



Sun Blade™ X6250 Server Module Windows Operating System Installation Guide

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Preface

This document contains instructions for installing the Windows Server 2003 or Windows Server 2008 operating system onto a Sun Blade X6250 server.

Related Documentation

The document set for the Sun Blade X6250 Server is described in the Where To Find documentation at:

<http://docs.sun.com/app/docs/prod/blade.x6250#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.
AaBbCc123	What you type, when contrasted with onscreen computer output	> <code>ipconfig</code> Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> have administrator privileges to do this. To delete a file, type <code>del filename</code> .
AaBbCc123	Titles of dialog boxes, text in dialog boxes, options, menu items and buttons.	1. On the File menu, click Extract All.

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

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Sun Blade X6250 Server Module Windows Operating System Installation Guide, part number 820-1184-14

Getting Started

This chapter describes the information you will need to know before installing the Microsoft Windows Server 2003 or Windows Server 2008 operating system on a Sun Blade X6250 server module.

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

The following sections are included in this chapter:

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

About Windows Server Installation

To install the Windows operating system, the Sun Blade X6250 server module might use either an optional compact flash card (Windows Server 2003 only), an SSD (Solid State Drive), or internal SAS hard disk mass storage connected to a RAID Expansion Module (REM). When installing Windows Server 2003, except for compact flash and SSD, mass storage drivers are not included with the Windows Server 2003 distribution media. When installing Windows Server 2008, the 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 and Windows Server 2008 operating system. The installation procedures apply to both the 32-bit and 64-bit versions of Microsoft Windows Server 2003 and Windows Server 2008.

Important Installation Considerations

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

- When you install the Windows operating system, any data on the boot drive, including any preinstalled operating system, will be overwritten.
- If you have an optional RAID Expansion Module (REM) connected to mass storage, and you want to include your boot drive as part of a RAID configuration, you must configure your RAID volume(s) using the controller's BIOS configuration utility (accessible during server boot) before you install the Windows operating system.

Note – For configurations that require additional hardware, you must install the hardware before you can install the operating system. You might also need to configure the boot device priority in the server's BIOS setup program.

- If you have an optional Sun Blade RAID 5 Expansion Module (Adaptec™-based), you must create an array volume using the controller's configuration utility on any disk you want Windows to be able to access. If you are performing an initial installation of Windows and want to boot from mass storage connected to the controller (even if 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](#).

Note – More information about using your controller's BIOS configuration utility is described in the *Sun Blade X6250 Server Module Installation Guide* (820-1182).

- A primary consideration during operating system installation is providing the mass storage drivers for the disk controller. Windows Server 2008 includes the mass storage drivers required for your server. Windows Server 2003 does not contain the mass storage drivers required for your server.
 - **If you install Windows using the Sun Installation Assistant (SIA)**, 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 Server 2003 requires that the mass storage drivers be delivered from a floppy disk. The Windows Server 2003 installation program can only read mass storage drivers from a floppy disk.
- For a manual installation, there are three methods that can be used to deliver the mass storage drivers for Windows Server 2003 installation:
 - Use a physical USB floppy drive connected to the Sun Blade server module.

Note – Your server module has only 2 USB ports. You must use the dongle cable included with the system to attach a USB floppy drive. The second USB port is then available for a USB hub for the keyboard, mouse and a CD/DVD drive.

- Use a remote KVMS (remote Keyboard, Video, Mouse, Storage—allows redirection of the server keyboard, video output, mouse and storage devices via a networked system) to redirect the floppy to a physical floppy drive on another system that is hosting the JavaRConsole (JavaRConsole system—a remote console run from a networked system).
- Use a remote KVMS to redirect the floppy to a floppy image file on another system that is hosting the JavaRConsole.
- For a manual installation, there are also three methods for delivering the Windows Server 2003 or Windows Server 2008 distribution media for installation:
 - Use the physical CD/DVD drive connected to the Sun Blade server module (*see note above*).
 - 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 an installation method for the mass storage driver and operating system media.

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

Supported Windows Operating Systems

The Sun Blade X6250 server supports the following Microsoft Windows operating systems at the time of publication of this document:

- Microsoft Windows Server 2003 R2 SP2, Standard Edition (32-bit)
- Microsoft Windows Server 2003 R2 SP2, 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:

<http://www.sun.com/servers/blades/x6250/os.jsp>

Assisted Installation Using Sun Installation Assistant (SIA)

The Sun Installation Assistant (SIA) is a tool supported for use with x64 Sun Fire and Sun Blade servers that assists in the installation of supported Linux and Microsoft Windows Server 2003 or 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 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/blade.x6250#hic>

Manual Installation

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

Note – If you plan to install Windows Server 2003 or Windows Server 2008 using a Preboot Execution Environment (PXE) server, refer to Chapter 9, “[Incorporating Sun Blade X6250 Server Module Drivers Into WIM or RIS Images](#)” on page 59.

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

1. [Downloading Server-Specific Driver Packages](#) (see Chapter 2).
2. [Selecting the Delivery Methods](#) (see Chapter 3).
3. [Prepare for Mass Storage Driver Delivery](#) (see Chapter 4).
4. [Configure the JavaRConsole System](#), only required if you are planning to install Windows from a remote console (see Chapter 5).

5. [Installing Windows Server 2003](#) (see Chapter 6).
6. [Installing Windows Server 2008](#) (see Chapter 7).
7. [Update the Critical Server-Specific Drivers](#) (see Chapter 8).

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

Downloading Server-Specific Driver Packages

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

Note – If you have the Tools and Drivers CD, you can skip this chapter and proceed to [Chapter 3](#). You can use the CD for creation of the mass storage driver floppy disk and the installation of the other server-specific drivers. The latest version of the Tools and Drivers CD for your server is also available as a downloadable image on the Sun download site.

To download the drivers:

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

<http://www.sun.com/servers/blades/x6250/downloads.jsp>

2. Choose one of the following download options:

- **If you are installing using the Windows Server 2003 or Windows Server 2008 media, download X6250_Tools_And_Drivers_Windows_XXXXX.zip to a hard drive location or media that will be accessible during the installation. Extract the following sub-packages contained in the .zip file:**
 - FloppyPack.zip (contains the disk controller drivers for the Sun Blade X6250). You will use this package to create driver media for your Windows Server 2003 installation, see [Chapter 3](#).
 - InstallPack.exe (program to update server-specific device drivers after installing Windows Server 2003 or Windows Server 2008)
 - DriverPack.zip (for experts only, server-specific driver archive for Windows Server, English). Download this file if you want to perform a PXE installation described in Chapter 9, “[Incorporating Sun Blade X6250 Server Module Drivers Into WIM or RIS Images](#)” on page 59.

- `OptPack.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.zip` file on the PXE server.**

Note – The `xxxxx` number identifies the version of the package (for example, `X6250_Tools_And_Drivers_Windows_38907.zip`).

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

Selecting the Delivery Methods

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

To select mass storage driver media and Windows Server 2003 or Windows Server 2008 distribution media delivery methods, complete the following procedures:

1. [Select a Mass Storage Drivers Method.](#)
2. [Select a Windows Server 2003 or Windows Server 2008 Distribution Media Method.](#)
3. **Make a note of the delivery methods 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 mass storage drivers for Windows Server 2003 installation. Make note of the method you have selected

Note – For Windows Server 2008, the Windows distribution media includes all drivers necessary to install Windows on the Sun Blade X6250 server module. If you are installing Windows Server 2003, you will need to supply mass storage drivers during the installation using one of the methods described below.

