Sun Fire™ X4100/X4200 Server Windows Operating System Installation Guide

Sun Microsystems, Inc.
www.sun.com

Part No. 819-4346-20
August 2008, Revision A

Submit comments about this document at: `http://www.sun.com/hwdocs/feedback`

Please
Recycle

Contents

Preface

This *Sun Fire™ X4100/ X4200 Server Windows Operating System Installation Guide* contains instructions for installing the Windows Server 2003 operating system onto a Sun Fire X4100 or Sun Fire X4200 server.

Note – This book applies only to the Sun Fire X4100 and Sun Fire X4200 servers. It does not apply to the Sun Fire X4100 M2 or Sun Fire X4200 M2.

Related Documentation

The document set for the Sun Fire X4100/X4200 Server is described in the Where To Find X4100/X4200 sheet that is packed with your system. Additionally, you can find the X4100/X4200 documentation at

`http://docs.sun.com/app/docs/prod/sf.x4100` or
`http://docs.sun.com/app/docs/prod/sf.x4200`

Translated versions of some of these documents are available at the web site described above in French, Simplified Chinese, Traditional Chinese, Korean, and Japanese. 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`

Using UNIX Commands

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

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

  http://docs.sun.com

Third-Party Web Sites

Sun is not responsible for the availability of third-party web sites mentioned in this document. Sun does not endorse and is not responsible or liable for any content, advertising, products, or other materials that are available on or through such sites or resources. Sun will not be responsible or liable for any actual or alleged damage or loss caused by or in connection with the use of or reliance on any such content, goods, or services that are available on or through such sites or resources.

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.

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

`http://www.sun.com/hwdocs/feedback`

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

Sun Fire X4100/X4200 Server Windows Operating System Installation Guide, part number 819-4346-20

CHAPTER 1

Getting Started

This chapter describes the information you will need to know before installing the Microsoft Windows Server 2003 operating system on a Sun Fire X4100 and Sun Fire X4200 server. Make sure to read the remainder of this chapter before beginning the Windows Server 2003 installation.

Note – This book applies only to the Sun Fire X4100 and Sun Fire X4200 servers. It does not apply to the Sun Fire X4100 M2 or Sun Fire X4200 M2.

The following sections are included in this chapter:

Chapter 2 provides the procedures on the SIA tool. This tool assists in installing the Sun-supported drivers and eliminates the need to create a separate Driver CD.

Chapter 7 provides the procedures that you need to follow to complete the Windows Server 2003 operating system installation.

About Windows Server 2003 Installation

The Sun Fire X4000 series servers require additional server-specific drivers that are not included with the Windows Server 2003 operating system. The following chapters in this document describe how to access and install the operating system and drivers. The installation procedures apply to both the 32-bit and 64-bit versions of Microsoft Windows Server 2003.

Important Installation Considerations

Please note the following important considerations before beginning the Windows Server 2003 operating system installation on a Sun Fire X4100 or X4200 server:

- When you install the Windows operating system, any data on the boot drive, including any preinstalled operating system, will be overwritten.
- A primary consideration during installation is providing the mass storage drivers for the disk controller used with the Sun Fire X4100 or X4200 server. The Microsoft Windows Server 2003 media does not contain the mass storage drivers needed for operating system installation.

  Windows requires that the mass storage drivers be delivered via a diskette. The Windows installation program can only read mass storage drivers from diskette drive A. Other devices such as CD/DVD or USB flash drives are not supported for mass storage driver delivery.

  There are three methods that can be used to deliver the drivers for Windows Server 2003 installation:

  - Use a physical USB diskette drive connected to the Sun Fire server.
  - Use RKVMS[1] to redirect the diskette device to a physical diskette drive on another system that is hosting the JavaRConsole[2] (JavaRConsole system).
  - Use RKVMS to redirect the diskette device to a diskette image file on another system that is hosting the JavaRConsole.
- There are also three different methods for delivering the Windows Server 2003 media for installation:
  - Use the physical DVD/CD drive connected to the Sun Fire server.

1. RKVMS – Remote Keyboard, Video, Mouse, Storage. Allows redirection of the server keyboard, video output, mouse, and storage devices via a networked system.
2. JavaRConsole – Remote console run from a networked system.

- Use RKVMS to redirect the CD drive to a physical CD drive on the JavaRConsole system.
- Use RKVMS to redirect the CD drive to a Windows CD image on the JavaRConsole system.

The installation procedures described in Chapter 3 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 *Integrated Lights Out Manager (ILOM) Administration Guide* 819-1160, for details on setting up the hardware needed for the installation.

Supported Windows Operating Systems

The Sun Fire X4000 series server supports 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, Standard x64 Edition (64-bit)
- Microsoft Windows Server 2003, Enterprise x64 Edition (64-bit)

The updated lists of supported operating systems are at the following URLs:

For the Sun Fire X4100 server:
`http://www.sun.com/servers/entry/x4100/os.jsp`

For the Sun Fire X4200 server:
`http://www.sun.com/servers/entry/x4200/os.jsp`

Manual Installation on One or More Servers

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

Note – If you plan to install Windows Server 2003 using a Preboot Execution Environment (PXE) server, go to Chapter 9: "Incorporating Sun Fire Drivers Into a RIS Image" on page 69

To install Windows from CD media onto a your server, complete the following procedures in order:

1. Downloading Server-Specific Driver Packages (see Chapter 3).
2. "Selecting the Delivery Methods" on page 19 (see Chapter 4).
3. Preparing for Mass Storage Driver Delivery (see Chapter 5).
4. Configuring the JavaRConsole System, if necessary (see Chapter 6).
5. Installing Windows Server 2003 (see Chapter 7).
6. Updating the Critical System-Specific Drivers (see Chapter 8).

After completing these procedures, you will have successfully installed the Windows Server 2003 operating system.

Sun Fire X4000 Series Platform Notes

This guide is intended for use with Sun Fire X4100 or X4200 servers. Some aspects of the installation will vary among different product platforms.

- The terms Tools and Drivers CD and Resource CD are used interchangeably in this guide. The Resource CD 705-1438-11 (or later version) contains drivers for earlier versions of the Sun Fire X4000 series servers.

CHAPTER 2

Using the Sun Installation Assistant

This chapter describes how to use Sun Installation Assistant (SIA), an easy-to-use program that helps you in installing an operating system, and includes the following sections:

Note – The installation steps you perform may vary for server-specific or operating system-specific instructions. Read the instructions carefully to ensure you perform the correct steps for your server and operating system.

About the Sun Installation Assistant

The Sun™ Installation Assistant (SIA) is a CD-based tool that helps you install a supported Linux or Windows operating system (OS) on your x64 Sun server. It provides a set of Sun-supported drivers that have been tested for quality assurance.

By using the SIA CD you can install an operating system, the appropriate drivers, and additional software on your system. **SIA eliminates the need to create a Driver CD.**

Note – The SIA CD does not automate the OS installation process. You will still need to follow the procedures provided in the OS vendor's native GUI install program, but you will not need to create a separate Driver CD. SIA automatically installs the Sun-supported drivers.

SIA performs the following tasks:

- Identifies the hardware on your system and prepares Sun server drivers for the OS install.
- Provides tools that you may use to upgrade system BIOS, SP firmware, installed device firmware, recover an inaccessible SP and more. Tools available are system-specific and may vary.
- Launches the OS vendor's native install program.
- Identifies and installs appropriate drivers and platform-specific software during the OS installation process.

SIA is shipped with new systems and may also be available as a download for your system at `http://www.sun.com/download/index.jsp`.

How to Use SIA for Windows

This section describes the different methods for using the Sun Installation Assistant (SIA) to install Windows on supported x64 Sun servers. The use of SIA is optional but is provided to make the installation of Microsoft Windows Server 2003 distributions easier for you.

SIA Installation Methods for Sun Fire Servers

SIA can install the operating system on supported Sun Fire servers using one of the following methods:

- **Locally at the server using the SIA CD.** Boot SIA from a CD in the server's CD/DVD drive directly connected to one of the server's USB ports.
- **Remotely with the ILOM Remote CD-ROM feature and the Remote Console application.** This method allows you to install SIA from a virtual CD-ROM drive. Information about setting up a remote KVMS connection to your server with the ILOM Remote Console application is described in the *Integrated Lights Out Manager (ILOM)* documentation for your Sun server (note that there are multiple versions of ILOM, be sure to refer to the guide that matches your server's installed version of ILOM).

▼ To Install the Operating System Using SIA

To use the Sun Installation Assistant, complete the following steps.

1. **Start SIA using one of the installation methods described in the previous section:**
   - Insert the SIA CD into the server's CD/DVD drive and power on or reboot the server.
   - Login to the server's ILOM via your KVM and use the Remote Control Launch Redirection feature to redirect the server to the virtual CD-ROM.

Note – The instructions below assume local CD/DVD drive access. Be sure to modify the instructions accordingly if you are installing the OS remotely via KVM with CD-ROM redirection.

---

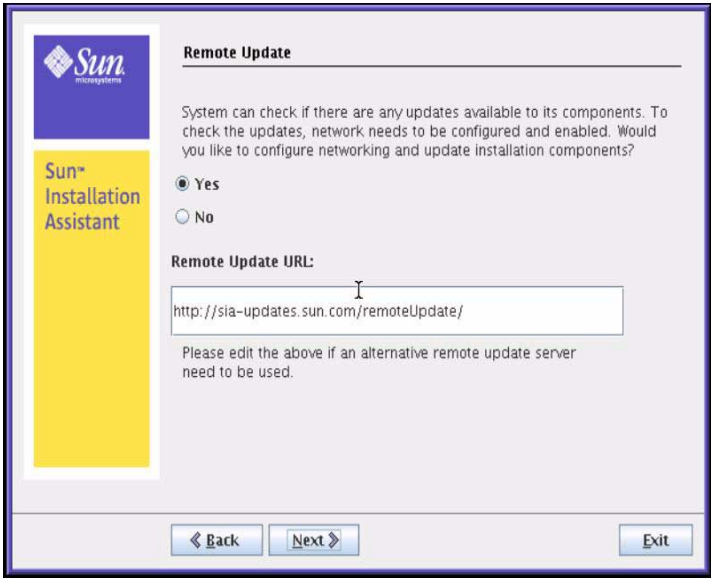
2. **At the Software License Agreement screen, select Accept to continue.**

   Note that you must scroll to the bottom of the license text window to make the Accept radio button active.

3. **At the Welcome screen, click Next.**

4. **Check for updates at the Remote Update screen.**

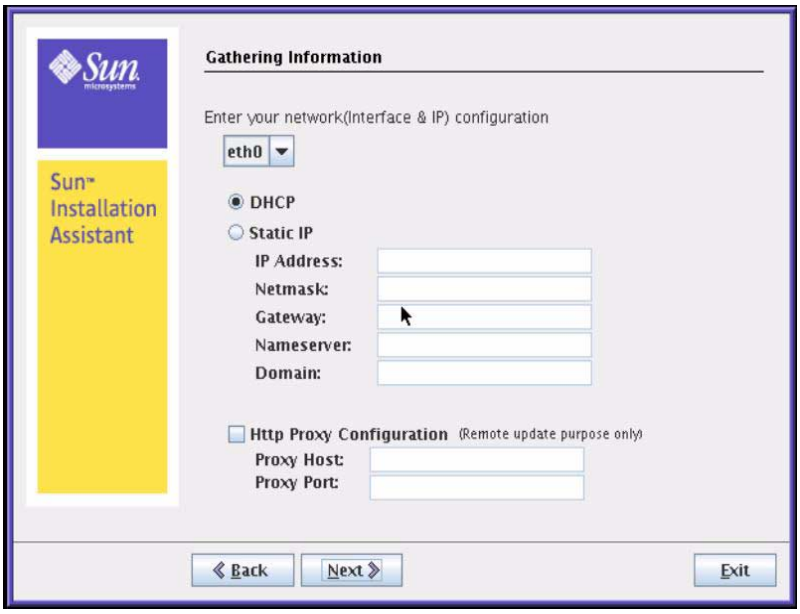
   SIA can download updates to enable new drivers, platforms, or fix other issues.You must have network connectivity established to the server to download updates.



