Sun Fire X4800 Server Installation Guide for Windows Operating Systems

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Contents

Using This Documentation

This section describes related documentation, submitting feedback, and a document change history.

Product Information Web Site

For information about the Sun x86 servers, go to http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html.

For software and firmware downloads for your x86 server product, go to http://www.oracle.com/technetwork/server-storage/sun-x86/downloads/index.html page and click on your server model.

Documentation and Feedback

Documentation	Link
All Oracle products	http://www.oracle.com/documentation
Sun Fire X4800 server	http://download.oracle.com/docs/cd/E19140-01/index.html
Oracle ILOM 3.0	http://www.oracle.com/technetwork/documentation/sys-mgmt-networking-190072.html#ilom

Provide feedback on this documentation at: http://www.oraclesurveys.com/se.ashx?s=25113745587BE578.

About This Documentation (PDF and HTML)

This documentation set is available in both PDF and HTML. The information is presented in topic-based format (similar to online help) and therefore does not include chapters, appendixes, or section numbering.

A PDF that includes all information on a particular topic subject (such as hardware installation or product notes) can be downloaded by clicking on the PDF button in the upper left corner of the page.

Contributors

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Change History

The following changes have been made to the documentation set.

- April 2010 – Installation Guide released.
- June 2010 – Installation Guide and Getting Started Guide re-released.
- July 2010 – Initial release of other documents.
- August 2010 – Product Notes and Service Manual re-released. ESX Installation Guide added.
- October 2010 – Product Notes re-released.
- December 2010 – Product Notes re-released.
- March 2011 – Documents re-released for SW1.2 including the Installation Guide, the Product Notes, the Linux Installation Guide, the Oracle Solaris Installation Guide, the Windows Installation Guide, and the Service Manual.

Introduction to Windows Installation

This section describes methods to install the Microsoft Windows Server 2008 R2 (64–bit) and the Windows Server 2008 SP2 operating systems onto the Oracle Sun Fire X4800 Server.

The differences between the Windows Server 2008 R2 and SP2 installation procedures are:

- Directory locations for the device drivers.

  See "Oracle Hardware Installation Assistant" on page 17.

  See "Incorporating Device Drivers into WIM Images for WDS" on page 57.

  See "Location of Device Drivers on Tools and Drivers DVD" on page 57.

- Download site for Windows Automated Installation Kit (AIK).

  See "Device Drivers to Incorporate Into WIM Images" on page 58.

- The mass storage driver is not installed for Windows Server 2008 SP2. The driver must be accessible through a connected CD/DVD or USB flash drive.

  See "Installing Windows Server 2008" on page 45.

- For Windows Server 2008 SP2 WDS installation environments, a device driver repository is not provided, and you must manually create one.

  See "Prerequisites and Task Overview for the Device Driver WIM Images" on page 59

The following topics are covered in this section:

Windows Installation Task Overview

To manually install Windows Server 2008 R2, complete the following procedures in order:

1. Select a delivery method.

   See "Selecting a Media Delivery Method" on page 15.

2. Download required Sun software and server-specific drivers.

   See "Downloading Server Software" on page 19.

3. Choose a method for delivering Windows media.

   See "Selecting a Media Delivery Method" on page 15.

4. If you are planning on installing Windows on your Sun server from a remote console.

   See "Configuring a Remote Console" on page 21.

5. Create a virtual disk.

   See "Creating a Virtual Disk" on page 29.

6. Install Windows Server 2008.

   See "Installing Windows Server 2008" on page 45.

   See "How to Install Windows Server 2008 Using PXE" on page 50.

7. Install critical drivers and supplemental software after the initial installation of Windows.

   See "Updating Critical Drivers and Installing Supplemental Software" on page 51.

   These procedures ensure that your server is installed with the full feature set.

8. Incorporate device drivers into your WIM image.

   See "Incorporating Device Drivers into WIM Images for WDS" on page 57.

9. Identify network interfaces.

   See "Identifying Network Interfaces in Windows" on page 71.

See next:

Getting Started With the Windows Server 2008 Installation

This section describes how to get started installing the Microsoft Windows Server 2008 R2 (64–bit) operating system on a Sun Fire X4800 Server.

The following topics are covered in this section:

- "Supported Windows Operating Systems" on page 11
- "Windows Server 2008 Installation Considerations" on page 12
- "Differences Between the Windows Server 2008 R2 and SP2 Installation Procedures" on page 13

Supported Windows Operating Systems

The Sun Fire X4800 Server supports the following Microsoft Windows operating systems at the time of publication of this document:

- Microsoft Windows Server 2008 R2

    - Standard Edition (64-bit)
    - Enterprise Edition (64-bit)
    - Datacenter Edition (64-bit)

- Microsoft Windows Server 2008 SP2, Standard Edition (64–bit)

    - Standard Edition (64-bit)
    - Enterprise Edition (64-bit)
    - Datacenter Edition (64-bit)

See next:

"Windows Server 2008 Installation Considerations" on page 12

Windows Server 2008 Installation Considerations

Note the following important considerations before beginning the Windows Server 2008 operating system installation on your Sun server.

■ Installing the Windows operating system, overwrites any data on the boot drive including any preinstalled operating system.

■ If you are using the on-board LSI mass storage controller and you want to include your boot drive as part of a RAID configuration, you need to configure a RAID volume on the controller before installing Windows.

Before you install Windows, use the LSI integrated RAID controller's setup utility by pressing Ctrl-C when prompted during server bootup. For more details, refer to the *Sun LSI 106x RAID User's Guide* for your server.

Note – For information about how to create a RAID virtual disk for the LSI MegaRAID SAS 9262-8i controller, see "Creating a Virtual Disk" on page 29.

■ *Windows Server 2008 R2* – Includes the required mass storage drivers for initial Windows operating system installation.

No separate driver disk is required during initial installation. Post-Windows installation, upgrade server-specific device drivers to the full-featured, Sun-tested versions as described in "Updating Critical Drivers and Installing Supplemental Software" on page 51.

■ *Windows Server 2008 SP2* – Requires that you have a mass storage driver for the LSI MegaRAID SAS 9262-8i controller.

See "Add Device Driver to the Boot WIM (Windows Server 2008 SP2 Only)" on page 64.

■ You can install Windows Server 2008 using any one of the following methods, depending on whether you are a novice, expert, or advanced user:

Description	Description	More Information
Installation for novice users	**Installing Windows using Oracle Hardware Installation Assistant** – For the novice user, Oracle Hardware Installation Assistant provides a wizard-like interface that assists in the installation of Windows operating system and firmware upgrades. Oracle Hardware Installation Assistant can install Windows by using a local or remote CD/DVD.	"Oracle Hardware Installation Assistant" on page 17 "Downloading Server Software" on page 19

Description	Description	More Information
Installation for experienced users	**Installing Windows manually** – For the experienced user, follow the instructions in this document to install Microsoft Windows from distribution media connected through the USB port. You can deliver the Windows distribution media by using a remote console with a redirected CD/DVD drive or CD/DVD image.	"Getting Started With the Windows Server 2008 Installation" on page 11 "Downloading Server Software" on page 19
Installation for advanced users	**Installing Windows from a deployment server environment** – For the advanced user, you can create a customized Windows installation image (WIM) for your server on a system running Windows Deployment Services (WDS). Once this installation image file has been created, you can boot your server from its network card and select the image from the WDS system for unattended deployment.	"Downloading Server Software" on page 19 "Incorporating Device Drivers into WIM Images for WDS" on page 57
Post installation	Install server-specific drivers and supplemental software.	"Updating Critical Drivers and Installing Supplemental Software" on page 51
Reference	Learn how to identify your active network ports in Windows.	"Identifying Network Interfaces in Windows" on page 71

See also:

For more information on media access options, see "Selecting a Media Delivery Method" on page 15.

See next:

"Differences Between the Windows Server 2008 R2 and SP2 Installation Procedures" on page 13.

Differences Between the Windows Server 2008 R2 and SP2 Installation Procedures

The differences between the Windows Server 2008 R2 and SP2 installation procedures are:

- Directory locations for the device drivers.

    See "Oracle Hardware Installation Assistant" on page 17.

    See "Incorporating Device Drivers into WIM Images for WDS" on page 57.

    See "Location of Device Drivers on Tools and Drivers DVD" on page 57.

- Download site for Windows Automated Installation Kit (AIK).

  See "Device Drivers to Incorporate Into WIM Images" on page 58.

- The mass storage driver is not installed for Windows Server 2008 SP2.

  The driver must be accessible through a connected CD/DVD or USB flash drive. See "Installing Windows Server 2008" on page 45 and "Add Device Driver to the Boot WIM (Windows Server 2008 SP2 Only)" on page 64.

- For Windows Server 2008 SP2 WDS installation environments, a device driver repository is not provided, and you must manually create one.

  See "Prerequisites and Task Overview for the Device Driver WIM Images" on page 59.

See next:

"Selecting a Media Delivery Method" on page 15.

Selecting a Media Delivery Method

You must select a method for providing the Windows installation media. The procedures for installing Windows differ depending on your media delivery method.

See next:

"Windows Media Delivery Methods" on page 15.

Windows Media Delivery Methods

Media Delivery Method	Additional Requirements
Windows local – Uses a physical CD/DVD drive connected to the server.	An external CD/DVD drive directly connected to the server's USB port.
	For information about how to install Windows, see "Installing Windows Server 2008" on page 45
Windows remote using a DVD – Uses a redirected physical CD/DVD drive on a remote system running JavaRConsole.	A remote system with a browser, an attached physical CD/DVD drive, a Windows distribution DVD, and network access to the server's management port.
	For information about how to set up this method, see "Configuring a Remote Console" on page 21.
Windows remote using an ISO image – Uses a redirected CD/DVD ISO image on a remote system running JavaRConsole.	A remote system with a browser, a Windows CD/DVD ISO image, and network access to the server's management port.
	For information about how to set up this method, see "Configuring a Remote Console" on page 21.
WDS WIM image – Uses a customized Windows Imaging Format (WIM) image on a Windows Deployment Services (WDS) server.	A server running WDS and a WIM image customized for your server.
	For more information, see "Incorporating Drivers Into the WIM Image" on page 62.

Oracle Hardware Installation Assistant

The Oracle Hardware Installation Assistant is a tool that helps you perform a variety of deployment and recovery tasks on your Sun x64 server. It can be launched from a bootable CD, a USB flash drive prepared with Oracle Hardware Installation Assistant software, or from a customized image available on a PXE installation server.

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Oracle Hardware Installation Assistant Task Overview

The following tasks can be performed using Oracle Hardware Installation Assistant:

Note – The available tasks are server-dependent and may vary.

- Upgrade your system BIOS, ILOM service processor firmware to the latest version (regardless of the OS on your server).

- Upgrade your HBA firmware to the latest version (regardless of the OS on your server).

- Configure RAID-1 volumes if you have an LSI-based disk controller (1068e for SAS-1, or 2926x and 9280 for SAS-2).

- Perform an assisted installation of a supported Windows or Linux operating system on your server. Oracle Hardware Installation Assistant installs appropriate drivers and platform-specific software, eliminating the need to create a separate driver disk. You provide the licensed OS distribution media (from CD or network image file) and the wizard guides you through the installation.

- Update your Oracle Hardware Installation Assistant session with the latest firmware and drivers from Oracle.

Obtaining Oracle Hardware Installation Assistant

The Oracle Hardware Installation Assistant is available as an option with your server. In addition, an ISO CD image of it can be downloaded from:

http://www.oracle.com/technetwork/server-storage/sun-x86/downloads/index.html

For information about the Oracle Hardware Installation Assistant, see the *Oracle Hardware Installation Assistant 2.5 User's Guide for X86 Servers* in the Oracle Hardware Installation Assistant documentation library.

Downloading Server Software

Server software that contains updated drivers and utilities for your server's hardware components is available from the web or from the optional documentation media kit. This software is required to complete the operating system installation.

Check the Oracle web site for the latest version of the software. If you do not have the latest version software on your Tools and Drivers CD/DVD, then download the latest version. If you have the latest Tools and Drivers CD/DVD, you can skip this section.

See also:

▼ How to Download Server Software

The _x_x_x number in the package file names identifies the version of the package (for example, `InstallPack_1_1_4.zip`).

1 Go to the software download site for your server.

http://www.oracle.com/technetwork/server-storage/sun-x86/downloads/index.html

2 Choose one of the following download options:

- **If you are installing Windows from distribution media (CD/DVD or ISO image), download `Windows.zip` to an accessible location.**

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

    `InstallPack_x_x_x.exe`

    This is the program to install all server-specific device drivers and supplemental software after the initial installation of Windows.

- **If you are installing Windows from a Windows Deployment Server (WDS) (advanced installation), download `Windows.zip`.**

    Extract the following sub-package contained in `Windows.zip` to the appropriate Windows image (WIM) folder on the WDS server as described in "Incorporating Drivers Into the WIM Image" on page 62:

```
DriverPack_x_x_x.zip
```

For experts only, the server-specific driver archive for Windows Server, English).

Tools folder for Windows 2008 and Windows Server 2008 R2. (for experts only, supplemental software archive).

Drivers folders for Windows 2008 and Windows Server 2008 R2.

3   Make sure that the driver packages are available, as needed, during the installation and post installation process.

See Also   "Selecting a Media Delivery Method" on page 15.

Configuring a Remote Console

This section describes how to set up a remote console system using JavaRConsole to deliver the Windows Server media over the network for operating system installation on your Sun server.

Note – If you have chosen the Windows Local delivery method, proceed to "Creating a Virtual Disk" on page 29.

This section covers the following topic:

▼ How to Set Up the JavaRConsole System

Before You Begin The following requirements must be met:

- The JavaRConsole system must be running Solaris, Linux, or Windows.
- The JavaRConsole system must be connected to a network that has access to the Sun server Ethernet management port.
- Java Runtime Environment (JRE) 1.5 must be installed.
- If the JavaRConsole system is running Solaris, volume management must be disabled for JavaRConsole to access the CD/DVD-ROM drive.
- If the JavaRConsole system is running Windows, Internet Explorer Enhanced Security must be disabled.
- The server's ILOM service processor has been set up according to the instructions in the Integrated Lights Out Manager (ILOM) documentation for your server.

