



Sun Fire™ X4600 M2 Server Windows Operating System Installation Guide

Sun Microsystems, Inc.
www.sun.com

Part No. 820-5467-10
June 2008, Revision A

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

Copyright 2008 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at <http://www.sun.com/patents> and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, Java, AnswerBook2, docs.sun.com, Sun Fire, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and in other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

AMD Opteron is a trademark or registered trademark of Advanced Microdevices, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

U.S. Government Rights—Commercial use. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2008 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, Californie 95054, Etats-Unis. Tous droits réservés.

Sun Microsystems, Inc. a les droits de propriété intellectuelle relatants à la technologie qui est décrit dans ce document. En particulier, et sans la limitation, ces droits de propriété intellectuelle peuvent inclure un ou plus des brevets américains énumérés à <http://www.sun.com/patents> et un ou les brevets plus supplémentaires ou les applications de brevet en attente dans les Etats-Unis et dans les autres pays.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a.

Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, Java, AnswerBook2, docs.sun.com, Sun Fire, et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

AMD Opteron est une marque de fabrique ou une marque déposée de Advanced Microdevices, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciées de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.



Adobe PostScript

Contents

| | |
|--------------------------------------------------------------|------------|
| Preface | vii |
| 1. Getting Started | 1 |
| About Windows Server Installation | 1 |
| Important Installation Considerations | 2 |
| Supported Windows Operating Systems | 3 |
| Assisted Installation Using Sun Installation Assistant (SIA) | 3 |
| SIA Media Availability, Updates and Documentation | 4 |
| Manual Installation | 4 |
| 2. Downloading Server-Specific Driver Packages | 7 |
| 3. Selecting the Delivery Methods | 9 |
| Select a Mass Storage Drivers Method | 10 |
| Select a Windows OS Distribution Media Method | 11 |
| 4. Prepare for Mass Storage Driver Delivery | 13 |
| Create a Floppy Disk | 13 |
| ▼ To Create a Floppy Disk | 14 |
| Copy the Floppy Image File | 16 |
| ▼ To Copy the Floppy Image File | 17 |

- 5. Configure the JavaRConsole System 19**
 - JavaRConsole System Requirements 20
 - Setting Up the JavaRConsole System 20
 - ▼ To Set Up the JavaRConsole System 20

- 6. Installing Windows Server 2003 25**
 - Installation Requirements 25
 - Installing the Operating System 26

- 7. Installing Windows Server 2008 33**
 - Installation Requirements 33
 - Installing the Operating System 34

- 8. Update the Critical Server-Specific Drivers 39**
 - Updating the Server-Specific Drivers 39
 - ▼ To Update the Server-Specific Drivers 40
 - Installing Supplemental Software 44
 - ▼ To Install Supplemental Software 45
 - Additional Information for Supplemental Software 46
 - Managing RAID Using the MegaRAID Storage Manager (MSM) 46
 - Using Intel NIC Teaming for With Your Sun Fire X4600 M2 Server 46
 - ▼ To Access NIC Teaming Configuration Settings 47
 - Completing the IPMItool Installation 49
 - Requirements 49
 - ▼ To Install Microsoft's IPMI System Management Driver (Windows Server 2003 R2 SP2) 50

- 9. Incorporating Sun Fire Drivers Into WIM or RIS Images 53**
 - Determine Required Drivers 54
 - Add Drivers to a WIM Image 54
 - Before you Begin 54

| | |
|-------------------------------------------------------------------|-----------|
| ▼ To Add Drivers to the WIM Image | 55 |
| Adding Drivers to the RIS Image | 57 |
| Before you Begin | 57 |
| ▼ To Add Drivers to the RIS Image | 58 |
| A. Configuring RAID for Any Operating System from the BIOS | 61 |
| Index | 63 |

Preface

This document contains instructions for installing the Windows Server 2003 or 2008 operating system onto a Sun Fire X4600 M2 server.

Note – This book applies only to the Sun Fire X4600 M2 server.

Related Documentation

The document set for the Sun FireX4600 M2 Server is described in the Where To Find Sun Fire X4600/X4600 M2 documentation at

<http://docs.sun.com/app/docs/prod/sf.x4600m2>

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>

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 <code>dir</code> to list all files. |
| AaBbCc123 | What you type, when contrasted with onscreen computer output | > ipconfig Password: |
| <i>AaBbCc123</i> | Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values. | Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> have administrator privileges to do this. To delete a file, type <code>del filename</code> . |
| 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 X4600 M2 Server Windows Operating System Installation Guide, part number
820-5467-10

Getting Started

This chapter describes the information you will need to know before installing the Microsoft Windows Server 2003 or 2008 operating system on a Sun Fire X4600 M2 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 3](#)
- [“Manual Installation” on page 4](#)

About Windows Server Installation

The Sun Fire X4600 M2 servers require additional server-specific drivers that are not included with the Windows Server 2003 operating system. For Windows Server 2008, required drivers are included with the Windows Server 2008 distribution media.

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 and 2008.

Important Installation Considerations

Please note the following important considerations before beginning the Windows Server operating system installation on a Sun Fire X4600 M2 server:

- When you install the Windows operating system, any data on the boot drive, including any preinstalled operating system, will be overwritten.
- If you want to include your boot drive as part of a RAID configuration, you will need to configure a RAID volume on it using the LSI integrated RAID controller's setup utility (accessible during server boot) before you install the Windows operating system. For more details, see [Appendix A](#).
- A primary consideration during installation is providing the mass storage drivers for the disk controller. Windows Server 2008 provides the drivers required for your server. Windows Server 2003 media does not contain the mass storage drivers needed for operating system installation.
 - **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 3.
 - **If you install Windows manually**, using the Microsoft Windows installation media, Windows 2003 requires that the mass storage drivers be delivered from a floppy disk. The Windows 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 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 *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188), for details on setting up the hardware needed for the installation.

Supported Windows Operating Systems

The Sun Fire X4600 M2 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)
- 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)

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

<http://www.sun.com/servers/x64/x4600/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 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 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, “[Incorporating Sun Fire Drivers Into WIM or RIS Images](#)” on page 53.

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

1. [Downloading Server-Specific Driver Packages](#) (see Chapter 2).
2. [Selecting 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. [Installing Windows Server 2003](#) (see Chapter 6).
6. [Installing 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.

Downloading Server-Specific Driver Packages

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

Note – If you have the Tools and Drivers CD (system software release 2.1 or later), 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 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.

<http://www.sun.com/servers/x64/x4600/downloads.jsp>

2. Choose one of the following download options:

- **If you are installing the Windows Server media, download `Windows.zip` to a hard drive location or media that will be accessible during the installation.**

Extract the following sub-packages contained in `Windows.zip`:

- `FloppyPack_x_x_x.zip` (contains LSI integrated RAID controller driver). You will use this file to create driver media for your Windows Server 2003 installation, see [Chapter 3](#).
- `InstallPack_x_x_x.exe` (program to install all server-specific device drivers)
- `DriverPack_x_x_x.zip` (for experts only, server-specific driver archive for Windows Server, English). Download this file if you want to perform a PXE installation described in Chapter 9, “[Incorporating Sun Fire Drivers Into WIM or RIS Images](#)” on page 53.
- `OptPack_x_x_x.zip` (for experts only, supplemental software archive). Download this file if you want to incorporate the supplemental software into a PXE installation.

- If you are installing Windows Server using a PXE server (advanced installation), extract the contents of the `DriverPack_x_x_x.zip` file on the PXE server.

Note – The `_x_x_x` number identifies the version of the package (for example, `FloppyPack_1_1_4.zip`).

3. Make sure that the driver packages are available as you begin the operating system installation. Proceed to [Chapter 3](#) to select the delivery methods.

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 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 installation. Make note of the method you have selected

Note – For Windows Server 2008, the Windows distribution media includes all drivers necessary for installing Windows on the Sun Fire X4600 M2 server. If you are installing Windows Server 2003, you will need to supply drivers during the installation using one of the methods described below.