Do one of the following bulleted steps:

- **To decline the remote update**, select **No** and click **Next** and proceed to Step 5.
- **To perform a remote update**, select **Yes**. You will need to do the following to configure networking:

a. **The Gathering Information dialog appears.**



b. Select the active network interface (for example: `eth0`)

This will be the network interface used to access the update image. If your server has multiple network cards, be sure to use the network-connected interface that will allow access to the host where the update image files reside.

c. Select the configuration method (DHCP or static)

If static method is selected, provide the necessary information (for example, IP address, gateway, and so on.)

d. Provide proxy information if an HTTP proxy is needed to access an external site (for example, sia-updates.sun.com).

Note – If you select FTP, the server must support anonymous FTP. Anonymous FTP must be able access the directory where you have unpacked the `iso` install image.

---

e. Click Next.

Remote Update will check for updates and display those available. When the updated components are required, they will be downloaded.

5. The Identify the System screen displays. Check to ensure that the appropriate hardware is installed and that there is sufficient memory for your operating system. Click Next to proceed.

6. **The Scanning for Option Cards and SCSI devices screen appears.**

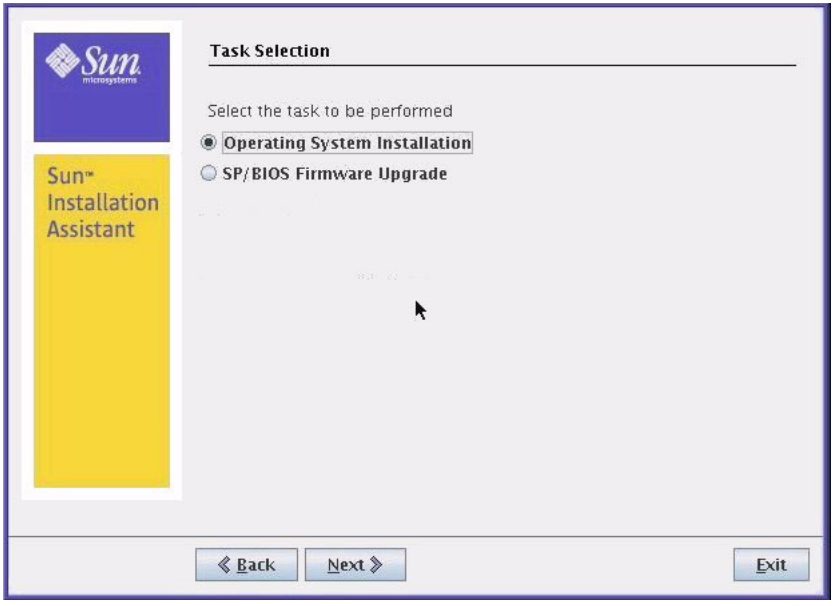
   SIA displays a list of option cards and SCSI disks present in the system, then automatically proceeds to the next screen.

Note – Some of the option card drivers require you to choose custom installation (as opposed to default installation), with development packages selected as part of the installation. Unless you do so, that particular xoption card driver will fail to install, although the OS installation will not be affected.

---

7. **The Task Selection screen appears.**

   This screen lists the task options supported for your server. For example, your list may include operating system installation, server SP/BIOS firmware upgrade, and other tasks (depending upon your server).



8. **Select an installation task:**
   - If you select to install the operating system, skip to Step 10.
   - If you select to upgrade the server's service processor firmware and system BIOS, proceed to Step 9.
   - For other tasks not listed here, select the task and follow the on-screen instructions.

9. **To upgrade the SP/BIOS firmware, perform these steps:**

   a. **Enter the service processor IP address and password. Click Next when done.**

Note – The service processor must be on the same network as the host.

b. Enter network configuration information. Click Next when done.

If you previously selected Remote Update, the network configuration information you entered there will be used (otherwise, see Step 4 for details on what you need to enter).

c. SIA checks to see if the firmware image available is a later version than what is on the server.

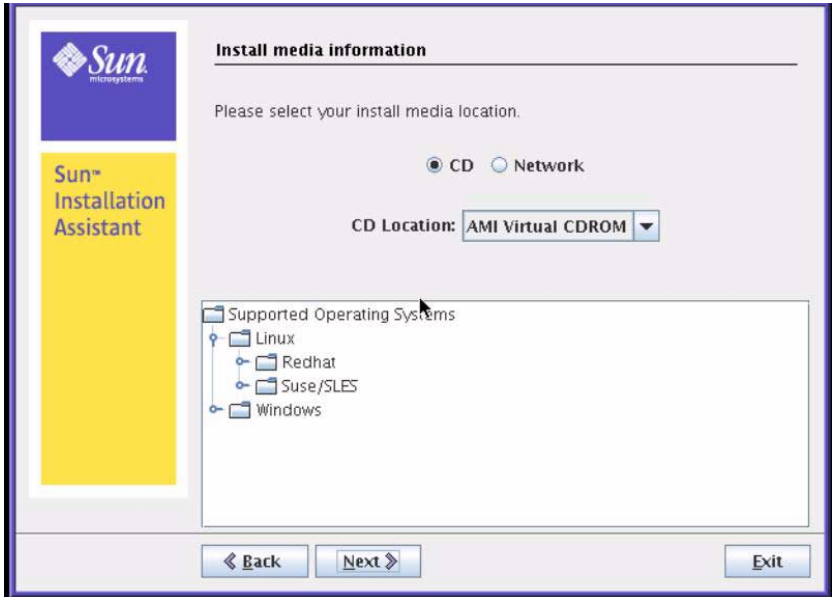
If the available image is *not* later than what is currently on the server, you do not need to do an upgrade. Click the **Go to Task List** button and select another task, as needed.

If the available image is later than what is currently on the server, SIA will prompt you to begin the update. Click **Next** to proceed. Go to Step d.

d. Once complete, your server reboots. You must then restart the SIA CD to continue with the installation process (you may skip over steps that you have already completed).

10. As the Operating System installation process begins, you will see the Install Media screen.

Select your OS installation media (either CD or Network) as described below.



- **To install from a CD, do the following:**

i. **Remove the SIA CD and insert the Disc 1 CD of your OS installation media into the server's CD/DVD drive.**

ii. **Select CD.**

iii. **Select the server's CD/DVD drive from the drop-down list.**

iv. **Click Next and proceed to** Step 11**.**

- **To install the OS from the Sun ILOM Remote Console (CD or ISO CD image), do the following:**

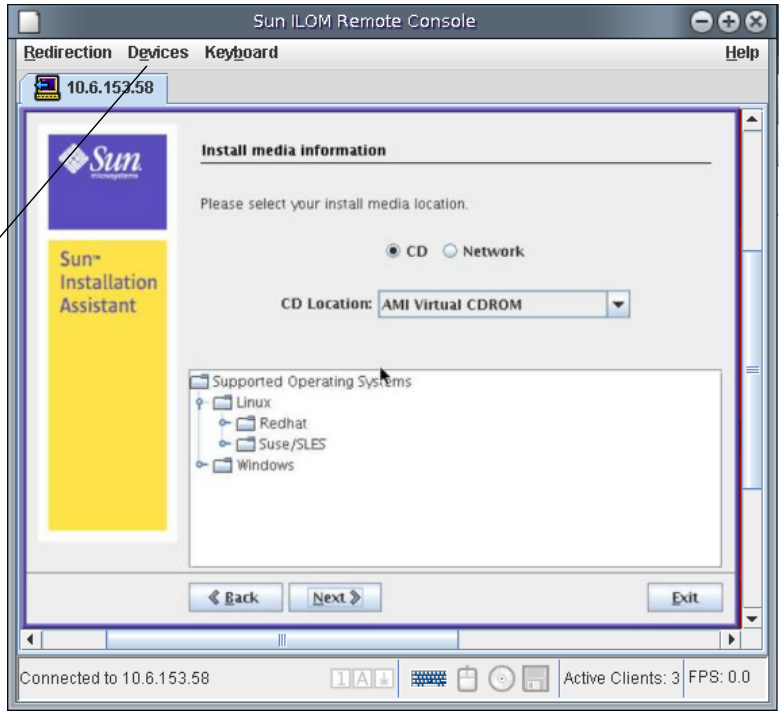
  i. **Click CD.**

  ii. **Select AMI Virtual CDROM.**

  iii. **In the Sun ILOM Remote Console, specify the network location of the media that you chose in Step 1. For example,**

  If you booted the SIA CD/DVD from a virtual drive location, eject the SIA CD and insert the Disc 1 CD of your OS installation media into the virtual drive.

  If you booted from an SIA ISO CD image, unmount the SIA CD-ROM image by deselecting `CD-ROM Image` from the ILOM Remote Console Devices menu, then reselect `CD-ROM Image` and specify the location of the OS boot media ISO image from the ILOM Remote Console Devices menu.



From an ILOM Remote Console, use the Devices menu to mount and unmount devices such as a CD or ISO CD image.

iv. Click Next in SIA to identify the OS media.

v. Proceed to Step 11**.**

- **To install from a network image, do the following:**

i. Select Network.

ii. Type the address of the network image in the address bar.

The network image can be HTTP, NFS or FTP, for example:

`http://`*host.name/imagepath* or

`http://`*ip.address/imagepath*

`nfs://`*host.name/imagepath* or

`nfs://`*ip.address/imagepath*

`ftp://`*host.name/imagepath* or

`ftp://`*ip.address/imagepath*

Where *host.name* is the domain name of the hosting server, *ip.address* is the IP address of the hosting server, and *imagepath* is the full path to the image file.

Note – For a listing of supported OS images see:
`http://www.sun.com/servers/x64/`*modelnumber*`/downloads.jsp`
where *modelnumber* is the model number of your server (for example: `x4500`).

iii. **Click Next and proceed to** Step 11**.**

11. **SIA identifies the distribution media.**

    For example, if you were installing Windows 2003, you would see:

    ```
    Identifying distribution... identified as Windows Server 2003
    Enterprise Edition - 64bit.
    ```

Note – If you provide an unsupported media, you will see an error message.

12. **Click Next to start the installer for your OS distribution.**
13. **For Windows, you are prompted to fill in system and product information. Once done, click Next.**
14. **SIA makes partitions, copies OS files, and prepares for the installation (this process can take a while). When complete, you will see the Setup Completed screen.**
15. **At this point, remove the SIA CD. Click Reboot.**

    The server reboots and continues with the installation of the operating system. If remote update was selected, SIA retrieves the latest files from the web. Otherwise it uses the files on the OS distribution media.Follow the on-screen instructions and perform reboot(s) as prompted.

16. **After Windows has installed, proceed to install critical Sun system-specific drivers, updates and optional software described elsewhere in this document.**

Troubleshooting

This section provides information on SIA messages and resolving problems with an SIA operating system installation. This section includes:

Error Messages

If the Sun Installation Assistant encounters an error or an unexpected condition, it will generate an error message. You might encounter a number of straightforward error messages such as the following:

```
You have inserted Disc 3 but the system requires Disc 2. Please insert
Disc 2.
```

You might also attempt to use the Sun Installation Assistant with versions of Windows that are not supported. In that case you might see error messages such as the following:

```
The media you have provided is not a release that is supported
by Sun Microsystems, Inc. on this platform. You cannot use the
Sun Installation Assistant to install this product and
associated software.
```

In this case, choose one of the following options:

- To install a supported product, click Back and then insert the appropriate media.
- To install this unsupported product, click Exit to exit the Sun Installation Assistant and reboot the system. You can now install the unsupported product as you normally would.

For a list of software release versions supported, refer to:

`http://www.sun.com/servers/x64/`*`modelnumber`*`/os.jsp`

Where *modelnumber* is the model number of your Sun server (for example, x4140).

SIA Installation Log File

A log file for SIA is written to the root directory of the newly installed system.