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.**
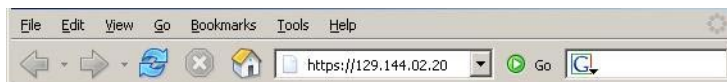
The Security Alert dialog box appears.

2   Click Yes.

The ILOM login screen appears.
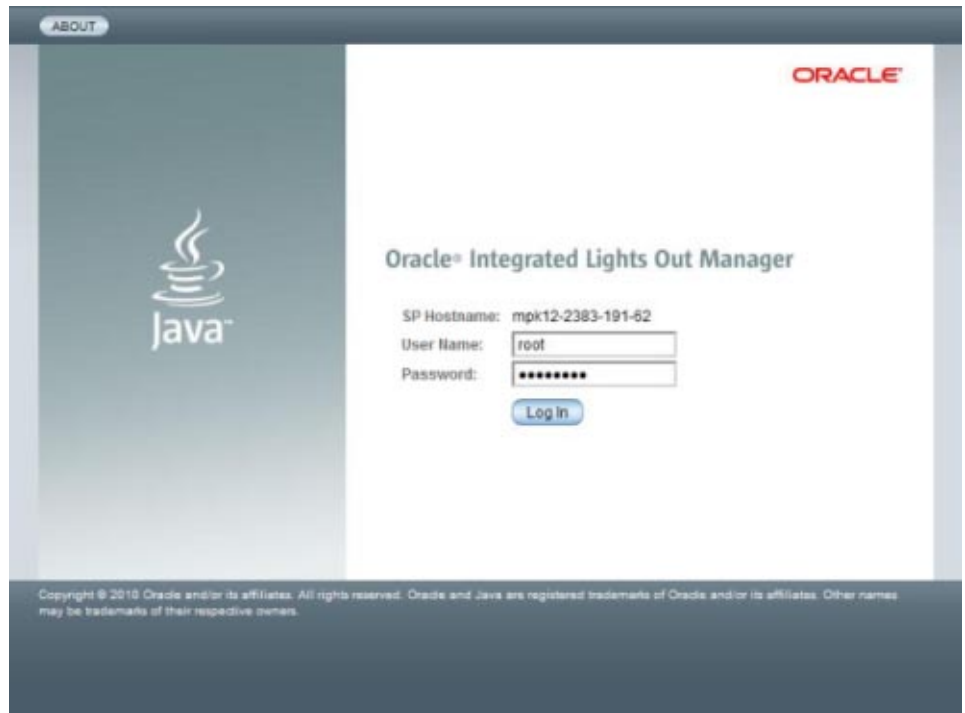
3   Enter the user name and password and click Log In.

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

The ILOM System Overview screen appears.
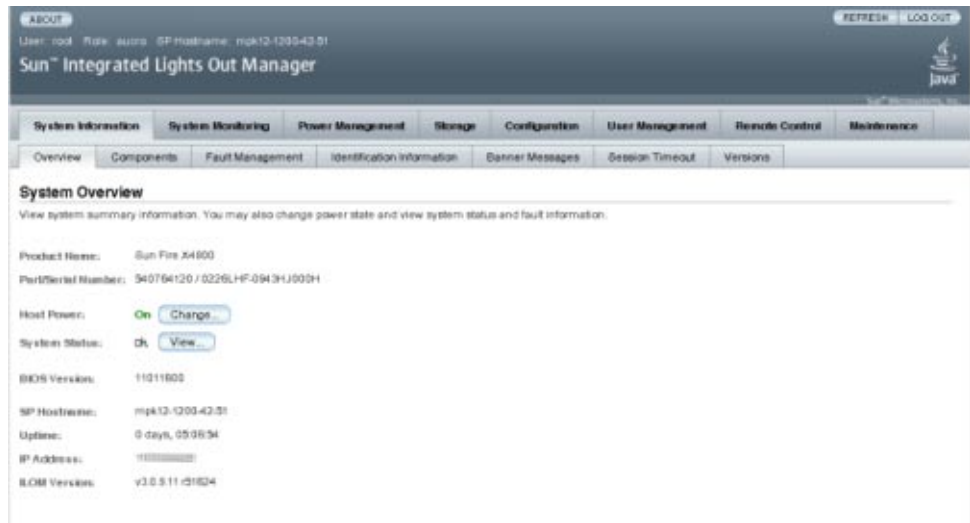
4 **Click the Remote Control tab in the ILOM Web interface.**

The Launch Redirection screen appears.

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

5 **Click Launch Redirection.**
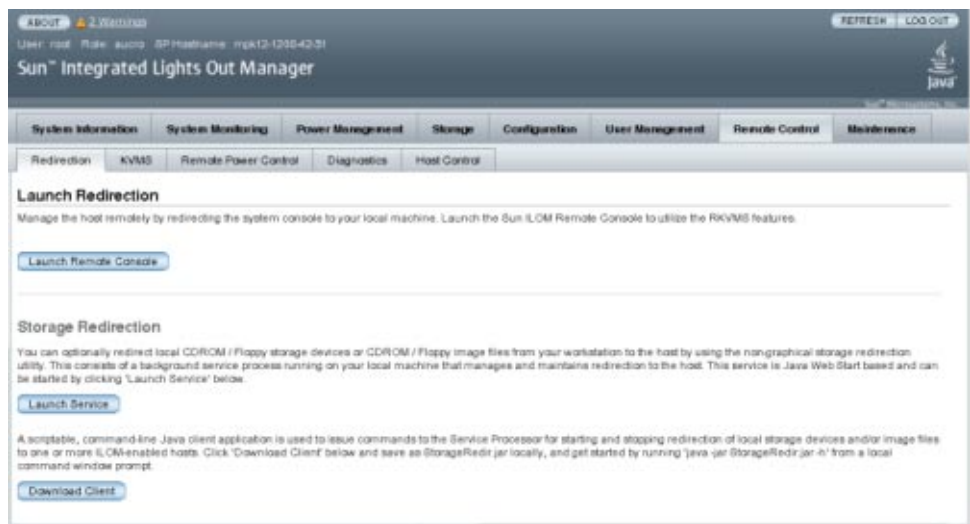
Note – If the dialog box regarding verifying the web site's certificate appears, click the Yes button if you choose to continue.
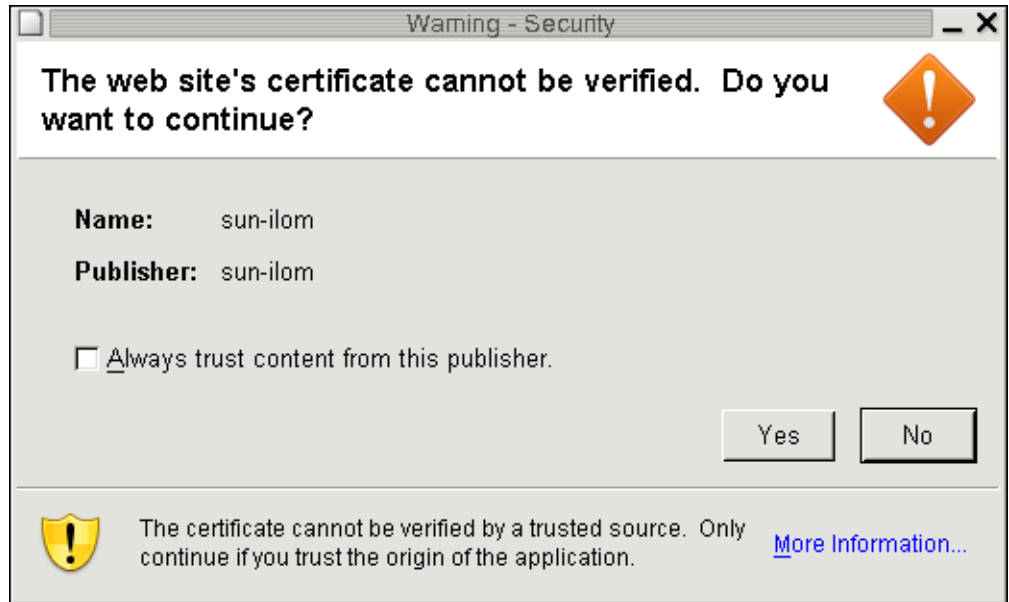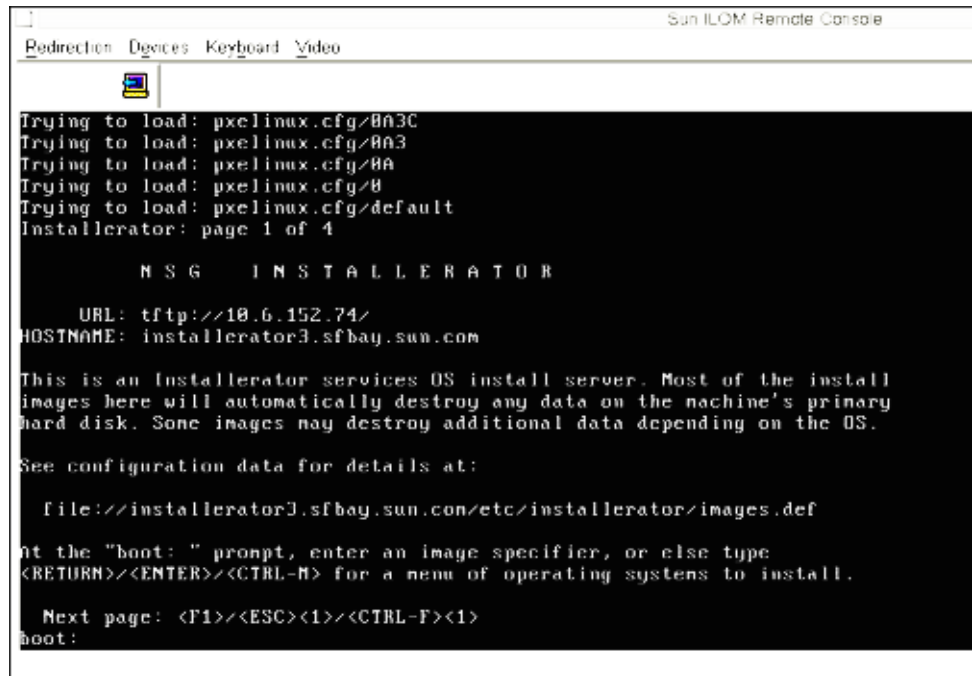
Note – When you are using a Windows system for JavaRConsole System redirection, an additional warning might appear. If the Hostname Mismatch dialog box appears, click the Yes button.
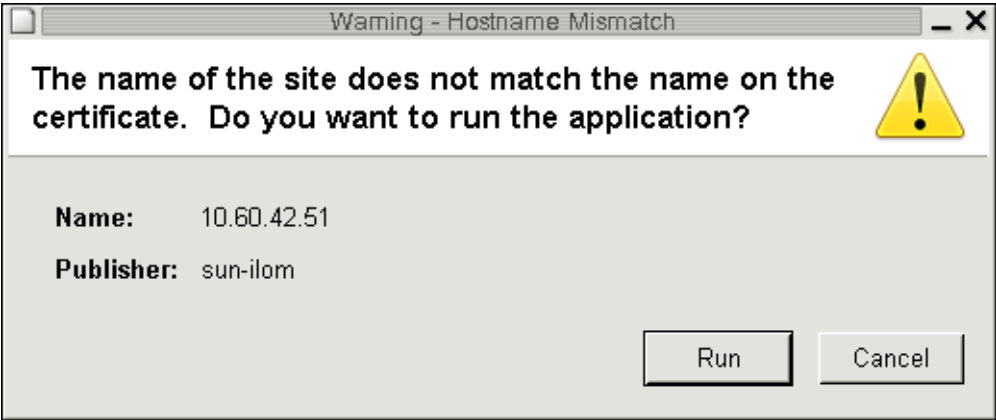
6 **Enter your user name and password and click OK.**

The default user name is **root** and password is **changeme**.
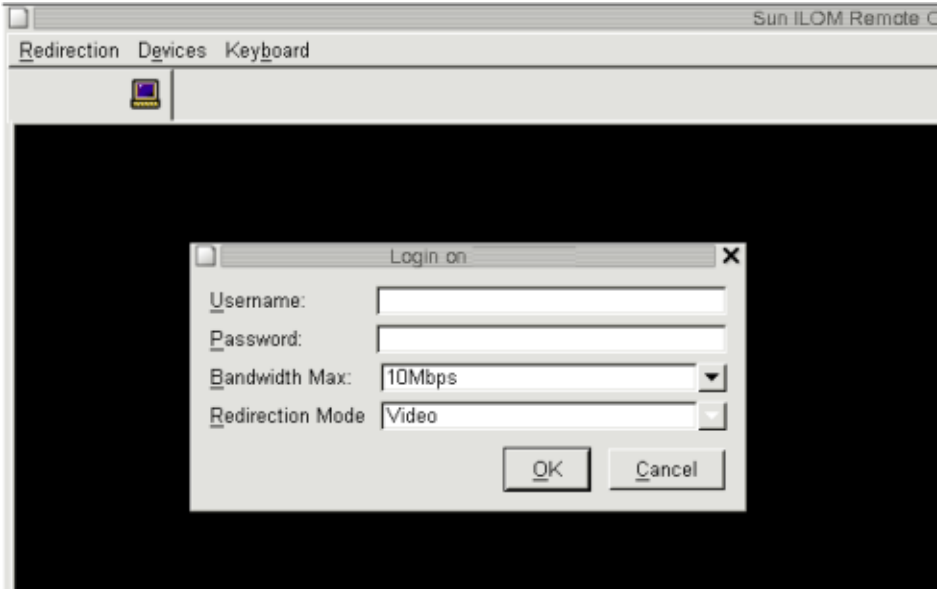
After the login is successful, the JavaRConsole screen appears:

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

- **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 or CD-ROM Image option to install the Windows Server significantly increases the time necessary to perform the installation as the content of the CD-ROM is accessed over the network. The installation duration depends on the network connectivity and traffic. This installation method also has a greater risk of issues due to transient network errors.
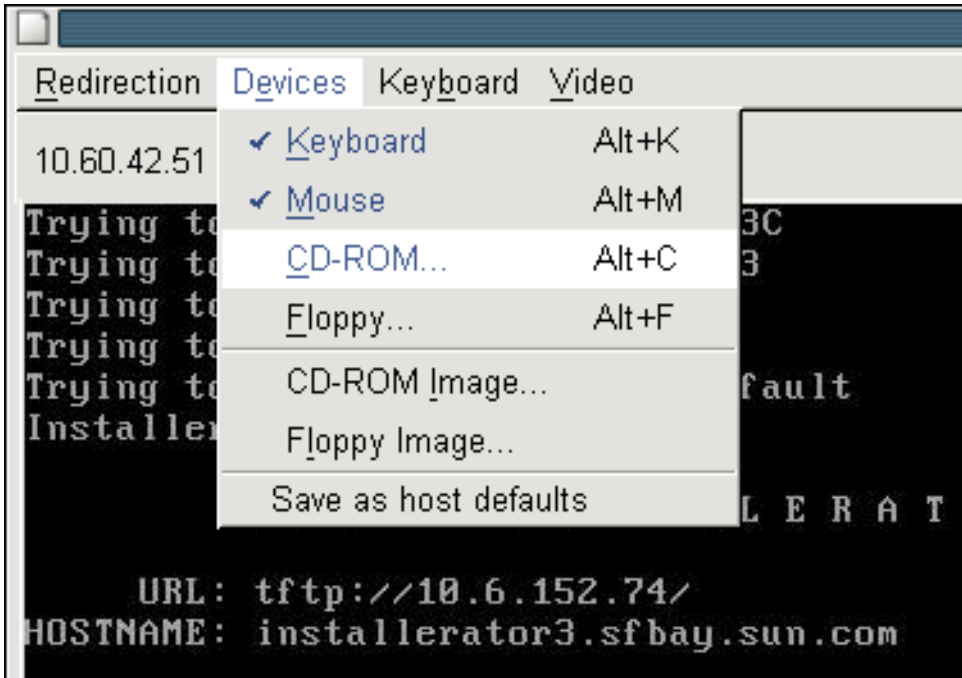
Next Steps "Installing Windows Server 2008" on page 45.