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

| 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. | <ul style="list-style-type: none">• External USB floppy drive listed as "Designed for Windows"* on the Windows Marketplace site: http://testedproducts.windowmarketplace.com/• Floppy disk | Easy |
| Floppy Disk Remote: Uses a remote KVMs to redirect to a physical floppy drive on the system hosting the JavaRConsole. | <ul style="list-style-type: none">• 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. | <ul style="list-style-type: none">• 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. |

* 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 operating system (OS) distribution media for the Windows installation on your server. Make a note of the method that you selected.

TABLE 3-2 Delivery Methods for Windows Server Distribution Media

| Mass Storage Drivers 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 2003 installation.

Depending on the method selected in [Chapter 3](#), you will use one of the procedures in this chapter. See [TABLE 4-1](#).

TABLE 4-1 Mass Storage Driver Delivery Methods

| Delivery Method | Section to Read |
|--------------------|---------------------------------------------------------|
| Floppy Disk Local | “Create a Floppy Disk” on page 13 |
| Floppy Disk Remote | “Create a Floppy Disk” on page 13 |
| Floppy Image | “Copy the Floppy Image File” on page 16 |

Create a Floppy Disk

For the *Floppy Disk Local* or *Floppy Disk Remote* delivery method, you need to create a floppy disk containing the 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
- The latest Tools and Drivers CD for your server, or `FloppyPack_x_x_x.zip` (See [“Downloading Server-Specific Driver Packages” on page 7](#) for details on obtaining `FloppyPack_x_x_x.zip`)

Note – The `_x_x_x` number identifies the version of the package (for example, `FloppyPack_1_1_4.zip`).

▼ To Create a Floppy Disk

Sun provides a wizard to help create the necessary floppy disk required for Windows installation. The Sun Fire Mass-Storage Driver Disk Creation wizard may be started using one of the following methods: from the main menu of your server's Tools and Drivers CD, or from the `mkfloppy.exe` executable file. Directions for using either method are described below.

1. Start the Sun Fire Mass-Storage Driver Disk Creation wizard using one of the following methods:

- **Insert the Tools and Drivers CD into the server's CD/DVD drive. The CD will autostart. At the main menu, select *Make a Windows 2003 Mass Storage Driver Disk*, and then proceed to [Step 2](#).**

--or--

- **If you have downloaded `FloppyPack_x_x_x.zip` from the Sun download site (see "[Downloading Server-Specific Driver Packages](#)" on page 7), do the following to copy and extract the files:**
 - i. **On a system running Microsoft Windows software with a floppy drive, copy the `FloppyPack_x_x_x.zip` file to a temporary directory.**
 - ii. **Start Windows Explorer.**
 - iii. **Navigate to the folder where you placed the downloaded file.**
 - iv. **Select `FloppyPack_x_x_x.zip`.**
 - v. **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.

- vi. **Extract the files into a new (empty) folder.**
- vii. **Start Windows Explorer and navigate to the folder containing the extracted files.**
- viii. **In Windows Explorer, open the directory containing the extracted files and double-click `mkfloppy.exe`, and then proceed to the next step.**

2. At the Mass-Storage Driver Disk Creation wizard welcome page (see [FIGURE 4-1](#)), click **Next** and follow the instructions in the wizard to create the mass storage drivers floppy disk for your server.

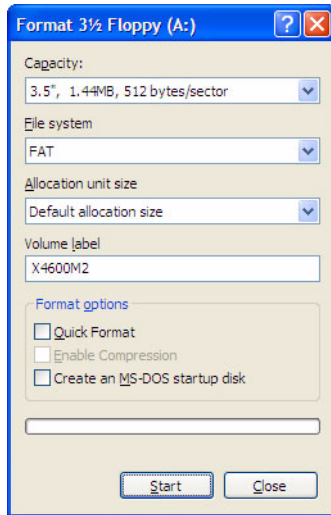
Insert a blank floppy disk into drive A: when prompted.

FIGURE 4-1 Mass-Storage Drivers Disk Creation Wizard Welcome Page



3. At the Format 3 1/2 Floppy page (see [FIGURE 4-2](#)), click the **Start** button to begin formatting.

FIGURE 4-2 Format 3 1/2 Floppy Page



4. When the floppy disk formatting is complete, click the Close button.

The Format 3 1/2 Floppy page closes and you are returned to the Mass-Storage Driver Disk Creation wizard.

5. Click Next and follow the instructions in the wizard to complete the creation of the mass storage drivers floppy disk, and then 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 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 `FloppyPack.zip` driver package downloaded from the driver download site or on the Tools and Drivers CD (system software release 2.1, or later) as shown in [“Downloading Server-Specific Driver Packages” on page 7](#).

▼ To Copy the Floppy Image File

To copy the floppy image file using a Windows system:

1. Prepare the driver files:

- If you are using the Tools and Drivers CD to access the floppy package, do the following:
 - i. Insert the CD into the JavaRConsole system.
 - ii. Navigate to the following directory:
`windows\w2k3\packages\FloppyPack\image`
and then proceed to [Step 2](#).
- If you have downloaded `FloppyPack.zip` from the download site, do the following to copy and extract the files:
 - i. Copy the `FloppyPack_x_x_x.zip` file to a temporary directory.
 - ii. Start Windows Explorer.
 - iii. Navigate to the temporary folder where you placed the downloaded file.
 - iv. Select `FloppyPack_x_x_x.zip`.
 - v. 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.

- vi. Navigate to the folder where the extracted files reside.
 - vii. Navigate to the image folder, and then proceed to the next step.
- ### 2. Copy the `floppy.img` file to a folder on the system that will be available during installation.
- Note the `floppy.img` file location.
- ### 3. To install Windows remotely using the Floppy Image method, proceed to [Chapter 5](#) to setup your remote console.

Configure the JavaRConsole System

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

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 media delivery methods described in [Chapter 3](#):
 - Floppy Disk Remote
 - Floppy 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* for your Sun Fire server 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 server 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 floppy and/or CD/DVD-ROM drives.
- If the JavaRConsole system is running Windows Server, Internet Explorer Enhanced Security must be disabled.

Setting Up the JavaRConsole System

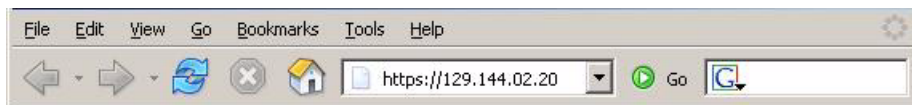
This section describes how to setup the JavaRConsole system to deliver the mass storage drivers during a remote Windows Server 2003 installation.

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.

▼ To Set Up the JavaRConsole System

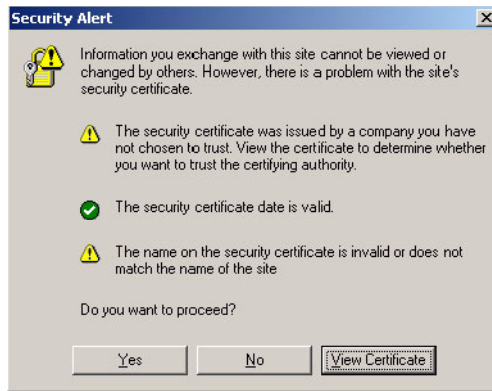
1. **Start the remote console application by typing the IP address of the Integrated Lights Out Manager (ILOM) service processor into a browser on the JavaRConsole system.**