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

Mass Storage Drivers Delivery Method	Additional Requirements	Ease of Configuration and Installation
Floppy Disk Local: Uses a physical USB floppy drive externally connected to a USB port on the server module dongle cable. Do not connect it to a hub, as this could cause the installation to fail. You can use a hub on the other dongle USB connector to connect additional devices, such as a keyboard and mouse.	<ul style="list-style-type: none">• External USB floppy drive listed as “Designed for Windows”* on the Windows Marketplace site: http://www.windowsservercatalog.com/marketplace/• Floppy disk• Server module dongle cable	Easy
Floppy Disk Remote: Uses a remote KVMS to redirect to a physical floppy drive on the system hosting the JavaRConsole.	<ul style="list-style-type: none">• JavaRConsole system with network access to your Sun Blade server module’s network management port and an attached floppy drive• Floppy disk	Medium: Installation time will be minimally increased over the Floppy Disk Local method.
Floppy Image: Uses a remote KVMS to redirect to a floppy image file on the system hosting the JavaRConsole. Only available for server modules supporting ILOM. This method can not be used for server modules using ELOM.	<ul style="list-style-type: none">• JavaRConsole system with network access to your Sun Blade server module’s management network port• Floppy image file	Medium: Installation time will be minimally increased over the Floppy Disk Local method.

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

Select a Windows Server 2003 or Windows Server 2008 Distribution Media Method

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

TABLE 3-2 Delivery Methods for Windows Server Distribution Media

Windows OS Media Delivery Method	Additional Requirements	Ease of Configuration and Installation
Windows Local: Uses an external CD/DVD drive connected to the USB port on the server module dongle. A USB hub may also be used.	<ul style="list-style-type: none">External USB CD/DVD drive listed as “Designed for Windows”* on the Windows Marketplace site: http://www.windowsservercatalog.com/marketplace/Server module dongle cable	Easy
Windows Remote: Uses a remote KVMs to redirect the CD drive to a physical CD drive on the system hosting the JavaRConsole.	JavaRConsole system with the network access to the Sun Blade server module network management port and an attached CD/DVD drive	Medium: Installation time will be significantly increased over the Windows Local method.
Windows Image: Uses a remote KVMs to redirect the CD drive to a Windows media image file on the system hosting the JavaRConsole.	JavaRConsole system with network access to the Sun Blade server module management network port	Medium: Installation time will be significantly increased over the Windows 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.

Prepare for Mass Storage Driver Delivery

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

Note – For Windows Server 2008, the Windows distribution media includes all drivers necessary to install Windows on the Sun Blade X6250 server module. If you are installing Windows Server 2003, you will need to supply mass storage drivers during the installation using one of the methods described here.

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

TABLE 4-1 Mass Storage Driver Delivery Methods

Delivery Method	Section to Read
Floppy Disk Local	“Create a Floppy Disk” on page 13
Floppy Disk Remote	“Create a Floppy Disk” on page 13
Floppy Image	“Copy the Floppy Image File” on page 17

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 floppy drive
- Floppy disk
- The latest Tools and Drivers CD for your server, or FloppyPack.zip (See [“Downloading Server-Specific Driver Packages” on page 7](#) for details on obtaining FloppyPack.zip)

▼ To Create a Floppy Disk for the Sun Blade X6250 Server Module

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 Mass-Storage Driver Disk, and then proceed to [Step 2](#).

--or--

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

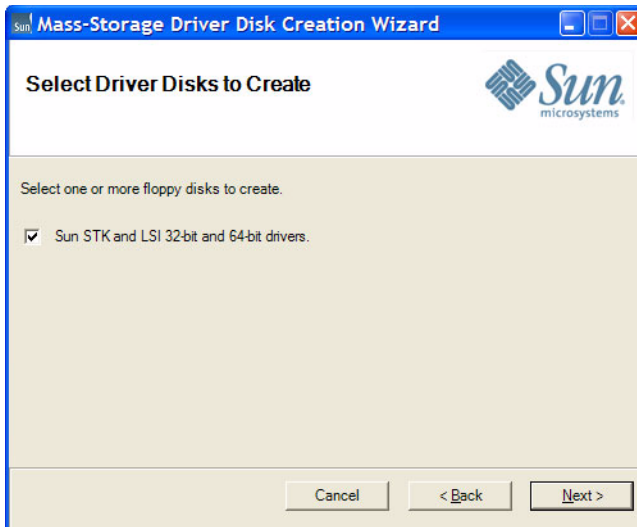
- vii. Start Windows Explorer and navigate to the folder containing the extracted files.
 - viii. In Windows Explorer, open the directory containing the extracted files and double-click the `mkfloppy.exe` wizard, and then proceed to the next step.
2. At the Mass-Storage Driver Disk Creation wizard welcome page (see [FIGURE 4-1](#)), click Next.
Insert a blank floppy disk into drive A: when prompted.

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



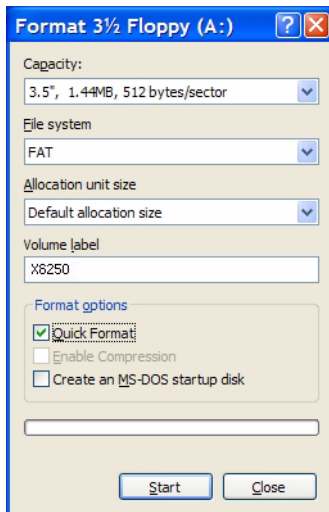
3. At the Select a Drivers Disk to Create page (see [FIGURE 4-2](#)), select the appropriate driver for your installed disk controller, and then click Next.
Follow the instructions in the wizard to create the mass storage driver floppy disk for your server.

FIGURE 4-2 Select Driver Disks to Create Page



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

FIGURE 4-3 Format 3 1/2 Floppy Page



5. 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.

6. 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 “[Downloading Server-Specific Driver Packages](#)” on page 7.

▼ To Copy the Floppy Image File

To copy the floppy image file using a Windows system:

1. Prepare the driver files:

- If you are using the Tools and Drivers CD to access the floppy package, do the following:
 - i. Insert the CD into the JavaRConsole system.
 - ii. Navigate to the following directory:
`windows\w2k3\packages\FloppyPack\image`
the following image is available:
`-- smi.img` (for the Sun Blade RAID 5 Expansion Module)
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.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.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 `smi.img` file to a folder on the JavaRConsole system that will be available during installation.
Note the `smi.img` file location.
 3. To install Windows remotely using the Floppy Image method, proceed to [Chapter 5](#) to setup your remote console.

Configure the JavaRConsole System

This chapter describes how to set up the JavaRConsole system to deliver the mass storage drivers and Windows Server 2003 or Windows Server 2008 media for operating system installation.

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

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

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

JavaRConsole System Requirements

The requirements for the JavaRConsole system are:

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

Setting Up the JavaRConsole System

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

- ["To Set Up the JavaRConsole System for Servers With ILOM" on page 20](#)
- ["To Set Up the JavaRConsole System for Servers With ELOM" on page 25](#)

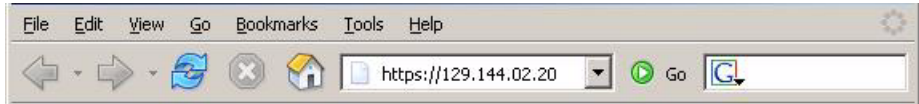
▼ To Set Up the JavaRConsole System for Servers With ILOM

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

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

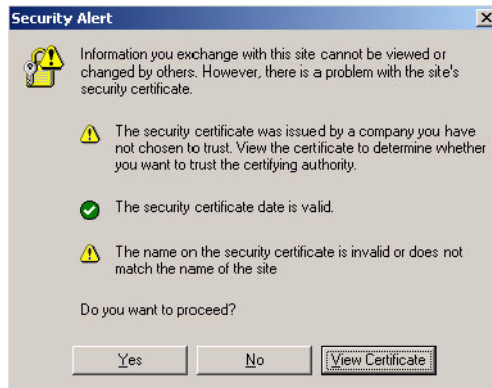
1. Start the remote console application by typing the IP address of the Integrated Lights Out Manager (ILOM) service processor into a browser on the JavaRConsole system.