Creating a Virtual Disk

Before attempting to install the operating system, you must create a virtual disk on your server to make available space accessible for the image download. The download erases the contents of the disk.

Virtual disks can be created from the LSI firmware for downloading the operating system. The LSI firmware can only be reached during boot-up of the server. Before Windows is launched and when the LSI banner is shown, you can enter the Control-H key combination to access the LSI interface.

Note – Virtual disks can also be created from the MegaRAID software (which is installed through the supplemental drivers on the Tools and Drivers DVD), but should not be used for installing the operating system.

See "How to Create a Virtual Disk" on page 29.

▼ How to Create a Virtual Disk

1   **Log in to the server using the IP address of the service processor (SP) module.**

2   **In the GUI window, click the Remote Control tab to launch ILOM Remote Control.**

3   **Select the KVMS tab.**

4   **Under Mouse Mode, select Relative, then click Save.**

Note – The Relative option enables the mouse to move from window to window while you are in Remote Console. At the end of this procedure, you are asked to change this mouse setting to Absolute.

5   **Click the Redirection tab. In the Redirection screen, click on Launch Remote Console.**
    This launches the ILOM 3.0 remote console window.

6 **From the Devices menu, select Mouse to enable the mouse.**

7 **Reboot your system and wait for the LSI banner. When the devices appear in the banner page, use the Control-H key combination.**

8 **In the Adapter Selection screen, click Start.**
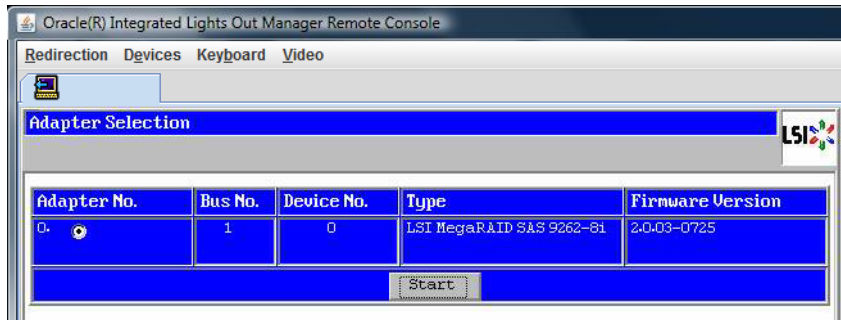
The MegaRaid BIOS Config Utility Virtual Configuration screen opens.

9 **In the MegaRaid BIOS Config Utility Virtual Configuration screen, select Configuration Wizard.**
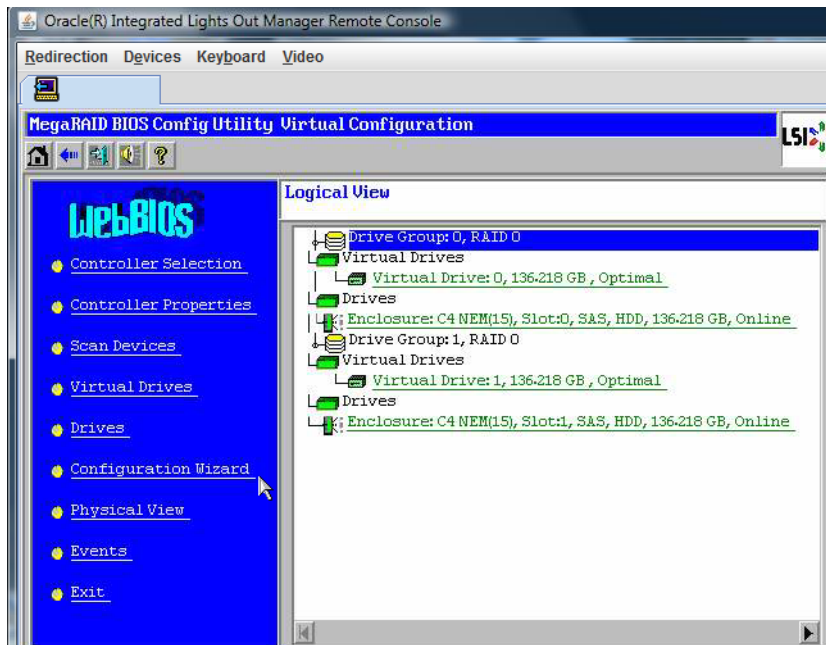
10   In the Configuration Wizard screen, select New Configuration, then click Next.
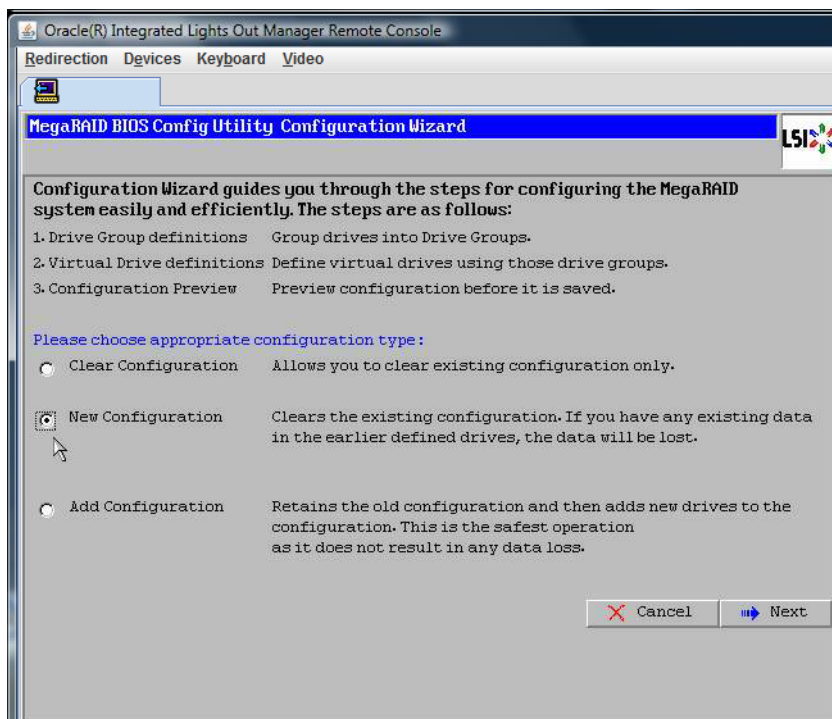
11   Select Manual Configuration.

Automatic Configuration creates a single virtual drive that includes all the hard drives on your system. More than one drive is configured as a striped set (RAID0) and appears as a single virtual drive of combined storage space. This might not be desirable as there can be multiple points of failure. That is, if one drive fails, then the system does not boot. You must remove all the drives except one. Alternatively, you can use Manual Configuration to create the virtual drive using only one hard drive.
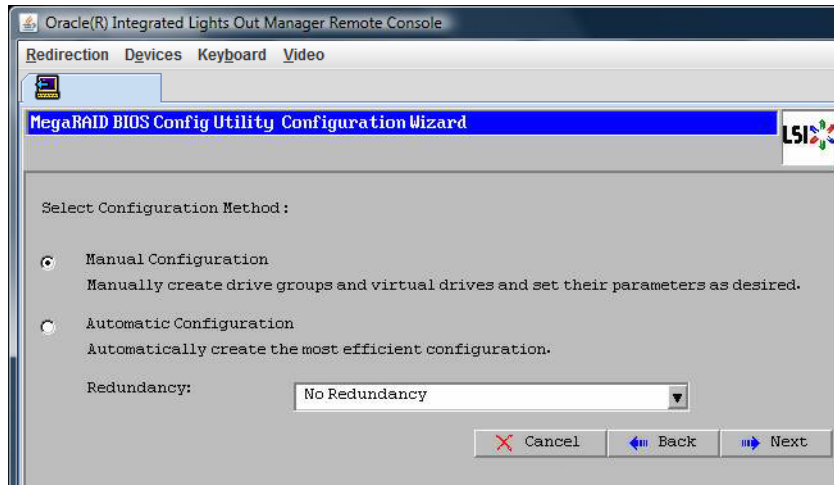
12   If a confirmation window appears, click Yes.
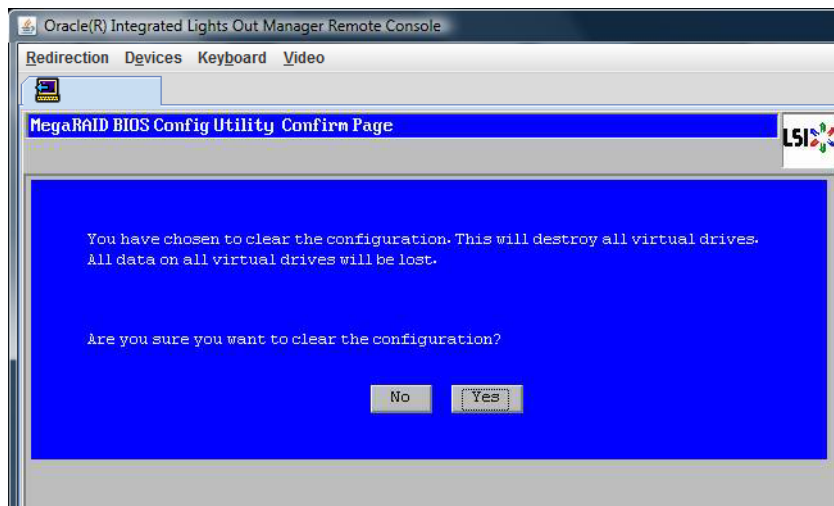
13 **When the MegaRAID BIOS Config Utility Config Wizard – Drive Group Definition screen appears, you see the drives in the system and the drive groups. Select the drive you want and click Add To Array.**
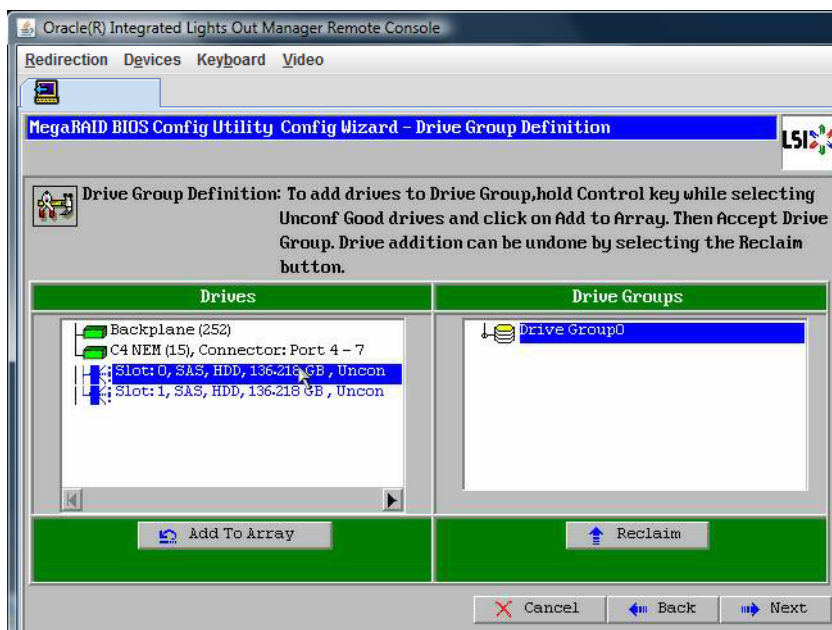
14   Click Accept DG to create the drive group.

You can now view Drive Group0.
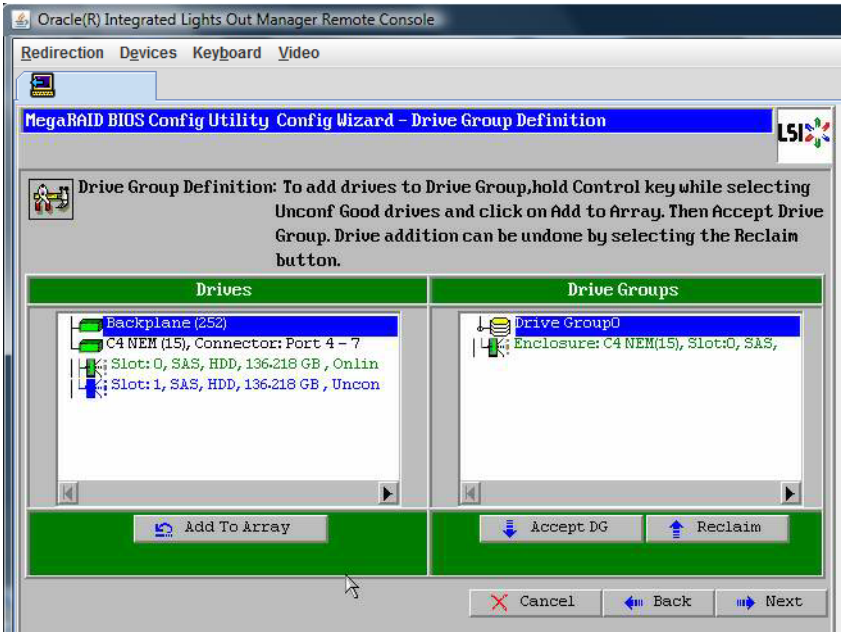
15   Click Next.

