



# Sun Fire™ X4140, X4240 and X4440 Servers Windows Operating System Installation Guide

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# Preface

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This guide contains instructions for installing the Windows Server 2003 or Windows Server 2008 operating system onto a Sun Fire X4140, X4240 or X4440 server.

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## Related Documentation

For a description of the document set for the Sun Fire X4140, X4240 or X4440 server, see the *Where to Find Documentation* sheet that is packed with your system and also posted on the product's documentation site. Go to the following URL, then navigate to your product:

<http://docs.sun.com/app/docs/prod/sf.x4140#hic>

<http://docs.sun.com/app/docs/prod/sf.x4240#hic>

<http://docs.sun.com/app/docs/prod/sf.x4440#hic>

Translated versions of some of these documents are available at the web site described above in French, Simplified Chinese, Traditional Chinese 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:

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## Typographic Conventions

Typeface*	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; onscreen computer output	Use <code>dir</code> to list all files.
<b>AaBbCc123</b>	What you type, when contrasted with onscreen computer output	> <b>ipconfig</b> 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.	<b>1. On the File menu, click</b> Extract All.

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

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*Sun Fire X4140, X4240 and X4440 Servers Windows Operating System Installation Guide,*  
part number 820-2399-12



# Getting Started

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This chapter describes the information you will need to know before installing the Microsoft Windows Server 2003 or Windows Server 2008 operating system on a Sun Fire X4140, X4240 or X4440 server.

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**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.

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The following sections are included in this chapter:

- [“About Windows Server Installation” on page 1](#)
- [“Important Installation Considerations” on page 2](#)
- [“Supported Windows Operating Systems” on page 3](#)
- [“Assisted Installation Using Sun Installation Assistant \(SIA\)” on page 4](#)
- [“Manual Installation” on page 5](#)

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## About Windows Server Installation

The Sun Fire X4140, X4240 and X4440 servers require mass storage drivers that are not included with the Windows Server 2003 operating system. For Windows Server 2008, required mass storage drivers are included with the Windows Server 2008 distribution media.

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

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# Important Installation Considerations

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

- When you install the Windows operating system, any data on the boot drive, including any preinstalled operating system, will be overwritten.
- If your server ships with an integrated RAID controller and you want to include your boot drive as part of a RAID configuration, you will need to configure a RAID volume(s) using the controller's BIOS configuration utility (accessible during server boot) before you install the Windows operating system.
- If you have an Adaptec™-based integrated RAID controller (standard on the X4440), you must create an array volume using the controller's configuration utility on any disk you want Windows to be able to access. If you are performing an initial installation of Windows and want to boot from mass storage connected to the controller (even if do not want it part of a RAID), use the controller's BIOS configuration utility (accessible during server boot) to create an array volume on the disk before you install the Windows operating system. Details on doing this can be found in [Appendix B](#).
- A primary consideration during installation is providing the mass storage drivers for the disk controller. Windows Server 2008 provides the mass storage drivers required for the Sun Fire X4140 and X4240 servers, but *not* for the Sun Fire X4440 server. Windows Server 2003 media does not contain the mass storage drivers needed to install the operating system.
  - **If you install Windows using the Sun Installation Assistant**, all required drivers are supplied at the time of installation. SIA can install Windows via a local or remote CD/DVD. For more about SIA, see "[Assisted Installation Using Sun Installation Assistant \(SIA\)](#)" on page 4.
  - **If you install Windows manually**, using the Microsoft Windows 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 drive to a physical floppy drive on another system that is hosting the JavaRConsole (JavaRConsole system—a remote console run from a networked system).

- Use a remote KVMS to redirect the floppy to a floppy image file on another system that is hosting the JavaRConsole.
- For a manual installation, there are also three different methods for delivering the Windows Server distribution media for installation:
  - Use the physical CD/DVD drive connected to the Sun Fire server.
  - Use a remote KVMS to redirect the CD/DVD drive to a physical CD/DVD drive on the JavaRConsole system.
  - Use a remote KVMS to redirect the CD/DVD drive to a Windows CD/DVD image on the JavaRConsole system.

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

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**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.

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## Supported Windows Operating Systems

The Sun Fire X4140, X4240 and X4440 servers support the following Microsoft Windows operating systems at the time of publication of this document:

- Microsoft Windows Server 2003, SP1 or later, Standard Edition (32-bit)
- Microsoft Windows Server 2003, SP1 or later, Enterprise Edition (32-bit)
- Microsoft Windows Server 2003 R2 SP2, Standard x64 Edition (64-bit)
- Microsoft Windows Server 2003 R2 SP2, Enterprise x64 Edition (64-bit)
- Microsoft Windows Server 2008, Standard Edition (32 or 64-bit)
- Microsoft Windows Server 2008, Enterprise Edition (32 or 64-bit)
- Microsoft Windows Server 2008, Datacenter Edition (32 or 64-bit)

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

For the Sun Fire X4140: <http://www.sun.com/servers/x64/x4140/os.jsp>

For the Sun Fire X4240: <http://www.sun.com/servers/x64/x4240/os.jsp>

For the Sun Fire X4440: <http://www.sun.com/servers/x64/x4440/os.jsp>

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# Assisted Installation Using Sun Installation Assistant (SIA)

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

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

## SIA Media Availability, Updates and Documentation

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

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

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

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

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

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

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

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# Manual Installation

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

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**Note** – If you plan to install Windows Server using a Preboot Execution Environment (PXE) server, refer to Chapter 9, [“Incorporate Sun Fire Drivers Into WIM or RIS Images”](#) on page 65.

---

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

1. [Download Server-Specific Driver Packages](#) (see Chapter 2).
2. [Select the Delivery Methods](#) (see Chapter 3).
3. [Prepare for Mass Storage Driver Delivery](#) (see Chapter 4).
4. [Configure the JavaRConsole System](#), only required if you are planning to install Windows from a remote console (see Chapter 5).
5. [Install Windows Server 2003](#) (see Chapter 6).
6. [Install Windows Server 2008](#) (see Chapter 7).
7. [Update the Critical Server-Specific Drivers](#) (see Chapter 8).

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



# Download Server-Specific Driver Packages

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

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**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.**

For the Sun Fire X4140:

<http://www.sun.com/servers/x64/x4140/downloads.jsp>

For the Sun Fire X4240:

<http://www.sun.com/servers/x64/x4240/downloads.jsp>

For the Sun Fire X4440:

<http://www.sun.com/servers/x64/x4440/downloads.jsp>

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

- **If you are installing the Windows Server 2003 or Windows Server 2008 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 and Adaptec integrated RAID controller drivers, NVIDIA disk controller driver, and AMI virtual floppy driver). You will use this file to create driver media during your installation of Windows Server 2003 or Windows Server 2008 (when installed on the X4440), see [Chapter 3](#).

- InstallPack\_x\_x\_x.exe (program to install all server-specific device drivers after installing Windows Server 2003 or Windows Server 2008)
- 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, “[Incorporate Sun Fire Drivers Into WIM or RIS Images](#)” on page 65.
- 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.**

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**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. Refer to [Chapter 3](#) for supported delivery methods.**

## Select the Delivery Methods

---

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

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

1. [Select a Mass Storage Drivers Method.](#)
2. [Select a Windows OS Distribution Media Method.](#)
3. **Make a note of the delivery methods that you selected and proceed to [Chapter 4.](#)**

---

# Select a Mass Storage Drivers Method

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

---

**Note** – If you installing Windows Server 2003, you will need to supply drivers during the installation using one of the methods described below. If you are installing Windows Server 2008 on a Sun Fire X4440 server, you will need to supply drivers during the installation using one of the methods described below. If you are installing Windows Server 2008 on a Sun Fire X4140 or X4240 server, the Windows distribution media includes the mass storage drivers necessary for installing Windows.

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**TABLE 3-1** Delivery Methods for Mass Storage Drivers

Mass Storage Drivers Delivery Method	Additional Requirements	Ease of Configuration and Installation
<b>Floppy Disk Local:</b> Uses a physical USB floppy drive directly connected to one of the server's USB ports.	<ul style="list-style-type: none"><li>External USB floppy drive listed as "Designed for Windows"* on the Windows Marketplace site: <a href="http://www.windowsservercatalog.com/marketplace/">http://www.windowsservercatalog.com/marketplace/</a></li><li>Floppy disk</li></ul>	Easy
<b>Floppy Disk Remote:</b> Uses a remote KVMS to redirect to a physical floppy drive on the system hosting the JavaRConsole.	<ul style="list-style-type: none"><li>JavaRConsole system with network access to your Sun Fire server's network management port and an attached floppy drive</li><li>Floppy disk</li></ul>	Medium: Installation time will be minimally increased over the Floppy Disk Local method.
<b>Floppy Image:</b> Uses a remote KVMS to redirect to a floppy image file on the system hosting the JavaRConsole.	<ul style="list-style-type: none"><li>JavaRConsole system with network access to your Sun Fire server's management network port</li><li>Floppy image file</li></ul>	Medium: Installation time will be minimally increased over the Floppy Disk Local method.
<b>Non-Floppy Media</b> (Windows Server 2008 only): Uses a physical drive, or remote KVMS to redirect to a physical drive on the system hosting the JavaRConsole.	<ul style="list-style-type: none"><li>JavaRConsole system with network access to your Sun Fire server's management network port</li><li>CD/DVD or USB flash drive media</li></ul>	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
<b>Windows Local:</b> Uses a physical CD/DVD drive on the Sun Fire server.	The server's CD/DVD drive	Easy
<b>Windows Remote:</b> 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.
<b>Windows Image:</b> 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 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	<a href="#">“Create a Floppy Disk” on page 13</a>
Floppy Disk Remote	<a href="#">“Create a Floppy Disk” on page 13</a>
Floppy Image	<a href="#">“Copy the Floppy Image File” on page 16</a>
Non-Floppy Media (used for Windows 2008 installation on the Sun Fire X4440 only)	<a href="#">“Copy Driver Files to Non-Floppy Media” on page 18</a>

---

## Create a Floppy Disk

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

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

- System with a connected floppy drive
- Floppy disk

- FloppyPack\_x\_x\_x.zip (See “Download Server-Specific Driver Packages” on page 7 for details on accessing this package)

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**Note** – The \_x\_x\_x number identifies the version of the package (for example, FloppyPack\_1\_1\_4.zip).

---

## ▼ To Create a Floppy Disk for the Sun Fire Server

Sun provides a wizard to help create the necessary floppy disk required for Windows Server 2003 installation. The Sun 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 wizard. Directions for using either method are described below.

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

- Insert the Tools and Drivers CD into a Windows system with a CD/DVD drive. The CD will autostart. At the main menu, select **Make a Windows Server 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 “Download 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.