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

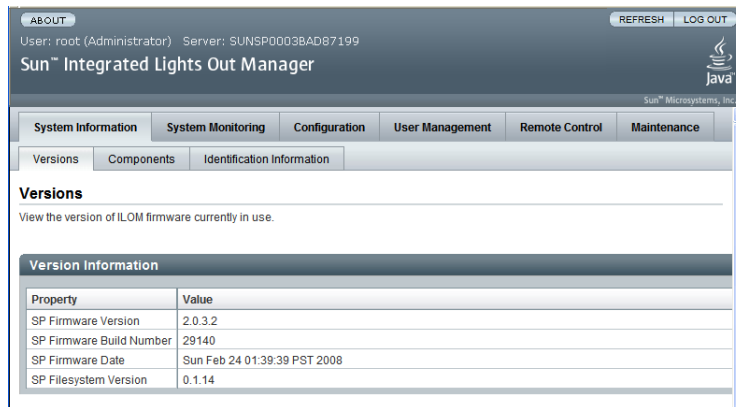


3. Enter the user name and password and click Log In.

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

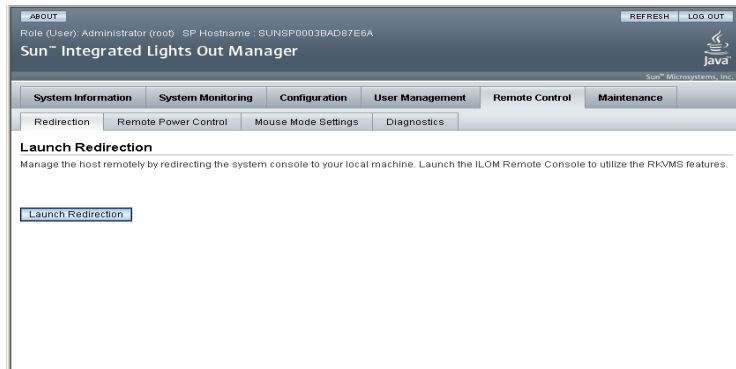


4. Click the Remote Control tab in the ILOM WebGUI.

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.

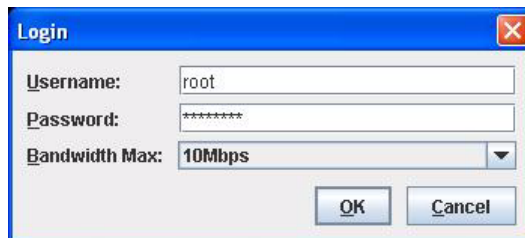
Note – When using Windows for JavaRConsole system redirection, an additional warning appears after clicking Launch Redirection. If the Hostname Mismatch dialog box is displayed, click the Yes button.

FIGURE 5-6 Hostname Mismatch Dialog Box



The Remote Control dialog box appears.

FIGURE 5-7 Remote Control Login Dialog Box

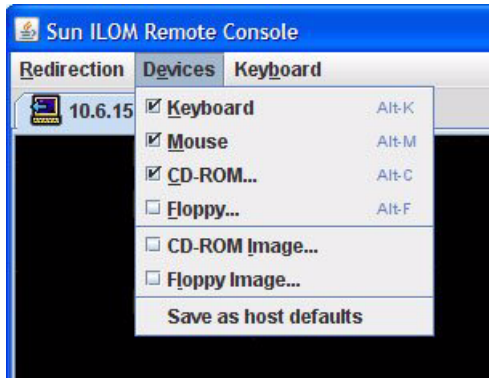


6. In the Remote Control Login dialog box, enter your user name and password and click OK.

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

After the login is successful, the JavaRConsole screen appears.

FIGURE 5-8 JavaRConsole Devices Menu



7. From the Devices menu, select Floppy and/or CD-ROM according to the delivery method you have chosen.

- **Floppy Disk Remote:** Select Floppy to redirect the server to the contents of the physical floppy drive attached to the JavaRConsole system.
- **Floppy Image:** Select Floppy Image to redirect the server to the mass storage drivers floppy image file located on the JavaRConsole system.
- **CD-ROM Remote:** Select CD-ROM to redirect the server to the operating system software CD/DVD contents from the CD/DVD-ROM drive attached to the JavaRConsole system.
- **CD-ROM Image:** Select CD-ROM Image to redirect the server to the operating system software .iso image file located on the JavaRConsole system.

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

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

- To install Windows Server 2003, proceed to [Chapter 6](#).

- To install Windows Server 2008, proceed to [Chapter 7](#).

▼ To Set Up the JavaRConsole System for Servers With ELOM

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

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

1. **Open your web browser.**
2. **In the address bar, type the IP address of the Sun Blade X6250 server module's ELOM.**

The login screen appears.
3. **Type the default user name and password.**

Username: **root**
Password: **changeme**
4. **Click Login.**

The ELOM displays the System Information screen.
The following tabs are displayed: System Information, System Monitoring, Configuration, User Management, Remote Control, and Maintenance.
5. **Click the Remote Control tab.**
6. **Select Redirection.**

The screen displays a Launch Redirection button.
7. **Click Launch Redirection.**

A hostname mismatch message appears.
8. **Click Run.**

Other security messages might appear.
9. **Click Run, OK, or Yes, as appropriate.**

Note – For systems using Firefox and Mozilla web browsers, the Java RTE must be version 1.6 or later.

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

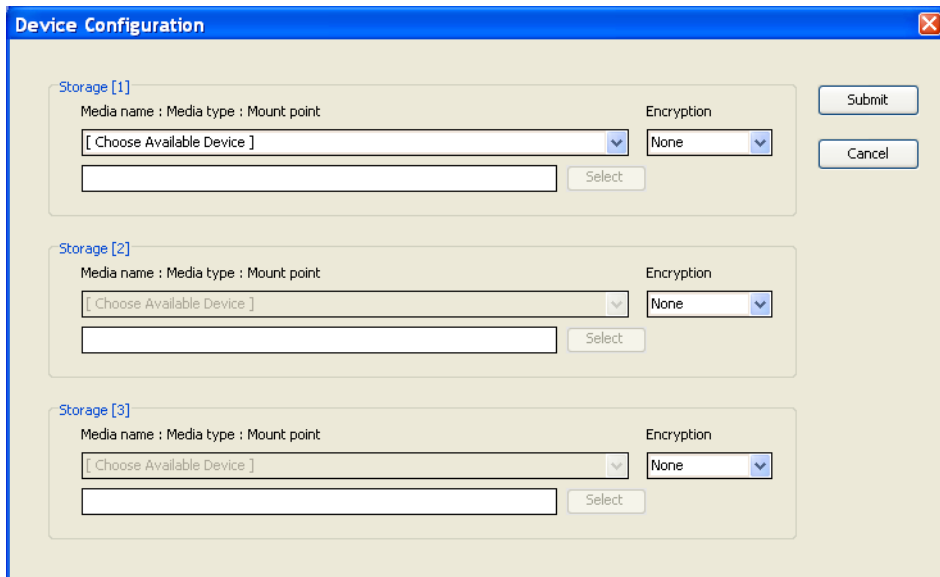
The remote console application supports the redirection of the following types of devices:

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

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

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

FIGURE 5-9 Device Configuration Window



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

- **Floppy Disk Remote:** Select Floppy to redirect the server to the contents of the physical floppy drive attached to the JavaRConsole system. This method may be used if you are installing the Windows Server 2003 on a Sun Blade X6250 server module equipped with a REM.
- **CD-ROM Remote:** Select CD-ROM to redirect the server to the operating system software CD/DVD contents from the CD/DVD-ROM drive attached to the JavaRConsole system.
- **CD-ROM Image:** Select CD-ROM Image to redirect the server to the operating system software .iso image file located on the JavaRConsole system.