FIGURE 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

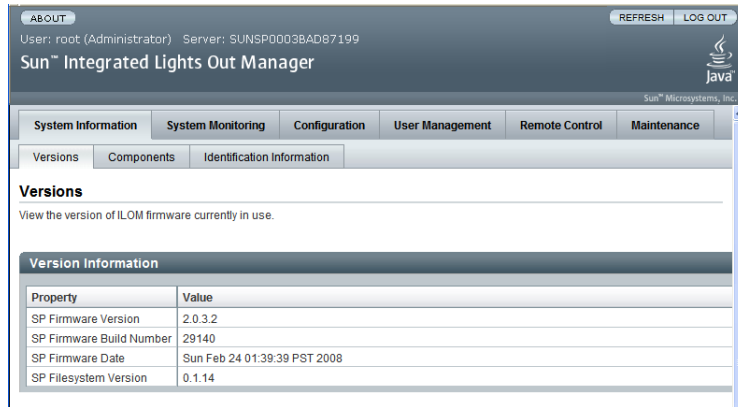


3. Enter the user name and password and click Log In.

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

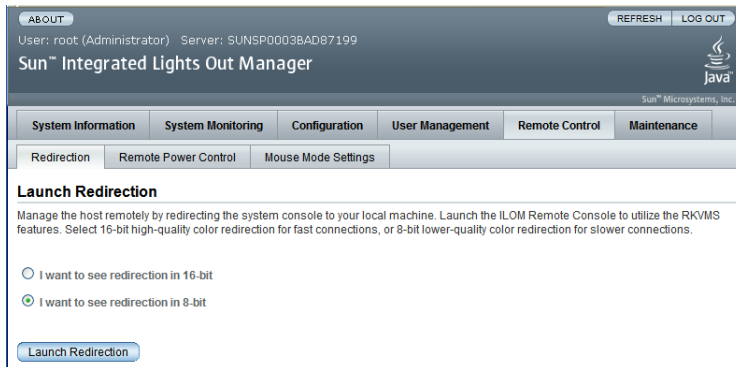


4. Click the Remote Control tab in the ILOM WebGUI.

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 8-bit color or 16-bit color, then click Launch Redirection.

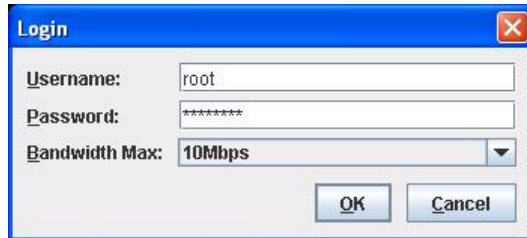
Note – When using a Windows system for JavaRConsole System redirection, an additional warning appears after clicking Launch Redirection. If the Hostname Mismatch dialog box is displayed, click the Yes button.

FIGURE 5-6 Hostname Mismatch Dialog Box



The Remote Control dialog box appears.

FIGURE 5-7 Remote Control Login Dialog Box

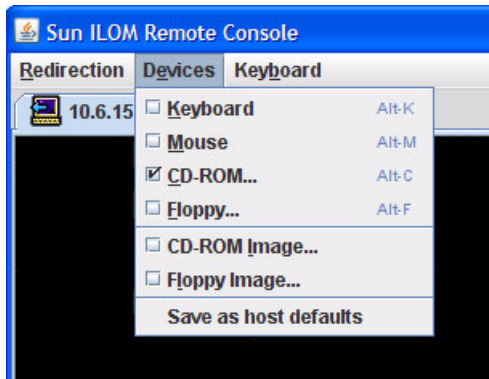


6. In the Remote Control Login dialog box, enter your user name and password and click OK.

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 one floppy item and/or one CD item 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 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 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.

Installing Windows Server 2003

This chapter describes how to install the Windows Server 2003 operating system directly onto a Sun Fire X4600 series 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).
- If you want to configure your boot drive for RAID1 (mirroring), you will need to do so using the LSI Logic integrated RAID controller's setup utility (accessible by pressing Ctrl+C when prompted during server boot) before you install the Windows operating system.
- 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.
- 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 rear 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 <code>floppy.img</code> 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 Sun Fire X4600 series 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.

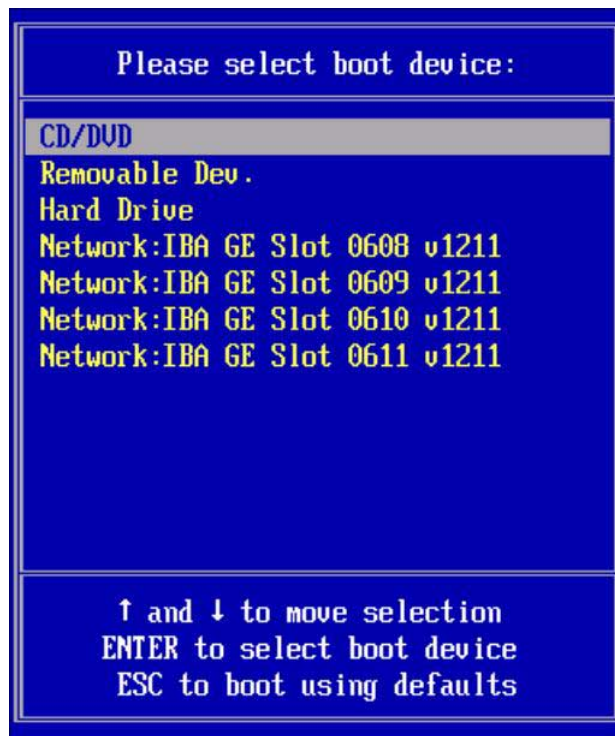
- 1. Make sure that you have completed all of the requirements listed in [Installation Requirements](#).**
- 2. Power cycle your server.**
The BIOS POST process begins.
- 3. Press F8 when the Press F8 for BBS POPUP prompt appears on the BIOS POST screen (see [FIGURE 6-1](#)).**
The BBS POPUP menu will allow you to select a boot device.

FIGURE 6-1 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 6-2](#)). If you have selected the Windows Local installation method, insert the Windows media CD in the server's CD/DVD drive now.

FIGURE 6-2 Boot Device Menu Example



5. **Select CD/DVD 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.

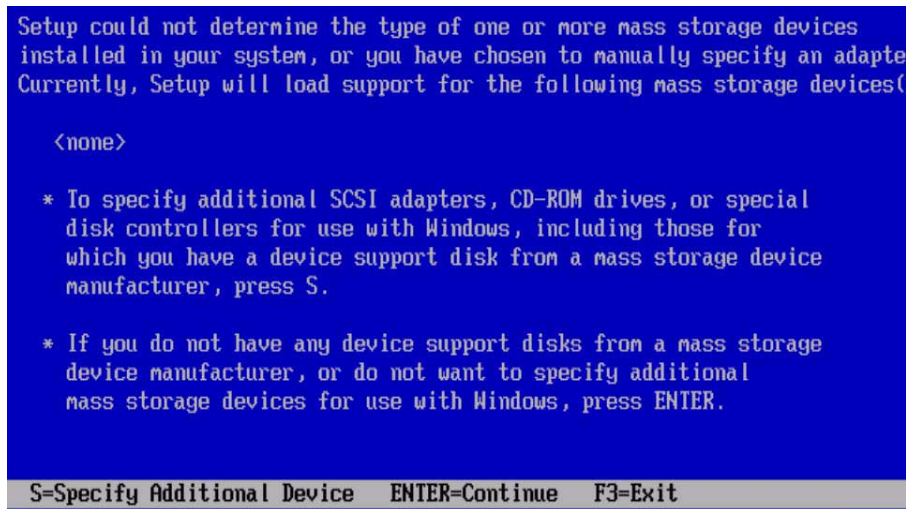
6. Press F6 when you see the following prompt at the bottom of the screen during the Windows Setup process:

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 6-3 Specify Additional Device Screen



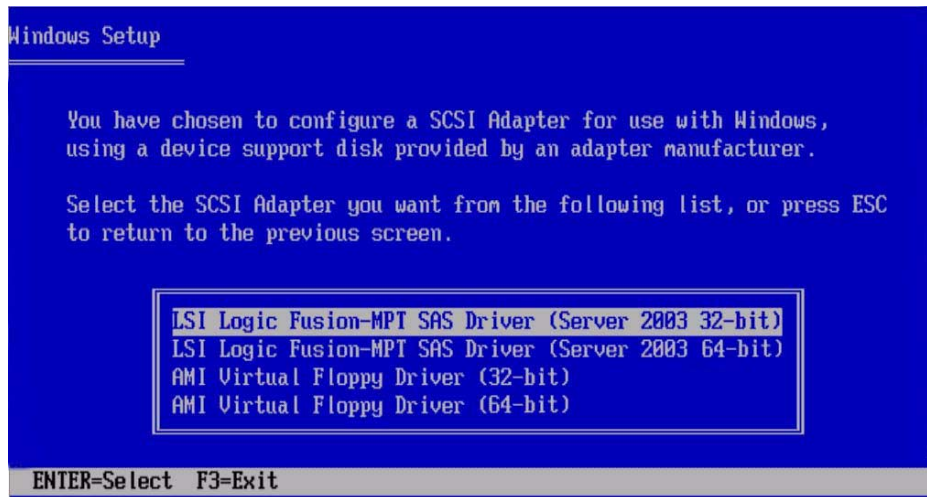
7. Make sure that the mass storage drivers are accessible according to the mass storage driver installation method that you have selected.

