

Sun Server X3-2 (formerly Sun Fire X4170 M3)

Installation Guide for VMware ESXi



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Using This Documentation

This installation guide contains procedures for installing the VMware ESXi software, and initial software configuration procedures for bringing the Sun Server X3-2 from Oracle to a configurable and usable state.

Note – The Sun Server X3-2 was formerly named the Sun Fire X4170 M3 server. This former name might still appear in the software. The new product name does not indicate any change in system features or functionality.

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

This section describes how to get the latest software and firmware, documentation and feedback, and support and accessibility information.

- [“Getting the Latest Software and Firmware” on page vii](#)
- [“About This Documentation” on page viii](#)
- [“Related Documentation” on page viii](#)
- [“Feedback” on page viii](#)
- [“Access to Oracle Support” on page ix](#)

Getting the Latest Software and Firmware

Firmware, drivers and other hardware-related software for each Oracle x86 server, server module (blade), and blade chassis are updated periodically.

You can obtain the latest version in one of three ways:

- Oracle System Assistant – This is a new factory-installed option for Oracle x86 servers. It has all the tools and drivers you need and is built into the server.
- My Oracle Support: <http://support.oracle.com>
- Physical media request

For more information, see “Getting Server Firmware and Software” on page 33.

About This Documentation

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

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

Related Documentation

Documentation	Link
All Oracle documentation	http://www.oracle.com/documentation
Sun Server X3-2	http://www.oracle.com/pls/topic/lookup?ctx=SunServerX3-2
Oracle Integrated Lights Out Manager (ILOM) 3.1	http://www.oracle.com/pls/topic/lookup?ctx=ilom31
Oracle Hardware Management Pack 2.2	http://www.oracle.com/pls/topic/lookup?ctx=ohmp

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About VMware ESXi Installs

Note – The Sun Server X3-2 was formerly named the Sun Fire X4170 M3 server. This former name might still appear in the software. The new product name does not indicate any change in system features or functionality.

This section contains an overview for installing VMware ESXi on your server.

Description	Links
Learn about VMware ESXi software installation steps.	“VMware ESXi Installation Task Map” on page 1
Learn which VMware ESXi software versions are supported.	“Supported VMware ESXi Software” on page 3
Learn about console display options and how to set them up.	“Selecting the Console Display Option” on page 3
Learn about boot media options and how to set them up.	“Selecting the Boot Media Option” on page 5
Learn about installation target options and how to set them up.	“Selecting the Installation Target Option” on page 8
Learn about VMware ESXi install options.	“VMware ESXi Installation Options” on page 9

Related Information

- [“Installing VMware ESXi” on page 19](#)

VMware ESXi Installation Task Map

The following table describes the steps for installing the VMware ESXi software.

Step	Description	Links
1.	Install your server hardware and configure the Oracle ILOM service processor.	<ul style="list-style-type: none"> • Sun Server X3-2 Installation Guide, “Installing the Server Into a Rack” on page 21 • Sun Server X3-2 Installation Guide, “Cabling the Server” on page 59 • Sun Server X3-2 Installation Guide, “Connecting to Oracle ILOM” on page 65
2.	Obtain the VMware ESXi installation media and documentation. The documentation should be used in conjunction with the install procedures and post install procedures referenced below in Steps 7 and 8.	<ul style="list-style-type: none"> • An ISO image of the VMware ESXi installation program is available as a download at: http://www.vmware.com/download • VMware ESXi release notes at: http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html Select your version of VMware ESXi in the Select a Release list box.
3.	Review the server product notes.	<p><i>Sun Server X3-2 Product Notes</i> at: http://www.oracle.com/pls/topic/lookup?ctx=SunServerX3-2</p>
4.	Set up the console, the media, and the installation target that you will use to perform the installation.	<ul style="list-style-type: none"> • “Selecting the Console Display Option” on page 3 • “Selecting the Boot Media Option” on page 5 • “Selecting the Installation Target Option” on page 8
5.	Verify BIOS settings for new OS installations.	“Verify the BIOS Factory Defaults” on page 12
6.	Configure the VMware ESXi software or the server hardware to support network connections.	“Configuring the VMware ESXi 5.0 Software or the Server Hardware to Support Network Connections” on page 16.
7.	Install the VMware ESXi software.	“Installing VMware ESXi on a Single System Using Media” on page 20
8.	Perform the post installation tasks, if applicable.	“Post Installation Tasks for VMware ESXi” on page 25

Related Information

- [“Preparing to Install VMware ESXi” on page 11](#)

Supported VMware ESXi Software

The server supports the following VMware ESXi software.

VMware Software	Edition
VMware ESXi 5.0	<ul style="list-style-type: none">• VMware ESXi 5.0• VMware ESXi 5.0 U1• VMware ESXi 5.0 U2• VMware ESXi 5.0 U3
VMware ESXi 5.1	<ul style="list-style-type: none">• VMware ESXi 5.1• VMware ESXi 5.1 U1
VMware ESXi 5.5	VMware ESXi 5.5

Additionally, you can install any other supported operating system or virtual machine software on your server. For a complete list of operating systems supported by the server, see the latest version of the *Sun Server X3-2 Product Notes* at: <http://www.oracle.com/pls/topic/lookup?ctx=SunServerX3-2> for updated information.

Related Information

- [“Installing VMware ESXi” on page 19](#)

Selecting the Console Display Option

This section describes the options for connecting a console to perform the installation.

