Sun Server X2-8 (formerly Sun Fire X4800 M2) Installation Guide for Windows Operating Systems

Contents

Using This Documentation

This section provides product information, documentation and feedback links, and a document change history.

Sun Server X2-8 Name Change

The Sun Server X2-8 was formerly named the Sun Fire X4800 M2 server. This former name might still appear in the product. The name change does not indicate any change in system features or functionality.

The new name identifies the following:

- X identifies an x86 product.
- The first number, 2, identifies the generation of the server.
- The second number, 8, identifies the number of processors.

Product Downloads

You can find downloads for all Oracle x86 servers and server modules (blades) on My Oracle Support (MOS). On MOS you can find two type of downloads:

- Software release bundles specific to the rackmount server, server module, modular system (blade chassis), or NEM. These software release bundles include Oracle ILOM, Oracle Hardware Installation Assistant and other platform software and firmware.

- Standalone software common across multiple types of hardware. This includes the Hardware Management Pack and Hardware Management Connectors.

▼ Get Software and Firmware Downloads

1 Go to `http://support.oracle.com`.

2 Sign in to My Oracle Support.

3 At the top of the page, click the Patches and Updates tab.

4 In the Patch Search box, click Product or Family (Advanced Search).

5 In the Product ? is field, type a full or partial product name, for example, Sun Server X2-8 until a list of matches is displayed and select the product of interest.

6 In the Release ? is pull-down list, click the Down arrow.

7 In the window that appears, click the triangle (>) by the product folder icon to show the choices and then select the release of interest and click Close.

8 In the Patches Search box, click Search.

A list of product downloads (listed as patches) appears.

9 Select the Patch name of interest, for example, 12684585, for the Sun Server X2-8 1.0 Firmware.

10 In the right-side pane that appears, click Download.

Documentation and Feedback

Documentation	Link
All Oracle products	`http://www.oracle.com/documentation`
Sun Server X2-8	`http://docs.oracle.com/cd/E20815_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.oracle.com/goto/docfeedback`.

About This Documentation

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, appendices, or section numbering.

You can get a PDF that includes all information about a particular topic subject (such as hardware installation or product notes) by clicking the PDF button on the top of the page.

Change History

The following lists the release history of this documentation set:

- July 2011 – Initial publication.
- October 2011 – Revised for SW1.1.
- January 2012 – Revised for SW1.2.
- April 2012 – Revised to add preinstalled Oracle VM, and additional rack mounting instructions.
- June 2012 – Revised to add the preinstalled Solaris 11 operating system.
- July 2012 – Revised to change name and to add 32 Gb DIMMs.
- October 2013 – Added Windows Server 2012.

Windows Server OS Installation Planning

This section describes methods to install the Microsoft Windows Server (64–bit) operating system onto the Oracle Sun Server X2-8.

This document includes the following topics:

- "Windows Installation Task Map" on page 9
- "Windows Server Installation Methods" on page 10

Note – The Sun Server X2-8 was formerly named the Sun Fire X4800 M2 server. This former name might still appear in the product. The name change does not indicate any change in system features or functionality.

Windows Installation Task Map

To manually install Windows Server, complete the following tasks in order:

1. Choose a delivery method.

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

2. Download required software and server-specific drivers.

   See "Downloading Server Software" on page 19.

3. (Optional) Prepare the Oracle ILOM Remote Console if you are doing a remote install.

   See "Configuring a Remote Console" on page 21.

4. Create a virtual disk, and configure RAID if desired.

   See "Creating a Virtual Disk" on page 29.

5. Install Windows Server. See:

   "How to Install Windows Server 2008 R2" on page 43

   "How to Install Windows Server 2012" on page 50

   "How to Install Windows Server 2008 Using PXE" on page 56

   "How to Install Windows Server 2012 Using PXE" on page 57

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

See "Updating Critical Drivers and Installing Supplemental Software" on page 59.

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

7. Incorporate device drivers into your WIM image.

   See "Incorporating Windows Server 2008 Device Drivers Into WIM Images for WDS" on page 65.

8. Identify network interfaces.

   See "Identifying Network Interfaces in Windows" on page 75.

Windows Server Installation Methods

You can install Windows Server 2008 or Windows Server 2012 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 (OHIA)** – For the novice user, OHIA provides a wizard-like interface that assists in the installation of the Windows operating system and firmware upgrades. OHIA can install Windows by using a local or remote CD/DVD.	"Oracle Hardware Installation Assistant (OHIA)" on page 17 "Downloading Server Software" on page 19
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 Oracle ILOM redirection or 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.	"Preparing For Windows OS Installation " on page 13 "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 Windows Server 2008 Device Drivers Into WIM Images for WDS" on page 65

Description	Description	More Information
Post-installation	Install server-specific drivers and supplemental software.	"Updating Critical Drivers and Installing Supplemental Software" on page 59
Reference	Learn how to identify your active network ports in Windows.	"Identifying Network Interfaces in Windows" on page 75

See also:

"Preparing For Windows OS Installation " on page 13

Preparing For Windows OS Installation

This section describes how to get started installing a Microsoft Windows Server 2008 R2 or 2012 (64–bit) operating system on a Sun Server X2-8.

The following topics are covered:

- "Supported Windows Operating Systems" on page 13
- "Windows Server Installation Considerations" on page 14
- "Selecting a Windows OS Media Delivery Method" on page 15

Supported Windows Operating Systems

The Sun Server X2-8 supports the following Microsoft Windows operating systems at the time of publication of this document:

- Microsoft Windows Server 2012
- Microsoft Windows Server 2008 R2
    - Standard Edition (64-bit)
    - Enterprise Edition (64-bit)
    - Datacenter Edition (64-bit)

To view a current list of supported operating systems, refer to the *Sun Server X2-8 (formerly Sun Fire X4800 M2) Product Notes*.

Windows Server Installation Considerations

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

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

- Disable x2APIC in the BIOS Setup Utility before you install the Windows operating system. Access the BIOS Setup Utility, select Advanced —> CPU Configuration —> x2APIC —> Disabled. Then Exit and save changes.

- 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 the Windows operating system.

  Before you install Windows, use the LSI integrated RAID controller's setup utility by pressing Ctrl-C when prompted during server boot-up. 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.

- The *Windows Server 2008 R2* package 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, Oracle-tested versions as described in "Updating Critical Drivers and Installing Supplemental Software" on page 59.

- All the drivers for Windows Server 2012 are in the box. There are no Windows Server 2012 drivers for certain PCIe add-in cards. See the installation sections in "How to Install Windows Server 2012" on page 50 and "How to Install Windows Server 2012 Using PXE" on page 57 for details.

Selecting a Windows OS Media Delivery Method

You must choose a method for providing the Windows OS installation media. The procedures for installing Windows OS differ depending on your media delivery method, as shown in the following table.

Media Delivery Method	Description	Additional Requirements	See:
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.	"Installing Windows Server" on page 43
Windows remote	Uses a redirected physical CD/DVD drive or an ISO image on a remote system running Oracle ILOM Remote Console.	A client system with a browser, an attached physical CD/DVD drive (not required for ISO image), a Windows distribution DVD or ISO image, and network access to the server's management port.	"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.	"Incorporating Drivers Into the WIM Image" on page 69.

Oracle Hardware Installation Assistant (OHIA)

The Oracle Hardware Installation Assistant (OHIA) is a tool that helps you perform a variety of deployment and recovery tasks on your Oracle x86 server. OHIA can be launched from a bootable CD, a USB flash drive prepared with OHIA software, or a customized OHIA image available on a PXE installation server.

- "Task Overview" on page 17
- "Obtaining OHIA" on page 17

Task Overview

The following tasks can be performed using OHIA:

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

- Upgrade your system BIOS, Oracle 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 Oracle server. OHIA 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 OHIA wizard guides you through the installation.

- Update your OHIA session with the latest firmware and drivers from Oracle.

Obtaining OHIA

OHIA is available as an option with most new x86 servers. In addition, an ISO CD image of OHIA is available for download from Oracle. For a complete list of supported Oracle server platforms, refer to the OHIA information page at:

http://www.oracle.com/
technetwork/server-storage/servermgmt/tech/hardware-installation-assistant/
index.html

Documentation describing how to use OHIA can also be found at http://
download.oracle.com/docs/cd/E19593-01/index.html.

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 at `http://support.oracle.com`. 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://wikis.oracle.com/display/SystemsComm/Systems+Options+and+Downloads`)

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.zip`

  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

DriverPack_*x_x_x*.zip

3   *For experts only:* **Download the following:**

- Server-specific driver archive for Windows Server, English.
- Tools folder for Windows Server 2008 R2 or for Windows Server 2012 (for experts only, supplemental software archive).
- Drivers folders.

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

See Also   "Selecting a Windows OS Media Delivery Method" on page 15

Configuring a Remote Console

This section describes how to set up a remote console system using Oracle Integrated Lights Out Manager (ILOM) Remote Console to deliver the Windows Server media over the network for operating system installation on your Oracle server.

Note – If you have chosen the Windows Local delivery method, proceed to .

▼ How to Set Up an Oracle ILOM Remote Console

This task allows you to access your server from a remotely-located client system, using the Oracle ILOM Remote Console.

Before You Begin   The following requirements must be met:

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

Caution – Using Oracle ILOM Remote Console to install the Windows Server might significantly increase the installation time, depending on network connectivity and traffic. It also has a greater risk of issues due to transient network errors.

1   Start the remote console application. Type the IP address of the Oracle Integrated Lights Out Manager (ILOM) service processor into a browser.
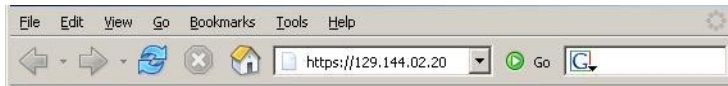
The Security Alert dialog box appears.

