

Sun Fire X4470 Server

Installation Guide for Virtual Machine Software



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Using This Documentation

This virtual machine software installation guide explains how to install and configure virtual machine software on a Sun Fire X4470 Server from Oracle. This document is written for technicians, system administrators, authorized service providers (ASPs), and users who have experience with installing operating systems.

- “Product Information” on page v
- “Related Documentation” on page vi
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Product Information

For information about the Sun Fire X4770 Server, go to the following web site:

(<http://www.oracle.com/goto/x4470>)

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
- External storage options
- Power calculator

Related Documentation

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

(<http://docs.sun.com/app/docs/prod/sf.x4470#hic>)

Title	Content	Part Number	Format
<i>Sun Fire X4470 Server Product Notes</i>	Late-breaking information about the server	821-0704	PDF HTML
<i>Sun Fire X4470 Server Getting Started Guide</i>	Basic installation information for setting up the server	821-0333	PDF Print
<i>Sun Fire X4470 Server Installation Guide</i>	Detailed installation information for setting up the server	821-0332	PDF HTML Print option
<i>Sun Fire X4470 Server Installation Guide for Linux Operating Systems</i>	Installation instructions for the Linux operating systems	821-1213	PDF HTML
<i>Sun Fire X4470 Server Installation Guide for Windows Operating Systems</i>	Installation instructions for the Windows Server operating systems	821-0701	PDF HTML
<i>Sun Fire X4470 Server Installation Guide for Oracle Solaris Operating System</i>	Installation instructions for the Oracle Solaris operating system	821-0700	PDF HTML
<i>Sun Fire X4470 Server Installation Guide for Virtual Machine Software</i>	Installation instructions for installing Oracle VM and VMware ESX/ESXi	821-1214	PDF HTML
<i>Sun Fire X4470 Server Service Manual</i>	Information and procedures for maintaining and upgrading the server	821-0703	PDF HTML
<i>Sun Installation Assistant 2.3 through 2.4 User's Guide for x64 Servers</i>	Instructions for using the Sun Installation Assistant for Windows and Linux operating systems installations	821-0694	PDF HTML
<i>Oracle x86 Servers Diagnostics Guide</i>	Information for diagnosing and troubleshooting the server	820-6750	PDF HTML

Title	Content	Part Number	Format
<i>Sun Server CLI Tools and IPMItool 2.0 User's Guide</i>	Instructions for using the Sun Server Hardware Management Pack applications and utilities	821-1600	PDF HTML
Oracle Integrated Lights Out Manager 3.0 Documentation Collection (formerly known as 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	820-5523 820-6410 820-6411 820-6412 820-6413	PDF HTML
<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X4470 Server</i>	ILOM 3.0 information that is specific to the Sun Fire X4470 Server	821-0702	PDF HTML
<i>Sun Fire X4470 Server Safety and Compliance Guide</i>	Hardware safety and compliance information for the server	821-0705	PDF
<i>Important Safety Information for Sun Hardware Systems</i>	Multilingual hardware safety and compliance information for all Sun hardware system	821-1590	Print

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

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- Documentation: (<http://docs.sun.com>)
- Support: (<http://www.sun.com/support/>)
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Sun Fire X4470 Server Installation Guide for Virtual Machine Software, part number 821-1214-10.

Product Downloads

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

(<http://www.oracle.com/goto/x4470>)

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

- Tool and Driver DVD image
- Sun Installation Assistant DVD image
- Sun Validation Test Suite (SunVTS) Update

PART I Virtual Machine Software Installation

This section lists the topics that describe how to install virtual machine software on Oracle's Sun Fire X4470 Server.