- [“Console Display Options” on page 4](#)
- [“Set Up the Local Console” on page 4](#)
- [“Set Up the Remote Console” on page 5](#)

Console Display Options

You can install the OS and administer the server by attaching a local console directly to the server's service processor (SP). The server supports two types of local consoles:

- A terminal connected to the serial management port (SER MGT)
You can connect the terminal directly to the port or connect it to a terminal emulator that is connected directly to the port.
- A VGA monitor connected to the video port (VGA) and a USB keyboard and USB mouse connected to the two rear USB connectors

You can also install the OS and administer the server from a remote console by establishing a network connection to the server SP. There are two types of remote consoles:

- Web-based client connection using the Oracle ILOM Remote System Console application
- SSH client connection to the network management port (NET MGT)

▼ Set Up the Local Console

1. To connect a local console, do one of the following:

- Connect a terminal to the serial management port (SER MGT) either directly or through a terminal emulator.
- Connect a VGA monitor to the video port and a keyboard and mouse to the USB ports.

2. For serial management port (SER MGT) connections only, to establish a connection to the host serial port:

a. Press Enter to access Oracle Integrated Lights Out Manager (ILOM).

The Oracle ILOM login prompt appears.

b. Type your Oracle ILOM user name and password.

c. At the Oracle ILOM prompt, type:

```
-> start /HOST/console
```

The serial management port output is automatically routed to the Linux host serial local console.

Related Information

- Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at:
<http://www.oracle.com/pls/topic/lookup?ctx=ilom31>

▼ Set Up the Remote Console

1. View or establish an IP address for the server SP.

For details, see *Sun Server X3-2 Installation Guide*, “Determining the IP Address of the Server SP” on page 69.

2. If you are using a web-based client connection, perform these steps; otherwise go to the next step.

- a. In a web browser, type the IP address for the server SP.
- b. Log in to the Oracle ILOM web interface.
- c. Redirect the video output from the server to the web client by launching the Oracle ILOM Remote System Console.
- d. If necessary, enable device redirection (mouse, keyboard, etc.) in the Devices menu.

3. If you are using an SSH client connection, perform these steps.

- a. From a serial console, establish an SSH connection to the server SP (`ssh root@hostname`, where *hostname* can be the DNS name or the IP address for the server SP).
- b. Log in to Oracle ILOM.
- c. Redirect the serial output from the server to the SSH client by typing:
`-> start /HOST/console`

Related Information

- Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at: <http://www.oracle.com/pls/topic/lookup?ctx=ilom31>

Selecting the Boot Media Option

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

- “Boot Media Options Requirements” on page 6
- “Set Up the Local Boot Media Option” on page 6
- “Set Up the Remote Boot Media Option” on page 7

Boot Media Options Requirements

This section describes the requirements for using local and remote media.

- [“Local Boot Media Requirements” on page 6](#)
- [“Remote Boot Media Requirements” on page 6](#)

Local Boot Media Requirements

Local boot media requires a built-in storage device on the server, or an external storage device attached to the server.

Supported OS local boot media sources can include:

- CD/DVD-ROM installation media
- If applicable, floppy device driver media

Remote Boot Media Requirements

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).

Supported OS remote boot media sources can include:

- CD/DVD-ROM installation media
- CD/DVD-ROM ISO installation image media
- Automated installation image (requires PXE boot)

▼ Set Up the Local Boot Media Option

To set up local boot media, perform this step.

- **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.**

For more information about how to attach local devices to the server, see the [Sun Server X3-2 Installation Guide, “Cabling the Server” on page 59](#).

▼ Set Up the Remote Boot Media Option

To install OS from media in a remote location, perform these steps.

1. **To redirect the boot media from a remote storage device, perform these steps; otherwise go to the next step.**

- a. **Mount or present the boot media so that it is accessible, 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.

- b. **Establish a web-based client connection to the server Oracle ILOM SP and launch the Oracle ILOM Remote System Console application.**

For more details, see the setup requirements for web-based client connection in [“Selecting the Console Display Option” on page 3](#).

- c. **In the Devices menu of the Oracle ILOM Remote System Console application, specify the location of the boot media, for example:**

- **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.

2. **To perform the installation using PXE, perform these steps.**

- a. **Configure the network server to export the installation using PXE boot.**

- b. **Make the OS install media available for PXE boot.**

If you are using an automated ESXi software installation image, you will need to create and provide the automated OS install image.

For detailed instructions for automating the installation setup process, consult the ESXi 5 installation documentation available at:

<http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html>

- c. **To boot the installation media, select the PXE boot interface card as the temporary boot device.**

Selecting the Installation Target Option

This section describes how to set up the installation target.

- [“Installation Target Options” on page 8](#)
- [“Set Up a Local Storage Drive \(HDD or SSD\) as the Installation Target” on page 9](#)
- [“Set Up a Fibre Channel Storage Area Network Device as the Installation Target” on page 9](#)

Installation Target Options

With the exception of the embedded Oracle System Assistant USB flash drive (which is reserved for Oracle System Assistant), you can install the operating system on any of the storage drives installed in the server. These include hard disk drives (HDDs) and solid state drives (SSDs).

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.

Important: Internal, Embedded Oracle System Assistant USB Flash Drive Should Not Be Used as a Boot or Storage Drive

The server ships with an embedded Oracle System Assistant USB flash drive. This drive contains the Oracle System Assistant, device drivers, and firmware for Oracle ILOM, BIOS, and supported IO devices. During the installation of all supported operating systems, this USB flash drive is detected as a SCSI disk with a single partition that is read/write capable and is displayed as Oracle_SSM in the list of drives. You should be careful not to overwrite this device when performing any of the following operations:

- Operating system installations
- Disk or partition formatting operations
- General disk, partition or filesystem maintenance

In the event that this USB flash drive is overwritten, the original contents can be restored. To restore the contents of the USB flash drive, obtain the Oracle System Assistant recovery and ISO update image and use it to perform a restore operation.

For instructions for downloading the Oracle System Assistant recovery and ISO update image and restoring the server's Oracle System Assistant flash drive, see the *Sun Server X3-2 Administration Guide*, "Restore Oracle System Assistant" on page 83.