Note – You can undo the drive group selection by clicking the Reclaim button.
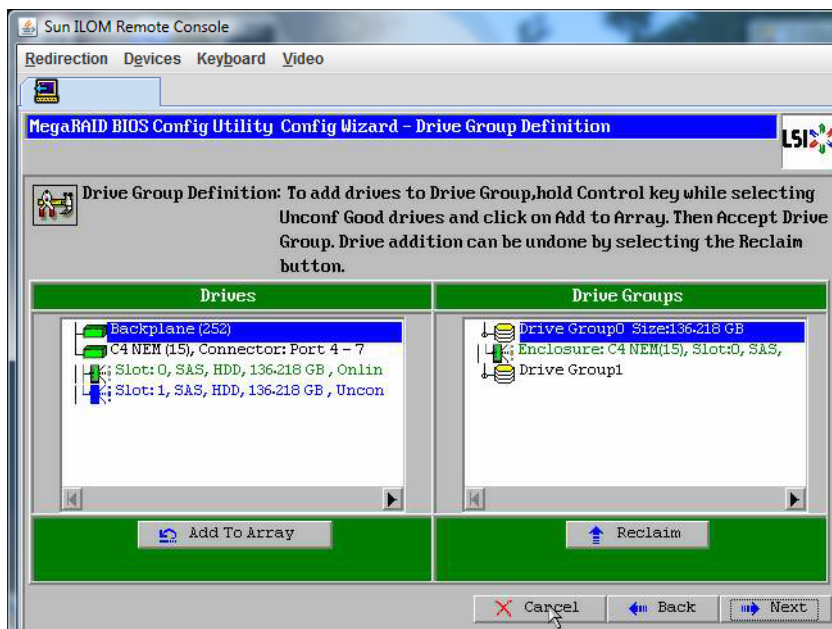
16 The drive group appears in the Span Definition window. Click Add to SPAN.
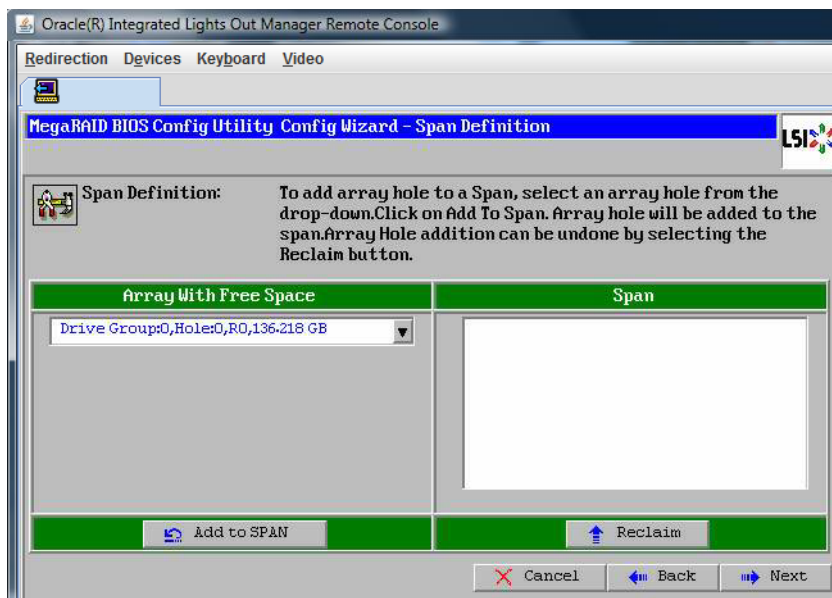
17 **The drive group appears in the span. Click Next.**
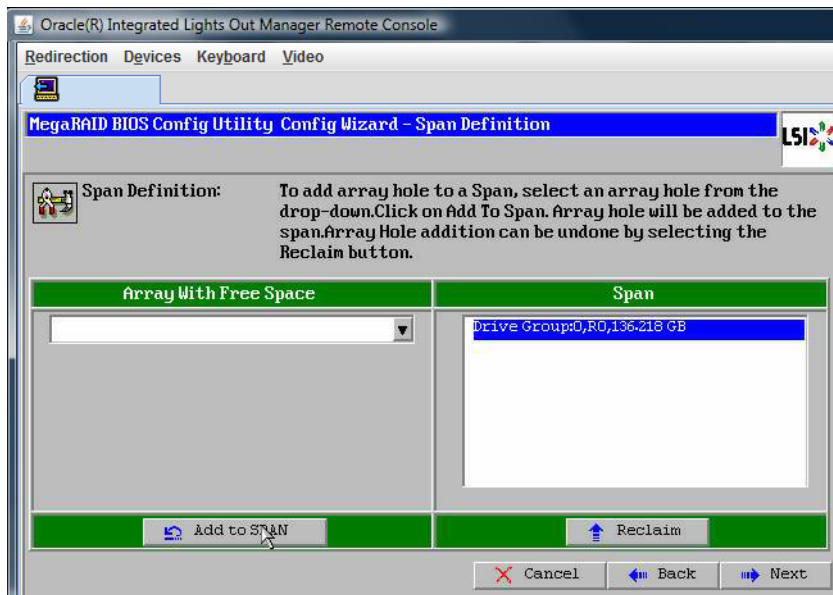
18   The Virtual Drive Definition screen appears. Set the RAID level and configurations you want for your virtual drive and click Accept.

For more information about configuring RAID, refer to your server's Disk Management documentation.
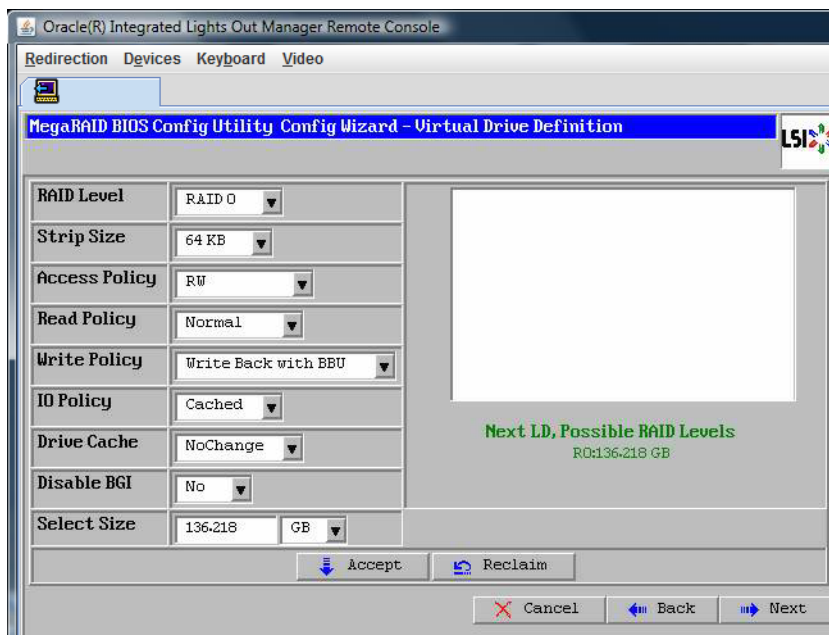
19   When system prompts you to confirm Write Back with BBU mode, click Yes.
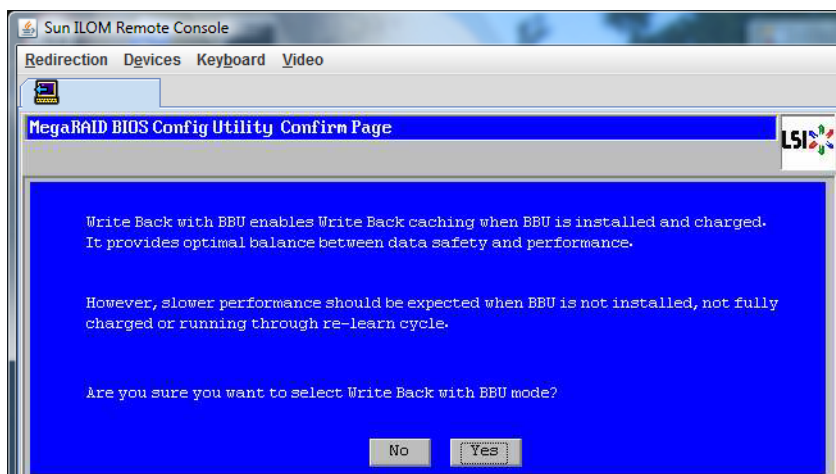
20 At the Config Wizard window, click Next.
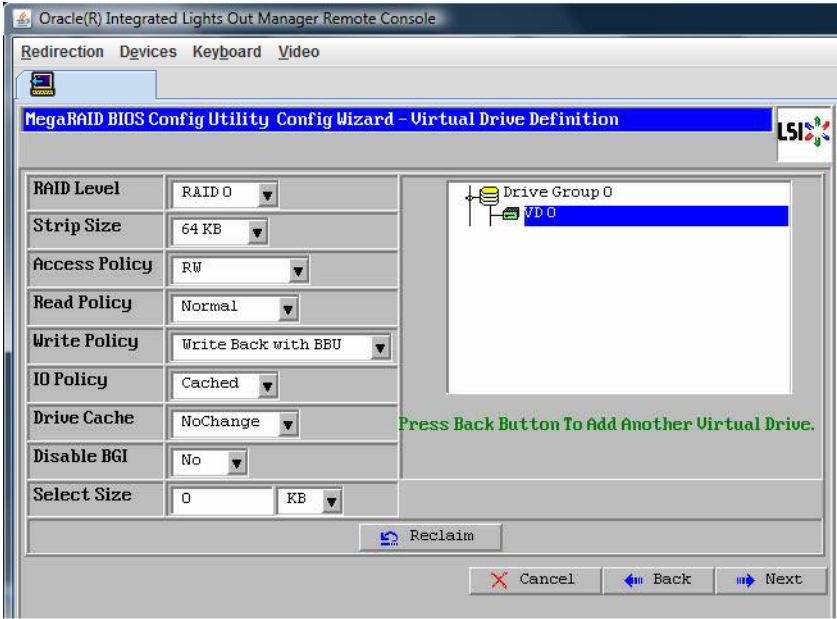
21   The Preview screen appears. Note that the virtual drive includes Drive Group 0.

This graphic shows a single virtual drive using the Manual Configuration option:
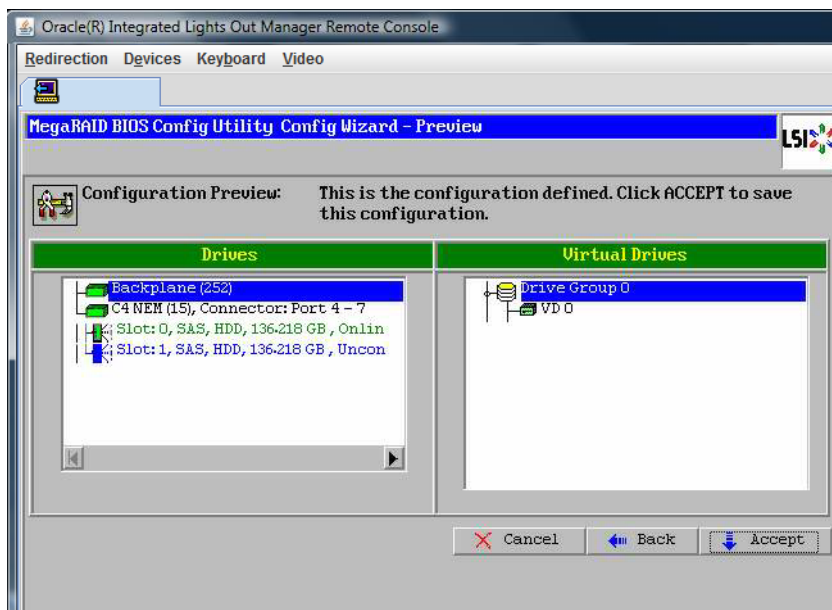
22   Save the Configuration.
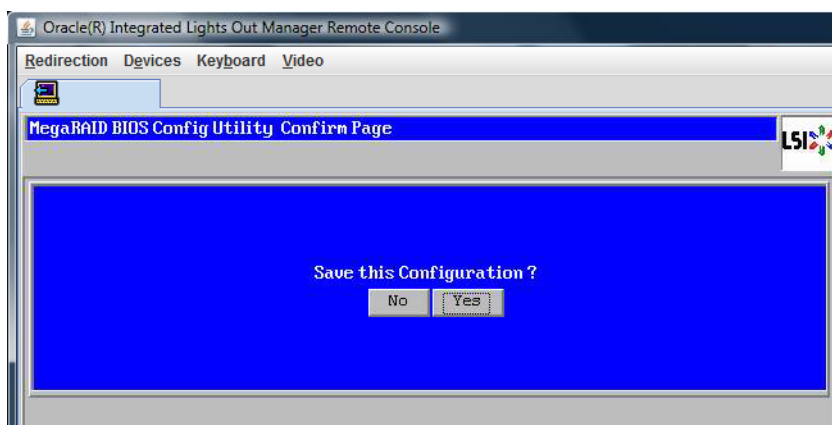
23 **Select Yes to the prompt: All data on Virtual Drivers will be lost. Want to Initialize?**
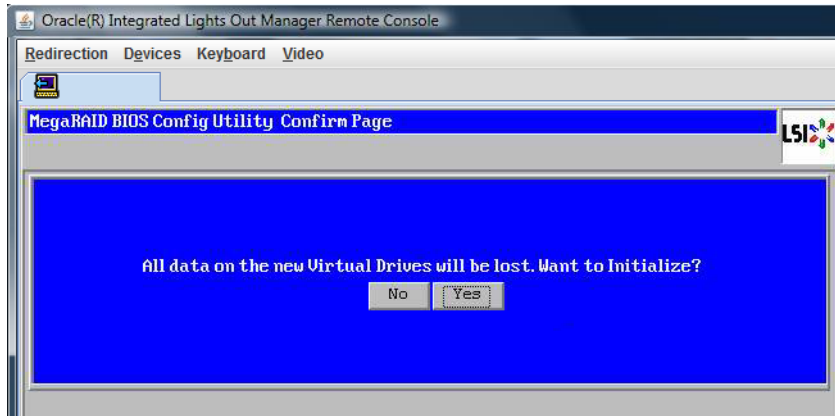
24 **Click Yes to exit.**
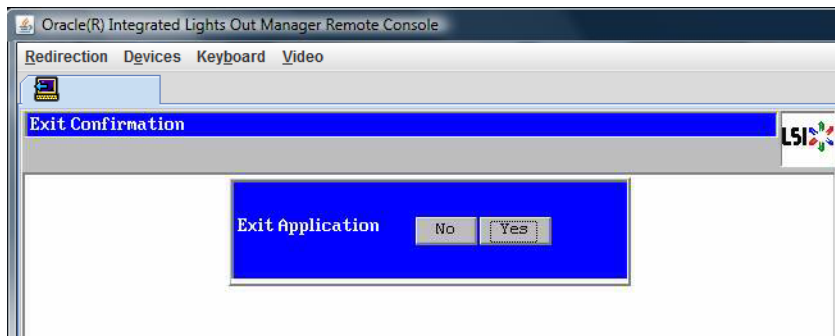
25 **When you see Please Reboot Your System, use the Alt-B key combination to view the keyboard pull-down menu.**