- **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

8. Press S to specify additional devices.

A screen appears listing the available drivers.

FIGURE 6-4 Select SCSI Adapter Screen

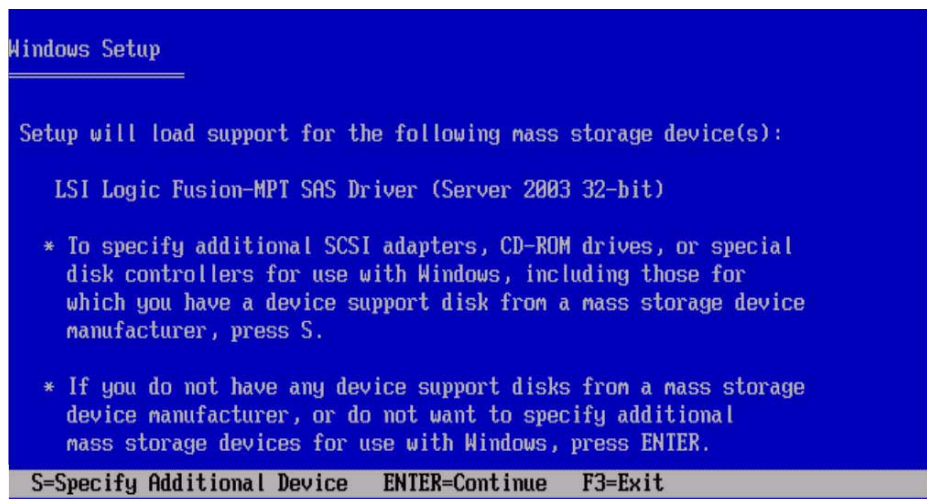


9. Select the appropriate version of the LSI Logic Fusion-MPT SAS Driver, depending on the version of Windows you are installing (Server 2003 32-bit or Server 2003 64-bit), then press Enter.

Windows Setup will then display your selection.

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

FIGURE 6-5 Specify Additional Device Screen

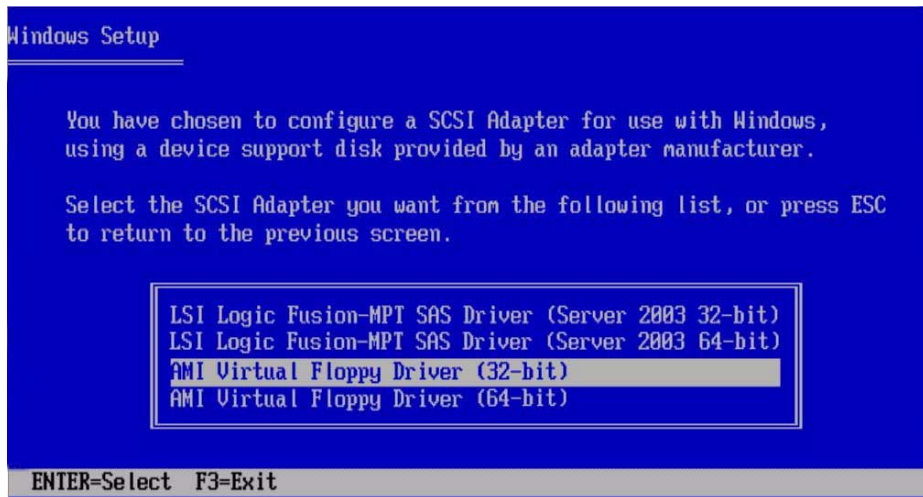


11. Do one of the following:

- If you are installing Windows using the Floppy Disk Local method, press Enter and skip to [Step 14](#).
- If you are installing Windows remotely using the Floppy Disk Remote or the Floppy Image delivery method, you will need to install the AMI virtual floppy driver. Press S.

Windows Setup will display a list of available drivers. Proceed to the next step.

FIGURE 6-6 Select SCSI Adapter Screen



12. Select the appropriate version of the AMI Virtual Floppy Driver, depending on the version of Windows you are installing (32-bit or 64-bit), and then press Enter.

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

FIGURE 6-7 Specify Additional Device Screen



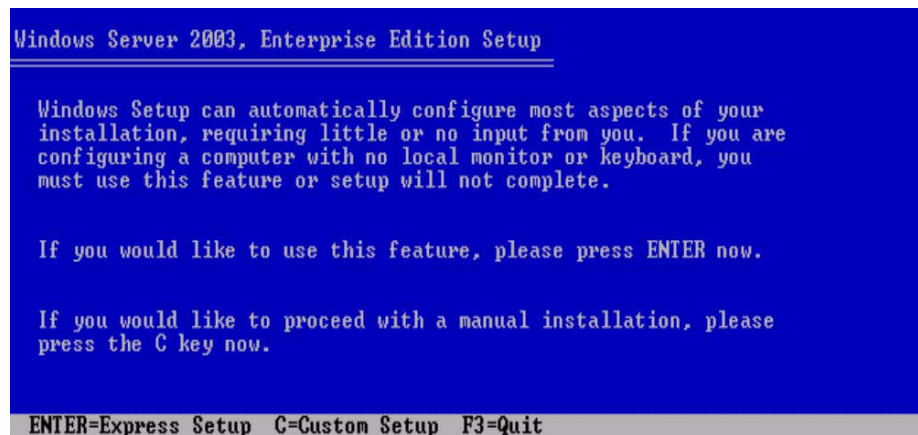
13. Confirm your choice and press Enter to continue.

The Welcome to Setup screen is displayed.

14. At the Welcome to Setup screen, press Enter to continue.

The Setup Selection screen is displayed.

FIGURE 6-8 Setup Selection Screen



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

If you plan to use hardware RAID on the system disk, 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**.

16. 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.

17. Proceed to [Chapter 8](#) "Updating the Critical Server-Specific Drivers."

Installing 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).
- If you want to configure your boot drive for RAID1 (mirroring), you will need to do so using the LSI Logic integrated RAID controller's setup utility (accessible by pressing Ctrl+C when prompted during server boot) before you install the Windows operating system.
- Verify that a keyboard and mouse are attached to the appropriate connections on your server.
- 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 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 |
|----------------|-----------------------------------------------------------------------------------------------------------|
| 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 DVD-ROM drive. |
| Windows Image | Ensure that the Windows Server 2008 installation media is accessible from the JavaRConsole system. |

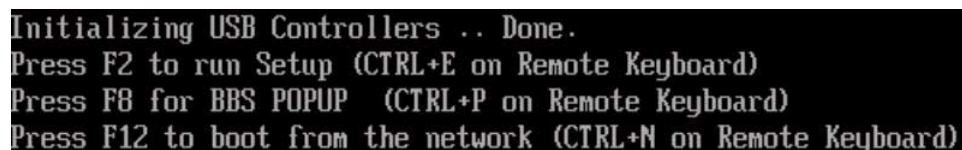
Installing the Operating System

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.

- 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 7-1](#)).**
The BBS POPUP menu will allow you to select a boot device.