2 Click Yes.

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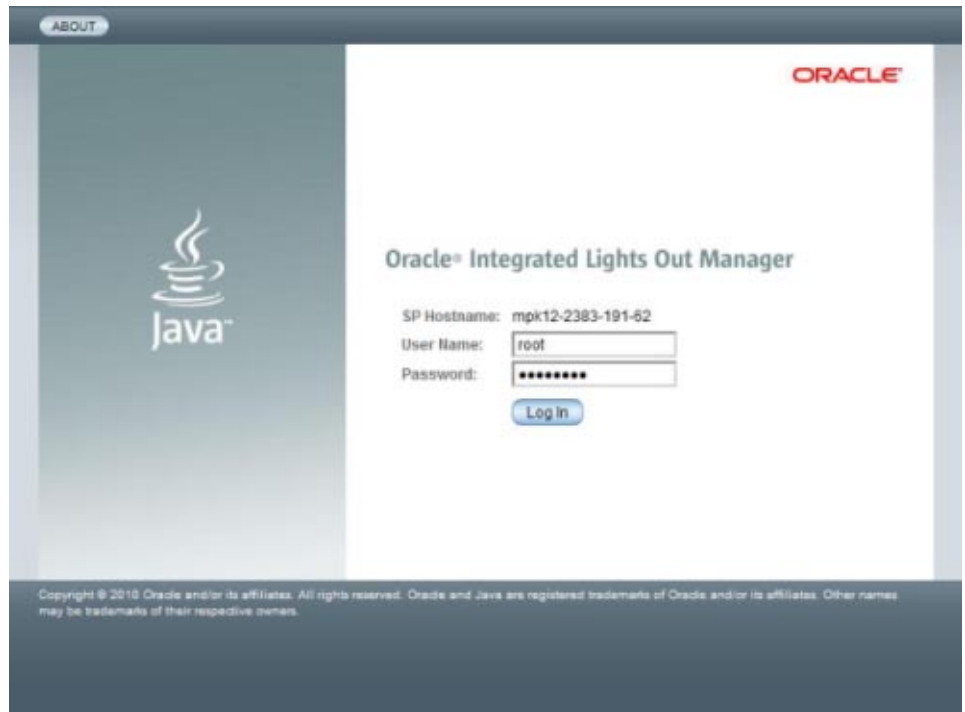
3 Enter the user name and password, and click Log In.

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

The Oracle ILOM System Overview screen appears.
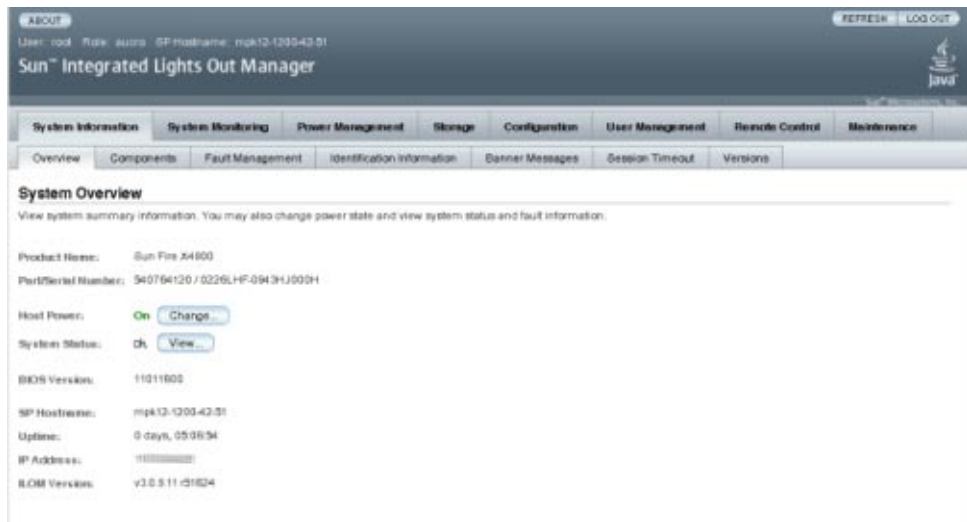
4   Click the Remote Control tab in the Oracle ILOM web interface.

The Launch Redirection screen appears.

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

5   Set the mouse mode to Absolute.

a.   Click the KVMS tab.

b.   Select Absolute from the Mouse Mode drop-down menu.

c.   Click the Redirection tab.

The Launch Redirection screen appears.

6   Click Launch Remote Console.
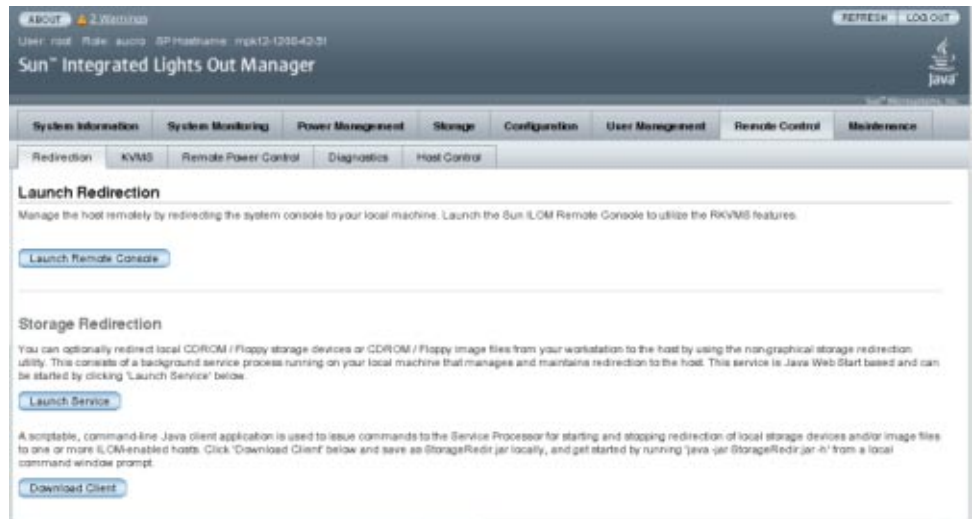
Note – If the dialog box regarding verifying the web site's certificate appears, click the Yes button if you choose to continue.
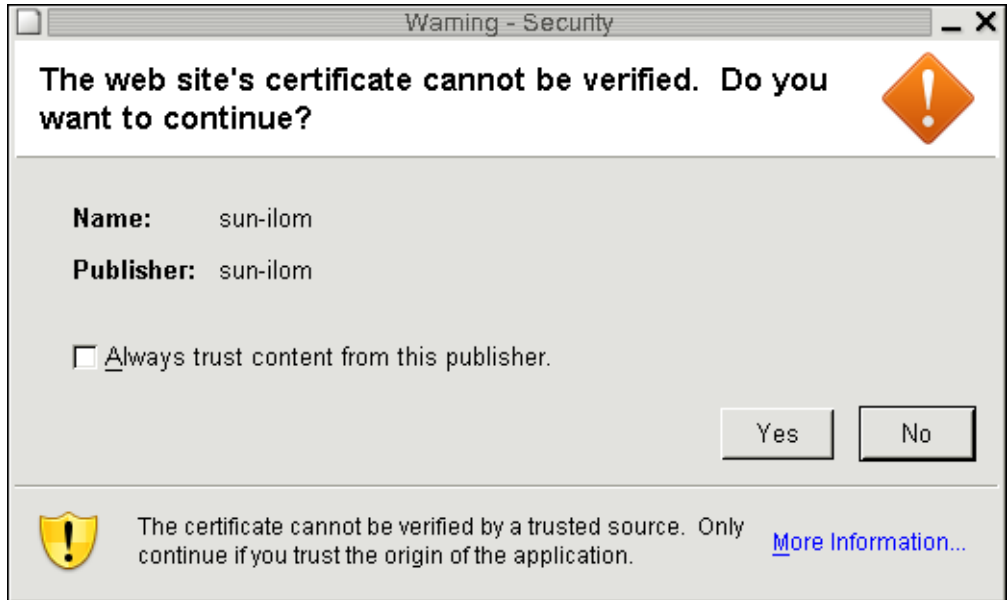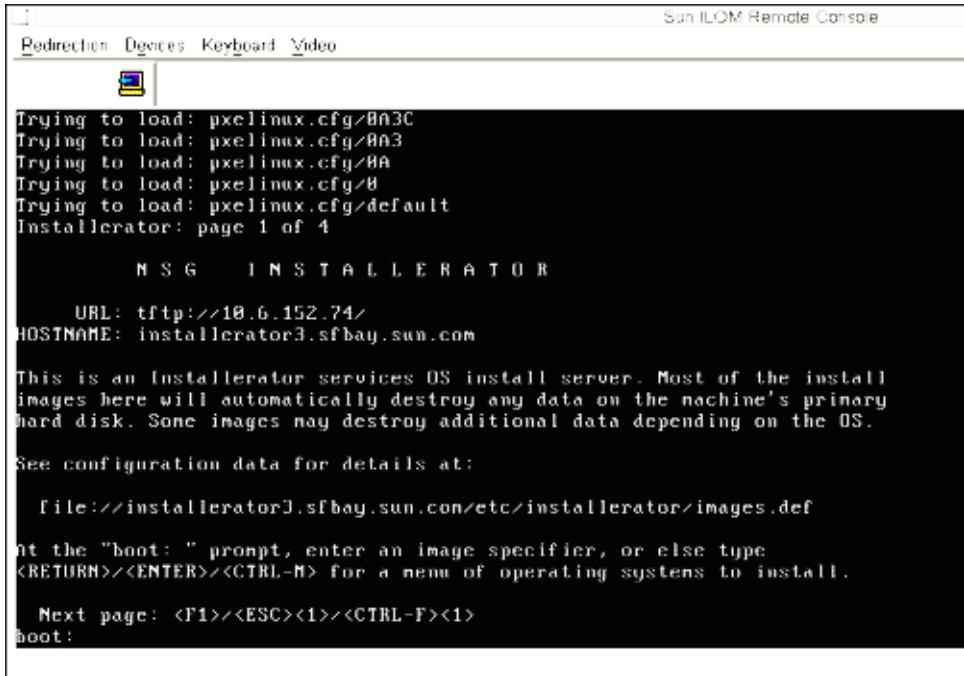
Note – When you are running redirection on a client running Windows, an additional warning might appear. If the Hostname Mismatch dialog box appears, click the Run button.
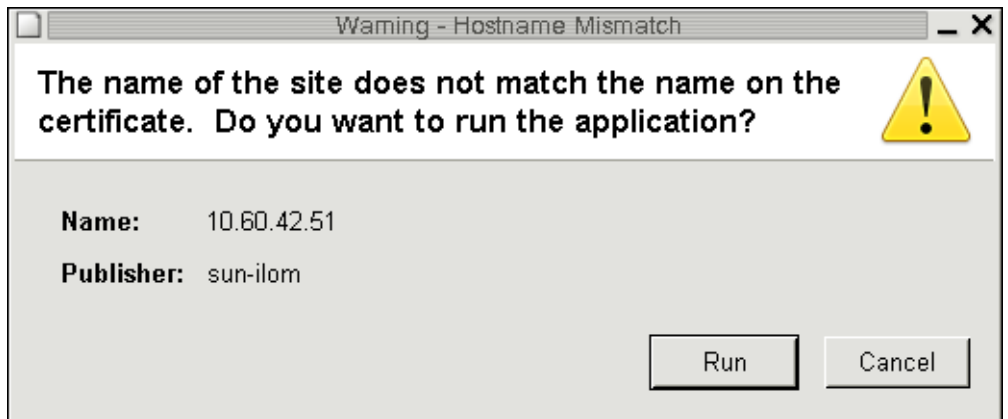
7 If a login dialog appears, enter your user name and password, and click OK.

