

Sun Netra X6720 M2 Server Module

Installation Guide for Linux, Virtual Machine Software,
and Oracle Solaris Operating Systems



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Using This Documentation

This guide contains operating system installation and initial software configuration procedures for bringing Oracle's Sun Netra X6270 M2 server module to a configurable and usable state. This document is written for technicians, system administrators, authorized service providers (ASPs), and users who have experience installing Linux, Virtual Machine software, and Oracle Solaris operating systems.

Product Information

For information about the Sun Netra X6270 M2 server module, go to the following website: (<http://www.oracle.com/goto/netrax6270m2>).

At that site, you can find links and navigate to the following information and downloads:

- Product information and specifications

- Supported operating systems

- Software and firmware downloads

- Supported option cards

- Supported Network Express Modules

- External storage options

Related Documentation

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

(<http://docs.sun.com/app/docs/prod/nt6270.m2.srvrmod?l=en#hic>)

Title	Content	Format
<i>Sun Netra X6270 M2 Server Module Product Notes</i> , 821-0936	Late-breaking information about the server	PDF HTML
<i>Sun Netra X6270 M2 Server Module Getting Started Guide</i> , 821-2123	Basic installation information for setting up the server	PDF Print
<i>Sun Netra X6270 M2 Server Module Installation Guide</i> , 821-0937	Detailed installation information for setting up the server	PDF HTML Print option
<i>Sun Netra X6270 M2 Server Module Installation Guide for Windows Operating Systems</i> , 821-0941	Installation instructions for the Windows Server operating systems	PDF HTML
<i>Sun Netra X6270 M2 Server Module Service Manual</i> , 821-0939	Information and procedures for maintaining and upgrading the server	PDF HTML
<i>Sun Installation Assistant 2.3 Through 2.4 User's Guide for x64 Systems</i> , 821-0694	Instructions for using the Sun Installation Assistant to install the Windows and Linux operating systems	PDF HTML
<i>Oracle x86 Servers Diagnostics Guide</i> , 820-6750	Information for diagnosing and troubleshooting the server	PDF HTML
<i>Sun Server CLI Tools and IPMI Tool 2.0 User's Guide</i> , 821-1600	Information for using applications and utilities common to x64 servers	PDF HTML
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection</i> , 820-5523, 820-6410, 820-6411, 820-6412, 820-6413 (formerly called Sun Integrated Lights Out Manager Documentation Collection)	Documents covering ILOM features and tasks that are common to servers and server modules that support ILOM 3.0	PDF HTML
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Netra X6270 M2 Server Module</i> , 821-0943	ILOM 3.0 information that is specific to the Sun Netra X6270 M2 server module	PDF HTML
<i>Sun Netra X6270 M2 Server Module Safety and Compliance Guide</i> , 821-0938	Hardware safety and compliance information for the server module	PDF
<i>Important Safety Information for Sun Hardware Systems</i> , 821-1590	Multilingual hardware safety and compliance information for all Sun hardware systems	Print

Translated versions of some of these documents are available at the web site listed above this table. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

Documentation, Support, and Training

These web sites provide additional resources:

- Documentation (<http://docs.sun.com>)
- Support (<http://www.sun.com/support>)
- Training (<http://www.sun.com/training>)

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Sun Netra X6270 M2 Server Module Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems, part number 821-0940-10.

Product Downloads

To download the latest product software, go to the following web site:

(<http://www.oracle.com/goto/netrax6270m2>)

At that site, you can find links and navigate to the following items:

- Tools and Drivers DVD image
- Sun Installation Assistant DVD image
- Sun Validation Test Suite (SunVTS) Update

PART I

Linux Software Installation

This section lists the topics that describe how to install a Linux operating system on Oracle’s Sun Netra X6270 M2 server module.

Description	Links
Novice or Experienced Users: Use SIA to perform an assisted installation of the Linux operating system. SIA provides the appropriate system drivers and platform-specific software.	Chapter 1 , Assisted OS Installation With Sun Installation Assistant (SIA)
Experienced Users. Manually install the Linux operating system and the required system drivers.	<ul style="list-style-type: none">• Chapter 2, Getting Started• Chapter 3, Installing Oracle Enterprise Linux• Chapter 4, Installing SUSE Enterprise Linux• Chapter 5, Installing Red Hat Enterprise Linux
References: Refer to these topics, as needed, to perform or complete the Linux operating system installation.	<ul style="list-style-type: none">• Appendix A, Installation Methods• Appendix B, Supported Operating Systems• Appendix C, BIOS Defaults for New Installations• Appendix D, Downloading the ISO Image for the Tools and Drivers DVD.

Assisted OS Installation With Sun Installation Assistant (SIA)

SIA makes operating system installation easy. With SIA, all you need to begin is a licensed copy of Linux or Windows OS distribution media supported for your server. All software and required server-specific drivers are supplied by SIA. With a graphical wizard interface and flexible installation options, SIA brings simplicity, speed, and reliability to your server deployments.

To use SIA, simply boot the SIA program from the server's CD drive, a USB flash drive, or from a network image. Check for the latest SIA updates available. Select your OS distribution from the menu and follow the on-screen instructions. SIA scans your system to ensure that it has the drivers it needs to configure your server components[1]. It also provides you the option of having SIA check for the latest drivers available. SIA will prompt you for the appropriate media as needed and any other required information during the OS installation process (such as license keys).

Note – [1] Some option card drivers are downloaded to the server, but require manual installation. Feature enhancements are made to SIA regularly; therefore, you should check the SIA information page for the latest SIA updates and supported features (<http://www.sun.com/systemmanagement/sia.jsp>).

Topics discussed in this chapter include:

- “SIA Task Overview” on page 4
- “How to Obtain SIA” on page 4
- “SIA Documentation Resources” on page 4

SIA Task Overview

You can perform the following tasks using SIA:

Note – The supported SIA installation and recovery tasks listed below are server-dependent and might vary.

- Perform an assisted installation of a Linux or Windows operating system on your server. SIA provides the appropriate drivers and platform-specific software, eliminating the need to create a separate driver disk.
- Optionally create RAID-1 volumes on internal storage devices.
- Optionally upgrade your system Oracle Integrated Lights Out Manager (ILOM) service processor (SP), BIOS, and storage device firmware (regardless of the OS on your server).
- Optionally update your SIA session with the latest firmware and drivers.
- Optionally recover from a corrupt or inaccessible ILOM service processor.

How to Obtain SIA

SIA is provided with most server platforms on the SIA DVD. It is also available as a web download. Regular updates are made available to ensure that the latest OS versions are supported. To download the latest version of SIA for your server platform, refer to the SIA information page at:

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

SIA Documentation Resources

If you have determined that you want to install a Windows or Linux operating system on your x86 server using SIA, refer to the following resources for detailed installation instructions and forum discussions.

- *Sun Installation Assistant 2.3 Through 2.4 User's Guide for x64 Systems*, 821-0694
(<http://docs.sun.com/app/docs/prod/install.x64svr>)
- Sun BigAdmin Feature Article: *How to Use the Sun Installation Assistant*

(http://www.sun.com/bigadmin/features/articles/install_assistant.jsp)

Getting Started With Linux Operating System Installations

This chapter describes how to get started installing a Linux operating system manually on your server.

Note – The term “manually” refers to performing the installation by following the instructions provided in this guide, and not using the Sun Installation Assistant (SIA). If you prefer to perform an assisted Linux installation by using SIA, see [Chapter 1](#) of this guide.

Topics discussed in this chapter include:

- [“Supported Linux Operating Systems” on page 7](#)
- [“Linux Installation Prerequisites” on page 8](#)
- [“Linux Installation Task Overview” on page 9](#)

Supported Linux Operating Systems

The Sun Netra X6270 M2 server module supports the following Linux operating systems:

Linux OS	Edition
Oracle	Enterprise Linux 5.4 for x86 (64-bit)
SUSE	Linux Enterprise Server 10 SP3
	Linux Enterprise Server 11 (64-bit)
RHEL	Red Hat Enterprise Linux Server (RHEL) 5.4 (64-bit)

For a complete and updated list of all the supported operating systems on the Sun Netra X6270 M2 server module, see the following web site:

(<http://www.oracle.com/goto/netrax6270m2>)

Linux Installation Prerequisites

Refer to the following important considerations before beginning the Linux operating system installation on your server.

TABLE 2-1 Prerequisites for Installing a Linux Operating System

Requirement	Description	For more information, see:
Server module is set up and operational	The server module is installed in the chassis, powered-on, and communication to the SP has been established.	<ul style="list-style-type: none">• <i>Sun Netra X6270 M2 Server Module Installation Guide</i>, 821-0937
Established deployment method that enables you to boot the Linux install program	Guidelines for deploying a Linux operating system installation.	<ul style="list-style-type: none">• Appendix A
RAID volume creation	If you want to include your boot drive as part of a RAID configuration, you need to configure a RAID volume on it. Use the LSI integrated RAID controller setup utility before you install Windows.	<ul style="list-style-type: none">• <i>LSI MegaRAID Software SAS User's Guide</i> at: (http://www.lsi.com/support/sun/)
Verification of BIOS settings for new OS installations	Prior to installing the Linux operating system, you should verify that the BIOS factory-default properties are set.	<ul style="list-style-type: none">• Appendix C
Linux vendor documentation	Gather the applicable vendor documentation for the Linux installation. The vendor documentation should be used in conjunction with the installation instructions provided in this guide.	<ul style="list-style-type: none">• (http://www.oracle.com/technology/documentation/index.html)• (http://www.novell.com/documentation/suse)• (http://www.redhat.com/docs/manuals/enterprise/)

TABLE 2-1 Prerequisites for Installing a Linux Operating System (Continued)

Requirement	Description	For more information, see:
Tools and Drivers DVD	Ensure that you have the Tools and Drivers DVD that was provided with your server.	<ul style="list-style-type: none"> (http://www.oracle.com/goto/netrax6270m2)
SLES 11 - Prepare LSI Storage Floppy Image or Floppy Disk	The SLES 11 install media does not include the LSI device drivers for the Sun Storage 6 Gb SAS HBA options (SG-SAS6-EM-Z, or SG-SAS6-REM-Z, or SGX-SAS6-REM-Z). If you have one of these SAS HBA options installed, the LSI mass storage driver for the HBA option must be mounted from a floppy image or floppy disk during the installation.	<ul style="list-style-type: none"> “SAS HBAs Requiring Storage Drivers for SLES 11 Installations” on page 10
Access to late-breaking information	Review the <i>Sun Netra X6270 M2 Server Module Product Notes</i> , 821-0936, for late-breaking information about supported operating system software and patches.	<ul style="list-style-type: none"> <i>Sun Netra X6270 M2 Server Module Product Notes</i>, 821-0936

