Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide for Linux Operating Systems

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Contents

Using This Documentation

This section describes how to get the latest firmware and software for the system, documentation and feedback, and a document change history.

Sun Blade X3–2B Model Name Change

The Sun Blade X3-2B was formerly named the Sun Blade X3-2B. This name might still appear in the software. The name change does not indicate any change in system features or functionality.

The new name identifies the following:

- X identifies an x86 product.
- The first number, 3, identifies the generation of the server.
- The second number, 2, identifies the number of processors.
- The alpha character, B, identifies the product as a blade server.

Getting the Latest Firmware and Software

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 Sun Oracle x86 servers. It has all the tools and drivers you need and resides on a USB drive installed in most servers.
- My Oracle Support – `http://support.oracle.com`
- Physical media request

For more information, see "Getting Server Firmware and Software" on page 43.

Documentation and Feedback

Documentation	Link
All Oracle products	http://www.oracle.com/documentation
Sun Blade X3-2B	http://www.oracle.com/pls/topic/lookup?ctx=SunBladeX3-2B
Oracle Integrated Lights Out Manager (ILOM) 3.1	http://www.oracle.com/pls/topic/lookup?ctx=ilom31
Oracle Hardware Management Pack	http://www.oracle.com/pls/topic/lookup?ctx=ohmp

Provide feedback on this documentation at: http://www.oracle.com/goto/docfeedback.

About This Documentation

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

You can generate a PDF that includes all information about a particular topic 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.

Support and Training

These web sites provide additional resources:

- Support: http://support.oracle.com
- Training: http://education.oracle.com

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Change History

The following lists the release history of this documentation set:

- April 2012. Initial publication.
- May 2012. Updated for SW 1.0.1. Documentation library re-released with editorial revisions.
- June 2012. Updated for SW 1.1. Revised Product Notes and Service Manual.
- July 2012. Server model name changed. All documents revised.

About This Installation Guide for Linux Operating Systems

Note – Important: The Sun Blade X3-2B was formerly named the Sun Blade X6270 M3 server module. This name might still appear in the software. The name change does not indicate any change in system features or functionality.

The following sections of this document describe how to install a supported Linux OS on a Sun Blade X3-2B.

Header	Header
A task table and an overview of the installation process.	"About Linux OS Installation" on page 11
Preparation and setup for installation.	"Preparing to Install the OS" on page 17
Procedures for installing an OS.	"Installing the Operating System" on page 25

About Linux OS Installation

Use the following task table to assist you with installing a supported version of Linux on the Sun Blade X3-2B.

Step	Description	Link
1	Perform the initial server installation and setup procedures.	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*
2	Review the latest server hardware and software information, including a list of supported operating systems.	*Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes*
3	Review the options for single-server or multiple-server OS installations.	"OS Installation Options" on page 12
4	Review the role of Oracle System Assistant in the OS installation process.	"Oracle System Assistant" on page 14
5	Prepare for the OS installation by performing the necessary procedures.	"Preparing to Install the OS" on page 17

Supported OS Versions and Latest Information

Use this section to learn about the supported versions of the Linux OS and how to get the latest server-related information:

Supported Linux Operating Systems

The Sun Blade X3-2B supports the following Linux operating systems:

- Oracle Linux
- SUSE Linus Enterprise Server (SLES)
- Red Hat Enterprise Linux (RHEL)

For supported versions, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes*.

Related Information

"Latest Information in Product Notes" on page 12

Latest Information in Product Notes

The most up-to-date information about the server is maintained in the *Sun Blade X3-2B Product Notes*. The *Product Notes* document contains detailed information about the supported operating systems, available firmware updates, and any hardware or software issues for the server. For more information, refer to: *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes*.

OS Installation Options

You can choose to install an OS on a single server or on multiple servers. The scope of this document is for single-server OS installations. The following table provides some information about these two installation options.

Option	Description
Multiple servers	Go to: `http://www.oracle.com/us/products/enterprise-manager/opscenter/index.html`.
Single server	Installs an OS to a single server using one of the following methods: ■ Locally: OS installation is performed locally at the server. Use this option if you have just completed the physical installation of the server in the rack. Additional hardware is required. ■ Remotely: OS installation is performed from a remote location. Uses the Oracle ILOM RemoteConsole application to access Oracle System Assistant or to perform a manual OS installation. **Note –** Oracle System Assistant is the easiest method for local or remote single-server OS installations.