---

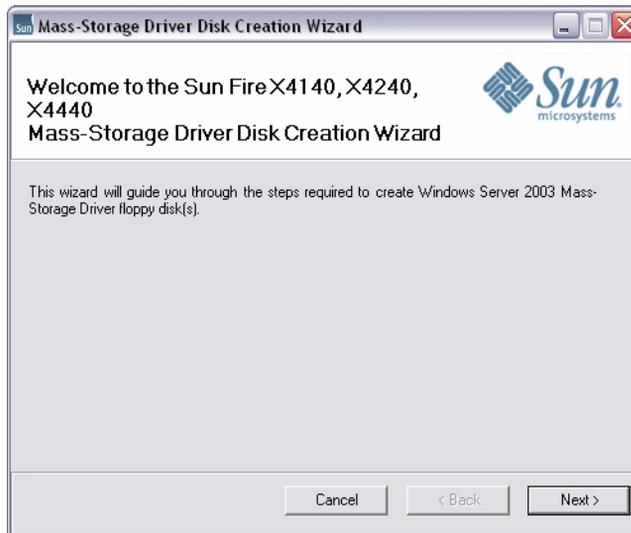
**Note** – If your version of Windows Explorer does not natively support compressed folders, use a third-party utility to extract the contents of the zip file. Make sure to maintain the directory structure of the folders after extracting them.

---

- vi. Extract the files into a new (empty) folder.
- vii. Start Windows Explorer and navigate to the folder containing the extracted files.

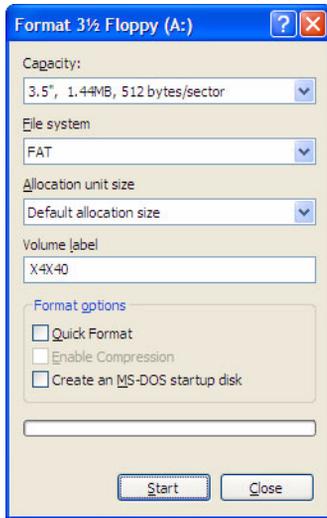
- viii. In Windows Explorer, open the directory containing the extracted files and double-click the `mkFloppy.exe` wizard, and then proceed to the next step.
2. At the Mass-Storage Driver Disk Creation wizard welcome page (see [FIGURE 4-1](#)), click Next and follow the instructions in the wizard to create the mass storage driver 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 driver 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 2.0, or later) as shown in [“Download 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
```

--or--

```
windows\w2k8\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 JavaRConsole 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.

---

# Copy Driver Files to Non-Floppy Media

This method is only supported for Windows Server 2008 installations and only necessary if your Sun Fire server uses the Adaptec-based integrated RAID controller (which is standard with the Sun Fire X4440). If you decide not to use a floppy disk or floppy image file, you may copy the driver files on to a USB flash drive or CD/DVD.

## ▼ Copy Drivers to Non-Floppy Media

This method requires the user to perform the individual steps necessary to create the driver media for Windows Server 2008. You will need a writable CD/DVD or USB flash drive to complete these instructions.

**1. Access the mass-storage driver files using one of the following methods:**

- **Insert the Tools and Drivers CD into a Windows system with a CD/DVD drive. The CD will autostart. At the main menu, select View Windows Server 2008 Mass Storage Driver Setup Files, and then proceed to [Step 2](#).**

--or--

- **If you have downloaded FloppyPack\_x\_x\_x.zip file for Windows Server 2008 from the Sun download site (see “[Download 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.**

**2. Insert a writeable CD/DVD or USB flash drive into the Windows system.**

**3. Using Windows Explorer, navigate to the file folder containing the driver files.**

4. On the Edit menu, click Select All.
5. Pressing and holding the left mouse button, drag and drop the selected files onto the media (USB flash drive or CD/DVD) you will use during the installation of Windows Server 2008.

---

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

---

The mass-storage driver media is created.

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

- If you are installing Windows remotely, proceed to [Chapter 5](#) to setup your remote console.
- To begin installing Windows Server 2008, proceed to [Chapter 7](#).



## 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 Sun Fire X4440 servers) 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
  - Non-Floppy Media (Windows Server 2008 only)
  - 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 or Windows Server 2008 (for the X4440) installation.

---

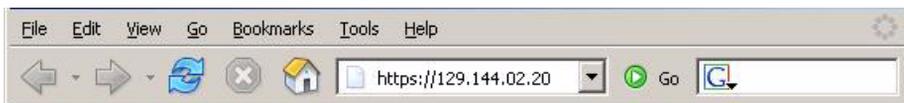
**Note** – This procedure assumes that the JavaRConsole system and ILOM service processor have been set up according to the instructions in the *Integrated Lights Out Manager (ILOM) Administration Guide* for your Sun Fire server.

---

### ▼ To Set Up the JavaRConsole System

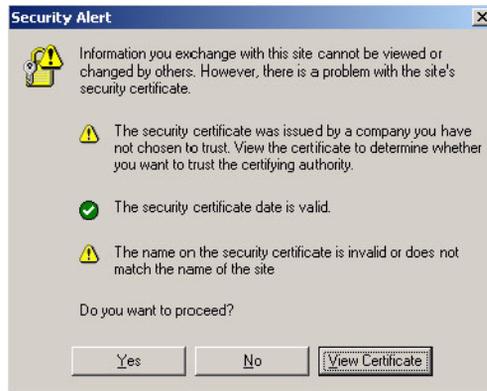
1. **Start the remote console application by typing the IP address of the Integrated Lights Out Manager (ILOM) service processor into a browser on the JavaRConsole system.**

**FIGURE 5-1** URL Sample



The Security Alert dialog box displays.

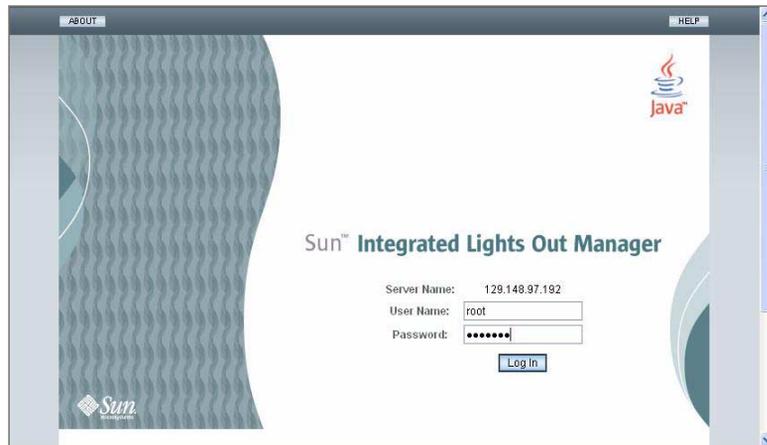
**FIGURE 5-2** Security Alert Dialog Box



**2. Click Yes.**

The ILOM login screen appears.

**FIGURE 5-3** Login Screen

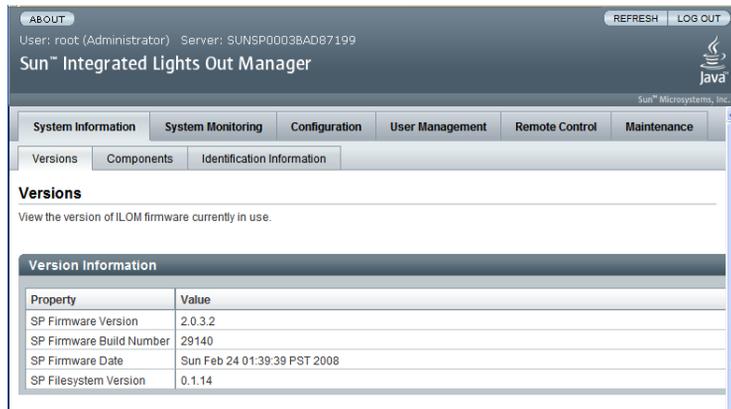


**3. Enter the user name and password and click Log In.**

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.**

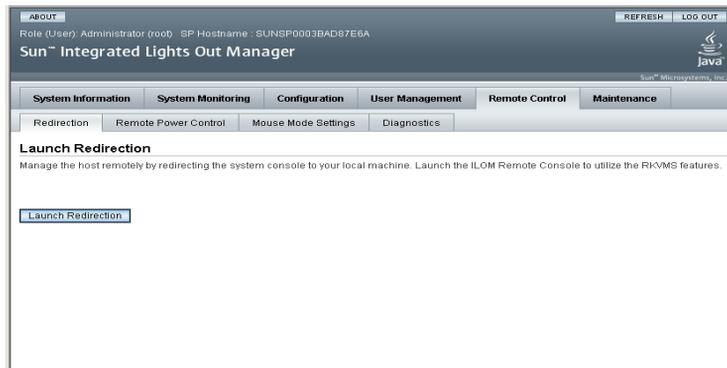
The Launch Redirection screen appears.

---

**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 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.

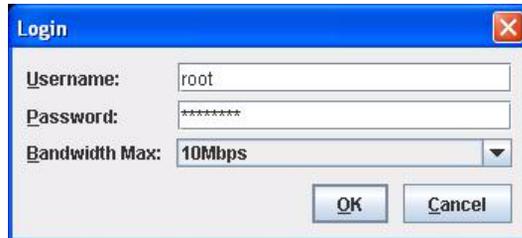
---

**FIGURE 5-6** Hostname Mismatch Dialog Box



The Remote Control dialog box appears.

**FIGURE 5-7** Remote Control Login Dialog Box

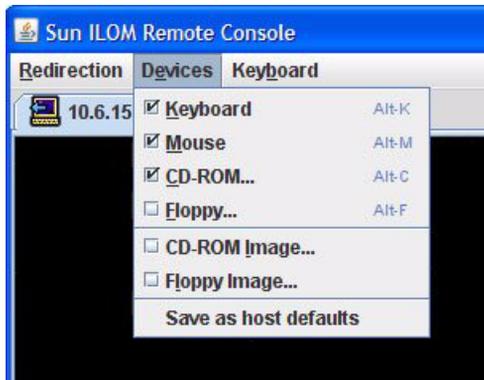


6. In the Remote Control Login dialog box, enter your user name and password and click OK.

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 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 time will depend on the network connectivity and traffic.

