** FIGURE C-2**).**

FIGURE C-2   BIOS Screen Showing LSI Logic Corp. Message
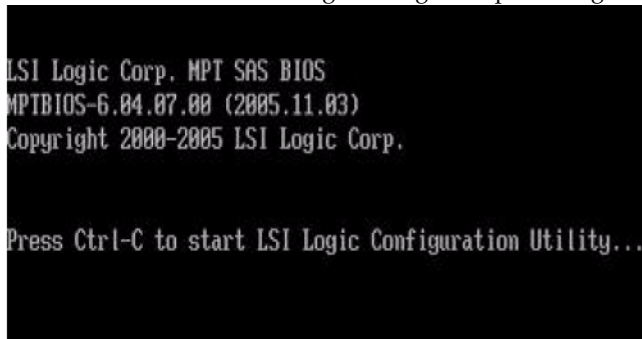
3. **Follow the on-screen instructions to create a mirrored RAID.**

   You can choose between RAID 1 (two mirrored disks with an optional hot spare) or RAID 1E (three or more mirrored disks with one or two hot spares).

4. **Exit the LSI RAID configuration utility.**

5. Install your OS on this RAID volume.

For information on using the LSI RAID configuration utility, refer to the *Sun LSI 106x RAID User's Guide* for your server on the Sun product documentation web site at:

http://docs.sun.com/app/docs/coll/sf-hba-lsi

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