To review this log file, refer to the file `SunInstallationAssistant.log` (located at `C:\` for Windows).

CHAPTER 3

Downloading Server-Specific Driver Packages

This chapter describes how to download the server-specific driver packages needed for Windows Server 2003 installation.

Note – If you have the Tools and Drivers CD (or Resource CD 705-1438-11 or later), you can skip this chapter and proceed to Chapter 4. You can use the CD for initial installation of the server-specific drivers.

The server-specific driver packages available for Windows Server 2003 installation are:

- `FloppyPack.zip` (contains LSI 1064 drivers and AMI virtual diskette drivers)
- `InstallPack.exe` (program to install all system-specific device drivers)
- `DriverPack.zip` (for experts only, system-specific driver archive for Windows Server 2003, English). Download this file if you want to perform a PXE installation, as described in Chapter 9.

Note – The full name of the driver packages incorporates a version identifier before the file extension, for example, `FloppyPack_1_1_2.zip`. This identifier is left out of the file names in this document for purposes of clarity.

To download the drivers:

17. **Go to the driver download site.**

    `http://www.sun.com/servers/entry/x4100/downloads.jsp`

18. **Do one of the following:**

- If you are installing the Windows Server 2003 media, download both of the following files to a hard drive location or media that will be accessible during the installation: `FloppyPack.zip` and `InstallPack.exe`
- If you are installing Windows Server 2003 using a PXE server (advanced installation), download the `DriverPack.zip` file to the PXE server.

19. **Make sure that the driver packages are available as you begin the operating system installation. Proceed to Chapter 4 to select the delivery methods.**

CHAPTER 4

Selecting the Delivery Methods

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

To select mass storage driver media and Windows Server 2003 media delivery methods, complete the following:

1. Selecting a Mass Storage Drivers Method.
2. Selecting a Windows Server 2003 Media Method.
3. **Make a note of the delivery methods that you selected and proceed to** Chapter 5.

Selecting a Mass Storage Drivers Method

There are three methods that can be used to provide the mass storage drivers for Windows Server 2003 installation on the Sun Fire X4100 or X4200 server:

- Diskette Local - Uses a physical USB diskette drive connected to the Sun Fire server.
- Diskette Remote - Uses RKVMS to redirect the diskette device to a physical diskette drive on the system hosting the JavaRConsole.
- Diskette Image - Uses RKVMS to redirect the diskette device to a diskette image file on the system hosting the JavaRConsole.

Select a method in TABLE 4-1 that meets the need of your environment. Make note of the method you select.

TABLE 4-1 Delivery Methods for Mass Storage Drivers

Mass Storage Drivers Delivery Method	Additional Requirements	Ease of Configuration and Installation
Diskette Local	• External USB diskette drive listed as "Designed for Windows"* on the Windows Marketplace site: http://testedproducts.windowsmarketplace.com/ • Diskette	Easy
Diskette Remote	• JavaRConsole system with network access to the Sun Fire X4000 series server network management port and an attached diskette drive • Diskette	Medium: Installation time will be minimally increased over the Diskette Local method.
Diskette Image	• JavaRConsole system with network access to the Sun Fire X4000 series server management network port	Medium: Installation time will be minimally increased over the Diskette Local method.

* If you do not use a USB diskette 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.

Selecting a Windows Server 2003 Media Method

There are three methods that can be used to provide the Windows media for Windows Server 2003 installation on the Sun Fire X4000 series server:

- Windows Local - Uses the physical DVD/CD drive connected to the Sun Fire server.
- Windows Remote - Uses RKVMS to redirect the CD drive to a physical CD drive on the system hosting the JavaRConsole.
- Windows Image - Uses RKVMS to redirect the CD drive to a Windows media image file on the system hosting the JavaRConsole.

Select a method in TABLE 4-2 that meets the need of your environment note. Make a note of the method that you selected.

TABLE 4-2 Delivery Methods for Windows Server 2003 Media

Mass Storage Drivers Delivery Method	Additional Requirements	Ease of Configuration and Installation
Windows Local	None*	Easy
Windows Remote	JavaRConsole system with the network access to the Sun Fire X4100 or X4200 server's network management port and an attached CD/DVD drive	Medium: Installation time will be significantly increased over the Windows Local method.
Windows Image	JavaRConsole system with network access to the Sun Fire X4100 or X4200 server's management network port	Medium: Installation time will be significantly increased over the Windows Local method.

* If your system does not have a DVD/CD drive, you will need an external USB DVD/CD drive attached to the Sun Fire X4000 series server to use the Windows Local method. The DVD/CD drive should be listed as "Designed for Windows" on the Windows Marketplace site (http://testedproducts.windowsmarketplace.com/).

CHAPTER 5

Preparing for Mass Storage Driver Delivery

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

Depending on the method selected in Chapter 4, you will use one of the procedures in this chapter. See TABLE 5-1.

TABLE 5-1 Mass Storage Driver Delivery Methods

Delivery Method	Section to Read
Diskette Local	Creating a Driver Diskette
Diskette Remote	Creating a Driver Diskette
Diskette Image	Copying the Diskette Image File

Creating a Driver Diskette

For the Diskette Local or Diskette Remote delivery method, you need to create a diskette containing the drivers before proceeding with the Windows installation.

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

- System with a connected diskette device
- Diskette
- `FloppyPack.zip` (See Chapter 3 for details on accessing this package.)

Follow the procedure in the section that corresponds with the system you are using to create the diskette.

- Using Windows to Create a Driver Diskette

■ Using Linux or Solaris to Create a Driver Diskette

Using Windows to Create a Driver Diskette

To create a diskette using a Windows system:

1. **Copy the driver packages onto the system that you will use to create the driver diskette:**

- **If you are using the Tools and Drivers CD (or Resource CD) to access the driver files, do the following to copy the files:**

  a. **Insert the Tools and Drivers CD into the Windows system with a diskette device.**

  b. **Navigate to the directory that holds the FloppyPack files:**

  `support\drivers\w2k3sp1\FloppyPack`

Note – The full name of the driver packages incorporates a version identifier before the file extension, for example, `FloppyPack_1_1_2.zip`. This identifier is left out of the file names in this document for purposes of clarity.

---

  c. **Copy the files into a directory on the Windows system.**

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

  a. **On a system running Microsoft Windows software with a floppy device, copy the `FloppyPack.zip` file to a temporary directory.**

  b. **Start Windows Explorer.**

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

  d. **Select `FloppyPack.zip`.**

  e. **On the** File **menu, click** Extract All.[1]

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

2. **Create the driver diskette with one of the following procedures:** Using the Assisted Method **or the** Using the Manual Method**.**

1. 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.

Using the Assisted Method

This method automates the creation of the driver diskette.

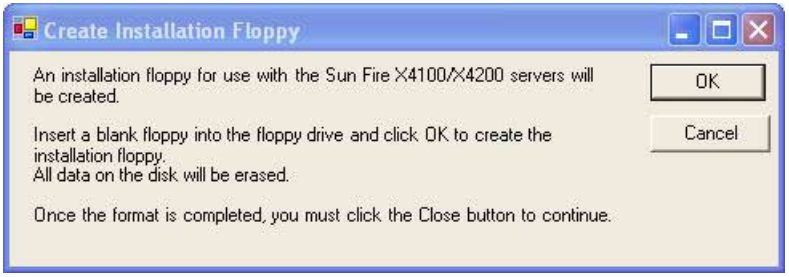
To use the assisted method:

1. **Insert a writeable diskette into the system diskette drive.**
2. **Start Windows Explorer and navigate to the folder where the extracted files reside.**
3. **In Windows Explorer, open the directory containing the extracted files and double-click** `mkfloppy.exe`**.**

Note – If the application fails to start, review the `README.RTF` file located in the same folder as the `mkfloppy.exe` application.

The Create Installation Floppy dialog box displays.

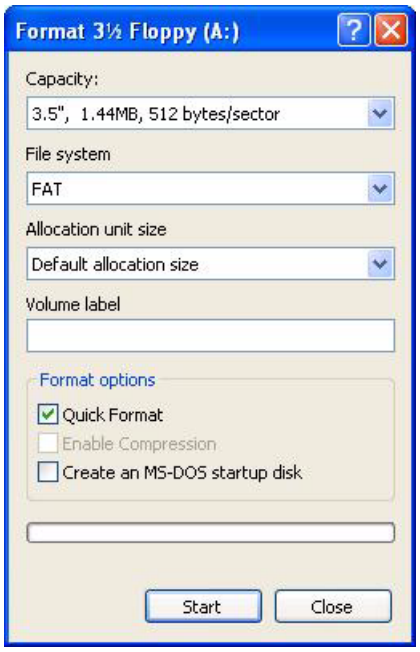
FIGURE 5-1 Create Installation Floppy Dialog Box



4. **Click** OK.

   The Format 3 1/2″ Floppy dialog box displays.

FIGURE 5-2 Format 3 1/2″ Floppy Dialog Box



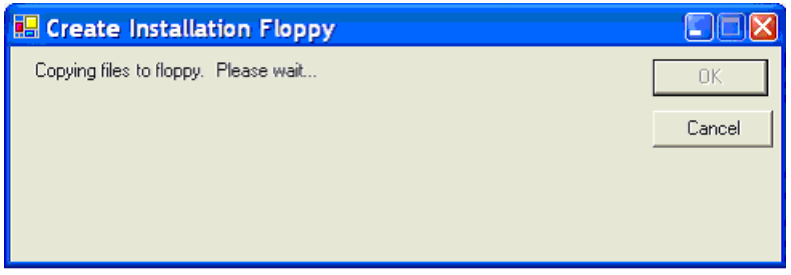
5. **Specify the settings to format the diskette, and then click** Start**.**

   Quick Format is an acceptable format for this process.

6. **Once the formatting is completed, click** Close**.**

   The Create Installation Floppy message displays, informing you that it is copying files to the diskette.

FIGURE 5-3 Create Installation Floppy Message



7. **After the files have been copied, click** OK.

   The mass-storage driver diskette is created.

8. **Proceed to** Chapter 6**.**

Using the Manual Method

This method requires the user to perform the individual steps necessary to create the driver diskette.

To use the manual method:

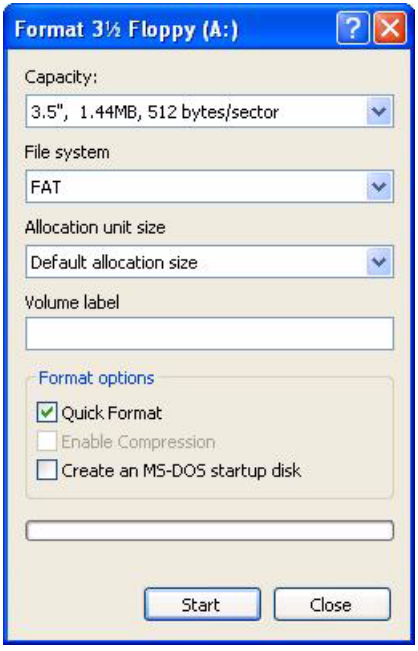
1. **Insert a writeable diskette into the floppy drive.**
2. **Start** Windows Explorer**.**
3. **Right-click the drive where you inserted the diskette.**

   A shortcut menu displays.

4. **Select** Format**.**

   The Format 3 1/2 Floppy dialog box displays.

FIGURE 5-4 Format 3 1/2 Floppy Dialog Box



5. **Specify the settings to format the diskette, and then click** Start.

   Quick Format is an acceptable format for this process.

6. **Once the formatting is complete, click** Close.

7. **Navigate to the** files **folder in the location where the extracted files reside.**

8. **On the** Edit **menu, click** Select All.

9. **Pressing and holding the left mouse button, drag and drop the selected files onto the diskette drive.**[2]

   The mass-storage driver diskette is created.

10. **Proceed to** Chapter 6.

Using Linux or Solaris to Create a Driver Diskette

If you are using a Linux or Solaris system to create the driver diskette, use the following procedure.