---

# Install Windows Server 2003

---

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

---

## Installation Requirements

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

For all installation methods:

- Complete the procedures in the previous chapters of this document (Chapters 2 through 5).
- Verify that a keyboard and mouse are attached to the appropriate connections on your server. Make sure to leave a USB port free if you selected the **Floppy Disk Local** mass storage drivers installation method.
- Make a note of the server's mass storage controller. There are three possibilities, depending on your server:
  - **LSI-based integrated RAID controller** (you will see a banner for this displayed during POST)
  - **Adaptec-based integrated RAID controller** (you will see a banner for this displayed during POST)
  - **NVIDIA-based integrated disk controller** (you *will not* see any banner for this displayed during POST)
- If your server uses an **LSI-based integrated RAID controller** and you want to include your boot drive as part of a RAID configuration, you will need to configure a RAID volume(s) using the controller's BIOS configuration utility (accessible by pressing Ctrl+C when prompted during server boot) before you install the Windows operating system.

- If your server uses an **Adaptec-based integrated RAID controller**, choose one of the following installation options that best matches your needs:
  - If you want to include your boot disk as part of a RAID configuration, you must configure your RAID volume(s) using the controller's array configuration utility before you install the Windows operating system. The controller's BIOS configuration utility is accessible during the server boot process by pressing Ctrl+A when prompted.
  - If you have a clean boot disk (no partitions) and do not want to make it part of a RAID, you must still create an array volume on it using the controller's BIOS configuration utility (accessible by pressing Ctrl+A when prompted during server boot) in order for Windows to be able to access the disk. This must be done before you install the Windows operating system. For more information, see [Appendix B](#).
  - If you have a disk with a preinstalled bootable array volume (and it is not part of an existing RAID that you want to keep) and you want to overwrite it to install Windows, no other disk preparation is required. During the Windows operating system installation you will be presented the option to overwrite any existing partition(s) within the array volume. The following figure shows an example of a system with an existing bootable array volume.

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

```

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

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

Waiting for Controller to Start...Controller started

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

Array#0 - Volume      60.25 GB      Optimal
1 Array(s) Found
  
```

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

---

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

---

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

**TABLE 6-1** Requirements for Each Installation Method

Method	Action or items required
Floppy Disk Local	Insert the mass-storage drivers floppy disk into a USB floppy drive attached directly to one of the server's USB ports. Note that if you are using the floppy disk local installation method, the JavaRConsole floppy drive or floppy image devices must not be redirected.
Floppy Disk Remote	Connect the floppy drive to the JavaRConsole system (if necessary) and insert the mass-storage drivers floppy disk into the floppy drive.
Floppy Image	Ensure that the <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 server.

---

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

---

### ▼ To Install the Operating System

1. **Make sure that you have completed all of the requirements listed in "Installation Requirements" on page 27.**

2. **Power cycle your server.**

The BIOS POST process begins.

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

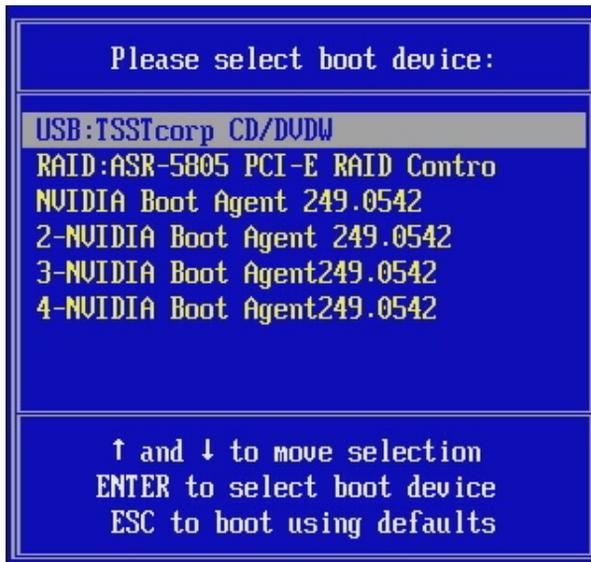
The BBS POPUP menu will allow you to select a boot device.

FIGURE 6-2 F8 Prompt Example

```
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 6-3). If you have selected the Windows Local installation method, insert the Windows media CD in the server's CD/DVD drive now.

FIGURE 6-3 Boot Device Menu Example



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

If prompted with Press any key to boot from CD, quickly press any key. The Windows Setup process begins.

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

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

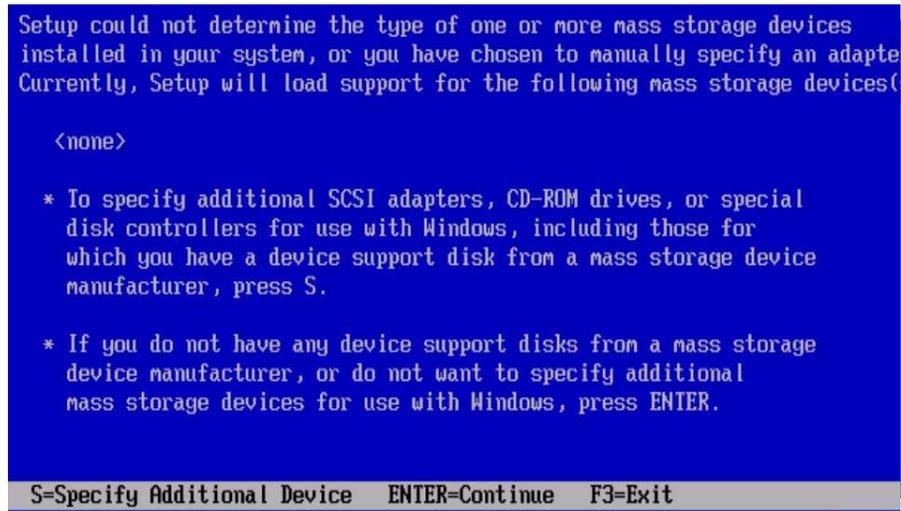
---

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

---

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

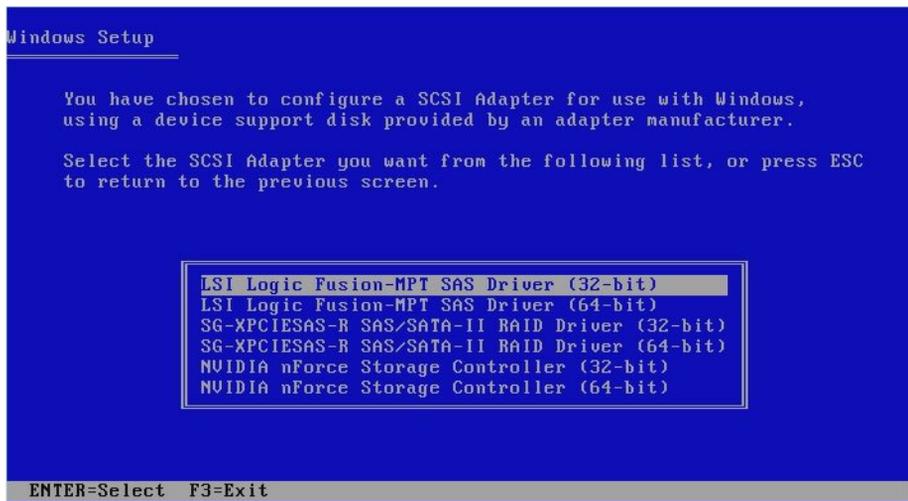
**FIGURE 6-4** Specify Additional Device Screen



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 6-5** Select Adapter Screen Example



**9. Select the appropriate mass storage controller driver version depending on the version of Windows (32-bit or 64-bit) you are installing, and then press Enter:**

- **For servers with an LSI-based integrated RAID controller, select:**
  - LSI Logic Fusion - MPT SAS Driver (32-bit)
  - or
  - LSI Logic Fusion - MPT SAS Driver (64-bit)
- **For servers with an Adaptec-based integrated RAID controller, select:**
  - SG-XPCIESAS-R SAS/SATA-II RAID Driver (32-bit)
  - or
  - SG-XPCIESAS-R SAS/SATA-II RAID Driver (64-bit)
- **For servers with an NVIDIA-based integrated disk controller, select:**
  - NVIDIA nForce Storage Controller (32-bit)
  - or
  - NVIDIA nForce Storage Controller (64-bit)

Windows Setup will then display your selection.

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

FIGURE 6-6 Specify Additional Devices Screen Example



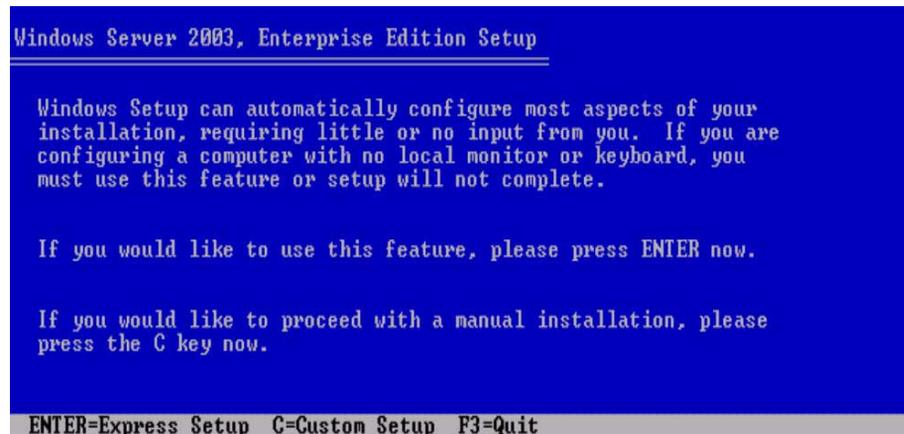
11. At the Welcome to Setup screen, press Enter to continue.

The Setup Selection screen is displayed.

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

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

FIGURE 6-7 Select Setup Screen



**13. 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.

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

# Install Windows Server 2008

---

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

---

## Installation Requirements

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

For all installation methods:

- Complete the procedures in the previous chapters of this document that apply (Chapters 2 through 5).
- Verify that a keyboard and mouse are attached to the appropriate connections on your server. If you have a Sun Fire X4440 server, be sure to leave a USB port free if you selected the **Floppy Disk Local** mass storage drivers installation method.
- Make a note of the mass storage controller you received with your server. There are three possibilities, depending on your server:
  - **LSI-based integrated RAID controller** (you will see a banner for this displayed during POST)
  - **Adaptec-based integrated RAID controller** (you will see a banner for this displayed during POST)
  - **NVIDIA-based integrated disk controller** (you *will not* see any banner for this displayed during POST)
- If your server uses an **LSI-based integrated RAID controller** and you want to include your boot drive as part of a RAID configuration, you will need to configure a RAID volume(s) using the controller's BIOS configuration utility (accessible by pressing Ctrl+C when prompted during server boot) before you install the Windows operating system.

- If your server uses an **Adaptec-based integrated RAID controller**, choose one of the following installation options that best matches your needs:
  - If you want to include your boot disk as part of a RAID configuration, you must configure your RAID volume(s) using the controller's array configuration utility before you install the Windows operating system. The controller's BIOS configuration utility is accessible during the server boot process by pressing Ctrl+A when prompted.
  - If you have a clean boot disk (no partitions) and do not want to make it part of a RAID, you must still create an array volume on it using the controller's BIOS configuration utility (accessible by pressing Ctrl+A when prompted during server boot) in order for Windows to be able to access the disk. This must be done before you install the Windows operating system. For more information, see [Appendix B](#).
  - If you have a disk with a preinstalled bootable array volume (and it is not part of an existing RAID that you want to keep) and you want to overwrite it to install Windows, no other disk preparation is required. During the Windows operating system installation you will be presented the option to overwrite any existing partition(s) within the array volume. The following figure shows an example of a system with an existing bootable array volume.

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