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

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

The devices are mounted and ready for the Windows install.

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

- To install Windows Server 2003, proceed to [Chapter 6](#).
- To install Windows Server 2008, proceed to [Chapter 7](#).

Installing Windows Server 2003

This chapter describes how to install the Windows Server 2003 operating system onto a Sun Blade X6250 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).
- When using the *Floppy Disk Local* mass storage drivers installation method, connect the USB floppy drive directly to one of the USB ports on the dongle cable provided with the server. Other USB devices should be connected to a USB hub attached to the other dongle cable USB port.
- If you are using an optional **Sun Blade RAID 5 Expansion Module** (Adaptec™-based), 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 Sun Blade REM array volume.

FIGURE 6-1 Example Startup Screen Showing Existing Sun Blade REM 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: 00724A0061
Controller WWN: 5000E0CE219A000

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

Note – More information about using the controller’s BIOS configuration utility is described in the *Sun Blade X6250 Server Module Installation Guide* (820-1182).

- For information about specific details on Windows Server 2003 installation, refer to your Microsoft Windows documentation.

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

For requirements specific to the mass storage driver and Windows Server 2003 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	Use a physical USB floppy drive externally connected to the USB port on the server module dongle.
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 .img file is accessible from the JavaRConsole system. Only available for server modules supporting ILOM. This method can not be used for server modules using ELOM.
Windows Local	Make sure that a USB CD/DVD drive is externally connected to a USB port on the server module dongle. A USB hub may also be used. Also have the Microsoft Windows Server 2003 installation media available.
Windows Remote	Insert the Microsoft Windows Server 2003 installation media into the JavaRConsole system's CD or DVD-ROM drive.
Windows Image	Ensure that the Windows Server 2003 installation media is accessible from the JavaRConsole system.

Installing the Operating System

Follow these steps to install the Microsoft Windows Server 2003 software onto your Sun Blade X6250 server module.

Note – The Windows installation will format the drive you designate as the boot disk, any pre-existing data on that disk will be lost.

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

FIGURE 6-3 Boot Device Menu Example

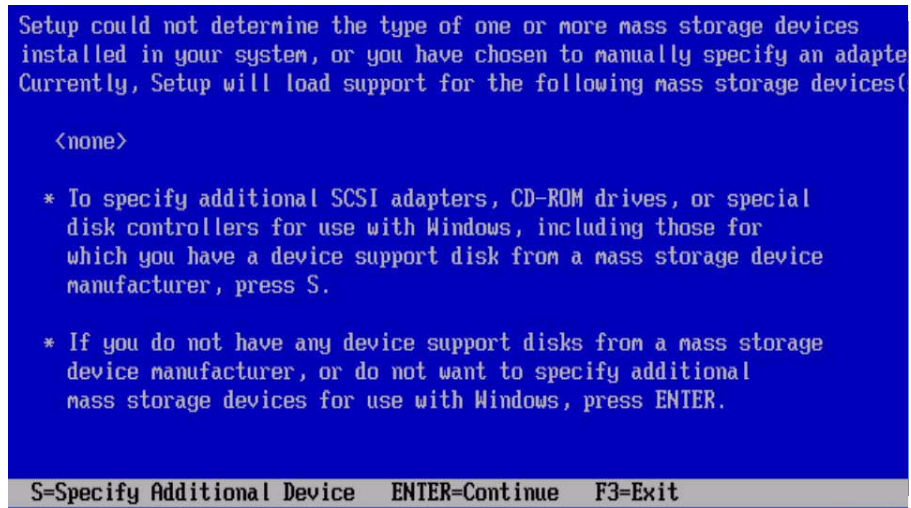


5. Select the DVD/CD-ROM drive or the CD image from the Boot Device menu and press Enter.
If prompted with Press any key to boot from CD, quickly press any key.
The Windows Setup process begins.
6. Press F6 when you see the following prompt at the bottom of the screen during the Windows Setup process:
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

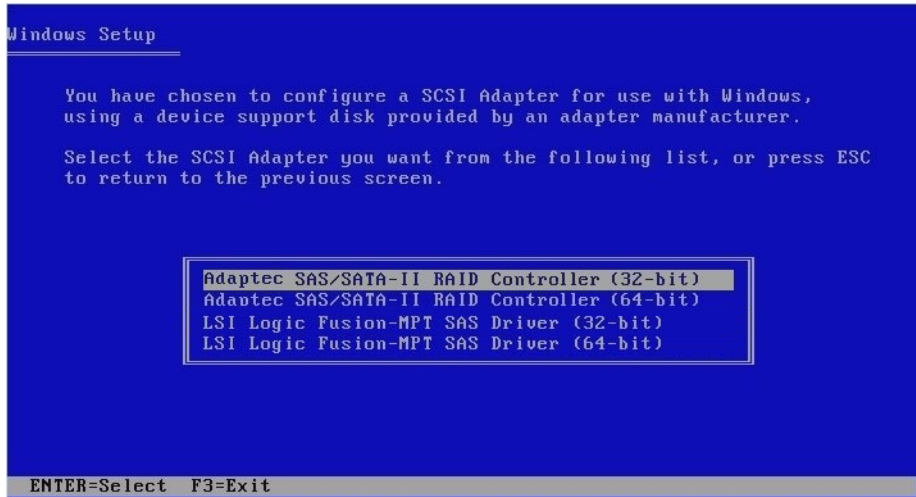


7. Make sure that the mass storage drivers are accessible according to the mass storage driver installation method that you have selected.
 - **Floppy Disk Local:** Mass storage drivers floppy disk in floppy drive A attached to the server
 - **Floppy Disk Remote:** Mass storage drivers floppy disk in the JavaRConsole server floppy drive
 - **Floppy Image (only supported for server modules using ILOM):** the `smi.img` available on the JavaRConsole system

8. Press S to specify additional devices.

A screen appears listing the available drivers. Refer to [FIGURE 6-5](#).

FIGURE 6-5 Example Select Mass Storage Adapter Screen



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

- For servers with an Adaptec-based Sun Blade RAID 5 Expansion Module, select:

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

or

Adaptec SAS/SATA-II RAID Controller (64-bit)

Windows Setup will then display your selection.

10. Windows Setup lists the mass storage driver to be installed (example shown in [FIGURE 6-6](#)). Press Enter to continue.

FIGURE 6-6 Example Specify Additional Device Screen With Sun Blade RAID 5 Expansion Module Selected



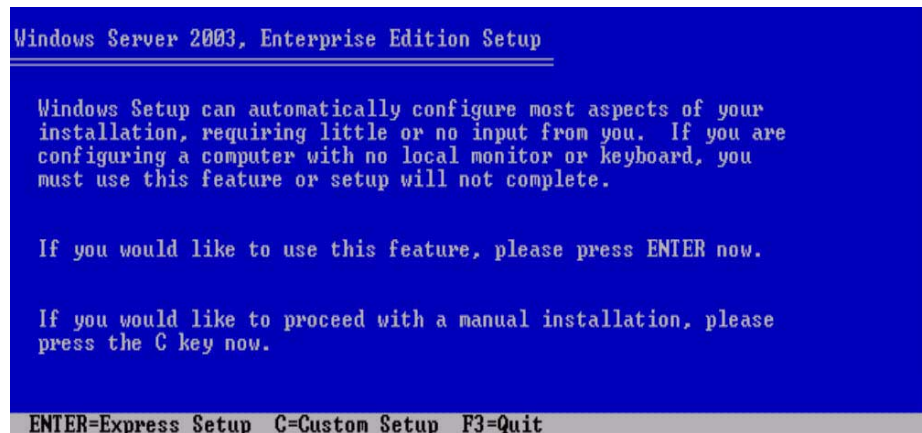
11. Confirm your choice and press Enter to continue.