Related Information:

- "Single-Server Installation Methods" on page 13
- "Oracle System Assistant" on page 14

Single-Server Installation Methods

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

Media Delivery Method	Additional Requirements
Local assisted OS installation – Uses Oracle System Assistant.	A monitor, USB keyboard and mouse, a USB device, and Linux distribution media. For more information, see "Assisted OS Installation" on page 13.
Remote assisted OS installation – Uses Oracle System Assistant.	Oracle ILOM Remote Console application, a redirected CD/DVD drive or ISO image file, and Linux distribution media. For more information, see "Assisted OS Installation" on page 13.
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 Linux distribution media. For more information, see "Manual OS Installation" on page 13.
Remote using a CD/DVD drive or CD/DVD ISO image – Uses a redirected physical CD/DVD drive on a remote system running the Oracle ILOM Remote Console application.	A remote system with a browser, an attached physical CD/DVD drive, Linux distribution media, and network access to the server management port. For more information, see "Manual OS Installation" on page 13.

Assisted OS Installation

This is the easiest method for installing a supported OS on the server. This method involves using the Oracle System Assistant application. You deliver the Linux OS installation media on either a local or remote CD/DVD drive, USB device, or CD/DVD image, and Oracle System Assistant guides the installation process and installs the necessary drivers when necessary. The server must support Oracle System Assistant, and it must be installed in the server.

Manual OS Installation

With this method, you deliver the Linux distribution media on either a local or remote CD/DVD drive, USB device, or CD/DVD image. You also need to supply the necessary drivers. The drivers for the server are available from the My Oracle Support site as OS-specific and server-specific packages. To install the OS, use the distribution media's installation wizard.

Related Information:"Oracle System Assistant" on page 14

Oracle System Assistant

Oracle System Assistant is a single-server system startup and maintenance tool for x86 Sun Fire and Sun Blade servers. It integrates Oracle's Single System Management products and a selection of related software to provide a suite of tools that allow for the quick and convenient startup and maintenance of the server. The components of Oracle System Assistant include:

- Hardware Management Pack
- User interface access to startup and maintenance provisioning tasks (including Install OS task)
- Oracle Linux command-line environment
- Operating system drivers and tools
- Server-specific firmware
- Server-related documentation

Oracle System Assistant resides on the server and is factory configured with a server-specific version of tools and drivers that is maintained through the use of online updates.

Related Information:

- "Oracle System Assistant OS Installation Task" on page 14
- "Obtaining Oracle System Assistant" on page 15

Oracle System Assistant OS Installation Task

The Oracle System Assistant Install OS task assists in the installation of a supported OS. You supply the OS installation media, and Oracle System Assistant guides you through the installation process. It then installs the appropriate drivers based on the server hardware configuration. The Install OS task is not available for all server-supported operating systems. However, once a server-supported OS is installed, you can use Oracle System Assistant to update the OS drivers as well as all the firmware components (BIOS, Oracle ILOM, HBAs, and expanders).

You can access Oracle System Assistant locally or remotely. If you just completed the installation of the server, then using Oracle System Assistant locally (while physically present at the server) can be a fast and efficient method of starting up the server. Once the server is operational, you can conveniently access Oracle System Assistant remotely while still retaining full-featured functionality.

Related Information: "Obtaining Oracle System Assistant" on page 15

Obtaining Oracle System Assistant

Oracle System Assistant might be already installed in the server. For more information about how to determine if the server has Oracle System Assistant or how to perform updates and recovery procedures, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

Related Information: "Preparing to Install the OS" on page 17

Preparing to Install the OS

Use the steps in this section to prepare for OS installation.

Step	Task	Link
1	You must have already reviewed the OS installation task table.	"About Linux OS Installation" on page 11
2	Download OS installation media kits.	"Downloading Installation Media Kits" on page 17
3	Set up for the installation based on the selected installation method.	■ For local installation: "Set Up for Local Installation" on page 18 ■ For remote installation: "Set Up for Remote Installation" on page 19
4	Prepare the BIOS by loading the optimal default values, and selecting a BIOS mode.	"Setting Up the BIOS" on page 23
5	Install the OS.	"Installing the Operating System" on page 25

Downloading Installation Media Kits

This section contains the following procedures for downloading Linux installation media:

▼ Download Oracle Linux Media Kits

1 **For Oracle Linux, go to the Oracle e-delivery site : `http://edelivery.oracle.com/linux`**

2 **Create an account (if you do not already have one).**

You need an account to download the updated ISO images.