To create a driver diskette using a Linux or Solaris system:

1. **Copy the driver package onto the system that you will use to create the floppy diskette:**

- **If you are using the Tools and Drivers (or Resource CD) to access the driver files, do the following:**

  a. **Create a** `/tmp/files` **directory.**

     `%` **`mkdir /tmp/files`**

  b. **Insert the CD into the system and mount the CD, as necessary.**

  c. **Navigate to the** `FloppyPack` **directory on the Tools and Drivers CD as shown in the following example:**

     `%` **`cd /mnt/cdrom/support/drivers/w2k3sp1/FloppyPack`**

     The folder also contains a version identifier.

  d. **Copy the files from the Tools and Drivers CD into the** `/tmp/files` **directory.**

     `%` **`cp -r * /tmp/files`**

- **If you have downloaded** `FloppyPack.zip` **from the download site, do the following:**

2. If you used Winzip to extract the files, do not drag and drop the files, as the directory structure will not be maintained.

a. Create a `/tmp` directory.

```
% mkdir /tmp
```

b. Do one of the following:

- If you copied the drivers to media:

  i. Insert the media into the system.

  ii. Mount the media.

  iii. Copy the files to the system as shown in the following example:

  ```
  % cp directory/FloppyPack_1_1_1.zip /tmp
  ```

  Where *directory* is the directory on the media on which the `FloppyPack.zip` file resides.

- If you downloaded the file directly to the system:

  i. Navigate to the directory where the files were originally downloaded.

  ii. Copy the files into the `/tmp` directory as shown in the following example:

  ```
  % cp directory/FloppyPack_1_1_1.zip /tmp
  ```

  Where *directory* is the directory on the system to which the `FloppyPack.zip` file was originally downloaded.

c. Change directory to the `/tmp` directory.

```
% cd /tmp
```

d. Unzip the `FloppyPack.zip` file.

For example:

```
% unzip FloppyPack_1_1_1.zip
```

This will create a new `files` directory.

2. Change directory to the `files` directory.

```
% cd /tmp/files
```

3. Insert a writeable formatted diskette into the diskette drive.

4. **Mount the diskette to the system.**

   See the example below for the operating system that you are using:

   Solaris:

   ```
   % volcheck
   ```

   Linux:

   ```
   % mkdir /mnt/floppy
   % mount /dev/fd0 /mnt/floppy
   ```

5. **Copy the files and folders in the `files` directory to the driver diskette.**

   See the example below that corresponds to the OS you are using:

   Solaris:

   ```
   % cp -r * /floppy/floppy0
   ```

   Linux:

   ```
   % cp -r * /mnt/floppy
   ```

6. **Proceed to** Chapter 6**.**

Copying the Diskette Image File

Use this procedure if you choose the Diskette 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 `FloppyPack.zip` driver package downloaded from the driver download site or on the Tools and Drivers CD (or Resource CD 705-1438-11 or later) as shown in Downloading Server-Specific Driver Packages.

Choose the procedure that corresponds to the operating system running on the JavaRConsole system:

- Using Windows to Copy the Diskette Image File
- Using Linux or Solaris to Copy the Diskette Image File

Using Windows to Copy the Diskette Image File

To copy the diskette image file using a Windows system:

1. **Prepare the driver files:**

- **If you are using the Tools and Drivers CD (Resource CD) to access the diskette package, do the following:**

  a. Insert the CD into the JavaRConsole system.

  b. Navigate to the following directory:

  `support\drivers\w2k3sp1\FloppyPack`

  The folder will also contain a version identifier.

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

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

  b. **Start Windows Explorer.**

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

  d. **Select `FloppyPack.zip`.**

  e. **On the** File **menu, click** Extract All.[3]

  f. **Navigate to the folder where the extracted files reside.**

2. **Navigate to the** image **folder.**
3. **Copy the `floppy.img` file to a folder on the system that will be available during installation.**
4. **Note the `floppy.img` file location and proceed to** Chapter 6.

Using Linux or Solaris to Copy the Diskette Image File

1. **Prepare the driver files:**

- **If you are using the Tools and Drivers CD (or Resource CD) to access the driver files, do the following:**

  a. **Create a `/tmp/files` directory on the JavaRConsole system.**

  ```
  % mkdir /tmp/files
  ```

  b. **Insert the CD into the JavaRConsole system and mount the CD to the system, as necessary.**

  c. **Navigate to the `FloppyPack` directory on the Tools and Drivers CD as shown in the following example:**

  ```
  % cd /mnt/cdrom/support/drivers/w2k3sp1/FloppyPack
  ```

  The folder will also contain a version identifier.

  d. **Copy the files from the Tools and Drivers CD into the `/tmp/files` directory on the JavaRConsole system.**

  ```
  % cp -r * /tmp/files
  ```

3. 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.

- **If you have downloaded `FloppyPack.zip` from the download site, do the following to extract the files:**

  a. Create a `/tmp` directory on the JavaRConsole system.

  ```
  % mkdir /tmp
  ```

  b. Do one of the following:

  - If you copied the drivers to media:

    i. Insert the media into the system.

    ii. If necessary, mount the media to the system.

    iii. Copy the files to the JavaRConsole system as shown in the following example:

    ```
    % cp directory/FloppyPack_1_1_1.zip /tmp
    ```

    Where *directory* is the directory on the media on which the `FloppyPack.zip` file resides.

  - If you downloaded the file directly to the JavaRConsole system:

    i. Navigate to the directory where the files were originally downloaded.

    ii. Copy the files into the `/tmp` directory as shown in the following example:

    ```
    % cp directory/FloppyPack_1_1_1.zip /tmp
    ```

    Where *directory* is the directory on the JavaRConsole system to which the `FloppyPack.zip` file was originally downloaded.

  c. Change directory to the `/tmp` directory.

  ```
  % cd /tmp
  ```

  d. Unzip the `FloppyPack.zip` file.

  For example:

  ```
  % unzip FloppyPack_1_1_1.zip
  ```

  This will create a new `files` directory.

2. **Change directory into the `files` folder.**

   ```
   % cd /tmp/files
   ```

3. **Navigate to the `image` folder.**

4. **Copy the `floppy.img` file to a location on the system that will be available during installation.**

5. **Note the location of the `floppy.img` file and proceed to** Chapter 6**.**

   You will need this location during the Windows Server 2003 installation.

CHAPTER 6

Configuring the JavaRConsole System

This chapter describes how to set up the JavaRConsole system to deliver the mass storage drivers and Windows Server 2003 media for operating system installation.

Note – If you have chosen both the Diskette Local and Windows Local delivery methods in Chapter 4, proceed to Chapter 7.

- You will need to set up a JavaRConsole system if you have chosen any one of the following mass storage driver or Windows media delivery methods described in Chapter 4:
  - Diskette Remote
  - Diskette Image
  - Windows Remote
  - Windows Image

Note – This procedure does not provide detailed instructions for setting up the JavaRConsole hardware. See the *Integrated Lights Out Manager (ILOM) Administration Guide* 819-1160, for further information.

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 Fire X4000 series Ethernet management port.
- Java Runtime Environment (JRE) 1.5 or later is installed.
- If the JavaRConsole system is running Solaris, volume management must be disabled for JavaRConsole to access the physical diskette and/or CD/DVD-ROM drives.
- If the JavaRConsole system is running Windows Server, Internet Explorer Enhanced Security must be disabled.

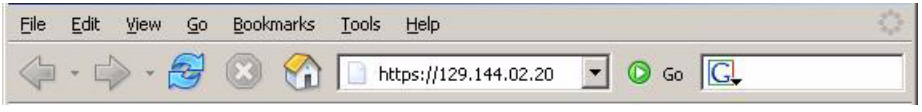
Note – This procedure assumes that the JavaRConsole system and ILOM service processor have been set up according to the instructions in the *Integrated Lights Out Manager (ILOM) Administration Guide* 819-1160.

Setting Up the JavaRConsole System

To set up the JavaRConsole system:

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

FIGURE 6-1 URL Sample



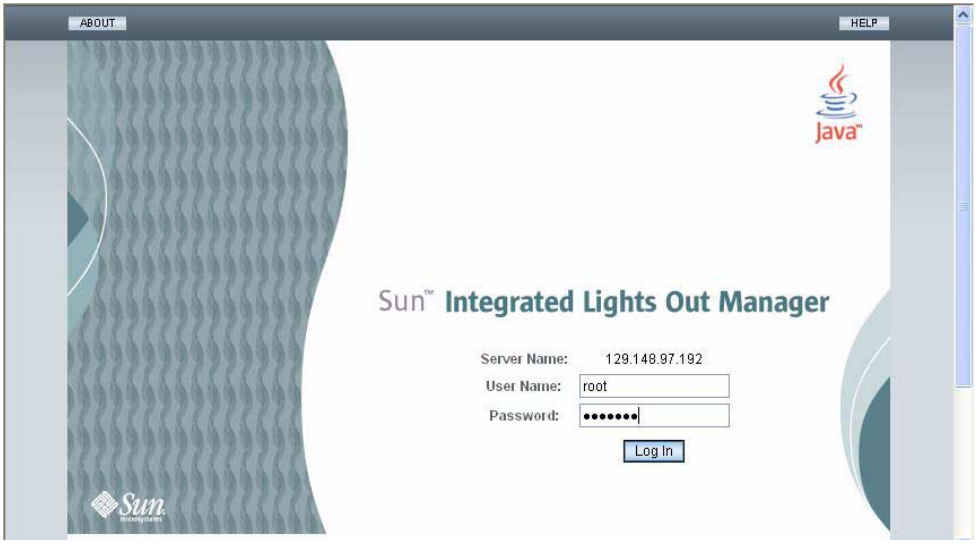
The Security Alert dialog box displays.

FIGURE 6-2 Security Alert Dialog Box

2. **Click** Yes.

   The ILOM login screen displays.

FIGURE 6-3 Login Screen

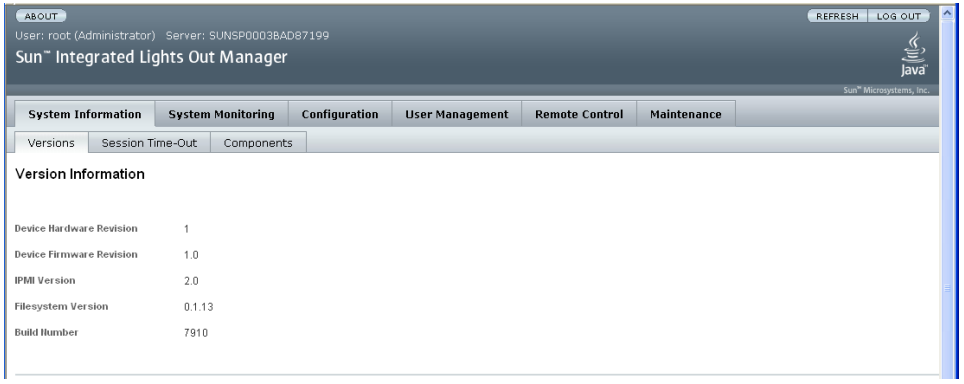


3. **Enter the user name and password, and then click** Log In.

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

The ILOM Version Information screen displays.

FIGURE 6-4 ILOM GUI Version Information Screen

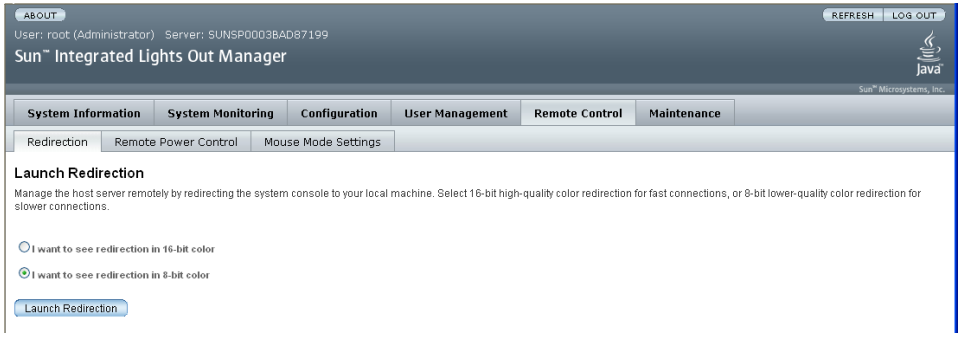


4. **Click the** Remote Control **tab.**

The Launch Redirection screen displays.