Linux Installation Task Overview

To install a Linux operating system, complete the following tasks in the order specified:

1. Gather the Linux operating system installation media and documentation. You can download the Linux installation program from the appropriate vendor’s web site, for example:
 - For Oracle Enterprise Linux, see (<http://edelivery.oracle.com/linux>)
 - For SUSE Linux Enterprise Server, see (<http://www.novell.com>)
 - For Red Hat Linux Enterprise Linux server, see (<http://www.redhat.com>)
2. If necessary, obtain the Tools and Driver DVD provided or download the latest drivers for your server as described in [Appendix D](#).
 If you are installing SLES 11 and you have a Sun Storage 6 Gb SAS HBA installed on your server, you must copy the LSI storage drivers for the HBA option to a floppy disk or floppy image prior to performing the SLES 11 installation. For more details, see “SAS HBAs Requiring Storage Drivers for SLES 11 Installations” on page 10.
3. Choose and set up an installation method for deploying Linux as described in [Appendix A](#).
4. Follow the instructions for performing a manual installation of a Linux Server operating system as described in:

- [Chapter 3](#) for Oracle Enterprise Linux
 - [Chapter 4](#) for SUSE Linux Enterprise Server
 - [Chapter 5](#) for Red Hat Linux Enterprise Server
5. Follow the operating system specific instructions for performing the post installation tasks as described in:
- [“Post OEL Installation Tasks” on page 19](#)
 - [“Post SLES Installation Tasks” on page 30](#)
 - [“Post RHEL Installation Tasks” on page 39](#)

SAS HBAs Requiring Storage Drivers for SLES 11 Installations

The SLES 11 installation media does not include the LSI mass storage driver for the following SAS host bus adapters (HBAs) options described in [TABLE 2-2](#).

TABLE 2-2 SAS HBAs Requiring LSI Mass Storage Drivers for SLES 11

SAS HBA Option	Option Number	Driver Required During Installation
Sun Storage 6 Gb SAS HBA, ExpressModule	SG-SAS6-EM-Z	LSI Adapter SAS Falcon
Sun Storage 6 Gb SAS HBA, REM	SG-SAS6-REM-Z SGX-SAS6-REM-Z	LSI Adapter SAS Falcon

If you have one of the SAS HBA options (described in [TABLE 2-2](#)) installed on your server and you are installing SLES 11, the LSI mass storage driver for the HBA option must be mounted from a floppy disk or floppy image during the SLES 11 installation process.

Prior to starting the SLES 11 installation, use one of the following methods to prepare the LSI mass storage driver floppy disk or floppy image:

- **Mount Floppy Disk.** Use the LSI storage floppy image on the Tools and Drivers DVD to create a floppy disk. Then, mount the floppy disk as a device from the ILOM Remote Console.
- **Mount Floppy Image.** Copy the LSI storage floppy image on the Tools and Drivers DVD to a network location; then mount the floppy image from the ILOM Remote Console.

The LSI storage floppy image on the Tools and Driver DVD is located in the following directory: `Linux/SLES/SLES11/FloppyImages/64bit`

Instructions for loading the LSI mass storage driver during the SLES 11 installation are provided in Step 6 in the procedure [“Installing SLES 11 Using Local or Remote Media”](#) on page 22.

If you do not have a copy of the Tools and Driver DVD, you can download the ISO image for the Tools and Driver DVD. For details, see [Appendix D](#).

Note – The SLES 11 installation media includes the required LSI mass storage drivers for the Sun Storage SAS **RAID** HBA options SG-SAS6-**R**-EM-Z, SG-SAS6-**R**-REM-Z, and SGX-SAS6-**R**-REM-Z.

Installing Oracle Enterprise Linux

This chapter provides information about installing Oracle Enterprise Linux 5 (OEL 5) for x86 (64-bit).

Note – It is highly recommended 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, see [Chapter 1](#).

This chapter includes the following topics:

- “Installing OEL 5 Using Local or Remote Media” on page 13
- “Installing OEL 5 Using a PXE Network Environment” on page 18
- “Post OEL Installation Tasks” on page 19

Installing OEL 5 Using Local or Remote Media

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

- OEL 5.4 (or subsequent release) CD or DVD set (internal or external CD/DVD)
- OEL 5.4 (or subsequent release) ISO DVD image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to “Installing OEL 5 Using a PXE Network Environment” on page 18 for instructions.

For further details about installing OEL, refer to the OEL documentation.

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 [Chapter 2](#).
- 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 [Appendix A](#).

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 19](#).

▼ Install OEL 5 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 [“Installation Boot Media” on page 89](#).

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP,** type: **reset /SYS**
- **From the ILOM CLI on a CMM,** type: **reset /CH/BLn/SYS**

Where *n* is the number of server module in chassis.

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.

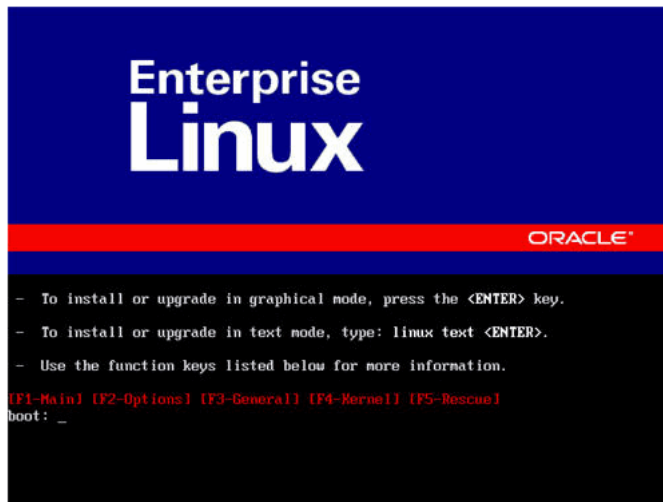
The device strings listed on Boot Device menu are in the format of: *device type*, *slot indicator*, and *product ID string*.

After a few seconds, the splash screen for the OEL 5 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 Next.



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.**

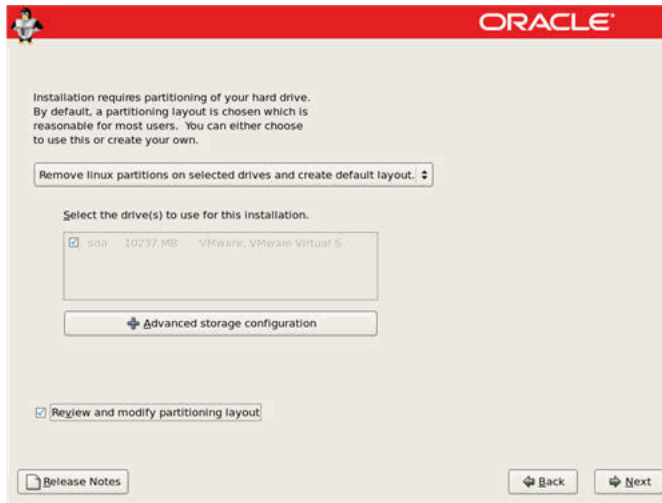
The Installation Number dialog appears.

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 Remove Linux partitions 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 Oracle 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.

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 OEL 5.4.
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 19.

Installing OEL 5 Using a PXE Network Environment

This section describes how to boot the OEL 5 from a PXE network environment. It assumes that you are booting the installation media from one of the following sources:

- OEL 5.4 CD or DVD set (internal or external CD/DVD)
- OEL 5.4 ISO DVD image or KickStart image (network repository)

Note – KickStart is an 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.

Before You Begin

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.
- 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 server's MAC network port address to boot from the PXE configuration.
 - Configure the Dynamic Host Configuration Protocol (DHCP).

For additional information, consult the PXE network installation instructions for Oracle Enterprise Linux 5.4 at:

<http://www.oracle-base.com/articles/linux/PXENetworkInstallations.php>.

▼ Install OEL 5 Using PXE Network 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, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP**, type: **reset /SYS**
- **From the ILOM CLI on a CMM**, type: **reset /CH/BL n /SYS**

Where n is the number of server module in chassis.

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. To complete the installation, refer to Step 5 in the procedure [“Install OEL 5 Using Local or Remote Media”](#) on page 14.

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.

- [“Configure Support for TPM”](#) on page 20

- “Register OEL and Activate Automatic Updates” on page 20

Configure Support for TPM

If you intend to use the Trusted Platform Module (TPM) feature set that is provided in Oracle Enterprise Linux, you must configure the Sun Netra X6270 M2 server module to support this feature. For instructions, see the *Sun Netra X6270 M2 Server Module Service Manual*, 821-0939.

Note – TPM enables you to administer the TPM security hardware in your server. For additional information about implementing this feature, refer to the TPM documentation available for Oracle Enterprise Linux.

Register OEL and Activate Automatic Updates

After installing OEL, you should register your system and activate your subscription with Oracle to receive automatic updates to the software. For more details, see Oracle Linux Support at: (<http://www.oracle.com/support/purchase.html>)

Installing SUSE Linux Enterprise Server

This chapter provides information about installing SUSE Linux Enterprise Server 11 (or subsequent release) for x86 (64-bit).

Note – It is highly recommended that you use the Sun Installation Assistant (SIA) to install the SUSE Linux Enterprise Server 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, see [Chapter 1](#).

This chapter includes the following topics:

- “Installing SLES 11 Using Local or Remote Media” on page 21
- “Installing SLES 11 Using a PXE Network Environment” on page 28
- “Post SLES Installation Tasks” on page 30

Installing SLES 11 Using Local or Remote Media

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

- SLES 11 (or subsequent release) CD or DVD set (internal or external CD/DVD)
- SLES 11 (or subsequent release) ISO DVD image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to [“Installing SLES 11 Using a PXE Network Environment” on page 28](#) for boot instructions.

To install SLES 11 using local or remote media, refer to the following topics:

- [“Before You Begin” on page 22](#)
- [“Installing SLES 11 Using Local or Remote Media” on page 22](#)

For further details about installing SLES 11, see the SUSE Linux Enterprise Server documentation collection from Novell at:

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

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 [Chapter 2](#).
- An installation method (for example: console, boot media, and install target) for booting the SLES installation media should have been chosen and established prior to performing the installation. For more information about these setup requirements, see [Appendix A](#).