3. **Find and download Oracle Linux.**

Next Steps "Setting Up the BIOS" on page 23

▼ Download SLES Media Kits

1. **Obtain your Novell account information.**
   You need a Novell account to download the ISO images.
2. **Download the SUSE Linux Enterprise Server media kit from `http://download.novell.com`.**

Next Steps "Setting Up the BIOS" on page 23

▼ Download RHEL Media Kits

1. **Obtain your enterprise account information.**
   You need an enterprise account to download the updated ISO images.
2. **Download the Red Hat Enterprise Linux Update Media Kit from `http://rhn.redhat.com`.**

Next Steps "Setting Up the BIOS" on page 23

Setting Up the Installation Method

▼ Set Up for Local Installation

A local OS installation is performed at the server. The preferred procedure for a local installation method is to use the Oracle System Assistant's Install OS task. Use this procedure to set up for a local Oracle System Assistant assisted installation or a local manual (unassisted) installation.

Note – For a local OS installation, additional hardware is required and server web access is recommended.

Before You Begin

- Perform the server installation as described in the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*
- Obtain the following items:
  - Video monitor with 15-pin (DB-15) connector capabilities
  - USB keyboard and mouse
  - USB device (CD/DVD drive or thumb drive)
  - Multi-port dongle cable
- To ensure that the server has the latest updates, server web access is recommended.

1. **Ensure the server is in standby power mode.**
2. **Attach the 3-cable dongle to the universal connector port (UCP) on the front of the server module.**
3. **Connect the video monitor to the video connector on the 3-cable dongle.**
4. **Connect the keyboard and mouse to one of the USB connectors on the front of the server (or to one of the USB connectors on the 3-cable dongle).**
5. **Connect the CD/DVD drive to the other USB connector on the front of the server (or to one of the USB connectors on the 3-cable dongle).**

Next Steps "Downloading Installation Media Kits" on page 17

▼ Set Up for Remote Installation

A remote OS installation is performed using the Oracle ILOM Remote Console application and a redirected CD/DVD drive or CD ISO image. The easiest method for a remote installation is to use Oracle System Assistant's assisted Install OS task. Use this procedure to set up for a remote Oracle System Assistant assisted installation or a remote manual (unassisted) installation.

Note – Using the CD-ROM or CD-ROM image option to install the OS significantly increases the time necessary to perform the installation as the content of the CD-ROM is accessed over the network. The installation duration depends on the network connectivity and traffic. This installation method also has a greater risk of issues due to transient network errors.

Before You Begin The following requirements must be met:

- You should have already performed the server installation as described in the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*
- The Remote Console system must be running on Solaris, Linux, or Windows.
- The Remote Console system must be connected to a network that has access to the Sun server Ethernet management port.
- Java Runtime Environment (JRE) 1.5 must be installed.
- If the Remote Console system is running Solaris, volume management must be disabled for Remote Console to access the CD/DVD-ROM drive.
- If the Remote Console system is running Windows, disable Internet Explorer Enhanced Security.
- The server service processor (SP) has been set up according to the instructions in the Oracle ILOM documentation for your server.
- You need the SP IP address to access Oracle ILOM.
- To ensure that the server has the latest updates, server web access is required.

Note – Some of the screen shots shown in this procedure might differ from the screens you see.

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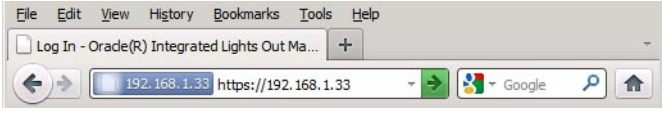
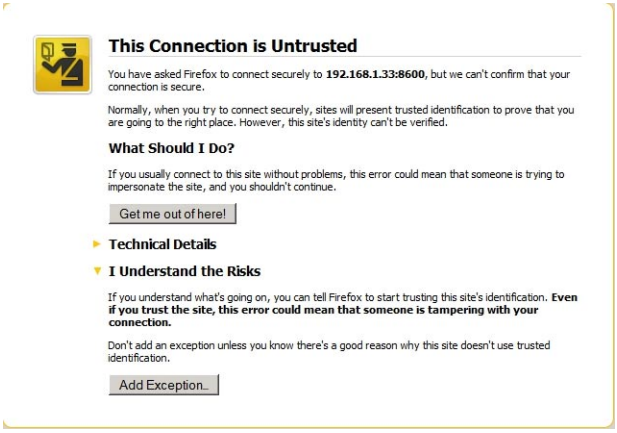
1 To access Oracle ILOM, type the IP address of the service processor into a browser on the Remote Console system.