```

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

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

Waiting for Controller to Start...Controller started

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

Array#0 - Volume      60.25 GB      Optimal
1 Array(s) Found

```

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

---

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

---

For requirements specific to the 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
Floppy Disk Local (X4440 only)	Insert the mass-storage drivers floppy disk into a USB floppy drive attached directly to one of the server's USB ports. Note that if you are using the floppy disk local installation method, the JavaRConsole floppy drive or floppy image devices must not be redirected.
Floppy Disk Remote (X4440 only)	Connect the floppy drive to the JavaRConsole system (if necessary) and insert the mass-storage drivers floppy disk into the floppy drive.
Floppy Image (X4440 only)	Ensure that the <code>floppy.img</code> file is accessible from the JavaRConsole system.
Windows Local	Make sure that the Microsoft Windows Server 2008 installation media and a DVD-ROM drive are available.
Windows Remote	Insert the Microsoft Windows Server 2008 installation media into the JavaRConsole system's CD or DVD-ROM drive.
Windows Image	Ensure that the Windows Server 2008 installation media is accessible from the JavaRConsole system.

---

## Installing the Operating System

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

---

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

---

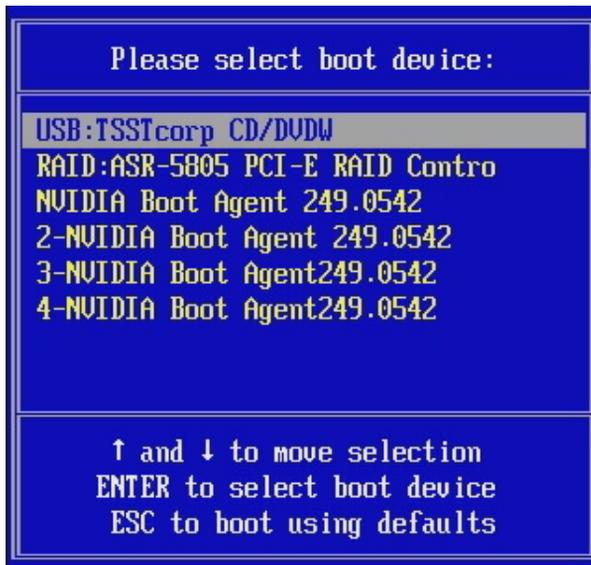
- 1. Make sure that you have completed all of the requirements listed in “Installation Requirements” on page 35.**
- 2. Power cycle your server.**  
The BIOS POST process begins.
- 3. Press F8 when the Press F8 for BBS POPUP prompt appears on the BIOS POST screen (see [FIGURE 7-2](#)).**  
The BBS POPUP menu will allow you to select a boot device.

FIGURE 7-2 F8 Prompt Example

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

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

FIGURE 7-3 Boot Device Menu Example

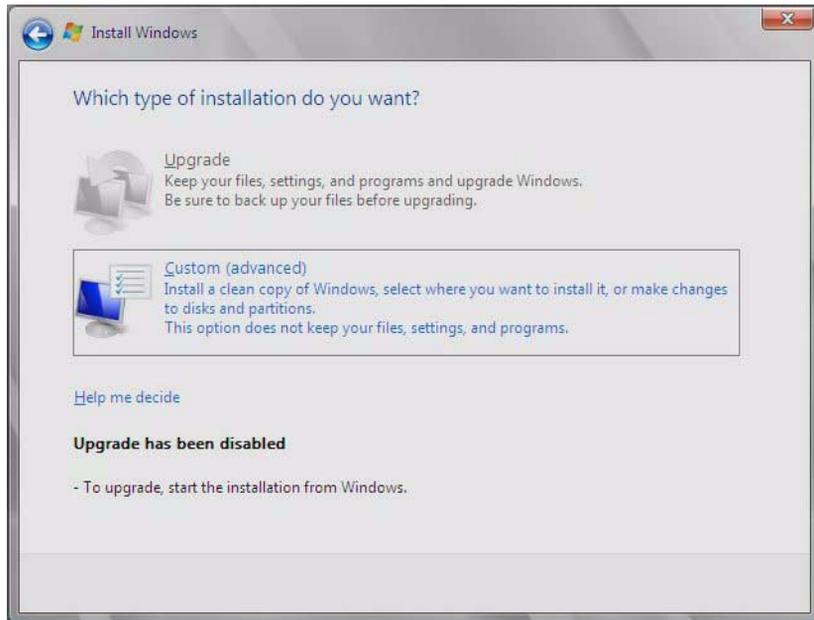


5. Select CD/DVDW from the Boot Device menu and press Enter.

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

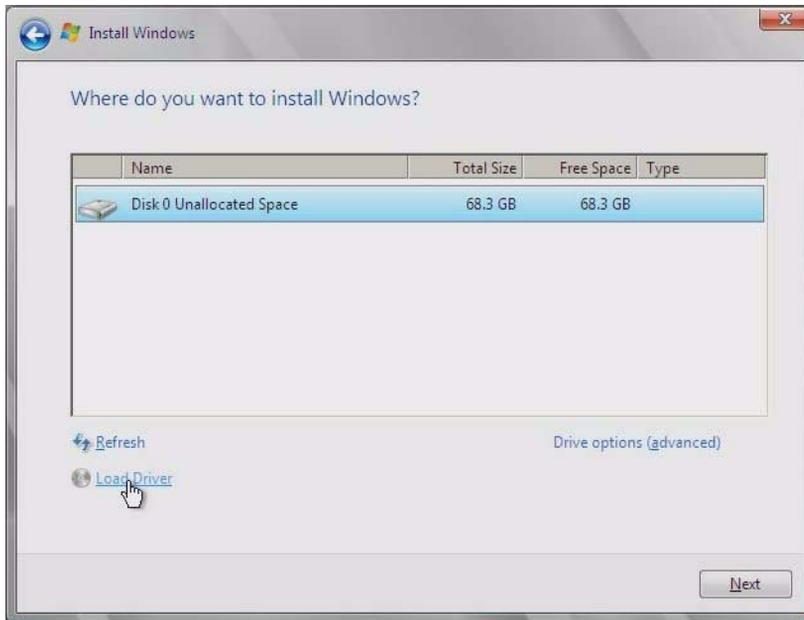
6. The Windows installation wizard starts. Proceed through the installation wizard until you see the Installation Type page displayed, and then click Custom (advanced).

**FIGURE 7-4** Select Installation Type Page



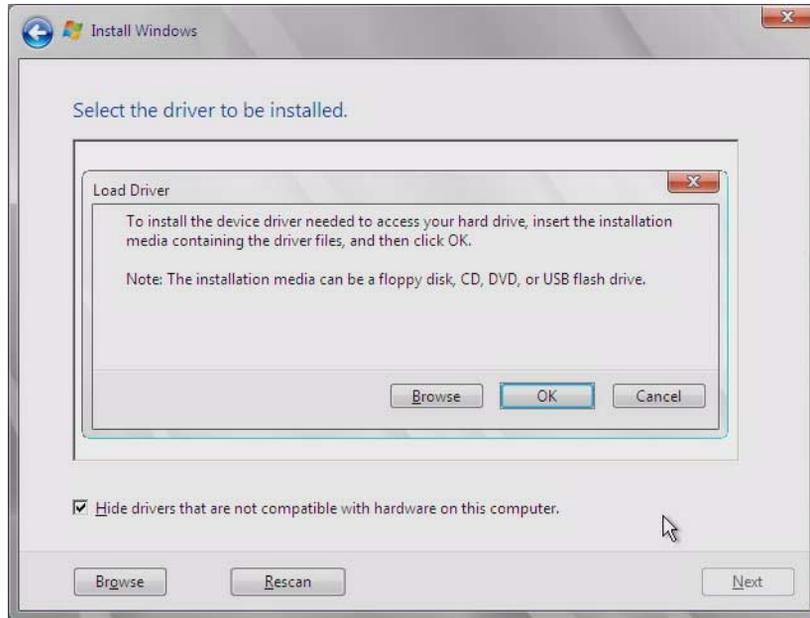
7. You will then see the Where Do You Want to Install Windows page (see FIGURE 7-5), do one of the following:

**FIGURE 7-5** Where to Install Windows Page Example



- If you *are not* installing Windows on a Sun Fire X4440, skip to [Step 8](#).
- If you *are* installing Windows on a Sun Fire X4440, do the following:
  - i. **Click the Load Driver option.**  
The Load Driver page is displayed.

**FIGURE 7-6** Browse to Driver Media



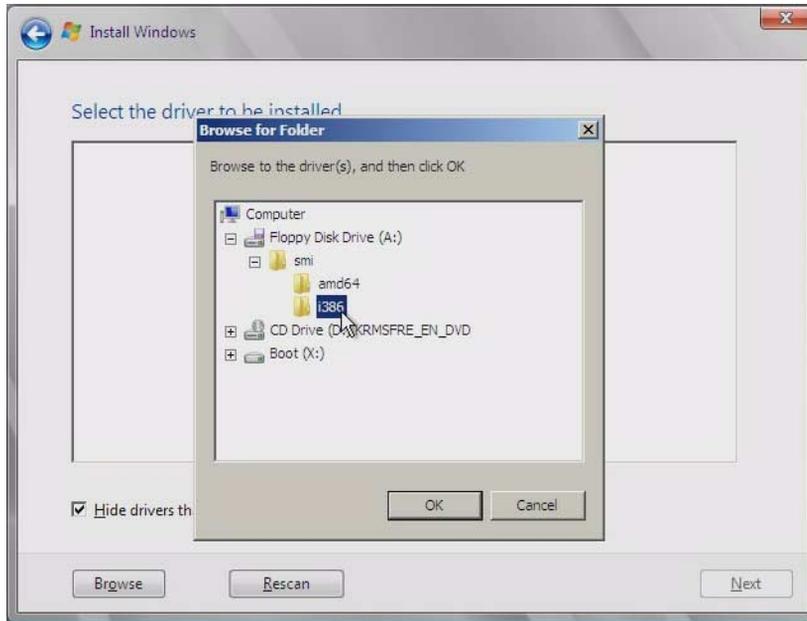
**ii. Click OK.**

Make sure that the mass storage drivers are accessible according to the mass storage driver installation method that you selected in [Chapter 3](#).

- **Floppy Disk Local:** Mass storage drivers on a floppy disk in floppy drive A on the server.
- **Floppy Disk Remote:** Mass storage drivers on a floppy disk in a floppy drive mounted as a device from the JavaRConsole system.
- **Floppy Image:** `floppy.img` file mounted as a device from the JavaRConsole system.
- **Non-floppy media:** Mass storage drivers on USB flash drive or CD/DVD plugged into the server or mounted as a device from the JavaRConsole system.

**iii. Click the Browse button and navigate to the driver media folder.**

**FIGURE 7-7** Brows for Folder Screen Example



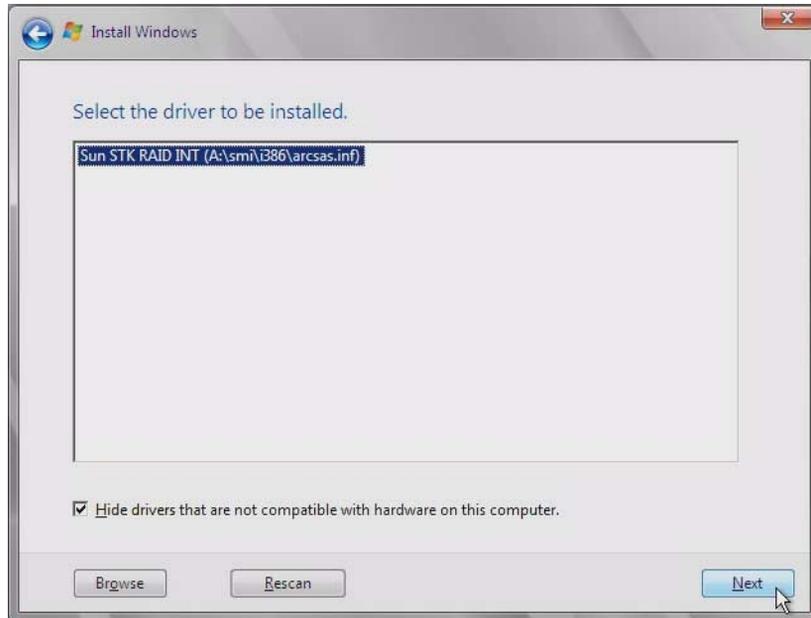
- iv. **Select the appropriate driver for your Adaptec-based integrated RAID controller (either the 32-bit version in the `i386` folder, or the 64-bit version in the `amd64` folder):**

Sun STK RAID INT

- v. **Click OK.**

The Select the Driver to Be Installed page is displayed with the selected driver.

**FIGURE 7-8** Selected Driver Page Example



**vi. Click Next.**

The Where Do You Want to Install Windows page is displayed (see [FIGURE 7-5](#)). Proceed to the next step.

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

- If you *do not* want to override the Windows Default partition information, skip to [Step 10](#).
- If you *do* want to override the Windows default partition information, click the Driver Options (advanced) option and proceed to the next step.



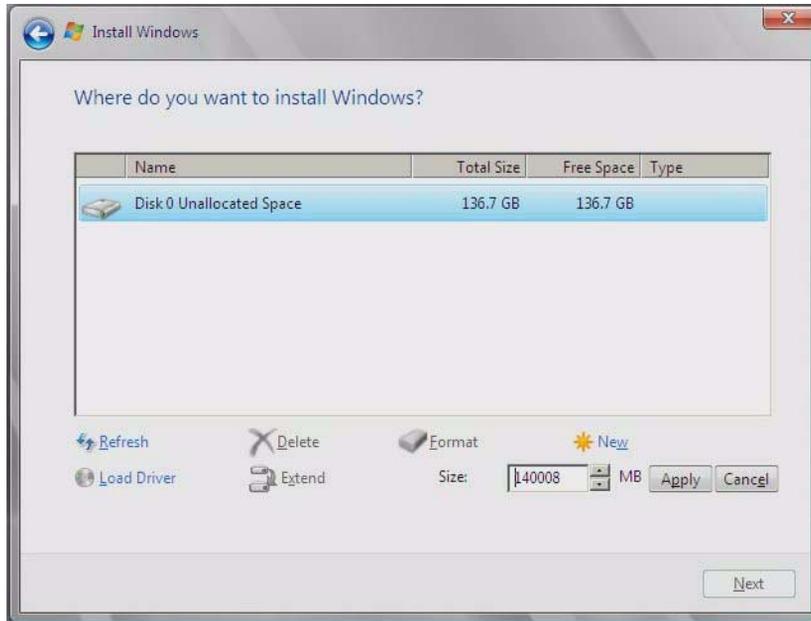
---

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

---

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

**FIGURE 7-9** Windows Partition Management Page



- a. Click Delete to delete the existing partition.
  - b. Click New to create the new partition.
  - c. Change size settings as needed, and then click Apply.
  - d. Click Next and proceed to the next step.
10. The Windows installation begins.  
The server will reboot multiple times during the installation process.
11. When Windows installation is complete, Windows starts and prompts you to change the user password. Click OK and proceed to setup the initial user login account.

---

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

---

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

12. Proceed to [Chapter 8](#) “Updating the Critical Server-Specific Drivers” to install server-specific software and the latest Sun-supported drivers.

## Update the Critical Server-Specific Drivers

---

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

This chapter contains the following sections:

- [“Updating the Server-Specific Drivers” on page 45](#)
- [“Installing Supplemental Software” on page 50](#)
- [“Additional Information for Supplemental Software” on page 52](#)

The procedures in this chapter assume that you already:

- Installed the Microsoft Windows Server 2003 or Windows Server 2008 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:

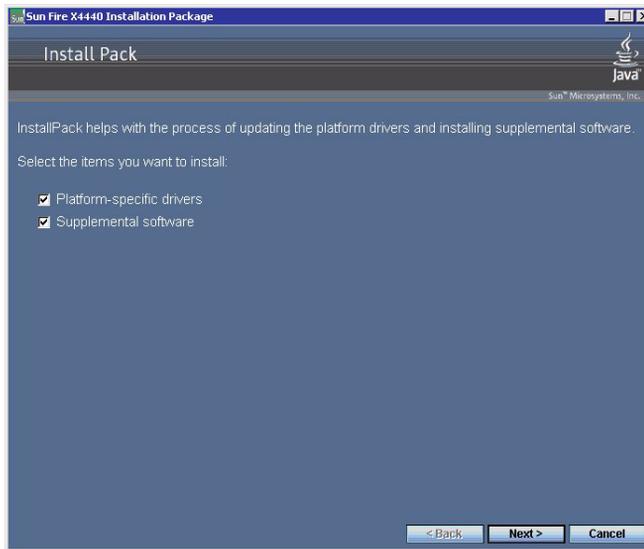
- Insert the Tools and Drivers CD into the server's CD/DVD drive. The CD will autostart. At the main menu, select **Install Drivers and Supplemental Software**.

--or--

- If you downloaded the `InstallPack_x_x_x.exe` file from the Sun download site (as described in [“Download 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 Installation Package dialog box (shown below) displays.