Description	Link(s)
Requirements. Refer to Chapter 1 to identify the installation considerations and requirements.	<ul style="list-style-type: none">• Chapter 1, Getting Started
Procedures. Refer to the appropriate chapter to install Oracle VM or VMware ESX or ESXi.	<ul style="list-style-type: none">• Chapter 2, Oracle VM Installation• Chapter 3, 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

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 3
- “VM Software Installation Prerequisites” on page 4
- “VM Software Installation Task Overview” on page 5

Supported Virtual Machine Software

The Sun Fire X4470 Server 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 Sun Fire X4470 Server, go to the Sun Server X4470 Server web site and navigate to the Operating System link:

(<http://www.oracle.com/goto/x4470>)

VM Software Installation Prerequisites

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

TABLE 1-1 VM Software Installation Considerations

Requirements	Description	For more information, see:
Server is set up and operational.	The server is mounted and powered-on in the rack and communication to the SP has been established.	<ul style="list-style-type: none">• <i>Sun Fire X4470 Server Installation Guide</i> (821-0332)
Established deployment method that enables you to boot the VM software install program	Guidelines for selecting a local or remote deployment method for installing VM software.	<ul style="list-style-type: none">• Appendix A
Oracle VM installation hardware requirements	Oracle VM requires two systems with static IP addresses. <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 1-1 VM Software Installation Considerations (Continued)

Requirements	Description	For more information, see:
Access to late-breaking information and updates for OS installations	Review the <i>Sun Fire X4470 Server Product Notes</i> and the VM software release notes for late-breaking information about supported software and updates.	<ul style="list-style-type: none"> • <i>Sun Fire X4470 Server Product Notes</i> (821-0704) • 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: (<http://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 7

- “Installing VMware ESX or ESXi Using Local or Remote Media” on page 11
4. Review and perform the applicable post installation tasks as described in the following sections:
- “Oracle VM Post Installation Tasks” on page 10
 - “VMware ESX and ESXi Post Installation Tasks” on page 16

Installing Oracle VM

This chapter summarizes the necessary steps for installing Oracle VM software.

Topics discussed in this chapter include:

- [“Installing Oracle VM Using Local or Remote Media” on page 7](#)
- [“Oracle VM Post Installation Tasks” on page 10](#)

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 8](#)
- [“Install Oracle VM Manager” on page 9](#)

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 1](#).
- 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 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 --> 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 Oracle VM Server installation.

The `Please Select Boot Device` menu appears.

- 4. In the Please 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 9](#).

- If you do have an Oracle VM Manager configured to manage the Oracle VM Server, proceed to [“Oracle VM Post Installation Tasks” on page 10](#).

▼ 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 10.

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 10
- “Manage Oracle VM Resources” on page 10

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 software releases. 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 11
- [“VMware ESX and ESXi Post Installation Tasks”](#) on page 16

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 From Local or Remote Media”](#) on page 12
- [“Install VMware ESX From Local or Remote Media”](#) on page 13

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 Prerequisites](#)” on page 4.

Note – The VMware ESX and ESXi software versions require that RAM be installed for each physical CPU in your Sun Fire X4470 Server. Ensure that there is a populated memory riser with a balanced memory configuration for each physical CPU on your system.

- Gather the VMware ESX or ESXi documentation. This documentation should be used in conjunction with the installation procedures 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 vmic0.

▼ Install VMware ESXi From Local or Remote Media

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

- **For CD/DVD.** 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-->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. **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 16.**

▼ Install VMware ESX From Local or Remote Media

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

- **For 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-->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 (`vmnic0`). Each network adapter that is live has a green check mark next to it as shown in the above dialog. Also, notice that the MAC address that is associated with the 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`:

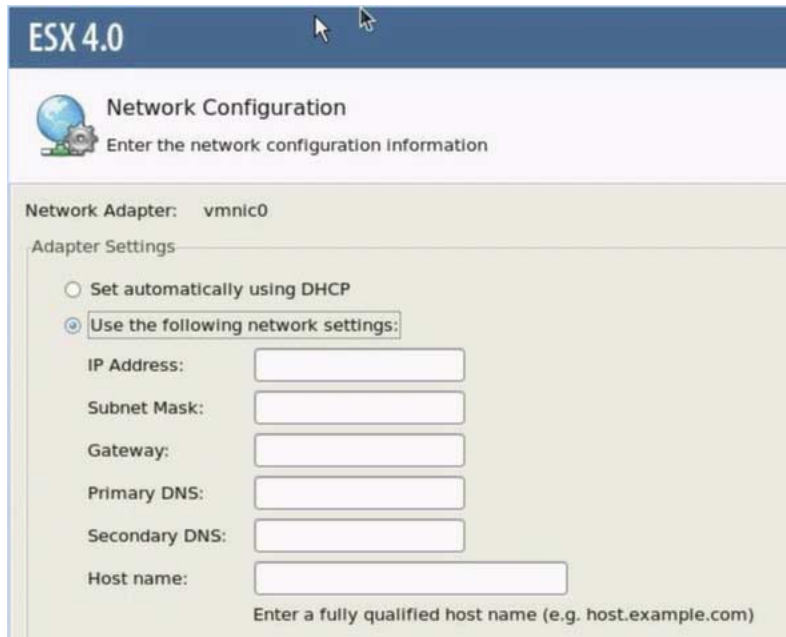
```
-> show /SYS/MB/NET0
```

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.



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 16.

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.

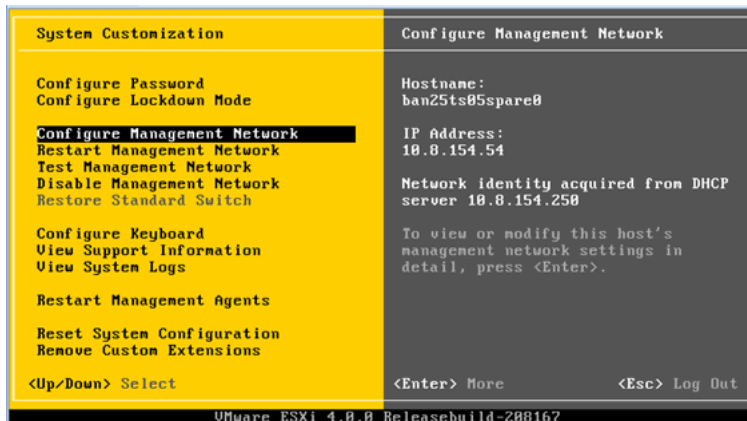
- “Configure Network Adapters for VMware ESXi Installations” on page 17
- “Local Storage Drive Not Seen After Performing VMware ESXi Installation” on page 19
- “Update the ESX or ESXi Software” on page 20
- “Manage VMware Resources” on page 20

Configure Network Adapters for VMware ESXi Installations

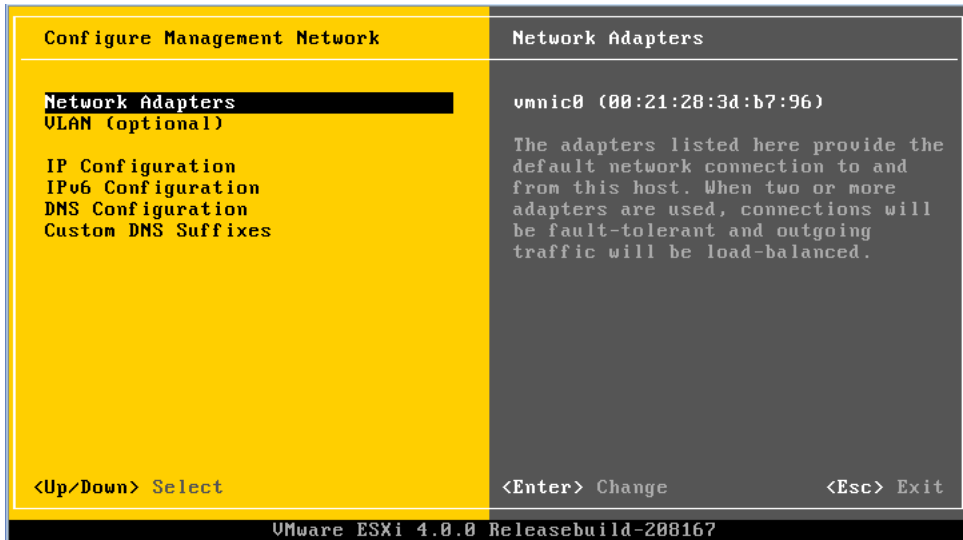
The following procedure describes how to configure the VMware ESXi settings for the network adapter(s) installed on your server. These instructions also include steps for discovering the physical port location of each network adapter installed on your server.

