



Sun Fire™ X4170, X4270, and X4275 Servers Linux, VMware, Solaris, and OpenSolaris Operating Systems Installation Guide

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Preface

The *Sun Fire X4170, X4270, and X4275 Servers Linux, VMware, Solaris, and OpenSolaris Operating Systems Installation Guide* contains operating system installation and initial software configuration procedures for bringing the server to a configurable and usable state.

This document is written for technicians, system administrators, authorized service providers (ASPs), and users who have experience with installing operating systems.

Product Updates

For product updates that you can download for the Sun Fire X4170, X4270, and X4275 Servers Servers, visit the following web site:

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

Find the Hardware Drivers section and click x64 Servers & Workstations. The Sun Fire X4170, X4270, and X4275 Servers sites contain updates for firmware and drivers, as well as CD-ROM .iso images.

Related Documentation

The related documents listed in the following table are available online at:

<http://docs.sun.com/app/docs/prod/sf.x4170#hic>

<http://docs.sun.com/app/docs/prod/sf.x4270#hic>

<http://docs.sun.com/app/docs/prod/sf.x4275#hic>

| Title | Content | Part Number | Format |
|--|--|--|-----------------------------|
| <i>Sun Fire X4170, X4270, and X4275 Servers Product Notes</i> | Late-breaking information about the server | 820-5831 | PDF HTML |
| <i>Sun Fire X4170, X4270, and X4275 Servers Getting Started Guide</i> | Basic installation information for setting up the server | 820-5833 | PDF Print |
| <i>Sun Fire X4170, X4270, and X4275 Servers Installation Guide</i> | Detailed installation information for setting up the server | 820-5827 | PDF HTML Print option |
| <i>Sun Fire X4170, X4270, and X4275 Servers Linux, VMware, Solaris, and OpenSolaris Operating Systems Installation Guide</i> | Installation instructions for the Linux, VMware, and Solaris operating systems | 820-5828 | PDF HTML |
| <i>Sun Fire X4170, X4270, and X4275 Servers Windows Operating System Installation Guide</i> | Installation instructions for the Windows Server operating system | 820-5829 | PDF HTML |
| <i>Sun Installation Assistant for Windows and Linux User's Guide</i> | Instructions for using the Sun Installation Assistant to install the Windows and Linux operating systems | 820-3357 | PDF HTML |
| <i>Sun Fire X4170, X4270, and X4275 Servers Service Manual</i> | Information and procedures for maintaining and upgrading the server | 820-5830 | PDF HTML |
| <i>Sun x64 Servers Diagnostics Guide</i> | Information for diagnosing and troubleshooting the server | 820-6750 | PDF HTML |
| <i>x64 Servers Utilities Reference Manual</i> | Information for using applications and utilities common to x64 servers | 820-1120 | PDF HTML |
| Sun Integrated Lights Out Manager 3.0 Documentation Collection | These documents cover ILOM features and tasks that are common to servers and server modules that support ILOM 3.0. | 820-5523 820-6410 820-6411 820-6412 820-6413 | PDF HTML |
| <i>Sun Integrated Lights Out Manager 2.0 User's Guide</i> | ILOM features and tasks that are common to servers and server modules that support ILOM | 820-1188 | PDF HTML |

| Title | Content | Part Number | Format |
|---|---|--------------------|---------------|
| <i>Sun Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X4170, X4270, and X4275 Servers</i> | ILOM 2.0 information that is specific to the Sun Fire X4170, X4270, and X4275 Servers | 820-7959 | PDF HTML |
| <i>Sun Integrated Lights Out Manager (ILOM) 2.0 Supplement for Sun Fire X4170, X4270, and X4275 Servers</i> | ILOM 2.0 information that is specific to the Sun Fire X4170, X4270, and X4275 Servers | 820-7629 | PDF HTML |
| <i>Sun Fire X4170, X4270, and X4275 Servers Safety and Compliance Guide</i> | Hardware safety and compliance information for the server | 820-5832 | PDF |
| <i>Important Safety Information for Sun Hardware Systems</i> | Multilingual hardware safety and compliance information for all Sun hardware system | 816-7190 | Print |

Translated versions of some of these documents are available at the web site described above in French, Simplified Chinese, and Japanese. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

Documentation, Support, and Training

| Sun Function | URL |
|---------------------|---|
| Sun Documentation | http://docs.sun.com |
| Support | http://www.sun.com/support/ |
| Training | http://www.sun.com/training/ |

Using UNIX Commands

This document might not contain information about basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. Refer to the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is at:

<http://docs.sun.com>

- OpenSolaris™ Operating System documentation, which is at:

<http://opensolaris.org/os/documentation/>

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Typographic Conventions

| Typeface* | Meaning | Examples |
|------------------|--|---|
| AaBbCc123 | The names of commands, files, and directories; on-screen computer output | Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail. |
| AaBbCc123 | What you type, when contrasted with on-screen computer output | % su Password: |
| <i>AaBbCc123</i> | Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values. | Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, enter <code>rm filename</code> . |

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

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Sun Fire X4170, X4270, and X4275 Servers Linux, VMware, Solaris, and OpenSolaris Operating Systems Installation Guide, part number 820-5828-13.

Planning the Operating System Installation

This chapter identifies the information you need to properly plan the installation of an operating system to Sun Fire X4170, X4270, and X4275 Servers.

This chapter contains the following topics:

- [“Supported Operating Systems” on page 2](#)
- [“Installation Prerequisites” on page 4](#)
- [“Installation Methods” on page 6](#)
- [“Verify BIOS Settings for New Installations” on page 11](#)

Supported Operating Systems

The Sun Fire X4170, X4270, and X4275 Servers support the installation and use of the following operating systems, or a subsequent release of the operating systems.

TABLE 1-1 Supported Operating Systems

| Operating System | Supported Version | For More Information, See: |
|------------------|---|---|
| Windows | <ul style="list-style-type: none">• Microsoft Windows Server 2003 Enterprise Edition (R2 with SP2, or SP2) (32-bit and 64-bit)• Microsoft Windows Server 2003 Standard Edition (R2 with SP2, or SP2) (32-bit and 64-bit)• Microsoft Windows Server 2008, Standard Edition (32-bit or 64-bit)• Microsoft Windows Server 2008, Enterprise Edition (32-bit or 64-bit)• Microsoft Windows Server 2008, Datacenter Edition (32-bit or 64-bit)• Microsoft Windows Server 2008 R2, Standard Edition• Microsoft Windows Server 2008 R2, Enterprise Edition• Microsoft Windows Server 2008 R2, Datacenter Edition | <ul style="list-style-type: none">• <i>Sun Fire X4170, X4275, and X4275 Servers Windows Operating System Installation Guide</i> |
| Linux | <ul style="list-style-type: none">• SUSE Linux Enterprise Server (SLES) 10 SP2 (64-bit)• SLES 11 (64-bit)• Red Hat Enterprise Linux (RHEL) 4.8 (32-bit and 64-bit)• RHEL 5.3 (64-bit)• Oracle Enterprise Linux 4.8 and 5.3 (64-bit) | <ul style="list-style-type: none">• Chapter 2 “Installing SUSE Linux Enterprise Server” on page 17• Chapter 3 “Installing Red Hat Enterprise Linux” on page 31• Chapter 4 “Installing Oracle Enterprise Linux” on page 43 |
| VMware | <ul style="list-style-type: none">• VMware ESX Server 3.5 Update 4• VMware ESXi Server 3.5 Update 4• VMware ESX Server 4.0• VMware ESXi Server 4.0 | <ul style="list-style-type: none">• Chapter 5 “Installing VMware” on page 55 |

TABLE 1-1 Supported Operating Systems (*Continued*)

| Operating System | Supported Version | For More Information, See: |
|------------------|---|---|
| Solaris | <ul style="list-style-type: none">• Solaris 10 10/09 | <ul style="list-style-type: none">• Chapter 6 “Installing Solaris 10” on page 69 |
| OpenSolaris | <ul style="list-style-type: none">• OpenSolaris 2009.06 | <ul style="list-style-type: none">• Chapter 7 “Installing OpenSolaris” on page 89 |

Preinstalled Solaris 10 or OpenSolaris Image

You can order either a Solaris 10 Operating System (OS) image or an OpenSolaris OS image preinstalled on the server. If you order a preinstalled image, it is shipped on the hard disk drive. If you need to install another operating system on this drive, you can choose to partition the drive in one of the following ways:

- Partition the local drive to remove the Solaris 10 or OpenSolaris OS image

or

- Partition the local drive to support a dual-boot operating system configuration

The Linux operating system installation procedures described later in this guide explain the appropriate point in the installation program where you can either partition the drive to remove the preinstalled image or to support a dual-boot operating system configuration.

Note – To configure the Solaris 10 or OpenSolaris preinstalled OS image, see the Solaris 10 or OpenSolaris Preinstalled OS chapter in the *Sun Fire X4170, X4275, and X4275 Servers Installation Guide*.

Installation Prerequisites

The following requirements must be met prior to installing an operating system.

TABLE 1-2 OS Installation Prerequisites

| Requirement | Mandatory or Optional | For More Information, See: |
|---|--|--|
| The server is mounted and powered-on in a rack. | Mandatory | <ul style="list-style-type: none">• <i>Sun Fire X4170, X4275, and X4275 Servers Installation Guide</i> |
| The SP network management port on the server is configured with an IP address. | Mandatory | <ul style="list-style-type: none">• <i>Sun Fire X4170, X4275, and X4275 Servers Installation Guide</i>or• <i>Sun Integrated Lights Out Manager 2.0 User's Guide</i>or• Sun Intergrated Lights Out Manager 3.0 Documentation Collection. |
| Select a console option and a media option for performing the installation, as well as an installation target. | Mandatory | <ul style="list-style-type: none">• “Installation Methods” on page 6 |
| Ensure that factory-default settings in the BIOS utility are set. | Recommended* <small>*For local disk drive OS install targets.</small> | <ul style="list-style-type: none">• “Verify BIOS Settings for New Installations” on page 11 |
| Set up a RAID set on SAS or SATA disk drives configured with a host bus adapter (HBA), see the documentation supplied with the HBA. | Mandatory* | <ul style="list-style-type: none">• <i>Sun Fire X4170, X4275, and X4275 Servers Installation Guide</i> for instructions for installing disk drives in the server• <i>Sun Fire X4170, X4275, and X4275 Servers Service Manual</i> for instructions for removing and replacing disk drives in the server• <i>Sun Disk Management Overview For x64 Sun Fire and Sun Blade Series Servers</i> (820-6350) |

TABLE 1-2 OS Installation Prerequisites (Continued)

| Requirement | Mandatory or Optional | For More Information, See: |
|---|-----------------------|---|
| <p>Gather the applicable vendor operating system installation documentation.</p> <p>Note - The operating system vendor documentation should be used in conjunction with the operating system instructions in this guide.</p> | Recommended | <p>Applicable operating system vendor documentation:</p> <ul style="list-style-type: none"> • Solaris 10 10/09 Release and Installation Collection at: http://docs.sun.com/app/docs/pro/Solaris.10 • OpenSolaris documentation at: http://opensolaris.org/os/documentation/ • Red Hat Enterprise Linux documentation collection at: http://www.redhat.com/docs/manuals/enterprise/ • SUSE Linux Enterprise Server documentation collection at: http://www.novell.com/documentation/suse • VMware documentation collection at: http://www.vmware.com/support/pubs/vi_pubs.html |
| <p>Ensure that you have the Tools and Drivers CD that was provided with your server.</p> <p>Note - If device drivers are required for your OS installation, the device drivers are provided on the Tools and Drivers CD/DVD.</p> | Mandatory | <ul style="list-style-type: none"> • Sun Fire X4170, X4270, and X4275 Servers Tools and Drivers CD/DVD <p>or</p> <ul style="list-style-type: none"> • Download versions of the Tools and Drivers CD/DVD for the Sun Fire X4170, X4270, and X4275 Servers is available at: http://www.sun.com/servers/x64/x4170/downloads.jsp http://www.sun.com/servers/x64/x4270/downloads.jsp http://www.sun.com/servers/x64/x4275/downloads.jsp |
| <p>Review the <i>Sun Fire X4170, X4275, and X4275 Servers Product Notes</i> for late-breaking news about supported operating system software and patches.</p> | Recommended | <ul style="list-style-type: none"> • <i>Sun Fire X4170, X4275, and X4275 Servers Product Notes</i> |

Installation Methods

To determine which installation method is best for your infrastructure, consider evaluating the options and requirements summarized in the following sections:

- “Console Outputs” on page 6
- “Installation Boot Media” on page 8
- “Installation Targets” on page 10

Console Outputs

TABLE 1-3 lists the consoles that you can use to capture the output and input of the operating system installation.

TABLE 1-3 Console Options for Performing an OS Installation

| Console | Description | Setup Requirement |
|---------------|--|---|
| Local console | <p>You can install the OS and administer the server by attaching a local console directly to the server SP.</p> <p>Examples of local consoles include:</p> <ul style="list-style-type: none">• Serial console• VGA console, with USB keyboard and mouse | <ol style="list-style-type: none">1. Attach a local console to the server. For details, see “Connecting to the ILOM Service Processor for the First Time” in the <i>Sun Fire X4170, X4275, and X4275 Servers Installation Guide</i>.2. At the ILOM prompt, type your ILOM user name and password.3. For serial console connections only, establish a connection to the host serial port by typing start /SP/console. The video output is automatically routed to the local console. <p>For further details about establishing a connection to the server SP, see:</p> <ul style="list-style-type: none">• <i>Sun Integrated Lights Out Manager 2.0 User’s Guide</i> <p>or</p> <ul style="list-style-type: none">• Sun Integrated Lights Out Manager 3.0 Documentation Collection |

TABLE 1-3 Console Options for Performing an OS Installation (*Continued*)

| Console | Description | Setup Requirement |
|----------------|---|--|
| Remote console | <p>You can install the OS and administer the server from a remote console by establishing a network connection to the server SP.</p> <p>Examples of remote consoles include:</p> <ul style="list-style-type: none">• Web-based client connection using the Sun ILOM Remote Console application• SSH client connection using a serial console | <ol style="list-style-type: none">1. Establish an IP address for the server SP. For details, see:<ul style="list-style-type: none">• <i>Sun Integrated Lights Out Manager 2.0 User's Guide</i>or<ul style="list-style-type: none">• Sun Integrated Lights Out Manager 3.0 Documentation Collection2. Establish a connection between a remote console and the server SP:<ul style="list-style-type: none">• For web-based client connection, perform these steps:<ol style="list-style-type: none">1) In a web browser, type the IP address for the server SP;2) log in to the ILOM web interface;3) redirect the video output from the server to the web client by launching the Sun ILOM Remote Console; then4) enable device redirection (mouse, keyboard, etc.) in the Device menu.• For SSH client connection, perform these steps:<ol style="list-style-type: none">1) From a serial console, establish an SSH connection to the server SP (<code>ssh root@ipaddress</code>);2) log in to the ILOM command-line interface; then3) redirect the serial output from the server to the SSH client by typing start /SP/console.• For additional information about establishing a remote connection to the ILOM SP or using the Sun ILOM Remote Console, see the <i>Sun Integrated Lights Out Manager 2.0 User's Guide</i> or the Sun Integrated Lights Out Manager 3.0 Documentation Collection. |

Installation Boot Media

You can start the operating system installation to a server by booting a local or remote installation media source. TABLE 1-4 identifies the supported media sources and the setup requirements for each source.

TABLE 1-4 Boot Media Options for Performing the OS Installation

| Install Media | Description | Setup Requirement |
|------------------|--|---|
| Local boot media | <p>Local boot media requires a built-in storage device on the server, or an external storage device attached to the server.</p> <p>Supported OS local boot media sources can include:</p> <ul style="list-style-type: none">• CD/DVD-ROM install media, and, if applicable, floppy device driver media | <p>To perform the installation using a local boot media, perform these steps:</p> <ol style="list-style-type: none">1. If your server does not contain a built-in storage device, attach the appropriate storage device to the front panel of the server using a USB connector.2. For more information about how to attach local devices to the server, see “Setting Up the Server” in the <i>Sun Fire X4170, X4275, and X4275 Servers Installation Guide</i>. <p>Note - For the Sun Fire X4275 server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the Sun ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see instructions for Remote Boot Media in this table.</p> |

TABLE 1-4 Boot Media Options for Performing the OS Installation (*Continued*)

| Install Media | Description | Setup Requirement |
|-------------------|--|--|
| Remote boot media | <p>Remote media requires you to boot the install over the network. You can start the network install from a redirected boot storage device or another networked system that exports the installation over the network using a Pre-Boot eXecution environment (PXE).</p> <p>Supported OS remote media sources can include:</p> <ul style="list-style-type: none"> • CD/DVD-ROM install media, and, if applicable, floppy device driver media • CD/DVD-ROM ISO install image and, if applicable, floppy ISO device driver media • Automated install image (requires PXE boot) | <p>To redirect the boot media from a remote storage device, perform these steps:</p> <ol style="list-style-type: none"> 1. Insert the boot media into the storage device, for example: <ul style="list-style-type: none"> • For CD/DVD-ROM, insert media into the built-in or external CD/DVD-ROM drive. • For CD/DVD-ROM ISO image, ensure that ISO image(s) are readily available on a network shared location. • For device driver floppy ISO image, ensure that ISO image, if applicable, is readily available on a network shared location or on a USB thumb drive. • For device driver floppy media, if applicable, insert floppy media into the external floppy drive. 2. Establish a web-based client connection to the server ILOM SP and launch the Sun ILOM Remote Console application. <p>For more details, see the setup requirements for web-based client connection in TABLE 1-3.</p> 3. In the Device menu of the Sun ILOM Remote Console application, specify the location of the boot media, for example: <ul style="list-style-type: none"> • For CD/DVD-ROM boot media, select CD-ROM. • For CD/DVD-ROM ISO image boot media, select CD-ROM Image. • For floppy device driver boot media, if applicable, select Floppy. • For floppy image device driver boot media, if applicable, select Floppy Image. • For more information about the Sun ILOM Remote Console, see the <i>Sun Integrated Lights Out Manager 2.0 User's Guide</i> or Sun Integrated Lights Out Manager 3.0 Documentation Collection. |

TABLE 1-4 Boot Media Options for Performing the OS Installation (*Continued*)

| Install Media | Description | Setup Requirement |
|-------------------------------------|---|--|
| Remote boot media, <i>continued</i> | <p>Note - An automated installation image enables you to perform the OS installation on multiple servers. By using an automated image, you can ensure configuration uniformity among many systems.</p> <p>Automated installations use a Pre-boot eXecution Environment (PXE) technology to enable the clients without an operating system to boot remotely to the automated install server that performs the installation of the operating system.</p> | <p>To perform the installation using PXE, perform these steps:</p> <ol style="list-style-type: none"> 1. Configure the network server to export the installation using a PXE boot. 2. Make the OS installation media available for PXE boot. <p>If you are using an automated OS installation image, you will need to create and provide the automated OS install image, for example:</p> <ul style="list-style-type: none"> • Solaris JumpStart Image • RHEL KickStart Image • SLES AutoYaST Image • Windows RIS or WDS Image <p>For detailed instructions for automating the installation setup process, consult the operating system vendor documentation.</p> <ol style="list-style-type: none"> 3. To boot the installation media, select the PXE boot interface card as the temporary boot device. For details, see the applicable PXE-based operating system installation procedure described later in this guide. |

Installation Targets

[TABLE 1-5](#) identifies the supported installation targets that you can use to install an operating system.