▼ Set Up a Local Storage Drive (HDD or SSD) as the Installation Target

- **Ensure that the hardware disk drive (HDD) or solid state drive (SSD) is properly installed and powered on.**

For more information about installing and powering on a HDD or SSD, refer to the *Sun Server X3-2 Service Manual*, "Servicing Storage Drives (CRU)" on page 49.

▼ Set Up a Fibre Channel Storage Area Network Device as the Installation Target

1. **Ensure that the PCIe HBA is properly installed in the server.**

For more information about installing a PCIe HBA option, refer to *Sun Server X3-2 Service Manual*, "Servicing PCIe Cards (CRU)" on page 88.

2. **Ensure that the storage area network (SAN) is installed and configured to make the storage device visible to the server's host.**

For instructions, refer to the documentation supplied with the Fibre Channel HBA.

VMware ESXi Installation Options

The table below provides some information about single server installation options.

Option	Description
Single server	<p>Installs ESXi software to a single server using one of the following methods:</p> <ul style="list-style-type: none"> Locally: ESXi installation is performed locally at the server. This option is recommended if you have just completed the physical installation of the server in the rack. Remotely: ESXi installation is performed from a remote location. Uses the Oracle ILOM Remote System Console application to perform a manual ESXi installation.

Single-Server Installation Methods

Select a method for providing the ESXi installation media. Use the following information to determine the local or remote ESXi installation that best serves your needs.

Media Delivery Method	Additional Requirements
Local using a CD/DVD drive – Uses a physical CD/DVD drive connected to the server.	A monitor, USB keyboard and mouse, a USB CD/DVD drive, and ESXi distribution media. For local installations, you deliver the installation media using a local CD/DVD drive attached directly to the server.
Remote using a CD/DVD ISO image – Uses a redirected physical CD/DVD drive or DVD ISO image on a remote system running the Oracle ILOM Remote System Console application.	A remote system with a browser, an attached physical CD/DVD drive, ESXi distribution media, and network access to the server's management port. For remote installations, you deliver the installation media by means of the remote CD/DVD USB device, or CD/DVD image.

Preparing to Install VMware ESXi

This section describes how to prepare the server for installing VMware ESXi.

Description	Links
Setting up BIOS.	“Setting Up BIOS” on page 11
Configure VMware ESXi software or server hardware to support network connections.	“Configuring the VMware ESXi 5.0 Software or the Server Hardware to Support Network Connections” on page 16
Configure RAID on the server.	“Configuring RAID” on page 17

Setting Up BIOS

Before you install the operating system, you should ensure that BIOS settings are configured to support the type of installation you plan to perform.

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.

The following sections provide specific instructions on how to configure BIOS to support the installation:

- [“Verify the BIOS Factory Defaults” on page 12](#)
- [“Switch Between Legacy BIOS and UEFI BIOS Mode” on page 14](#)

Related Information

- “Installing VMware ESXi on a Single System Using Media” on page 20

▼ Verify the BIOS Factory Defaults

Note – If the server is newly installed and this is the first time that an operating system has been installed, then BIOS is probably configured to its default settings and you do not have to perform this task.

Before you begin, ensure that the following requirements are met:

- 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 instructions, see the [Sun Server X3-2 Service Manual, “Servicing Storage Drives \(CRU\)”](#) on page 49.
- A console connection is established to the server. For details, see “[Selecting the Console Display Option](#)” on page 3.

1. Reset or power on the server.

For example:

- **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 Oracle ILOM web interface**, click Host Management > Power Control, then select Reset from the Select Action list box.
- **From the Oracle ILOM CLI**, type the following command from the prompt:
-> **reset /System**

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 menu appears.
6. **In the Boot 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 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 list 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** and **Reset** on the **Save & 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 Oracle ILOM Remote System Console, F10 is trapped by the local OS. You must use the F10 option listed in the Keyboard drop-down menu that is available at the top of the remote console application.

▼ Switch Between Legacy BIOS and UEFI BIOS Mode

The BIOS firmware supports both legacy BIOS and Unified Extensible Firmware Interface (UEFI). The default setting is legacy BIOS. Because VMware ESXi 5.0, 5.1, and 5.5 support both legacy BIOS and UEFI BIOS, you have the option of setting BIOS to either Legacy mode or UEFI mode before you perform the installation.

Note – After you have installed the VMWare ESXi virtual machine software, if you decide you want to switch from legacy BIOS to UEFI BIOS or vice versa, you must reinstall the software.

Before you begin, ensure that a console connection is established to the server. For details, see [“Selecting the Console Display Option” on page 3](#).

1. Reset or power on the server.

For example:

- **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 Oracle ILOM web interface**, click Host Management > Power Control and select Reset from the Select Action list box.
- **From the Oracle ILOM CLI**, type the following command from the prompt:

-> **reset /System**

The BIOS screen appears.