Caution – You must do this step; otherwise, the next step using Control Alt Delete reboots your local machine.
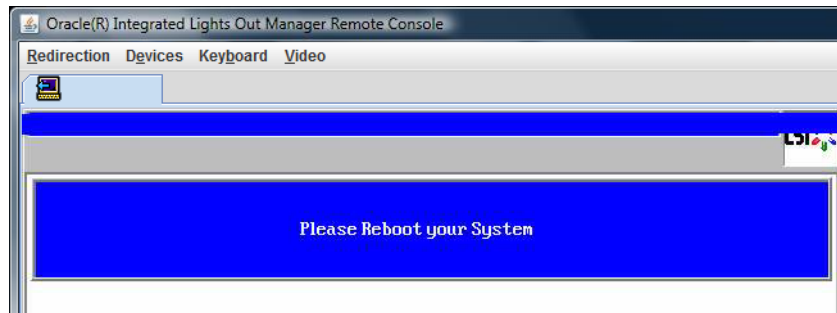
26 Use the arrow keys to select Control Alt Delete in the menu to reboot the remote system. Press Enter.

27 Go back and set the mouse mode to Absolute:

   a. In the Remote Control screen, select the KVMS tab.

   b. Under Mouse Mode, select the Absolute.

   c. Click Save.

▼ How to Set the Boot Drive

After creating a virtual drive you need to set the drive to be the boot drive if you are going to install your operating system on it.

1 Go to the Configuration Wizard screen and select Virtual Drives.
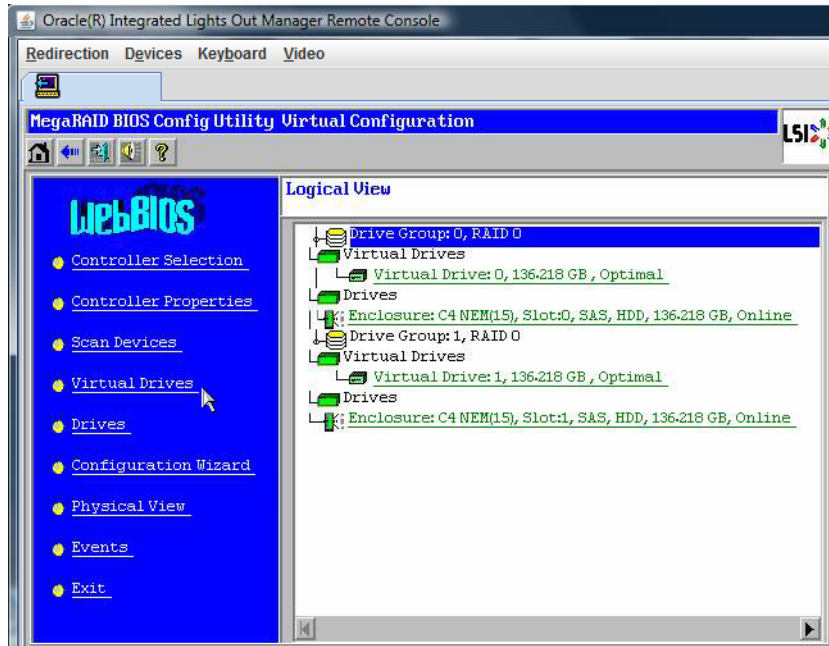
The MegaRAID BIOS Config Utility Virtual Drives Configuration screen appears.

2   Check to see if the Set_Boot Drive (current=none) is listed as one of the options:

If the Set_Boot Drive (current=none) option is listed, then the boot drive has not been set.
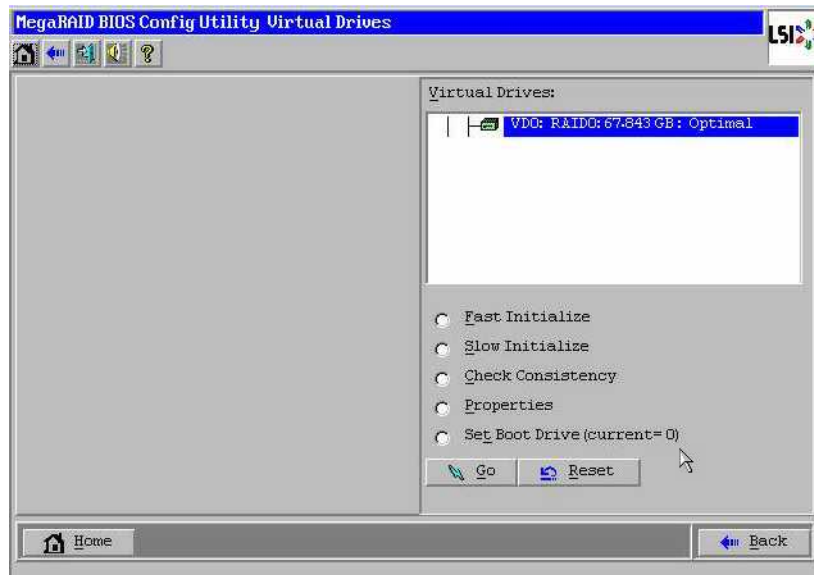
3   Click Set_Boot Drive (current=none), then click Go.

Installing Windows Server 2008

This section describes how to install the Windows Server 2008 R2 operating system on your server using the "Installing Windows Server 2008" on page 45 distribution media.

Note – If the Oracle Solaris Operating System is preinstalled on your server's boot disk, the Windows installation formats the boot disk, which erases any existing data on it.

The following topics are covered in this section:

▼ How to Install Windows Server 2008

Before You Begin   Before beginning the operating system installation, make sure that the following requirements are met:

- If you want to configure your boot drive for RAID1 (mirroring), you need to do so using the LSI Logic integrated RAID controller's setup utility (accessible by pressing Ctrl+C when prompted during server boot) before you install the Windows operating system. For more details, refer to the *Sun LSI 106x RAID User's Guide*.
- For your chosen Windows media delivery method, refer to the following requirements table.

Method	Action or Items Required
Windows local	Have the Microsoft Windows Server 2008 R2 installation media available to insert into the attached physical CD/DVD-ROM drive when prompted.
Windows remote	Insert the Microsoft Windows Server 2008 R2 installation media into the JavaRConsole system's CD/DVD-ROM drive. Make sure you have selected CD-ROM from the JavaRConsole Device menu.
Windows image	Ensure that the Windows Server 2008 R2 installation ISO image is accessible from the JavaRConsole system. Make sure you have selected CD-ROM Image from the JavaRConsole Device menu.

1   Power cycle your server.
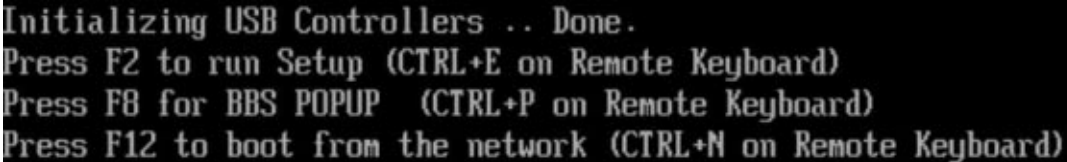
If you are using the Windows Remote or Windows Image method, you can do this through ILOM.

The BIOS POST process begins.

2   Press F8 when the Press F8 for BBS POPUP prompt appears on the BIOS POST screen.

The BBS POPUP menu allows you to select a boot device.

Note – BIOS POST messages, including the prompt for the BBS Popup menu, can go by quickly, and you might miss them. If so, power cycle the server and hold down the F8 key during boot until the BBS Popup menu (shown in Step 3) appears.

```
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)
```

3 **Once the BIOS POST process is complete, the Boot Device menu appears. If you have selected the Windows Local installation method, insert the Windows media DVD into the connected DVD drive now.**

```
        Please select boot device:

CD/DVD
Removable Dev.
Hard Drive
Network:IBA GE Slot 0608 v1211
Network:IBA GE Slot 0609 v1211
Network:IBA GE Slot 0610 v1211
Network:IBA GE Slot 0611 v1211




       ↑ and ↓ to move selection
      ENTER to select boot device
       ESC to boot using defaults
```
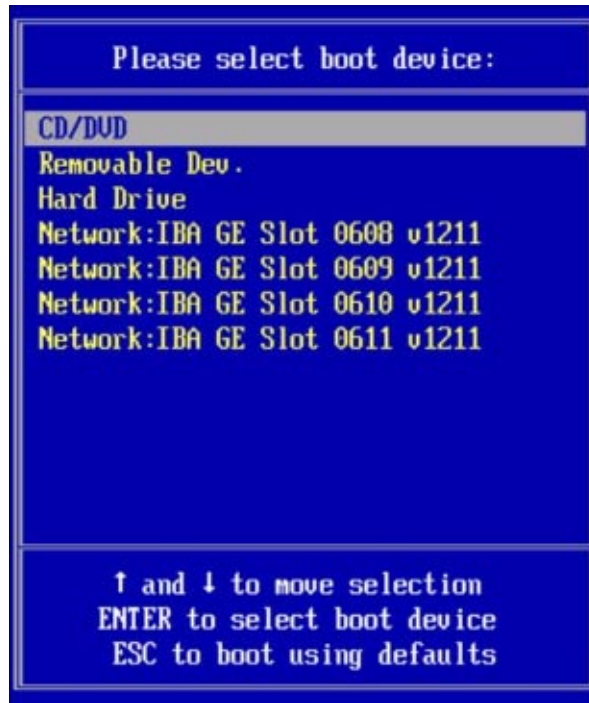
4 **Do one of the following:**

- **If you are using the Windows Local method, select CD/DVD from the Boot Device menu and press Enter.**

- **If you are using the Windows Remote or Windows Image method, select the virtual CD/DVD from the Boot Device menu and press Enter.**

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

The Windows installation wizard starts.

5 Proceed through the installation wizard until you see the Installation Type page, then click Custom (advanced).
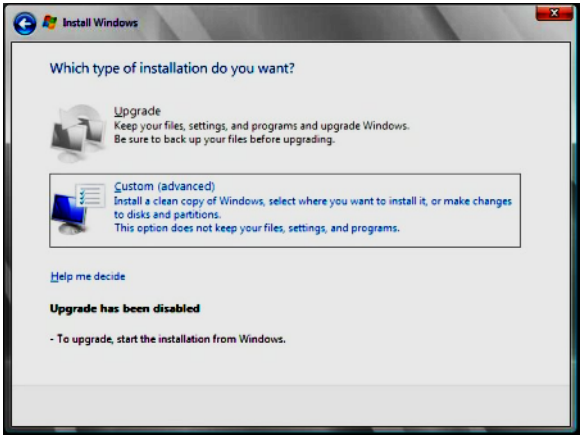
6 At the Where to Install Windows screen, do one of the following:
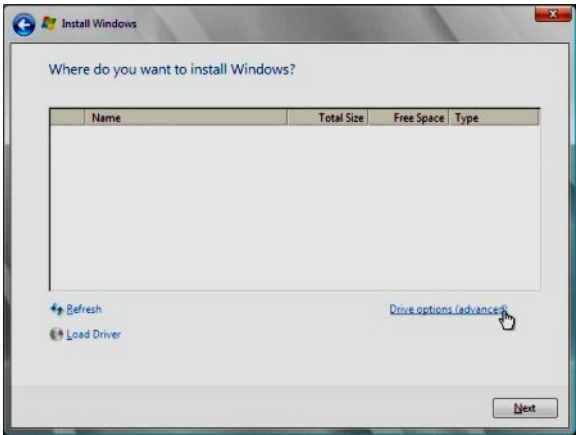
Note – For Windows Server 2008 SP2, the mass storage driver is not installed. The driver must be accessible through a connected CD/DVD or USB flash drive. If the driver is not accessible, the disk is not visible as shown in the previous figure. To add the driver to the boot WIM, see "Add Device Driver to the Boot WIM (Windows Server 2008 SP2 Only)" on page 64.

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

- To select the Windows default partition settings, click Next. You are taken to .
- To override the Windows default partition settings, click Driver Options (advanced) and proceed to the Advanced Driver Options screen in the next step.

7 At the Advanced Driver Options screen, do the following:

a. Click Delete to delete the existing partition.

b. Click New to create the new partition.

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

d. Click Next.
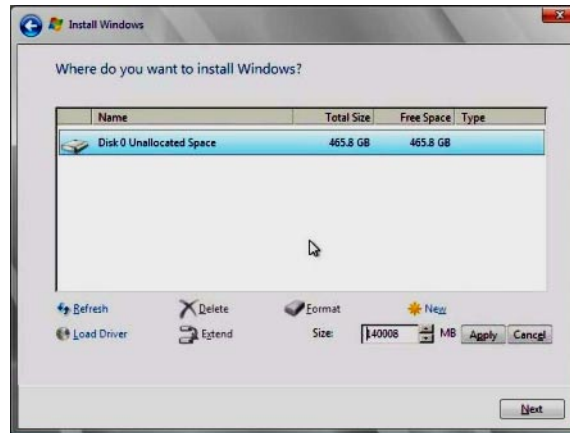
The Windows installation begins. The server reboots multiple times during the installation process.