TABLE 1-5 Installation Targets for OS Installations

| Install Target | Description | Setup Requirement | Supported OS |
|--|--|---|---|
| Local hard disk drive (HDD) or Solid state drive (SSD) | You can choose to install the operating system to any of the HDDs or SSDs installed in the server. | <ul style="list-style-type: none"> • Ensure that the HDD or SSD is properly installed and powered-on in the server. <p>For more information about installing and powering on an HDD or SDD, refer to the installation guide or service manual provided with your server.</p> | <ul style="list-style-type: none"> • All operating systems listed in TABLE 1-1 |

TABLE 1-5 Installation Targets for OS Installations (*Continued*)

| Install Target | Description | Setup Requirement | Supported OS |
|--|--|---|---|
| Fibre Channel (FC) Storage area network (SAN) device | For servers equipped with Fibre Channel PCI Host Bus Adapter (HBA), you can choose to install the operating system to an external FC storage device. | <ul style="list-style-type: none">• Ensure FC PCI HBA is properly installed in the server and is operating. For more information about installing an HBA in a server, refer to the <i>Sun Fire X4170, X4275, and X4275 Servers Installation Guide</i>.• The SAN must be installed and configured to make the storage visible to the host. For instructions, refer to the documentation supplied with the FC HBA. | <ul style="list-style-type: none">• All operating systems listed in TABLE 1-1 |
| CompactFlash card | If your system is equipped with an optional compact flash card, you can choose to install a Linux or Solaris operating system to the compact flash card. | <ul style="list-style-type: none">• Ensure that the compact flash card option is properly installed in the server. For more information about installing this option, see the service manual supplied with your server. | <ul style="list-style-type: none">• All Linux and Solaris operating systems listed in TABLE 1-1 |

Verify BIOS Settings for New Installations

For all new operating system installations on a hard disk drive, you should verify that the following BIOS settings are properly configured before you perform the operating system installation:

- System time
- System date
- Boot order

In the BIOS Setup utility, you can set optimal defaults, as well as view and edit BIOS settings as needed. Note that all changes you make in the BIOS Setup utility (through F2) are permanent until the next time you change them.

Note – If necessary, you can specify a temporary boot device by pressing F8 during the BIOS start-up. A temporary boot device setting is only in effect for the current system boot. After the system boots from a temporary boot device, the permanent boot device setting specified through F2 (in the BIOS) will be in effect.

Before You Begin

Ensure the following requirements are met prior to accessing the BIOS Setup utility:

- Server is mounted and powered on in a rack. For details, see the *Sun Fire X4170, X4275, and X4275 Servers Installation Guide*.
- Server is equipped with a hard disk drive (HDD) or a solid state drive (SSD).
- HDD or SSD is properly installed in the server. For details, see the *Sun Fire X4170, X4275, and X4275 Servers Installation Guide*.
- Console connection is established to the server. For details, see [“Console Outputs” on page 6](#).

▼ View or Edit BIOS Settings for New Installations

1. Reset the power on the server.

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.

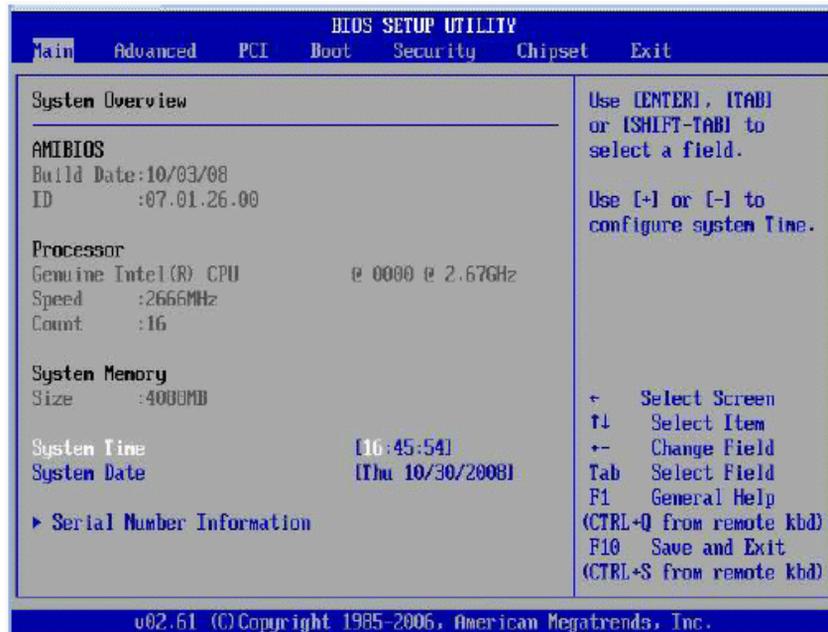
For further details for powering on or off your server, see the *Sun Fire X4170, X4275, and X4275 Servers Service Manual*.

- **From the ILOM CLI**, type: **reset /SYS**

The BIOS screen appears.



- When prompted in the BIOS screen, press F2 to access the BIOS Setup utility.
After a few moments, the BIOS Setup utility appears.



3. To ensure that the factory defaults are set, do the following:

a. Press F9 to automatically load the optimal factory default settings.

A message appears prompting you to continue this operation by selecting OK or to cancel this operation by selecting CANCEL.

b. In the message, highlight OK, then press Enter.

The BIOS Setup utility screen appears with the cursor highlighting the first value in the system time field.

4. In the BIOS Setup utility, do the following to edit the values associated with the system time or date.

a. Highlight the values you want to change.

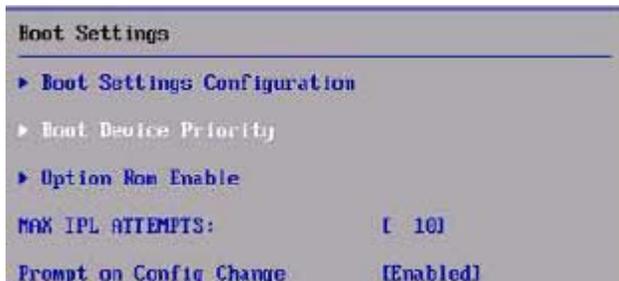
Use up or down arrow keys to change between the system time and date selection.

b. To change the values in the highlighted fields, use these keys:

- PLUS (+) to increment the current value shown
- MINUS (-) to decrement the current value shown
- ENTER to move the cursor to the next value field

5. To access the boot settings, select Boot from the BIOS Setup utility menu bar.

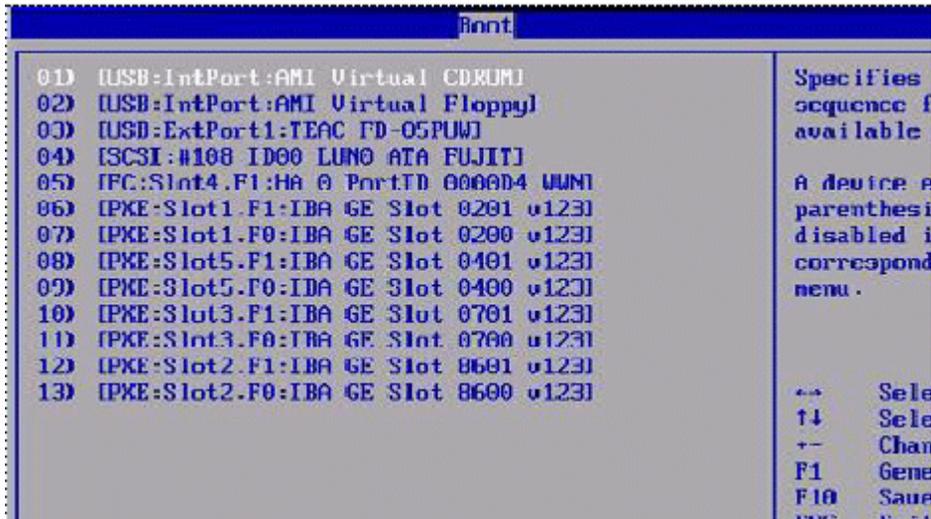
The Boot Settings menu appears.



6. In the Boot Settings menu, use the down arrow key to select Boot Device Priority, then press Enter.

The Boot Device Priority menu appears listing the order of the known bootable devices.

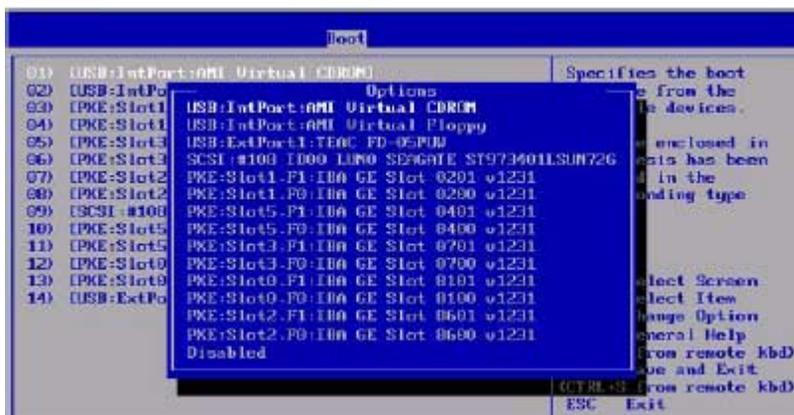
Note that the boot device order listed on your screen might differ from the device order shown in the sample screen below.



The first device in the list has the highest boot priority.

7. In the Boot Device Priority menu, do the following to edit the first boot device entry in the list:
 - a. Use the up and down arrow keys to select the first entry in the list, then press Enter.
 - b. In the Options screen, use the up and down arrow keys to select the default permanent boot device, then press Enter.

Note that the boot options listed on your screen might differ from the options shown in the sample screen below.



Note – The device strings listed on the Boot menu and Options menu are in the format of: *device type, slot indicator, and product ID string*.

Note – You can change the boot order for other devices in the list by repeating Steps 7a and 7b for each device entry you want to change.

8. To save the changes made and exit the BIOS Setup utility, press F10.

Note – When using the Sun ILOM Remote Console, F10 is trapped by the local OS. You must use the F10 option listed in the Keyboard drop-down menu that is available at the top of the Remote Console.

Alternatively, you can save the changes and exit the BIOS Setup utility by selecting Save on the Exit menu.

A message appears prompting you to save changes and exit setup.

9. In the message dialog, select OK, then press Enter.

Installing SUSE Linux Enterprise Server

This chapter provides information about installing:

- SUSE Linux Enterprise Server 10 SP2 (or subsequent release) for x86 (64-bit)
- SUSE Linux Enterprise Server 11 (or subsequent release) for x86 (64-bit)

Note – Sun highly recommends that you use the Sun Installation Assistant (SIA) to install the SUSE Linux operating system on your server. SIA provides and installs the device driver(s), if required, for you. For more information about using SIA to install an operating system, follow the instructions provided in the *Sun Installation Assistant for Windows and Linux User's Guide* (820-3357).

This chapter includes the following topics:

- [“Task Map for the SLES Installation” on page 18](#)
- [“Installing SLES10 or SLES11 Using Local or Remote Media” on page 19](#)
- [“Installing SLES10 or SLES11 Using a PXE Network Environment” on page 25](#)
- [“Post SLES Installation Tasks” on page 28](#)

Task Map for the SLES Installation

Use [TABLE 2-1](#) to preview the installation process defined as a series of tasks. The table identifies the required tasks, describes them, and provides pointers to the instructions for performing the task.

TABLE 2-1 Task Map for the SLES Installation

| Step | Task | Description | Relevant Topic(s) |
|------|--|--|---|
| 1 | Review installation prerequisites. | Verify that all applicable requirements are met for installing an operating system to your server. | <ul style="list-style-type: none">• TABLE 1-2 “OS Installation Prerequisites” on page 4” |
| 2 | Choose an installation method. | Evaluate and select an installation method that meets the needs of your infrastructure. | <ul style="list-style-type: none">• “Installation Methods” on page 6 |
| 3 | Ensure that the BIOS factory defaults are set. | Verify that the factory default settings in the BIOS are set prior to performing the operating system installation. | <ul style="list-style-type: none">• “Verify BIOS Settings for New Installations” on page 11 |
| 4 | Gather the SLES installation media. | SLES OS CD/DVD media and documentation can be purchased from Sun or Novell. For a Sun Fire X4170, X4270, and X4275 Servers, use the media for x86 platforms. | You can download or order the media for SLES at the following site: http://www.novell.com |
| 5 | Perform the SLES OS installation. | The installation instructions in this chapter explain the initial steps for booting the installation media and partitioning the drive. For further information about installing SLES, refer to the SUSE Linux Enterprise Server documentation collection from Novell at: http://www.novell.com/documentation/suse | <ul style="list-style-type: none">• “Installing SLES10 or SLES11 Using Local or Remote Media” on page 19• “Installing SLES10 or SLES11 Using a PXE Network Environment” on page 25 |

TABLE 2-1 Task Map for the SLES Installation (*Continued*)

| Step | Task | Description | Relevant Topic(s) |
|------|--|--|--|
| 6 | Register SLES and configure automatic updates (recommended). | If the SLES installation media does not contain the most up-to-date version of the SLES OS, follow the instructions in this chapter to update the SLES operating system. | <ul style="list-style-type: none">• “Updating the SLES Operating System” on page 28 |
| 7 | Install driver(s) post installation, if necessary. | If the SLES operating system does not include the necessary device drivers to support the hardware on your system, you might need to install additional device drivers. | <ul style="list-style-type: none">• “Installing System Device Drivers to Support Additional Hardware” on page 29 |
| 8 | Enable the Wake On LAN option, if desired. | This feature enables you to power on the server from another location over the network. | <ul style="list-style-type: none">• “Enable the Option for Wake On LAN” on page 30 |

Installing SLES10 or SLES11 Using Local or Remote Media

The following procedure describes how to boot the SLES 10 (SLES10) or SLES 11 (SLES11) operating system from local or remote media. It assumes that you are booting the SLES installation media from one of the following sources:

- SLES10-SP2 or SLES11 CD or DVD set (internal or external CD/DVD)
- SLES10-SP2 or SLES11 ISO DVD image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to [“Installing SLES10 or SLES11 Using a PXE Network Environment” on page 25](#) for boot instructions.

Refer to the following procedures to install the SLES OS from local or remote media:

- [“Install SLES10 Using Local or Remote Media” on page 20](#)
- [“Install SLES11 Using Local or Remote Media” on page 22](#)

Before You Begin

Prior to performing the installation, the following requirements must be met:

- All applicable installation prerequisites for installing this operating system should have been met. For further information about these prerequisites, see [TABLE 1-2 “OS Installation Prerequisites” on page 4](#).
- An installation method (for example: console, boot media, and installation target) should have been chosen and established prior to performing the installation. For more information about these setup requirements, see [“Installation Methods” on page 6](#).

Note that the following procedure explains the initial steps for booting the installation media and launching the SLES installation program. For further details about installing SLES, see the SUSE Linux Enterprise Server documentation collection from Novell at: <http://www.novell.com/documentation/suse>.

After completing this procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see [“Post SLES Installation Tasks” on page 28](#).

▼ Install SLES10 Using Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see [“Remote boot media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8](#).

- **For Distribution CD/DVD.** Insert the SLES10 boot disc (CD labeled number 1 or DVD) into the local or remote CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disc image (CD labeled number 1 or DVD) has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see [TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8](#).

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select Remote Control --> Remote Power Control, then select the Power Cycle option from the Host action drop-down list box.

- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the ILOM CLI on the server SP**, 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 the messages as they appear on the screen for a brief time.

3. **In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the SLES installation.**

The Please Select Boot Device menu appears.