The Welcome to Setup screen is displayed.

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

The Setup Selection screen is displayed.

FIGURE 6-7 Setup Selection Screen



13. Press either Enter to select Express Setup, or C to select Custom Setup.

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**.

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

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

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

- **Floppy Disk Local:** Remove the floppy disk from the floppy drive attached to the server.
- **Floppy Disk Remote:** Remove the floppy disk from the JavaRConsole server.
- **Floppy Image (only supported for server modules using ILOM):** Deselect Floppy Image from the JavaRConsole Devices menu.

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

15. Proceed to [Chapter 8](#) “Updating the Critical Server-Specific Drivers.”

Installing Windows Server 2008

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

Installation Requirements

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

For all installation methods:

- Complete the procedures in the previous chapters of this document that apply (Chapters 2 through 5).
- Verify that a keyboard and mouse are connected to the server's dongle cable, or to a USB hub that is connected to the server's dongle cable.
- If you are using an optional **Sun Blade RAID 5 Expansion Module** (Adaptec™-based), 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 Sun Blade REM array volume.

FIGURE 7-1 Example Startup Screen Showing Existing Sun Blade REM 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: 00724A0061
Controller WWN: 5000E0CE219A000

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

Note – More information about using the controller’s BIOS configuration utility is described in the *Sun Blade X6250 Server Module Installation Guide* (820-1182).

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

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

For requirements specific to the Windows media delivery method that you have chosen, see [TABLE 7-1](#).

TABLE 7-1 Requirements for Each Installation Method

Method	Action or items required
Windows Local	Uses an external CD/DVD drive connected to the USB port on the server module dongle. A USB hub may also be used.
Windows Remote	Insert the Microsoft Windows Server 2008 installation media into the JavaRConsole system's DVD-ROM drive.
Windows Image	Ensure that the Windows Server 2008 installation media is accessible from the JavaRConsole system.

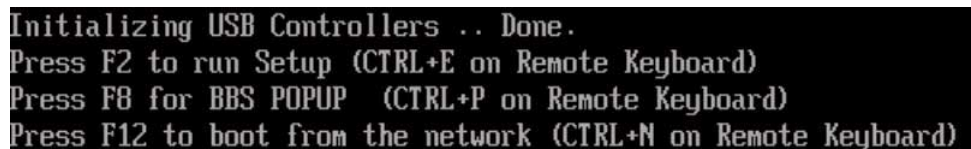
Installing the Operating System

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

Note – The Windows installation will format the drive you designate as the boot disk, any pre-existing data on that disk will be lost.