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

FIGURE 6-5 ILOM GUI Remote Control Screen



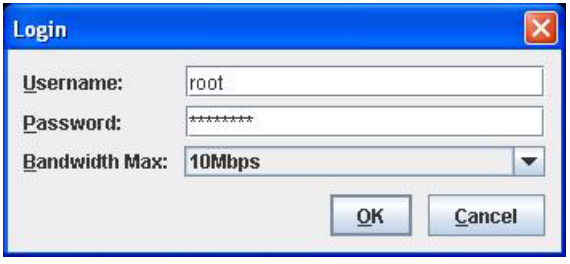
5. **Select** 8-bit color **or** 16-bit color**, and then click** Launch Redirection**.**

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

FIGURE 6-6 Hostname Mismatch Dialog Box

The Remote Control Login Dialog box displays.

FIGURE 6-7 Remote Control Login Dialog Box

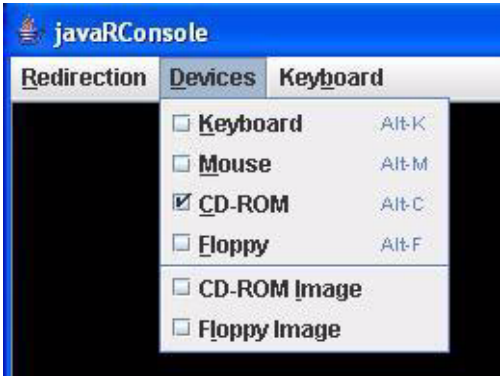


6. **In the** Remote Control Login **dialog box, enter your user name and password and click** OK**.**

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

   After the login is successful, the JavaRConsole screen displays.

FIGURE 6-8 JavaRConsole Devices Menu



7. **From the** Devices **menu, select one diskette item and/or one CD item according to the delivery method you have chosen.**

- Diskette Remote: Select Floppy to redirect the server to the contents of the physical diskette drive attached to the JavaRConsole system.
- Diskette Image: Select Floppy Image to redirect the server to the mass storage drivers diskette image file located on the JavaRConsole system.
- CD-ROM Remote: Select CD-ROM to redirect the server to the operating system software CD 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 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.

CHAPTER 7

Installing Windows Server 2003

This chapter describes how to install the Windows Server 2003 operating system directly onto a Sun Fire X4100 or X4200 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.
- Verify that a keyboard and mouse are attached to the appropriate connections on your Sun Fire X4100 or X4200 server. Make sure to leave a rear USB port free if you selected the Diskette Local mass storage drivers installation method.
- 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 a Sun Fire X4100 or X4200 server.

For requirements specific to the mass storage driver and 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
Diskette Local	Connect the USB diskette drive to the *rear* of the server and insert the mass-storage device diskette into the diskette drive.* Note: Connecting the USB diskette drive to a USB connector on the front of the server will cause the installation to fail.
Diskette Remote	Connect the diskette drive to the JavaRConsole system (if necessary) and insert the mass-storage drivers diskette into the diskette drive.
Diskette 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.

* See the list of USB diskette drives listed as "Designed for Windows" on the Windows Marketplace site at `http://testedproducts.windowsmarketplace.com/`

Installing the Operating System

Follow these steps to install the Microsoft Windows Server 2003 software onto your Sun Fire X4000 series server.

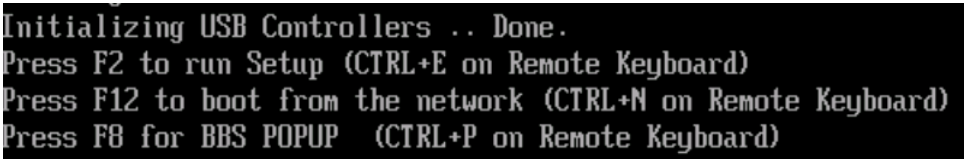
Caution – The Solaris Operating System is preinstalled on the Sun Fire X4100 and Sun Fire X4200 server boot disk. The Windows installation will format the boot disk and all data will be lost.

1. **Make sure that you have completed all of the requirements listed in** Installation Requirements**.**
2. **Power cycle the Sun Fire X4000 series server.**

   The BIOS POST process begins.

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

FIGURE 7-1 F8 Prompt



When the BIOS POST process is complete, the Boot Device menu displays.

FIGURE 7-2 Boot Device Menu

4. **If you have selected the Windows Local installation method, insert the CD now.**

5. **Select** CD-ROM **from the Boot Device menu.**

Note – After you press Enter in Step 6, the next actions must be performed quickly. Read Step 7 and Step 8 before proceeding, so that you will know what to look for.

6. **Press** Enter**.**

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

Note – The prompt is displayed for five seconds and is easy to miss. If you miss the prompt, you will need to restart the system and go back to Step 3.

During the early part of Windows Setup, the following message displays at the bottom of the screen:

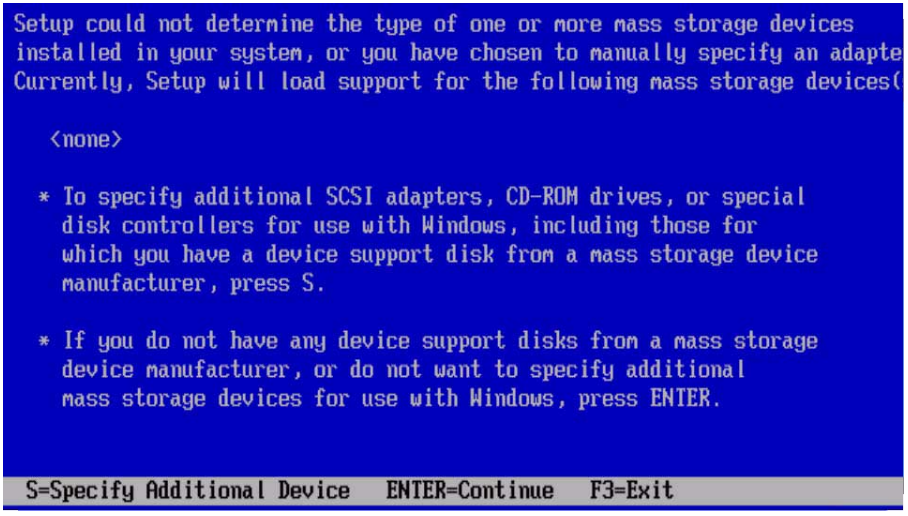
```
Press F6 if you need to install a third party SCSI or RAID driver.
```

8. **Press** `F6` **to install mass-storage drivers.**

Note – The prompt is displayed for five seconds and is easy to miss. If you don't 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.

A screen displays, prompting you to press S to specify additional devices.

FIGURE 7-3 Specify Additional Device Screen



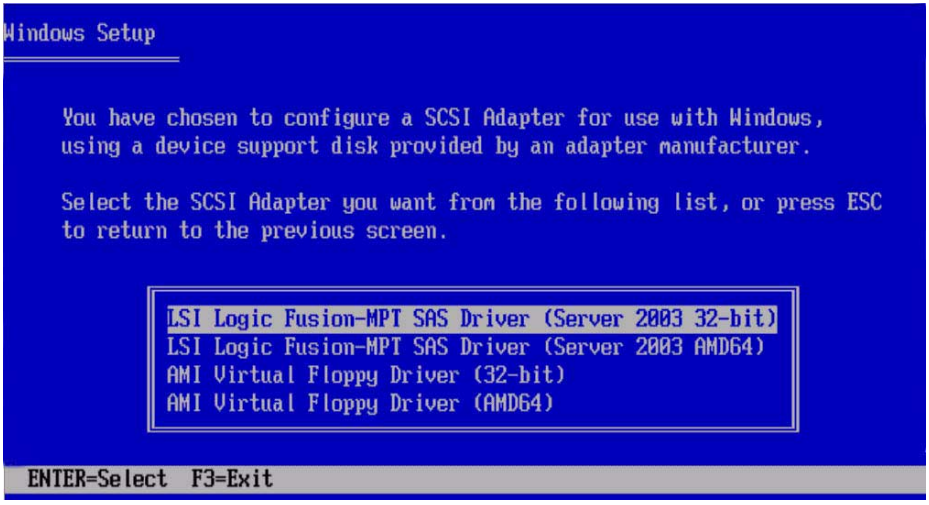
9. **Make sure that the mass storage drivers are accessible according to the mass storage driver installation method that you have selected.**

- Diskette Local - Mass storage drivers diskette in diskette drive A on the Sun Fire X4000 series server
- Diskette Remote - Mass storage drivers diskette in the JavaRConsole server diskette drive
- Diskette Image - `floppy.img` available on the JavaRConsole system

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

    A screen displays listing the available drivers.

FIGURE 7-4 Select SCSI Adapter Screen



11. **Select the appropriate version of the LSI Logic Fusion-MPT SAS Driver, depending on the version of Windows you are installing (Server 2003 32-bit or Server 2003 AMD64), then press Enter.**

    A screen displays, confirming your selections and allowing you to select additional drivers.

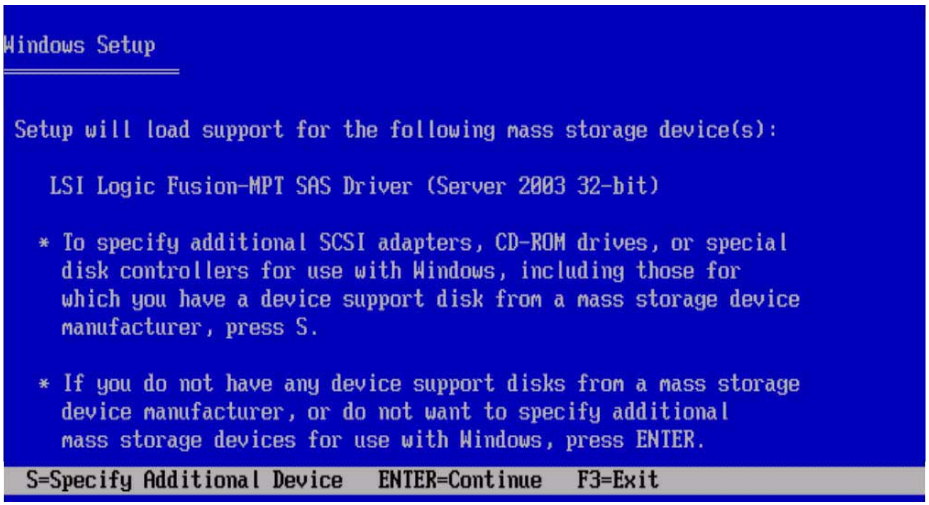
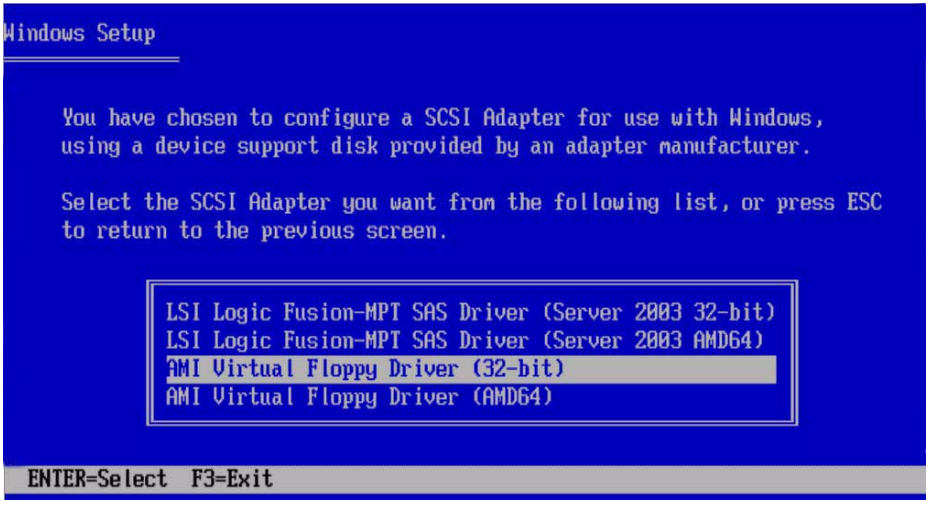


FIGURE 7-5 Specify Additional Device Screen

12. **If you are installing Windows using the Diskette Remote or the Diskette Image Delivery Method, press S; otherwise press Enter and proceed to** Step 14**.**

    A screen displays listing the available drivers.