4. **In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.**

The device strings listed on the Boot Device menu are in the format of: *device type*, *slot indicator*, and *product ID string*.

After a few seconds the SUSE initial boot screen appears.

5. **In the initial SUSE boot installation screen, use the tab key to select the second option Installation, then press Enter.**

This option continues the normal user interactive installation process.

The Language screen appears.

Note – The Language screen might take several minutes to appear.

6. **In the Language screen, select the appropriate language option, then click Next.**

The License Agreement screen appears.

7. **In the SUSE Linux Novell License Agreement screen, click Accept.**

The SUSE YaST installation program initializes. The YaST graphical installation screen appears.

Depending on the AutoYaST file configuration, the YaST Language Selection screen might appear.

8. **If the YaST Language Selection screen appears, specify which language to use.**

Depending on the AutoYaST file configuration, the YaST Installation Mode screen might appear.

9. If the YaST Installation Mode screen appears, select **New Installation**, then click **OK to continue**.

The system's hardware is detected. The YaST Installation Settings screen appears.

10. In the YaST Installation Settings screen, do the following:

- a. Click the **Partitioning** option.
- b. Select **Create Custom Partition**, then click **OK**.
- c. **Partition the disk as appropriate**.

Refer to the YaST Partitioning instructions for more information.

Note – If the OpenSolaris or the Solaris OS is preinstalled on the disk, you can choose to partition the disk to remove the preinstalled OS; or, you can choose to keep the preinstalled OS and partition the disk to support dual-boot operating systems.

11. Continue the basic installation setup until all the SLES OS files are installed and the system reboots.
12. After completing the basic installation setup, refer to the YaST documentation to perform the following tasks:
 - a. Create a password for your account.
 - b. Configure and test the Internet access and network settings.
 - c. Register the OS, then download available updates to the operating system.
Alternatively, see [“Updating the SLES Operating System” on page 28](#) to manually update your SLES OS.
13. Review and, if necessary, perform the post installation tasks described later in this chapter.
Refer to [“Post SLES Installation Tasks” on page 28](#).

▼ Install SLES11 Using Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see [“Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8](#).

- **For Distribution CD/DVD.** Insert the SLES11 boot disc (CD labeled number 1 or DVD) into the local or remote CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disc image (CD labeled number 1 or DVD) has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see [TABLE 1-4 “Boot Media Options for Performing the OS Installation”](#) on page 8.

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select Remote Control --> Remote Power Control, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the ILOM CLI on the server SP,** 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 the messages as they appear on the screen for a brief time.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the SLES installation.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed on the Boot Device menu are in the format of: *device type*, *slot indicator*, and *product ID string*.

After a few seconds the SUSE initial boot screen appears.

5. In the initial SUSE boot installation screen, use the tab key to select the second option Installation, then press Enter.

This option continues the normal user interactive installation process.

The Welcome screen appears.

Note – The Welcome screen might take several minutes to appear.

6. In the Welcome screen, use the tab key to navigate to the Language drop-down menu.
 - a. Select the appropriate language option, then tab the Keyboard Layout.
 - b. In the Keyboard Layout menu, select the appropriate keyboard layout.
 - c. In the License Agreement, click I Agree to the License Terms, then tab to and click Next.

The Media Check screen appears.

7. In the Media Check screen, click Start Check to verify your installation media, or alternatively, click Next to continue with the installation.

The Installation Mode screen appears.

8. In the Installation Mode screen, select New Installation, then click Next to continue.

The Clock and Time Zone screen appears.

9. In the Clock and Time Zone screen, select the appropriate Region and Time Zone, then click Next to continue.

The Server Base Scenario screen appears.

10. In the Server Base Scenario screen, select Physical Machine (this is usually the correct option), Virtual Machine, or Xen Virtualization Host, then click Next to continue.

The Installation Settings screen appears.

11. In the Installation Settings screen, do the following:

- a. Click the Partitioning option.
- b. Select Create Custom Partition, then click OK.
- c. Partition the disk as appropriate.

Refer to the YaST partitioning instructions for more information.

Note – If the OpenSolaris or the Solaris OS is preinstalled on the disk, you can choose to partition the disk to remove the preinstalled OS; or, you can choose to keep the preinstalled OS and partition the disk to support dual-boot operating systems.

12. Continue the basic installation setup until all of the SLES OS files are installed and the system reboots.
13. After completing the basic installation setup, refer to the YaST documentation to perform the following tasks:

- a. **Create a password for your account.**
- b. **Configure and test the Internet access and network settings.**
- c. **Register the OS, then download available updates to the operating system.**
Alternatively, see [“Updating the SLES Operating System”](#) on page 28 to manually update your SLES OS.

14. Review and, if necessary, perform the post installation tasks described later in this chapter.

Refer to [“Post SLES Installation Tasks”](#) on page 28.

Installing SLES10 or SLES11 Using a PXE Network Environment

This section describes how to boot SLES10 or SLES11 from a PXE network environment. It assumes that you are booting the installation media from one of the following sources:

- SLES10-SP2 or SLES11 CD or DVD set (internal or external CD/DVD)
- SLES10-SP2 or SLES11 ISO DVD image or AutoYaST image (network repository)

AutoYaST enables you to install the SLES operating system on multiple systems. For information about how to prepare an automated installation using AutoYaST, refer to the Novell SUSE documentation collection at:

<http://www.novell.com/documentation/suse>

Before You Begin

The following requirements must be met prior to performing the SLES installation from a PXE network environment:

- If you are using AutoYaST to perform the installation, you must:
 - Create the AutoYast profile.
Follow the AutoYaST installation instructions in the SUSE Linux Enterprise 10 or SUSE Linux Enterprise 11 documentation.
- To use PXE to boot the installation media over the network, you must:
 - Configure the network (NFS, FTP, HTTP) server to export the installation tree.
 - Configure the files on the TFTP server necessary for PXE booting.

- Configure the Sun Fire X4170, X4270, and X4275 Servers MAC network port address to boot from the PXE configuration.
- Configure Dynamic Host Configuration Protocol (DHCP).

Follow the setup instructions for booting SUSE media over the network in the SUSE Linux Enterprise 10 or SUSE Linux Enterprise 11 documentation.

After completing this procedure, you may need to perform the tasks for [“Post SLES Installation Tasks”](#) on page 28.

▼ Install SLES10 or SLES11 Using Network PXE Boot

1. **Ensure that the PXE network environment is properly set up and the SLES installation media is available for PXE boot.**
2. **Reset the power on the server.**

For example:

- **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the Power Cycle option from the Host action drop-down menu.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the ILOM CLI on the server SP**, type: `reset /SYS`

The BIOS screen appears.

Note – The next events occur very quickly; therefore, focused attention is needed for these steps. Watch carefully for the messages as they appear on the screen for a brief time.

3. **Press F8 to specify a temporary boot device.**
4. **In the Boot Device menu, select the PXE installation boot device (physical port) that is configured to communicate with your network installation server.**

The Please Select Boot Device menu appears listing the available boot device. The network bootloader loads and a boot prompt appears. Wait for the five second time-out and the installation kernel will begin to load.

The SUSE Linux Novell License Agreement screen appears.

5. **In the SUSE Linux Novell License Agreement screen, click Accept.**

The SUSE YaST installation program initializes. The YaST graphical installation screen appears.

Depending on the AutoYaST file configuration, the YaST Language Selection screen might appear.

6. **If the YaST Language Selection screen appears, specify which language to use.**

Depending on the AutoYaST file configuration, the YaST Installation Mode screen might appear.

7. **If the YaST Installation Mode screen appears, select New Installation, then click OK to continue.**

The system's hardware is detected. The YaST Installation Settings screen appears.

8. **In the YaST Installation Settings screen, do the following:**

- a. **Click the Partitioning option.**

- b. **Select Create Custom Partition, then click OK.**

- c. **Partition the disk as appropriate.**

Refer to the YaST Partitioning instructions for more information.

Note – If the OpenSolaris or the Solaris OS is preinstalled on the disk, you can choose to partition the disk to remove the preinstalled OS; or, you can choose to keep the preinstalled OS and partition the disk to support dual-boot operating systems.

9. **Continue the basic installation setup until all the SLES OS files are installed and the system reboots.**
10. **After completing the basic installation setup, refer to the YaST documentation to perform the following tasks:**

- a. **Create a password for your account.**

- b. **Configure and test the Internet access and network settings.**

- c. **Register the OS, then download available updates to the operating system.**

Alternatively, see [“Updating the SLES Operating System” on page 28](#) to manually update your SLES OS.

11. **Review and, if necessary, perform the post installation tasks described later in this chapter.**

Refer to [“Post SLES Installation Tasks” on page 28](#).

Post SLES Installation Tasks

After completing the SLES10 or SLES11 installation, review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- [“Updating the SLES Operating System” on page 28](#)
- [“Installing System Device Drivers to Support Additional Hardware” on page 29](#)
- [“Enable the Option for Wake On LAN” on page 30](#)

Updating the SLES Operating System

The SLES OS installation media might not contain the most up-to-date versions of the SLES OS. The following procedure describes how to update the SLES OS on your server.

▼ Update the SLES Operating System

1. **Log in as superuser.**
2. **Type the following command to run the YaST Online Update:**

```
# you
```

Note that YaST can operate in both text and graphical modes. These directions apply to both.

3. **If your server is behind a network firewall and need to use a proxy server to access the Internet, you must first configure YaST with the correct proxy information.**
 - a. **Select the Network Services tab on the left, then the Proxy screen on the right. Type the correct proxy URLs in both the HTTP and HTTPS fields.**

Note – In order for the online update service to function correctly through a network HTTP proxy, the following additional configuration step must be performed.

b. Exit the YaST utility and run the following command:

```
run set-prefs proxy-url <Proxy_URL>
```

Where *Proxy_URL* is the fully qualified URL of your proxy server (for example: `http://proxy.yourdomain:3128/`).

c. After successfully running the command, launch YaST again.

4. Register with the Novell Customer Center.

Note – You will need your Novell Customer Center user name and password, as well as an SLES OS product activation code.

a. Select the Software tab on the left.

b. Select Novell Customer Center Configuration and follow the directions.

5. Once registered, select the Online Update tab to perform the software update.

Installing System Device Drivers to Support Additional Hardware

TABLE 2-2 identifies the system device drivers that are available for you to install on your system. Review this table to determine which driver, if any, are currently required for installation on your system.

TABLE 2-2 Additional SLES Drivers

| Hardware Device | Device Driver Required | Instructions | Download Driver From This Site |
|--|--------------------------------|--|---|
| Sun Dual-Port 4X PCI-Express Infiniband Host Channel Adapter X1236A-Z (PCIe) | Mellanox: Infiniband driver | Refer to the Readme file for installation instructions. | http://www.mellanox.com/content/pages.php?pg=products_dyn&product_family=26&menu_section=34 |
| Sun PCI-E 4x Infiniband Adapter X4217A-Z (PCIe) | Mellanox: Infiniband driver | The Readme file is available on the Mellanox driver download site. | |

Enable the Option for Wake On LAN

After installing the operating system, you might want to consider enabling the Wake On LAN (WOL) option in the BIOS Setup utility. This feature enables you to power on the server from another location over the network. For details about the requirements for enabling WOL, see “Wake On LAN” in the *Sun Fire X4170, X4275, and X4275 Servers Service Manual*.

Installing Red Hat Enterprise Linux

This chapter provides information about installing:

- Red Hat Enterprise Linux v.4.8 (or subsequent release) for x86 (32-bit and 64-bit)
- Red Hat Enterprise Linux v.5.3 (or subsequent release) for x86 (64-bit)

Note – Sun highly recommends that you use the Sun Installation Assistant (SIA) to install the Red Hat Enterprise Linux operating system on your server. SIA provides and installs the device driver(s), if required, for you. For more information about using SIA to install an operating system, follow the instructions provided in the *Sun Installation Assistant for Windows and Linux User's Guide* (820-3357).

This chapter includes the following topics:

- [“Task Map for the RHEL Installation” on page 32](#)
- [“Installing RHEL4 or RHEL5 Using Local or Remote Media” on page 33](#)
- [“Installing RHEL4 or RHEL5 Using a PXE Network Environment” on page 40](#)
- [“Post RHEL Installation Tasks” on page 42](#)

Task Map for the RHEL Installation

Use [TABLE 3-1](#) to preview the installation process defined as a series of tasks. The table identifies the required tasks, describes them, and provides pointers to the instructions for performing the task.

TABLE 3-1 Task Map for the RHEL Installation

| Step | Task | Description | Relevant Topic(s) |
|------|---|--|---|
| 1 | Review installation prerequisites. | Verify that all applicable requirements are met for installing an operating system to your server. | <ul style="list-style-type: none">• “Installation Prerequisites” on page 4 |
| 2 | Choose an installation method. | Evaluate and select an installation method that meets the needs of your infrastructure. | <ul style="list-style-type: none">• “Installation Methods” on page 6 |
| 3 | Ensure that the BIOS factory defaults are set. | Verify that the factory default settings in the BIOS are set prior to performing the operating system installation. | <ul style="list-style-type: none">• “Verify BIOS Settings for New Installations” on page 11 |
| 4 | Gather the RHEL installation media. | RHEL OS CD/DVD media and documentation can be purchased from Sun or Red Hat. | You can download or order the media for RHEL at the following site: http://www.redhat.com |
| 5 | Perform the RHEL OS installation. | The install instructions in this chapter explain the initial steps for booting the installation media and launching the RHEL installation program. For further information about installing RHEL, refer to the RHEL documentation collection at: http://www.redhat.com/docs/manuals/enterprise/ | <ul style="list-style-type: none">• “Installing RHEL4 or RHEL5 Using Local or Remote Media” on page 33• “Installing RHEL4 or RHEL5 Using a PXE Network Environment” on page 40 |
| 6 | Register RHEL and activate automatic updates (recommended). | After installing RHEL, you should register your system and activate your subscription with Red Hat to retrieve automatic updates to the software. | <ul style="list-style-type: none">• Red Hat Enterprise Linux documentation collection at: http://www.redhat.com/docs/manuals/enterprise/ |
| 7 | Install driver(s) post installation, if necessary. | If the RHEL operating system does not include the necessary device drivers to support your system, you might need to install additional device drivers. | <ul style="list-style-type: none">• “Install System Device Drivers to Support Additional Hardware” on page 42 |
| 8 | Enable the Wake On LAN option, if desired. | This feature enables you to power on the server from another location over the network. | <ul style="list-style-type: none">• “Enable the Option for Wake On LAN” on page 42 |

Installing RHEL4 or RHEL5 Using Local or Remote Media

The following procedures describe how to boot the RHEL4 or RHEL5 operating system installation from local or remote media. The procedures assume that you are booting the RHEL installation media from one of the following sources:

- RHEL4 or RHEL5 CD or DVD set (internal or external CD/DVD)
- RHEL4 or RHEL5 ISO DVD image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to [“Installing RHEL4 or RHEL5 Using a PXE Network Environment” on page 40](#) for instructions.

Note – If you received RHEL4 CDs from Sun, you might need to upgrade the RHEL4 operating system to Update 7 immediately after completing the installation.

Refer to the following procedures to install the RHEL OS from local or remote media:

- [“Install RHEL4 Using Local or Remote Media” on page 34](#)
- [“Install RHEL5 Using Local or Remote Media” on page 37](#)

Before You Begin

Prior to performing the installation, the following requirements must be met:

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see [TABLE 1-2 “OS Installation Prerequisites” on page 4](#).
- An installation method (for example: console, boot media, and install target) should have been chosen and established prior to performing the installation. For more information about these setup requirements, see [“Installation Methods” on page 6](#).

Note that the following procedures explain the initial steps for booting the installation media and partitioning the drive. For further details about installing RHEL, see RHEL documentation collection at:

<http://www.redhat.com/docs/manuals/enterprise/>

After completing this procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see [“Post RHEL Installation Tasks” on page 42.](#)

▼ Install RHEL4 Using Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see [“Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.](#)

- **For Distribution CD/DVD.** Insert the Red Hat 4.0 Distribution media boot disc (CD labeled number 1 or the single DVD) into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disc image (CD labeled number 1 or DVD) has been selected in the Sun ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see [TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.](#)

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the ILOM CLI on the server SP,** 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.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the RHEL installation.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed on Boot Device menu are in the format of: *device type, slot indicator, and product ID string*.

After a few seconds, the splash screen for the Red Hat installation appears. The bottom half of the splash screen lists instructions, function keys, and the boot prompt.

5. In the Red Hat Enterprise Linux splash screen, press Enter to continue the normal user interactive installation.

Alternately, for text mode, enter the following command:

```
boot: linux text
```

6. In the Testing CD Media screen, press the Tab key to select Skip, then press Enter.

Note – If you are experiencing problems with the initial setup for the installation, it might be necessary to test the installation CD media by selecting OK.

A message appears about running Anaconda, the Red Hat Enterprise Linux system installer. After a few seconds the Red Hat splash screen appears displaying the Welcome screen.

7. In the Red Hat Welcome screen, click Next to continue the installation.

The Language screen appears.