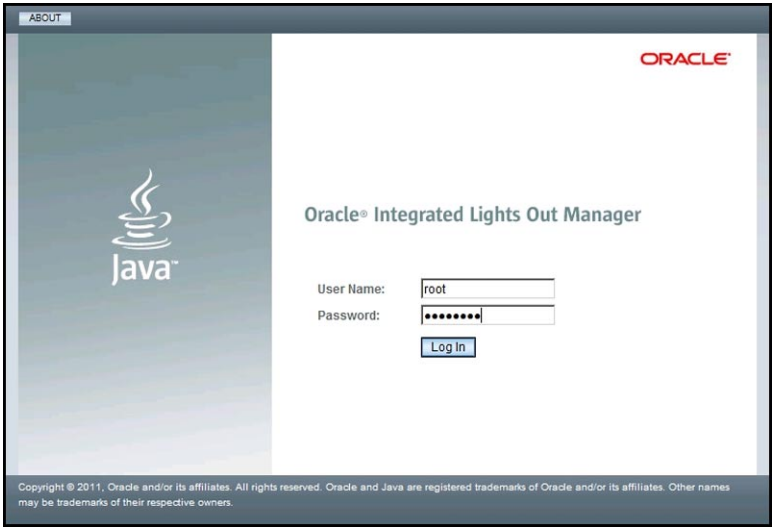
The Security Alert dialog box appears.



2 **Click the I Understand the Risks link.**

3 **Click Add Exception.**

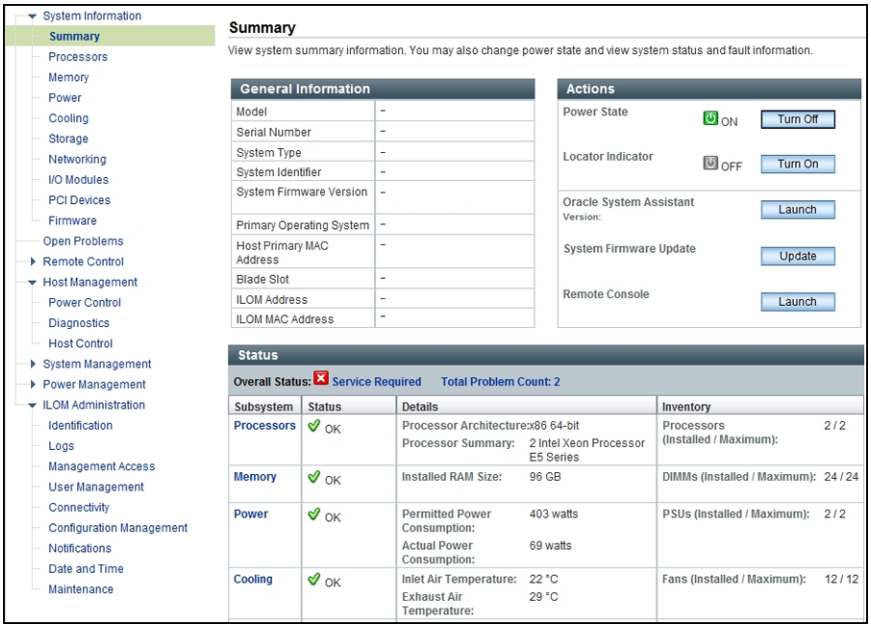
The Oracle ILOM login screen appears.



4 **Type the user name and password and click Log In.**

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

The Oracle ILOM System Summary screen appears.

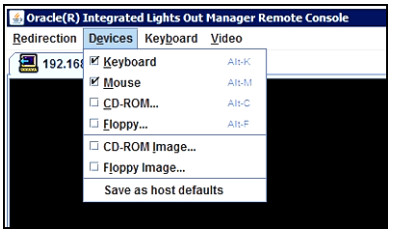


5 Click the Remote Console Launch button.

A dialog box for the `jnlpgenerator.jnlp` file appears.

6 Click Open.

The Remote Console screen appears.