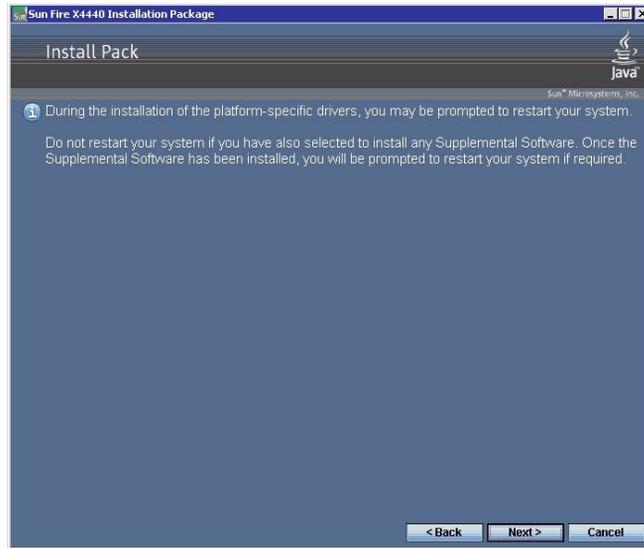
**FIGURE 8-1** Sun Fire Installation Package Dialog Box



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

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

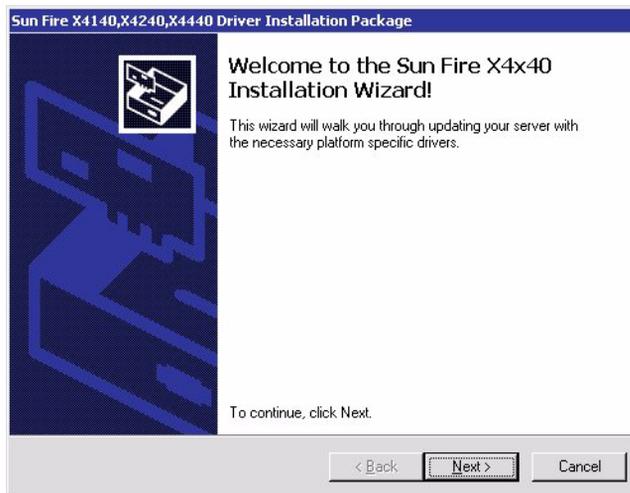
**FIGURE 8-2** Install Pack Dialog Box



**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 Example



**4. Click Next.**

The End User License Agreement page appears.

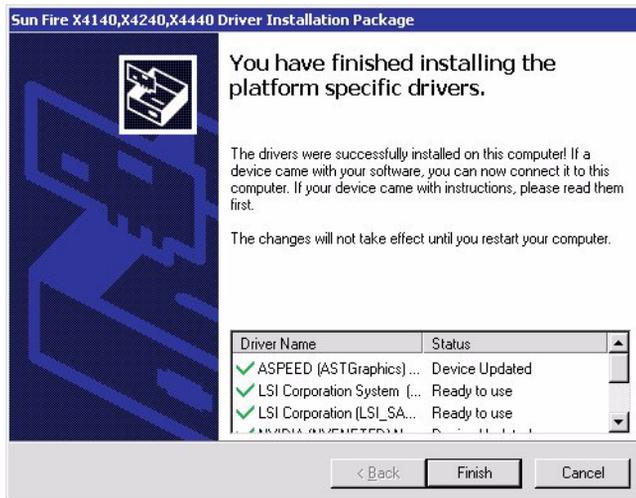
**FIGURE 8-4** End User License Agreement Page



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

The platform-specific drivers are installed (see [FIGURE 8-5](#)). A green check mark verifies that each driver has been successfully installed.

**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 50.

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

# Installing Supplemental Software

There are 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 you can select.

**TABLE 8-1** Install Pack Supplemental Software

Available Components	Servers with LSI Integrated RAID Controller	Servers with Adaptec Integrated RAID Controller	Servers with NVIDIA Integrated Disk Controller
<b>LSI MegaRAID Storage Manager</b> —Allows you to configure, monitor, and maintain RAID on the LSI SAS 1064/1068 integrated RAID controller. Refer to <a href="#">“Managing RAID Using the MegaRAID Storage Manager (MSM)”</a> on page 53.	Typical	Not applicable	Not applicable
<b>LSI SAS-IR Storage SNMP Agent</b> —Captures SNMP data on the LSI SAS 1064/1068 integrated RAID controller. Requires the Windows Component for SNMP service for operation.	Typical	Not applicable	Not applicable
<b>Sun STK RAID Manager</b> —Allows you to configure, administer and monitor RAID on the Adaptec SG-XPCIESAS-R-IN integrated RAID controller. Refer to <a href="#">“Managing RAID Using the StorageTek RAID Manager”</a> on page 53.	Not applicable	Typical	Not applicable
<b>ipmitool</b> —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 R2 installations, refer to <a href="#">“Completing the IPMItool Installation”</a> on page 61)	Typical	Typical	Typical
<b>IPMI System Management Driver (Sun Microsystems)</b> —Windows driver that reads the sensor data repository (SDR) and displays sensor values, System Event Log (SEL), Field Replaceable Unit (FRU) inventory information. <b>Provided for Windows Server 2003 SP1 only. Built into Windows Server 2003 R2 and 2008.</b>	Typical	Typical	Typical

**TABLE 8-1** Install Pack Supplemental Software (Continued)

Available Components	Servers with LSI Integrated RAID Controller	Servers with Adaptec Integrated RAID Controller	Servers with NVIDIA Integrated Disk Controller
<b>NVIDIA Network Access Manager (NAM)</b> —Ethernet interface configuration, optimization and teaming solution available for servers with integrated NVIDIA Gigabit Ethernet. After installation, refer to <a href="#">“Using the NVIDIA Network Access Manager for Windows Server 2003”</a> on page 54 or <a href="#">“Using the NVIDIA Network Control Panel for Windows Server 2008”</a> on page 59.	Typical	Typical	Typical
<b>AMD Machine Check Analysis Tool (MCAT)</b> —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	Custom
<b>AMD Power Monitor</b> —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	Custom

## ▼ To Install Supplemental Software

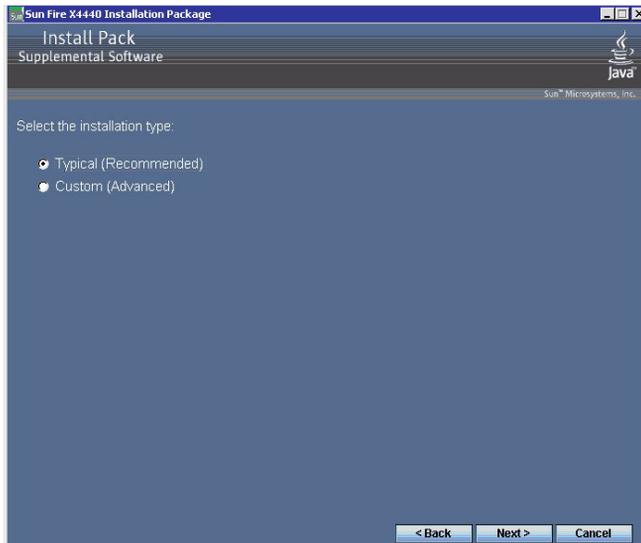
---

**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 screen (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 53](#)
- [“Managing RAID Using the StorageTek RAID Manager” on page 53](#)
- [“Using the NVIDIA Network Access Manager for Windows Server 2003” on page 54](#)

- “Using the NVIDIA Network Control Panel for Windows Server 2008” on page 59
- “Completing the IPMItool Installation” on page 61

## Managing RAID Using the MegaRAID Storage Manager (MSM)

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

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

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

<http://docs.sun.com>

## Managing RAID Using the StorageTek RAID Manager

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

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

- The Adaptec Configuration Utility is a BIOS-based utility that enables you to create and manage controllers, disk drives and other devices, and arrays using the integrated RAID controller (Adaptec-based). If you use the BIOS Configuration Utility to create arrays, the Sun StorageTek RAID Manager GUI detects those arrays and displays them as logical drives in the GUI.
- The `arrconf` command-line interface (CLI) can be used with the Sun StorageTek SAS RAID HBA to perform many of the same tasks provided with the StorageTek RAID Manager GUI.

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

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

## Using the NVIDIA Network Access Manager for Windows Server 2003

If you elect to do a custom installation of Sun supplemental software, you can select NVIDIA Network Access Manager (NAM) to be installed on your Sun server. When installed, you can use NAM features to optimize your server's network performance, increase its network bandwidth and provide for optimal throughput in case one of your network adapters stops functioning.

The NVIDIA Network Access Manager software includes:

- **Ethernet setup:** This tool allows you to configure the settings for your NVIDIA integrated network interfaces to best conform to your network configuration.
- **Teaming:** This tool allows you to combine all the NVIDIA Ethernet interfaces on your system to form a team, resulting in increased bandwidth and network fail-over redundancy. In addition, you have the capability to configure TCP/IP acceleration that off-loads the processing of TCP/IP network traffic from your computer's CPU to its NVIDIA hardware resulting in greatly improved system performance.

---

**Note** – The TCP/IP Acceleration off loading policy is defined using the NVIDIA Network Access Manager (NAM). Its functionality is disabled by default. When TCP/IP acceleration is enabled, all TCP/IP connections will be off-loaded. If you have a software firewall installed on your system, enabling TCP/IP Acceleration technology may cause some network traffic to bypass your firewall. A warning message indicating this is displayed when a user enables TCP/IP acceleration.

---