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 30](#).

▼ Installing SLES 11 Using Local or Remote Media

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

- **For Distribution CD/DVD.** Insert the SLES 11 boot disc (CD labeled number 1 or 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 install media, see [Appendix A](#).

2. Reset the power on the server.

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP**, type: **reset /SYS**
- **From the ILOM CLI on a CMM**, type: **reset /CH/BL n /SYS**

Where n is the number of server module in chassis.

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. You might want to enlarge the size of your screen to eliminate scroll bars.

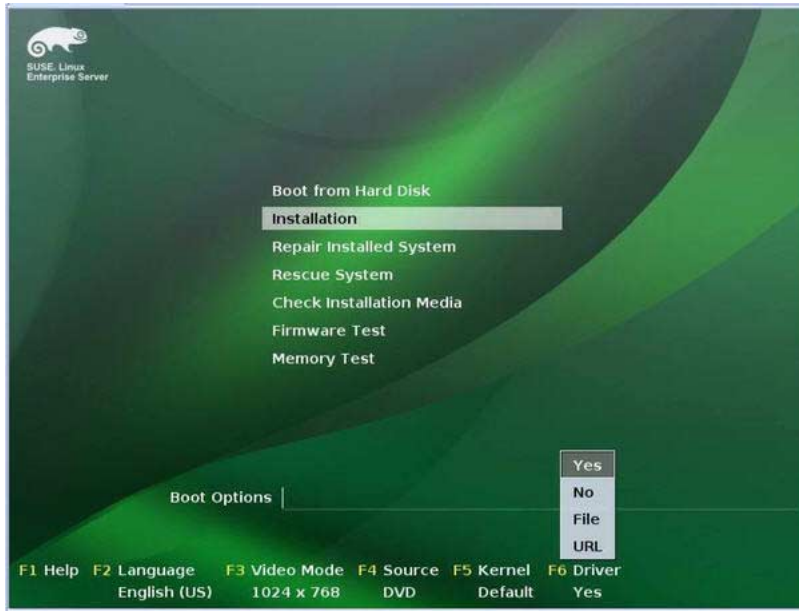
3. **In the BIOS power-on self-test screen, press F8 to specify a temporary boot device for the SLES installation.**

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 initial SUSE boot screen appears.



5. In the initial SUSE boot installation screen, do one of the following:

- For systems without a Sun Storage 6 Gb SAS HBA configuration (SG-SAS6-EM-Z, SG-SAS6-REM-Z, or SGX-SAS6-REM-Z), use the tab key to select the second option **Installation** and press Enter.

The Welcome screen appears. **Proceed to Step 7.**

- or -

- For systems with a Sun Storage 6 Gb SAS HBA (SG-SAS6-EM-Z, SGX-SAS6-REM-Z, or SG-SAS6-REM-Z) configuration, press F6 to load the appropriate LSI mass storage driver.

The Driver Update Medium dialog appears. **Proceed to Step 6.**

Note – The floppy storage media for loading LSI mass storage driver should have been mounted prior to starting the SLES 11 installation. For details about mounting the LSI floppy storage media prior to installation, see [“SAS HBAs Requiring Storage Drivers for SLES 11 Installations”](#) on page 10.



6. (LSI storage driver for SAS HBA configurations only) To load the LSI mass storage driver for the Sun Storage 6 Gb SAS HBA option (SG-SAS6-EM-Z, SG-SAS6-REM-Z, or SGX-SAS6-REM-Z), perform the following steps:

a. In the Driver Update Medium dialog, select the medium where the LSI floppy storage image is mounted, then click OK.

The driver is loaded then the Driver Update Medium dialog reappears.

b. In the Driver Update Medium dialog, click Back.

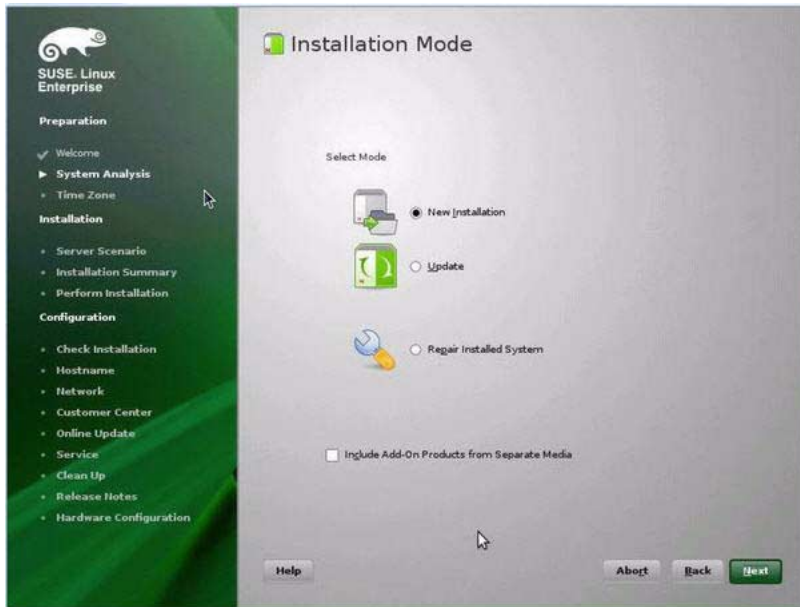
A message appears stating that the installation is being loaded then the SUSE Welcome screen appears.



7. In the Welcome screen, do the following

- Select the appropriate Language.
- Select the Keyboard Layout.
- Read the license agreement and select the check box for: I Agree to the License Terms.
- Click Next.

The System Probing screen appears with a progress bar. Upon completion of the system analysis, the Yast Installation Mode screen appears.



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

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.

The Server Base Scenario screen appears.

10. In the Server Base Scenario screen, select Physical Machine, then click Next.

The Installation Settings screen appears.



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

- Click **Next** to accept the installation settings shown.
- or -
- Click **Change** to edit the settings, then click **Next** to accept the installation settings.

Note – For more information about how to create custom partitions or edit other installation settings, refer to the Novell SLES 11 documentation.

The Confirm Package License screen appears.

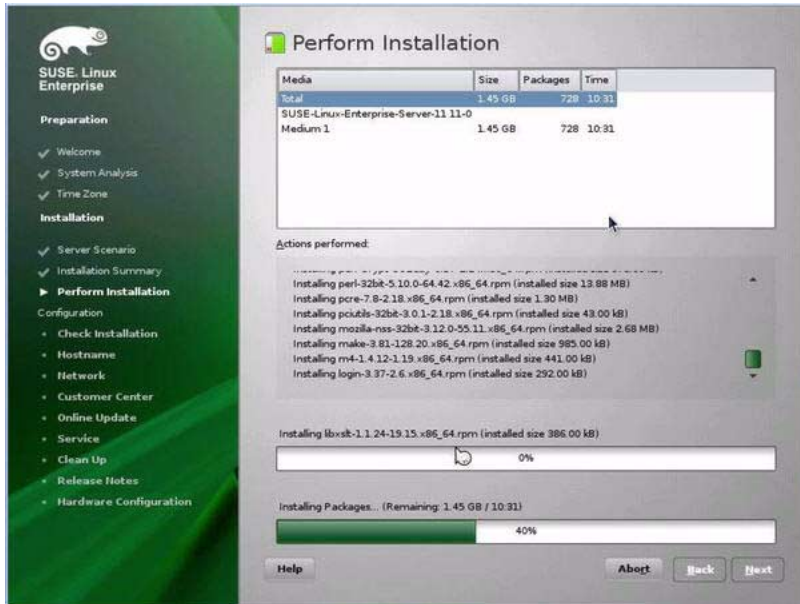
12. In the Confirm Package License screen, do the following:

- Read the License Agreement.
- Click **I Agree**.
- Click **Install**.

A Confirm Installation dialog appears.

13. In the Confirm Installation dialog, read the message and click **Install to start the installation.**

The Perform Installation dialog appears.



14. Continue the basic installation setup until all the SLES 11 OS files are installed and the system reboots.
15. After the completing the basic installation setup, refer the SLES 11 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 the latest updates available to the operating system.
16. Review and, if necessary, perform the post installation tasks described later in this chapter.

For details, see [“Post SLES Installation Tasks”](#) on page 30.

Installing SLES 11 Using a PXE Network Environment

This section describes how to boot SLES 11 from a PXE network environment. It assumes that you are booting the install media from one of the following sources:

- SLES 11 (or subsequent release) CD or DVD set (internal or external CD/DVD)
- SLES 11 (or subsequent release) 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 11 installation from a PXE network boot 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 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 Netra X6270 M2 server module MAC network port address to boot from the PXE configuration.
- Configure the Dynamic Host Configuration Protocol (DHCP).

Follow the setup instructions for booting SUSE media over the network in the SUSE Linux Enterprise documentation

After completing this procedure, you might need to perform the tasks for “[Post SLES Installation Tasks](#)” on page 30.

▼ Install SLES 11 Using PXE Network 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 the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP**, type: **reset /SYS**
- **From the ILOM CLI on a CMM**, type: **reset /CH/BL n /SYS**

Where n is the number of server module in chassis.

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. 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 PXE install boot device (physical port) that is configured to communicate with your network install server, then press Enter.

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 initial SUSE Linux boot screen appears.

5. To continue the installation, proceed to the following section:

- [Step 5 of “Installing SLES 11 Using Local or Remote Media” on page 21.](#)

Post SLES Installation Tasks

After completing the SLES 11 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 30](#)
- [“Configuring Support for TPM” on page 32](#)

Updating the SLES Operating System

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

▼ Update the SLES Operating System

1. Log in to the SLES server 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 you 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, then the Proxy screen on the right. Type the correct proxy URLs in both the HTTP and HTTPS fields.

Note – In order for the on-line update service to function correctly through a network HTTP or HTTPS 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 product activation code.

- a. Select the Software tab.
 - b. Select Novell Customer Center Configuration and follow the directions.
5. Once registered, select the Online Update tab to perform the software update.

Configuring Support for TPM

If you intend to use the Trusted Platform Module (TPM) feature set that is provided in SLES, you must configure the Sun Netra X6270 M2 server module to support this feature. For instructions, see the configuration support for TPM information in the *Sun Netra X6270 M2 Server Module Service Manual*, 821-0939.