7 From the Devices menu, select one CD item according to the delivery method you have chosen.

- **CD-ROM Remote.** Select CD-ROM to redirect the server to the operating system software CD/DVD contents from the CD/DVD-ROM drive attached to the Remote Console system.
- **CD-ROM Image.** Select CD-ROM Image to redirect the server to the operating system software `.iso` image file located on the Remote Console system.

Next Steps
- "Downloading Installation Media Kits" on page 17
- "Setting Up the BIOS" on page 23

Setting Up the 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. The following topics provide specific instructions on how to configure the BIOS to support the installation:

- "Load BIOS Optimal Default Settings" on page 23
- "Set the BIOS Mode" on page 24

▼ Load BIOS Optimal Default Settings

Caution – This procedure resets the BIOS settings to the default values, and overwrites any previously customized settings. To retain customized settings, review each menu and make note of the customized values before loading the default values.

The BIOS Setup Utility contains an option to load the optimal BIOS settings for the server. Perform this procedure on a newly installed server to ensure that the BIOS is set to the optimal default values.

Before You Begin
- The server is equipped with a properly installed storage drive.
- A console connection is established to the server. For details, see "Setting Up the Installation Method" on page 18

1. **Power on the server.**

   POST messages appear on the console.

2. **Watch the messages, and, when prompted, press F2 to access the BIOS Setup Utility.**

   The BIOS Setup Utility main screen appears.

3. **To ensure that the factory defaults are set, press F9.**

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

Next Steps "Set the BIOS Mode" on page 24

▼ Set the BIOS Mode

The BIOS firmware supports both legacy BIOS and Unified Extensible Firmware Interface (UEFI); the default setting is Legacy. Some operating systems support both legacy BIOS and UEFI BIOS and some support legacy BIOS only. These are the options for setting the BIOS mode before installing the OS:

- If the OS supports legacy BIOS only, you must make sure that BIOS is set to legacy mode before you do the OS installation.
- If the OS supports both legacy BIOS and UEFI BIOS, you have the option of setting BIOS to either legacy mode or UEFI mode before you perform the OS installation.

1. **Power on the server.**

   POST messages appear on the console.

2. **Watch the messages, and, when the prompt appears, press F2 to access the BIOS Setup Utility.**

   The BIOS Setup Utility main screen appears.

3. **In the BIOS Setup Utility, use the left or right arrow keys to navigate to the Boot screen.**

   The Boot Menu screen appears.

4. **Use the down arrow key to select the UEFI/BIOS Boot Mode field.**

5. **Press Enter and use the up or down arrow keys to select the Legacy BIOS option.**

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

Next Steps "Installing the Operating System" on page 25

Installing the Operating System

This section describes the procedures for installing the OS.

Step	Description	Link
1	You must have already reviewed the Preparing to Install the OS section.	"Preparing to Install the OS" on page 17
2	If necessary, get logical and physical network names.	"Identifying Logical and Physical Network Interface Names for Linux OS Configuration" on page 25
3	Install the OS using the selected method.	■ "Install a Linux OS (Oracle System Assistant)" on page 29 ■ "Installing a Linux OS Manually" on page 33
5	Update server tools and drivers.	"Installing Server System Tools and Updating Drivers" on page 38
4	Update the OS to a new version.	"Updating a Linux OS to a New Version" on page 40

Identifying Logical and Physical Network Interface Names for Linux OS Configuration

While configuring an operating system for a networked server, you might need to provide the logical name (assigned by the OS) and the physical name (MAC address) of each network interface.

This section explains how to obtain the needed logical information in these situations. It provides the following topics.

▼ Identify Logical and Physical Network Interface Names While Installing Oracle Linux or RHEL

During installation and configuration of the Oracle or Red Hat Enterprise Linux OS, you reach a point where you must enter the logical and physical names (MAC addresses) of the network interfaces.

This section explains how to launch a user shell during the Linux configuration to obtain the logical and physical network interface names that you need to continue with the configuration.

1. **At the boot prompt type: `linux rescue` and then press Enter.**

   The Choose a Language screen appears.

2. **In the Choose a Language screen, select the appropriate language, and click OK.**

   The Keyboard Type screen appears.

3. **In the Keyboard Type screen, select the appropriate configuration, and then click OK.**

   The Setup Network screen appears.

4. **In the Setup Network screen, click No.**

   The Rescue screen appears.

5. **In the Rescue screen, click Skip.**

   The user shell appears.