The default user name is **root** and password is **changeme**.
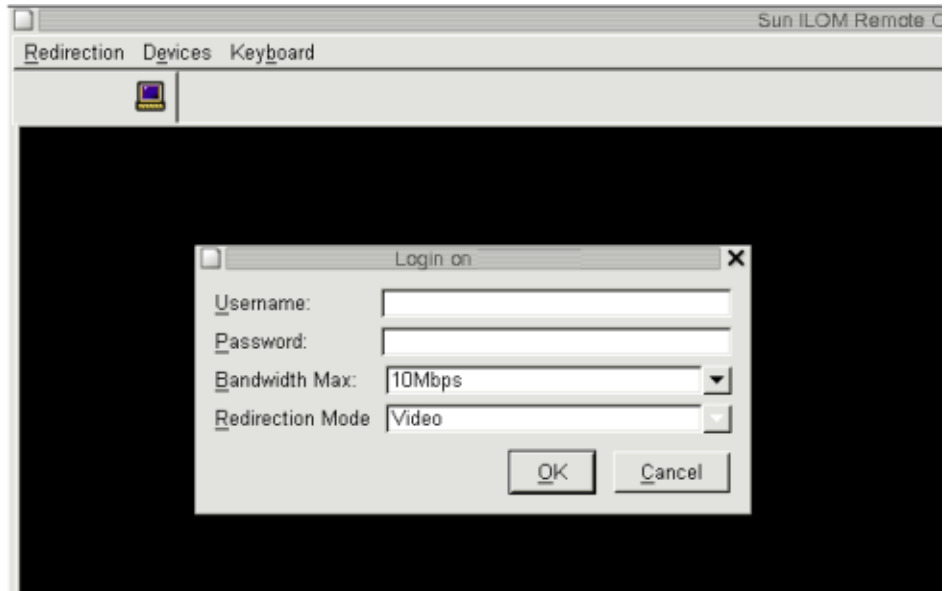
After the login is successful, the Oracle ILOM Remote Console screen appears:

The Oracle ILOM Remote Console session is now established and ready for you to proceed.

Next Steps

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 be reached only during boot-up of the server. Before Windows is launched and when the LSI banner is shown, you can press 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

This procedure creates a virtual disk where you will install the OS. It uses Manual Configuration to create a virtual drive using only one hard drive.

This is only one of many possible RAID configurations. To install a different RAID configuration, refer to the *SGX-SAS6-R-REM-Z: Software User's Guide*, available at:
http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-rem-z.aspx

Before You Begin If you are using a Windows Remote installation, configure it as described in "Configuring a Remote Console" on page 21 before starting.

1. **Log into the Oracle ILOM using the IP address of the service processor (SP) module.**

2. **If you are using a Windows Remote installation, switch the mouse mode to Relative:, select KVMS –> Mouse Mode –> Relative –> then select Save.**

   a. **Click the KVMS tab.**

b. Select Relative from the Mouse Mode drop-down menu.

c. Click the Redirection tab.

The Launch Redirection screen appears.

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

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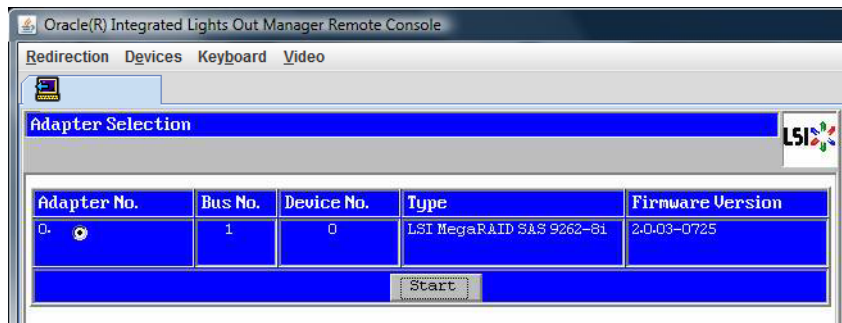
The MegaRaid BIOS Config Utility Virtual Configuration screen appears.

5   In the MegaRaid BIOS Config Utility Virtual Configuration screen, select Configuration Wizard.
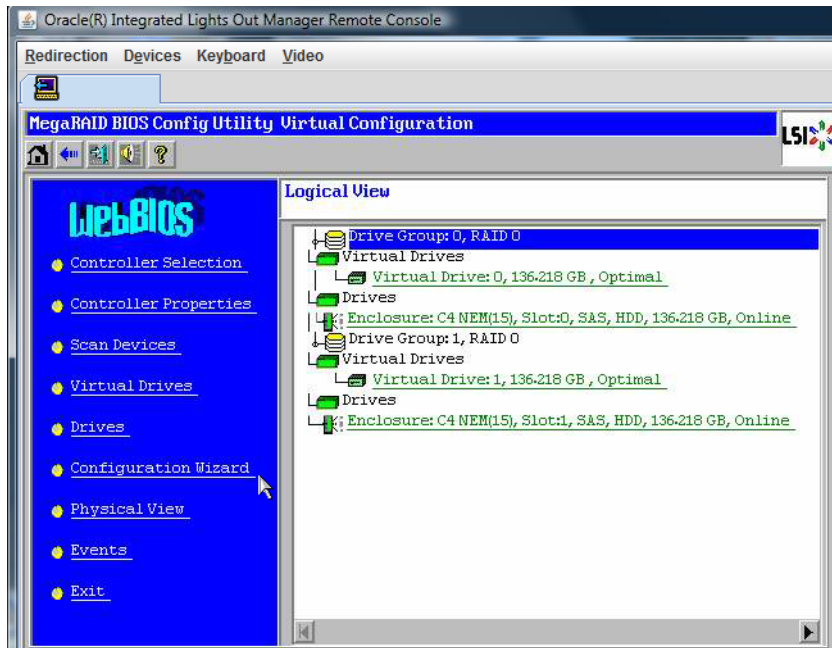
The MegaRaid BIOS Config Utility Virtual Configuration Wizard screen appears.

6 **Click Configuration Wizard to start the virtual disk configuration wizard.**

7 **Select New Configuration, and click Next.**

The Select Configuration window appears.
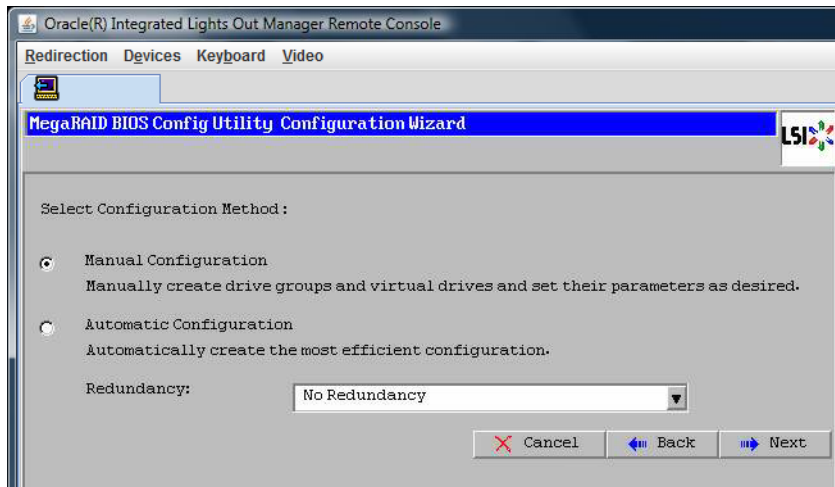
8   Select Manual Configuration and click Next.

Automatic Configuration creates a single virtual drive that combines all the hard drives on your system into a single virtual drive with all data striped across all the drives.

The rest of this procedure uses *Manual Configuration* to create a virtual drive using only one hard drive. This is only one of many RAID options. To configure different RAID options, refer to *SGX-SAS6-R-REM-Z: Software User's Guide* available at `http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-rem-z.aspx`.

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9   If a confirmation window appears, click Yes.
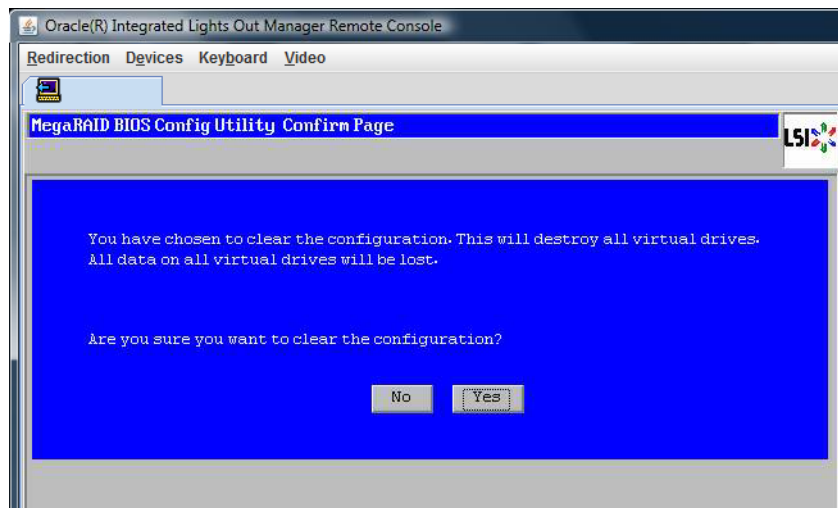
The MegaRAID BIOS Config Utility Config Wizard – Drive Group Definition screen appears, showing the drives in the system and the drive groups.