Note – TPM enables you to administer the TPM security hardware in your server. For additional information about implementing this feature, refer to the TPM documentation available for SUSE Linux Enterprise Server.

Installing Red Hat Enterprise Linux

This chapter provides information about installing Red Hat Enterprise Linux 5 for x86 (64-bit) on the server.

Note – It is highly recommended that you use the Sun Installation Assistant (SIA) to install the Red Hat 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, see [Chapter 1](#).

This chapter includes the following topics:

- “Installing RHEL 5 Using Local or Remote Media” on page 33
- “Installing RHEL 5 Using a PXE Network Environment” on page 37
- “Post RHEL Installation Tasks” on page 39

Installing RHEL 5 Using Local or Remote Media

The following procedure describes how to boot the RHEL 5.4 operating system installation from local or remote media. The procedure assumes that you are booting the RHEL installation media from one of the following sources:

- RHEL 5.4 (or subsequent release) CD or DVD set (internal or external CD/DVD)
- RHEL 5.4 (or subsequent release) ISO DVD image (network repository)

Note – If you are booting the installation media from a PXE environment, refer to “Installing RHEL 5 Using a PXE Network Environment” on page 37 for instructions.

For further details about installing RHEL, see the RHEL documentation collection at: (<http://www.redhat.com/docs/manuals/enterprise/>)

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 [Chapter 2](#).
- 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 [Appendix A](#).

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 39.

▼ Install RHEL 5 Using Local or Remote Media

1. Ensure that the install 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 install media, see [Appendix A](#).

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP,** type: **reset /SYS**
- **From the ILOM CLI on a CMM,** type: **reset /CH/BLn/SYS**

Where *n* is the number of server module in chassis.

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 RHEL 5 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.**

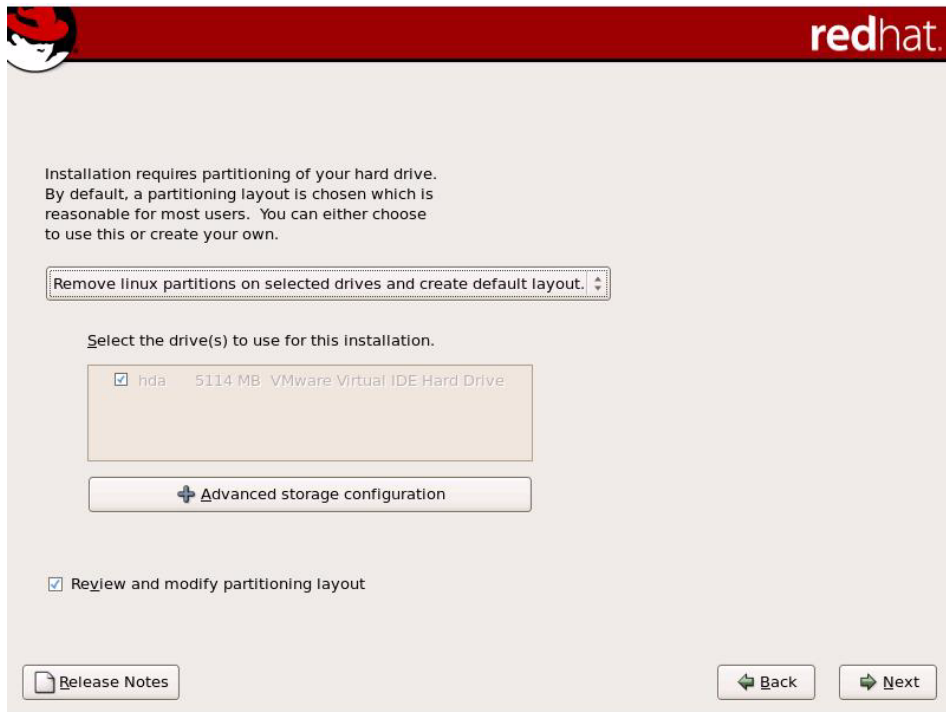
The Installation Number dialog appears.

- 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 Remove Linux partitions 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 Oracle Solaris OS is preinstalled on the disk, you can choose to partition the disk to remove Oracle 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 RHEL 5.4.

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 39.

Installing RHEL 5 Using a PXE Network Environment

This section describes how to boot the RHEL 5 from a PXE network environment. It assumes that you are booting the install media from one of the following sources:

- RHEL 5.4 (or subsequent release) CD or DVD set (internal or external CD/DVD)
- RHEL 5.4 (or subsequent release) ISO DVD image or KickStart image (network repository)

Note – KickStart is Red Hat’s automated installation method. 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.

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 5: 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 Netra X6270 M2 server module 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 RHEL 5 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, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP**, type: **reset /SYS**
- **From the ILOM CLI on a CMM**, type: **reset /CH/BLn/SYS**

Where *n* is the number of server module in chassis.

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. **To complete the installation, refer to [Step 5 in the procedure “Install RHEL 5 Using Local or Remote Media”](#) on page 34.**

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.

- “Register RHEL and Activate Automatic Updates” on page 39
- “Configuring TPM Support” on page 39

Register RHEL and Activate Automatic Updates

After installing RHEL, you should activate your RHEL subscription to receive automatic updates to the software. For more details, see Red Hat Linux Support at: (<http://www.redhat.com/apps/support/>)

Configuring TPM Support

If you intend to use the Trusted Platform Module (TPM) feature set that is provided in RHEL, you must configure the Sun Netra X6270 M2 server module to support this feature. For instructions, see configuration support for TPM information in the *Sun Netra X6270 M2 Server Module Service Manual*, 821-0939.

Note – TPM allows you to administer the TPM security hardware in your server. For additional information about implementing this feature, refer to the TPM documentation available for Red Hat Enterprise Linux.

PART II

Virtual Machine Software Installations

This section lists the topics that describe how to install virtual machine software on your server.

Description	Link(s)
Requirements. Refer to Chapter 6 to identify the installation considerations and requirements.	<ul style="list-style-type: none">• Chapter 6, Getting Started
Procedures. Refer to the appropriate chapter to install Oracle VM or VMware ESX or ESXi.	<ul style="list-style-type: none">• Chapter 7, Oracle VM Installation• Chapter 8, VMware ESX or ESXi Installation
References. Refer to these topics, as needed, to perform or complete the virtual machine software installation.	<ul style="list-style-type: none">• Appendix A, Supported Installation Methods• Appendix B, Supported Operating Systems• Appendix C, BIOS Defaults For New Installs

Getting Started With Virtual Machine Software Installations

This chapter describes how to get started installing a supported version of the virtual machine software on your server.

Topics discussed in this chapter include:

- “Supported Virtual Machine Software” on page 43
- “VM Software Installation Considerations” on page 44
- “VM Software Installation Task Overview” on page 45

Supported Virtual Machine Software

The Sun Netra X6270 M2 server module supports the following virtual machine (VM) software.

VM Software	Minimum Supported Edition
Oracle VM	Release 2.2.1
VMware ESX	Release 4.0 Update 1
VMware ESXi	Release 4.0 Update 1

For a complete and updated list of all the supported operating systems on the server module, see the following web site:

(<http://www.oracle.com/goto/netrax6270m2>)

VM Software Installation Considerations

Refer to the following important considerations before beginning the VM software installation on your server.

TABLE 6-1 VM Software Installation Considerations

Consideration	Description	For more information, see:
Established deployment method that enables you to boot the virtual machine software install program	Guidelines for deploying the VM software installation.	<ul style="list-style-type: none">• Appendix A
Oracle VM installation hardware requirements	<p>Oracle VM requires two systems with static IP addresses.</p> <ul style="list-style-type: none">• One system to install the Oracle Virtual Machine Server.• One system for Oracle Virtual Machine Manager with one of the following Linux operating systems installed:<ul style="list-style-type: none">- Oracle Enterprise Linux Release 4.5 or subsequent release- Red Hat Enterprise Linux Release 4 or subsequent release	<ul style="list-style-type: none">• Oracle VM Server Release Notes and the Oracle VM Manager Release Notes at: (http://download.oracle.com/docs/cd/E15458_01/index.htm)
RAID volume requirements	If you want to include your boot drive as part of a RAID configuration, you need to configure a RAID volume on it. Use the LSI integrated RAID controller setup utility before you install VMware.	<ul style="list-style-type: none">• <i>LSI MegaRAID Software SAS User's Guide</i> at: (http://www.lsi.com/support/sun/)
Verification of BIOS settings for new OS installations	Prior to installing the VM software, you should verify that the BIOS factory-default properties are set.	<ul style="list-style-type: none">• Appendix C

TABLE 6-1 VM Software Installation Considerations *(Continued)*

Consideration	Description	For more information, see:
Access to late-breaking information and updates for OS installations	Review the <i>Sun Netra X6270 M2 Server Module Product Notes</i> , 821-0936, and the VM software release notes for late-breaking information about supported software and updates.	<ul style="list-style-type: none"> • <i>Sun Netra X6270 M2 Server Module Product Notes</i>, 821-0936 • Oracle VM 2.2.1 release notes at: (http://download.oracle.com/docs/cd/E15458_01/index.htm) • VMware ESX 4.0 Update 1 release notes at: (http://www.vmware.com/support/vsphere4/doc/vsp_esx40_u1_rel_notes.html) • VMware ESXi Update 1 release notes at: (http://www.vmware.com/support/vsphere4/doc/vsp_esxi40_u1_rel_notes.html)

VM Software Installation Task Overview

To install the virtual machine software, complete the following procedures in order:

1. Gather the media for installing the VM software.
 - An ISO image of the Oracle VM installation program is available as a download at: (<http://www.oracle.com/virtualization>)
 - An ISO image of the VMware ESX or ESXi installation program is available as a download at: (www.vmware.com/download)

Note – You can use the VM software ISO image for remote installation or for creating an installation CD or DVD.

2. Choose and set up an installation method for deploying the installation of the VM software as described in [Appendix A](#).
3. Follow the instruction for installing the VM software as described in the following sections:
 - “Installing Oracle VM Using Local or Remote Media” on page 47

- “Installing VMware ESX or ESXi Using Local or Remote Media” on page 53
4. Review and perform the applicable post installation tasks as described in the following sections:
- “Oracle VM Post Installation Tasks” on page 50
 - “VMware ESX and ESXi Post Installation Tasks” on page 58

Installing Oracle VM

This chapter summarizes the necessary steps for installing Oracle VM.