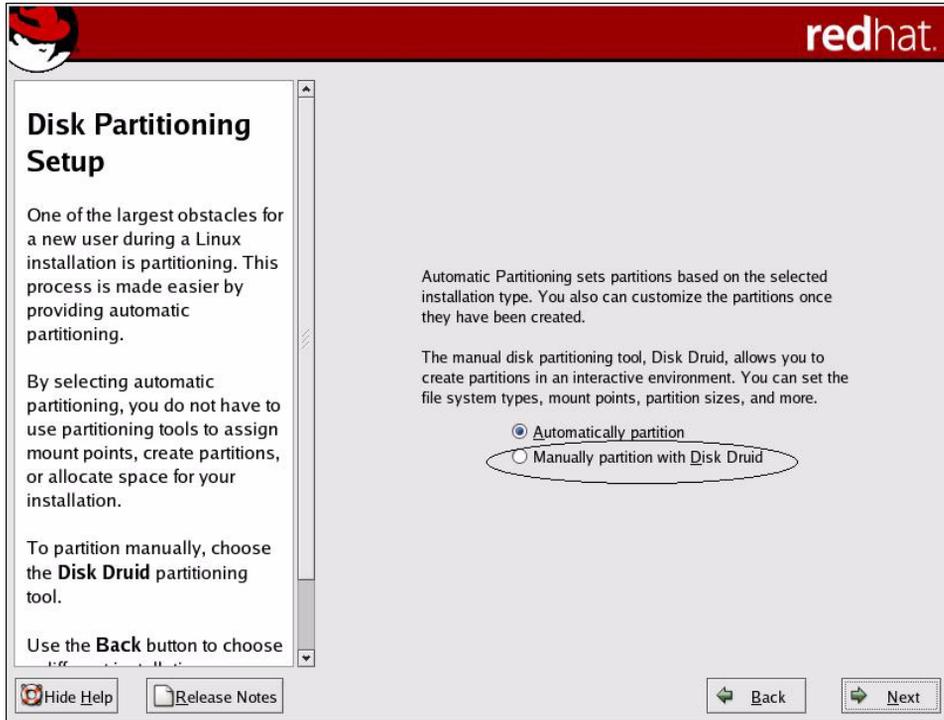
8. In the Language screen, select the appropriate language, then click Next.

The Keyboard Configuration screen appears.

9. In the Keyboard Configuration screen, select the appropriate keyboard configuration, then click Next.

10. When the Disk Partitioning Setup screen appears, do the following:

- a. Select the Manually Partition with Disk Druid radio button, then click Next.



- b. Partition the disk as appropriate by referring to the instructions presented on the Red Hat disk partitioning screen.**

Note – If the Solaris OS is preinstalled on the disk, you can choose to partition the disk to remove Solaris; or, you can choose to keep Solaris and partition the disk to support dual-boot operating systems.

- 11. Continue the basic Red Hat installation setup by following the on-screen instructions and Red Hat documentation.**
- 12. Upon completing the basic Red Hat installation setup, perform the following post-installation tasks:**
 - a. Configure your system for automatic updates.**

Refer to Red Hat documentation for more information.
 - b. If required, download and install the latest errata and bug fixes for RHEL4.7.**

Refer to Red Hat documentation for more information.

- c. Review and, if necessary, perform the post installation tasks described later in this chapter.

Refer to [“Post RHEL Installation Tasks” on page 42.](#)

▼ Install RHEL5 Using Local or Remote Media

1. Ensure that the installation media is available to boot.

- **For Distribution CD/DVD.** Insert the Red Hat 5.0 Distribution media boot disc (CD labeled number 1 or the single DVD) into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disc image (CD labeled number 1 or DVD) has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see [TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.](#)

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.

- **From the ILOM CLI on the server SP,** 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.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the RHEL installation.

The Please Select Boot Device menu appears.

- 4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.**

The device strings listed on Boot menu are in the format of: *device type, slot indicator, and product ID string*.

After a few seconds, the splash screen for the RHEL5 installation appears. The bottom half of the splash screen lists instructions, function keys, and the boot prompt.

- 5. In the Red Hat Enterprise Linux splash screen, press Enter to continue the normal user interactive installation.**

Alternately, for text mode, enter the following command:

```
boot: linux text
```

- 6. In the Language screen, select the appropriate language, then click OK.**

The Keyboard Type screen appears.

- 7. In the Keyboard Type screen, select the appropriate keyboard configuration, then click OK.**

The Installation Method screen appears.

- 8. In the Installation Method screen, select the appropriate installation method (Local CDRom or NFS Image), then click OK.**

The CD Found screen appears.

- 9. In the CD Found screen, click Skip.**

The Red Hat Enterprise Linux 5 screen appears.

- 10. In the Red Hat Enterprise 5 screen, click Next.**

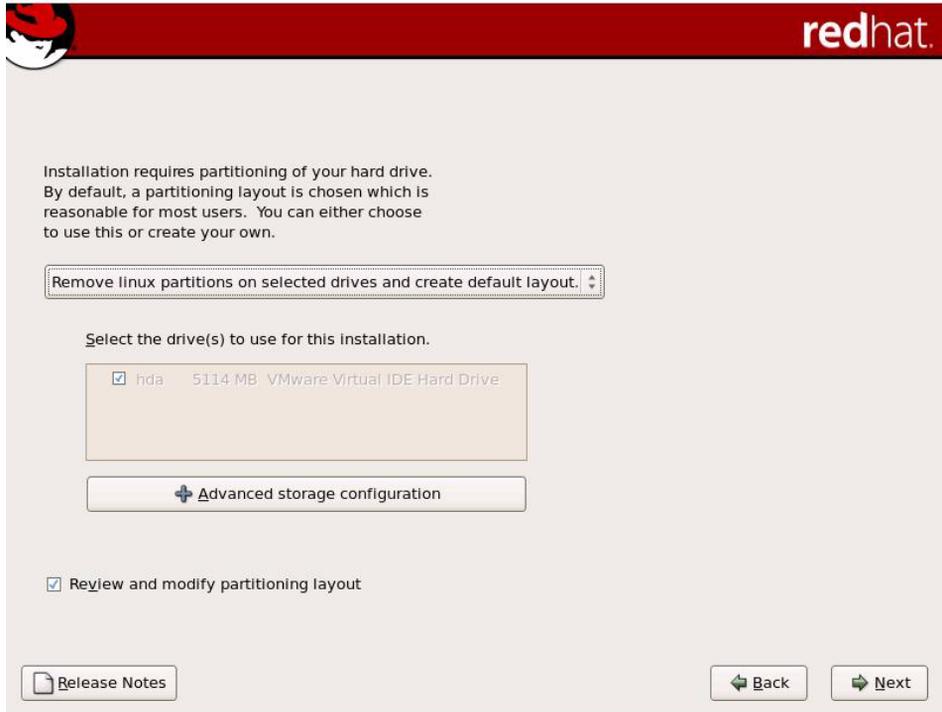
The Installation Number dialog appears.

- 11. In the Installation Number dialog, enter the "Installation number" or click Skip entering installation number, then click OK.**

The Disk Partition Setup screen appears.

- 12. In the Disk Partition Setup screen, do the following:**

- a. Select the option for Remote Linux partition on selected drives and create default layout or manually partition the disk using the Create custom layout option of Disk Druid, then click Next.**



- b. Partition the disk as appropriate by referring to the instructions presented on the Red Hat disk partitioning screen.**

Note – If the Solaris OS is preinstalled on the disk, you can choose to partition the disk to remove Solaris; or, you can choose to keep Solaris and partition the disk to support dual-boot operating systems.

- 13. Continue the basic Red Hat installation setup by following the on-screen instructions and Red Hat documentation.**
- 14. After completing the basic Red Hat installation setup, perform the following post-installation tasks:**
 - a. Configure your system for automatic updates.**

Refer to Red Hat documentation for more information.
 - b. If required, download and install the latest errata and bug fixes for RHEL5.3.**

Refer to Red Hat documentation for more information.

- c. Review and, if necessary, perform the post installation tasks described later in this chapter.

Refer to “Post RHEL Installation Tasks” on page 42.

Installing RHEL4 or RHEL5 Using a PXE Network Environment

This section describes how to boot the RHEL4 or RHEL5 from a PXE network environment. It assumes that you are booting the installation media from one of the following sources:

- RHEL4 or RHEL5 CD or DVD set (internal or external CD/DVD)
- RHEL4 or RHEL5 ISO DVD image or KickStart image (network repository)

Note – KickStart is Red Hat’s automated installation tool. It enables a system administrator to create a single image containing the settings for some or all installation and configuration parameters that are normally provided during a typical Red Hat Linux installation. Typically, a KickStart image is placed on a single network server and read by multiple systems for installation.

Note – If you received RHEL4 CDs from Sun, you might need to upgrade the RHEL4 operating system to Update 7 immediately after completing the installation.

Before You Begin

The following requirements must be met prior to performing the RHEL PXE installation:

- If you are using a KickStart image to perform the installation, you must:
 - Create a KickStart file.
 - Create a boot media with the KickStart file or make the KickStart file available on the network.

Follow the KickStart installation instructions in the *Red Hat Enterprise Linux 4: Administration Guide* (<http://www.redhat.com/docs>).

- To use PXE to boot the installation media over the network, you must:
 - Configure the network (NFS, FTP, HTTP) server to export the installation tree.

- Configure the files on the TFTP server necessary for PXE booting.
- Configure the Sun Fire X4170, X4270, and X4275 Servers MAC network port address to boot from the PXE configuration.
- Configure the Dynamic Host Configuration Protocol (DHCP).

Follow the PXE network installation instructions in the *Red Hat Enterprise Linux 4: Administration Guide* (<http://www.redhat.com/docs>).

▼ Install RHEL4 or RHEL5 Using Network PXE Boot

1. **Ensure that the PXE network environment is properly set up and the RHEL installation media is available for PXE boot.**
2. **Reset the power on the server.**

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the ILOM CLI on the server SP**, 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.

3. **Press F8 to specify a temporary boot device.**

The Please Select Boot Device menu appears listing the available boot device.

4. **In the Boot Device menu, select the network port that is configured to communicate with your PXE network install server.**

The network bootloader loads and a boot prompt appears. After a few seconds the installation kernel will begin to load.

5. **Refer to one of the following procedures to complete the installation:**

- For RHEL4.7, refer to [Step 5 of “Install RHEL4 Using Local or Remote Media” on page 34](#)

- For RHEL5.3, refer to [Step 5](#) of “[Install RHEL5 Using Local or Remote Media](#)” on [page 37](#).

Post RHEL Installation Tasks

After completing the RHEL installation, you should review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- “[Install System Device Drivers to Support Additional Hardware](#)” on [page 42](#)
- “[Enable the Option for Wake On LAN](#)” on [page 42](#)

Install System Device Drivers to Support Additional Hardware

[TABLE 3-2](#) identifies the system device drivers available for you to install on your system. Review this table to determine which drivers, if any, are currently required for installation on your system.

TABLE 3-2 Additional RHEL Drivers

| Hardware Device | Device Driver Required | Instructions | Download Driver From This Site |
|--|-----------------------------|---|---|
| Sun Dual-Port 4X PCI-Express Infiniband Host Channel Adapter X1236A-Z (PCIe) | Mellanox: Infiniband driver | Refer to the Readme file for install instructions. The Readme file is available on the Mellanox driver download site. | http://www.mellanox.com/content/pages.php?pg=products_dyn&product_family=26&menu_section=34 |
| Sun PCI Express 4x Infiniband Adapter X4217A-Z (PCIe) | Mellanox: Infiniband driver | | |

Enable the Option for Wake On LAN

After installing the operating system, you might want to consider enabling the Wake On LAN (WOL) option in the BIOS Setup utility. This feature enables you to power on the server from another location over the network. For details about the requirements for enabling WOL, see “Wake On LAN” in the *Sun Fire X4170, X4270, and X4275 Servers Service Manual*.

Installing Oracle Enterprise Linux

This chapter provides information about installing:

- Oracle Enterprise Linux 4 Update 8 (or subsequent release) for x86 (32-bit and 64-bit)
- Oracle Enterprise Linux 5 Update 3 (or subsequent release) for x86 (64-bit)

Note – Sun highly recommends that you use the Sun Installation Assistant (SIA) to install the Oracle Enterprise Linux (OEL) operating system on your server. SIA provides and installs the device driver(s), if required, for you. For more information about using SIA to install an operating system, follow the instructions provided in the *Sun Installation Assistant for Windows and Linux User's Guide* (820-3357).

This chapter includes the following topics:

- [“Task Map for the OEL Installation”](#) on page 44
- [“Installing OEL4 or OEL5 Using Local or Remote Media”](#) on page 45
- [“Installing OEL4 or OEL5 Using a PXE Network Environment”](#) on page 52
- [“Post OEL Installation Tasks”](#) on page 54

Task Map for the OEL Installation

Use [TABLE 4-1](#) to preview the installation process defined as a series of tasks. The table identifies the required tasks, describes them, and provides pointers to the instructions for performing the task.

TABLE 4-1 Task Map for the OEL Installation

| Step | Task | Description | Relevant Topic(s) |
|------|--|---|---|
| 1 | Review installation prerequisites. | Verify that all applicable requirements are met for installing an operating system to your server. | <ul style="list-style-type: none">• “Installation Prerequisites” on page 4 |
| 2 | Choose an installation method. | Evaluate and select an installation method that meets the needs of your infrastructure. | <ul style="list-style-type: none">• “Installation Methods” on page 6 |
| 3 | Ensure that the BIOS factory defaults are set. | Verify that the factory default settings in the BIOS are set prior to performing the operating system installation. | <ul style="list-style-type: none">• “Verify BIOS Settings for New Installations” on page 11 |
| 4 | Gather the OEL installation media. | The OEL OS download is available from Oracle. | You can download OEL from the following site: http://edelivery.oracle.com/linux |
| 5 | Perform the OEL OS installation. | The installation instructions in this chapter explain the initial steps for booting the installation media and launching the OEL installation program. For further information about installing OEL, refer to the Oracle and Red Hat documentation at: <ul style="list-style-type: none">• For OEL4: http://www.oracle-base.com/articles/linux/OracleEnterpriseLinux4Installation.php• For OEL5: http://www.oracle-base.com/articles/linux/OracleEnterpriseLinux5Installation.php• For Red Hat: http://www.redhat.com/docs/manuals/enterprise/ | <ul style="list-style-type: none">• “Installing OEL4 or OEL5 Using Local or Remote Media” on page 45• “Installing OEL4 or OEL5 Using a PXE Network Environment” on page 52 |

TABLE 4-1 Task Map for the OEL Installation (*Continued*)

| Step | Task | Description | Relevant Topic(s) |
|------|--|--|---|
| 6 | Register OEL and activate automatic updates (recommended). | After installing OEL, you should register your system and activate your subscription with Oracle to receive automatic updates to the software. | <ul style="list-style-type: none">• Oracle Enterprise Linux support at: http://www.oracle.com/support/purchase.html |
| 7 | Install driver(s) post installation, if necessary. | If the OEL operating system does not include the necessary device drivers to support your system, you might need to install additional device drivers. | <ul style="list-style-type: none">• “Install System Device Drivers to Support Additional Hardware” on page 54 |
| 8 | Enable the Wake On LAN option, if desired. | This feature enables you to power on the server from another location over the network. | <ul style="list-style-type: none">• “Enable the Option for Wake On LAN” on page 54 |

Installing OEL4 or OEL5 Using Local or Remote Media

The following procedures describe how to boot the OEL operating system installation from local or remote media. The procedures assume that you are booting the OEL installation media from one of the following sources:

- OEL4 or OEL5 CD or DVD set (internal or external CD/DVD)
- OEL4 or OEL5 ISO DVD image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to “Installing OEL4 or OEL5 Using a PXE Network Environment” on page 52 for instructions.

Refer to the following procedures to install the OEL OS from local or remote media:

- “Install OEL4 Using Local or Remote Media” on page 46
- “Install OEL5 Using Local or Remote Media” on page 49

Before You Begin

Prior to performing the installation, the following requirements must be met:

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see [TABLE 1-2 “OS Installation Prerequisites”](#) on page 4.
- An installation method (for example: console, boot media, and install target) should have been chosen and established prior to performing the installation. For more information about these setup requirements, see [“Installation Methods”](#) on page 6.

Note that the following procedures explain the initial steps for booting the installation media and partitioning the drive. For further details about installing OEL, see OEL documentation at:

- For OEL4:
<http://www.oracle-base.com/articles/linux/OracleEnterpriseLinux4Installation.php>
- For OEL5:
<http://www.oracle-base.com/articles/linux/OracleEnterpriseLinux5Installation.php>
- For Red Hat: <http://www.redhat.com/docs/manuals/enterprise/>

After completing this procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see [“Post OEL Installation Tasks”](#) on page 54.

▼ Install OEL4 Using Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see [“Remote Boot Media”](#) in [TABLE 1-4 “Boot Media Options for Performing the OS Installation”](#) on page 8.

- **For Distribution CD/DVD.** Insert the Oracle 4 Distribution media boot disc (CD labeled number 1 or the single DVD) into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disc image (CD labeled number 1 or DVD) has been selected in the Sun ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see [TABLE 1-4 “Boot Media Options for Performing the OS Installation”](#) on page 8.

2. Reset the power on the server.

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the ILOM CLI on the server SP**, 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.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the OEL installation.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed on Boot Device menu are in the format of: *device type, slot indicator*, and *product ID string*.

After a few seconds, the splash screen for the Oracle installation appears. The bottom half of the splash screen lists instructions, function keys, and the boot prompt.