6. **At the command prompt (#) in the user shell, type the following command to display all network interfaces, and then press Enter.**

   ```
   # ifconfig -a
   ```

   The output of the Linux named network interfaces appear.

   If you have multiple network interfaces and the output of interfaces scrolls off the top of the screen, you can display the output per interface.

7. **To view the output of each network interface, type the following at the command prompt, and then press Enter:**

   ```
   # ifconfig eth#
   ```

   where *eth#* is the interface number. For example, if you type:

   ```
   # ifconfig eth0
   ```

the output for **eth0** appears:

```
Link encap:Ethernet  HWaddr 00:14:4F:0C:A1:F2
inet addr:192.168.2.103  Bcast:192.168.2.255
```

- **The `eth0` entry in the first column refers to the Oracle Linux logical named interface. This first column in the output identifies the logical names Oracle Linux or RHEL assigned to the network interface.**
- **The `HWaddr 00.14.4F.0C:A1:F2` entry in the second column (first row) refers to the physical MAC address of the network port.**

8. **Record the logical network interface name with the physical port MAC address for future reference. You need to refer to this record when configuring the network interfaces during the Oracle Linux or RHEL OS installation.**
9. **When you are done, do one of the following to exit the user shell.**
   - **From Oracle ILOM, select Remote Control > Remote Power Control > Reset.**
   - **From the Oracle ILOM Remote Console in the Keyboard menu, select Control Alt Delete.**
   - **From other consoles, press Ctrl-Alt-Delete.**
10. **Restart the OS installation program.**

Next Steps

- "Install a Linux OS (Oracle System Assistant)" on page 29
- "Installing a Linux OS Manually" on page 33

▼ Identify Logical and Physical Network Interface Names While Installing SLES

During installation and configuration of the SUSE Linux Enterprise Server OS, you reach a point where you must enter the logical and physical names (MAC addresses) of the network interfaces.

This section explains how to launch a user shell during the SUSE Linux OS configuration to obtain the logical and physical network interface names that you need to continue with the configuration.

Before You Begin Find and record the MAC addresses of all the physical ports from their labels.

1. **If you have not already done so, select `Rescue System` and press Enter.**

   The message `Loading Linux Kernel` appears followed by the SUSE splash screen, and then the Choose a Keyboard Map screen appears.

2. **In the Choose a Keyboard Map screen, select the appropriate keyboard configuration, and click OK.**

   The user shell launches, and the Rescue Login prompt appears.

3. **At the Rescue Login prompt, type `root` to log in, and then press Enter.**

   The Rescue prompt appears.

4. **At the Rescue prompt (#), type the following command, and then press Enter to display all network interfaces (active and inactive).**

   ```
   # ifconfig -a
   ```

   The output of the Linux SUSE named and physical named network interfaces appear. Each interface found will list output similar to the following example:

   ```
   eth0 Link encap:Ethernet  HWaddr 00:14:4F:0C:A1:53
        inet addr:192.168.2.103  Bcast:192.168.2.255  Mask:255.255.0.0
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        RX packets:23363 errors:0 dropped:0 overruns:0 frame:0
        TX packets:21798 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:100
        RX bytes:13479541 (12.8 MiB)  TX bytes:20262643 (19.3 MiB)
        Interrupt:9

   lo   Link encap:Local Loopback
        inet addr:127.0.0.1  Mask:255.0.0.0
        inet6 addr: ::1/128 Scope:Host
        UP LOOPBACK RUNNING  MTU:16436  Metric:1
        RX packets:9814 errors:0 dropped:0 overruns:0 frame:0
        TX packets:9814 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:0
        RX bytes:3655065 (3.4 MiB)  TX bytes:3655065 (3.4 MiB)
   ```

   - The `eth0` entry in the first column refers to the logical name of the Ethernet interface assigned by the operating system. The `lo` entry in the first column refers to the loopback interface.
   - The `HWaddr 00.14.4F.0C:A1:53` entry in second column (first row) refers to the physical MAC address of the network port.

   If you have multiple network interfaces and the output of interfaces scrolls off the top of the screen, you can display the output per interface.

   `# ifconfig` *eth#*

   where *eth#* is the interface number.

5. **Record the SUSE logical network interface name with the physical port MAC address for future reference.**

   You will need to refer to this record when configuring the network interfaces during the Linux SUSE OS installation.