Topics discussed in this chapter include:

- [“Installing Oracle VM Using Local or Remote Media” on page 47](#)
- [“Oracle VM Post Installation Tasks” on page 50](#)

Installing Oracle VM Using Local or Remote Media

The procedures in this section summarize the steps for installing the Oracle VM software. The procedures assume that you are booting the VM installation software from one of the following sources:

- Oracle VM 2.2.1 CD or DVD media set (internal or external CD or DVD)
- Oracle VM 2.2.1 ISO software image (network repository)

Note – The Oracle VM ISO image can be used for remote installation or for creating an installation CD or DVD.

Refer to the following procedures to install the Oracle VM software:

- [“Install Oracle VM Server From Local or Remote Media” on page 48](#)
- [“Install Oracle VM Manager” on page 49](#)

Before You Begin

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

- All applicable installation considerations for installing the Oracle VM Server and Manager should have been met. For details, see [Chapter 6](#).
- Gather the Oracle VM documentation. This documentation should be used in conjunction with the installation procedure presented in this chapter.

The Oracle VM documentation is available for download at:

(http://download.oracle.com/docs/cd/E15458_01/index.htm)

▼ Install Oracle VM Server From Local or Remote Media

1. Ensure that the Oracle VM Server install media is available to boot.

- **For Distribution CD/DVD.** Insert the Oracle VM Server 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 disc image (CD labeled number 1 or DVD) has been selected in the ILOM Remote Console application (Devices menu --> CD-ROM Image).

For additional information about how to set up the installation media, see [Appendix A](#).

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP,** type: **reset /SYS**
- **From the ILOM CLI on a CMM,** type: **reset /CH/BLn/SYS**

Where *n* is the number of server module in chassis.

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 Oracle VM Server installation.

The Please Select Boot Device menu appears.

4. In the Select 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 Oracle VM Manager installation program appears.

5. Follow the prompts to install Oracle VM Server and Oracle VM Agent.

At this time the Oracle VM installation program installs the Oracle VM Server and the Oracle VM Agent.

6. Log in to Oracle VM Server as the root user, with the password you set during the installation.

Note – The Oracle VM installation will require two passwords: one for the root VM Server account and one for the VM Agent. When necessary, refer to the *Oracle VM Server Installation Guide* for further details about how to complete the Oracle VM Server installation.

7. Perform one of the following:

- If you do not have an Oracle VM Manager configured to manage the Oracle VM Server, you will need to install the Oracle VM Manager.

To install Oracle VM Manager, see [“Install Oracle VM Manager” on page 49](#).

- If you do have an Oracle VM Manager configured to manage the Oracle VM Server, proceed to [“Oracle VM Post Installation Tasks” on page 50](#).

▼ Install Oracle VM Manager

1. Start up the supported Linux operating system on the system on which you want to install the Oracle VM Manager.
2. Ensure that the Oracle VM Manager install media is mounted.
3. As the root user, run the following script:

```
# sh runInstaller.sh
```

4. Follow the prompts to install Oracle VM Manager.

You will be required to log in to the management interface using the Oracle VM Agent password.

When necessary, refer to the *Oracle VM Server Installation Guide* for further details about how to complete the Oracle VM Manager installation.

5. After completing the Oracle VM Manager installation, do the following:

a. Log in to the web Oracle VM Management interface as Admin.

You will need to enter the password that was created during the installation of the Oracle VM Manager.

b. In the web management interface, use the options available to create and manage server pools, as well as create, configure, and manage the virtual machines.

6. Review and perform the applicable post installation tasks as described in “Oracle VM Post Installation Tasks” on page 50.

Oracle VM Post Installation Tasks

After completing the Oracle VM software installation, review the following post installation tasks and, if necessary, perform the tasks that are applicable to your system.

- “Update the Oracle VM Software” on page 50
- “Manage Oracle VM Resources” on page 50

Update the Oracle VM Software

The Oracle VM installation media might not contain the most up-to-date versions of the software. If necessary, update the Oracle VM software with the latest updates. For download instructions, see this web site:

(<http://www.oracle.com/virtualization>)

Manage Oracle VM Resources

To learn how to configure, access, and manage Oracle VM resources, refer to the Oracle VM Documentation Library at:

(http://download.oracle.com/docs/cd/E15458_01/index.htm)

Installing VMware ESX or ESXi

This chapter summarizes the necessary steps for installing:

- VMware ESX 4.0 Update 1 (and subsequent releases)
- VMware ESXi 4.0. Update 1 (and subsequent releases)

This chapter includes the following topics:

- [“Installing VMware ESX or ESXi Using Local or Remote Media” on page 53](#)
- [“VMware ESX and ESXi Post Installation Tasks” on page 58](#)

Installing VMware ESX or ESXi Using Local or Remote Media

The procedures in this section describe how to install the VMware (ESX or ESXi) software from local or remote media. It assumes that you are booting the VMware installation media from one of the following sources:

- VMware ESX or ESXi 4.0 Update 1 CD or DVD (internal or external CD or DVD)
- VMware ESX or ESXi 4.0 Update 1 ISO image (network repository)

Note – The VMware ISO image can be used for remote installations or for creating an installation CD or DVD.

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

- [“Install VMware ESXi 4.0 From Local or Remote Media” on page 54](#)
- [“Install VMware ESX 4.0 From Local or Remote Media” on page 55](#)

Before You Begin

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

- All applicable installation considerations for installing the virtual machine software should have been met. For details, see “[VM Software Installation Considerations](#)” on page 44.
- Gather the VMware ESX or ESXi documentation. This documentation should be used in conjunction with the installation procedure presented in this chapter.

The VMware ESX and ESXi documentation is available at:

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

- For VMware ESX installations, determine the network management interface you will use for the VM service console.

The VM service console and management interface require a network interface. The service console does not automatically use the first interface with a live connection. Therefore, you will need to select a network interface for the service console during installation since the network interface defaults to vmnic0.

▼ Install VMware ESXi 4.0 From Local or Remote Media

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

- **For CD/DVD distribution media.** Insert the VMware ESXi 4.0 Update 1 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 (Devices menu-->CD-ROM Image).

For additional information about how to set up the installation media, see [Appendix A](#).

2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP,** type: **reset /SYS**
- **From the ILOM CLI on a CMM,** type: **reset /CH/BLn/SYS**

Where n is the number of server module in chassis.

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 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 program appears.

5. **To complete the installation, refer to the VMware ESXi 4.0 Update 1 installation documentation.**

You can access the VMware ESXi 4.0 installation documentation at:
(http://www.vmware.com/support/pubs/vs_pubs.html)

6. **After installing VMware ESXi 4.0 Update 1, proceed to “VMware ESX and ESXi Post Installation Tasks” on page 58.**

▼ Install VMware ESX 4.0 From Local or Remote Media

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

- **For Distribution CD/DVD.** Insert the VMware ESX 4.0 Update 1 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 (Devices menu-->CD-ROM Image).

For additional information about how to set up the installation media, see [Appendix A](#).

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

For example:

- **From the ILOM web interface**, select Remote Control --> Remote Power Control, then select the Reset option from the Select 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 program appears.

5. Continue the VMware installation program and, when necessary, refer to the VMware ESX 4.0 installation documentation.

6. When the Network Configuration dialog appears, perform the following steps:



- a. In the Network Adapter field, click the drop-down arrow and select the desired network adapter, then click Next.

In this dialog, a live network adapter (that is, an adapter connected to the network) must be specified for the VMware service console (vmmnic0). 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 network port (for example: NET0, NET1, NET2, or NET3) appears. You can use the MAC address to determine which physical network port is present.

Alternatively using the ILOM command-line interface (CLI), you can determine the MAC addresses that are associated with the server's physical network ports. For example, in the ILOM CLI you would type the following command to determine the MAC address that is associated with the physical network port known as NET0:

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

In the sample output shown below, the MAC address for NET0 is 00:14:4F:CA:B8:36.

```
->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:B8:36
fault_state = OK
clear_fault_action = (none)
```

Note – If you are unsure which network adapter to select, contact your network administrator.

The ESX 4.0 Network Configuration dialog appears enabling you to specify the network adapter settings.

ESX 4.0

Network Configuration
Enter the network configuration information

Network Adapter: vmnic0

Adapter Settings

☐ Set automatically using DHCP

☒ Use the following network settings:

IP Address:

Subnet Mask:

Gateway:

Primary DNS:

Secondary DNS:

Host name:

Enter a fully qualified host name (e.g. host.example.com)

b. In the Network Configuration dialog, do one of the following:

- **To auto-configure the network adapter,** select Set automatically using DHCP, then click Next.
- or -
- **To manually configure the network adapter,** select Use the following network settings, and specify the network settings in the appropriate fields, then click Next.

7. Complete the VMware ESX 4.0 Server installation and, when necessary, refer to the VMware ESX 4.0 Server installation documentation.

8. After completing the installation, proceed to [“VMware ESX and ESXi Post Installation Tasks”](#) on page 58.

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.