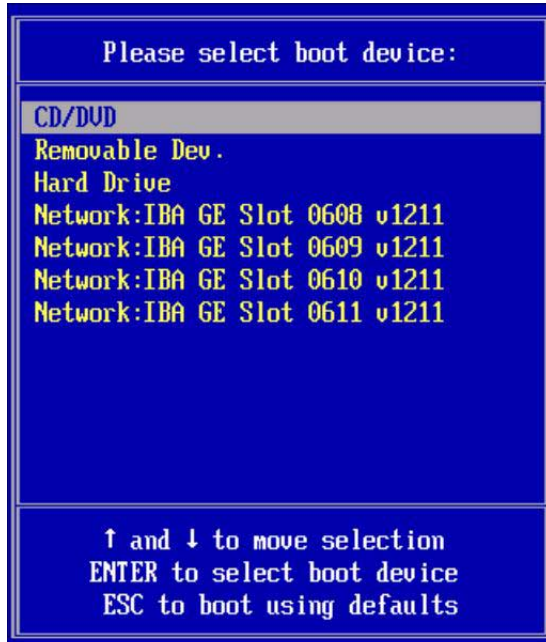
FIGURE 7-1 F8 Prompt Example



```
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 7-2](#)). If you have selected the Windows Local installation method, insert the Windows media DVD in the server's DVD drive now.

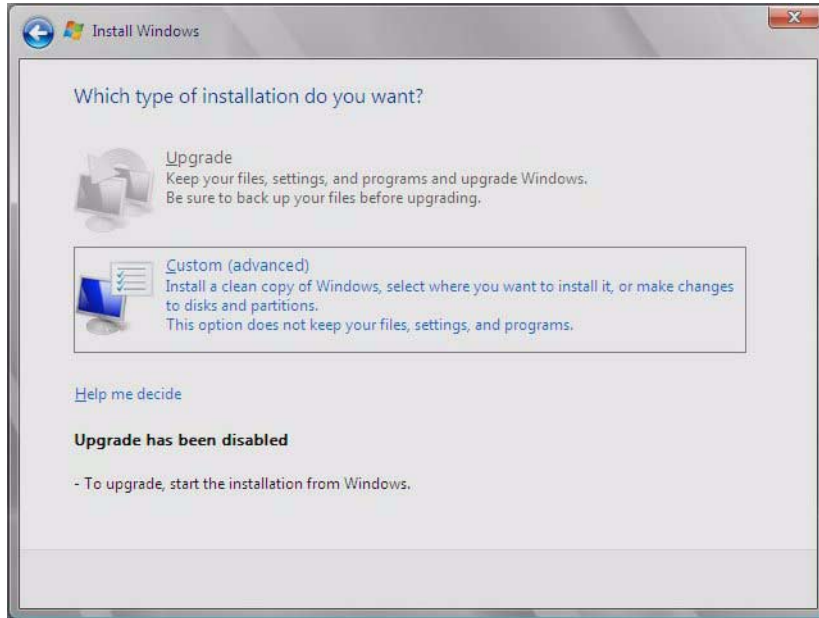
FIGURE 7-2 Boot Device Menu Example



5. **Select CD/DVD from the Boot Device menu and press Enter.**
If prompted with Press any key to boot from CD, quickly press any key.

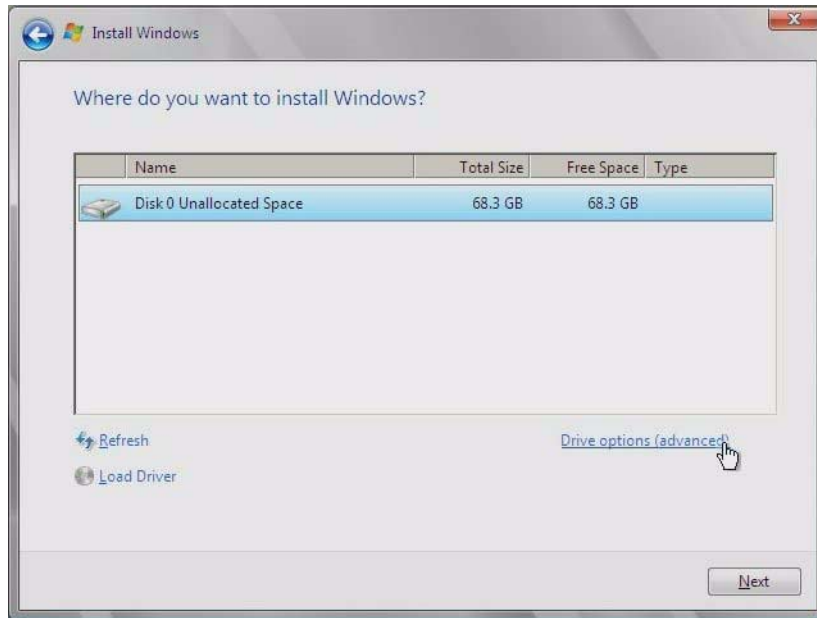
6. The Windows installation wizard starts. Proceed through the installation wizard until you see the Installation Type page displayed, and then click Custom (advanced).

FIGURE 7-3 Select Installation Type Page



7. You will then see the Where to Install Windows page (see FIGURE 7-4), do one of the following:

FIGURE 7-4 Where to Install Windows Page Example



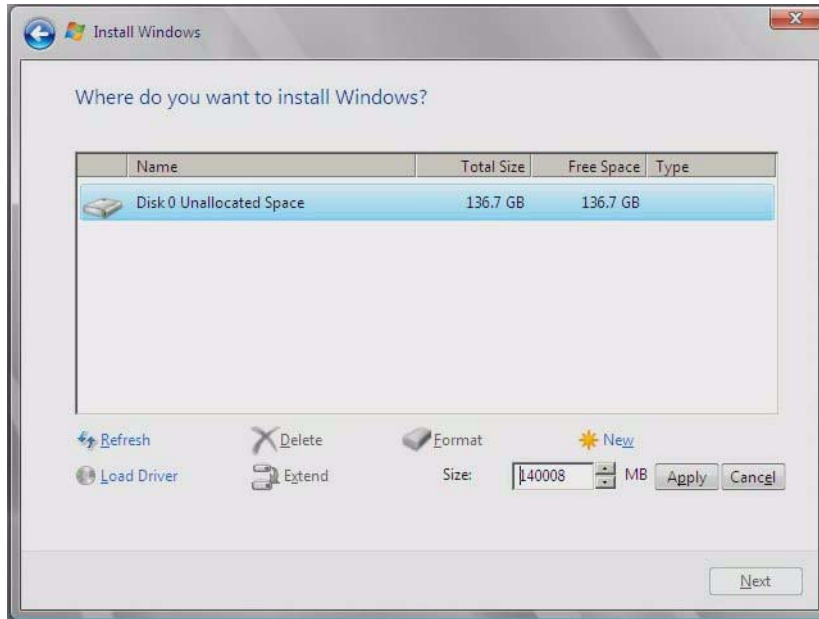
- If you *do not* want to override the Windows default partition settings, click Next and skip to [Step 9](#).
- If you *do* want to override the Windows default partition settings, click Driver Options (advanced) and proceed to the next step.



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

8. At the Advanced Driver Options page (see [FIGURE 7-5](#)), do the following:
 - 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.

FIGURE 7-5 Windows Partition Management Page



9. The Windows installation begins.

The server will reboot multiple times during the installation process.

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

Note – Windows Server 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 you have created your initial account, the Windows Server 2008 desktop is displayed. The Windows Server 2008 interface is new, review the Microsoft documentation to familiarize yourself with the changes.

- 11. 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:

- [“Updating the Server-Specific Drivers” on page 39](#)
- [“Installing Supplemental Software” on page 44](#)
- [“Additional Information for Supplemental Software” on page 46](#)

The procedures in this chapter assume that you already:

- Installed the Microsoft Windows Server operating system.
- Downloaded `Windows.zip` and extracted `InstallPack_x_x_x.exe` as described in [“Prepare for Mass Storage Driver Delivery” on page 13](#).
- Have `InstallPack.exe` readily accessible by the server.

Note – The `_x_x_x` number identifies the version of the package (for example, `InstallPack_1_1_4.zip`).

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 using one of the following methods: from the main menu of your server’s Tools and Drivers CD, or from the `InstallPack_x_x_x.exe` executable file. Directions for using either method are described below.

▼ To Update the Server-Specific Drivers

1. Start the Sun Fire Installation Package software using one of the following methods:

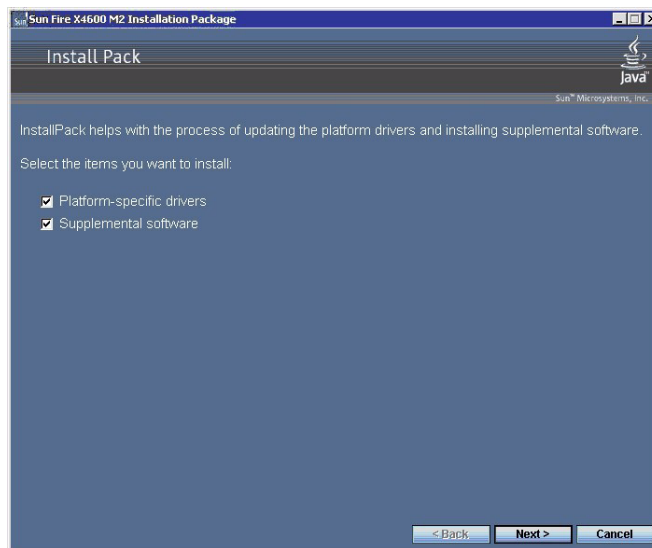
- Insert the Tools and Drivers CD into the server's CD/DVD drive. The CD will autostart. At the main menu, select Install Drivers and Supplemental Software.

--or--

- If you downloaded the `InstallPack_x_x_x.exe` file from the Sun download site (as described in ["Downloading Server-Specific Driver Packages"](#) on page 7), ensure that it has been copied to a local drive on the server, and then run the `InstallPack_x_x_x.exe` application.

The Sun Fire Install Package dialog box (shown below) displays.

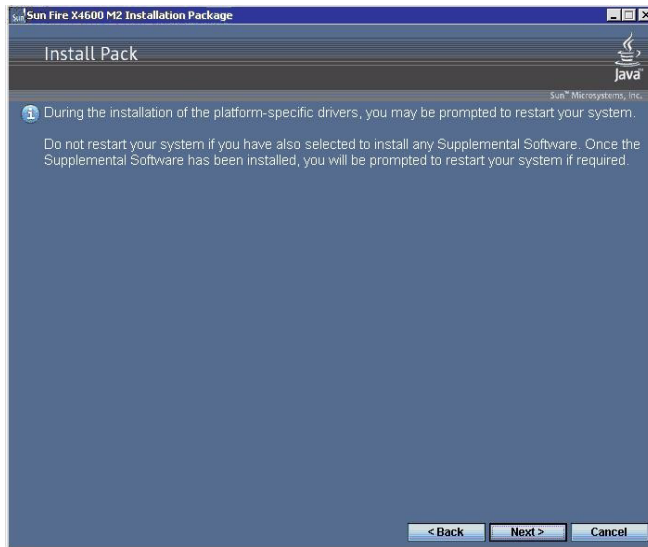
FIGURE 8-1 Sun Fire Installation Package Dialog Box



2. Click Next to accept the default settings.

Note that you should always accept the “platform-specific drivers” to ensure that the most recent drivers are installed. The Install Pack notice dialog box displays.

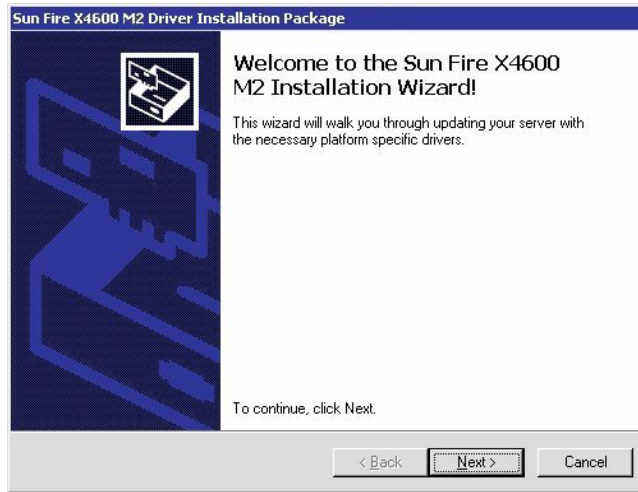
FIGURE 8-2 Install Pack Notice Dialog Box



3. Review the Important Note and then click Next.

The Welcome to the Sun Fire Installation Wizard displays.

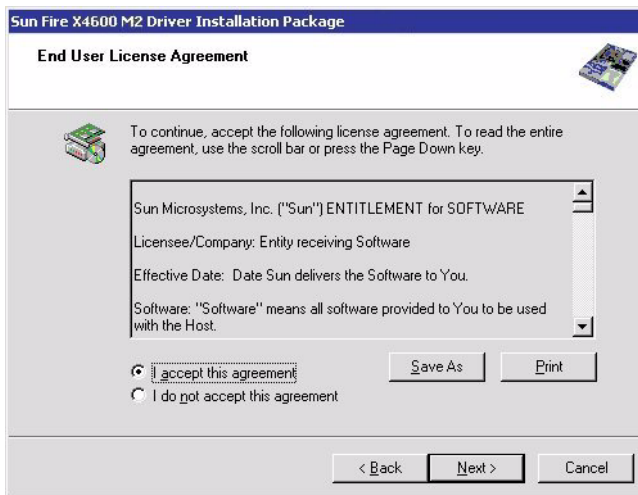
FIGURE 8-3 Sun Fire Installation Wizard



4. Click Next.

The End User License Agreement page appears.

FIGURE 8-4 End User License Agreement Page



5. Select “I accept this agreement”, and then click Next.