6. **To exit the Rescue shell, do one of the following:**

   - **From the Oracle ILOM web interface, select Remote Control > Remote Power Control > Reset.**
   - **From other consoles, at the Rescue prompt (#), type `reboot`, and then press Enter.**

7. **Restart the SLES installation program.**

Next Steps

- "Install a Linux OS (Oracle System Assistant)" on page 29
- "Installing a Linux OS Manually" on page 33

▼ Install a Linux OS (Oracle System Assistant)

The Oracle System Assistant Install OS task provides assisted OS installation of a supported versions of the Linux OS.

Before You Begin

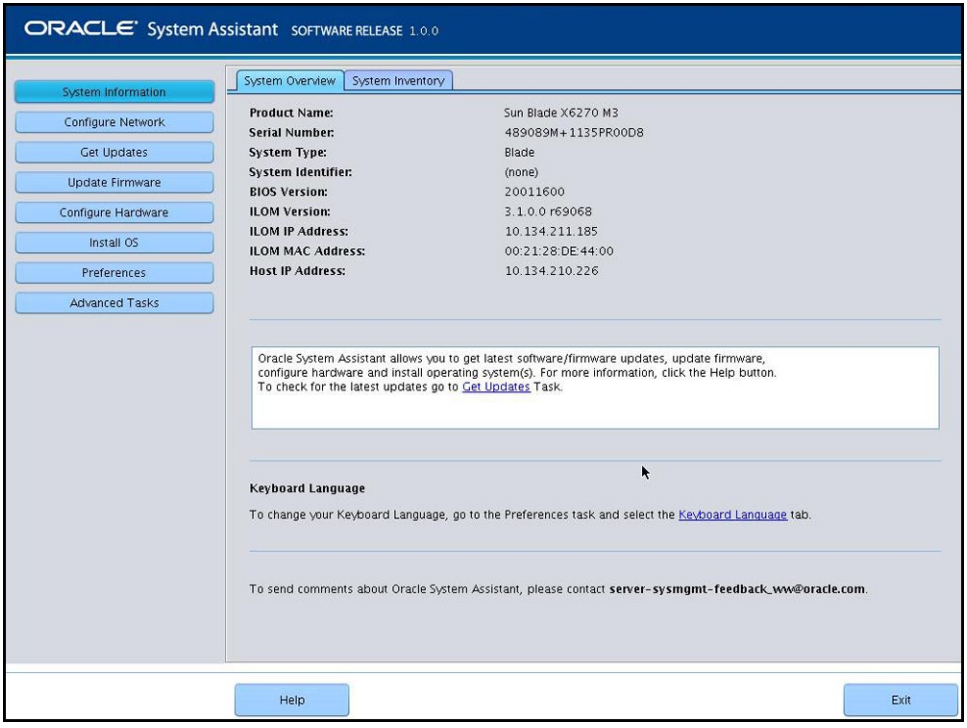
- Prepare the server storage drives. For more information, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Installation Guide*.
- Perform the steps in "Preparing to Install the OS" on page 17.
- During the OS installation and configuration process, you might need to provide logical and physical network names. For more information, see "Identifying Logical and Physical Network Interface Names for Linux OS Configuration" on page 25.
- For local installation, have the installation media available to insert into the attached physical CD/DVD-ROM drive when prompted.
- For remote installation, insert the installation media into the Remote Console system's CD/DVD-ROM drive. Make sure you have selected CD-ROM from the Remote Console Device menu.
- If you are using an ISO image, ensure that the it is accessible from the Remote Console system. Make sure you have selected CD-ROM Image from the Remote Console Device menu.

1. **Ensure that the server is in standby power mode.**

2. **Boot the server and watch the video monitor or Remote Console screen for the prompt to press the F9 key to enter Oracle System Assistant.**