- **FirstPacket:** This tool allows you to manage the traffic on your server and improve the performance of user-specified applications, such as networked games, Voice-over-IP (VoIP) and other applications that are sensitive to network delay (latency).

---

**Note** – You may not use both NVIDIA FirstPacket and NVIDIA Teaming together. You can only configure your server to use one or the other.

---

---

**Note** – To determine which network interface ports are active on your system, refer to [Appendix A](#).

---

## Launching the Network Access Manager

To access the functions available for your server's network interface, do the following at your server once NAM has been installed:

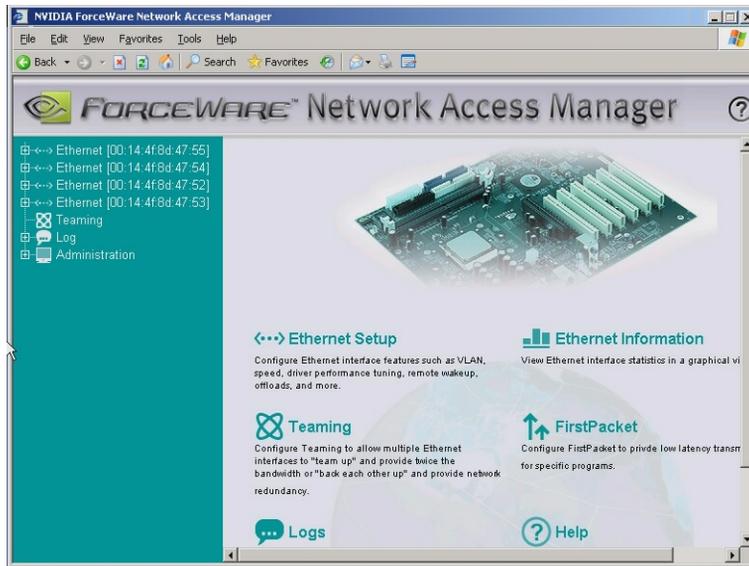
1. **From your Windows taskbar, click Start, and then click Programs.**
2. **Click the Network Access Manager folder, and then click Web-based Interface.**

At the web interface, see [FIGURE 8-8](#), you can setup Ethernet settings and teaming for your NVIDIA integrated network interfaces using the wizards.

3. **Open the NVIDIA Corporation program group, click the Network Access Manager folder, and then click Web-based Interface.**

At the web interface, can setup teaming for two or more network interfaces using the shown in [FIGURE 8-8](#).

**FIGURE 8-8** Windows Server 2003: Network Access Manager Page



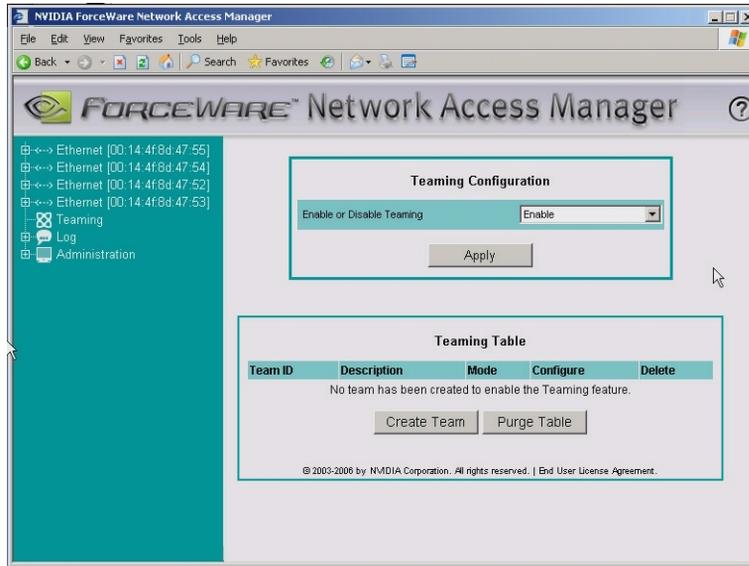
4. For example, if you wanted to set up NIC teaming, you would click the Teaming link.

The Teaming wizard starts.

5. Select Enable from the Teaming Configuration drop-down menu, and then click Apply. Refer to [FIGURE 8-9](#).

You will see the unpopulated Teaming Table displayed.

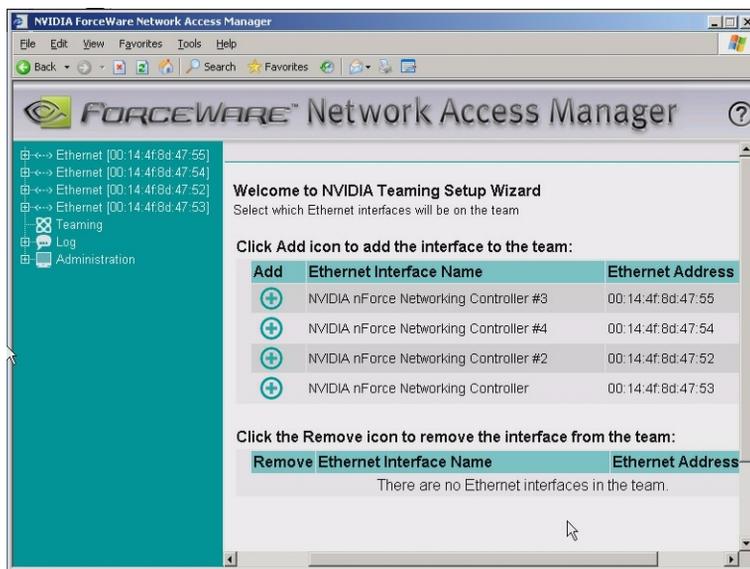
**FIGURE 8-9** Teaming Wizard



6. To select the network interfaces to team, and configure the teaming options, click the **Create Team** button.

The wizard will display the network interfaces available for teaming (see [FIGURE 8-10](#)).

FIGURE 8-10 Network Interface List



7. From the available list of Ethernet Interface Names, add available interfaces to the team by clicking the Add icon. You can have two or more in a team.
8. After selecting the interfaces to be teamed, click the Next button (located at the bottom of the page).

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

---

**Note** – Once you confirm the team to be created, the server's network interface and Network Access Manager will need to restart to configure the new settings.

---

## Learning More About Network Access Manager

For more information about using NVIDIA networking options through either the web-based or CLI interface, refer to the documentation and online help installed with the product.

# Using the NVIDIA Network Control Panel for Windows Server 2008

If you elect to do a custom installation of Sun supplemental software, you can select NVIDIA Network Access Manager (NAM) to be installed on your Sun server. When installed, you can use NAM features to optimize your server's network performance, increase its network bandwidth and provide for optimal throughput in case one of your network adapters stops functioning. For Windows Server 2008, NVIDIA Ethernet settings are done through the NVIDIA Control Panel.

The NVIDIA Control Panel software is used to set up network interface **Teaming**. This tool allows you to combine all the NVIDIA Ethernet interfaces on your system to form a team, resulting in increased bandwidth and network fail-over redundancy.

---

**Note** – To determine which network interface ports are active on your system, refer to [Appendix A](#).

---

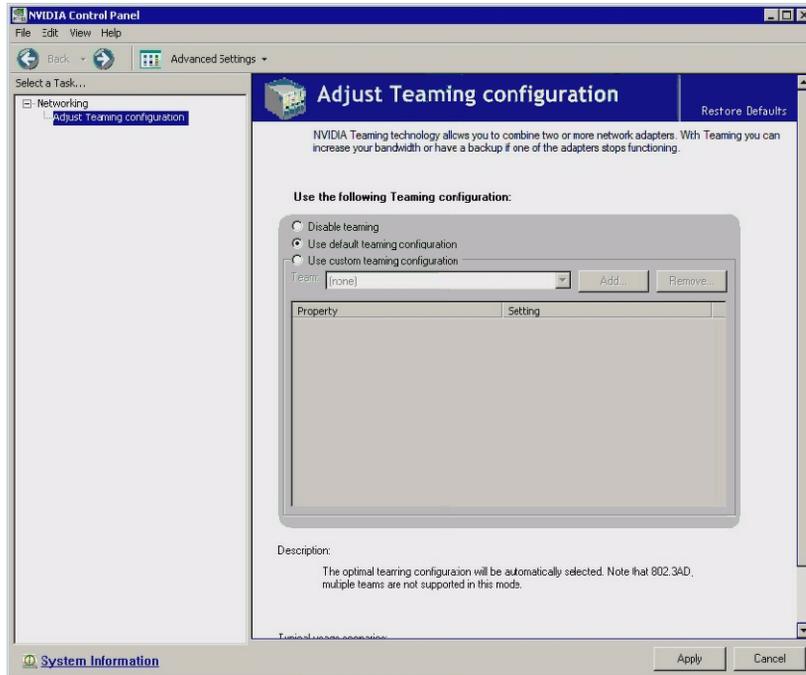
## Launching the NVIDIA Control Panel

To access the functions available for your server's network interface, do the following at your server once NAM has been installed:

1. **From your Windows taskbar, click Start, and then click Programs.**
2. **Open the NVIDIA Corporation program group, click the NVIDIA Control Panel folder, and then click Control Panel.**

You will be prompted to select the Standard or Advanced interface. You can setup teaming for two or more network interfaces. An example of the Advanced interface is shown in [FIGURE 8-11](#).

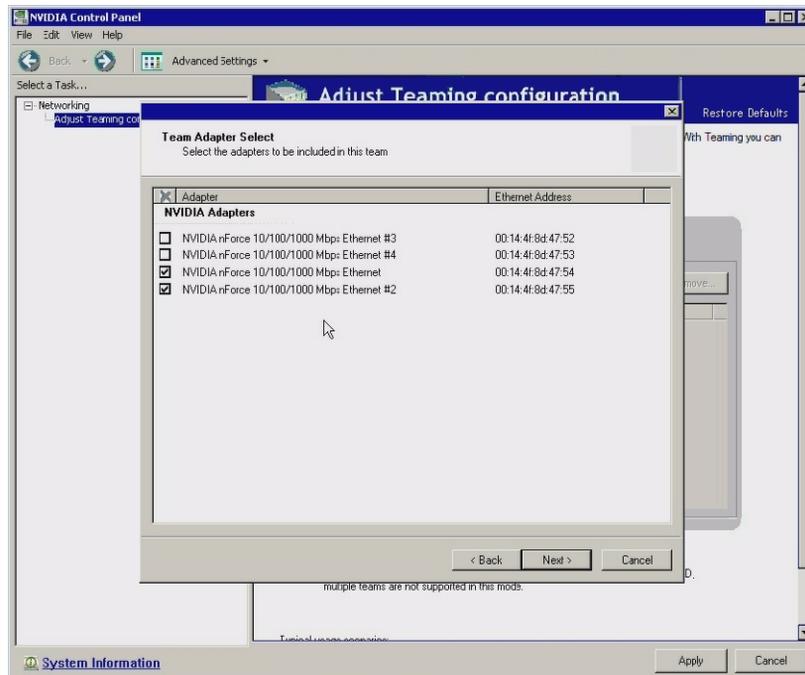
**FIGURE 8-11** Windows Server 2008: NVIDIA Control Panel Networking Page



3. For example, if you wanted to set up NIC teaming and select your own settings, instead of using the optimal defaults, you would select **Use Custom Teaming Configuration**.

The Custom Teaming Configuration wizard starts and displays the network interfaces available for teaming (see [FIGURE 8-12](#)).

**FIGURE 8-12** Ethernet Teaming List



**4. Select the network interfaces you wish to team, and then click**

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

## Learning More About NVIDIA Control Panel

For more information about using NVIDIA networking options refer to the documentation and online help installed with the product.

## 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 Server 2003, refer to the requirements listed below.

## Requirements

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

### For Windows Server 2003 SP1:

- Install the IPMI tool as described in ["To Install Supplemental Software" on page 51](#).
- Install the Sun IPMI System Management driver as described in ["To Install Supplemental Software" on page 51](#).
- 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 51](#).
- 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 63](#).

### For Windows Server 2008:

- Install IPMI tool as described in ["To Install Supplemental Software" on page 51](#).
- 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 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>

# Incorporate 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 66](#)
- [“Add Drivers to a WIM Image” on page 66](#)
- [“Add Drivers to a RIS Image” on page 70](#)

# 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 Single or Dual Core Processor Driver	Yes	Yes	No	No
AMD Quad Core Processor Driver	Yes	Yes	No	No
Aspeed Graphic Driver	Yes	Yes	Yes	Yes
Disk Controller Driver (server dependant): <ul style="list-style-type: none"><li>• LSI Logic Fusion-MPT RAID HBA (also referred to as LSI-based integrated RAID controller)</li></ul>	Yes	Yes	Yes	Yes
--or-- <ul style="list-style-type: none"><li>• Sun StorageTek SAS RAID HBA, SG-XPCIESAS-R (also referred to as Adaptec-based integrated RAID controller)*</li></ul>				
--or-- <ul style="list-style-type: none"><li>• NVIDIA nForce Storage Controller (also referred to as NVIDIA-based integrated disk controller)</li></ul>				