10   Select a disk drive to add to an array, and click Add To Array button.
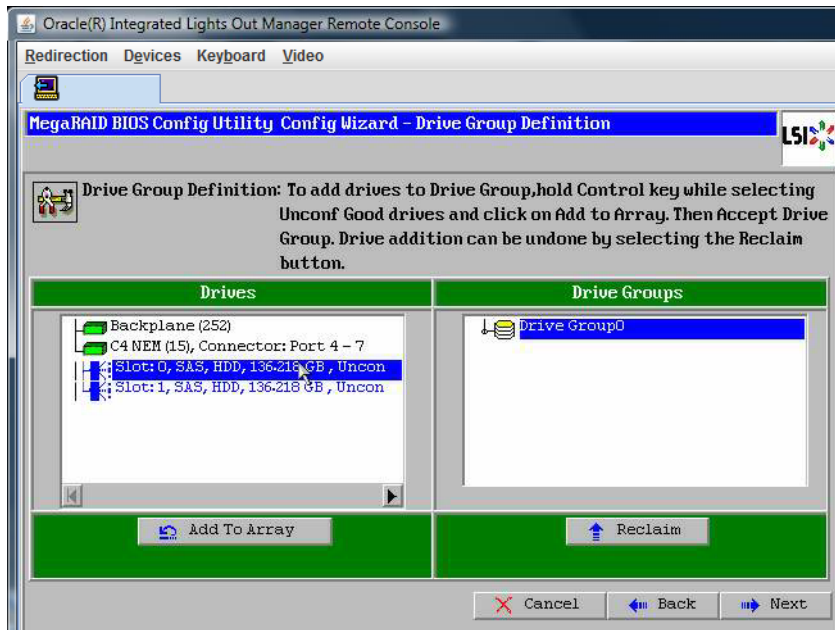
11   Click Accept DG to create the drive group.

You can now view Drive Group 0.
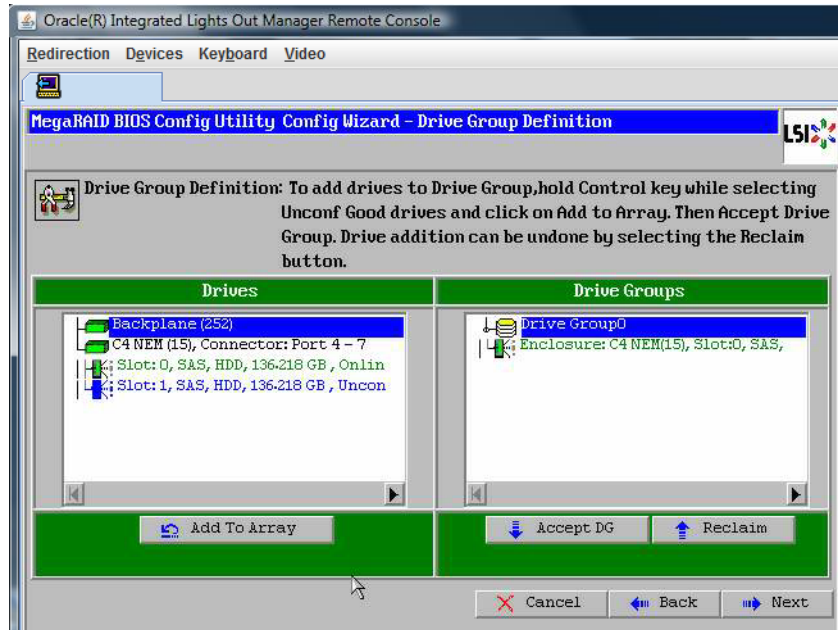
12   Click Next.

Note – You can undo the drive group selection by clicking the Reclaim button.
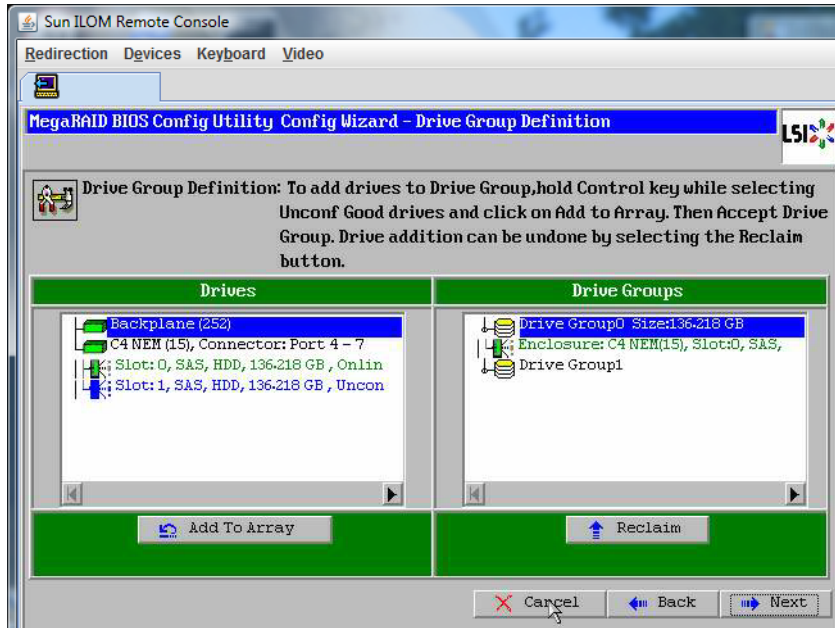
The drive group appears in the Span Definition window.

13   Click Add to SPAN.
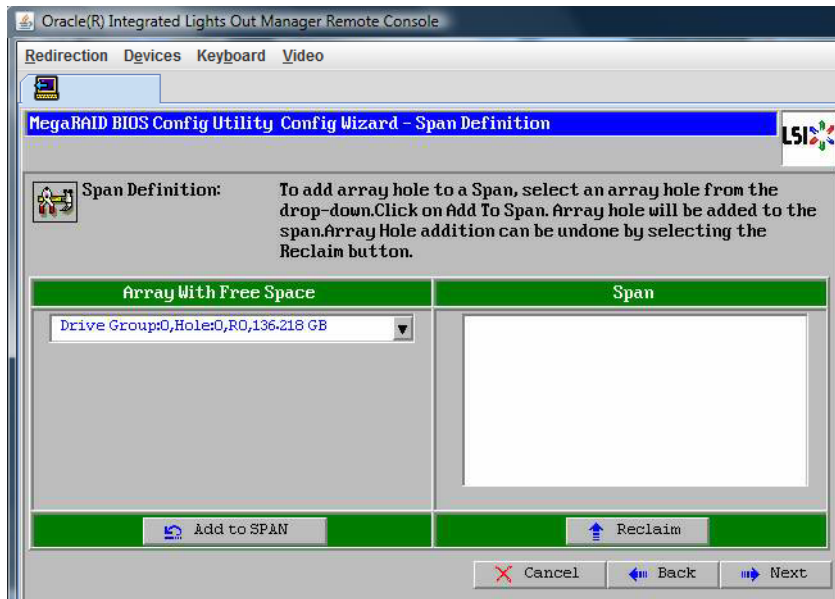
The drive group appears in the span.

14   Click Next.
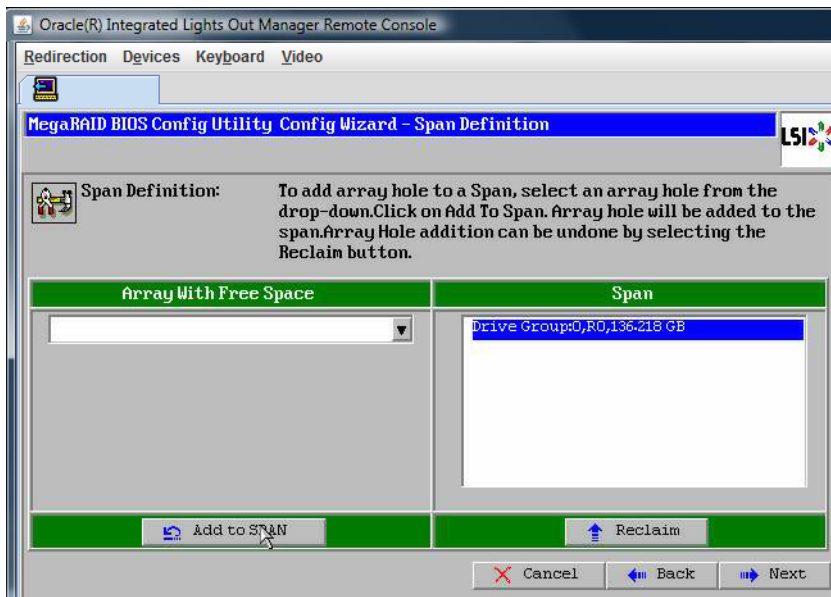
The Virtual Drive Definition screen appears.

15 **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.
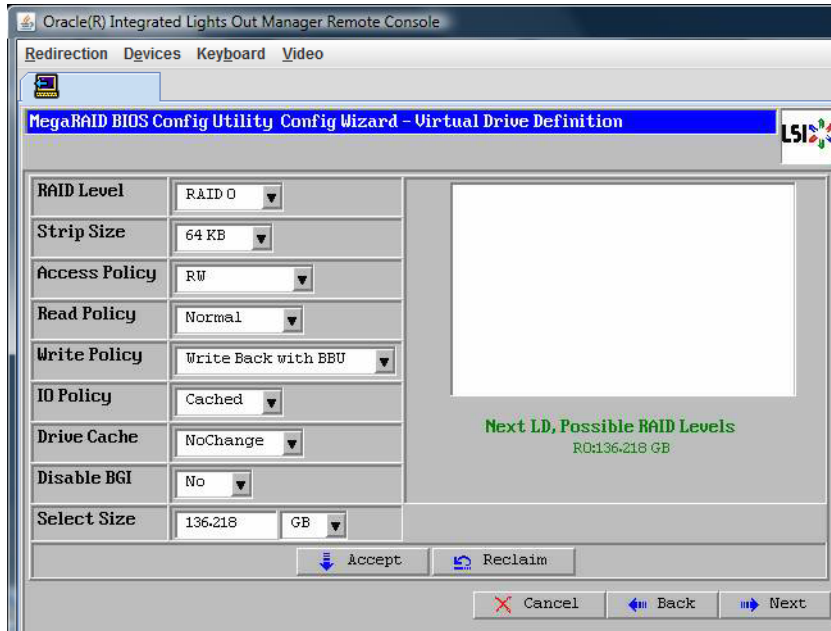
The system prompts you to confirm Write Back with BBU mode.