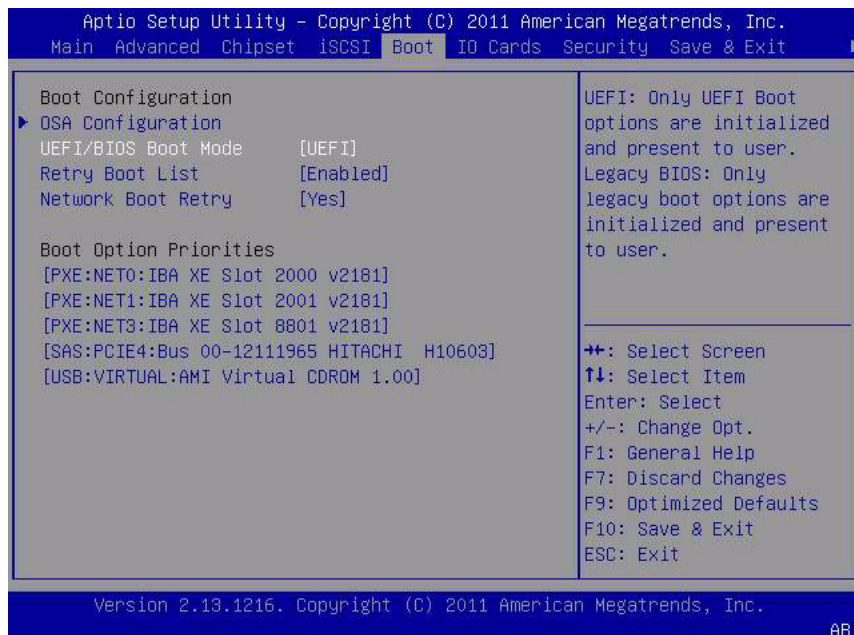


2. When prompted in the BIOS screen, press F2 to access the BIOS Setup Utility.

After a few moments, the BIOS Setup Utility appears.

3. In the BIOS Setup Utility, select Boot from the top menu bar.

The Boot Menu screen appears.



4. Select the UEFI/BIOS Boot Mode field and use the +/- keys to switch the setting to the desired mode, Legacy BIOS or UEFI.

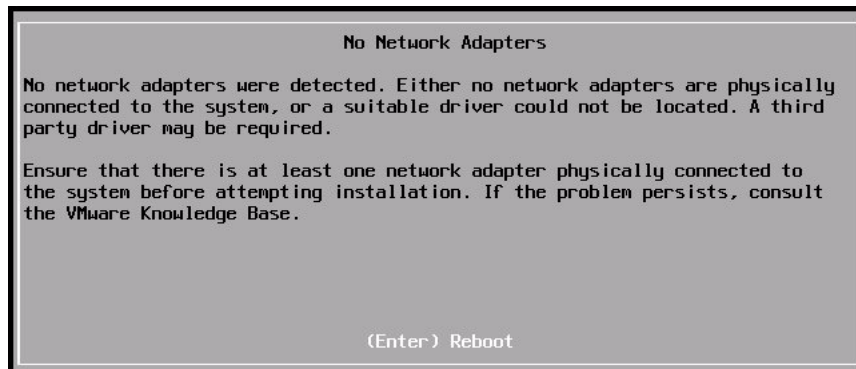
5. To save changes and exit BIOS, press the F10 key.

Configuring the VMware ESXi 5.0 Software or the Server Hardware to Support Network Connections

The downloaded ISO images for the VMware ESXi 5.0 virtual machine software (including U1, U2, and U3) will not install to the server because the software does not include a driver for the server's on-board network adapters.

Note – The information in this section does not apply to VMware ESXi 5.1 or 5.5 installations. The driver for the server's on-board network adapters is included with the VMware ESXi 5.1 and 5.5 installation images.

Without the required driver, the VMware ESXi 5.0 installation programs fail to find a working network connection and terminates with the following informational message.



Therefore, before you can install the VMware ESXi 5.0 software, you must do one of the following:

- Add the required driver to the ESXi installation ISO image.
For instructions for adding the required driver to the ESXi ISO image, see [“Adding the Required Driver to the ESXi ISO Installation Image” on page 17](#).
- Install a network interface card (NIC) in the server that is compatible with the standard download VMware ESXi 5.0 ISO image.
For instructions for identifying and installing a compatible NIC card, see [“Installing a Compatible Network Interconnect Card in the Server” on page 17](#).

Adding the Required Driver to the ESXi ISO Installation Image

You use the offline depot ZIP file to add a driver to an ESXi installation ISO image. For instructions for incorporating the offline depot ZIP file into a customized ESXi installation ISO image, see the vSphere 5 documentation topic “Using vSphere ESXi Image Builder CLI” at:

http://pubs.vmware.com/vsphere-50/topic/com.vmware.vsphere.install.doc_50/GUID-78CC6C2E-E961-4A5E-B07D-0CE7083DE51E.html.

You can download the required driver from My Oracle Support or the VMware downloads web site.

- For instructions for downloading the required driver from My Oracle Support, see “Getting Server Firmware and Software” on page 33.
- To download the required driver from the VMware web site, go to:
http://downloads.vmware.com/d/details/dt_esxi50_intel_x540_t2ixgbe3_6_5/dCV0YnRod2pidGVkZA==.

Installing a Compatible Network Interconnect Card in the Server

You must obtain a NIC that is compatible with the unmodified ESXi installation ISO image and install it into one of the available, external PCIe slots located in the rear of the server—slot 1, 2, or 3.

To identify a compatible NIC, see the VMware Hardware Compatibility List (HCL) at: <http://www.vmware.com/resources/compatibility/search.php>.

For instructions for installing a NIC into the server, see the installation documentation included with the NIC and the servicing procedures for PCIe risers and cards in the *Sun Server X3-2 Service Manual*, “Servicing PCIe Cards (CRU)” on page 88.

Configuring RAID

If you want to use a redundant array of independent disks (RAID), you must configure RAID on your server before you install VMware ESXi. For instructions for configuring RAID, see the *Sun Server X3-2 Installation Guide*, “Configuring Server Drives for OS Installation” on page 91.

Related Information

- *Sun Server X3-2 Administration Guide*, “Configuring RAID” on page 101

Installing VMware ESXi

This section provides instructions for installing VMware ESXi on the server.

Description	Links
Pre-installation requirements.	“Before You Begin” on page 19
Using media to install the VMware ESXi software on a single server.	“Installing VMware ESXi on a Single System Using Media” on page 20

Before You Begin

Ensure that the following requirements are met:

- If you want to configure RAID (redundant array of independent disks) on the server’s storage drives, you must do so before you install VMware ESXi. For instructions for configuring RAID, see the [Sun Server X3-2 Installation Guide, “Configuring Server Drives for OS Installation” on page 91](#).