- 1. Make sure that you have completed all of the requirements listed in “Installation Requirements” on page 37.**
- 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)
```

- 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 Server 2008 media DVD in the server's DVD drive now.

FIGURE 7-3 Boot Device Menu Example

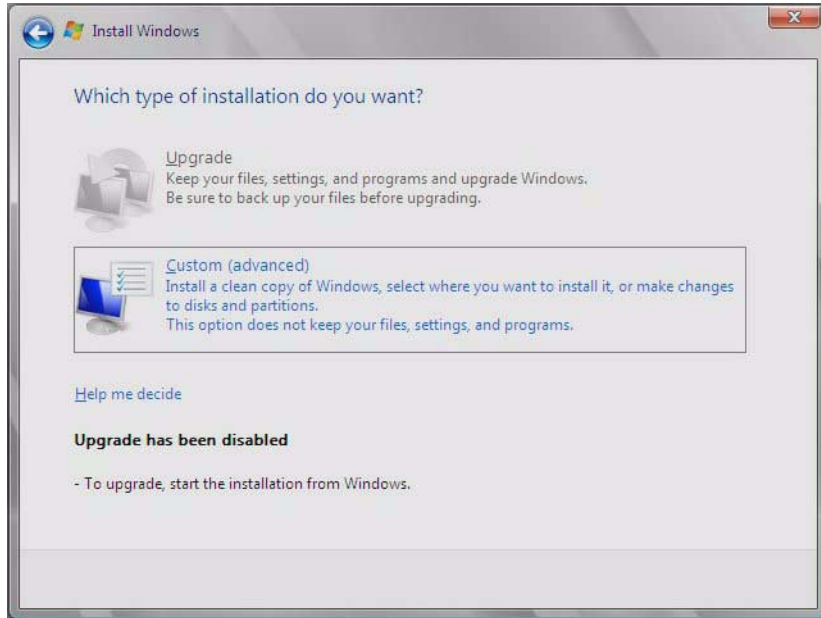


- Select CD/DVD from the Boot Device menu and press Enter.

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

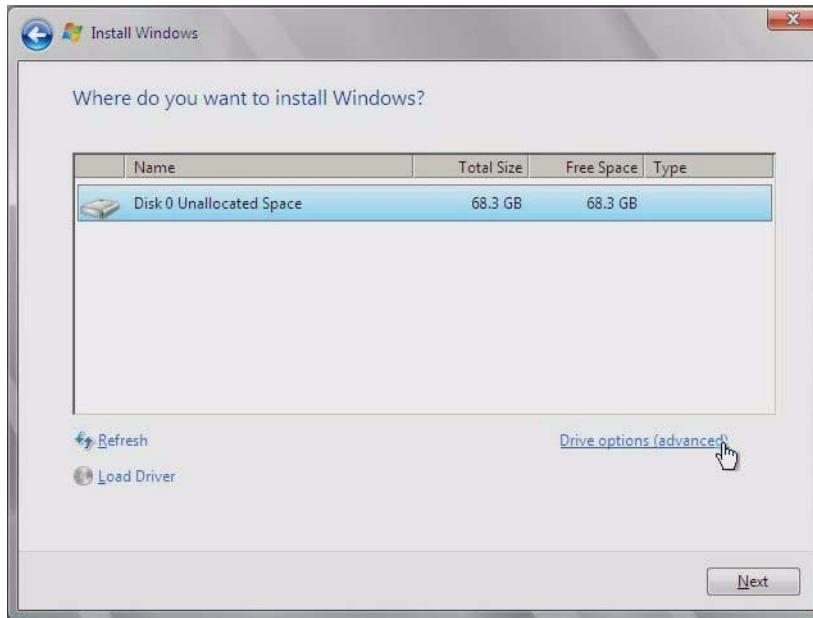
6. The Windows installation wizard starts. Proceed through the installation wizard until you see the Installation Type page displayed, and then click Custom (advanced).

FIGURE 7-4 Select Installation Type Page



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

FIGURE 7-5 Where to Install Windows Page Example



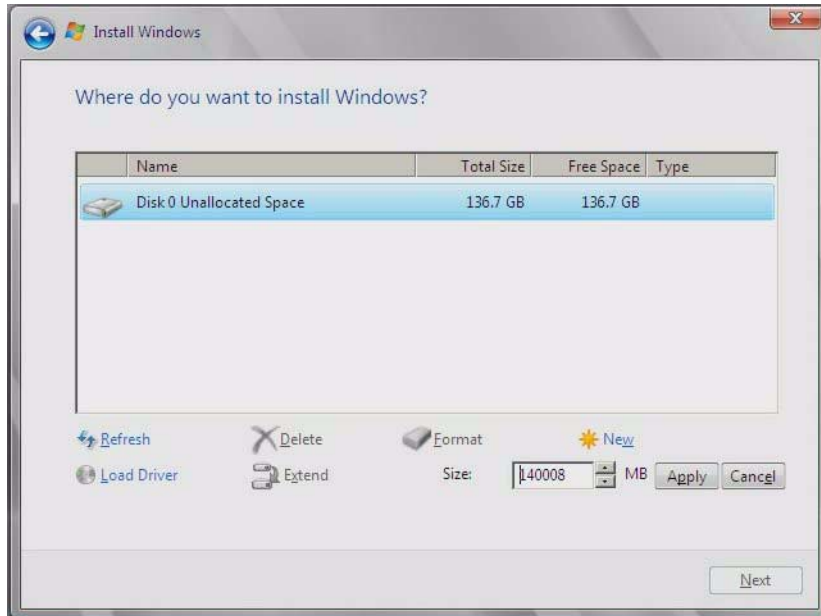
- If you *do not* want to override the Windows default partition settings, click Next and skip to [Step 9](#).
- If you *do* want to override the Windows default partition settings, click Driver Options (advanced) and proceed to the next step.



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

8. At the Advanced Driver Options page (see [FIGURE 7-6](#)), do the following:

FIGURE 7-6 Windows Partition Management Page



- a. Click Delete to delete the existing partition.
- b. Click New to create the new partition.
- c. Change size settings as needed, and then click Apply.
- d. Click Next and proceed to the next step.

9. The Windows installation begins.

The server will reboot multiple times during the installation process.

10. When Windows installation is complete, Windows starts and prompts you to change the user password. Click OK and proceed to set up the initial user account.

Note – Windows Server 2008 enforces stronger password schemes for user accounts than previous versions of Windows. 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.

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

Update the Critical Server-Specific Drivers

This chapter describes how to update the Windows Server 2003 or Windows Server 2008 installation with server-specific device drivers.

This chapter contains the following sections:

- [“Updating the Server-Specific Drivers” on page 46](#)
- [“Installing Supplemental Software” on page 51](#)
- [“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.
- Have the latest Tools and Drivers CD for your server available.

--or--

- Downloaded `X6250_Tools_And_Drivers_Windows_XXXXX.zip` and extracted `InstallPack.exe` to a location accessible to the server as described in [“Prepare for Mass Storage Driver Delivery” on page 13](#).

Note – The `XXXXX` number identifies the version of the package (for example, `X6250_Tools_And_Drivers_Windows_38907.zip`).

Updating the Server-Specific Drivers

Sun provides a wizard to install Sun server-specific drivers and supplemental software. The Sun 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.exe` executable file. Directions for using either method are described below.

▼ To Update the Server-Specific Drivers

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

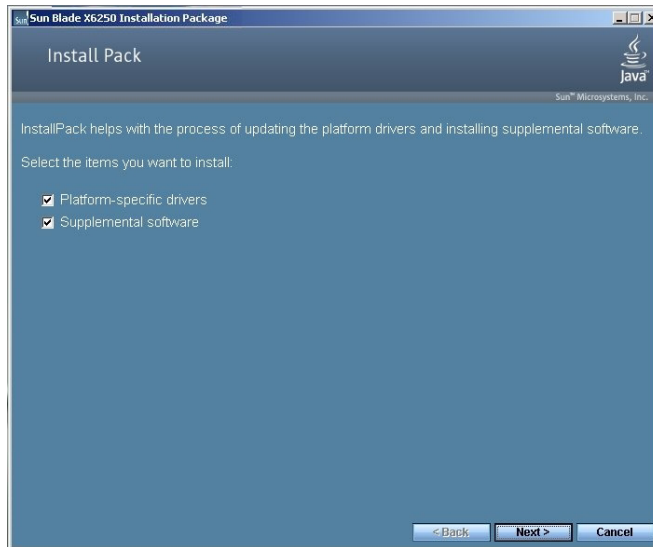
- Insert the Tools and Drivers CD into a USB external CD/DVD drive connected to the server. The CD will autostart. At the main menu, select **Install Drivers and Supplemental Software**.

--or--

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

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

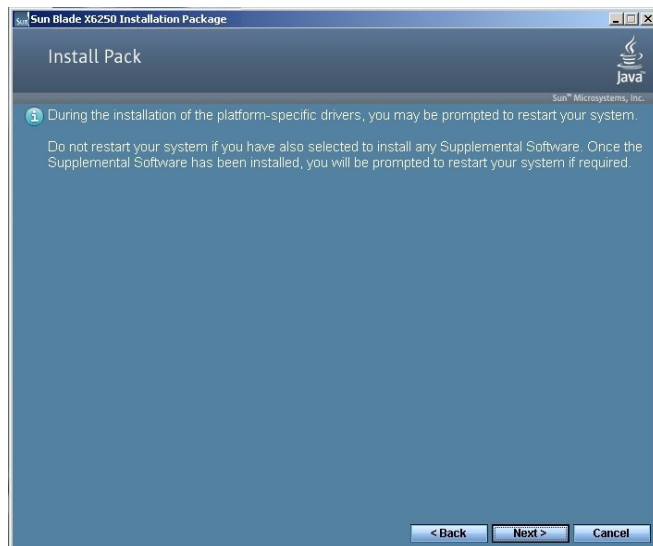
FIGURE 8-1 Sun Installation Package Dialog Box Example



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 device drivers are installed. The Install Pack notice dialog box displays.

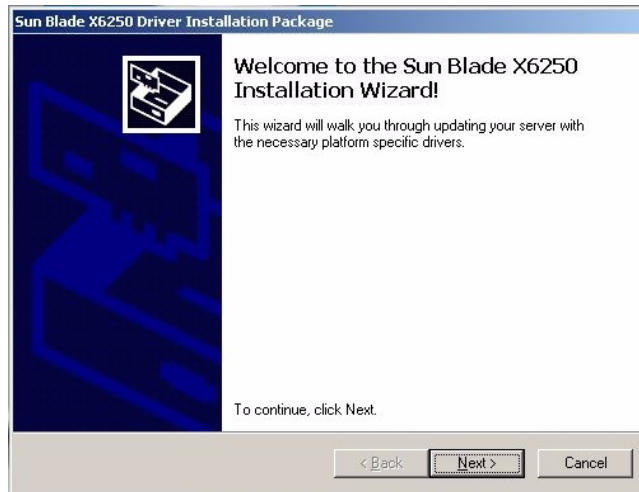
FIGURE 8-2 Install Pack Notice Dialog Box Example



3. Review the Important Note and then click Next.

The Welcome to the Sun Installation Wizard displays.

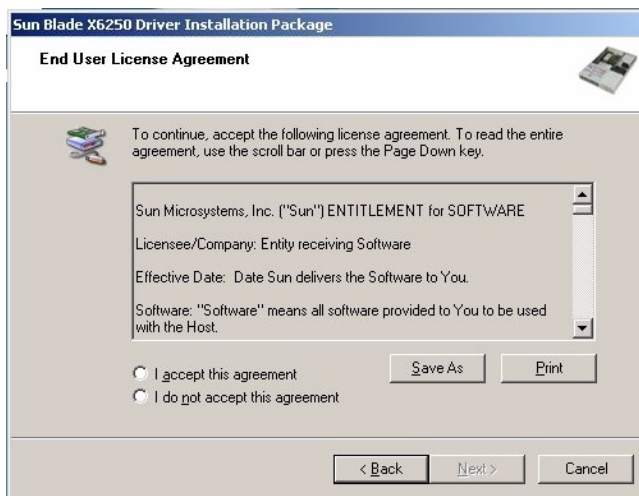
FIGURE 8-3 Sun Installation Wizard Example



4. Click Next.

The End User License Agreement page appears.

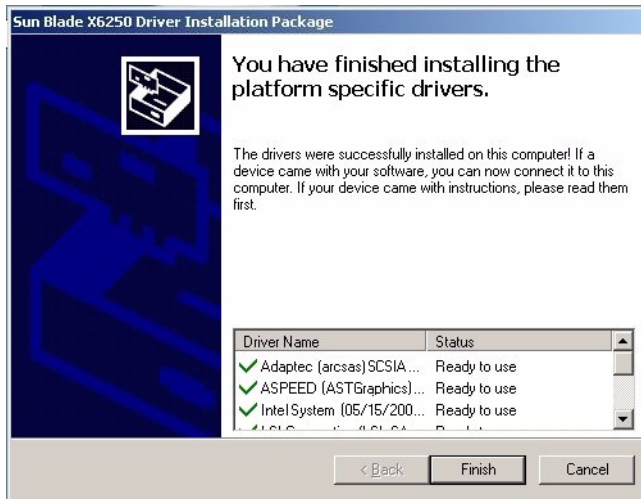
FIGURE 8-4 End User License Agreement Page



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 51.

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 Blade server module. 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

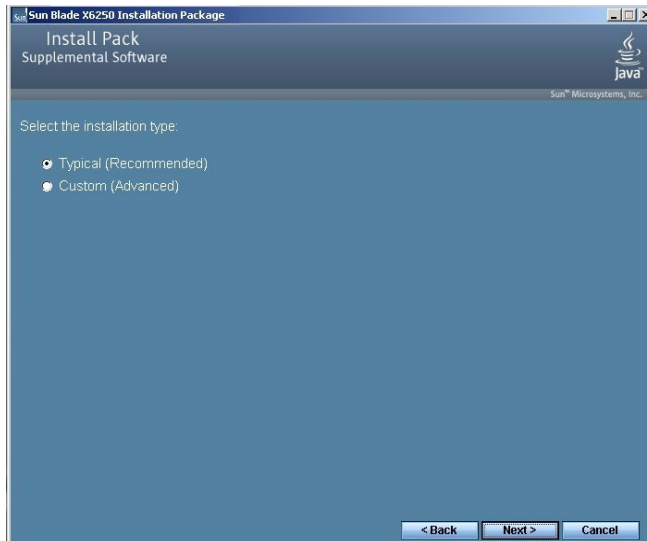
Available Components	Windows Server 2003	Windows Server 2008
Sun STK RAID Manager —Allows you to configure, administer and monitor RAID on the Sun Blade RAID Expansion Module, X4620A (Adaptec-based). Refer to “Managing RAID Using the StorageTek RAID Manager” on page 53.	Typical	Typical