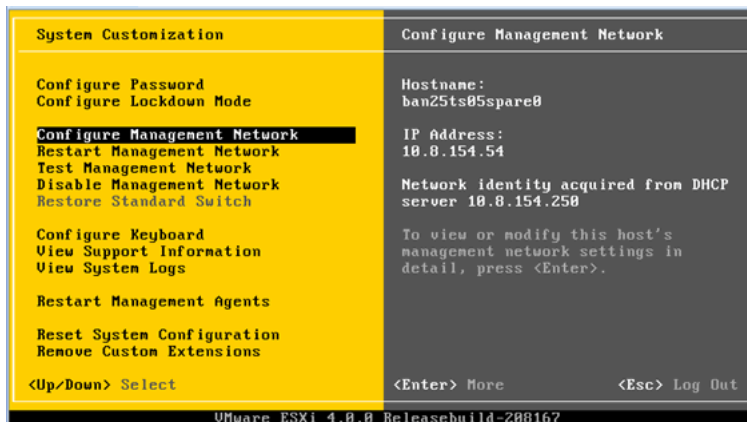
- “Configure Network Adapters for VMware ESXi Installations” on page 59
- “Local Storage Drive Not Seen After Performing VMware ESXi Installation” on page 61
- “Update the ESX or ESXi Operating System” on page 62
- “Manage VMware Resources” on page 62

Configure Network Adapters for VMware ESXi Installations

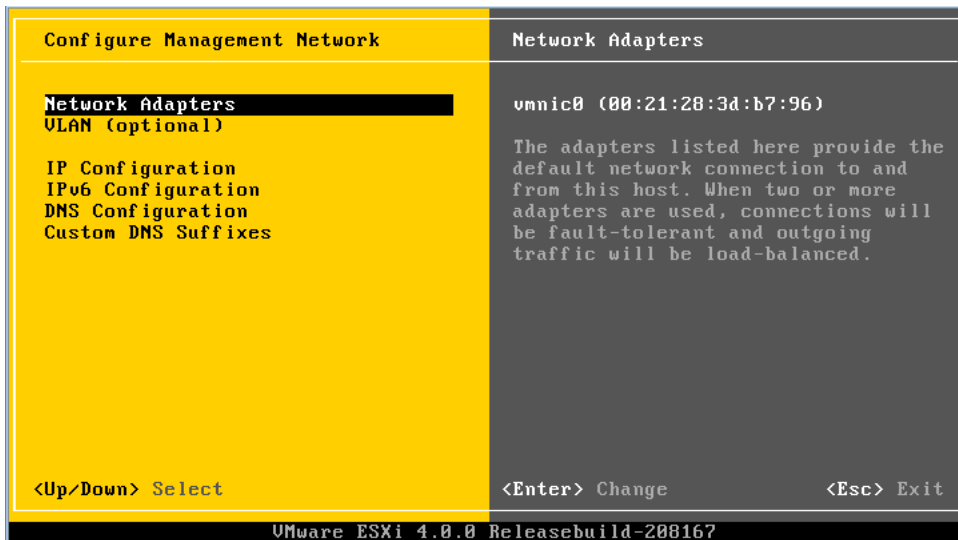
The following procedure describes how to configure the VMware ESXi settings for the network adapter(s) installed on your server. These instructions also include steps for discovering the physical port location of each network adapter installed on your server.

▼ Configure Network Adapter Settings

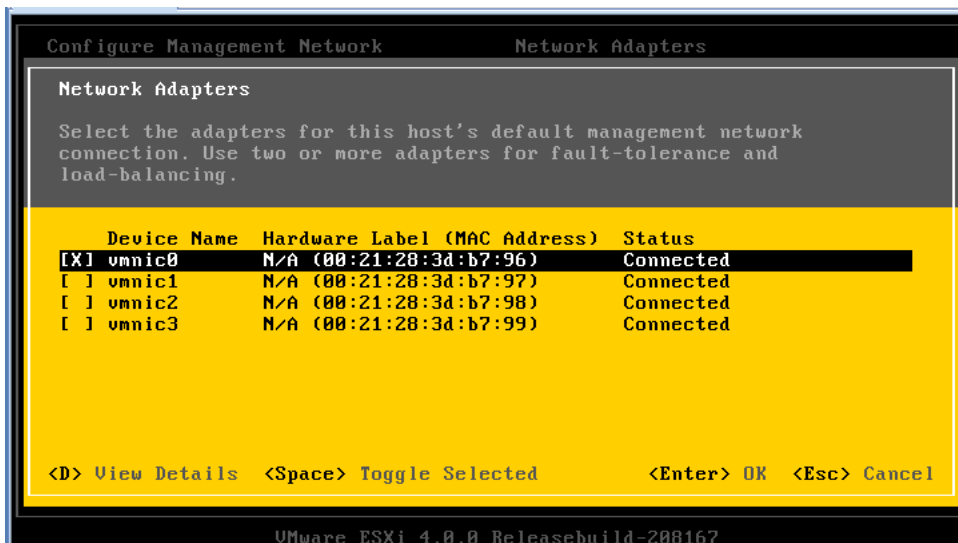
1. Log in to the VMware ESXi Server.
2. Access the System Customization dialog and select **Configure Management Network**.



The Configure Management Network dialog appears.



3. In the Configuration Management Network dialog, select Network Adapters. The Network Adapters dialog appears.



4. In Network Adapters dialog, select a live network adapter (that is, an adapter connected to the network) for the VMware service console (vmnic0), then 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 (for example: 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 are being displayed. For example, to determine the MAC address for each server network port, enter the following command in the ILOM command-line interface (CLI) for each server network port:

```
-> show /SYS/MB/NET $n$ 
```

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 = 82576EB  
fru_serial_number = 00:21:28:3D:B7:96  
fru_extra_2 = 00:21:28:3D:B7:96  
fault_state = OK  
clear_fault_action = (none)
```

Note – If you are unsure of which network adapter to select, contact your network administrator.

Local Storage Drive Not Seen After Performing VMware ESXi Installation

If your local storage drive on the server is attached to a Sun Storage 6 Gb SAS Host Bus Adapter (SG-SAS6-EM-Z, SG-SAS6-REM-Z, or SGX-SAS6-REM-Z), the VMFS datastore on the local storage drive is not visible after performing the VMware ESXi installation. In this case, perform the following procedure to make the existing VMFS datastore on the local storage drive visible and ready for use.

▼ Make Local VMFS Datastore Visible to VSphere Client

1. Connect to the VMware ESX server by using the VSphere Client.

2. In the VSphere Client interface add the ESXi host to the datacenter of your choice.
3. Select the ESXi host that you added to the datacenter in Step 2, then click the Configuration tab.
4. In the Configuration tab, do the following:
 - a. In the Hardware box, select Storage, then click the Add Storage link.
 - b. Verify that the Disk/LUN Storage Type is selected, then click Next.
 - c. Select the vmhba entry that corresponds to the local disk, then click Next.
 - d. Select Use Free Space, then click Next.
 - e. Create a datastore name (for example, local_storage), then click Next.
 - f. Adjust the maximum file size if needed, then click Next.
 - g. Verify that the proposed disk layout is acceptable, then click Finish.

The local VMFS datastore is visible and ready for use.

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 software.

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

[\(http://support.vmware.com/selfsupport/download/\)](http://support.vmware.com/selfsupport/download/)

It is recommended to install patch ESX400-201002001 for ESX or patch ESXi400-201002001 for ESXi.

Manage VMware Resources

To learn more about configuring and managing VMware resources, refer to the VMware documentation at:

[\(http://www.vmware.com/support/pubs/vs_pages/vsp_pubs_esxi40_i_vc40.html\)](http://www.vmware.com/support/pubs/vs_pages/vsp_pubs_esxi40_i_vc40.html)

PART III Oracle Solaris Installation

This section lists the topics that describe how to install the Oracle Solaris operating system on your server.

Description	Links
Novice or Experienced Users. Review the installation considerations prior to performing the Oracle Solaris installation.	Chapter 9 , Getting Started
Experienced Users. Perform the Oracle Solaris 10 operating system installation and post installation tasks.	Chapter 10 , Installing Oracle Solaris 10
References. Refer to these topics, as needed, to perform or complete the Oracle Solaris operating system installation.	<ul style="list-style-type: none">• Appendix A, Installation Methods• Appendix B, Supported Operating Systems• Appendix C, BIOS Defaults for New Installations• Appendix D, Downloading the ISO Image for the Tools and Drivers DVD

Getting Started With Oracle Solaris Operating System Installations

This chapter describes how to get started installing the Oracle Solaris Operating System on Oracle's Sun Netra X6270 M2 server module.

Topics discussed in this chapter include:

- "Supported Oracle Solaris Operating Systems" on page 65
- "Installation Considerations" on page 66
- "Installation Task Overview" on page 67

Supported Oracle Solaris Operating Systems

The Sun Netra X6270 M2 server module supports the following Solaris Operating System:

- Oracle Solaris 10 10/09

For a complete and updated list of all the supported operating systems on the Sun Netra X6270 M2 server module, see the following web site:

(<http://www.oracle.com/goto/netrax6270m2>)

Solaris Documentation Collections

The installation instructions in this guide describe the initial steps for booting and launching the Solaris installation. For additional details about how to install the Solaris Operating System on your server, refer to the following documentation collection:

(<http://docs.sun.com/app/docs/coll/1236.11?l=en>)

Installation Considerations

Refer to the following important considerations before beginning the operating system installation on your server.

Consideration	Description	For more information, see:
Selecting a local or remote deployment method for manually installing the operating system	You can install the operating system using any of the supported deployment methods: <ul style="list-style-type: none">• Local install using an internal or external storage device and attached KVMS.• Network install using either the ILOM Remote Console or a custom JumpStart installation.	<ul style="list-style-type: none">• Appendix A, Supported Installation Methods• <i>Sun Solaris 10 10/09 Installation Guide: Network-Based Installations</i>, 821-0439• <i>Sun Solaris 10 10/09 Installation Guide: Custom JumpStart and Advanced Installations</i>, 821-0437
RAID volume creation	If you want to include your boot drive as part of a RAID configuration, you need to configure a RAID volume on it. Use the LSI integrated RAID controller setup utility before you install the operating system.	<ul style="list-style-type: none">• <i>LSI MegaRAID SAS Software User's Guide</i> at: (http://www.lsi.com/support/sun/)
Verification of BIOS settings for new OS installations	Prior to installing the operating system you should verify that the BIOS factory-default properties are set.	<ul style="list-style-type: none">• Appendix C
Installation of optional supplemental software	After performing the operating system installation, you might need to install critical Solaris patches pertaining to your system. Solaris patches can contain new features, enhancements, or fixes to known problems.	<ul style="list-style-type: none">• “Post Oracle Solaris Installation Tasks” on page 82
Access to late-breaking information and patches for OS installations	Review the <i>Sun Netra X6270 M2 Server Module Product Notes</i> , 821-0936, for late-breaking information about supported operating system software and patches.	<ul style="list-style-type: none">• <i>Sun Netra X6270 M2 Server Module Product Notes</i>, 821-0936

Installation Task Overview

To install the Solaris 10 10/09 Operating System, complete the following procedures in order:

1. Obtain the Solaris10 10/09 Operating System installation media.
The DVD media for the Solaris Operating System is shipped with your server. You can download or order the installation media at:
[\(http://www.sun.com/software/solaris/get.jsp\)](http://www.sun.com/software/solaris/get.jsp)
2. Obtain the Tools and Driver DVD provided, or download the latest drivers and utilities available for your server as described in [Appendix D](#).
3. Choose and set up an installation method for deploying the Solaris installation as described in [Appendix A](#).
4. Follow the instructions for performing the Solaris installation as described in [Chapter 10](#).
5. Follow the instructions for performing Solaris post installation tasks as described in [“Post Oracle Solaris Installation Tasks”](#) on page 82.

Installing Oracle Solaris 10

This chapter provides information about installing the Oracle Solaris 10 10/09 Operating System (Solaris 10 OS) on the server module.

This chapter includes the following topics:

- [“Installing Solaris 10 Using Local or Remote Media” on page 69](#)
- [“Installing Oracle Solaris 10 OS Using a PXE Network Environment” on page 77](#)
- [“Post Oracle Solaris Installation Tasks” on page 82](#)

For information describing how to configure the preinstalled Oracle Solaris 10 OS image, see the *Sun Netra X6270 M2 Server Module Installation Guide*, 821-0937 for setup instructions.

Installing Solaris 10 Using Local or Remote Media

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

- Oracle Solaris 10 10/09 (or subsequent release) DVD set (internal or external DVD)
- Oracle 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 Oracle Solaris 10 OS Using a PXE Network Environment” on page 77](#) for instructions.

Before You Begin

The following requirements should be met prior to starting the installation procedure in this section.

- All applicable installation prerequisites for installing an operating system should have been met. For further information about these prerequisites, see [Chapter 9](#).
- 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 [Appendix A](#).

After completing this procedure, you should review and perform the required post installation tasks described later in this chapter. For more details, see “[Post Oracle Solaris Installation Tasks](#)” on page 82.

▼ Install Oracle Solaris 10 Using Local or Remote Media

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

- **For Distribution DVD.** Insert the Oracle Solaris 10 DVD into the local or remote DVD drive.
- **For ISO image.** Ensure that the ISO images are available and that the ILOM Remote Console application is aware of the first ISO image location.

For additional information about how to set up the install media, see [Appendix A](#).

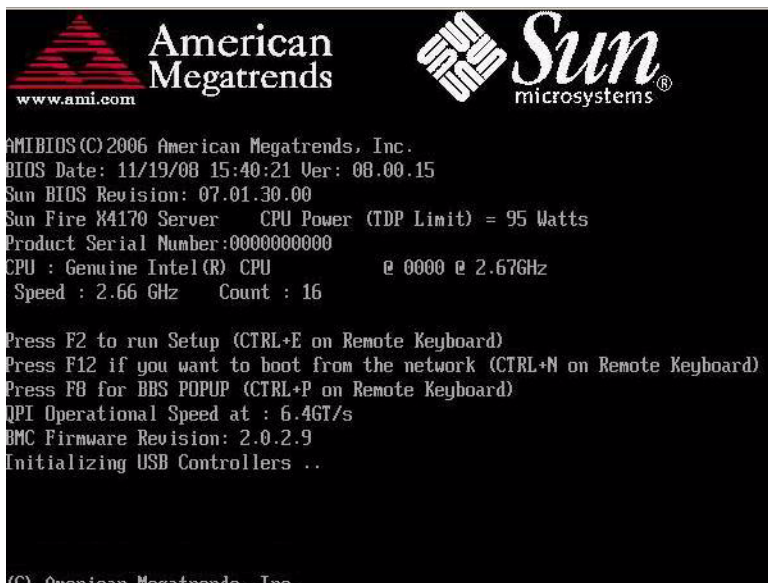
2. Reset the power on the server.

For example:

- **From the ILOM web interface,** select the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP,** type: **reset /SYS**
- **From the ILOM CLI on a CMM,** type: **reset /CH/BLn/SYS**

Where *n* is the number of server module in chassis.

The BIOS screen appears.



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 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 DVD device as the first (temporary) boot device, then press Enter.

In the sample Boot Device menu shown in Step 3, the virtual DVD 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*, and *product ID string*.

Note – If you are performing the Solaris installation from a redirected DVD using the ILOM Remote Console application, select AMI Virtual CDROM, which is listed as an option in the Boot Device menu when you install from a redirected DVD.

The GRUB menu appears.