Note – If the server is equipped with the Sun Storage 6 Gb SAS PCIe RAID, Internal HBA (SGX-SAS6-R-INT-Z), you must create a RAID volume and make it bootable before installing VMware ESXi; otherwise, the HBA will not be able to identify the server’s storage drives.

- The console display options should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see [“Selecting the Console Display Option” on page 3](#).
- The boot media option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see [“Selecting the Boot Media Option” on page 5](#).
- The installation target option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see [“Selecting the Installation Target Option” on page 8](#).

- Verify that the BIOS settings are set to the defaults. For instructions on how to verify and, if necessary, set the BIOS settings, see [“Verify the BIOS Factory Defaults”](#) on page 12.
- Configure the VMware ESXi software or the server hardware to support network connections. For instructions, see [“Configuring the VMware ESXi 5.0 Software or the Server Hardware to Support Network Connections”](#) on page 16.
- For local installation, have the ESXi installation media available to insert into the attached physical CD/DVD-ROM drive when prompted.
- For remote installation, insert the ESXi installation media into the Oracle ILOM Remote System Console system’s CD/DVD-ROM drive. Ensure that you have selected CD-ROM from the Oracle ILOM Remote System Console system’s Devices menu.
- If you are using an ESXi image, ensure that the ESXi ISO image is accessible from the Oracle ILOM Remote System Console system. Ensure you have selected CD-ROM Image from the Oracle ILOM Remote System Console system’s Devices menu.
- For VMware ESXi 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.

- Gather the VMware ESXi documentation so that you can use it in conjunction with the instructions provided in this section. VMware ESXi documentation is available at:
<http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html>

Installing VMware ESXi on a Single System Using Media

This section provides information about installing VMware ESXi 5.0, 5.1, and 5.5 for x86 (64-bit) software.

- [“Install VMware ESXi Using Local or Remote Media”](#) on page 21

▼ Install VMware ESXi Using Local or Remote Media

The following procedure describes how to install the VMware ESXi software from local or remote media. It assumes that you are booting the VMware installation media from one of the following sources:

- VMware ESXi 5.0, 5.1, or 5.5 CD or DVD (internal or external CD or DVD)
- VMware ESXi 5.0, 5.1, or 5.5 ISO image (network repository)

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

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

- **For Distribution CD/DVD.** Insert the VMware ESXi Distribution media boot disc (CD labeled number 1 or the single DVD) into the local or external 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 Oracle ILOM Remote System Console application (Devices menu > CD-ROM Image).

For additional information about how to set up the installation media, see [“Selecting the Boot Media Option” on page 5](#).

2. Reset or power on the server.

For example:

- **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 Oracle ILOM web interface,** select Host Management > Power Control, then select Reset from the Select Action list box.
- **From the Oracle ILOM CLI,** type: **reset /System**

The BIOS screen appears.



```
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.  
BIOS Date: 05/11/2012 11:52:57 Ver: 18021000  
Press F2 to run Setup (CTRL+E on serial keyboard)  
Press F8 for BBS Popup (CTRL+P on serial keyboard)  
Press F12 for network boot (CTRL+N on serial keyboard)  
Press F9 to start Oracle System Assistant (CTRL+O on serial keyboard)
```

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 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.

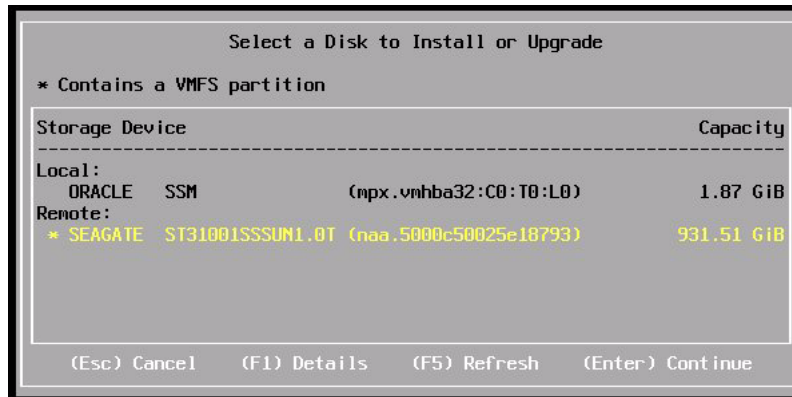
After a few seconds, the splash screen for the VMware installation program appears.

- 5. To complete the installation, refer to the VMware ESXi installation documentation.**

You can access the VMware ESXi installation documentation at:

<http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html>

- 6. When the following screen appears, select the storage drive on which to install the ESXi software.**



7. After completing the VMware ESXi installation, proceed to [“Post Installation Tasks for VMware ESXi”](#) on page 25.

Post Installation Tasks for VMware ESXi

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

Description	Link
Configure the network adapters.	“Configure Network Adapter Settings” on page 25
Determine the MAC for a connected network port.	“Determine the MAC Address of a Connected Server Network Port” on page 28
Update the VMware ESXi software.	“Update the VMware ESXi Software” on page 29
Manage the VMware ESXi resources.	“Manage VMware ESXi Resources” on page 30