▼ Configure Network Adapter Settings

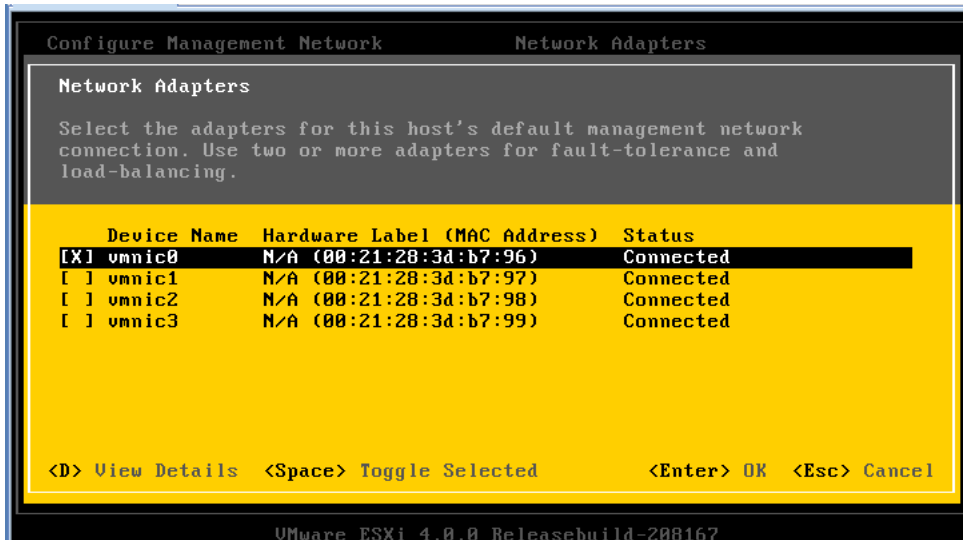
1. Log in to the VMware ESXi Server.
2. Access the System Customization dialog and select Configure Management Network.



The Configure Management Network dialog appears.



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



- In the 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 PCIe Host Bus Adapter card (SG-SAS6-INT-Z or SG-SAS6-EXT-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 ESXi 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 Software

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/>)

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)

PART II Virtual Machine System Administrator References

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

Description	Link
Guidelines for selecting and setting up an installation environment for deploying the virtual machine software installation program	Appendix A
A complete list of operating systems supported on the Sun Fire X4470 Server at the time of this publication	Appendix B
Instructions for ensuring that the BIOS default properties are set prior to performing the virtual machine software installation	Appendix C

Supported Installation Methods

To determine which installation method is best for you when installing software on your x86 server, consider the following options summarized in this appendix:

- “Console Outputs” on page 23
- “Installation Boot Media” on page 25
- “Installation Targets” on page 27

Console Outputs

TABLE A-1 lists the consoles you 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 the “Attaching Devices” in the <i>Sun Fire X4470 Server Service Manual</i>(821-0703).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 Fire X4470 Server Installation Guide</i> (821-0332).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:<ol style="list-style-type: none">1) In a web browser, type the IP address for the server SP;2) log in to the ILOM web interface;3) redirect the video output from the server to the web client by launching the ILOM Remote Console;4) enable device redirection (mouse, keyboard, etc.) in the Device menu.• For SSH client connection, perform these steps:<ol style="list-style-type: none">1) From a serial console, establish an SSH connection to the server SP (<code>ssh root@ipaddress</code>);2) log in to 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 or rear panel of the server.2. For more information about how to attach local devices to the server, see “Attaching Devices” in the <i>Sun Fire X4470 Server Service Manual</i> (821-0703).