The platform-specific drivers are installed (see [FIGURE 8-5](#)). Verify that all drivers were successfully installed as indicated by the green check mark.

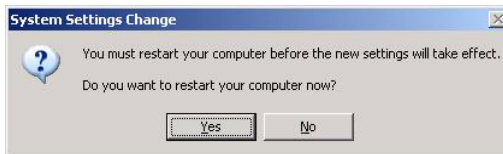
FIGURE 8-5 Finished Installing Page Example



6. Click Finish.

The System Settings Change dialog box displays (see [FIGURE 8-6](#)).

FIGURE 8-6 System Settings Change Dialog Box



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

7. If you accepted the default settings in [Step 2](#), click No to proceed to “[Installing Supplemental Software](#)” on [page 44](#).

If you are not installing the Supplemental Software, click Yes to restart your computer.

Installing Supplemental Software

There are several supplemental software components available for your Sun Fire server. You have two options for installation: **Typical**, where basic choices are made for you (as indicated in the table below), and **Custom**, which is a superset of Typical and includes all software components of Typical plus additional software components.

TABLE 8-1 Install Pack Supplemental Software

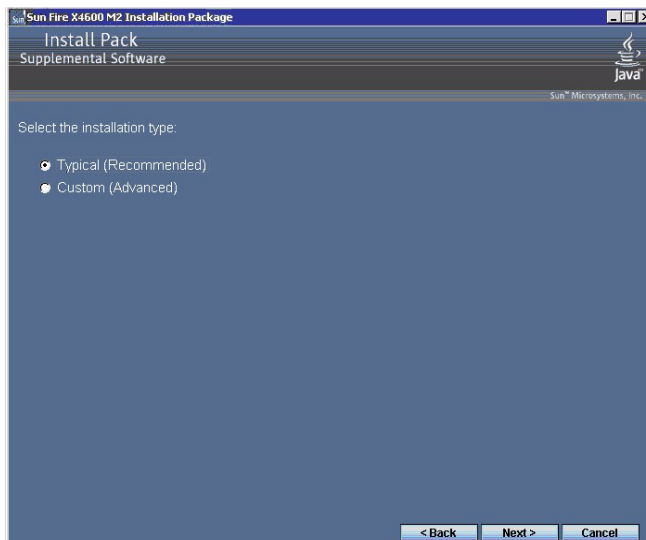
| Available Components | Windows Server 2003 | Windows Server 2008 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| Intel Teaming —NIC teaming features include fault tolerance, load balancing, link aggregation, and Virtual LAN (VLAN) tagging. | Typical | Typical |
| LSI MegaRAID Storage Manager —Allows you to configure, monitor, and maintain RAID on the LSI SAS 1064/1068 integrated RAID controller. | Typical | Typical |
| LSI SAS-IR Storage SNMP Agent —Captures SNMP data on the LSI SAS 1064/1068 integrated RAID controller. Requires the Windows Component for SNMP service for operation. | Typical | Typical |
| ipmitool —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 BMC (also called the Service Processor). For Windows Server 2003 installations, refer to “Completing the IPMItool Installation” on page 49) | Typical | Typical |
| IPMI System Management Driver (Sun Microsystems) —Windows driver that reads the sensor data repository (SDR) and displays sensor values, System Event Log (SEL), Field Replaceable Unit (FRU) inventory information. Installs for Windows Server 2003 SP1 only, is not applicable for Windows Server 2003 R2 or 2008. | Typical | Not applicable |
| AMD MCAT —Machine Check Analysis Tool (MCAT) is a command line utility that takes Windows System Event Log (.evt) file as an argument and decodes the MCA error logs into human readable format. | Custom | Custom |
| 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. | Custom | Custom |

▼ To Install Supplemental Software

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

If you selected **Supplemental Software** at the initial Installation Package page (see [FIGURE 8-1](#)) in [Step 2](#), and selected **No** in [Step 7](#), the Supplemental Software dialog box displays:

FIGURE 8-7 Supplemental Software Dialog Box



1. Click **Next** to accept the **Typical** settings, or select **Custom** to choose the options to install (see descriptions in [TABLE 8-1](#)).

Component installation wizards will guide you through the installation of each of the selected supplemental software components.

2. Once the supplemental software has been installed, click **Finish**.
3. Click **Yes** at the **System Setting Change** dialog box to restart your system. If you ran the **Sun Fire Installation Package** software from the **Tools and Drivers CD**, remove it now.

Proceed to the next section to learn more about 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)” on page 46
- “Using Intel NIC Teaming for With Your Sun Fire X4600 M2 Server” on page 46
- “Completing the IPMItool Installation” on page 49

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 for With Your Sun Fire X4600 M2 Server

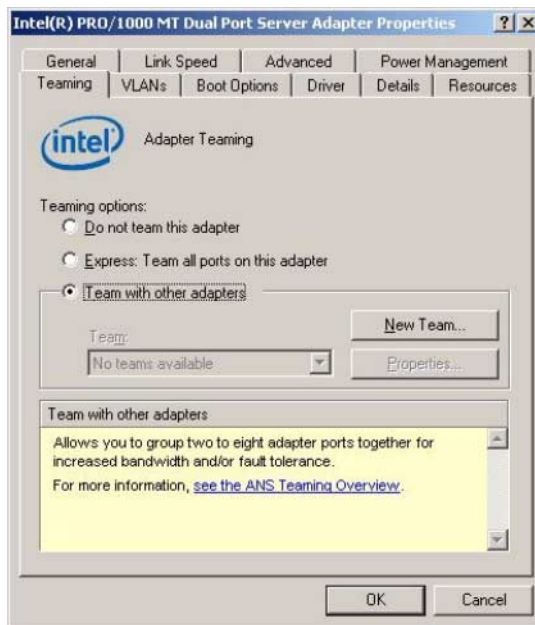
Intel® PROSet for Windows Device Manager is an extension to the Windows Device Manager. When you install the NIC Teaming supplemental software for your Sun Fire server, Intel PROSet software configuration tabs are automatically added to the network adapters listed in Device Manager.

▼ To Access NIC Teaming Configuration Settings

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