▼ Configure Network Adapter Settings

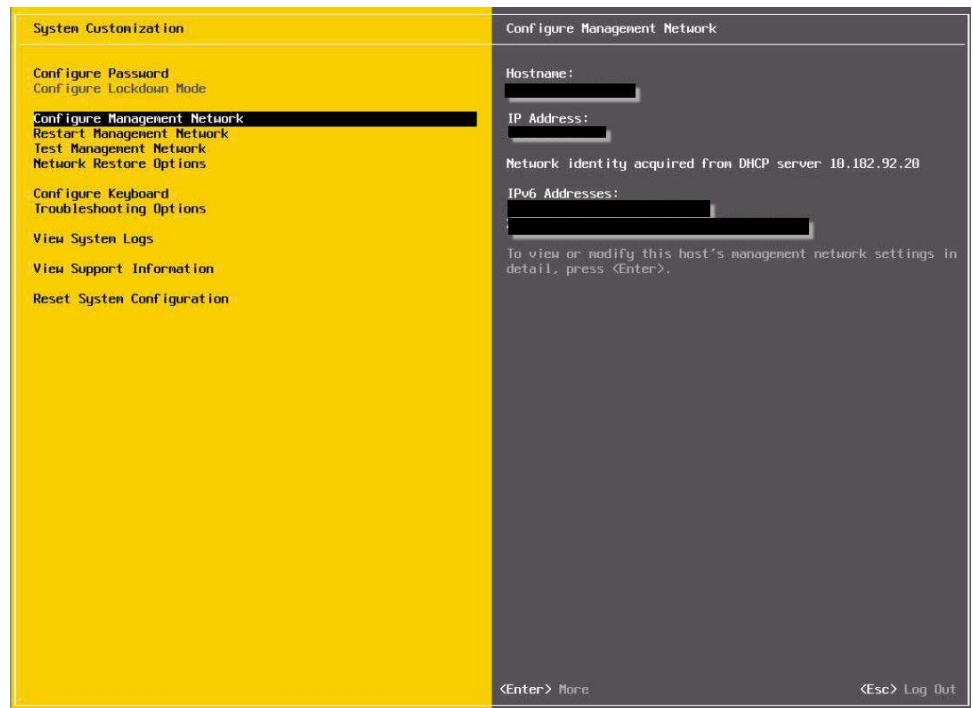
Note – This task is necessary only if you are using static IP addressing. If you are using DHCP, this task is not necessary.

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.

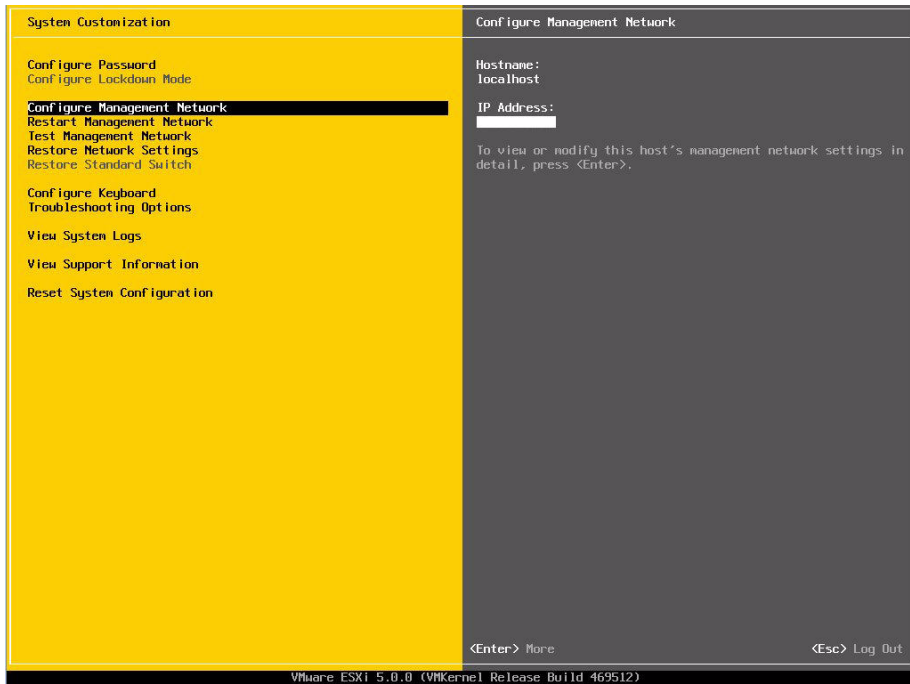
1. After you complete the VMware ESXi software installation and reboot the server, the following screen appears:



2. To select **Customize System/View Logs**, press **F2**.
3. Log in to the **VMware ESXi Server**.
4. Access the **System Customization** screen and select **Configure Management Network**.
 - If you installed VMware ESXi 5.5, the System Customization screen will appear as follows:



- If you installed an earlier version of VMware ESXi, the System Customization screen will differ:



5. To complete this task, refer to the VMware documentation at:

<http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html>.

▼ Determine the MAC Address of a Connected Server Network Port

The server has four network ports, NET0, NET1, NET3, and NET4. When any of these ports is connected to the network, VMware ESXi assigns a MAC address to the port.

Note – Ethernet ports NET2 and NET3 are nonfunctional in single-processor systems.

- To determine the MAC address for each server network port, enter the following command in the Oracle ILOM command-line interface (CLI) for each server network port:

-> **show /System/Networking/Ethernet_NICs/Ethernet_NIC_***n*

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

For example, if server network port NET0 is connected, then the above CLI command produces the following output, where the `mac_addresses` field lists the MAC address.

```
-> /System/Networking/Ethernet_NICs/Ethernet_NIC_0
/System/Networking/Ethernet_NICs/Ethernet_NIC_0
Targets:
Properties:
  health = OK
  health_details = -
  location = NET0 (Ethernet NIC 0)
  manufacturer = INTEL
  part_number = X540
  serial_number = Not Available
  mac_addresses = 00:21:28:3D:B7:96
Commands:
  cd
  show
->
```

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

▼ Update the VMware ESXi Software

The VMware ESXi installation media might not contain the most up-to-date versions of the software. If necessary, update the ESXi Server software with the latest updates and patches.