```
GNU GRUB  version 0.95  (689K lower / 2087424K upper memory)

kernel /I86PC.Solaris_10-54/multiboot kernel/unix -B install_media=12→
module /I86PC.Solaris_10-54/x86.miniroot

Use the ↑ and ↓ keys to select which entry is highlighted.
Press 'b' to boot, 'e' to edit the selected command in the
boot sequence, 'c' for a command-line, 'o' to open a new line
after ('O' for before) the selected line, 'd' to remove the
selected line, or escape to go back to the main menu.
```

5. In the GRUB menu, select Solaris_10 os, 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, append **,console = ttya** to the boot flags on the kernel line.

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 (cmi_hdl_create
returned NULL)

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

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

WARNING: There will be no MCA support on chip 1 core 0 strand 7 (cmi_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 Enter.

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.

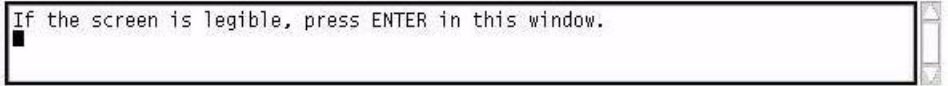
    If the screen does not properly revert to console mode,
    restart the installation and make the following selection:

    Solaris Interactive Text (Console session)

Press ENTER to continue.
```

8. In the Discovering Network Configuration 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 Oracle Solaris Installation Tasks”](#) on page 82 to perform the post Solaris installation tasks.

Installing Oracle 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 DVD set (internal or external 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 10/09 Installation Guide: Custom JumpStart and Advanced Installations*, 821-0437.

Before You Begin

The following requirements must be met prior to starting 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.

- Server module 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 10/09 Installation Guide: Network-Based Installations*, 821-0439.

- If your install 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 10/09 Installation Guide: Custom JumpStart and Advanced Installations*, 821-0437.

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 Oracle Solaris Installation Tasks” on page 82](#).

▼ Install Solaris 10 Using PXE Network Boot

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

For details, see “Planning to Install Over the Network” in the *Solaris 10 10/09 Installation Guide: Network-Based Installations*, 821-0439.

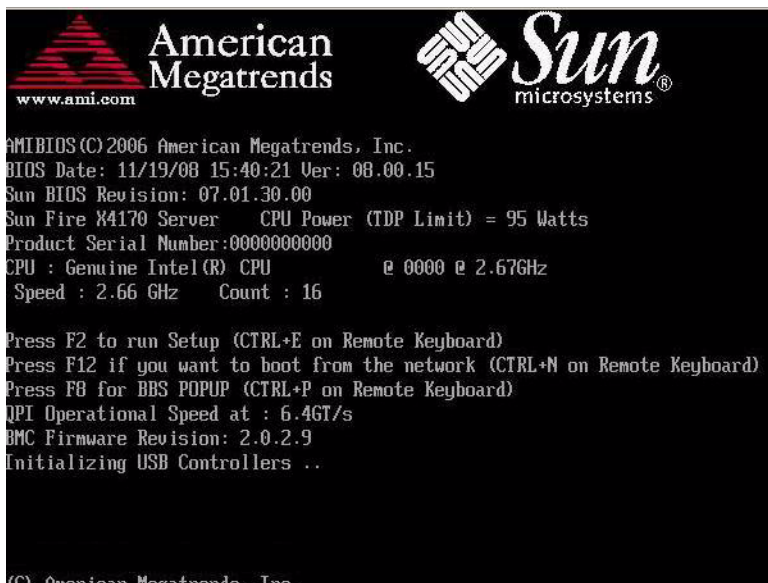
2. **Reset the power on the server.**

For example:

- **From the ILOM web interface**, select the Remote Control --> Remote Power Control, then select Reset from the Select 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.
- **From the ILOM CLI on the server SP**, type: **reset /SYS**
- **From the ILOM CLI on a CMM**, type: **reset /CH/BL n /SYS**

Where n is the number of server module in chassis.

The BIOS screen appears.



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 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.

The GRUB menu appears.

5. In the GRUB menu, select Solaris_10 os, 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, append **,console = ttya** to the boot flags on the kernel line.

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

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 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.

7. In the Configure Keyboard Layout menu, select the appropriate keyboard layout, then press Enter.

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.

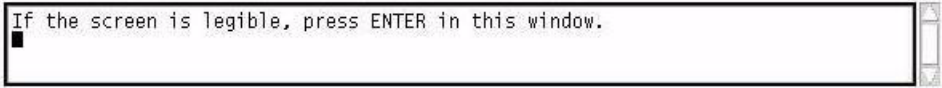
    If the screen does not properly revert to console mode,
    restart the installation and make the following selection:

    Solaris Interactive Text (Console session)