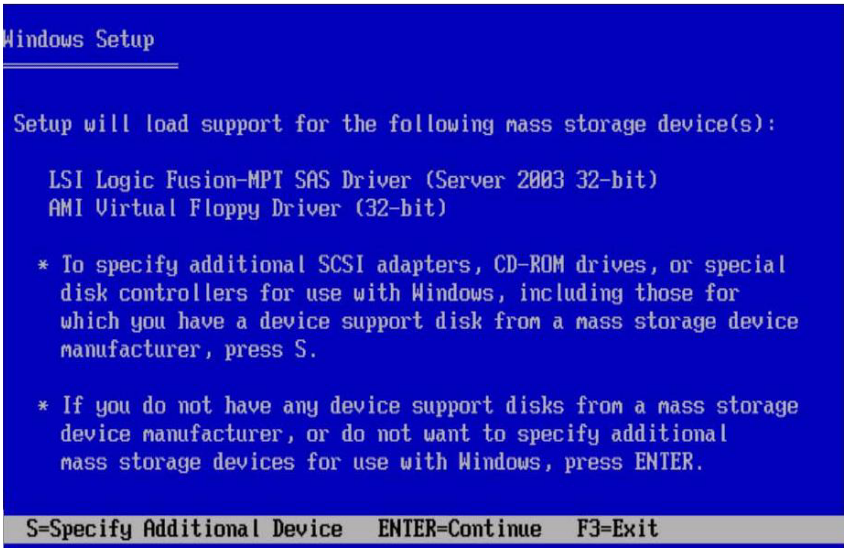
FIGURE 7-6 Select SCSI Adapter Screen



13. **Select the appropriate version of the AMI Virtual Diskette Driver, depending on the version of Windows you are installing (32-bit or AMD64), then press** Enter**.**

    Windows Setup will display the following screen, showing both the drivers you have selected.

FIGURE 7-7 Specify Additional Device Screen



14. **Press** Enter **to continue.**

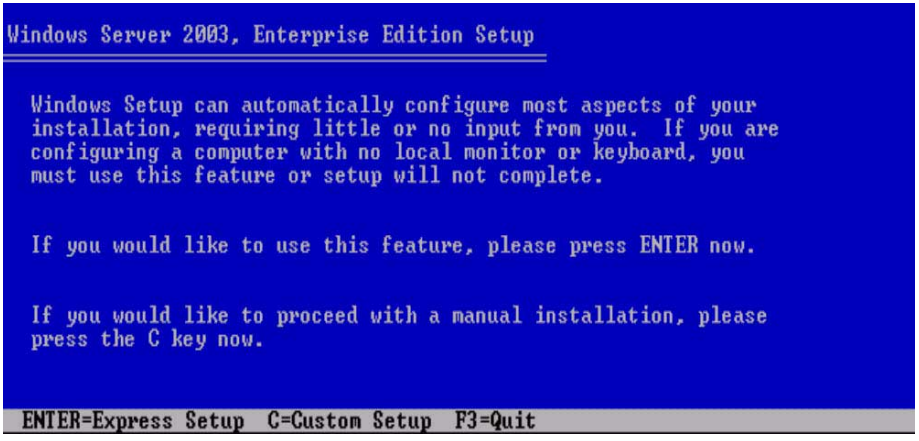
    The Welcome to Setup screen displays.

FIGURE 7-8 Welcome to Setup Screen

15. **Press** Enter **to continue.**

    Windows Setup will continue and display the following screen, allowing you to select Express Setup or Custom Setup.

FIGURE 7-9 Select Setup Screen



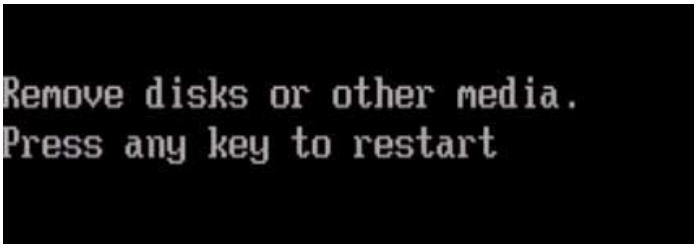
Note – If you plan to use hardware RAID on the system disk, you must select Custom Setup and manually partition the disk. Make sure to reserve a minimum of 64 MB of unpartitioned space at the end of the drive.

16. **Press** Enter **for Express Setup.**

17. **Follow the onscreen instructions to complete the Windows Server 2003 Installation.**

    During installation, the system will reboot and the following message could appear.

FIGURE 7-10 Remove Disk Message



If this message displays, you will need to complete the following steps to complete the installation:

a. **Do one of the following, depending on which mass storage driver delivery method you have selected:**

- Diskette Local - Remove the diskette from the floppy drive on the Sun Fire server.
- Diskette Remote - Remove the diskette from the JavaRConsole server.
- Diskette Image - Deselect Floppy Image form the JavaRConsole Devices menu.

b. **Press any key to restart the system and complete Windows Server 2003 Installation.**

18. **Proceed to** Updating the Critical System-Specific Drivers**.**

CHAPTER 8

Updating the Critical System-Specific Drivers

This chapter explains how to update the Windows Server 2003 installation with the system-specific device driver software for the Sun Fire X4100 or X4200 server.

Note – This information applies only to the Sun Fire X4100 and Sun Fire X4200 servers. It does not apply to the Sun Fire X4100 M2 or Sun Fire X4200 M2.

This chapter contains the following sections:

The procedures in this chapter assume that you already:

- Installed the Microsoft Windows Server 2003 operating system.
- Downloaded the `InstallPack.exe` as described in "Downloading Server-Specific Driver Packages" on page 17.
- Have the `InstallPack.exe` readily available.

Update the System-Specific Drivers

To update the system-specific drivers:

1. **Copy the `InstallPack.exe` file from its current location to a local drive on the server.**

Note – A version number that represents the current version of the software update package will also be part of the package name.

2. **Start the** `InstallPack.exe` **application.**

   The files are extracted and the Sun Fire Installation Package dialog box displays.

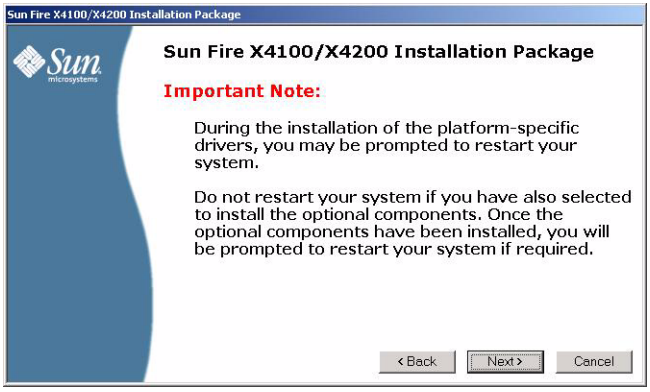
FIGURE 8-1 Sun Fire Installation Package dialog box

3. **Click** Next **to accept the default settings.**

Note – It is recommended that "platform-specific drivers" always be selected to ensure that the most recent drivers are installed.

The Important Note dialog box displays.

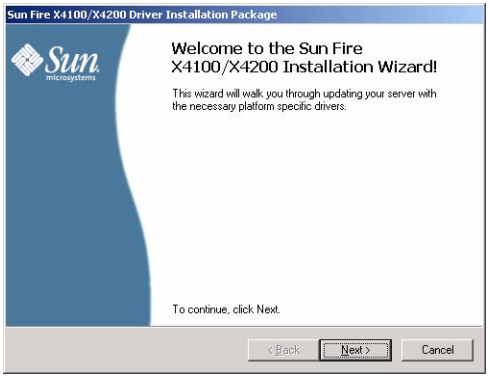
FIGURE 8-2 Important Note dialog box



4. **Review the important note and then click** Next.

   The Welcome to the Sun Fire Installation Wizard dialog box displays.

FIGURE 8-3 Sun Fire X4100/X4200 Installation Wizard dialog box



5. **Click** Next.

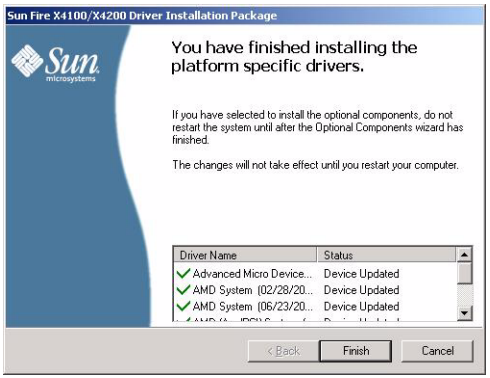
   The End User License Agreement dialog box displays.

FIGURE 8-4 End User License Agreement dialog box

6. **To accept the license agreement, click** Next**.**

   The installation will continue until the Finished Installing dialog box displays.

FIGURE 8-5 Finished Installing dialog box



7. **Click** Finish**.**

   The System Settings Change dialog box displays.

FIGURE 8-6 System Settings Change dialog box

8. **If you accepted the default settings in** Step 3**, click** No **to proceed to** "Installing Optional Components" on page 56**.**

   If you are not installing the Optional Components, click Yes **to restart your computer.**

For AMD Power Monitor installation, a security alert may display saying that AMD ACPI-compliant system has not been properly authenticated. Click Yes to accept the installation of the driver software, or No to abort.

Installing Optional Components

There are several optional components available for your Sun Fire server. You can select to install the recommended options (Typical), or choose your own set of options (Custom).

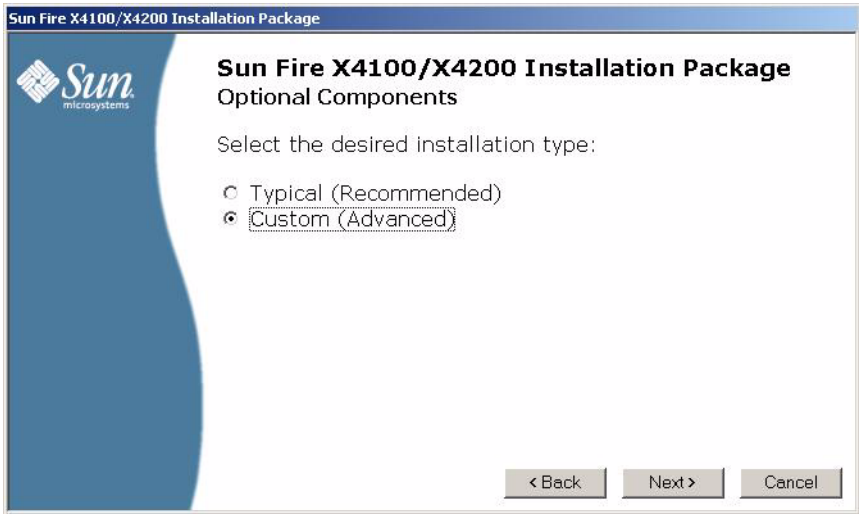
TABLE 8-1 Install Pack Optional Components

Installation Selection	Component
Typical (Recommended)	Preselected components: • Intel Teaming Supported teaming features include fault tolerance, load balancing, link aggregation, and Virtual LAN (VLAN) tagging. Configuring teaming is done via the Device Manager. • LSI SAS-IR Storage SNMP Agent - LSI SAS-IR Storage SNMP Agent captures SNMP data on the LSI SAS1064/1068 Integrated RAID controller. Requires the Windows Component for SNMP service for operation. • IPMITool - Manage and configure devices from the command line interface. After this tool has been installed, please complete the installation as described in "Completing the IPMItool Installation" on page 65.
Custom (Advanced)	User-selectable components: • AMD MCAT* Machine Check Analysis Tool (MCAT) is a command line utility that takes Windows System Event Log (`.evt`) files as an argument and decodes the MCA error logs into human readable format. • AMD Power Monitor* AMD Power Monitor is intended to show the current frequency, voltage, utilization and power savings of each core on each processor in the system. * If selected, these components will install unsigned drivers. The system will continue to operate correctly.