ipmitool —Command line utility that reads the sensor data repository (SDR) and displays sensor values, System Event Log (SEL) entries, Field Replaceable Unit (FRU) inventory information, gets and sets LAN configuration parameters, and performs chassis power control operations via the BMC (also called the Service Processor). For Windows Server 2003 installations, refer to “Completing the IPMItool Installation” on page 56).	Typical	Typical
Intel Teaming —NIC teaming features include fault tolerance, load balancing, link aggregation, and Virtual LAN (VLAN) tagging. After installation, refer to “Using Intel NIC Teaming” on page 53.	Typical	Typical

▼ To Install Supplemental Software

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

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

FIGURE 8-7 Supplemental Software Dialog Box



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

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

2. Once the supplemental software has been installed, click **Finish**.
3. Click **Yes** at the **System Setting Change** dialog box to restart your system. If you ran the **Sun 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 StorageTek RAID Manager”](#) on page 53
- [“Using Intel NIC Teaming”](#) on page 53
- [“Completing the IPMItool Installation”](#) on page 56

Managing RAID Using the StorageTek RAID Manager

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

- The Sun StorageTek RAID Manager software is an application that helps you build a storage space for your online data. Your storage space can include direct-attached or internal RAID storage. With the Sun StorageTek RAID Manager software, you can group disk drives into logical drives and build in redundancy to protect your data and improve system performance. You can also use the software to monitor and manage all the HBAs, enclosures, and disk drives in your storage space from a single location.
- The Adaptec Configuration Utility is a BIOS-based utility that enables you to create and manage controllers, disk drives and other devices, and arrays using the integrated RAID controller (Adaptec-based). If you use the BIOS Configuration Utility to create arrays, the Sun StorageTek RAID Manager GUI detects those arrays and displays them as logical drives in the GUI.
- The `arrconf` command-line interface (CLI) can be used with the Sun StorageTek SAS RAID HBA to perform many of the same tasks provided with the StorageTek RAID Manager GUI.

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

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

Using Intel NIC Teaming

Intel® PROSet for Windows Device Manager is an extension to the Windows Device Manager. When you install the NIC Teaming supplemental software for your Sun Blade X6250 server module, Intel PROSet software configuration tabs are automatically added to the network adapters listed in Device Manager.

▼ To Access Intel NIC Teaming Configuration Settings

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

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

The run dialog box is displayed.

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

FIGURE 8-8 Intel NIC Adapter Properties



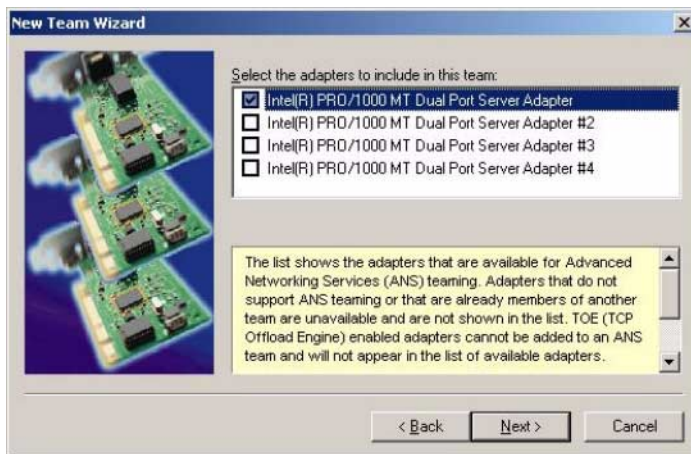
5. To setup NIC teaming, click the Teaming tab.
The teaming options are displayed (see [FIGURE 8-8](#)).
6. Select **Team with other adapters** and then click **New Team**.
The New Team Wizard is displayed.

FIGURE 8-9 New Team Wizard



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

FIGURE 8-10 Adapter Selection Page



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

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

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

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

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

Completing the IPMItool Installation

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

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

- Through the server's ILOM (*Integrated Lights Out Manager*) interface. For details on using ILOM, refer to your server's ILOM documentation.
- Through the server's Windows operating system. To use the IPMItool with Windows, it must be used in conjunction with the IPMI System Management driver (available with Windows Server 2003 R2 SP2). 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 R2 SP2:

- Install IPMItool 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 57](#).

For Windows Server 2008:

- Install IPMItool 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 ipmissetp.dll,AddTheDevice
```