16 **Click Yes.**
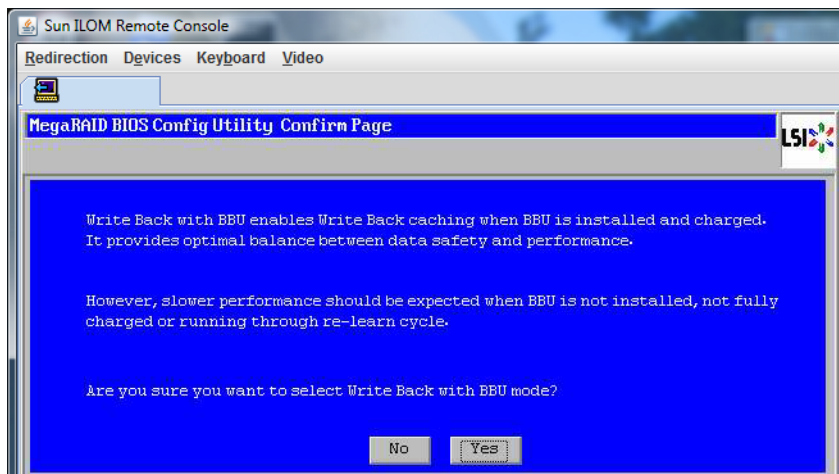
The Config Wizard —> Virtual Drive Definition window appears.

17   Click Next.
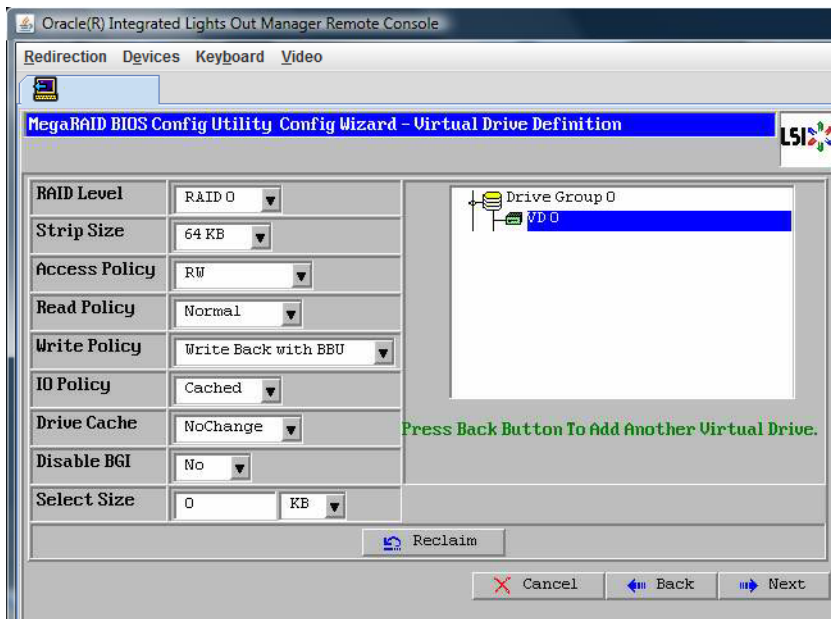
The Preview screen appears.

18   Verify that the virtual drive includes Drive Group 0.

The example graphic shows a single virtual drive using the Manual Configuration option, then click Accept.
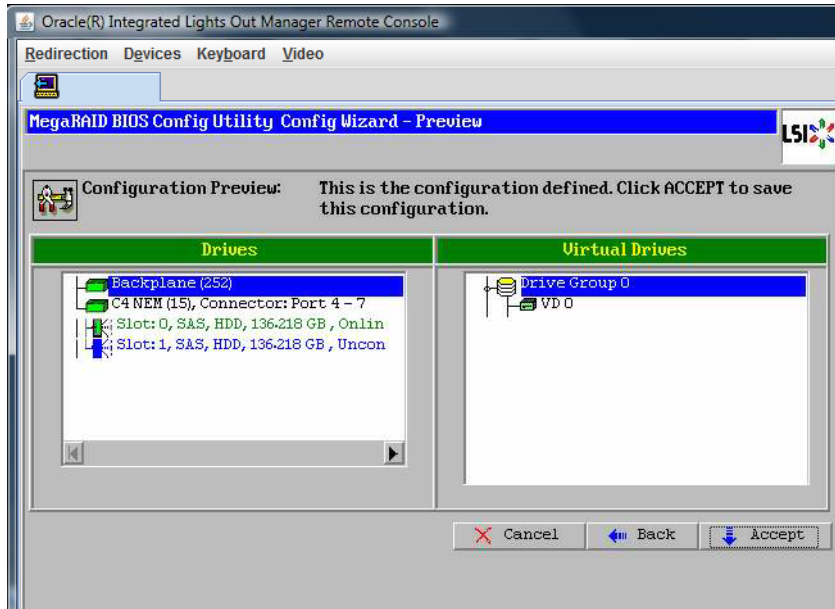
19   Click Yes to save the Configuration.
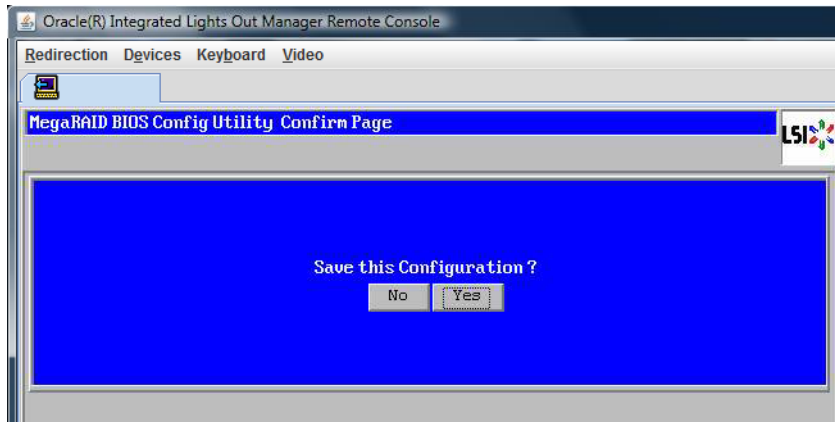
The prompt appears: All data on Virtual Drives will be lost. Want to Initialize?
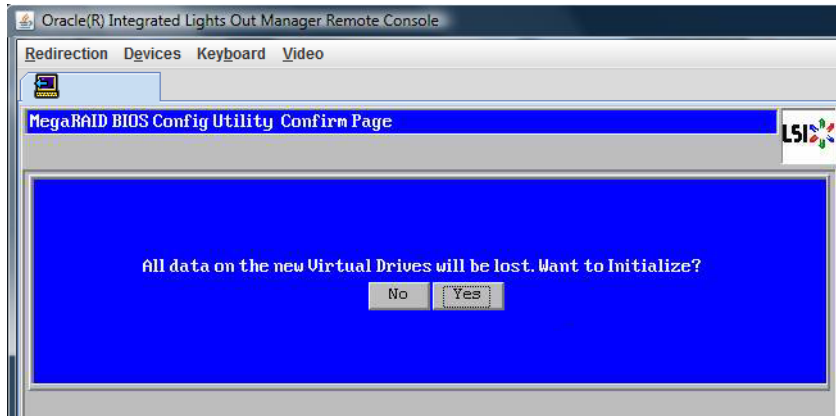
20   Click Yes to initialize.

The Virtual Drives list appears.

21   Click Home.

The MegaRaid BIOS Config Utility Virtual Configuration screen appears.
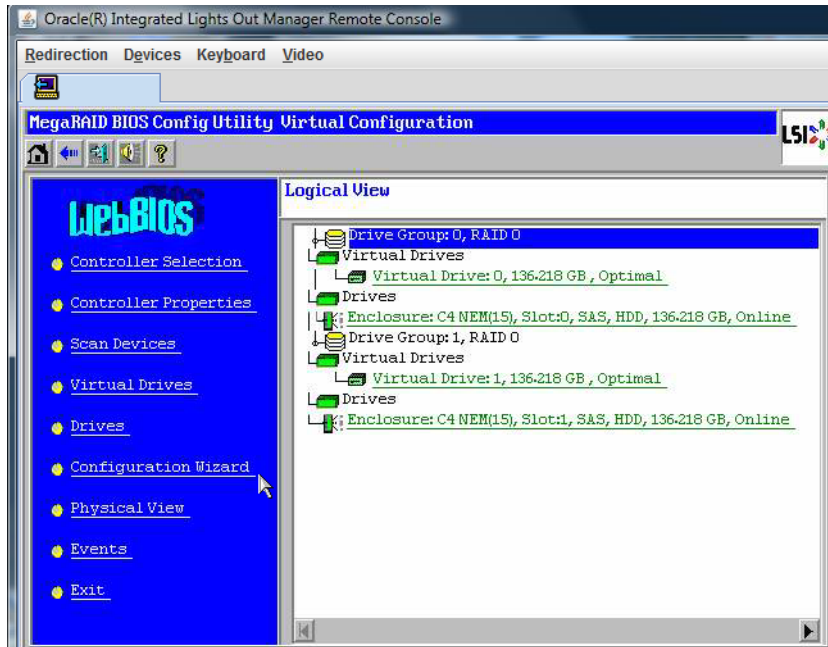
22   Click Exit.

The system reboots.

Installing Windows Server

This section describes how to install the Windows Server 2008 R2 and Windows Server 2012 operating systems on your server using distribution media. The distribution media is described in "Selecting a Windows OS Media Delivery Method" on page 15.

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:

- "How to Install Windows Server 2008 R2" on page 43
- "How to Install Windows Server 2012" on page 50
- "How to Install Windows Server 2008 Using PXE" on page 56
- "How to Install Windows Server 2012 Using PXE" on page 57

▼ How to Install Windows Server 2008 R2

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 RAID 1 (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.

Method	Action or Items Required
Windows remote with CD/DVD	Insert the Microsoft Windows Server 2008 R2 installation media into the Oracle ILOM Remote Console system's CD/DVD-ROM drive. Make sure that the Redirection window is open and that you have selected CD-ROM from the Oracle ILOM Remote Console Device menu.
Windows remote with ISO file	Ensure that the Windows Server 2008 R2 installation ISO image is accessible from the client system. Make sure that the Redirection window is open and that you have selected CD-ROM Image from the Oracle ILOM Remote Console Device menu.