5. In the Oracle Enterprise Linux splash screen, press Enter to continue the normal user interactive installation.

Alternately, for text mode, enter the following command:

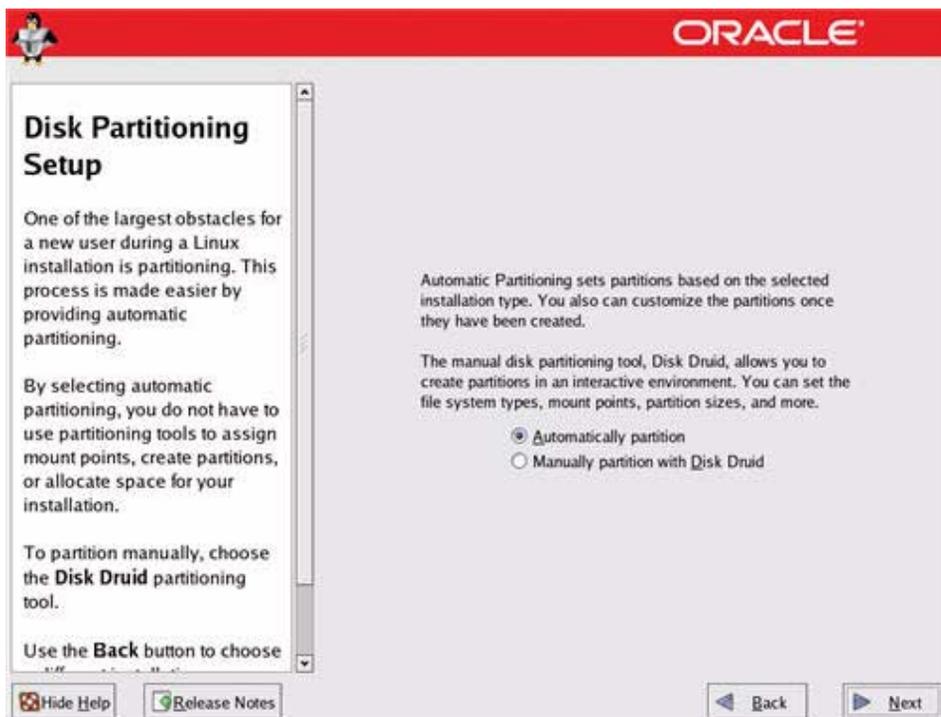
```
boot: linux text
```

6. In the Testing CD Media screen, press the Tab key to select Skip, then press Enter.

Note – If you are experiencing problems with the initial setup for the installation, it might be necessary to test the installation CD media by selecting OK.

A message appears about running Anaconda, the Oracle Enterprise Linux system installer. After a few seconds the Oracle splash screen appears displaying the Welcome screen.

7. In the Oracle Welcome screen, click **Next** to continue the installation.
The Language screen appears.
8. In the Language screen, select the appropriate language, then click **Next**.
The Keyboard Configuration screen appears.
9. In the Keyboard Configuration screen, select the appropriate keyboard configuration, then click **Next**.
10. When the Disk Partitioning Setup screen appears, do the following:
 - a. Select the **Manually Partition with Disk Druid** radio button, then click **Next**.



- b. Partition the disk as appropriate by referring to the instructions presented on the Oracle disk partitioning screen.

Note – If the Solaris or OpenSolaris OS is preinstalled on the disk, you can choose to partition the disk to remove the preinstalled OS; or, you can choose to keep the preinstalled OS and partition the disk to support dual-boot operating systems.

11. Continue the basic Oracle installation setup by following the on-screen instructions and Oracle documentation.
12. Upon completing the basic Oracle installation setup, perform the following post-installation tasks:
 - a. **Configure your system for automatic updates.**

Refer to Oracle documentation for more information.
 - b. **If required, download and install the latest errata and bug fixes for RHEL4.7.**

Refer to Oracle documentation for more information.
 - c. **Review and, if necessary, perform the post installation tasks described later in this chapter.**

Refer to [“Post OEL Installation Tasks” on page 54.](#)

▼ Install OEL5 Using Local or Remote Media

1. **Ensure that the installation media is available to boot.**
 - **For Distribution CD/DVD.** Insert the Oracle 5 Distribution media boot disc (CD labeled number 1 or the single DVD) into the local or remote USB CD/DVD-ROM drive.
 - **For ISO images.** Ensure that the ISO images are available and that the boot disc image (CD labeled number 1 or DVD) has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see [TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.](#)
2. **Reset the power on the server.**

For example:

 - **From the ILOM web interface,** select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
 - **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
 - **From the ILOM CLI on the server SP,** 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.

- 3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the OEL installation.**

The Please Select Boot Device menu appears.

- 4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.**

The device strings listed on Boot menu are in the format of: *device type, slot indicator, and product ID string.*

After a few seconds, the splash screen for the OEL5 installation appears. The bottom half of the splash screen lists instructions, function keys, and the boot prompt.

- 5. In the Oracle Enterprise Linux splash screen, press Enter to continue the normal user interactive installation.**

Alternately, for text mode, enter the following command:

```
boot: linux text
```

- 6. In the Language screen, select the appropriate language, then click OK.**

The Keyboard Type screen appears.

- 7. In the Keyboard Type screen, select the appropriate keyboard configuration, then click OK.**

The Installation Method screen appears.

- 8. In the Installation Method screen, select the appropriate installation method (Local CDRom or NFS Image), then click OK.**

The CD Found screen appears.

- 9. In the CD Found screen, click Skip.**

The Oracle Enterprise Linux 5 screen appears.

- 10. In the Oracle Enterprise Linux 5 screen, click Next.**

The Installation Number dialog appears.

- 11. In the Installation Number dialog, enter the "Installation number" or click Skip entering installation number, then click OK.**

The Disk Partition Setup screen appears.

- 12. In the Disk Partition Setup screen, do the following:**

- a. **Select the option for Remote Linux partition on selected drives and create default layout or manually partition the disk using the Create custom layout option of Disk Druid, then click Next.**



- b. **Partition the disk as appropriate by referring to the instructions presented on the Oracle disk partitioning screen.**

Note – If the Solaris or OpenSolaris OS is preinstalled on the disk, you can choose to partition the disk to remove the preinstalled OS; or, you can choose to keep the preinstalled OS and partition the disk to support dual-boot operating systems.

13. **Continue the basic Oracle installation setup by following the on-screen instructions and Oracle documentation.**
14. **After completing the basic Oracle installation setup, perform the following post-installation tasks:**
 - a. **Configure your system for automatic updates.**

Refer to Oracle documentation for more information.
 - b. **If required, download and install the latest errata and bug fixes for OEL5.3.**

Refer to Oracle documentation for more information.

- c. Review and, if necessary, perform the post installation tasks described later in this chapter.

Refer to “Post OEL Installation Tasks” on page 54.

Installing OEL4 or OEL5 Using a PXE Network Environment

This section describes how to boot the OEL4 or OEL5 from a PXE network environment. It assumes that you are booting the installation media from one of the following sources:

- OEL4 or OEL5 CD or DVD set (internal or external CD/DVD)
- OEL4 or OEL5 ISO DVD image or KickStart image (network repository)

Note – KickStart is Red Hat’s automated installation tool. It enables a system administrator to create a single image containing the settings for some or all installation and configuration parameters that are normally provided during a typical Oracle Linux installation. Typically, a KickStart image is placed on a single network server and read by multiple systems for installation.

The following requirements must be met prior to performing the OEL PXE installation:

- If you are using a KickStart image to perform the installation, you must:
 - Create a KickStart file.
 - Create the boot media with the KickStart file or make the KickStart file available on the network.

Follow the KickStart installation instructions in the *Red Hat Enterprise Linux 4: Administration Guide* (<http://www.redhat.com/docs>).

- To use PXE to boot the installation media over the network, you must:
 - Configure the network (NFS, FTP, HTTP) server to export the installation tree.
 - Configure the files on the TFTP server necessary for PXE booting.
 - Configure the Sun Fire X4170, X4270, and X4275 Servers MAC network port address to boot from the PXE configuration.
 - Configure the Dynamic Host Configuration Protocol (DHCP).

Follow the PXE network installation instructions in the *Red Hat Enterprise Linux 4: Administration Guide* (<http://www.redhat.com/docs>).

▼ Install OEL4 or OEL5 Using Network PXE Boot

1. **Ensure that the PXE network environment is properly set up and the OEL installation media is available for PXE boot.**

2. **Reset the power on the server.**

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.
- **From the ILOM CLI on the server SP**, 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.

3. **Press F8 to specify a temporary boot device.**

The Please Select Boot Device menu appears listing the available boot device.

4. **In the Boot Device menu, select the network port that is configured to communicate with your PXE network install server.**

The network bootloader loads and a boot prompt appears. After a few seconds the installation kernel will begin to load.

5. **Refer to one of the following procedures to complete the installation:**

- For OEL4.4, refer to [Step 5 of “Install OEL4 Using Local or Remote Media” on page 46](#)
- For OEL5.3, refer to [Step 5 of “Install OEL5 Using Local or Remote Media” on page 49](#).

Post OEL Installation Tasks

After completing the OEL installation, you should review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- “Install System Device Drivers to Support Additional Hardware” on page 54
- “Enable the Option for Wake On LAN” on page 54

Install System Device Drivers to Support Additional Hardware

TABLE 4-2 identifies the system device drivers available for you to install on your system. Review this table to determine which drivers, if any, are currently required for installation on your system.

TABLE 4-2 Additional OEL Drivers

| Hardware Device | Device Driver Required | Instructions | Download Driver From This Site |
|--|-----------------------------|---|---|
| Sun Dual-Port 4X PCI-Express Infiniband Host Channel Adapter X1236A-Z (PCIe) | Mellanox: Infiniband driver | Refer to the Readme file for install instructions. The Readme file is available on the Mellanox driver download site. | http://www.mellanox.com/content/pages.php?pg=products_dyn&product_family=26&menu_section=34 |
| Sun PCI Express 4x Infiniband Adapter X4217A-Z (PCIe) | Mellanox: Infiniband driver | Mellanox driver download site. | |

Enable the Option for Wake On LAN

After installing the operating system, you might want to consider enabling the Wake On LAN (WOL) option in the BIOS Setup utility. This feature enables you to power on the server from another location over the network. For details about the requirements for enabling WOL, see “Wake On LAN” in the *Sun Fire X4170, X4270, and X4275 Servers Service Manual*.

Installing VMware

This chapter summarizes the necessary steps for installing the following VMware versions:

- VMware ESX/ESXi 3.5 Update 4
- VMware ESX/ESXi 4.0

In particular, this chapter includes specific information for selecting a network interface card (NIC) for the VMware service console.

Note – VMware ESX 3.5 was formerly named as VMware ESX Server 3.5 and VMware ESXi 3.5 as VMware ESX Server 3i version 3.5.

This chapter includes the following topics:

- [“Task Map for the VMware Installation” on page 55](#)
- [“Installing VMware ESX or ESXi Using Local or Remote Media” on page 57](#)
- [“VMware ESX and ESXi Post Installation Tasks” on page 68](#)

Task Map for the VMware Installation

Use [TABLE 5-1](#) to preview the installation process defined as a series of tasks. The table identifies the required tasks, describes them, and provides pointers to the instructions for performing the task.

TABLE 5-1 Task Map for the VMware Installation

| Step | Task | Description | Relevant Topic(s) |
|------|---|---|--|
| 1 | Review installation prerequisites. | Verify that all applicable requirements are met for installing an operating system to your server. | <ul style="list-style-type: none">• “Installation Methods” on page 6 |
| 2 | Choose an installation method. | Evaluate and select an installation method that meets the needs of your infrastructure. | <ul style="list-style-type: none">• “Installation Methods” on page 6 |
| 3 | Ensure that the BIOS factory defaults are set. | Verify that the factory default settings in the BIOS are set prior to performing the operating system installation. | <ul style="list-style-type: none">• “Verify BIOS Settings for New Installations” on page 11 |
| 4 | Gather the VMware installation software. | A VMware ESX license can be purchased from Sun or VMware. VMware ESXi is available as a free download from VMware. | You can download the software for VMware ESX/ESXi 3.5 Update 4 or ESX/ESXi 4.0 from the following site: http://www.vmware.com/ |
| 5 | Perform the VMware ESX or ESXi OS installation. | The installation instructions in this chapter explain the initial steps for booting the installation media. For further information about installing VMware ESX and ESXi, refer to the VMware documentation at: <ul style="list-style-type: none">• For ESX/ESXi 3.5 Update 4: http://www.vmware.com/support/pubs/vi_pubs.html• For ESX/ESXi 4.0: http://www.vmware.com/support/pubs/vs_pubs.html | <ul style="list-style-type: none">• “Installing VMware ESX or ESXi Using Local or Remote Media” on page 57 |
| 6 | Update the VMware operating system, if necessary. | The VMware ESX or ESXi installation media might not contain the most up-to-date versions of the operating system. Follow the instructions in this chapter to update the ESX or ESXi operating system. | <ul style="list-style-type: none">• “Update the ESX or ESXi Operating System” on page 68 |
| 7 | Enable the Wake On LAN option, if desired. | This feature enables you to power on the server from another location over the network. | <ul style="list-style-type: none">• “Enable the Option for Wake On LAN” on page 68 |

Installing VMware ESX or ESXi Using Local or Remote Media

The following procedures summarize the steps for installing VMware (ESX or ESXi) from local or remote installation media.

The following procedures assume you are booting the VMware installation software from one of the following sources:

- VMware ESX or ESXi CD or DVD (internal or external CD/DVD)
- VMware ESX or ESXi ISO software image (network repository)

Note – If you want to use a CD/DVD for installation, you must create it. VMware does not provide the OS software on media. It is only available as a download.

Refer to the following VM procedures to install the VMware OS from local or remote media:

- [“Install VMware ESX 3.5 Update 4 From Local or Remote Media” on page 58](#)
- [“Install VMware ESXi 3.5 Update 4 From Local or Remote Media” on page 60](#)
- [“Install VMware ESX 4.0 From Local or Remote Media” on page 63](#)
- [“Install VMware ESXi 4.0 From Local or Remote Media” on page 67](#)

Before You Begin

Prior to performing the installation, the following requirements must be met:

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see [TABLE 1-1 “Installation Prerequisites” on page 4](#).
- An installation method (for example: console, boot media, and installation target) should have been chosen and established prior to performing the installation. For more information about these setup requirements, see [“Installation Methods” on page 6](#).

Note that the following procedures explain the initial steps for booting the installation media and launching the VMware ESX or ESXi installation program.

After completing this procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see [“VMware ESX and ESXi Post Installation Tasks” on page 68](#).

▼ Install VMware ESX 3.5 Update 4 From Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see “Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

- **For CD/DVD distribution media.** Insert the media boot disk into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disk image has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select Remote Control --> Remote Power Control, then select the Power Cycle option from the Host action list box.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.

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.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the VMware installation.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed in the Boot Device menu are in the following format: *device type, slot indicator, and product ID string.*

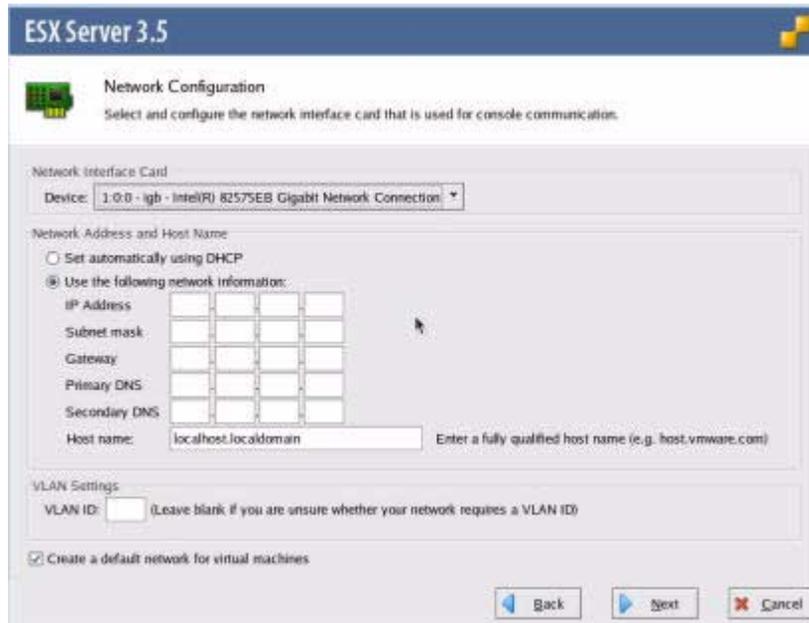
After a few seconds, the splash screen for the VMware installation appears.

5. Refer to the VMware installation documentation for ESX to assist you through the installation process.

For installation documentation, see:

http://www.vmware.com/support/pubs/vi_pubs.html

During the installation procedure, a Network Configuration dialog appears.



6. In the Network Interface Card field, click the Device drop-down menu and select the desired network adapter.

A live network adapter (that is, an adapter connected to the network) must be specified for the VMware service console (vmmnic0). To determine how to translate the PCI bus labels to the physical ports on a NIC, see [Appendix A “Translate Network Interface Card PCI Bus Number to Physical Network Port”](#) on page 99

Note – If you are not sure which network adapter to select, contact your network administrator.

7. To configure the network interface card, do one of the following:

- To auto-configure the network adapter, select **Set automatically using DHCP**, and click **Next**.

Or

- To manually configure the network adapter, select Use the following network Information, enter the network settings and host name, and click Next.
8. **Refer to the VMware installation documentation for ESX and complete the installation.**
For installation documentation, see:
http://www.vmware.com/support/pubs/vi_pubs.html
 9. **Review and, if necessary, perform the post installation tasks described later in this chapter.**
Refer to “VMware ESX and ESXi Post Installation Tasks” on page 68.

▼ Install VMware ESXi 3.5 Update 4 From Local or Remote Media

1. **Ensure that the installation media is available to boot.**

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see “Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

- **For CD/DVD distribution media.** Insert the media boot disk into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disk image has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

2. **Reset the power on the server.**

For example:

- **From the ILOM web interface,** select Remote Control --> Remote Power Control, then select the Power Cycle option from the Host action list box.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.