Note – If you have already installed the optional components, running the installation once again will not necessarily reinstall the optional components. It may result in the components being removed. Carefully review the dialog boxes during optional component installation to ensure that the results are as expected.

If you selected No in the previous Step 8, or if you did not select Optional Components in FIGURE 8-1, the Optional Components dialog box displays:

FIGURE 8-7 Optional Components Dialog Box



1. **Select your installation type:**

- **Click Next to select the recommended settings**.

  Dialog boxes guide you through the installation of each of the selected optional components. When all selected optional components have been installed, the Sun Fire Setup Completed dialog box will appear, as shown in FIGURE 8-11.

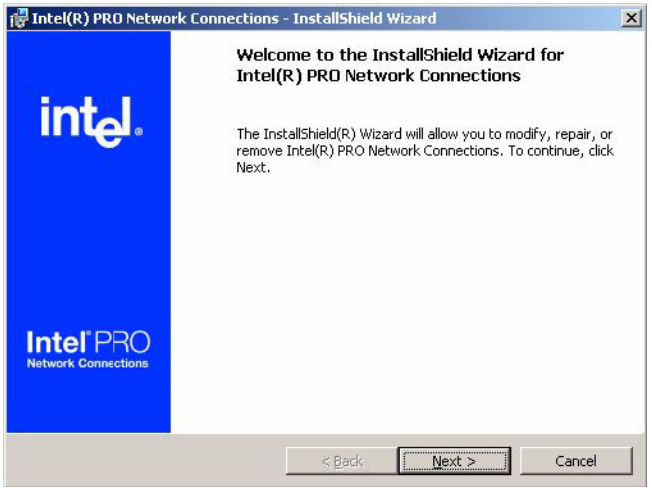
- **To modify the default settings, select Custom and click Next.**

  The Optional Components selection dialog box displays.

FIGURE 8-8 Custom Optional Components Selection Dialog Box

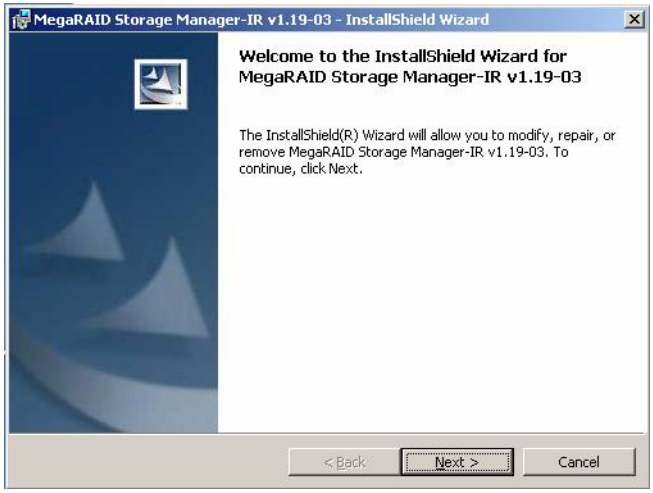
2. **Select the optional components to install and click Next to begin installation.**
   For additional information on the optional components, click "Help Me Choose."
3. **In this example,** FIGURE 8-9 **shows the introductory screen to Intel Teaming. Click Next to continue.**

FIGURE 8-9 Intel Teaming Installation Wizard Dialog Box



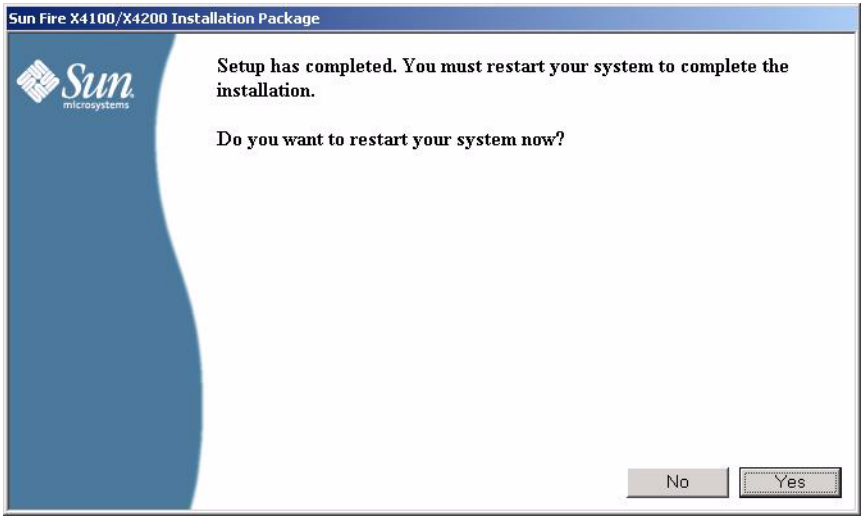
4. **In this example, FIGURE 8-10 shows the introductory screen to the introductory screen to MSM-IR. Click Next to continue.**

FIGURE 8-10 MSM-IR Installation Wizard Dialog Box



Further dialog boxes will guide you through the installation of each of the selected optional components. Follow the wizard prompts. When all selected optional components have been installed, the Sun Fire Setup Completed dialog box displays, as shown in FIGURE 8-11.

FIGURE 8-11 Sun Fire Setup Complete Dialog Box



Note – Some optional components, as indicated in FIGURE 8-8, will install unsigned drivers. Your system will continue to operate normally. During installation each unsigned driver will cause a Driver Installation Security Alert dialog to appear. You should answer **`Yes`** to continue the installation.

Additional Information for Optional Software

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

Managing RAID Using the MegaRAID Storage Manager (MSM)

The MSM program enables you to configure the LSI Logic 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`

Using Intel NIC Teaming

Intel® PROSet for Windows Device Manager is an extension to the Windows Device Manager. When you install the NIC Teaming supplemental software for your Sun server, Intel PROSet software configuration tabs are automatically added to the network adapters listed in Device Manager.

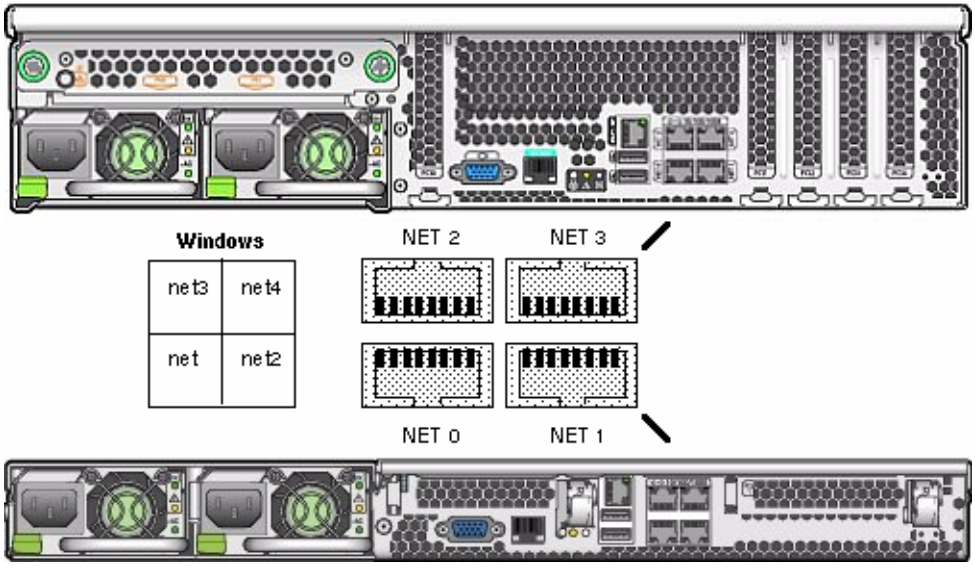
Note – To determine which network interface ports are active on your system, refer to Appendix B.

Your Sun Fire X4100 and X4200 has four Intel™ Ethernet network interface ports. The order in which the server's BIOS detects these ports during boot-up are as follows:

- NET 0 (Intel NIC)
- NET 1 (Intel NIC)
- NET 2 (Intel NIC)
- NET 3 (Intel NIC)

The device naming for the Ethernet ports differ according to the OS. Windows identifies these ports for the Sun Fire X4100 and X4200 as shown in FIGURE 8-12.

FIGURE 8-12 Sun Fire X4100and X4200 Ethernet Ports



▼ 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 8-13 Intel NIC Adapter Properties

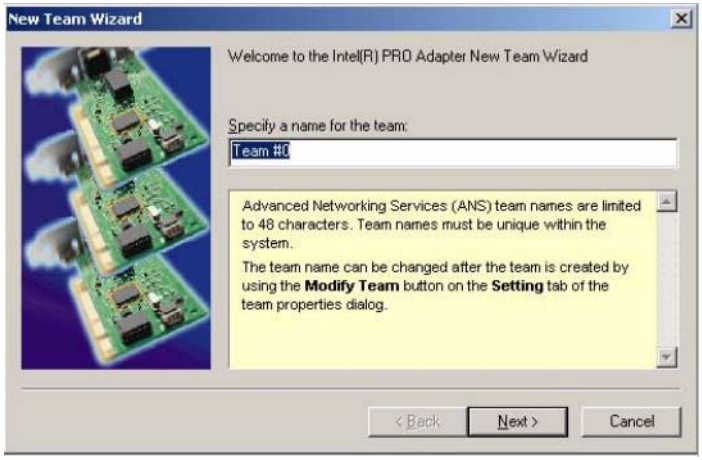
5. **To setup NIC teaming, click the Teaming tab.**

   The teaming options are displayed (see FIGURE 8-13).

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

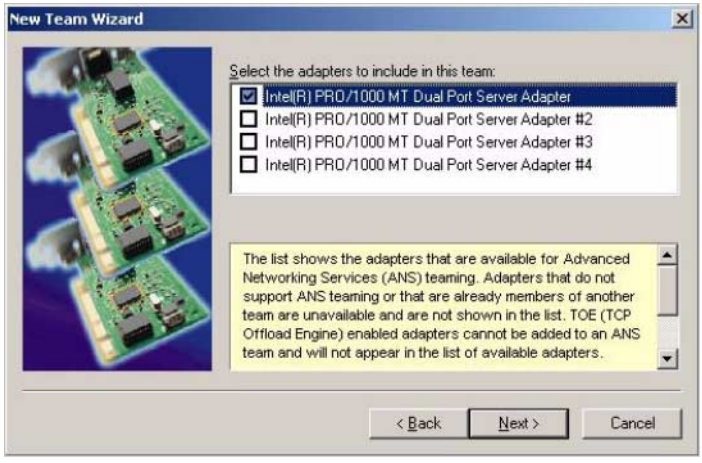
   The New Team Wizard is displayed.

FIGURE 8-14 New Team Wizard



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

FIGURE 8-15 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. IPMItool is supplemental software and may be installed using the server's Tools and Drivers CD or using the `Installpack.exe` executable file (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)* interface. For details on using ILOM, refer to your server's ILOM 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 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 "Installing Optional Components" on page 56.
- Install the Sun IPMI System Management driver as described in "Installing Optional Components" on page 56.
- No configuration is required. IPMITool is ready for use.