- To obtain download instructions, see this web site:

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

▼ Manage VMware ESXi Resources

VMware provides documentation about ESXi software.

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

<http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html>

Configuring Network Interfaces

This section contains information about:

- [“NIC Connectors” on page 31](#)

NIC Connectors

The network interface connectors are labeled physically on the server as follows. Depending on the option cards installed in your system, the VMware ESXi software might renumber the network ports.

TABLE: NIC Connector Label

NIC Connector Label	Interface Type
NET0	First NIC interface (<i>vmnic0</i>)
NET1	Second NIC interface (<i>vmnic1</i>)
NET2	Third NIC interface (<i>vmnic2</i>)
NET3	Fourth NIC interface (<i>vmnic3</i>)

Note – Ethernet ports NET2 and NET3 are nonfunctional in single-processor systems.

Getting Server Firmware and Software

This section explains the options for accessing server firmware and software.

Description	Links
Learn about server firmware and software updates.	“Firmware and Software Updates” on page 33
Learn about the options for accessing firmware and software.	“Firmware and Software Access Options” on page 34
View the available firmware and software packages.	“Software Releases” on page 35
Access the firmware and software packages through Oracle System Assistant, My Oracle Support, or Physical Media Request.	“Getting Firmware and Software from MOS or PMR” on page 36
Install firmware and software updates.	“Installing Updates Using Other Methods” on page 40

Firmware and Software Updates

Firmware and software for your server are updated periodically. These updates are made available as a software release. The software releases are a set of downloadable files (patches) that includes all available firmware, hardware drivers, tools, and utilities for the server. All these files have been tested together and verified to work with your server.

You should update your server firmware and software as soon as possible after a new software release becomes available. Software releases often include bug fixes, and updating your server ensures that your server has the latest firmware and software.

The ReadMe document that is included with each patch in a software release contains information about the patch, such as what has changed or not changed from the prior software release, as well as bugs that are fixed within the current release.

The product notes that are part of the server documentation identify which server software release is the latest release supported on your server.

Firmware and Software Access Options

Use one of the following options to obtain the latest release of firmware and software for your server:

- **Oracle System Assistant** – Oracle System Assistant is a new factory-installed option for Oracle servers that enables you to easily download and install server firmware and software.

For more information about using Oracle System Assistant, see the *Sun Server X3-2 Administration Guide*, “Setting Up the Server Using Oracle System Assistant” on page 35.

- **My Oracle Support** – All system software is available from My Oracle Support at <http://support.oracle.com>.

For more information about what is available on the My Oracle Support web site, see “Software Releases” on page 35.

For instructions on how to download software releases from My Oracle Support, see “Download Firmware and Software Using My Oracle Support” on page 36.

- **Physical Media Request (PMR)** – You can request a DVD that contains one or more of the software releases that are available from My Oracle Support.

For information see, “Requesting Physical Media” on page 37.

- **Other methods** – You can use Oracle Enterprise Manager Ops Center, Oracle Hardware Management Pack, or Oracle ILOM to update your server software and firmware.

For information, see “Installing Updates Using Other Methods” on page 40.

Software Releases

Software releases on My Oracle Support are grouped by product family (such as Sun Fire), then the product (the specific server or blade), and finally the software release version. A software release contains all the updated software or firmware for your server or blade as a set of downloadable files (patches), including firmware, drivers, tools, and utilities, all tested together to be compatible with your server.

Each path is a zip file that contains a ReadMe file and a set of subdirectories containing firmware or software files. The ReadMe file provides details on the components that have changed since the prior software release and bugs that are fixed.

My Oracle Support provides the set of software releases for your server as described in the following table. You can obtain these software releases by downloading the files from My Oracle Support or by submitting to Oracle a physical media request (PMR). Alternatively, you can download the firmware and software for your server using Oracle System Assistant.

Package Name	Description	When to Download This Package
Sun Server X3-2 (X4170 M3) SW ^{version} – Firmware Pack	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
Sun Server X3-2 (X4170 M3) SW ^{version} – OS Pack	An OS Pack is available for each supported operating system version. Each OS Pack includes a package of all tools, drivers, and utilities for that version of the OS. Software includes Oracle Hardware Management Pack and LSI MegaRAID software. For the Windows OS, this OS Pack also includes Intel Network Teaming and Install Pack.	You need to update OS-specific drivers, tools, or utilities.
Sun Server X3-2 (X4170 M3) SW ^{version} – All Packs	Includes the Firmware Pack, all OS Packs, and all documents. This pack does not include Oracle VTS or the Oracle System Assistant image.	You need to update a combination of system firmware and OS-specific software.

Package Name	Description	When to Download This Package
Sun Server X3-2 (X4170 M3) SW _{version} – Diagnostics	Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.
Sun Server X3-2 (X4170 M3) SW _{version} – Oracle System Assistant	Oracle System Assistant recovery and ISO update image.	You need to manually recover or update Oracle System Assistant.

Getting Firmware and Software from MOS or PMR

You can use Oracle System Assistant to easily download and then use the latest software release. For further information, see the [Sun Server X3-2 Administration Guide](#), “Setting Up the Server Using Oracle System Assistant” on page 35.

You can also obtain updated firmware and software by using My Oracle Support (MOS) or by submitting to Oracle a physical media request (PMR). For information, see:

- “Download Firmware and Software Using My Oracle Support” on page 36
- “Requesting Physical Media” on page 37

▼ Download Firmware and Software Using My Oracle Support

1. Go to the following web site: <http://support.oracle.com>.

2. Sign in to My Oracle Support.

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

The Patch search pane appears at the right of the screen.

4. Within the Search tab area, click Product or Family (Advanced).

The Search tab area appears with search fields.