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.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the VMware installation.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed in the Boot Device menu are in the following format: *device type*, *slot indicator*, and *product ID string*.

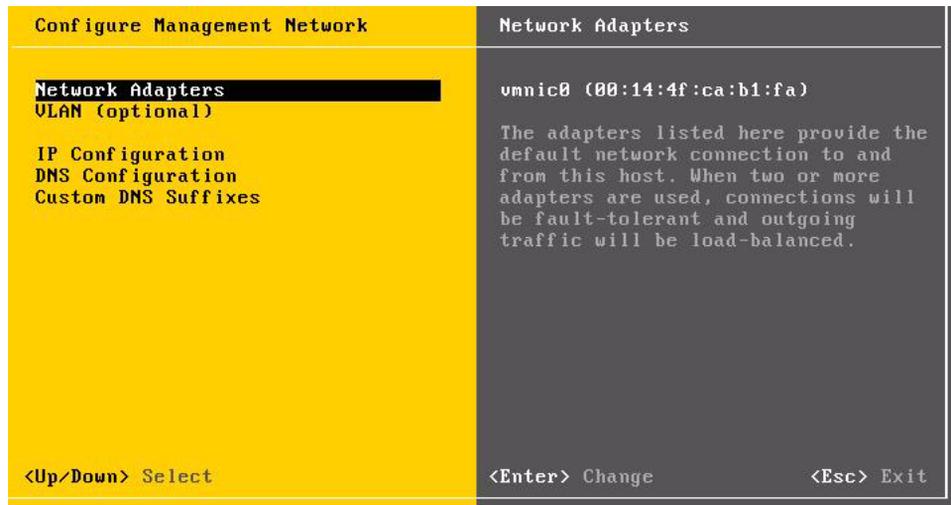
After a few seconds, the splash screen for the VMware installation appears.

5. Refer to the VMware installation documentation for ESXi 3.5 Update 4 to assist you through the installation process.

For installation documentation, see:

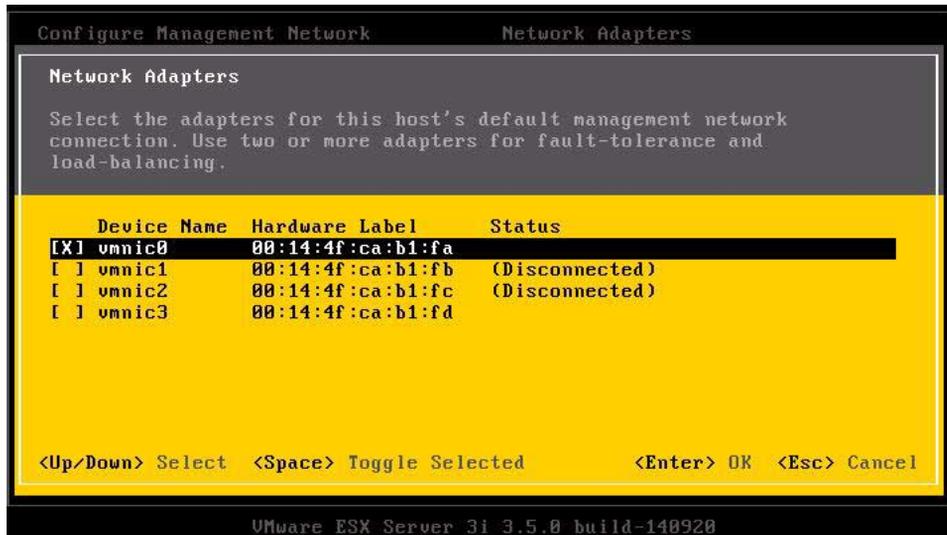
http://www.vmware.com/support/pubs/vi_pubs.html

During the installation procedure, the following Network Configuration dialog appears.



6. Under Configure Management Network, select Network Adapters, and press Enter.

The Network Adapters dialog appears.



- In Network Adapters dialog, select a live network adapter (that is, an adapter connected to the network) for the VMware service console (vmnic0) and press Enter.

A live network adapter (that is, an adapter connected to the network) must be specified for the VMware service console (vmnic0). Notice that the MAC address that is associated with the server's physical network port (NET0, NET1, NET2, or NET3) is displayed in the Hardware Label column. Therefore, you can use the MAC address to determine which of the server's physical network ports is being displayed. For example, to determine the MAC address for each server network port, enter the following command in the Sun ILOM command-line interface (CLI) for each server network port:

```
-> show /SYS/MB/NETn
```

Where *n* is 0, 1, 2, or 3.

If the network adapter shown in the above dialog were associated for network port NET0, then the CLI command `show /SYS/MB/NET0`, would produce the following output, where the `fru_serial_number` field lists the MAC address.

```
-> show /SYS/MB/NET0
/SYS/MB/NET0
```

```
Targets:
```

```
Properties:
```

```
type = Network Interface  
ipmi_name = MB/NET0  
fru_name = GIGABIT ETHERNET CONTROLLERS  
fru_manufacturer = INTEL  
fru_part_number = 82575EB  
fru_serial_number = 00:14:4f:ca:b1:fa  
fault_state = OK  
clear_fault_action = (none)
```

Note – If you are not sure which network adapter to select, contact your network administrator.

8. Refer to the VMware installation documentation for ESXi and complete the installation.

For installation documentation, see:

http://www.vmware.com/support/pubs/vi_pubs.html

9. Review and, if necessary, perform the post installation tasks described later in this chapter.

Refer to “VMware ESX and ESXi Post Installation Tasks” on page 68.

▼ Install VMware ESX 4.0 From Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see “Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

- **For CD/DVD distribution media.** Insert the media boot disk into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disk image has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

2. Reset the power on the server.

For example:

- **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the Power Cycle option from the Host action list box.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.

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.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the VMware installation.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed in the Boot Device menu are in the following format: *device type, slot indicator, and product ID string*.

After a few seconds, the splash screen for the VMware installation appears.

5. Refer to the VMware installation documentation for ESX to assist you through the installation process.

For installation documentation, see:

http://www.vmware.com/support/pubs/vi_pubs.html

During the installation procedure, a Network Configuration dialog appears.



6. In the Network Adapter field, click the drop-down menu and select the desired network adapter, and click Next.

A live network adapter (that is, an adapter connected to the network) must be specified for the VMware service console (vmnic0). Each network adapter that is live has a green check mark next to it as shown in the above dialog. Also, notice that the MAC address that is associated with the server's physical network port (NET0, NET1, NET2, or NET3) is displayed. Therefore, you can use the MAC address to determine which of the server's physical network ports is being displayed. For example, to determine the MAC address for each server network port, enter the following command in the Sun ILOM command-line interface (CLI) for each server network port:

```
-> show /SYS/MB/NETn
```

Where *n* is 0, 1, 2, or 3.

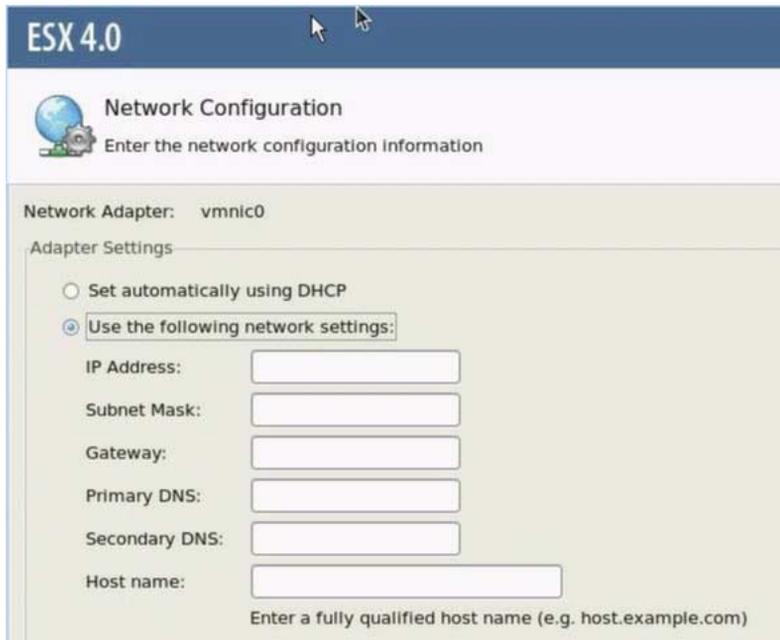
If the network adapter shown in the above dialog were associated for network port NET0, then the CLI command `show /SYS/MB/NET0`, would produce the following output, where the `fru_serial_number` field lists the MAC address:

```
-> show /SYS/MB/NET0
/SYS/MB/NET0
Targets:

Properties:
  type = Network Interface
  ipmi_name = MB/NET0
  fru_name = GIGABIT ETHERNET CONTROLLERS
  fru_manufacturer = INTEL
  fru_part_number = 82575EB
  fru_serial_number = 00:21:28:3d:ec:04
  fault_state = OK
  clear_fault_action = (none)
```

Note – If you are not sure which network adapter to select, contact your network administrator.

A second ESX 4.0 Network Configuration dialog appears.



7. Select a network adapter configuration method.

Do one of the following:

- To auto-configure the network adapter, select **Set automatically using DHCP**, and click **Next**.

Or

- To manually configure the network adapter, select **Use the following network settings**, enter the network settings, and click **Next**.

8. Refer to the VMware installation documentation for ESX and complete the installation.

For installation documentation, see:

http://www.vmware.com/support/pubs/vs_pubs.html

9. Review and, if necessary, perform the post installation tasks described later in this chapter.

Refer to “[VMware ESX and ESXi Post Installation Tasks](#)” on page 68.

▼ Install VMware ESXi 4.0 From Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see “Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

- **For CD/DVD distribution media.** Insert the VMware ESXi media boot disk into the local or remote USB CD/DVD-ROM drive.
- **For ISO images.** Ensure that the ISO images are available and that the boot disk image has been selected in the ILOM Remote Console application (Device menu --> CD-ROM Image).

For additional information about how to set up the installation media, see TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select Remote Control --> Remote Power Control, then select the Power Cycle option from the Host action list box.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, then press the Power button again to power on the server.

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.

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the VMware installation.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first boot device, then press Enter.

The device strings listed in the Boot Device menu are in the following format: *device type, slot indicator, and product ID string.*

After a few seconds, the splash screen for the VMware installation appears.

5. Refer to the VMware installation documentation for ESXi to assist you through the installation process. For installation documentation, see:
http://www.vmware.com/support/pubs/vs_pubs.html
6. Review and, if necessary, perform the post installation tasks described later in this chapter.
Refer to “VMware ESX and ESXi Post Installation Tasks” on page 68.

VMware ESX and ESXi Post Installation Tasks

After completing the ESX or ESXi installation, review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- “Update the ESX or ESXi Operating System” on page 68
- “Enable the Option for Wake On LAN” on page 68

Update the ESX or ESXi Operating System

The VMware ESX or ESXi installation media might not contain the most up-to-date versions of the operating system.

If necessary, update the ESX or ESXi Server software with the latest updates and patches. For download instructions, see this web site:

<http://support.vmware.com/selfsupport/download/>

Enable the Option for Wake On LAN

After installing the operating system, you might want to consider enabling the Wake On LAN (WOL) option in the BIOS Setup utility. This feature enables you to power on the server from another location over the network. For details about the requirements for enabling WOL, see “Wake On LAN” in the *Sun Fire X4170, X4270, and X4275 Servers Service Manual*.

Installing Solaris 10

This chapter provides information about installing the Solaris™ 10 10/09 Operating System (Solaris 10 OS) on the Sun Fire X4170, X4270, and X4275 Servers Servers.

This chapter includes the following topics:

- [“Task Map for the Solaris 10 Installation” on page 69](#)
- [“Installing Solaris 10 Using Local or Remote Media” on page 71](#)
- [“Installing Solaris 10 OS Using a PXE Network Environment” on page 78](#)
- [“Post Solaris Installation Tasks” on page 86](#)

For information describing how to configure the preinstalled Solaris 10 OS image, see the *Sun Fire X4170, X4270, and X4275 Servers Installation Guide* (820-5827) for setup instructions.

Task Map for the Solaris 10 Installation

Use [TABLE 6-1](#) to preview the installation process defined as a series of tasks. The table identifies and describes the tasks required, and provides pointers to the instructions for performing that task.

TABLE 6-1 Task Map for the Solaris 10 Installation

| Step | Task | Description | Relevant Topic(s) |
|------|------------------------------------|---|---|
| 1 | Review installation prerequisites. | Verify that all applicable requirements are met for installing an operating system to a Sun Fire X4170, X4270, or X4275 Server. | <ul style="list-style-type: none"> • TABLE 1-2 “OS Installation Prerequisites” on page 4 |
| 2 | Choose an installation method. | Evaluate and select an installation method that meets the needs of your infrastructure. | <ul style="list-style-type: none"> • “Installation Methods” on page 6 |

TABLE 6-1 Task Map for the Solaris 10 Installation (*Continued*)

| Step | Task | Description | Relevant Topic(s) |
|------|---|---|--|
| 3 | Ensure that the BIOS factory defaults are set. | Verify that the factory default settings in the BIOS are set prior to performing the operating system installation. | <ul style="list-style-type: none">• “Verify BIOS Settings for New Installations” on page 11 |
| 4 | Gather the Solaris 10 10/09 installation media. | The Solaris 10 OS is shipped with the CD and DVD media and documentation that you will need to install the Solaris OS for both SPARC and x86 platforms. For Sun Fire X4170, X4270, and X4275 Servers, use the media for x86 platforms. | <ul style="list-style-type: none">• You can download or order the media for Solaris 10 10/09 at: http://www.sun.com/software/solaris/get.jsp |
| 5 | Perform the Solaris 10 10/09 OS installation. | The install instructions in this chapter describe the initial steps for booting the installation media and launching the Solaris installation program. For further information about installing Solaris 10 10/09, refer to the <i>Solaris 10 Installation Guide: Basic Installations</i> , (817-0544). | <ul style="list-style-type: none">• “Installing Solaris 10 Using Local or Remote Media” on page 71 <p>or</p> <ul style="list-style-type: none">• “Installing Solaris 10 OS Using a PXE Network Environment” on page 78 |
| 6 | Install driver(s), post installation, if necessary. | If the Solaris Operating System does not include the necessary device drivers to support your system, you might need to install additional device drivers. | <ul style="list-style-type: none">• “Install System Device Drivers to Support Additional Hardware” on page 86 |
| 7 | Install patches, post installation, if necessary. | If necessary, install critical Solaris patches pertaining to your system. Solaris patches can contain new features, enhancements, or fixes to known problems. | |
| 8 | Enable the Wake On LAN option, if desired. | This feature enables you to power on the server from another location over the network. | <ul style="list-style-type: none">• “Enable the Option for Wake On LAN” on page 86 |
| 9 | Install RAID Management Software, if necessary. | If you have Sun StorageTek SAS RAID HBA (SG-XPCIESAS-R) installed on your server, you should install the Sun RAID management software. | <ul style="list-style-type: none">• “Install RAID Management Software” on page 87 |

Installing Solaris 10 Using Local or Remote Media

The following procedure describes how to boot the Solaris Operating System installation from local or remote media. It assumes that you are booting the installation media from one of the following sources:

- Solaris 10 10/09 (or subsequent release) CD or DVD set (internal or external CD/DVD)
- Solaris 10 10/09 (or subsequent release) ISO DVD image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to [“Installing Solaris 10 OS Using a PXE Network Environment” on page 78](#) for instructions.

Before You Begin

Prior to performing the installation, the following requirements must be met:

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see [TABLE 1-2 “OS Installation Prerequisites” on page 4](#).
- An installation method (for example: console, boot media, and install target) should have been chosen and established prior to performing the installation. For information about these setup requirements, see [“Installation Methods” on page 6](#).

Note that the following procedure explains the initial steps for booting the installation media and launching the Solaris installation program. For further details about installing Solaris 10, see the *Solaris 10 Installation Guide: Basic Installations* (817-0544).

After completing this procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see [“Post Solaris Installation Tasks” on page 86](#).

▼ Install Solaris 10 Using Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see “Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

- **For distribution CD/DVD.** Insert the Solaris 10 Distribution media (CD labeled 1 or the single DVD) into the local or remote CD/DVD-ROM drive.
- **For ISO image.** Ensure that the ISO images are available and that the Sun ILOM Remote Console application is aware of the first ISO image location.

For additional information about how to set up the installation media, see TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8.

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to turn the server off, then press the Power button again to power on the server.
- **From the ILOM CLI on server SP,** type: **reset /SYS**

The BIOS screen appears.



```
www.ami.com American Megatrends Sun microsystems®
AMIBIOS (C) 2006 American Megatrends, Inc.
BIOS Date: 11/19/08 15:40:21 Ver: 08.00.15
Sun BIOS Revision: 07.01.30.00
Sun Fire X4170 Server CPU Power (TDP Limit) = 95 Watts
Product Serial Number:0000000000
CPU : Genuine Intel(R) CPU @ 0000 @ 2.67GHz
Speed : 2.66 GHz Count : 16

Press F2 to run Setup (CTRL+E on Remote Keyboard)
Press F12 if you want to boot from the network (CTRL+N on Remote Keyboard)
Press F8 for BBS POPUP (CTRL+P on Remote Keyboard)
QPI Operational Speed at : 6.4GT/s
BMC Firmware Revision: 2.0.2.9
Initializing USB Controllers ..

(C) American Megatrends, Inc.
64-3047-009999-00101111-111908-TYLSBURG-3ABDN030-V2KC 6B38
```

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

3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the Solaris installation.