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

\* For BIOS versions prior to version 30 (software update 2.1), the StorageTek SG-XPCIESAS-R (Adaptec-based integrated RAID controller) driver supplied with Windows Server 2008 is not sufficient boot the installed the operating system. You must incorporate the driver from DriverPack.zip to boot the installed operating system.

## Add Drivers to a WIM Image

For Windows Server 2003, the LSI and Adaptec RAID controller and NVIDIA disk controller drivers must be incorporated for the operating system to be installed. For Windows Server 2008, the LSI and Adaptec RAID controller and NVIDIA disk

controller drivers are sufficient to install the system. Sun recommends updating both RAID controller drivers to enable the full functionality of host control of the firmware RAID functionality.

The procedures in the section assume the Windows Deployment Services are running on Windows Server 2003.

## Before you Begin

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

- The Windows Automated Installation Kit (Windows AIK or WAIK) must be installed. The kit can be downloaded from Microsoft. Sun recommends using version 2.0 or later of the WAIK.
- Read the Windows AIK documentation.
- Windows Remote Installation Services must be are running on a Windows Server. Read the Windows Deployment Services snap-in documentation.
- Locate `DriverPack.zip` for Windows Server 2008, see [“Download Server-Specific Driver Packages” on page 7](#).

## ▼ 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 Path And Credentials**.

A new Path And Credentials 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.

---

## Add Drivers to a RIS Image

For remote installation of Windows Server 2003 using a server running Windows Remote Installation Services, the mass storage controller driver provided with Windows Server 2003 is not sufficient to install the operating system. Sun recommends updating the RIS image with the mass storage 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 are 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 [“Download Server-Specific Driver Packages” on page 7](#).

### ▼ To Add Drivers to a 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`
  - `$OEM$\$$OEMDIR`
  - `$OEM$\$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 server-specific drivers for your Windows platform:**
  - **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. **Update the %RIS\_Image%\\$OEM\$\textmode folder with the mass storage drivers:**
  - **Copy the contents of the %RIS\_Image%\\$OEM\$\\$1\Sun\Drivers\lsi folder to the %RIS\_Image%\\$OEM\$\textmode folder.**
  - **Copy the contents of the %RIS\_Image%\\$OEM\$\\$1\Sun\Drivers\smi folder to the %RIS\_Image%\\$OEM\$\textmode folder.**
  - **Copy the contents of the %RIS\_Image%\\$OEM\$\\$1\Sun\Drivers\nvidia\sata folder to the %RIS\_Image%\\$OEM\$\textmode folder.**
5. **Copy the %RIS\_Image%\\$OEM\$\\$1\Sun\Drivers\nvidia\sata\idecoi.dll file to the %RIS\_Image%\\$OEM\$\\$OEMDIR folder.**
6. **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.
7. **Copy all the files from the %RIS\_Image%\\$OEM\$\\$1\Sun\Drivers\nvidia\RIS to the %RIS\_Image%\\$OEM\$\textmode folder.**

After copying the files, you can delete the %RIS\_Image%\\$OEM\$\\$1\Sun\Drivers\nvidia\RIS folder.
8. **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.aspx>
9. **Make changes to the .sif file for your mass storage solution as listed in one of the following tables, then proceed to Step 10:**
  - For servers with the Adaptec-based integrated RAID controller see [TABLE 9-2](#).
  - For servers with the LSI-based integrated RAID controller see [TABLE 9-3](#).
  - For servers with the NVIDIA-based integrated disk controller see [TABLE 9-4](#).

---

**Note** – For readability, the OemPnpDriversPath information has been shown on multiple lines; it must be entered on a single line. The three drivers listed in MassStorageDrivers have been shown on multiple lines; each driver (“*driver description*” = OEM) should be listed on a separate line.

---

**TABLE 9-2** .sif File Changes for Servers With an Adaptec-Based Integrated RAID Controller

Windows Server 2003 32-bit	Windows Server 2003 64-bit
[Unattended] OemPreinstall = yes OemPnpDriversPath = "\Sun\Drivers\amd\cpu;\Sun\Drivers\nvidia\smbus;\Sun\Drivers\nvidia\ethernet;\Sun\Drivers\aspeed"	[Unattended] OemPreinstall = yes OemPnpDriversPath = "\Sun\Drivers\amd\cpu;\Sun\Drivers\nvidia\smbus;\Sun\Drivers\nvidia\ethernet;\Sun\Drivers\aspeed"
[MassStorageDrivers] "SG-XPCIESAS-R SAS/SATA-II RAID Driver (32-bit)" = OEM	[MassStorageDrivers] "SG-XPCIESAS-R SAS/SATA-II RAID Driver (64-bit)" = OEM
[OEMBootFiles] arcsas.cat arcsas.inf arcsas.sys txtsetup.oem idecoi.dll	[OEMBootFiles] arcsas.cat arcsas.inf arcsas.sys txtsetup.oem idecoi.dll

**TABLE 9-3** .sif File Changes for Servers With an LSI-Based Integrated RAID Controller

Windows Server 2003 32-bit	Windows Server 2003 64-bit
<pre>[Unattended] OemPreinstall = yes OemPnPDriversPath = "\Sun\Drivers\amd\ cpu;\Sun\Drivers\nvidia\smbus;\Sun\ Drivers\nvidia\ethernet;\Sun\Drivers\ aspeed"</pre>	<pre>[Unattended] OemPreinstall = yes OemPnPDriversPath = "\Sun\Drivers\amd\ cpu;\Sun\Drivers\nvidia\smbus;\Sun\ Drivers\nvidia\ethernet;\Sun\Drivers\ aspeed"</pre>
<pre>[MassStorageDrivers] "LSI Logic Fusion-MPT SAS Driver (32- bit)" = OEM</pre>	<pre>[MassStorageDrivers] "LSI Logic Fusion-MPT SAS Driver (64- bit)" = OEM</pre>
<pre>[OEMBootFiles] lsi_sas.inf lsi_sas.sys lsinodrv.inf txtsetup.oem idecoi.dll</pre>	<pre>[OEMBootFiles] lsi_sas.inf lsi_sas.sys lsinodrv.inf txtsetup.oem idecoi.dll</pre>

**TABLE 9-4** .sif File Changes for Servers NVIDIA-Based Integrated Disk Controller

Windows Server 2003 32-bit	Windows Server 2003 64-bit
<pre>[Unattended] OemPreinstall = yes OemPnPDriversPath = "\Sun\Drivers\amd\ cpu;\Sun\Drivers\nvidia\smbus;\Sun\ Drivers\nvidia\ethernet;\Sun\Drivers\ aspeed"</pre>	<pre>[Unattended] OemPreinstall = yes OemPnPDriversPath = "\Sun\Drivers\amd\ cpu;\Sun\Drivers\nvidia\smbus;\Sun\ Drivers\nvidia\ethernet;\Sun\Drivers\ aspeed"</pre>
<pre>[MassStorageDrivers] "NVIDIA nForce Storage Controller (32- bit)" = OEM</pre>	<pre>[MassStorageDrivers] "NVIDIA nForce Storage Controller (64- bit)" = OEM</pre>
<pre>[OEMBootFiles] nvata.cat nvgts.inf nvgts.sys txtsetup.oem idecoi.dll</pre>	<pre>[OEMBootFiles] nvata.cat nvgts64.inf nvgts64.sys txtsetup.oem idecoi.dll</pre>

10. 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
```