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

Note – Windows Server 2008 R2 enforces password schemes for user accounts. Password standards include restrictions on length, complexity, and history. By default, the password must have 8 characters, with one number and one uppercase character. For more details, click the Accessibility link on the account creation screen.

Once you have created your initial account, the Windows Server 2008 desktop appears. The Windows Server 2008 R2 interface is new; review the Microsoft documentation to familiarize yourself with the changes.

See Also "Updating Critical Drivers and Installing Supplemental Software" on page 51.

▼ How to Install Windows Server 2008 Using PXE

The following procedure applies to Windows Server 2008 SP2 and R2.

1 Reset or power on the server, in one of the following:

- From the ILOM web interface, select Reset on the Remote Power Control tab.
- From the local server, press the Power button on the front panel of the server for approximately 1 second to power off the server, then press the Power button again to power on the server.
- From the ILOM CLI, type **reset /SYS**. The BIOS screen appears.

Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Watch carefully for these messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

---

2 Press F8 to specify a temporary boot device. The Please Select Boot Device screen appears.

3 In the Please Select Boot Device screen, select the appropriate PXE installation boot device and press Enter.

Note – The PXE installation boot device is the physical network port configured to communicate with your network installation server. The Boot Agent screen appears.

---

4 In the Boot Agent screen, press F12 for a network service boot.

5 Continue the normal Windows Server 2008 SP2 or 2008 R2 WDS network installation.

For additional information, consult Microsoft's Windows Deployment Services product documentation.

6 When the installation is complete, perform any necessary post installation tasks.

See Also "Downloading the ISO Image for the Tools and Drivers DVD" on page 69.

Updating Critical Drivers and Installing Supplemental Software

To ensure that your server is installed with the full Sun–supported feature set, you must download drivers and supplemental software. This section covers the following topics:

- "Installing Critical Device Drivers" on page 51
- "Installing Supplemental Software" on page 53
- "Managing RAID Using the MegaRAID Storage Manager" on page 55
- "IPMItool" on page 55
- "Configuring Support for the Trusted Platform Module" on page 56
- "Configuring Intel NIC Teaming" on page 56

The procedures in this section assume that you have already done the following:

- Installed the Microsoft Windows Server operating system.

- Downloaded Windows.zip and extracted InstallPack_*x_x_x*.exe from the download site to an accessible location as described in "How to Download Server Software" on page 19, or obtained the latest Tools and Drivers CD/DVD for your server.

Note – The _*x_x_x* number identifies the version of the package (for example, InstallPack_1_1_4.exe).

Installing Critical Device Drivers

This section describes how to update the Windows installation with critical device drivers and supplemental server component software.

An installation wizard is provided on the Tools and Drivers DVD to install server-specific device drivers and supplemental software. The server-specific device drivers are provided to support hardware devices on your server.

See "How To Install Server-Specific Device Drivers" on page 52.

▼ How To Install Server-Specific Device Drivers

1 Insert the Tools and Drivers DVD into a local or remote USB DVD drive, and do one of the following:

- **If the DVD automatically starts, click Install Drivers and Supplement Software.**

- **If the DVD does not automatically start, navigate to one of the following folders containing the appropriate InstallPack file (for example, `InstallPack_1_0_1.exe`), and double click it.**

  DVDname\Windows\W2K8\Packages

  DVDname\Windows\W2K8R2\Packages

2 In the Install Pack dialog box, click Next to accept the default installable items.

Note – You should always accept default installable items to ensure that the most recent versions of the drivers are installed.

The Install Pack notice dialog box appears.

3 Read the message in the Install Pack notice dialog box, then click Next.
The Welcome to the Sun Fire Installation Wizard appears.

4 In the Welcome to the Sun Fire Installation Wizard dialog box, click Next.
The End User License Agreement page appears.

5 In the End User License Agreement screen, select I Accept This Agreement, then click Next.
The platform-specific drivers are installed. A green check mark verifies that each driver was installed successfully.

6 In the Driver Installation Pack screen, click Finish.
The System Settings Change screen appears.

Note – If you plan on installing supplemental software (highly recommended), do not restart your system at this time. After supplemental software is installed, you are prompted to restart the system.

7 Decide whether or not to install supplemental software:
Choose one of the following:

- No – If you accept the default installable items settings in the earlier step, click No to proceed to "Installing Supplemental Software" on page 53.

- Yes – If you are not installing the supplemental software, click Yes to restart your computer.

See Also "Installing Supplemental Software" on page 53.

Installing Supplemental Software

There are several supplemental software components available for your Sun Fire server. You have two options for installation:

- Typical – Installs all supplemental software applicable for your server.
- Custom – Installs only the supplement software selected for installation.

The following table identifies the optional Supplemental Software components available for your server.

Available Supplemental Software Components	Servers With LSI-Integrated RAID Controller	Servers With Intel-Integrated Disk Controller
LSI MegaRAID Storage Manager. Enables you to configure, monitor, and maintain RAID on the SAS internal RAID Host Bus Adapter.	Typical	Not applicable
IPMItool. A command-line utility that reads the sensor data repository (SDR) and shows sensor values, system event log (SEL), and field-replaceable unit (FRU) inventory information; gets and sets LAN configuration parameters; performs chassis power control operations through the BMC (also called the service processor).	Typical	Typical
Intel NIC Teaming. Enables the network interfaces on a server to be grouped together into a team of physical ports called a virtual interface. Its features include fault tolerance, load balancing, link aggregation, and virtual LAN (VLAN) tagging.	Typical	Typical

See also:

"How to Install the Supplemental Software" on page 53

▼ How to Install the Supplemental Software

Before You Begin If you have already installed the supplemental software, running the installation again does not necessarily reinstall the supplemental software. It might result in the components being removed. Carefully review the screens during supplemental software installation to ensure that the results are what you want.

1 Choose to install or not to install supplemental software.

Choose one of the following:

- Do Not Install Supplemental Software – If you selected not to install the supplemental software when you ran the procedure "How To Install Server-Specific Device Drivers" on page 52, refer to that procedure and run it again and this time accept the default settings in Step 2 (the default is to install the supplemental software), and select No in Step 7.

  You should always accept default installable items to ensure that the most recent versions of the drivers are installed.

- Install Supplemental Software – If you selected to install supplemental software at the Server Installation Package dialog box in Step 2 of "How To Install Server-Specific Device Drivers" on page 52, and selected No (to not reboot your computer) in Step 7, the Install Pack Supplemental Software dialog box appears:

2 **Choose Typical or Custom.**

In the Install Pack Supplement Software dialog box, click Next to accept the Typical settings; or select Custom to choose the options to install. See descriptions of the supplemental software in Table 2.

The Component Installation wizard guides you through the installation of each of the selected supplemental software components:
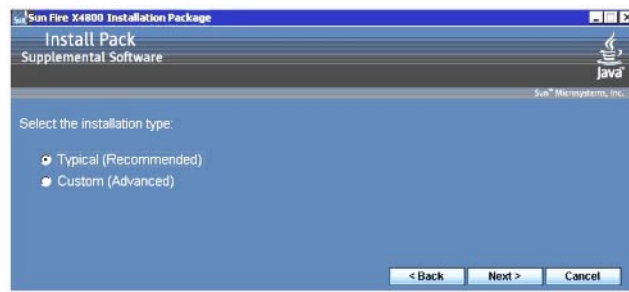
3 **After the supplemental software has been installed, click Finish.**

4 **Click Yes at the System Setting Change dialog box to restart your system.**

If you ran the Sun Server Installation Package software from the Tools and Drivers DVD, remove the DVD from your system.

See Also "Managing RAID Using the MegaRAID Storage Manager" on page 55.

Managing RAID Using the MegaRAID Storage Manager

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

MSM works with the appropriate operating system (OS) libraries and drivers to configure, monitor, and maintain storage configurations attached to x64 servers. The MSM interface shows 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 shown on the screen.

For information about using MSM, refer to the *Sun LSI 106x RAID User's Guide* in the Sun Integrated Controller Disk Management (LSI) Documentation library.

See also:

IPMItool

The IPMItool is a command-line utility that reads the sensor data repository (SDR) and shows sensor values, system event log (SEL), field-replaceable unit (FRU) inventory information, gets and sets LAN configuration parameters, and performs chassis power control operations using the server's service processor. IPMItool is supplemental software and can be installed using the server's Tools and Drivers CD/DVD or using the InstallPack_*x_x_x*.exe executable file (described in).

Once installed, the IPMItool can 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 using a command prompt. The IPMItool for Windows is used in conjunction with the Microsoft's IPMI System Management driver (bundled with Windows Server 2008 R2 and installed when you install the OS).

For more information about standard IPMItool commands, refer to the following:

- http://ipmitool.sourceforge.net/manpage.html
- *Sun Server CLI Tools and IPMItool User's Guide*

See also:

Configuring Support for the Trusted Platform Module

The Trusted Platform Module (TPM) is an on-board hardware component designed to enhance security by providing a protected space for key operations and other security critical tasks. Using both hardware and software, the TPM protects encryption and signature keys at their most vulnerable stages.

To use the TPM feature set that is provided in Windows Server 2008, you must configure your server to support this feature. For instructions, refer to the TPM information in the documentation of your server.

For additional information about implementing this feature, refer to the Windows Trusted Platform Module Management documentation provided by Microsoft.

See also:

Configuring Intel NIC Teaming

For information about setting up NIC teaming for your environment, go to the Intel Connectivity web page on Advanced Networking Services (ANS) teaming at: `http://www.intel.com/support/network/sb/CS-009747.htm`.

In addition, you can download the complete set of Intel Network Connections User Guides for your server's network adapters at: `http://www.intel.com/support/network/sb/cs-009715.htm`

See also:

Incorporating Device Drivers into WIM Images for WDS

This section is for advanced system administrators who need to incorporate a Windows Server 2008 R2 or Windows Server 2008 SP2 device driver into a Windows Imaging Format (WIM) file.

This section assumes that the system administrator is using Microsoft Windows Deployment Services (WDS) to deploy the installation of Windows Server 2008 (SP2 or R2) over a network.

Note – This section is not intended as a tutorial for WDS or Microsoft's Windows System Imaging Manager (WSIM). For detailed information about WDS or WSIM, refer to Microsoft's WDS and WSIM documentation.

Topics in this section include:

Location of Device Drivers on Tools and Drivers DVD

The following table identifies the location of the device driver directories on the Tools and Drivers DVD.

Note – If you do not have a copy of the Tools and Drivers DVD, you can download the ISO image for the Tools and Driver DVD. For details see "Downloading the ISO Image for the Tools and Drivers DVD" on page 69.

TABLE 1   Device Driver Directory Location on Tools and Drivers DVD

Recommended Drivers	Directory Location on Tools and Driver DVD
Intel Network Drivers	For Windows 2008 R2: `windows\W2K8R2\drivers\NIC\intel`
	For Windows 2008 SP2: `windows\w2K8\drivers\NIC\intel`
Aspeed Driver	For Windows 2008 R2: `windows\W2K8R2\drivers\display\ aspeed`
	For Windows 2008 SP2: `windows\w2K8\drivers\display\aspeed`
LSI MegRAID Driver:	
Sun Storage 6 Gb/s SAS PCIe RAID HBA, SG-SAS6-R-INT-Z	`windows/w2k8/drivers/64bit/hba/lsi/megaraid`
Sun Storage 6 Gb/s SAS PCIe RAID HBA, SG-SAS6-R-EXT-Z	`windows/w2k8/drivers/64bit/hba/lsi/megaraid`
LSI MPT2 Driver:	
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-INT-Z	`windows/w2k8/drivers/64bit/hba/lsi/mpt2`
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-EXT-Z	`windows/w2k8/drivers/64bit/hba/lsi/m pt2`
Intel ICH10 Controller	For Windows 2008 R2: `windows\W2K8R2\drivers\64bit\HBA\ intel`
	For Windows 2008 SP2: `windows\W2K8R2\drivers\64bit\HBA\ intel`

See also:

Device Drivers to Incorporate Into WIM Images

The table below identifies the device drivers to incorporate in the Windows Server 2008 (SP2 or R2) WIM image.

Note – The boot WIM image identified in the table is only required for Windows Server 2008 SP2 installations. The install WIM image identified in the table is required for both Windows Server 2008 SP2 and Windows Server 2008 R2 installations.

TABLE 2   Device Driver to Incorporate into WIM Images

Device Drivers to Incorporate	Windows Server 2008 SP2 and R2 - Add to `install.wim`	Windows 2008 SP2Server – Add to `boot.wim`
Intel Network Drivers	X	X
Aspeed Graphic Driver	X	
SAS PCIe HBA option installed on server:		
Sun Storage 6 Gb/s SAS PCIe RAID HBA, SG-SAS6-R-INT-Z	X	X
Sun Storage 6 Gb/s SAS PCIe RAID HBA, SG-SAS6-R-EXT-Z	X	X
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-INT	X	X
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-EXT-Z	X	X
Intel ICH10 Controller	X	

See also:

Prerequisites and Task Overview for the Device Driver WIM Images

Prior to creating the device driver WIM images for Windows Server 2008 R2 or Windows Server 2008 SP2, ensure that the following tasks are completed in the order specified:

1. Install and configure the Windows Deployment Services (WDS) on a server in your network.

    For details, you can download Microsoft's Windows Deployment Services Step-by-Step Guide. Search for "WDS" and look for Windows Deployment Services Step-by-Step Guide at the following site:

    http://www.microsoft.com/downloads/en/default.aspx

2. Install the Windows Automated Installation Kit (AIK). Windows AIK contains applications to mount and modify WIM images as well as applications to create and modify XML unattended setup scripts.

   To download Windows AIK, go to the following site, search for WAIK, and look for Automated Installation Kit (AIK) for Windows Vista SP1 and Windows Server 2008 (Windows Server 2008 SP2), or Windows AIK for Windows 7 (for Windows Server 2008 R2):

   http://www.microsoft.com/downloads/en/default.aspx

3. Locate the Windows device drivers on the Tools and Driver DVD.

   See "Location of Device Drivers on Tools and Drivers DVD" on page 57.