The Please Select Boot Device menu appears.



4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first (temporary) boot device, then press Enter.

In the sample Boot Device menu shown in [Step 3](#), the virtual CDROM device is specified as the first boot device.

The device strings listed on Boot Device menu are in the format of: *device type, slot indicator, and product ID string.*

Note – If you are performing the Solaris installation from the Sun ILOM Remote Console application, you need to select (in the Boot Device menu) the AMI Virtual CDROM.

The GRUB menu appears.

```
GNU GRUB version 0.97 (623K lower / 2161280K upper memory)

Solaris
Solaris Serial Console ttya
Solaris Serial Console ttyb (for lx50, v60x and v65x)

Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the
commands before booting, or 'c' for a command-line.
```

5. In the GRUB menu, select `Solaris`, then press `Enter`.

Note – In the GRUB menu, if you want to redirect the install output to a serial console, press “e” to edit the GRUB menu to support a serial console (`-B console = ttya`).

The system loads the Solaris disk image into memory. This process can take several minutes. When it completes, the Install Type menu appears.

```

WARNING: There will be no MCA support on chip 0 core 0 strand 5 (cni_hdl_create
returned NULL)

WARNING: There will be no MCA support on chip 1 core 0 strand 5 (cni_hdl_create
returned NULL)

WARNING: There will be no MCA support on chip 0 core 0 strand 7 (cni_hdl_create
returned NULL)

WARNING: There will be no MCA support on chip 1 core 0 strand 7 (cni_hdl_create
returned NULL)

Configuring devices.
/

1. Solaris Interactive (default)
2. Custom JumpStart
3. Solaris Interactive Text (Desktop session)
4. Solaris Interactive Text (Console session)
   (Select option 3 or 4 to install a ZFS root file system)
5. Apply driver updates
6. Single user shell

Enter the number of your choice.
Automatically continuing in 27 seconds

```

6. In the Install Type menu, choose the type of interface that you want to use to perform the installation.

- **Graphical User Interface (default)**

Type 1 then press Enter.

- **Text Installer From Desktop Session**

Type 3 then press Enter.

- **Text Installer From Console Session**

Type 4 then press Enter.

Note – The screens that are displayed on your system might vary depending on the type of interface you chose to configure in Step 6. The following sample screens appearing in this procedure are based on the default Graphical User Interface (GUI) option (option 1).

The system discovers and configures the devices and interfaces. If the system discovers a keyboard, the Configure Keyboard Layout menu appears.

```
Done mounting Live image
USB keyboard
 1. Albanian                23. Lithuanian
 2. Belarusian             24. Latvian
 3. Belgian                25. Macedonian
 4. Brazilian              26. Malta_UK
 5. Bulgarian              27. Malta_US
 6. Canadian-Bilingual    28. Norwegian
 7. Croatian               29. Polish
 8. Czech                  30. Portuguese
 9. Danish                 31. Russian
10. Dutch                  32. Serbia-And-Montenegro
11. Finnish                33. Slovenian
12. French                 34. Slovakian
13. French-Canadian       35. Spanish
14. Hungarian              36. Swedish
15. German                 37. Swiss-French
16. Greek                  38. Swiss-German
17. Icelandic              39. Traditional-Chinese
18. Italian                40. TurkishQ
19. Japanese-type6        41. TurkishF
20. Japanese               42. UK-English
21. Korean                 43. US-English
22. Latin-American
To select the keyboard layout, enter a number [default 43]:
```

7. In the Configure Keyboard Layout menu, select the appropriate keyboard layout, then press F2 to continue.

The system configures the keyboard layout selection and searches for configuration files.

If you selected a GUI installation in the earlier steps, the next two steps ([Step 8](#) and [Step 9](#)) confirm that the GUI is functioning. If you did not select a GUI interface earlier, skip to Step 10.

```
Discovering additional network configuration...

Starting Solaris Interactive (graphical user interface) Installation.

    You must respond to the first question within 30 seconds
    or the installer proceeds in a non-window environment
    (console mode).

    If the screen becomes blank or unreadable the installer
    proceeds in console mode.

    If the screen does not properly revert to console mode,
    restart the installation and make the following selection:

    Solaris Interactive Text (Console session)

Press ENTER to continue.
```

8. In the Discovering Network Configurations and Starting Solaris Interactive Installation screen, press Enter.

A second screen appears to confirm that the GUI is functioning.



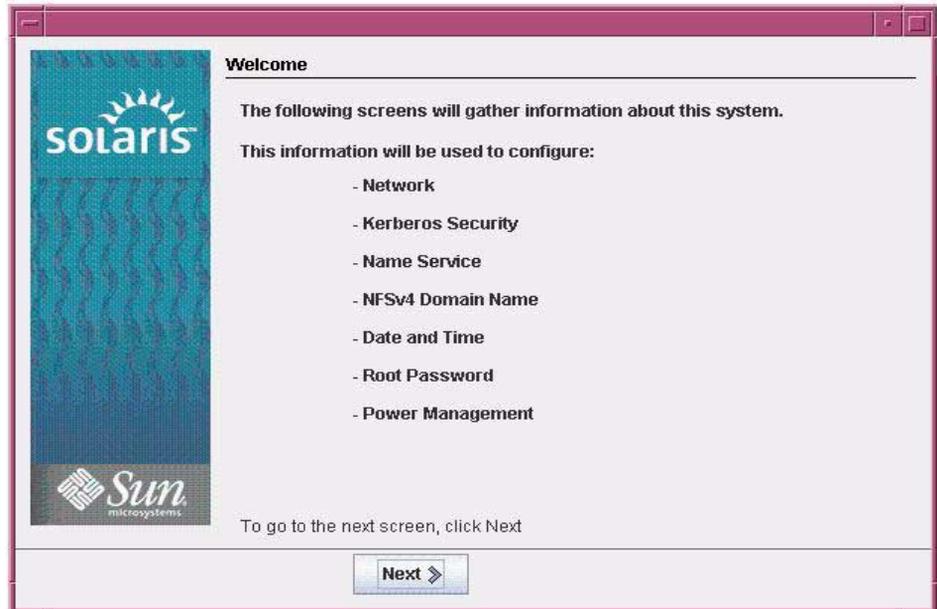
9. In the screen that is confirming the text shown is legible, press Enter.

The Language Selection menu appear.

10. In the Language Selection menu, type the selected language ID number (0-9), then press Enter.

After a few moments the Welcome screen appears.

Note – The sample screen shown below reflects the GUI installation program. If you are running a text-based installation interface, the text-based Welcome screen (not shown) will appear.



11. In the Welcome screen, click Next to begin the installation.

The Solaris installation program will display several configuration screens.

12. Continue the normal Solaris installation and, if necessary, refer to the Solaris documentation for additional details.

After the installation completes, the system will automatically reboot (if you previously selected this option during the configuration screens) and displays the Solaris login prompt.

Note – If you did not configure the system to automatically reboot when the installation completes, you must manually reboot the system.

13. Proceed to the section “Post Solaris Installation Tasks” on page 86 to perform the post Solaris configuration tasks.

Installing Solaris 10 OS Using a PXE Network Environment

The following procedure describes how to boot the Solaris operating system installation from a PXE network environment. It assumes that you are booting the installation media from one of the following sources:

- Solaris 10 10/09 CD or DVD set (internal or external CD/DVD)
- Solaris 10 10/09 ISO DVD image or Solaris JumpStart™ image (network repository)

Note – JumpStart can help you eliminate some or most of the manual tasks of setting up the Solaris Operating System for the first time on multiple servers. For more information about using a JumpStart image, see the *Solaris 10 Installation Guide: Custom JumpStart and Advanced Installations* (817-5506).

Before You Begin

The following requirements must be met prior to performing the Solaris 10 PXE installation:

- To use PXE to boot the installation media over the network, you should have completed the following tasks:
 - PXE boot install server setup to export the installation.

Note – The PXE network boot does not work properly over subnets that include multiple DHCP servers. Therefore, you should set up only one DHCP server on the subnet that includes the client system that you want to install.

- Sun Fire X4170, X4270, and X4275 Servers MAC network port address configured as a client system on the PXE boot install server.

For further information about setting up and installing Solaris 10 from the network, see the *Solaris 10 Installation Guide: Network Installations* (817-0544).

- If your installation media source is a JumpStart installation image, the image must be properly prepared and ready for installation. Information concerning how to properly set up and deploy a JumpStart installation is outside the scope of this guide.

For details about creating a Solaris JumpStart image, see the *Solaris 10 Installation Guide: Custom JumpStart and Advanced Installations* (817-5506).

After completing the following procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see [“Post Solaris Installation Tasks” on page 86](#).

▼ Install Solaris 10 Using Network PXE Boot

1. **Ensure that the PXE network environment is properly set up and the Solaris installation media is available for PXE boot.**

For details, see the “Planning to Install From Network” sections in the *Solaris 10 Installation Guide: Network Installations* (817-0544).

2. **Reset the power on the server.**

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to turn the server off, then press the Power button again to power on the server.
- **From the ILOM CLI on server SP**, type: **reset /SYS**

The BIOS Screen appears.

The image shows a BIOS POST screen for a Sun Fire X4170 Server. At the top left is the American Megatrends logo with the website www.ami.com. At the top right is the Sun Microsystems logo. The main text displays system information: AMIBIOS (C) 2006 American Megatrends, Inc.; BIOS Date: 11/19/08 15:40:21 Ver: 08.00.15; Sun BIOS Revision: 07.01.30.00; Sun Fire X4170 Server CPU Power (TDP Limit) = 95 Watts; Product Serial Number: 0000000000; CPU: Genuine Intel(R) CPU @ 0000 @ 2.67GHz; Speed: 2.66 GHz Count: 16. Below this, instructions are given for running Setup (F2), booting from network (F12), and BBS POPUP (F8). It also shows QPI Operational Speed at 6.4GT/s, BMC Firmware Revision: 2.0.2.9, and 'Initializing USB Controllers ..'. At the bottom, copyright information for American Megatrends, Inc. and a unique identifier 6B3B are visible.

```
www.ami.com
American Megatrends
Sun Microsystems®

AMIBIOS (C) 2006 American Megatrends, Inc.
BIOS Date: 11/19/08 15:40:21 Ver: 08.00.15
Sun BIOS Revision: 07.01.30.00
Sun Fire X4170 Server CPU Power (TDP Limit) = 95 Watts
Product Serial Number:0000000000
CPU : Genuine Intel(R) CPU @ 0000 @ 2.67GHz
Speed : 2.66 GHz Count : 16

Press F2 to run Setup (CTRL+E on Remote Keyboard)
Press F12 if you want to boot from the network (CTRL+N on Remote Keyboard)
Press F8 for BBS POPUP (CTRL+P on Remote Keyboard)
QPI Operational Speed at : 6.4GT/s
BMC Firmware Revision: 2.0.2.9
Initializing USB Controllers ..

(C) American Megatrends, Inc.
64-3047-009999-00101111-111908-TYLSBURG-3ABDN030-Y2KC 6B3B
```

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.

3. In the BIOS power-on self-test (POST) screen, press F8 to specify a temporary boot device.

The Please Select Boot Device menu appears.

4. In the Boot Device menu, select the appropriate PXE boot port, then press Enter.

The PXE boot port is the physical network port configured to communicate with your network install server.

Note that the options listed on the following sample Boot Device menu might be different from the options shown on your Boot Device menu.

The GRUB menu appears.



5. In the GRUB menu, select Solaris, then press Enter.

Note – In the GRUB menu, if you want to redirect the install output to a serial console, press “e” to edit the GRUB menu to support a serial console (-B console = ttya).

The system loads the Solaris disk image into memory. This process can take several minutes. When it completes, the Install Type menu appears.

```

WARNING: There will be no MCA support on chip 0 core 0 strand 5 (cni_hdl_create
returned NULL)

WARNING: There will be no MCA support on chip 1 core 0 strand 5 (cni_hdl_create
returned NULL)

WARNING: There will be no MCA support on chip 0 core 0 strand 7 (cni_hdl_create
returned NULL)

WARNING: There will be no MCA support on chip 1 core 0 strand 7 (cni_hdl_create
returned NULL)

Configuring devices.
/

1. Solaris Interactive (default)
2. Custom JumpStart
3. Solaris Interactive Text (Desktop session)
4. Solaris Interactive Text (Console session)
   (Select option 3 or 4 to install a ZFS root file system)
5. Apply driver updates
6. Single user shell

Enter the number of your choice.
Automatically continuing in 27 seconds

```

6. In the Install Type menu, choose the type of interface that you want to use to perform the installation.

- **Graphical User Interface (default)**

Type 1 then press Enter.

- **Text Installer From Desktop Session**

Type 3 then press Enter.

- **Text Installer From Console Session**

Type 4 then press Enter.

Note – The screens that are displayed on your system might differ depending on the type of interface you chose to configure in Step 6. The sample screens appearing in this procedure from this point on are based on the default Graphical User Interface (GUI) option (option 1).

The system discovers and configures the devices and interfaces. If the system discovers a keyboard, the Configure Keyboard Layout menu appears.

```

Done mounting Live image
USB keyboard
 1. Albanian
 2. Belarusian
 3. Belgian
 4. Brazilian
 5. Bulgarian
 6. Canadian-Bilingual
 7. Croatian
 8. Czech
 9. Danish
10. Dutch
11. Finnish
12. French
13. French-Canadian
14. Hungarian
15. German
16. Greek
17. Icelandic
18. Italian
19. Japanese-type6
20. Japanese
21. Korean
22. Latin-American
23. Lithuanian
24. Latvian
25. Macedonian
26. Malta_UK
27. Malta_US
28. Norwegian
29. Polish
30. Portuguese
31. Russian
32. Serbia-And-Montenegro
33. Slovenian
34. Slovakian
35. Spanish
36. Swedish
37. Swiss-French
38. Swiss-German
39. Traditional-Chinese
40. TurkishQ
41. TurkishF
42. UK-English
43. US-English
To select the keyboard layout, enter a number [default 43]:

```

7. In the Configure Keyboard Layout menu, select the appropriate keyboard layout, then press F2 to continue.

The system configures the keyboard layout selection and searches for configuration files.

If you selected a GUI installation in the earlier steps, the next two steps ([Step 8](#) and [Step 9](#)) confirm that the GUI is functioning. If you did not select a GUI interface earlier, skip to [Step 10](#).

```

Discovering additional network configuration...

Starting Solaris Interactive (graphical user interface) Installation.

You must respond to the first question within 30 seconds
or the installer proceeds in a non-window environment
(console mode).

If the screen becomes blank or unreadable the installer
proceeds in console mode.

If the screen does not properly revert to console mode,
restart the installation and make the following selection:

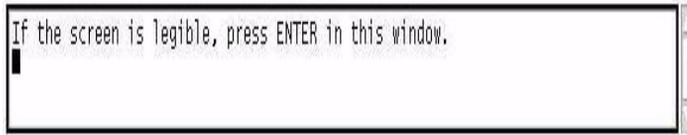
Solaris Interactive Text (Console session)

Press ENTER to continue.

```

8. In the Discovering Network Configurations and Starting Solaris Interactive Installation screen, press Enter.

A second screen appears to confirm that the GUI is functioning.



9. In the screen that is confirming the text shown is legible, press Enter.

The Language Selection menu appears.

10. In the Language Selection menu, type the selected language ID number (0-9), then press Enter.

After a few moments the Welcome screen appears.

Note – The sample screen shown below reflects the GUI installation program. If you are running a text-based installation interface, the text-based Welcome screen (not shown) will appear.



11. In the Welcome screen, click Next to begin the installation.

If you preconfigured all of the system information, the installation program does not prompt you to enter any configuration information. If you did not preconfigure all the system information, the installation program prompts you for this information on several configuration screens.

12. Continue the normal Solaris installation and, if necessary, refer to the Solaris documentation for additional details.

After the installation completes, the system will automatically reboot (if you previously selected this option during the configuration procedure) and displays the Solaris login prompt.

Note – If you did not configure the system to automatically reboot when the installation completes, you must manually reboot the system.

13. Proceed to the section “Post Solaris Installation Tasks” on page 86 to perform the post Solaris configuration tasks.

Post Solaris Installation Tasks

After completing the Solaris installation and rebooting the Solaris Operating System, review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- [“Install System Device Drivers to Support Additional Hardware” on page 86](#)
- [“Enable the Option for Wake On LAN” on page 86](#) (optional)
- [“Install RAID Management Software” on page 87](#)

Install System Device Drivers to Support Additional Hardware

The following table identifies the system device drivers available for you to install on your system. You should review this table to determine which drivers, if any, are currently required for installation on your system.

TABLE 6-2 Additional Solaris Device Drivers

| Hardware Device | Driver Required | Instructions | Download Driver From This Site (URL) |
|---|----------------------|---|---|
| Sun Dual Port DDR IB Host Channel Adapter PCIe Card | Hermon device driver | The hermon device driver is included in the Solaris InfiniBand (IB) Updates 3 software release. | http://www.sun.com/download/index.jsp?cat=Hardware%20Drivers&tab=3&subcat=InfiniBand |
| Sun QDR IB-HCA PCI-e Card (X4237A) | | For additional information about this device driver, see: http://docs.sun.com/app/docs/doc/819-2254/hermon-7d?a=view | |

Enable the Option for Wake On LAN

After installing the operating system, you might want to consider enabling the Wake On LAN (WOL) option in the BIOS Setup utility. This feature enables you to power on the server from another location over the network. For details about the requirements for enabling WOL, see “Wake On LAN” in the *Sun Fire X4170, X4270, and X4275 Servers Service Manual*.