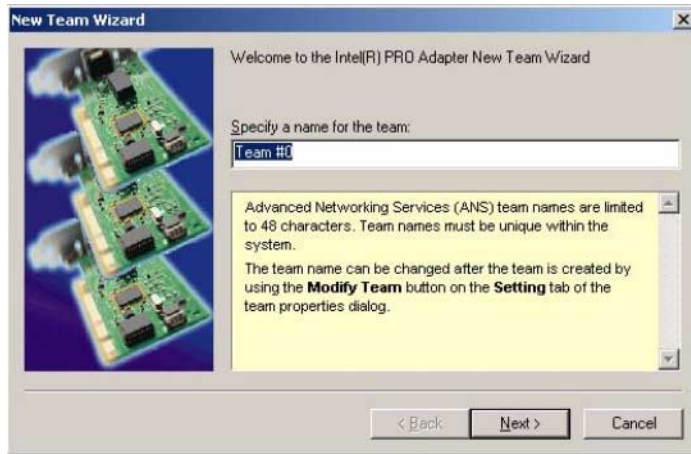
1. **From the Taskbar, click Start, and then click Run.**
The run dialog box is displayed.
2. **In the Open list, type `devmgmt.msc`, and then click OK.**
The Device Manager dialog box is displayed.
3. **Expand the Network adapters group and select the first adapter.**
4. **Right-click the selection and click Properties.**
The adapter properties dialog box is displayed.

FIGURE 8-8 Intel NIC Adapter Properties



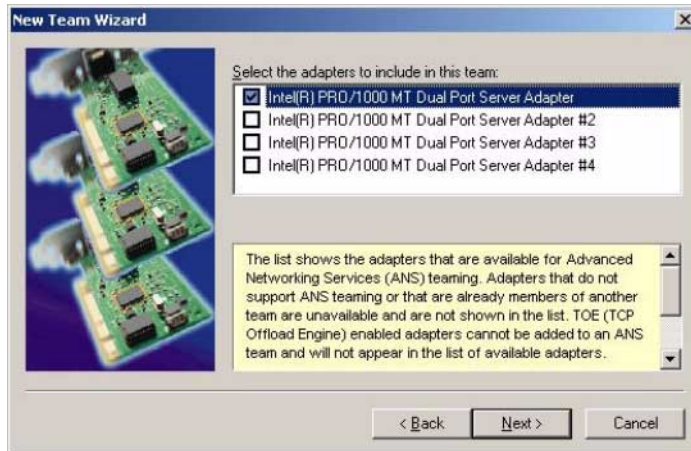
5. **To setup NIC teaming, click the Teaming tab.**
The teaming options are displayed (see FIGURE 8-8).
6. **Select Team with other adapters and then click New Team.**
The New Team Wizard is displayed.

FIGURE 8-9 New Team Wizard



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

FIGURE 8-10 Adapter Selection Page



8. Select the adapters to be included in the team from the list of installed adapters.

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_x_x_x.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, refer to the requirements listed below.

Requirements

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

For Windows Server 2003 SP1:

- Install the IPMI tool as described in ["To Install Supplemental Software" on page 45](#).
- Install the Sun IPMI System Management driver as described in ["To Install Supplemental Software" on page 45](#).
- No configuration is required. IPMItool is ready for use.

For Windows Server 2003 R2 SP2:

- Install the IPMI tool as described in ["To Install Supplemental Software" on page 45](#).

- 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 50.

For Windows Server 2008:

- Install IPMI tool as described in ["To Install Supplemental Software"](#) on page 45.
- No configuration is required. IPMITool is ready for use.

▼ 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 ipmissetp.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>

Incorporating Sun Fire Drivers Into WIM or RIS Images

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.

- [“Determine Required Drivers” on page 54](#)
- [“Add Drivers to a WIM Image” on page 54](#)
- [“Adding Drivers to the RIS Image” on page 57](#)

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 |
| AMD-8132 HyperTransport IOAPIC Controller | Yes | Yes | No | No |
| AMD K8 Processor | Yes | Yes | No | No |
| AMI Virtual Floppy | Yes | Yes | Yes | Yes |
| LSI Logic Fusion-MPT RAID HBA | Yes | Yes | Yes | Yes |
| NVIDIA nForce PCI System Management | Yes | Yes | No | No |
| NVIDIA nForce4 HyperTransport Bridge | Yes | Yes | No | No |
| NVIDIA nForce4 Low Pin Count Controller | Yes | No | No | No |

Add Drivers to a WIM Image

For remote installation of Windows Server 2008 using a server running Windows Deployment Services, the LSI integrated RAID controller driver provided with Windows Server 2008 is sufficient to install the operating system.

Before you Begin

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

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

- Locate `DriverPack.zip` for Windows Server 2008.

▼ To Add Drivers to the WIM Image

1. **Extract the contents of Windows Server 2008 `DriverPack.zip` to a network share (for example: `\\yourshare\share\DriverPack`), making sure to maintain the directory structure.**
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:\win_mount`
4. **Use Windows System Image Manager (Windows SIM, available in Windows AIK) to create an answer file that contains the paths to the device drivers that you intend to install. See the Microsoft documentation for the Windows Automated Installation Kit for the details of starting the Windows SIM application.**
5. **Add the `Microsoft-Windows-PnpCustomizationsNonWinPE` component to your answer file in the `offlineServicing` pass.**
6. **Expand the `Microsoft-Windows-PnpCustomizationsNonWinPE` node in the answer file. Right-click `DevicePaths`, and then select `Insert New PathAndCredentials`.**

A new `PathAndCredentials` list item appears.

- 7. In the Microsoft-Windows-PnpCustomizationsNonWinPE component, specify the path to the architecture 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\amd64</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 the architecture is 64-bit.**