# Configure Windows Network Communication Settings With Multiple Network Interfaces

---

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

Topics in this appendix include:

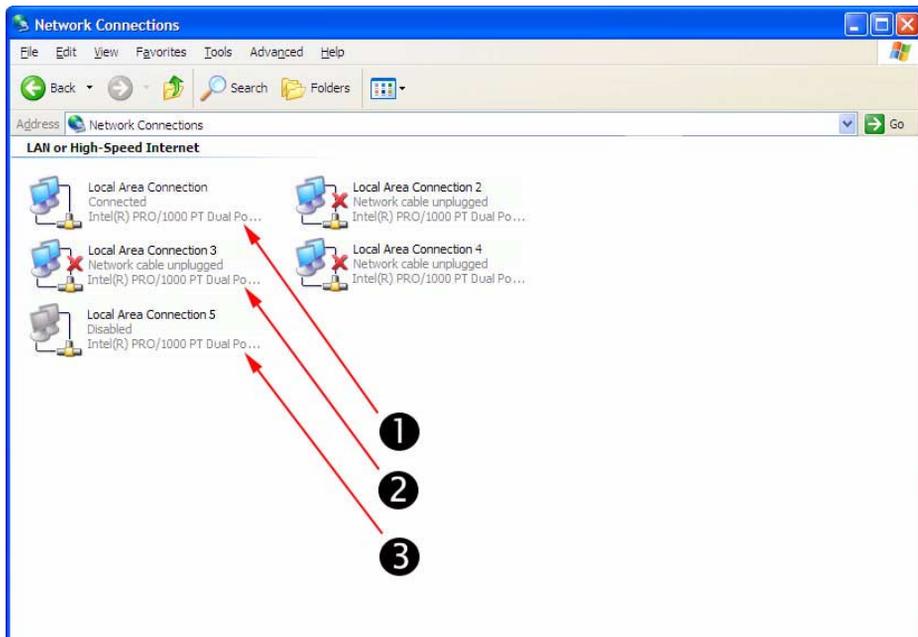
- [“Determine Which Network Data Ports Are Actively Connected to a Network”](#) on page 76.
- [“Confirm Physical Port MAC Addresses and Match Them to Window Device Names”](#) on page 77.

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

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

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

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



### Illustration Key

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

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

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

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

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

The Run dialog box appears.

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

The `cmd.exe` DOS window appears.

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

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

---

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

---

```
C:\>ipconfig /all

Windows IP Configuration

Host Name . . . . . : SUN-9C84S4R09H6
Primary Dns Suffix . . . . . :
Node Type . . . . . : Unknown
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : East.sun.com

1 -> Ethernet adapter Local Area Connection 2:

Media State . . . . . : Media disconnected
Description . . . . . : Intel(R) PRO/1000 PT Dual Port Network Connection #2
Physical Address. . . . . : 00-14-4F-00-20-39

2 -> Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix . : East.sun.com
Description . . . . . : Intel(R) PRO/1000 PT Dual Port Network Connection
Physical Address. . . . . : 00-14-4F-00-20-38
DHCP Enabled. . . . . : No
IP Address. . . . . : 10.8.143.181
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.8.143.254
DNS Servers . . . . . : 129.148.9.49
                        129.148.13.40

Ethernet adapter Local Area Connection 3:

Media State . . . . . : Media disconnected
Description . . . . . : Intel(R) PRO/1000 PT Dual Port Network Connection #5
Physical Address. . . . . : 00-03-00-04-FC-E2

Ethernet adapter Local Area Connection 4:

Media State . . . . . : Media disconnected
Description . . . . . : Intel(R) PRO/1000 PT Dual Port Network Connection #6
Physical Address. . . . . : 00-03-00-04-FC-E3

C:\>
```

**Illustration Key**

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

In the sample output:

- Ethernet Adapter Local Area Connection is the Windows default logical name (friendly name) assigned to a network interface.  
Note that the first *Ethernet Adaptor Local Area Connection* appears with a null value. This entry identifies the connection-specific DNS suffix (for example, east.sun.com) and the physical MAC address for that port.
- Ethernet Adapter Local Area Connection 2 identifies a disconnected media state, a description, and the physical MAC address for that port.
- The numeric value following the Windows logical friendly name refers to the network connection number.

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

---

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

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

[“Using the Adaptec Configuration Utility” on page 79](#)

[“Additional Information” on page 80](#)

---

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

---

---

## Using the Adaptec Configuration Utility

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

1. **Power down and restart your server.**
2. **During the BIOS POST process, press Ctrl-A when prompted to launch the Adaptec RAID Configuration Utility.**
3. **At the RAID Configuration Utility main menu, under options, select Array Configuration Utility.**
4. **Select Initialize Drives.**
5. **Select the boot drive (at the top of the list, typically: Dev01).**
6. **Press the Insert key and press Enter.**
7. **At the warning dialog box, press Y.**  
The drive is initialized.
8. **At the main menu, select Create Array and press Enter.**
9. **Select the boot drive.**
10. **Press the Insert key and press Enter.**
11. **At the Array Properties screen, set boot drive properties as appropriate for your setup (or choose the defaults).**  
Press F1 help for details on available properties.
12. **Select Done and press Enter.**  
Note that in order for Windows to see other the hard disk drives in your server, you will need to first initialize them and create an array volume or RAID using the Adaptec RAID Configuration Utility. Each volume created by the Adaptec RAID Configuration Utility will be seen by the operating system and the server's BIOS as a single disk drive.
13. **At the main menu, press ESC, and then press ESC again.**
14. **Select Yes to exit the utility.**  
The system will reboot. The disk is now ready to be used by Windows.

---

## Additional Information

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

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

- *Sun StorageTek RAID Manager Software User's Guide (820-1177)*

To obtain these documents, navigate to:

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



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