Install RAID Management Software

If you have Sun StorageTek SAS RAID HBA (SG-XPCIESAS-R) installed on your server, you should install the Sun RAID management software, which is available on the Tools and Drivers CD/DVD. If you do not install the RAID management software on your system, the Solaris OS will not be able to detect and report disk errors.

You can access the Adaptec RAID Storage management software on the Tools and Drivers CD/DVD at the following location:

```
solaris/tools/raid_adaptec
```


Installing OpenSolaris

This chapter provides information about installing the OpenSolaris™ 2009.06 Operating System (OpenSolaris OS) on the Sun Fire X4170, X4270, and X4275 Servers.

This chapter includes the following topics:

- [“Task Map for OpenSolaris Installation” on page 89](#)
- [“Installing OpenSolaris OS Using Local or Remote Media” on page 90](#)
- [“Post OpenSolaris Installation Tasks” on page 98](#)

For information describing how to configure the preinstalled OpenSolaris OS image, see the *Sun Fire X4170, X4270, and X4275 Servers Installation Guide (820-5827)* for setup instructions.

Task Map for OpenSolaris Installation

Use [TABLE 7-1](#) to preview the installation process defined as a series of tasks. The table identifies and describes the tasks required, and provides pointers to the instructions for performing that task.

TABLE 7-1 Task Map for the OpenSolaris Installation

| Step | Task | Description | Relevant Topic(s) |
|------|------------------------------------|---|---|
| 1 | Review installation prerequisites. | Verify that all applicable requirements are met for installing an operating system to the Sun Fire X4170, X4270, and X4275 Servers. | <ul style="list-style-type: none"> • TABLE 1-2 “OS Installation Prerequisites” on page 4 |
| 2 | Choose an installation method. | Evaluate and select an installation method that meets the needs of your infrastructure. | <ul style="list-style-type: none"> • “Installation Methods” on page 6 |

TABLE 7-1 Task Map for the OpenSolaris Installation (*Continued*)

| Step | Task | Description | Relevant Topic(s) |
|------|---|---|--|
| 3 | Ensure that the BIOS factory defaults are set. | Verify that the factory default settings in the BIOS are set prior to performing the operating system installation. | <ul style="list-style-type: none">• “Verify BIOS Settings for New Installations” on page 11 |
| 4 | Gather OpenSolaris 2009.06 installation media. | The OpenSolaris OS is shipped with the CD and DVD media and documentation that you will need to install the OpenSolaris OS for both SPARC and x86 platforms. For the Sun Fire X4170, X4270, and X4275 Servers, use the media for x86 platforms. | <ul style="list-style-type: none">• You can download or order the media for the OpenSolaris OS at: http://opensolaris.org/os/downloads/ |
| 5 | Perform the OpenSolaris OS installation. | The installation instructions in this chapter describe the initial steps for booting the installation media and launching the OpenSolaris installation program. For further information about installing OpenSolaris, refer to the Getting Started with OpenSolaris 2009.06 web site at: http://dlc.sun.com/osol/docs/content/2009.06/getstart/ | <ul style="list-style-type: none">• “Installing OpenSolaris OS Using Local or Remote Media” on page 90 |
| 6 | Install driver(s), post installation, if necessary. | If the OpenSolaris OS does not include the necessary device drivers to support your system, you might need to install additional device drivers. | <ul style="list-style-type: none">• “Install System Device Drivers to Support Additional Hardware” on page 98 |
| 7 | Install SRUs, post installation, if necessary. | If necessary, download and install OpenSolaris Support Repository Updates (SRUs). SRUs provide critical fixes to the OpenSolaris OS. | <ul style="list-style-type: none">• “Install Support Repository Updates” on page 98 |
| 8 | Enable the Wake On LAN option, if desired. | This feature enables you to power on the server from another location over the network. | <ul style="list-style-type: none">• “Enable the Option for Wake On LAN” on page 98 |

Installing OpenSolaris OS Using Local or Remote Media

The following procedure describes how to boot the OpenSolaris 2009.06 Operating System installation from local or remote media. It assumes that you are booting the installation media from one of the following sources:

- OpenSolaris 2009.06 (or subsequent release) Live CD/DVD (internal or external CD/DVD)

- OpenSolaris 2009.06 (or subsequent release) Live CD ISO image (network repository)

Before You Begin

Prior to performing the installation, the following requirements must be met:

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see [TABLE 1-2 “OS Installation Prerequisites” on page 4](#).
- An installation method (for example: console, boot media, and installation target) should have been chosen and established prior to performing the installation. For information about these setup requirements, see [“Installation Methods” on page 6](#).

Note that the following procedure explains the initial steps for booting the installation media and launching the OpenSolaris installation program.

After completing this procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see [“Post OpenSolaris Installation Tasks” on page 98](#).

▼ Install OpenSolaris OS Using Local or Remote Media

1. Ensure that the installation media is available to boot.

Note – For the Sun Fire X4275 Server, which has neither a CD/DVD-ROM drive nor a USB connector on the front panel, use the ILOM Remote Console to redirect the boot media from a remote storage device. For instructions, see [“Remote Boot Media” in TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8](#).

- **For distribution CD/DVD.** Insert the OpenSolaris 2009.06 Distribution Media (CD labeled 1 or the single DVD) into the local or remote CD/DVD-ROM drive.
- **For ISO image.** Ensure that the ISO images are available and that the Sun ILOM Remote Console application is aware of the first ISO image location.

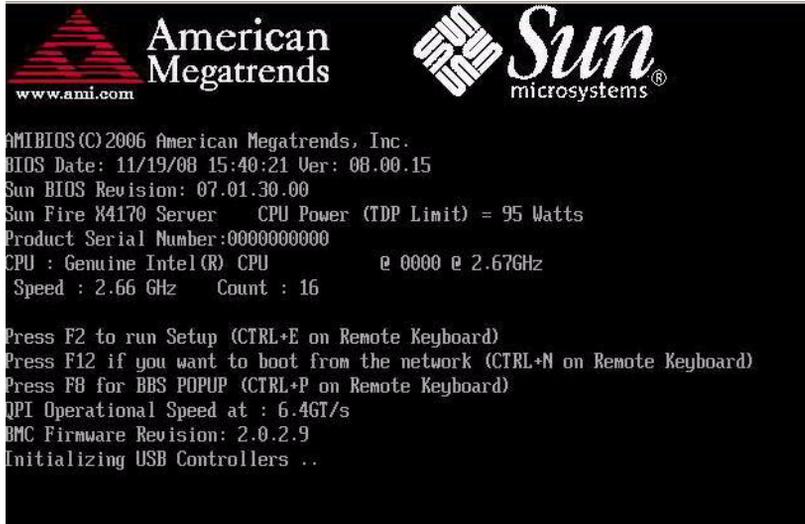
For additional information about how to set up the installation media, see [TABLE 1-4 “Boot Media Options for Performing the OS Installation” on page 8](#).

2. Reset the power on the server.

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control tab, then select the Power Cycle option from the Host action drop-down list box.
- **From the local server**, press the Power button (approximately 1 second) on the front panel of the server to turn the server off, then press the Power button again to power on the server module.
- **From the ILOM CLI on the server SP**, 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.

- 3. In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the OpenSolaris installation.**

The Please Select Boot Device menu appears.



4. In the Boot Device menu, select either the external or virtual CD/DVD device as the first (temporary) boot device, then press Enter.

In the sample Boot Device menu shown in [Step 3](#), the CD/DVDW device is specified as the first boot device.

The device strings listed on the Boot Device menu are in the format of:

device type: slot indicator: product ID string

Note – If you are performing the OpenSolaris installation from the Sun ILOM Remote Console application, select the AMI Virtual CDROM, or CDROM image as the first boot device.

The GRUB menu appears.



5. In the GRUB menu, select `OpenSolaris 2009.06`, then press **Enter**.

Note – In the GRUB menu, if you want to redirect the installation output to a serial console, press “e” to edit the GRUB menu to support a serial console (`-B console = ttya`).

The system loads the OpenSolaris disk image into memory. This process can take several minutes.

The system discovers and configures the devices and interfaces. If the system discovers a keyboard, the Configure Keyboard Layout menu appears.

```

Done mounting Live image
USB keyboard
 1. Albanian
 2. Belarusian
 3. Belgian
 4. Brazilian
 5. Bulgarian
 6. Canadian-Bilingual
 7. Croatian
 8. Czech
 9. Danish
10. Dutch
11. Finnish
12. French
13. French-Canadian
14. Hungarian
15. German
16. Greek
17. Icelandic
18. Italian
19. Japanese-type6
20. Japanese
21. Korean
22. Latin-American
23. Lithuanian
24. Latvian
25. Macedonian
26. Malta_UK
27. Malta_US
28. Norwegian
29. Polish
30. Portuguese
31. Russian
32. Serbia-And-Montenegro
33. Slovenian
34. Slovakian
35. Spanish
36. Swedish
37. Swiss-French
38. Swiss-German
39. Traditional-Chinese
40. TurkishQ
41. TurkishF
42. UK-English
43. US-English
To select the keyboard layout, enter a number [default 43]:

```

6. In the Configure Keyboard Layout menu, select the appropriate keyboard layout, then press Enter to continue.

The system configures the keyboard layout selection and searches for configuration files. The Select Desktop Language menu appears.

```

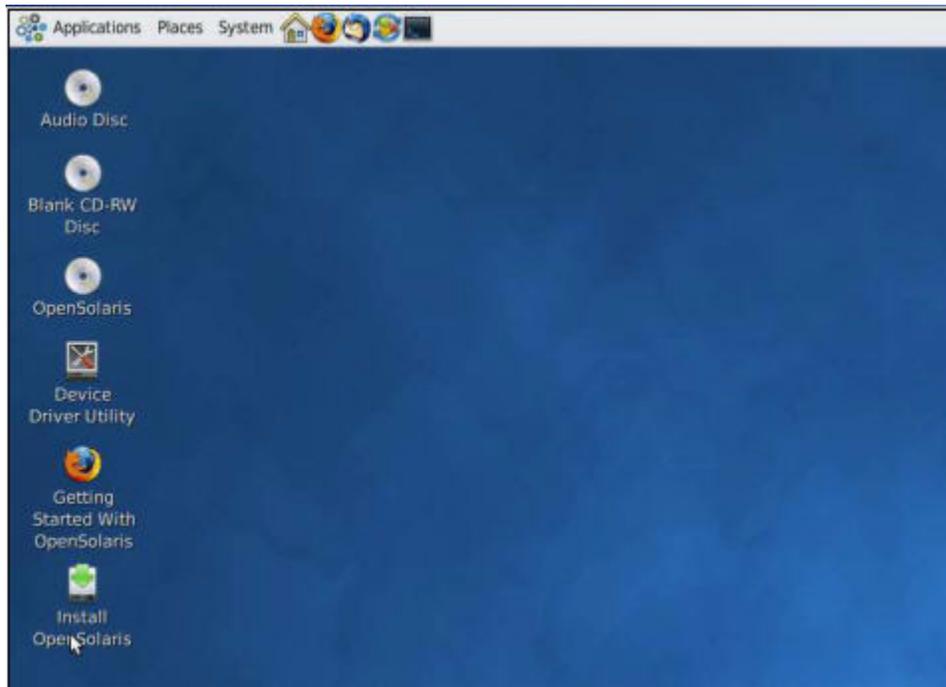
22. Latin-American
To select the keyboard layout, enter a number [default 43]:

 1. Arabic
 2. Chinese - Simplified
 3. Chinese - Traditional
 4. Czech
 5. Dutch
 6. English
 7. French
 8. German
 9. Greek
10. Hebrew
11. Hungarian
12. Indonesian
13. Italian
14. Japanese
15. Korean
16. Polish
17. Portuguese - Brazil
18. Russian
19. Slovak
20. Spanish
21. Swedish
To select desktop language, enter a number [default is 6]:

```

7. In the Select Desktop Language menu, select the appropriate desktop language, then press Enter to continue.

After a few moments the OpenSolaris 2009.06 desktop appears.



8. In the OpenSolaris desktop, double-click the Install OpenSolaris icon to begin the OS installation.

The OpenSolaris Installer Welcome screen appears.



9. In the Welcome screen, click Next to begin the installation.

The OpenSolaris installation program will display several configuration screens.

10. Follow the on-screen instructions to complete the OpenSolaris installation.

For additional information, refer to the Getting Started with OpenSolaris 2009.06 web site at:

<http://dlc.sun.com/osol/docs/content/2009.06/getstart>

Note – If you did not configure the system to automatically reboot when the installation completes, you must manually reboot the system.

11. Proceed to the section “Post OpenSolaris Installation Tasks” on page 98 to perform the post OpenSolaris configuration tasks.

Post OpenSolaris Installation Tasks

After completing the OpenSolaris installation and rebooting the Operating System, review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- “Install System Device Drivers to Support Additional Hardware” on page 98
- “Install Support Repository Updates” on page 98
- “Enable the Option for Wake On LAN” on page 98 (optional)

Install System Device Drivers to Support Additional Hardware

The Device Driver Utility enables you to connect to the Image Packaging System (IPS) and use it to search for device drivers for the devices on your system that do not have a driver attached with them.

To start the Device Driver Utility, click the Device Driver Utility icon on the OpenSolaris desktop.

Install Support Repository Updates

A Support Repository Update (SRU) contains the latest released bug fixes for your OpenSolaris release.

Directions for accessing and installing SRUs can be found at:

<http://sunsolve.sun.com/show.do?target=opensolaris>

Enable the Option for Wake On LAN

After installing the operating system, you might want to consider enabling the Wake On LAN (WOL) option in the BIOS Setup utility. This feature enables you to power on the server from another location over the network. For details about the requirements for enabling WOL, see “Wake On LAN” in the *Sun Fire X4170, X4270, and X4275 Servers Service Manual*.

Translate Network Interface Card PCI Bus Number to Physical Network Port

This appendix provides information to help you identify the appropriate network interface card to configure for the VMware service console.

To translate the PCI bus numbering for network interface cards populated in a Sun Fire X4170, X4270 or X4275 Server, refer to the following tables.

- [TABLE A-3: “Sun Fire X4170, X4270, and X4275 Servers Bus Numbering Translations for On-Board Ethernet” on page A-99](#)
- [TABLE A-4: “Sun Fire X4170 Server Bus Numbering Translations for X7280A-2” on page A-100](#)
- [TABLE A-5: “Sun Fire X4170 Server Bus Numbering Translations for X4446A-2” on page A-100](#)
- [TABLE A-6: “Sun Fire X4270 and X4275 Servers Bus Numbering Translations for X7280A-2” on page A-100](#)
- [TABLE A-7: “Sun Fire X4270 and X4275 Servers Bus Numbering Translations for X4446A-2” on page A-101](#)

TABLE A-3 Sun Fire X4170, X4270, and X4275 Servers Bus Numbering Translations for On-Board Ethernet

| PCI Bus:Device:Function | Port Label |
|-------------------------|------------|
| 1:0:0 | NET 0 |
| 1:0:1 | NET 1 |
| 7:0:0 | NET 2 |
| 7:0:1 | NET 3 |

TABLE A-4 Sun Fire X4170 Server Bus Numbering Translations for X7280A-2

| PCI Bus:Device:Function | PCI Slot | RJ-45 Port |
|--------------------------------|-----------------|-------------------|
| d:0:0/d:0:1 | 0 | 0/1 |
| 13:0:0/13:0:1 | 1 | 0/1 |
| 19:0:0/19:0:1 | 2 | 0/1 |

TABLE A-5 Sun Fire X4170 Server Bus Numbering Translations for X4446A-2

| PCI Bus:Device:Function | PCI Slot | RJ-45 Port |
|--------------------------------|-----------------|-------------------|
| f:0:0/f:0:1/10:0:0/10:0:1 | 0 | 0/1/2/3 |
| 15:0:0/15:0:1/16:0:0/16:0:1 | 1 | 0/1/2/3 |
| 1b:0:0/1b:0:1/1c:0:0/1c:0:1 | 2 | 0/1/2/3 |

TABLE A-6 Sun Fire X4270 and X4275 Servers Bus Numbering Translations for X7280A-2

| PCI Bus:Device:Function | PCI Slot | RJ-45 Port |
|--------------------------------|-----------------|-------------------|
| 13:0:0/13:0:1 | 0 | 0/1 |
| 21:0:0/21:0:1 | 1 | 0/1 |
| 2f:0:0/2f:0:1 | 2 | 0/1 |
| d:0:0/d:0:1 | 3 | 0/1 |
| 1b:0:0/1b:0:1 | 4 | 0/1 |
| 29:0:0/29:0:1 | 5 | 0/1 |

TABLE A-7 Sun Fire X4270 and X4275 Servers Bus Numbering Translations for X4446A-2

| PCI Bus:Device:Function | PCI Slot | RJ-45 Port |
|--------------------------------|-----------------|-------------------|
| 15:0:0/15:0:1/16:0:0/16:0:1 | 0 | 0/1/2/3 |
| 23:0:0/23:0:1/24:0:0/24:0:1 | 1 | 0/1/2/3 |
| 31:0:0/31:0:1/32:0:0/32:0:1 | 2 | 0/1/2/3 |
| f:0:0/f:0:1/10:0:0/10:0:1 | 3 | 0/1/2/3 |
| 1d:0:0/1d:0:1/1e:0:0/1e:0:1 | 4 | 0/1/2/3 |
| 2b:0:0/2b:0:1/2c:0:0/2c:0:1 | 5 | 0/1/2/3 |

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