For Windows Server 2003 R2 SP2:

- Install the IPMI tool as described in "Installing Optional Components" on page 56.
- Install Microsoft's IPMI System Management driver in Windows Server 2003 R2 SP2.
- Configuration is required. Perform the steps described in "To Install Microsoft's IPMI System Management Driver (Windows Server 2003 R2 SP2)" on page 66.

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

Do the following before attempting to use the 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`

   and then click OK.

   The IPMI System Management driver is instantiated.

5. **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`

CHAPTER 9

Incorporating Sun Fire Drivers Into a RIS Image

This chapter is intended for advanced system administrators who need to incorporate their Sun server driver package into a Remote Installation Services (RIS) image.

Note – This information applies only to the Sun Fire X4100 and Sun Fire X4200 servers. It does not apply to the Sun Fire X4100 M2 or Sun Fire X4200 M2.

This chapter is not a tutorial on RIS; it provides guidance on how to incorporate the Sun Fire X4100 or X4200 server-specific drivers into a RIS image.

This chapter covers the following sections:

Determining Required Drivers

The server-specific drivers that must be incorporated into a RIS image are shown in TABLE 9-1 in "Sun Fire X4100 and X4200 Server-Specific Drivers for RIS Installation" on page 70 for the Sun Fire X4100 and X4200 servers.

.

TABLE 9-1 Sun Fire X4100 and X4200 Server-Specific Drivers for RIS Installation

Device	Required for 32-bit Windows Server 2003	Required for 64-bit Windows Server 2003
AMD-8131/AMD-8132 HyperTransport IOAPIC Controller	Yes	No
AMD-8111 High Precision Event Timer	Yes	No
AMD-8131 HyperTransport PCI-X Tunnel	Yes	Yes
AMD K8 Processor	Yes	Yes
AMI Virtual Floppy	Yes	Yes
LSI 1064 HBA	Yes	Yes

Adding Drivers to the RIS Image

In the following procedure, `RemoteInstall\Setup\`*Language*`\Images\`*Dir_name*`\` *Arch* refers to the image located on the RIS server where the drivers will be added.

- *Language* is the language of the installed operating system (English, for example).
- *Dir_name* is the directory where the RIS image is installed.
- *RIS_Image* refers to the root of your Windows image on the RIS server.
- *Arch* refers to the Architecture associated with your Windows image: i386 (32-bit) or amd64 (64-bit)

▼ To Add Drivers to the RIS Image

1. **Create the following directories in RIS_Image (root of your Windows image on the RIS server.):**
   - `$OEM$\textmode`
   - `$OEM$\$1\Sun\Drivers`
2. **Extract the contents of DriverPack.zip to a temporary location, making sure to maintain the directory structure.**
3. **Update the RIS_Image with the platform-specific drivers:**

- For 32-bit, copy the contents of the DriverPack\32-bit folder to the `RIS_Image\$OEM$\$1\Sun\Drivers` folder, making sure to maintain the directory structure.
- For 64-bit, copy the contents of the DriverPack\64-bit folder to the `RIS_Image\$OEM$\$1\Sun\drivers` folder, making sure to maintain the directory structure.

4. **Copy the contents of the `RIS_Image\$OEM$\$1\Sun\Drivers\lsi` folder to the `RIS_Image\$OEM\textmode` folder. (After copying the contents, you can delete the `RIS_Image\OEM$\$1\Sun\Drivers\lsi` folder).**
5. **Copy the contents of the `RIS_Image\$OEM$\$1\Sun\Drivers\RIS` folder to the `RIS_Image\$OEM$\textmode` folder. (After copying the contents, you can delete the `RIS_Image\OEM$\$1\Sun\Drivers\RIS` folder).**
6. **Copy all the files from the `RIS_Image\$OEM$\$1\Sun\Drivers\nvidia\RIS` folder to the Arch folder. (After copying the files, you can delete the `RIS_Image\$OEM$\$1\Sun\Drivers\nvidia\RIS` folder).**
7. **Create an answer file using the method described in the Microsoft TechNet article *"Creating an Answer File with Setup Manager"*. The article can be found at:**

http://technet2.microsoft.com/WindowsServer/en/library/78421630-6fcc-4604-a888-bd9c84244a5b1033.mspx

8. **Make the following changes to the `.sif` file that is used for installation.**

   For readability, the OemPnpDriversPath information has been shown on multiple lines. The information must be entered on a single line:

TABLE 9-2 Sun Fire X4100 and Sun Fire X4200 Server .sif File Changes

32-bit	64-bit

`[Unattended]`
`OemPreinstall = yes`
 	
`OemPnpDriversPath="\Sun\Drivers\`
`amd\8111\hpet;\Sun\Drivers\amd\`
`8131\IOAPIC;\Sun\Drivers\amd\8131\`
`PCIX;\Sun\Drivers\ami"`
 	
`[MassStorageDrivers]`
`"LSI Logic Fusion-MPT SAS Driver`
`(32-bit)" = OEM`
 	
`[OEMBootFiles]`
`lsi_sas.inf`
`lsi_sas.sys`
`lsinodrv.inf`
`s2k332.cat`
`txtsetup.oem`
	`[Unattended]`
	`OemPreinstall = yes`
	
	`OemPnpDriversPath="\Sun\Drivers\`
	`amd\8131\PCIX;\Sun\Drivers\amd\`
	`cpu;\Sun\Drivers\ami"`
	
	`[MassStorageDrivers]`
	`"LSI Logic Fusion-MPT SAS Driver`
	`(64-bit)" = OEM`
	
	`[OEMBootFiles]`
	`lsi_sas.inf`
	`lsi_sas.sys`
	`lsinodrv.inf`
	`s2k3am64.cat`
	`txtsetup.oem`

9. **Stop and start the Remote Installation Service (BINLSVC) on the RIS server.**

   To do this, type the following commands at the command prompt and press Enter after each command:

   ```
   net stop binlsvc
   net start binlsvc
   ```

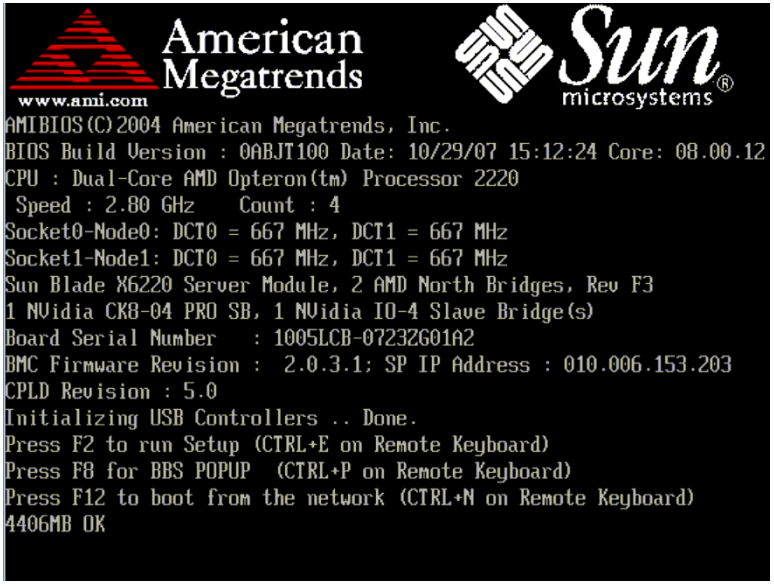
APPENDIX **A**

Configuring RAID for Any Operating System from the BIOS

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 A-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 A-2**).**

FIGURE A-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.**

Note – The LSI RAID configuration utility is described in detail in the *Sun LSI 106x* RAID User's Guide (820-4933), which is on the Sun documentation web site in the collection of documents for your Sun server.

APPENDIX **B**

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 network interfaces.

Topics in this appendix include:

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

By using Microsoft's Network Connections folder, you can visually determine which server 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.

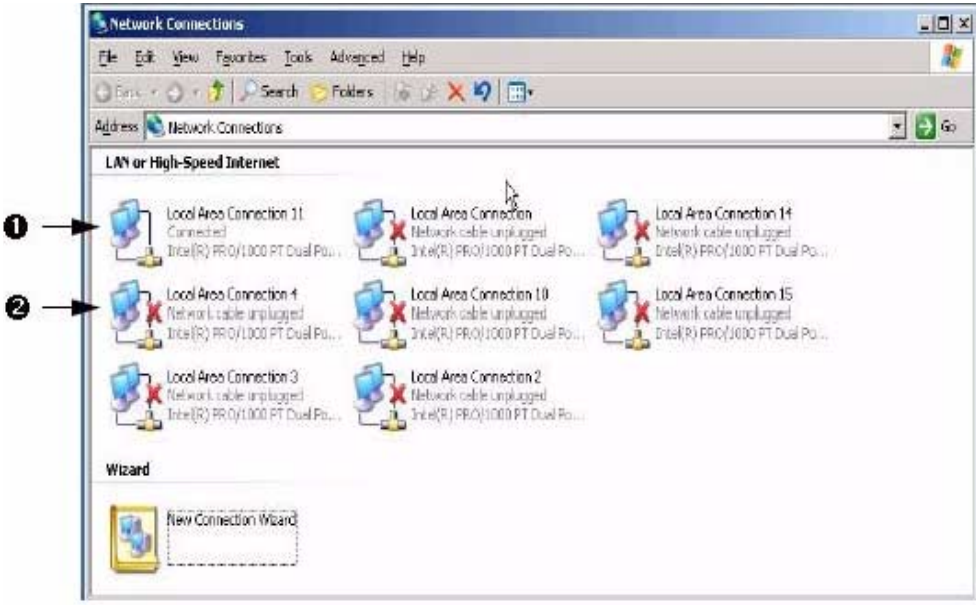


Illustration Key

1. An active port connection.
2. A red X marks the port connections that are currently inactive.

▼ 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, enter the command:** `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.

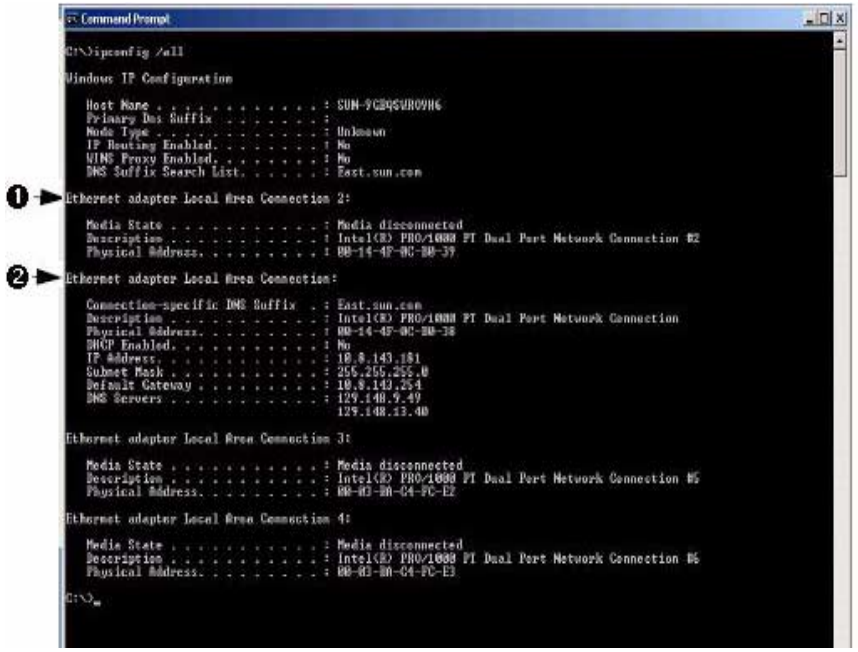


Illustration Key

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.

▼ Launch the Manage Your Server Program After Windows Setup Completes

To configure network settings after the Windows Server 2003 Setup program completes, you can use the Manage Your Server program. You can access this program at any time as long as you are logged in as Administrator.

To launch Manager Your Server, do the following:

- **Click Start -> All Programs -> Administrator Tools -> Manager Your Server.**

For specific details about how to specify network settings using the Manage Your Server program, see Microsoft's documentation.

Index

S

T

U