```
<?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\amd64</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.

Adding Drivers to the RIS Image

For remote installation of Windows Server 2003 using a server running Windows Remote Installation Services, the LSI integrated RAID controller driver provided with Windows Server 2003 is not sufficient to install the operating system. Sun recommends updating the RIS image with the LSI integrated RAID controller driver available with `DriverPack.zip`.

Before you Begin

Before creating a RIS image, you need to do the following:

- Windows Remote Installation Services must be running on a Windows Server. Read the Windows Remote Installation Services documentation for more information.
- Locate `DriverPack.zip` for Windows Server 2003. For more information, see [Downloading Server-Specific Driver Packages](#).

▼ To Add Drivers to the RIS Image

In the following procedure, %RIS_Image% refers to the root of your Windows image on the RIS server.

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\i386 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\amd64 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. 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>

7. Make the changes listed in TABLE 9-2 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 X4600 M2 .sif File Entries

| Windows Server 32-bit | Windows Server 64-bit |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| [Unattended] OemPreinstall = yes | [Unattended] OemPreinstall = yes |
| OemPnpDriversPath="\Sun\Drivers\ amd\cpu;\Sun\Drivers\amd\ioapic;\ Sun\Drivers\ami;\Sun\Drivers\ati;\ Sun\Drivers\nvidia\smbus" | OemPnpDriversPath="\Sun\Drivers\ amd\cpu;\Sun\Drivers\amd\ioapic;\ Sun\Drivers\ami;\Sun\Drivers\ nvidia\smbus" |
| [MassStorageDrivers] "LSI Logic Fusion-MPT SAS Driver (32-bit)" = OEM | [MassStorageDrivers] "LSI Logic Fusion-MPT SAS Driver (64-bit)" = OEM |
| [OEMBootFiles] lsi_sas.inf lsi_sas.sys lsinodrv.inf s2k332.cat txtsetup.oem | [OEMBootFiles] lsi_sas.inf lsi_sas.sys lsinodrv.inf s2k3am64.cat txtsetup.oem |

8. 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:

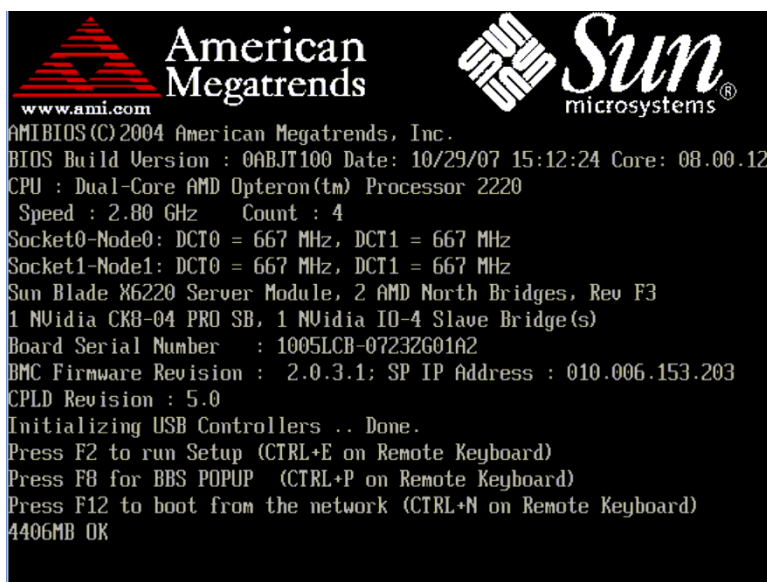
```
net stop binlsvc  
net start binlsvc
```


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.

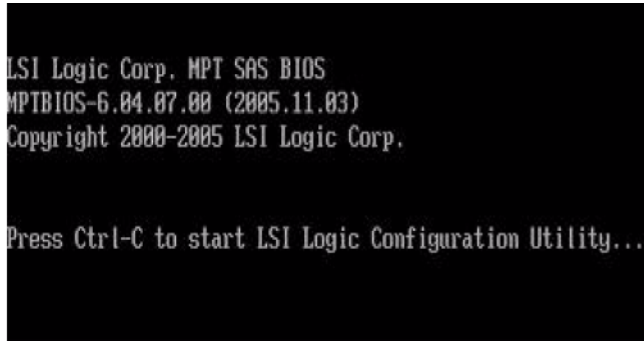
FIGURE A-1 Opening Screen of the Server BIOS



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 in the collection of documents for the X4600/X4600 M2 servers.

Index

A

assisted installation using SIA, 2

B

boot disk, considerations for including in RAID, 2

C

configuring the JavaRConsole system, 19

D

device drivers
updates to, 4

documentation
feedback, viii

downloading server-specific driver packages, 7

drivers

download procedures, 7

download sites, 7

mass storage drivers

selecting delivery method, 9

updating system-specific drivers, 39

drivers, methods for delivering, 2

F

floppy diskette creation
using Windows, 14

G

guidelines for operating system installation, 2

I

image file

creating with Windows, 17

installation (SIA) CD/DVD, 4

installation choices, 2

installation methods, assisted or manual, 2

installing from Windows media, 34

installing Windows 2008, 33

IPMITool, requirements for using, 49

J

JavaRConsole

setup procedures, 20

system configuration, 19

system requirements, 20

M

mass storage drivers

copying an image file, 16

using Windows, 17

floppy diskette creation

using Windows, 14

floppy diskette redirection, 24

floppy image redirection, 24

preparing for installation, 10

methods for delivering drivers and Windows media
for installation, 2

O

operating system installation

guidelines, 2

overview, 1

- preparing mass storage drivers, 10
- preparing Windows media, 11
- procedure, 26, 34
- requirements, 25, 33

P

- preparing for Windows installation, 1
- procedure for installing the operating system, 26, 34

R

- RAID consideration for the boot disk, 2
- remote console redirection to drivers and Windows media, 19
- Remote Installation Service (RIS)
 - adding drivers, 57
 - required drivers, 54
- remote server console redirection using JaveRConsole, 19
- requirements for operating system installation, 25, 33

S

- Sun Installation Assistant (SIA)
 - media and updates, 4
 - obtaining the latest version, 4
- supported Windows versions, 3
- system-specific drivers
 - updating, 39

T

- typographic conventions, viii

U

- updates
 - for drivers, 4
 - for SIA, 4

W

- Windows 2008, installation, 33
- Windows media
 - CD image redirection, 24
 - CD-ROM redirection, 24
 - preparing for installation, 11
- Windows media, method for delivering, 2
- Windows, supported versions, 3