4. Establish a network-shared device driver repository.

   For example:

   - Create a device driver repository containing the Windows Server 2008 (SP2 or R2) device drivers.

     Note that for Windows Server 2008 WDS installation environments, a device driver repository is provided, which you can modify. For Windows Server 2003 SP2 WDS installation environments, a device driver repository is not provided, and you must manually create one. The following is an example of how you might want to set up the directory structure for a new device driver repository:

     `C:\unattend\drivers\{w2K8|W2k8R2}\catalogs\vendor\version`

     Where:

unattend	Unattend device driver store.
drivers	Name for device driver directory.
{W2K8 or W2K8R2}	Name for Windows Server 2008 (SP2 or R2) device drivers directory.
catalogs	Name for Windows Server 2008 (SP2 or R2) catalog files.
vendor	Name of directory for device driver vendor.
version	Name of directory for device driver version.

   - Ensure that the directories (folders) in the device driver repository are shared and accessible to the Windows Deployment Services (WDS) during the network installation.

     For example, the device driver repository folder and network shares referenced in this section are set up as follows:

Repository Folder	Network Shares
`C:\Unattended\Drivers\W2K8`	`\\wds-server\W2K8-Drivers`

```
C:\Unattended\Drivers\W2K8R2          \\wds-server\W2K8R2-Drivers
```

- Extract the Windows Server 2008 device drivers on the Tools and Drivers DVD and place them into the device driver repository.

  See "Location of Device Drivers on Tools and Drivers DVD" on page 57.

  Note – If you do not have a copy of the Tools and Drivers DVD, you can download the ISO image for the Tools and Driver DVD. See "Downloading the ISO Image for the Tools and Drivers DVD" on page 69.

  The following example demonstrates the directory structure of the device driver repository after you copy a SAS PCIe HBA driver (example version number: 1.19.2.64) from the Tools and Drivers DVD to the device driver repository:

Windows Server 2008 SP2	Tools and Driver DVD	`DVDDevice:\windows\W2K8R2\drivers\64bit\hba\lsi\mpt2s`
	Device Driver Repository	`C:\unattend\drivers\W2K8\lsi\1.19.2.2.64`
Windows Server 2008 R2	Tools and Driver DVD	`DVDDevice:\windows\W2K8R2\drivers\64bit\hba\lsi\mpt2`
	Device Driver Repository	`C:\unattend\drivers\W2K8R2\lsi\1.19.2.64`

5. Create an `imageunattend.xml` setup script for Windows Server 2008 (SP2 or R2).

   For details, see "How to Create an ImageUnattend.xml Setup Script" on page 62.

6. For Windows Server 2008 SP2 (only) installations, add the required boot device drivers described in "Device Drivers to Incorporate Into WIM Images" on page 58 to `boot.wim`.

   For details about adding the device drivers to the `boot.wim`, see "Add Device Driver to the Boot WIM (Windows Server 2008 SP2 Only)" on page 64.

7. Map the `imageunattend.xml` setup script to the Windows Server 2008 image.

   For details, see "Map ImageUnattend.xml Setup Script to Windows Server 2008 Install Image" on page 67.

8. For Windows Server 2008 SP2 and Windows Server 2008 R2 installations, add the required device drivers described in "Device Drivers to Incorporate Into WIM Images" on page 58 to the `install.wim`.

Incorporating Drivers Into the WIM Image

The procedures presented in this section are guidelines you can use to add device drivers to a WIM image file. These procedures should be performed in the following order:

Before You Begin

Prior to performing the procedures in this section, you should ensure that all the prerequisites as described in have been met.

▼ How to Create an `ImageUnattend.xml` Setup Script

Follow these steps to create an ImageUnattend.xml setup script for a Windows Server 2008 SP2 or R2 installation. After the setup script is generated, it is saved to the device driver repository.

Note – In this procedure, the ImageUnattend.xml setup script is mapped to a Windows Server 2008 (SP2 or R2) install image. Then the install image installs the specified device drivers during the Windows Server 2008 network installation.

---

1 Insert the Windows Server 2008 DVD media into the DVD reader of the system that is hosting the Windows Deployment Services.

2 Copy all the Windows Server 2008 catalog files into the Catalogs folder of the device driver repository, for example:

```
copy DVDDrive:\source\*.clg C:\Unattend\Drivers\{WSK8|W28R2}\ Catalogs
```

3 Launch the Windows System Manager application and create a new `ImageUnattend.xml` setup script:

    a. Click Start > All Programs > Microsoft Windows AIK > Windows System Image Manager.

    b. In the Answer File pane, right-click and select New Answer File.

    c. If a message appears asking to open a new Windows image now, click No.

4 Specify the Windows Server 2008 catalog file that matches the Windows Server 2008 edition (Standard, Datacenter, or Enterprise) that you are installing:

    a. In the Windows Image pane, right-click Select Windows Image.

b. **In the Files Type list box, select Catalog files (`*.clg`), then click Browse to specify the Catalogs folder in the device-driver repository.**

Ensure that you select the catalog file that matches the Windows Server 2008 (SP2 or R2) edition you are installing.

For example, for Windows Server 2008 SP2 Datacenter, select:

```
C:\Unattend\Drivers\{W2K8|W2K8R2}\Catalogs\
install_Windows_Server_2008_SERVERDATACENTER.clg
```

5 **Specify the component packages to pass 2 `offlineServing`.**

a. **In the Windows Image pane, click and expand architecture_Microsoft-Windows-PnPCustomizationNonWinPE_version.**

b. **Right-click PathAndCredentials and select Add Setting to Pass 2 OfflineServing.**

6 **Repeat Step 5 for each device driver you want installed during the Windows Server 2008 installation.**

Refer to the table in for the list of device drivers to include in the `install.wim` file.

7 **Specify an installation key value.**

a. **In the Answer File pane, click and expand 2 offlineServicing,architecture_Microsoft-Windows- PnPCustomizationsNonWinPE_version.**

b. **Click and expand PathAndCredentials and enter a sequence key value and the UNC device driver path in the repository.**

For example, to add the device driver for the Sun Storage PCIe SAS RAID HBA option, enter:

Key 1

Path \\wds-server\W2K8-Drivers\Lsi\1.19.2.64

c. **In the Credential section for each PathAndCredentials component, click and expand the component to insert the UNC domain, login name, and password (if required), which allows access to the device drivers stored in the repository.**

For example:

Domain   UNC_domain

Password   UNC_password

Username   UNC_username

    d. Repeat Steps 7a through 7c for each device driver you want installed during the Windows Server 2008 installation.

8 Validate the `ImageUnattend.xml` file using the Windows System Image Manager application:

In the Windows System Image Manager application, click the Tools menu and select Validate Answer File.

9 Save the `.xml` setup script as `ImageUnattend.xml` using the Windows System Manager application:

    a. In the Windows System Image Manager application, click the File menu and select Save Answer File as.

    b. Save the `.xml` setup script in the device driver repository as:

    `c:\Unattend\Drivers\W2K8\Catalogs\ImageUnattend.xml`

    Exit the Windows System Image Manager application.

    The creation of the ImageUnattend.xml setup script is complete.

Next Steps   For Windows Server 2008 R2 installation, proceed to "Map ImageUnattend.xml Setup Script to Windows Server 2008 Install Image" on page 67.

For Windows Server 2008 SP2 installations, proceed to "Add Device Driver to the Boot WIM (Windows Server 2008 SP2 Only)" on page 64 prior to mapping the ImageUnattend.xml setup script to the install.wim image.

▼ Add Device Driver to the Boot WIM (Windows Server 2008 SP2 Only)

For Windows Server 2008 SP2 installations only, perform the following steps to add the appropriate PCIe SAS HBA LSI device driver (MegaRAID or MPT2) to the boot.wim image. If the required PCIe SAS HBA device driver (as described in Table 1 and Table 2) is not added to the boot.wim image, the Windows Server 2008 SP2 installation fails.

Note – If you are performing a Windows Server 2008 R2 installation, skip this procedure. Device drivers are not required at boot time for Windows Server 2008 R2 installations.

---

1 Insert the Windows Server 2008 SP2 DVD media into the DVD reader of the system that is hosting the Windows Deployment Services.

2   Perform the following to launch the Windows Deployment Services Administration tool and import the Windows Server 2008 SP2 Boot WIM.

    a.   Choose Start > All Programs > Windows Deployment Services.

    b.   Right-click Boot Images and select Add a Boot Image, then click Browse to specify the Windows Server 2008 SP2 boot WIM file (for example, `DVDDrive:\sources\boot.wim`)

    c.   Click Open, and then click Next.

3   To import the Windows Server 2008 SP2 boot image, click Next twice, and then click Finish.

4   Disable the Windows Server 2008 SP2 boot WIM using the Windows Deployment Services Administration:

Click and expand Boot Images, right-click Microsoft Windows Server (Setup) x64, then choose Disable.

5   Launch and run the Deployment Tools Command Prompt as Administrator:

For example, click Start > All Programs > Microsoft Windows AIK, then right-click Deployment Tools Command Prompt, and choose Run as Administrator.

6   At the Deployment Tools command prompt, do the following:

    a.   Use the `mkdir` command to create a temporary directory mount point to mount the Windows Server 2008 SP2 boot WIM image.

    For example:

```
mkdir C:\Mnt
```

    b.   Use the `cd` command to change the directory to the folder containing the Windows Server 2008 SP2 boot WIM.

    For example:

```
cd DVDDrive:\RemoteInstall\Boot\x64\images
```

    c.   Use the `imagex` command to mount the Windows Server 2008 SP2 boot WIM with read/write permissions to the temporary directory mount point, for example:

```
imagex /mountrw boot.wim 2 C:\Mnt
```

    d. **Use the `cd` command to change the directory to the device driver repository containing the Windows Server 2008 SP2 device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (`SG-SAS-R-INT-Z or SG-SAS-R-EXT-Z`):**

    For example, to change to the directory containing the LSI device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS-R-INT-Z or SG-SAS-R-EXT-Z), type:

    `cd C:\Unattend\Drivers\W2K8\lsi\1.19.2.64`

    e. **Use the `peimg` command to add the LSI MegaRAID device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS-R-INT-Z or SG-SAS-R-EXT-Z) to the Windows Server 2008 SP2 boot WIM.**

    For example, to add the LSI MegaRAID device driver for the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS-R-INT-Z or SG-SAS-R-EXT-Z), type:

    `peimg /INF=*.inf C:\Mnt\Windows`

    f. **Repeat the `peimg` command for each additional device driver (as described in Table 2) that is required in the boot WIM image:**

      ■ Sun Storage 6 Gb/s SAS PCIe HBA option (SG-SAS-INT-Z or SG-SAS-EXT-Z)
      ■ Intel network driver

    g. **Use the `imagex` command to unmount and commit the modified Windows Server 2008 SP2 boot WIM.**

    For example:

    `imagex /unmount/commit C:\Mnt`

7   **To enable the Windows Server 2008 SP2 boot WIM image, do the following.**

    a. **Launch the Windows Deployment Services administration tool.**

    Start > All Programs > Windows Deployment Services.

    b. **In the Windows Deployment Services (WDS) administration tool, click and expand Boot Images.**

    c. **Right-click Microsoft Windows Server (Setup) x64 and choose Enable.**

    The modifications to include the device drivers into the `boot.wim` image are complete.

8   **Exit the Deployment Tools Command Prompt and the WDS administration tool.**

Next Steps   "Map ImageUnattend.xml Setup Script to Windows Server 2008 Install Image" on page 67

▼ **Map `ImageUnattend.xml` Setup Script to Windows Server 2008 Install Image**

Follow the steps in this procedure to map the ImageUnattend.xml Setup Script to the Windows Server 2008 (SP2 or R2) install.wim for your Oracle server. For details, see "How to Create an ImageUnattend.xml Setup Script" on page 62.

1. **Insert the Windows Server 2008 SP2 DVD media into the DVD reader of the system that is hosting the Windows Deployment Services.**

2. **Launch the Windows Deployment Services administration tool and import the Windows Server 2008 SP2 install WIM.**

   a. **Choose Start > All Programs > Windows Deployment Services.**

   b. **Right-click Install Images and choose Add Install Image.**

      Note that if no image groups exist, create a new image group named Windows Server 2008 SP2 or Windows Server 2008 R2, and click Next.

   c. **Click Browse to select the Windows Server 2008 SP2 Install WIM image located at: `DVDDrive:\sources\install.wim`; then click Open, and then Next.**

   d. **Select the Windows Server 2008 edition (Data Center, Standard, or Enterprise) to import into Windows Deployment Services, then click `Next`.**

   e. **To import the specified Windows Server 2008 edition install image, click Next twice, and then click Finish.**

3. **Launch the Deployment Tools Command Prompt as Administrator, for example:**

   Click Start > All Programs > Microsoft Windows AIK, then right-click Deployment Tools Command Prompt, and choose Run as Administrator.

4. **In the Deployment Tools Command Prompt, do the following:**

   a. **Use the `cd` command to change the directory to the folder containing the Windows Server 2008 SP2 install WIM.**

      For example, the Windows Server 2008 SP2 Datacenter (x64) edition WIM image would be located at:

      ```
      cd Drive:\RemoteInstall\images\Windows Server 2008 SP2
      ```

b. Use the `mkdir` command to create a directory with the exact same spelling and case as the imported Windows Server 2008 WIM image.

```
mkdir install
```

Note – Selecting the defaults when importing the install image for Windows Server 2008 (SP2 or R2) creates an installation WIM file called `install.wim`.

---

c. Use the `cd` command to change the directory to the imported Windows Server 2008 folder, then use the `mkdir` command to create an `Unattend` directory.

For example:

`cd install`

`mkdir Unattend`

d. Use the `cd` command to change the directory to the `Unattend` directory, then use the `copy` command to copy the `ImageUnattend.xml` setup script (created in an earlier procedure in this section) to the `Unattend` directory.

For example:

`cd Unattend`

`copy C:\Unattend\Drivers\{W2K8|W2k8R2}\Catalogs\ImageUnattend.xml`

5   Open the Windows Server 2008 image properties.

a. Launch the Windows Deployment Services administration tool.

Choose Start > All Programs--Windows Deployment Services.

b. In the Windows Deployment Services (WDS) administration tool, click and expand the Windows Server 2008 (SP2 or R2) image group.

c. Right-click Microsoft Windows Server and choose Properties.