5. In the Product field, select the product from the drop-down list.

Alternatively, type a full or partial product name (for example, Sun Server X3-2) until a match appears.

6. In the Release field, select a software release from the drop-down list.

Expand the list to see all available software packages.

7. Click Search.

The Patch Advanced Search Results screen appears, listing the patches for the software release.

See [“Software Releases” on page 35](#) for a description of the available software releases.

8. To select a patch for a software release, click the patch number next to the software release version.

You can use the Shift key to select more than one patch).

A pop-up action panel appears. The pop-up panel contains several action options, including the ReadMe, Add to Plan, and Download options. For information about the Add to Plan option, click on the associated drop-down button and select “Why use a plan?”

9. To review the ReadMe file for the selected patch, click ReadMe.

10. To download the patch for the software release, click Download.

The File Download dialog box appears.

11. In the File Download dialog box, click the patch zip file name.

The patch file for the software release downloads.

Requesting Physical Media

If your processes do not allow downloads from Oracle web sites, you can receive the latest software release packages by submitting to Oracle a physical media request (PMR). The preferred method for submitting a PMR is through the My Oracle Support (MOS) web site.

The high-level tasks for submitting a physical media request are described in these sections:

- [“Gathering Information for the Physical Media Request” on page 37](#)
- [“Request Physical Media \(Online\)” on page 38](#)
- [“Request Physical Media \(By Phone\)” on page 39](#)

Gathering Information for the Physical Media Request

You must have a warranty or support contract for your server in order to make a physical media request (PMR).

Before you make the PMR, gather the following information:

- **Obtain product name, software release version, and patches required.** It will be easier to make the request if you know the latest software release and the name of the download packages (patches) that you are requesting.
 - *If you have access to My Oracle Support* – Follow the instructions in “[Download Firmware and Software Using My Oracle Support](#)” on page 36 to determine the latest software release version and view available software release packages (patches). After viewing the list of patches, you can navigate away from the Patch Advanced Search Results page, if you do not want to continue with the download steps.
 - *If you do not have access to My Oracle Support* – Use the information in “[Software Releases](#)” on page 35 to determine which packages you want, and then request those packages for the latest software release.
- **Have the shipping information ready.** You will need to provide a contact, phone number, email address, company name, and shipping address as part of the request.

▼ Request Physical Media (Online)

Gather the information described in “[Gathering Information for the Physical Media Request](#)” on page 37 before making the request.

1. **Go to the following web site:** <http://support.oracle.com>.
2. **Sign in to My Oracle Support.**
3. **Click on the Contact Us link in the upper right corner of the page.**
The Create Service Request: Problem screen appears.
4. **Describe your request as follows:**
 - a. **In the Problem Summary field, type: PMR for latest software release for Sun Server X3-2.**
 - b. **From the Problem Type drop-down menu, select Software & OS Media Request.**
 - c. **In the Support Identifier field, type the Customer Support Identifier associated with your support contract.**
5. **Skip the Create Service Request: Selections screen by clicking the Next button in the upper right corner of the screen twice.**
The Create Service Request: More Details screen appears.
6. **Provide more information about your request as follows:**

- a. In the **Additional Information** section, answer the questions listed in the following table:

Question	Your Answer
Is this a physical software media shipment request?	Yes
Which product line does the media request involve?	Sun Products
Are you requesting a required password for a patch download?	No
Are you requesting a patch on CD/DVD?	Yes
If requesting a patch on CD/DVD, please provide the patch number and OS/platform?	Enter the patch number for each download that you want from the software release.
List the product name and version requested for the physical media shipment?	<i>Product Name:</i> Sun Server X3-2. <i>Version:</i> Latest software release number.
What is the OS/platform for the requested media?	If you are requesting OS-specific downloads, specify the OS here. If you are requesting system firmware only, enter Generic.
Are any languages required for this shipment?	No

- b. Fill in the **Ship-To** contact information, which includes a contact name, phone number, email address, company name, and shipping address.

7. Click the **Next** button.

The Create Service Request: Severity/Contact screen appears.

8. Enter your contact phone number and preferred method of contact.

9. Click the **Submit** button.

This completes the physical media request. It can take up to seven business days to receive the physical media.

▼ Request Physical Media (By Phone)

Gather the information described in [“Gathering Information for the Physical Media Request” on page 37](#) before making the request.

1. Call Oracle support, using the appropriate number from the Oracle Global Customer Support Contacts Directory at:

<http://www.oracle.com/us/support/contact-068555.html>

2. Tell Oracle support that you want to make a physical media request (PMR) for the server.
 - If you are able to access the specific software release and patch number information from My Oracle Support, provide this information to the support representative.
 - If you are unable to access the software release information, request the latest software release for the server.
-

Installing Updates Using Other Methods

In addition to using Oracle System Assistant and My Oracle Support, you can install updated firmware and software using one of the following methods:

- **Oracle Enterprise Manager Ops Center** – You can use Ops Center Enterprise Controller to automatically download the latest firmware from Oracle, or firmware can be loaded manually into the Enterprise Controller. In either case, Ops Center can install the firmware onto one or more servers, blades, or blade chassis.

For more information, go to:

<http://www.oracle.com/technetwork/oem/ops-center/index.html>.

- **Oracle Hardware Management Pack** – You can use the fwupdate CLI Tool within the Oracle Hardware Management Pack to update firmware within the system.

For more information, refer to the Oracle Hardware Management Pack

Documentation Library at: <http://www.oracle.com/goto/OHMP/docs>.

- **Oracle ILOM** – You can use the Oracle ILOM web interface or command-line interface to update Oracle ILOM and BIOS firmware.

For more information, refer to the Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at:

<http://www.oracle.com/pls/topic/lookup?ctx=ilom31>.

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