Press ENTER to continue.
```

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

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



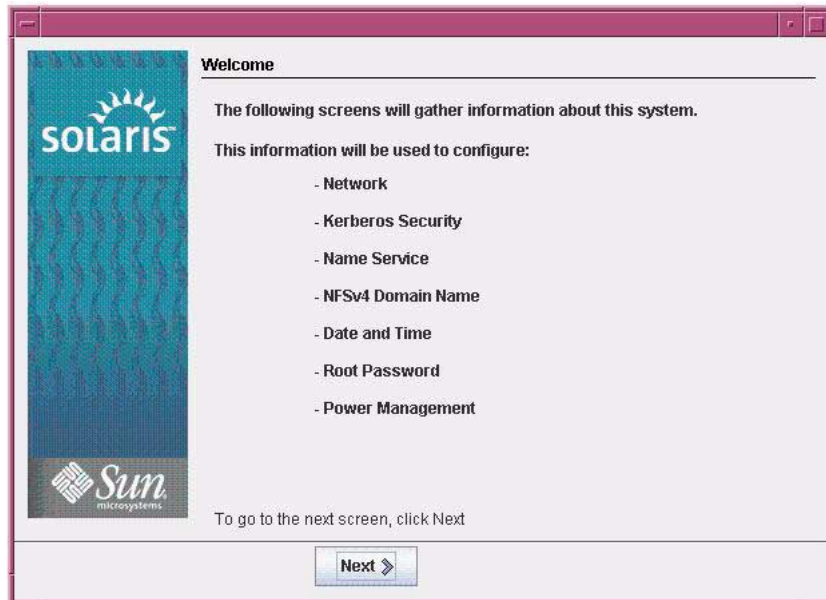
9. In the screen that is confirming the text shown is legible, press Enter.

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 Oracle Solaris Installation Tasks”](#) on page 82 to perform the post Solaris configuration tasks.

Post Oracle 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 Critical Oracle Solaris Patches”](#) on page 83
- [“Install RAID Management Software”](#) on page 83

Install Critical Oracle Solaris Patches

The following table identifies the critical Oracle Solaris patches available to install on your system. Review this table to determine which patches, if any, are currently required for installation on your system.

TABLE 10-1 Critical Solaris Patches

Critical Solaris Patch	Description	Download Patch
142901-03	This patch reduces boot time considerably.	
143524-01	This patch provides fixes for systems with the Sun Storage 6 Gb SAS PCIe HBA, Internal.	
142260-02	This patch provides performance fixes for solid state drives (SSDs) and flash devices.	(http://www.oracle.com/goto/netrax6270m2)
143355-02	This patch provides performance fixes for the 10 GbE Intel NIC (1109A).	
142085-03	This patch provides fixes for the qlc QLogic FC HBA driver.	

Install RAID Management Software

If you have a Sun Storage 6 Gb SAS RAID HBA installed on your server, you should install the RAID management software, which is available on the Tools and Drivers 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.

For more details about installing the RAID management software, refer to the documentation shipped with the HBA or the *LSI MegaRAID SAS Software User's Guide* at: (<http://www.lsi.com/support/sun/>)

PART IV System Administrator References

Refer to the following system administrator references as needed to perform or complete the software installation.

Description	Link
Guidelines for selecting and setting up an installation environment for deploying the software installation program	Appendix A, Installation Methods
A complete list of operating systems supported on the server module at the time of this publication	Appendix B, Supported Operating Systems
Instructions for ensuring that the BIOS default properties are set prior to performing the software installation	Appendix C, BIOS Defaults for New Installations
Instructions for downloading the ISO image for the Sun Netra X6270 M2 server module Tools and Drivers DVD	Appendix D, Downloading ISO Image for Tools and Drivers DVD

Supported Installation Methods

To determine which installation method is best for you when installing software on a server, consider the following options summarized in this appendix:

- [“Console Outputs” on page 87](#)
- [“Installation Boot Media” on page 89](#)
- [“Installation Targets” on page 91](#)

Console Outputs

[TABLE A-1](#) lists the consoles you can use to capture the output and input of the operating system installation.

TABLE A-1 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 “Attaching Devices to the Server” in the <i>Sun Netra X6270 M2 Server Module Installation Guide</i>, 821-0937, and Appendix C in the <i>Sun Netra X6270 M2 Server Module Service Manual</i>, 821-0939. 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 <code>start /SP/console</code>. The video output is automatically routed to the local console. <p>For further details about establishing a connection to the server SP, see the <i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide</i>, 820-6410.</p>
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 ILOM Remote Console application • SSH client connection using a serial console 	<ol style="list-style-type: none"> 1. View or establish an IP address for the server SP. For details, see the <i>Sun Netra X6270 M2 Server Module Installation Guide</i>, 821-0937. 2. View or 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: 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 ILOM Remote Console; 4) enable device redirection (mouse, keyboard, etc.) in the Device menu. • For SSH client connection, perform these steps: 1) From a serial console, establish an SSH connection to the server SP (<code>ssh root@ipaddress</code>); 2) log in to ILOM; 3) redirect the serial output from the server to the SSH client by typing <code>start /SP/console</code>. <p>For additional information about establishing a remote connection to the ILOM SP or using the ILOM Remote Console, see the <i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide</i>, 820-6410.</p>

Installation Boot Media

You can start the operating system installation to a server by booting a local or remote installation media source. [TABLE A-2](#) identifies the supported media sources and the setup requirements for each source.

TABLE A-2 Boot Media Options for Performing an OS Installation

Installation 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 installation media, and, if applicable, floppy device driver media	<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 module using the dongle cable.2. For details, see “Attaching Devices to the Server” in the <i>Sun Netra X6270 M2 Server Module Installation Guide</i>, 821-0937, and Appendix C in the <i>Sun Netra X6270 M2 Server Module Service Manual</i>, 821-0939.

TABLE A-2 Boot Media Options for Performing an OS Installation *(Continued)*

Installation 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 installation media, and, if applicable, floppy device driver media• CD/DVD-ROM ISO installation image and, if applicable, floppy ISO device driver media• Automated installation 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: 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 drive.2. Establish a web-based client connection to the server ILOM SP and launch the ILOM Remote Console application. For more details, see the Setup Requirements for web-based client connection in TABLE A-1.3. In the Device menu of the ILOM Remote Console application, specify the location of the boot media, for example: For CD/DVD-ROM, select CD/DVD-ROM. For CD/DVD-ROM ISO image, select CD-ROM Image. For floppy device driver boot media, if applicable, select Floppy. For floppy image device driver, if applicable, select Floppy Image. <p>For more information about the ILOM Remote Console, see the <i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide</i>, 820-6410.</p>

TABLE A-2 Boot Media Options for Performing an OS Installation (Continued)

Installation Media	Description	Setup Requirement
Remote Boot Media (continued)	<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 via PXE boot.2. Make the OS install media available for PXE boot. If you are using an automated OS installation image, you will need to create and provide the automated OS install image, for example:<ul style="list-style-type: none">— Solaris JumpStart Image— RHEL KickStart Image— SLES AutoYaST Image— Windows WDS ImageFor detailed instructions for automating the installation setup process, consult the operating system vendor documentation.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 earlier in this guide.

Installation Targets

TABLE A-3 identifies the supported installation targets you can use to install an operating system.

TABLE A-3 Installation Targets for OS Installation

Install Target	Description	Setup Requirement	Supported OS
Local storage drive Hard disk driver (HDD) or Solid state drive (SSD)	You can choose to install the operating system to any of the storage drives 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 SSD, refer to the <i>Sun Netra X6270 M2 Server Module Service Manual</i>, 821-0939.</p>	<ul style="list-style-type: none">• All supported operating systems listed in Appendix B.
Fibre Channel (FC) Storage Area Network (SAN) device	For servers equipped with Fibre Channel Host Bus Adapters (HBAs), you can choose to install the operating system to an external FC storage device.	<ul style="list-style-type: none">• Ensure FC HBA is properly installed in the server. <p>For more information about installing a SAS HBA option, refer to the <i>Sun Netra X6270 M2 Server Module Service Manual</i>, 821-0939.</p> <ul style="list-style-type: none">• The SAN must be installed and configured to make the storage visible to the host. <p>For instructions, refer to the documentation supplied with the FC HBA.</p>	<ul style="list-style-type: none">• All operating systems listed in Appendix B.

Supported Operating Systems

TABLE B-1 in this appendix describes the operating systems supported on the server module at the time this document was published.

For an up-to-date list of the latest operating systems supported on the server module, go to the following web site and navigate to the Operating Systems link:

(<http://www.oracle.com/goto/netrax6270m2>)

Supported Operating Systems

Oracle's Sun Netra X6270 M2 server module supports the installation and use of the following operating systems, or a subsequent release of the operating system.

TABLE B-1 Supported Operating Systems

Operating System	Supported Version	For additional Information, see
Windows	<ul style="list-style-type: none">• Microsoft Windows Server 2008 SP2, Standard Edition (64-bit)• Microsoft Windows Server 2008 SP2, Enterprise Edition (64-bit)• Microsoft Windows Server 2008 SP2, Datacenter Edition (64-bit)• Microsoft Windows Server 2008 R2, Standard Edition (64-bit)• Microsoft Windows Server 2008 R2, Enterprise Edition (64-bit)• Microsoft Windows Server 2008 R2, Datacenter Edition (64-bit)	<ul style="list-style-type: none">• <i>Sun Netra X6270 M2 Server Module Installation Guide for Windows Operating Systems</i>, 821-0941
Linux	<ul style="list-style-type: none">• Oracle Enterprise Linux (OEL) 5.4 (64-bit)• SUSE Linux Enterprise Server (SLES) 10 SP3 (64-bit)• SUSE Linux Enterprise Server (SLES) 11 (64-bit)• Red Hat Enterprise Linux Server (RHEL) 5.4 (64-bit)	<ul style="list-style-type: none">• Chapter 3 for OEL• Chapter 4 for SLES• Chapter 5 for RHEL
Solaris	<ul style="list-style-type: none">• Oracle Solaris 10 10/09	<ul style="list-style-type: none">• Chapter 10
Virtual Machine Software	<ul style="list-style-type: none">• Oracle VM 2.2.1• VMware ESX 4.0 Update 1• VMware ESXi 4.0 Update 1	<ul style="list-style-type: none">• Chapter 7 for Oracle VM• Chapter 8 for VMware

BIOS Defaults for New Installations

When installing a new operating system on a storage drive, you should verify that the following BIOS settings are properly configured before you perform the operating system or virtual machine software installation:

- System time
- System date
- Boot order

Verification of BIOS Factory Defaults

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

In addition to using F2 to view or edit the system's BIOS settings, you can use F8 during the BIOS start-up to specify a temporary boot device. If you use F8 to set a temporary boot device, this change is only in effect for the current system boot. The permanent boot device specified through F2 will be in effect after booting from the temporary boot device.

Before You Begin

Ensure that the following requirements are met prior to accessing the BIOS Setup Utility.

- The server is equipped with a hard disk drive (HDD) or solid state drive (SDD).
- The HDD or SDD is properly installed in the server. For details, see Oracle's *Sun Netra X6270 M2 Server Module Service Manual*, 821-0939.

- A console connection is established to the server. For details, see [“Console Options for Performing an OS Installation”](#) on page 88.

▼ View or Edit BIOS Settings for New Installations

1. Reset the power on the server.

For example:

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

The BIOS screen appears.

2. 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 the Boot menu.

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. 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 menu, use the up and down arrow keys to select the default permanent boot device, then press Enter.

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.

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

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

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

Note – When using the 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 console.

Downloading the ISO Image for the Tools and Drivers DVD

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

ISO Image Download Procedure

Follow the steps in the procedure below to download the ISO image for the Tools and Drivers DVD.

▼ Download the Tools and Drivers DVD Image

1. **Go to the product web site, then navigate to the software download site your server platform:**
(<http://www.oracle.com/goto/blades>)
2. **Select and download the ISO image for the Tools and Drivers DVD to an accessible network location or local storage location.**
3. **Prepare the ISO image for installation by using one of the following methods:**
 - Use remote KVMS (ILOM Remote Console) to mount the ISO image.
 - Create a Tools and Drivers DVD using third-party software.

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