1 If you are using the Windows Remote install method, select the corresponding CD item in the Redirection window:

- **CD-ROM ... Redirects the server to the the CD/DVD-ROM drive attached to the client system.**

- **CD-ROM Image... Redirects the server to the ISO image file located on the client system.**

    If you select CD-ROM image, you are prompted to browse for the image file.
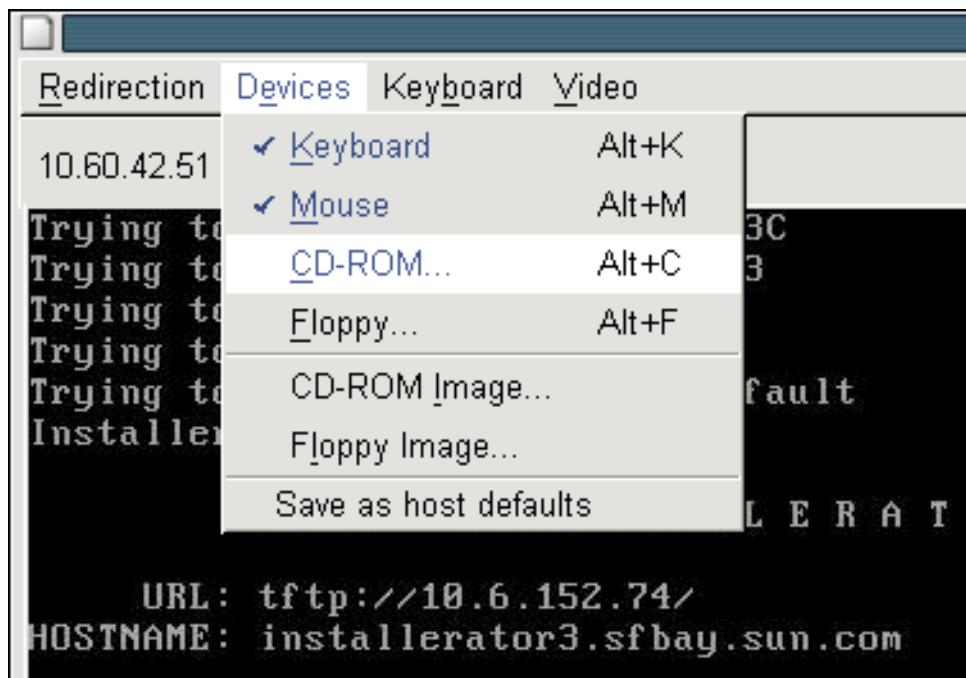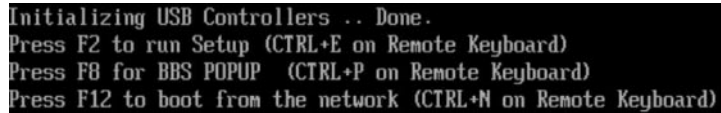
2 Power cycle the server.

If you are using the Windows Remote method, you can power cycle the server using Oracle ILOM.

The BIOS POST process begins.

3   Start the BIOS Setup Utility.

Look for the Initializing USB ... Done message on the screen.

Note – BIOS POST messages can go by quickly, and you might miss them. If you miss the prompt, power cycle the server again, and hold down the F2 key during boot until the BIOS setup utility appears.

After the Press F2 to run setup prompt appears, press F2. The BIOS Setup Utility opens.

4   Disable x2APIC in the BIOS Setup Utility.

a. **Click: Advanced —> CPU Configuration —> x2APIC.**

b. **Change the value from Enabled to `Disabled`.**

c. **Press Escape to return to the main BIOS screen.**

d. Select Exit Options —> Save Changes and Exit.

5 After the Press F8 for BBS POPUP prompt appears on the BIOS POST screen, press F8.

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 you do, power cycle the server and hold down the F8 key during boot until the BBS Popup menu (shown in Step 1) appears.

6   Wait for the Boot Device menu to appear after the BIOS POST process completes.

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
```

7   Do one of the following from the Boot Device menu:

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

- **If you are using the Windows Remote method, select the virtual CD/DVD and press Enter.**

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

The Windows installation wizard starts.

8   Proceed through the installation wizard until you see the Installation Type page, and then click Custom (advanced).
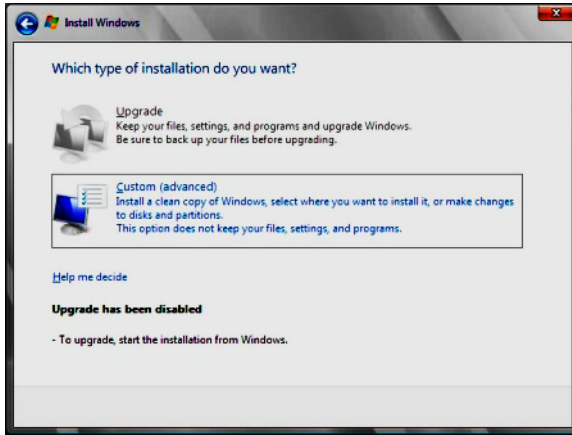
The Where to Install Windows screen appears.

9   At the Where to Install Windows screen, do one of the following:

- To select the Windows default partition settings: Click Next. Proceed to Step 10.

- To override the Windows default partition settings: Click Driver Options (advanced) and proceed to the Advanced Driver Options screen in step 9.
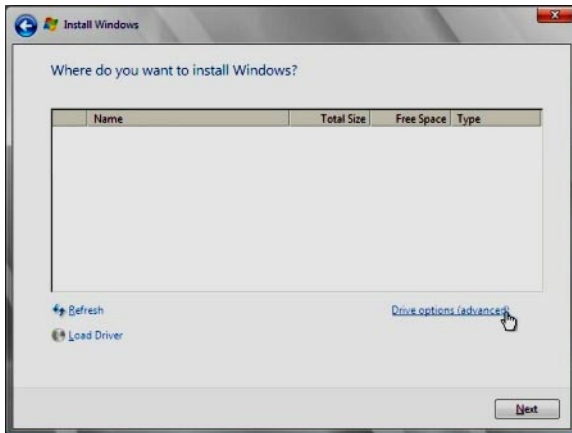
Caution – Formatting or re-partitioning a pre-existing partition destroys all data on the partition.

The Advanced Driver Options screen appears.

10   At the Advanced Driver Options screen, do the following to create a partition:

a.   Click Delete to delete the existing partition.

b.   Click New to create a new partition.

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

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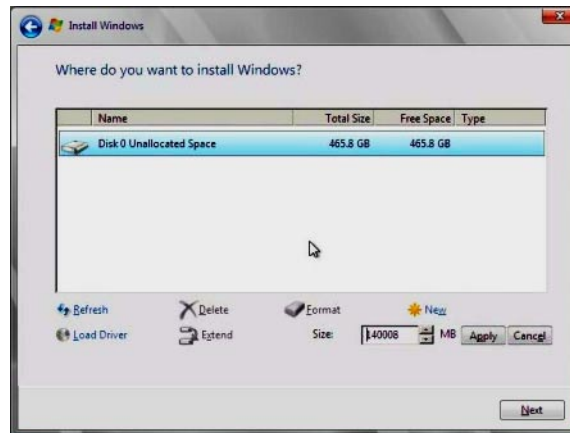
11   The Windows installation begins. Wait while the server reboots multiple times during the installation process.

12   After the Windows installation completes, 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. If you need more details, click the Accessibility link on the account creation screen.

After 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.

▼ How to Install Windows Server 2012

This section describes how to install the Windows Server 2012 OS. The OS can be installed using either a local or remote method.

> ⚠ **Caution** – Data loss. The OS installation formats the boot disk, which erases any existing data on the disk, including any preinstalled OS.

All Sun Server X2-8 platform drivers for Windows Server 2012 are in-box. There are currently no Windows Server 2012 drivers available for the following PCIe add-in cards:

- Sun StorageTek Dual 8 Gb FCDual 1 GbE HBA in ExpressModule form factor, RoHS-6 compliant, Emulex X-Option (Metis-E)

- Sun StorageTek Dual 8 Gb FCDual 1 GbE HBA in ExpressModule form factor, RoHS-6 compliant, Qlogic X-Option (Metis-Q)

- Sun Storage Dual 10 GbE PCIe FCoE Converged Network Adapter, Qlogic and SR optics (Europa-Q)-SR

- Sun Storage Dual 10 GbE FCoE ExpressModule Converged Network Adapter, Qlogic, 2 port and Twinax (Europa-Q)-LR

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 RAID 1 (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 2012 installation media available to insert into the attached physical CD/DVD-ROM drive when prompted.
Windows remote with CD/DVD	Insert the Microsoft Windows Server 2012 installation media into the client system's CD/DVD-ROM drive. Make sure that the Redirection window is open and that you have selected CD-ROM from the Oracle ILOM Remote Console Device menu.

Method	Action or Items Required
Windows remote with ISO file	Ensure that the Windows Server 2012 installation ISO image is accessible from the client system. Make sure that the Redirection window is open and that you have selected ISO file image from the Oracle ILOM Remote Console Device menu.

1   Power cycle the server.

If you are using the Windows Remote or Windows Image method, you can do this through Oracle ILOM.

The BIOS POST process begins.

2   Watch the screen for the BIOS menu to appear.

Note – BIOS POST messages, including the BIOS menu options list, can go by quickly. If you miss the messages, power cycle the server and hold down the F8 key during boot until the BBS Popup menu appears.

3   When the BIOS menu options list appears, press F8 to access the BBS Popup menu.

Once the BIOS POST process is complete, the BBS Popup menu appears. The BBS Popup menu allows you to select a boot device.

The following example shows a BBS popup menu with a virtual CDROM selected:

```
┌─────────────────────────────────────────┐
│       Please select boot device:         │
├─────────────────────────────────────────┤
│ USB:VIRTUAL1:AMI Virtual CDROM 1.00       │
│ SAS:REM:Bus 00-31CC8B01 SEAGATE   ST9300  │
│ PXE:IBA GE Slot 2000 v1404                │
│ PXE:IBA GE Slot 2001 v1404                │
│ Enter Setup                               │
├─────────────────────────────────────────┤
│      ↑ and ↓ to move selection            │
│     ENTER to select boot device           │
│      ESC to boot using defaults           │
└─────────────────────────────────────────┘
```

4 **If you have selected the Windows Local installation method, insert the Windows media DVD into the connected DVD drive.**

5 **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.**

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

The Windows installation wizard starts.

6 **Proceed through the installation wizard until you see the Installation Type, then click Custom (advanced).**
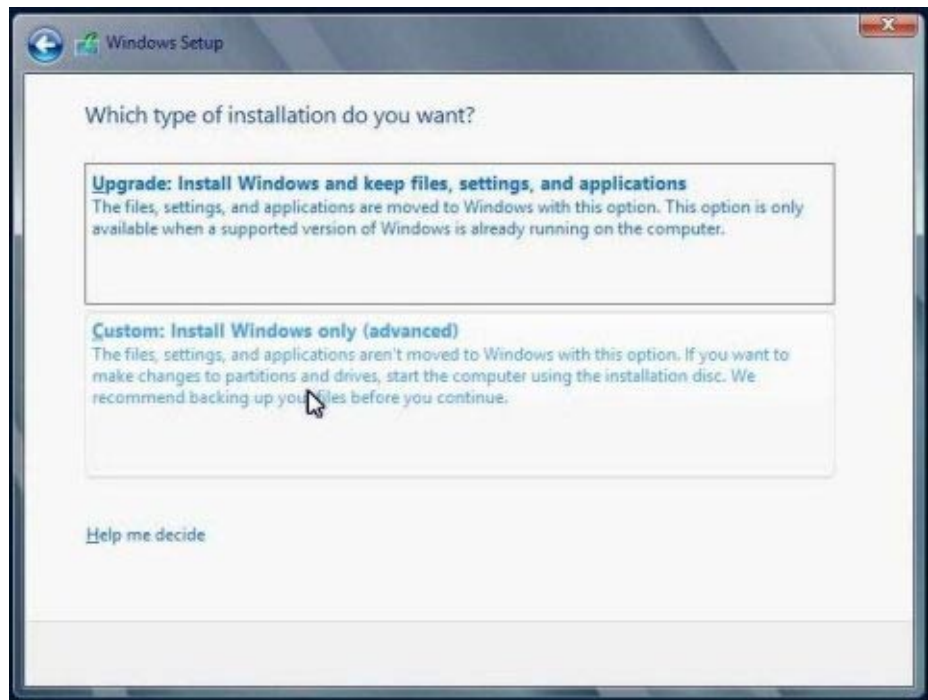
7 **At the Where do you want to Install Windows screen:**

- To select the Windows default partition settings, click Next. Go to Step 9.
- To override the Windows default partition settings, click Drive Options (advanced) and proceed to the next step.

Caution – Formatting or repartitioning a preexisting partition destroys all data on the partition.

8 **At the Advanced Drive Options screen:**

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.
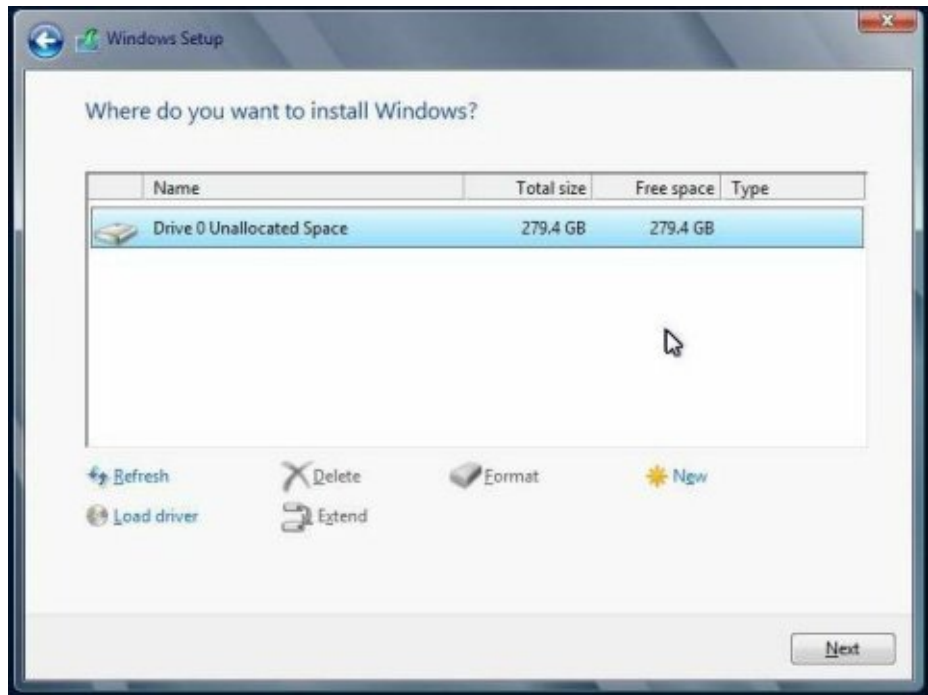
The Windows installation begins. During the installation process, the server reboots several times.
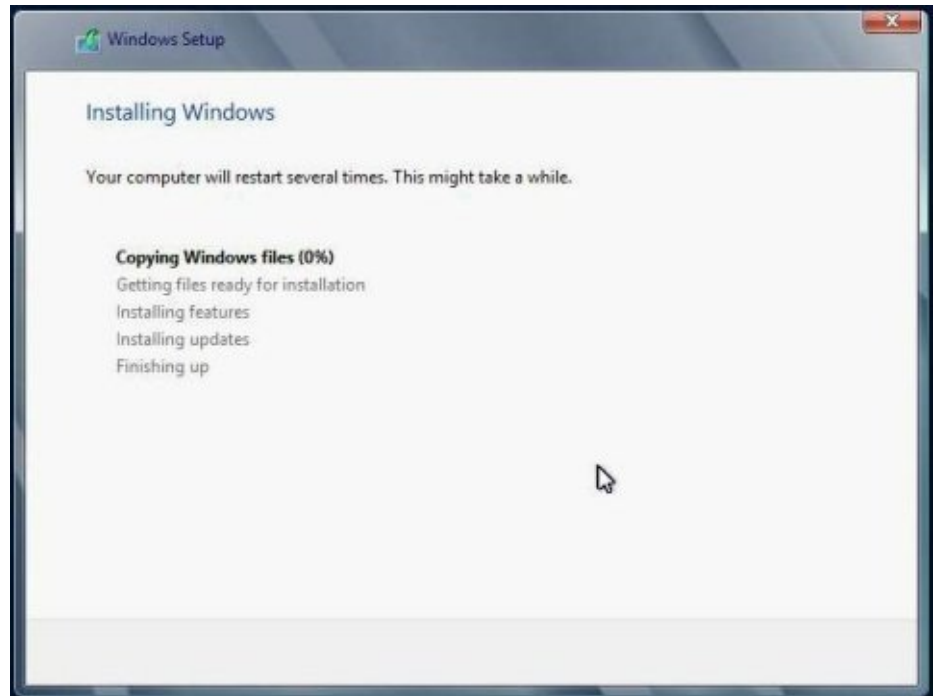
When the installation process is complete, Windows starts and prompts you to set the Administrator password.

9   Assign the administrator password.
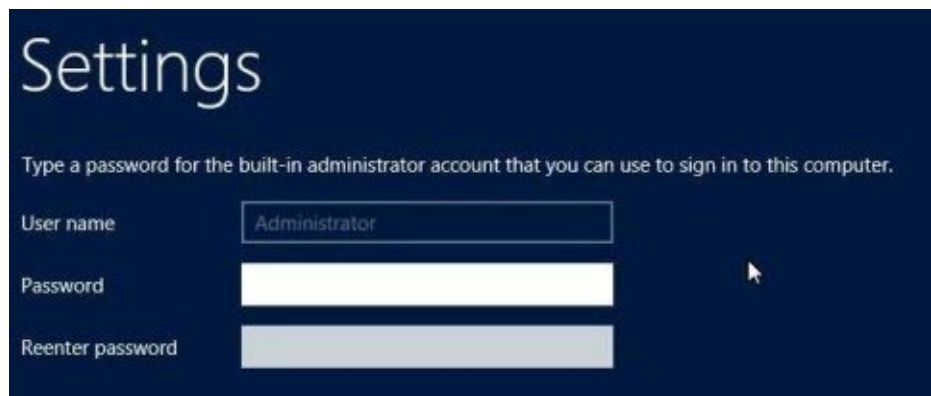
> **Note –** The password must have 8 characters, with one number and one uppercase character. For more details, click the Accessibility link on the account creation screen.

Once you have assigned a password to the Administrator account, the Windows Server 2012 desktop appears.

See Also "Updating Critical Drivers and Installing Supplemental Software" on page 59.

▼ How to Install Windows Server 2008 Using PXE

The following procedure applies to Windows Server 2008 R2.

1 Reset or power on the server. Choose one of the following methods:

- From Oracle ILOM web interface: Click the Remote Power Control tab and then click Reset.
- From Oracle ILOM CLI: Type **reset /SYS**. The BIOS screen appears.
- From the local server: Press the Power button on the front panel of the server for approximately one second to power off the server, and then press the Power button again to power on the server.

> **Note –** 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. The next events occur very quickly; therefore, focused attention is needed for the following steps.

2 Press F8 to specify a temporary boot device.

The Please Select Boot Device screen appears.

3 Select a temporary 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 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:**

"Updating Critical Drivers and Installing Supplemental Software" on page 59

See Also "Downloading the ISO Image for the Tools and Drivers DVD" on page 74

▼ How to Install Windows Server 2012 Using PXE

The following procedure applies to Windows Server 2008 R2 SP1 and Windows Server 2012.

Note – The power-on messages and prompts occur quickly and might appear on the screen for a brief time. You might want to enlarge the size of the screen to eliminate scroll bars.

All Sun Server X2-8 platform drivers for Windows Server 2012 are in-box. There are currently no Windows Server 2012 drivers available for the following PCIe add-in cards:

- Sun StorageTek Dual 8 Gb FCDual 1 GbE HBA in ExpressModule form factor, RoHS-6 compliant, Emulex X-Option (Metis-E)

- Sun StorageTek Dual 8 Gb FCDual 1 GbE HBA in ExpressModule form factor, RoHS-6 compliant, Qlogic X-Option (Metis-Q)

- Sun Storage Dual 10 GbE PCIe FCoE Converged Network Adapter, Qlogic and SR optics (Europa-Q)-SR

- Sun Storage Dual 10 GbE FCoE ExpressModule Converged Network Adapter, Qlogic, 2 port and Twinax (Europa-Q)-LR

Before You Begin To deploy Windows 2012 using PXE, you need to first install Windows Deployment Service (WDS) on a Windows 2008 or a Windows 2012 server.

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

- From the Oracle ILOM web interface, on the Remote Power Control tab, select Reset.

- From the local server, press the Power button on the front panel of the server for approximately 1 second to initiate a graceful shutdown and power off the server. Once powered off, press the Power button again to power on the server.

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 used to communicate with the network installation server.
>
> The Boot Agent screen appears.

4   Continue the normal Windows Server WDS network installation.

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

5   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 74

Updating Critical Drivers and Installing Supplemental Software

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

- "Prerequisites" on page 59
- "Installing Critical Device Drivers" on page 59
- "Installing Supplemental Software" on page 61
- "Managing RAID Using the MegaRAID Storage Manager" on page 63
- "IPMItool" on page 63
- "Configuring Support for the Trusted Platform Module" on page 64
- "Configuring Intel NIC Teaming" on page 64

Prerequisites

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 60.

▼ How to Install Server-Specific Device Drivers

1 Insert the Tools and Drivers DVD into a local or remote USB DVD drive.

2 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

  The Install Pack dialog box appears.

3 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.

4 Read the message in the Install Pack notice dialog box, and then click Next.

The Welcome to the Sun Fire Installation Wizard appears.

5 Click Next.

The End User License Agreement page appears.

6 Select I Accept This Agreement, and then click Next.

The Driver Installation Pack screen appears. The platform-specific drivers are installed. A green check mark verifies that each driver was installed successfully.

7 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.

---

8 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 the task described in "Installing Supplemental Software" on page 61.

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

See Also "Installing Supplemental Software" on page 61

Installing Supplemental Software

There are several supplemental software components available for your 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 supplemental software components are available for your server.

- LSI MegaRAID Storage Manager. Enables you to configure, monitor, and maintain RAID on the SAS internal RAID Host Bus Adapter.

- 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).

- 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.

Caution – 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.

▼ How to Install the Supplemental Software

1   Choose to install or not to install supplemental software.

Choose one of the following, depending on the option previously selected:

- Do Not Install Supplemental Software – If you selected not to install the supplemental software when you ran the procedure described in"How to Install Server-Specific Device Drivers" on page 60, refer to that procedure and run it again, and this time accept the default settings in Step 3 (the default is to install the supplemental software), and select No in Step 8.

  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 3 of "How to Install Server-Specific Device Drivers" on page 60, and selected No (to not reboot your computer) in Step 8, 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 click Custom to choose the options to install. See descriptions of the supplemental software in Table 2.
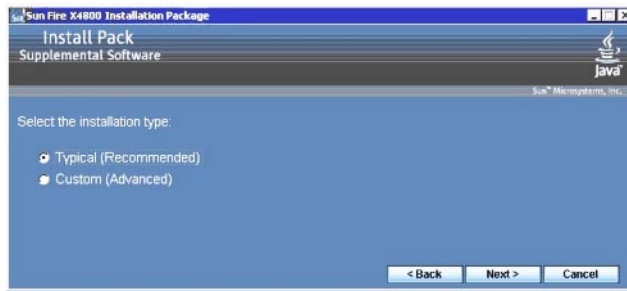
The Component Installation wizard guides you through the installation of each of the selected supplemental software components.

3   After the supplemental software has been installed, click Finish.

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

5   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 63

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* for your server on the product documentation web site at:

http://docs.sun.com/app/docs/coll//sf-hba-lsi

See also:

"IPMItool" on page 63

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 "Installing Critical Device Drivers" on page 59).

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

- Through the server's Oracle 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
- *Oracle Server CLI Tools and IPMItool User's Guide*

See also:

"Configuring Support for the Trusted Platform Module" on page 64

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 R2, 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" on page 64

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 a 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 Windows Server 2008 Device Drivers Into WIM Images for WDS" on page 65

Incorporating Windows Server 2008 Device Drivers Into WIM Images for WDS

This section is for advanced system administrators who need to incorporate a Windows Server 2008 R2 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 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

TABLE 1   Device Driver Directory Location on Tools and Drivers DVD

Recommended Drivers	Directory Location on Tools and Driver DVD
Intel Network Drivers	windows\W2K8R2\drivers\NIC\intel
Aspeed Driver	windows\W2K8R2\drivers\display\aspeed

TABLE 1 Device Driver Directory Location on Tools and Drivers DVD   *(Continued)*

Recommended Drivers	Directory Location on Tools and Driver DVD
LSI MegaRAID Driver:	
Sun Storage 6 Gb/s SAS PCIe RAID HBA, SG-SAS6-R-INT-Z	`windows\w2k8r2\drivers\64bit\hba\lsi\megaraid`
Sun Storage 6 Gb/s SAS PCIe RAID HBA, SG-SAS6-R-EXT-Z	`windows\w2k8r2\drivers\64bit\hba\lsi\megaraid`
LSI MPT2 Driver:	
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-INT-Z	`windows\w2k8r2\drivers\64bit\hba\lsi\mpt2`
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-EXT-Z	`windows\w2k8r2\drivers\64bit\hba\lsi\mpt2`
Intel ICH10 Controller	`windows\W2K8R2\drivers\64bit\HBA\intel`

See also:

Device Drivers to Incorporate Into WIM Images

The following table identifies the device drivers to incorporate in the Windows Server 2008 R2 WIM image.

Note – The install WIM image identified in the table is required for Windows Server 2008 R2 installations.

TABLE 2 Device Driver to Incorporate into WIM Images

Device Drivers to Incorporate	Windows Server 2008 R2 - Add to `install.wim`
Intel network drivers	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
Sun Storage 6 Gb/s SAS PCIe RAID HBA, SG-SAS6-R-EXT-Z	X
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-INT	X

TABLE 2 Device Driver to Incorporate into WIM Images	*(Continued)*
Device Drivers to Incorporate	**Windows Server 2008 R2 - Add to `install.wim`**
Sun Storage 6 Gb/s SAS PCIe HBA, SG-SAS6-EXT-Z	X
Intel ICH10 Controller	X

See also:

"Prerequisites and Task Overview for the Device Driver WIM Images" on page 67

Prerequisites and Task Overview for the Device Driver WIM Images

Prior to creating the device driver WIM images for Windows Server 2008 R2, 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 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 65.

4. Establish a network-shared device driver repository.

   For example:

   - Create a device driver repository containing the Windows Server 2008 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\W2k8R2\catalogs\vendor\version

where:

`unattend`	Unattend device driver store.
`drivers`	Name for device driver directory.
`{W2K8 or W2K8R2}`	Name for Windows Server 2008 R2 device drivers directory.
`catalogs`	Name for Windows Server 2008 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 R2 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 65.

  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 74.

  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 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 R2.

   For details, see "How to Create an `ImageUnattend.xml` Setup Script" on page 69.

6. 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 71.

7. Add the required device drivers described in "Device Drivers to Incorporate Into WIM Images" on page 66 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:

1. "How to Create an ImageUnattend.xml Setup Script" on page 69
2. "Map ImageUnattend.xml Setup Script to Windows Server 2008 Install Image" on page 71

Before You Begin

Prior to performing the procedures in this section, you should ensure that all the prerequisites as described in "Prerequisites and Task Overview for the Device Driver WIM Images" on page 67 have been met.

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

To create an `ImageUnattend.xml` setup script for a Windows Server 2008 R2 installation, follow these steps. After the setup script is generated, the script is saved to the device driver repository.

Note – In this procedure, the `ImageUnattend.xml` setup script is mapped to a Windows Server 2008 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\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`), and 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 R2 edition you are installing.

    For example, for Windows Server 2008 R2 Datacenter, select:

    `C:\Unattend\Drivers\`*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 "Incorporating Drivers Into the WIM Image" on page 69 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 Tools —> 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 File —> 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**

To map the ImageUnattend.xml Setup Script to the Windows Server 2008 R2 install.wim for your Oracle server, perform the following the steps.

For details, see .

1   **Insert the Windows Server 2008 R2 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 R2 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 R2, and click Next.

   c. Click Browse to select the Windows Server 2008 R2 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, and 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 R2 install WIM.

   For example, the Windows Server 2008 R2 Datacenter (x64) edition WIM image would be located at:

   ```
   cd Drive:\RemoteInstall\images\Windows Server 2008 r2
   ```

   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 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.

   d. Use the `mkdir` command to create an `Unattend` directory.

   For example:

```
cd install

mkdir Unattend
```

   e. **Use the `cd` command to change the directory to the `Unattend` directory.**

   f. **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\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 R2 image group.**

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

6   Map the `ImageUnattend.xml` setup script to the Windows Server 2008 R2 image.

   a. **Click the General Tab of the Windows Server 2008 image properties, click 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 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

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.

▼ How to Download the ISO Image

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

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

http://www.oracle.com/technology/software/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 Remote Console) to mount the ISO image.

See Also

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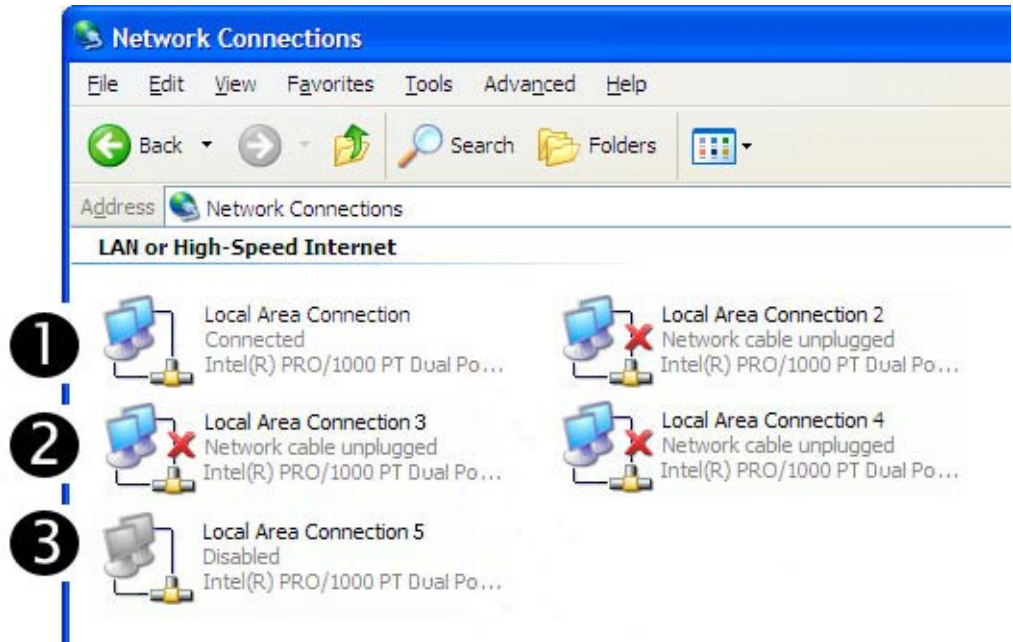
Callout	Description
1	An active port connection.
2	A red X marks the port connections that are currently inactive.
3	The port has been manually disabled (right-click to re-enable).

See Also "How to Confirm Physical Port MAC Addresses and Map Them to Windows Device Names" on page 76

▼ 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   Click —> 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

Index