and then click OK.

The IPMI System Management driver is instantiated.

5. To ensure that the IPMI System Management driver is installed, repeat steps 1a through 1c, above.

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

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

Incorporating Sun Blade X6250 Server Module 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 60](#)
- [“Add Drivers to a WIM Image” on page 60](#)
- [“Adding Drivers to a RIS Image” on page 63](#)

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
Intel Pro/1000 EB Network with I/O Acceleration	Yes	Yes	No	No
Intel(R) 631xESB/6321ESB Chipset drivers	Yes	Yes	No	No
Aspeed Graphics Driver	Yes	Yes	Yes	Yes
Sun Blade RAID 5 Expansion Module (Adaptec-based) driver	Yes	Yes	Yes	Yes

Add Drivers to a WIM Image

For remote installation of Windows Server 2008 using a server running Windows Deployment Services, the mass storage controller drivers provided with Windows Server 2008 are sufficient to install the operating system.

Before you Begin

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

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

▼ 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 /mount /w C:\windows_distribution\sources\install.wim 1  
C:\win_mount
```

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

4. **Use Windows System Image Manager (Windows SIM, available in Windows AIK) to create an answer file that contains the paths to the device drivers that you intend to install. See the Microsoft documentation for the Windows Automated Installation Kit for the details of starting the Windows SIM application.**
5. **Add the `Microsoft-Windows-PnpCustomizationsNonWinPE` component to your answer file in the `offlineServicing` pass.**
6. **Expand the `Microsoft-Windows-PnpCustomizationsNonWinPE` node in the answer file. Right-click `DevicePaths`, and then select `Insert New PathAndCredentials`.**

A new `PathAndCredentials` list item appears.
7. **In the `Microsoft-Windows-PnpCustomizationsNonWinPE` component, specify the path to the architecture folder in the `DriverPack` folder on the network share, and the credentials used to access the network share.**

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

```
<Path>\\yourshare\share\DriverPack\amd64</Path>  
<Credentials>  
  <Domain>MyDomain</Domain>  
  <Username>MyUserName</Username>  
  <Password>MyPassword</Password>  
</Credentials>
```

8. Save the answer file and exit Windows SIM. The answer file must be similar to the following sample. The sample assumes the architecture is 64-bit.

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

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

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

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

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

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

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

12. Replace the service image and Enable the image.

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

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

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

Adding Drivers to a RIS Image

For remote installation of Windows Server 2003 using a server running Windows Remote Installation Services, the mass storage controller driver must be incorporated for the operating system to be installed. You must update the RIS image with the mass storage controller driver available with `DriverPack.zip`.

Before you Begin

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

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

▼ To Add Drivers to 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\$1\Sun\Drivers`
2. **Extract the contents of `DriverPack.zip` to a temporary location, making sure to maintain the directory structure.**
3. **Update the `RIS_Image` with the platform-specific drivers:**

- For 32-bit, copy the contents of the `DriverPack\32-bit` folder to the `%RIS_Image%\OEM\$1\Sun\Drivers` folder, making sure to maintain the directory structure.
 - For 64-bit, copy the contents of the `DriverPack\64-bit` folder to the `%RIS_Image%\OEM\$1\Sun\Drivers` folder, making sure to maintain the directory structure.
4. Copy the following files, depending on your installed mass storage solution:
 - If you are using the Adaptec-based Sun Blade RAID 5 Expansion Module, copy the contents of the `%RIS_Image%\OEM\$1\Sun\Drivers\adaptec` folder to the `%RIS_Image%\OEM\textmode` folder.
 After copying the contents, you can delete the `%RIS_Image%\OEM\$1\Sun\Drivers\adaptec` folder.
 5. Copy the contents of the `%RIS_Image%\OEM\$1\Sun\Drivers\RIS` folder to the `%RIS_Image%\OEM\textmode` folder.
 6. Copy all the files from the `%RIS_Image%\OEM\$1\Sun\Drivers\intel\RIS` to the `%RIS_Image%\OEM\textmode` folder.
 After copying the contents, you can delete the `%RIS_Image%\OEM\$1\Sun\Drivers\intel\RIS` folder.
 7. Create an answer file using the method described in the Microsoft TechNet article *"Creating an Answer File with Setup Manager"*. The article can be found at:
<http://technet2.microsoft.com/WindowsServer/en/library/78421630-6fcc-4604-a888-bd9c84244a5b1033.msp>
 8. Make changes to the `.sif` file for your mass storage solution as listed in one of the following tables, then proceed to Step 9:
 - For servers with the Sun Blade RAID 5 Expansion Module (Adaptec-based) see [TABLE 9-2](#).

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

TABLE 9-2 Sun Blade X6250 Server Module .sif File Entries for Sun Blade RAID 5 Expansion Module

Windows Server 32-bit	Windows Server 64-bit
[Unattended] OemPreinstall = yes	[Unattended] OemPreinstall = yes
OemPnpDriversPath="\Sun\Drivers\ intel\chipset;\Sun\Drivers\intel\ nic;\Sun\Drivers\adapttec;\Sun\ Drivers\ast"	OemPnpDriversPath="\Sun\Drivers\ intel\chipset;\Sun\Drivers\intel\nic;\ Sun\Drivers\adapttec;\Sun\Drivers\ ast"
[MassStorageDrivers] "Adaptec SAS/SATA-II RAID Controller (32-bit)" = OEM	[MassStorageDrivers] "Adaptec SAS/SATA-II RAID Controller (64-bit)" = OEM
[OEMBootFiles] adpenc.cat adpenc.inf arc.cat arc.inf arc.sys arcsas.cat arcsas.inf arcsas.sys ramdisk1 txtsetup.oem	[OEMBootFiles] adpenc.cat adpenc.inf arc.cat arc.inf arc.sys arcsas.cat arcsas.inf arcsas.sys ramdisk1 txtsetup.oem

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

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

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


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 Sun Blade X6250 server module network interfaces.

Topics in this appendix include:

- [“Determine Which Network Data Ports Are Actively Connected to a Network”](#) on page 68.
- [“Confirm Physical Port MAC Addresses and Match Them to Window Device Names”](#) on page 69.
- [“Launch the Manage Your Server Program After Windows Setup Completes”](#) on page 71.

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

By using Microsoft's Network Connections folder, you can visually determine which Sun Blade X6250 server module PCI EM (PCI Express Module) and NEM (Network Express Module) 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.

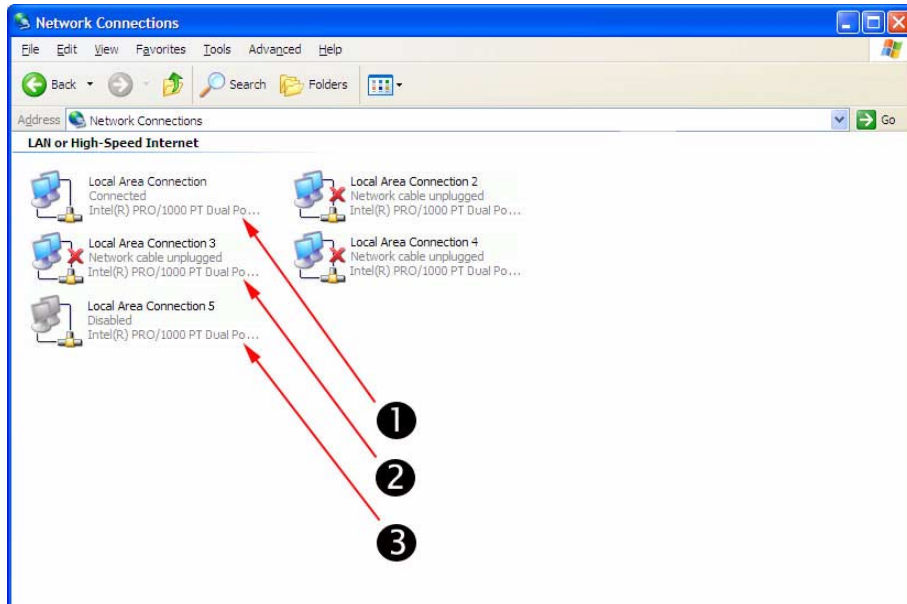


Illustration Key

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 NEM and PCI EM ports and to match them to the Windows Device Friendly Names, you will need to open a command prompt and run `ipconfig /all`.

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

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

The Run dialog box appears.

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

The `cmd.exe` DOS window appears.

3. **In the `cmd.exe` DOS window, enter the command: `ipconfig /all`**

The output from the `ipconfig /all` command identifies the installed NEM and PCI EM 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-9CB4S0R09H6
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.

▼ Launch the Manage Your Server Program After Windows Setup Completes

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

To launch Manager Your Server, do the following:

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

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

Preparing Sun Blade REM Disks for the Operating System

If your Sun Blade server module uses the Sun Blade RAID 5 Expansion Module (Adaptec-based), you will need to prepare its disks so that Windows will be able to access them. This is done using the controller's BIOS configuration utility, which is accessible during server boot.

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

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

Using the Adaptec Configuration Utility

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

1. **Power down and restart your server.**
2. **During the BIOS POST process, press Ctrl-A when prompted to launch the Adaptec RAID Configuration Utility.**
3. **At the RAID Configuration Utility main menu, under options, select Array Configuration Utility.**

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

Additional Information

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

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

To obtain these documents, navigate to:

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

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