6   Perform the following steps to map the `ImageUnattend.xml` setup script to the windows Server 2008 (SP2 or R2) image.

a. In the General Tab of the Windows Server 2008 image properties, select Allow image to install in unattended mode and click Select File.

b. Browse to the following location as specified in the prior steps:

```
Drive:\RemoteInstall\images\{W2K8|W2K8R2}\install\Unattend\
ImageUnattend.xml
```

      c. Click OK to map the `ImageUnattend.xml` setup script to the Windows Server 2008 WIM image.

      The Windows Server 2008 (SP2 or R2) WIM image is ready to be installed through Windows Deployment Services.

      d. Exit the Deployment Tools Command Prompt and the Windows Deployment Services Administration tool.

Next Steps "Downloading the ISO Image for the Tools and Drivers DVD" on page 69.

Downloading the ISO Image for the Tools and Drivers DVD

Use the download instructions in this section if a Tools and Driver DVD was not shipped with your server or if you need to verify that the Tools and Drivers DVD shipped with your server contains the latest tools and firmware for your server.

See also:

"How to Download the ISO Image" on page 69

▼ How to Download the ISO Image

To download the ISO image for the Tools and Drivers DVD.

1 Go to the Oracle software download site for your server platform:

http://www.oracle.com/technetwork/server-storage/sun-x86/downloads/index.html

2 Select and download the ISO image for the Tools and Drivers DVD to an accessible network location or local storage location.

3 Prepare the ISO image for installation.

Use one of the following methods:

- Create a Tools and Drivers DVD using third-party software.
- Use remote KVMs (Oracle ILOM RemoteConsole) to mount the ISO image.

See Also "Identifying Network Interfaces in Windows" on page 71.

Identifying Network Interfaces in Windows

This section provides information about identifying your server's network interface settings in Windows.

-
-

▼ How to Determine the Server's Active Network Data Ports

You can determine which network data ports are actively connected to a network by using Microsoft's Network Connections folder. You can visually determine which server network ports are actively connected to a network. To access the Network Connections folder:

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

The Network Connections window appears, identifying the actively connected data ports.
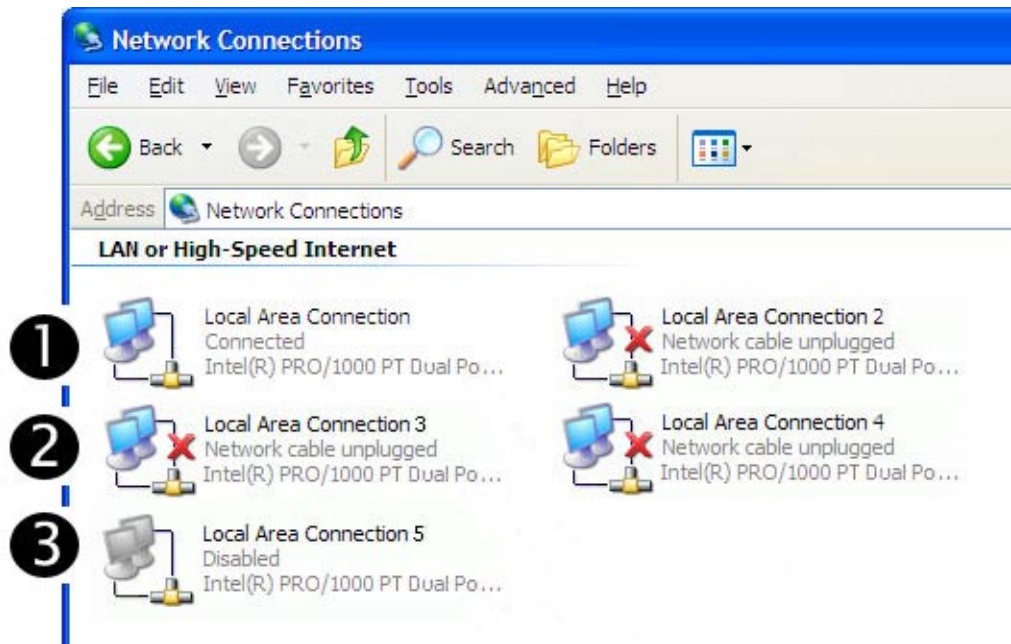
Callout	Description
1	An active port connection.
2	A red X marks the port connections that are currently inactive.
3	The port has been manually disabled (right-click to re-enable).

See Also

▼ How to Confirm Physical Port MAC Addresses and Map Them to Windows Device Names

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

1   Choose > Start > Run.

The Run dialog box appears.

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

The `cmd.exe` DOS Command Prompt window appears.

3   In the `cmd.exe` DOS Command Prompt window, enter the following command at the prompt:
`ipconfig /all`

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

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

```
Windows IP Configuration

   Host Name . . . . . . . . . . . . : 08R2G58S
   Primary Dns Suffix  . . . . . . . : whql.local
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No
   DNS Suffix Search List. . . . . . : whql.local

Ethernet adapter Local Area Connection 8:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection #8
   Physical Address. . . . . . . . . : 00-21-28-44-CD-A2
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::3dc4:70b2:dbc4:a20e%19(Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.10.50(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :
   DHCPv6 IAID . . . . . . . . . . . : 637542696
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
   DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                       fec0:0:0:ffff::2%1
                                       fec0:0:0:ffff::3%1
   NetBIOS over Tcpip. . . . . . . . : Enabled

Ethernet adapter Local Area Connection 7:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection #7
   Physical Address. . . . . . . . . : 00-21-28-44-CD-9B
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::fcb6:ab8:1ea8:c6a5%17(Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.60.50(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :
   DHCPv6 IAID . . . . . . . . . . . : 570433832
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
```

```
     DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                         fec0:0:0:ffff::2%1
                                         fec0:0:0:ffff::3%1
     NetBIOS over Tcpip. . . . . . . . : Enabled

Ethernet adapter Local Area Connection 6:

     Connection-specific DNS Suffix  . :
     Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection #6
     Physical Address. . . . . . . . . : 00-21-28-44-CD-9A
     DHCP Enabled. . . . . . . . . . . : No
     Autoconfiguration Enabled . . . . : Yes
     Link-local IPv6 Address . . . . . : fe80::f45c:b870:efe2:54d7%16(Preferred)
     IPv4 Address. . . . . . . . . . . : 192.168.20.50(Preferred)
     Subnet Mask . . . . . . . . . . . : 255.255.255.0
     Default Gateway . . . . . . . . . :
     DHCPv6 IAID . . . . . . . . . . . : 520102184
     DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
     DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                         fec0:0:0:ffff::2%1
                                         fec0:0:0:ffff::3%1
     NetBIOS over Tcpip. . . . . . . . : Enabled

Ethernet adapter Local Area Connection 5:

     Connection-specific DNS Suffix  . :
     Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection #5
     Physical Address. . . . . . . . . : 00-21-28-44-CE-2B
     DHCP Enabled. . . . . . . . . . . : No
     Autoconfiguration Enabled . . . . : Yes
     Link-local IPv6 Address . . . . . : fe80::8d16:989a:ef66:21fc%15(Preferred)
     IPv4 Address. . . . . . . . . . . : 192.168.70.50(Preferred)
     Subnet Mask . . . . . . . . . . . : 255.255.255.0
     Default Gateway . . . . . . . . . :
     DHCPv6 IAID . . . . . . . . . . . : 436216104
     DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
     DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                         fec0:0:0:ffff::2%1
                                         fec0:0:0:ffff::3%1
     NetBIOS over Tcpip. . . . . . . . : Enabled

Ethernet adapter Local Area Connection 4:

     Connection-specific DNS Suffix  . :
     Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection #4
     Physical Address. . . . . . . . . : 00-21-28-44-CE-2A
     DHCP Enabled. . . . . . . . . . . : No
     Autoconfiguration Enabled . . . . : Yes
     Link-local IPv6 Address . . . . . : fe80::ecc8:9a72:ca4a:f6a8%14(Preferred)
     IPv4 Address. . . . . . . . . . . : 192.168.30.50(Preferred)
     Subnet Mask . . . . . . . . . . . : 255.255.255.0
     Default Gateway . . . . . . . . . :
     DHCPv6 IAID . . . . . . . . . . . : 419438888
     DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
     DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                         fec0:0:0:ffff::2%1
```

```
                                          fec0:0:0:ffff::3%1
    NetBIOS over Tcpip. . . . . . . : Enabled

Ethernet adapter Local Area Connection 3:

    Connection-specific DNS Suffix  . :
    Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection #3
    Physical Address. . . . . . . . . : 00-21-28-44-CD-BB
    DHCP Enabled. . . . . . . . . . . : No
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::436:f2c5:82d:9b45%13(Preferred)
    IPv4 Address. . . . . . . . . . . : 192.168.40.50(Preferred)
    Subnet Mask . . . . . . . . . . . : 255.255.255.0
    Default Gateway . . . . . . . . . :
    DHCPv6 IAID . . . . . . . . . . . : 352330024
    DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
    DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                        fec0:0:0:ffff::2%1
                                        fec0:0:0:ffff::3%1
    NetBIOS over Tcpip. . . . . . . : Enabled

Ethernet adapter Local Area Connection 2:

    Connection-specific DNS Suffix  . :
    Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection #2
    Physical Address. . . . . . . . . : 00-21-28-44-CD-BA
    DHCP Enabled. . . . . . . . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::6565:3371:68b7:8fc9%12(Preferred)
    IPv4 Address. . . . . . . . . . . : 192.168.1.83(Preferred)
    Subnet Mask . . . . . . . . . . . : 255.255.255.0
    Lease Obtained. . . . . . . . . . : Friday, April 23, 2010 1:15:30 PM
    Lease Expires . . . . . . . . . . : Sunday, April 24, 2011 1:15:29 PM
    Default Gateway . . . . . . . . . :
    DHCP Server . . . . . . . . . . . : 192.168.1.1
    DHCPv6 IAID . . . . . . . . . . . : 301998376
    DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
    DNS Servers . . . . . . . . . . . : 192.168.1.1
    NetBIOS over Tcpip. . . . . . . : Enabled

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . :
    Description . . . . . . . . . . . : Intel(R) 82576 Gigabit Dual Port Network
Connection
    Physical Address. . . . . . . . . : 00-21-28-44-CD-A3
    DHCP Enabled. . . . . . . . . . . : No
    Autoconfiguration Enabled . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::914f:4a32:d51a:648b%11(Preferred)
    IPv4 Address. . . . . . . . . . . : 192.168.50.50(Preferred)
    Subnet Mask . . . . . . . . . . . : 255.255.255.0
    Default Gateway . . . . . . . . . :
    DHCPv6 IAID . . . . . . . . . . . : 234889512
    DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-13-55-41-39-00-21-28-44-CD-A3
    DNS Servers . . . . . . . . . . . : fec0:0:0:ffff::1%1
                                        fec0:0:0:ffff::2%1
                                        fec0:0:0:ffff::3%1
```

```
      NetBIOS over Tcpip. . . . . . . . : Enabled

   Tunnel adapter isatap.{1C6FCDB6-1785-4754-9835-0875D96FD9BE}:

      Media State . . . . . . . . . . . : Media disconnected
      Connection-specific DNS Suffix  . :
      Description . . . . . . . . . . . : Microsoft ISATAP Adapter
      Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
      DHCP Enabled. . . . . . . . . . . : No
      Autoconfiguration Enabled . . . . : Yes

   Tunnel adapter isatap.{9525B926-8C1F-469D-B302-F12890BF74E2}:

      Media State . . . . . . . . . . . : Media disconnected
      Connection-specific DNS Suffix  . :
      Description . . . . . . . . . . . : Microsoft ISATAP Adapter #2
      Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
      DHCP Enabled. . . . . . . . . . . : No
      Autoconfiguration Enabled . . . . : Yes

   Tunnel adapter isatap.{2B983248-1D90-41CA-920B-BE387D88F320}:

      Media State . . . . . . . . . . . : Media disconnected
      Connection-specific DNS Suffix  . :
      Description . . . . . . . . . . . : Microsoft ISATAP Adapter #3
      Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
      DHCP Enabled. . . . . . . . . . . : No
      Autoconfiguration Enabled . . . . : Yes

   Tunnel adapter isatap.{839E5C39-B7AB-49C0-8BA3-38F5E2688745}:

      Media State . . . . . . . . . . . : Media disconnected
      Connection-specific DNS Suffix  . :
      Description . . . . . . . . . . . : Microsoft ISATAP Adapter #4
      Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
      DHCP Enabled. . . . . . . . . . . : No
      Autoconfiguration Enabled . . . . : Yes

   Tunnel adapter isatap.{3292E9DB-E6AA-4611-8612-961DEA5112C0}:

      Media State . . . . . . . . . . . : Media disconnected
      Connection-specific DNS Suffix  . :
      Description . . . . . . . . . . . : Microsoft ISATAP Adapter #5
      Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
      DHCP Enabled. . . . . . . . . . . : No
      Autoconfiguration Enabled . . . . : Yes

   Tunnel adapter isatap.{0AAB6818-15D4-4CFA-BC13-68FD3FBCBFB0}:

      Media State . . . . . . . . . . . : Media disconnected
      Connection-specific DNS Suffix  . :
      Description . . . . . . . . . . . : Microsoft ISATAP Adapter #6
      Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
      DHCP Enabled. . . . . . . . . . . : No
      Autoconfiguration Enabled . . . . : Yes

   Tunnel adapter isatap.{7A0F9D94-E16F-4F8F-B07E-CE66F446BB26}:

      Media State . . . . . . . . . . . : Media disconnected
```

```
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . : Microsoft ISATAP Adapter #7
   Physical Address. . . . . . . . : 00-00-00-00-00-00-00-E0
   DHCP Enabled. . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes

Tunnel adapter isatap.{DE3F60D0-D0DF-49A5-9168-14F27BACAD4B}:

   Media State . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . : Microsoft ISATAP Adapter #8
   Physical Address. . . . . . . . : 00-00-00-00-00-00-00-E0
   DHCP Enabled. . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
```

Where

`Ethernet adapter Local Area Connection`
Identifies the first Ethernet adapter port.

`Ethernet adapter Local Area Connection 2`
Identifies the second Ethernet adapter port.

And, `Ethernet adapter Local Area Connection 3`
Identifies the third 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.

See Also   "How to Determine the Server's Active Network Data Ports" on page 71

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