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: <ul style="list-style-type: none"> For CD/DVD-ROM, insert media into the built-in or external CD/DVD-ROM drive. For CD/DVD-ROM ISO image, ensure that ISO image(s) are readily available on a network shared location. For device driver floppy ISO image, ensure that ISO image, if applicable, is readily available on a network shared location or on a USB 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: <ul style="list-style-type: none"> For CD/DVD-ROM boot media, select CD-ROM For CD/DVD-ROM ISO image boot media, select CD-ROM Image. For floppy device driver boot media, if applicable, select Floppy For floppy image device driver boot media, if applicable, select Floppy Image. <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- 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 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 hard disk drive (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. For more information about installing and powering on an HDD or SSD, refer to the <i>Sun Fire X4470 Service Manual</i> (821-0703).	<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 PCIe 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 that the FC PCIe HBA is properly installed in the server. For more information about installing a HBA in a chassis, refer to the <i>Sun Fire X4470 Server Service Manual</i> (821-0703). <ul style="list-style-type: none">• The SAN must be installed and configured to make the storage visible to the host. For instructions, refer to the documentation supplied with the FC HBA.	<ul style="list-style-type: none">• All operating systems listed in Appendix B.

Supported Operating Systems

TABLE B-1 in this appendix describes the operating systems supported on the Sun Fire X4470 Server at the time this document was published.

For an up-to-date list of the latest operating systems supported on the Sun Fire X4470 Server, go to the Sun Fire X4470 Server web site and navigate to the appropriate page:

(<http://www.oracle.com/goto/x4470>)

Supported Operating Systems

The Sun Fire X4470 Server 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	Additional Information
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) 	<i>Sun Fire X4470 Server Installation Guide for Windows Operating Systems (821-0701)</i>

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

Operating System	Supported Version	Additional Information
Linux	<ul style="list-style-type: none">• Oracle Enterprise Linux 5.5 (64-bit)• SUSE Linux Enterprise Server (SLES) 11 (64-bit)• Red Hat Enterprise Linux 5.5 (64-bit)	<i>Sun Fire X4470 Server Installation Guide for Linux Operating Systems (821-1213)</i>
Oracle Solaris	<ul style="list-style-type: none">• Oracle Solaris 10 10/09	<i>Sun Fire X4470 Server Installation Guide for Oracle Solaris Operating System (821-0700)</i>
Virtual Machine Software	<ul style="list-style-type: none">• Oracle Virtual Machine 2.2.1• VMware ESX 4.0 Update 1• VMware ESXi 4.0 Update 1	<i>Sun Fire X4470 Server Installation Guide for Virtual Machine Software (821-1214)</i>

BIOS Defaults for New Installations

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

- System time
 - System date
 - Boot order
-

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 (by pressing F2) are permanent until the next time you change them.

In addition to using the F2 key 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 (SSD).
- The HDD or SSD is properly installed in the server. For details, see the *Sun Fire X4470 Server Service Manual* (821-0703).

- A console connection is established to the server. For details, see “[Console Options for Performing an OS Installation](#)” on page 24.

▼ View or Edit BIOS Settings for New Installations

1. Reset the power on the server.

For example, to reset the power on a server:

- **From the ILOM web interface**, select `Remote Control-->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 turn the server off, then press the `Power` button again to power-on the server.
- **From the ILOM CLI**, type: `reset /SYS`

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 Device Priority 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.

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