3 **When the prompt appears, press the F9 key.**

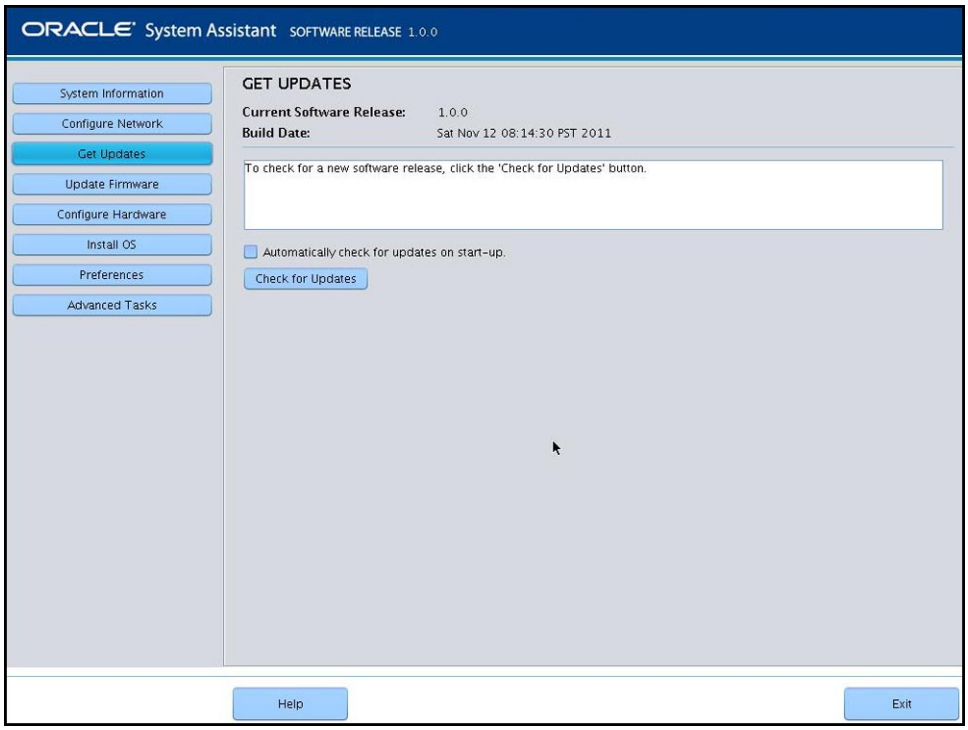
The Oracle System Assistant main screen appears.



4 **To update the Oracle System Assistant application, click the Get Updates button.**

This action ensures that the application has the latest firmware and drivers before you begin the OS installation.

Note – Server web access is required to update Oracle System Assistant.

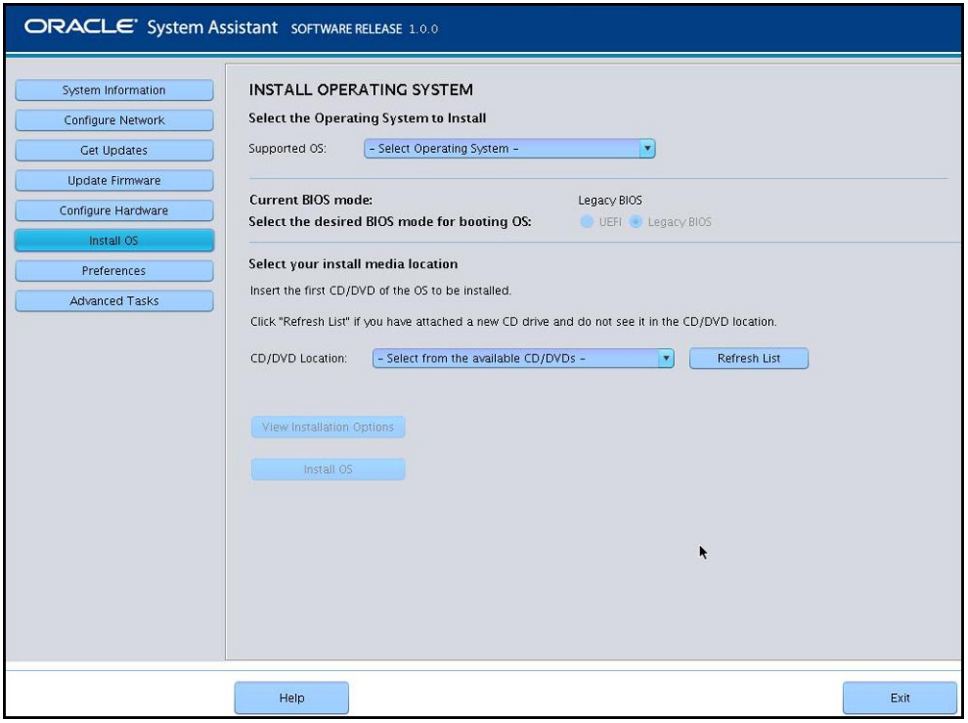


5 **To update the server firmware, click the Update Firmware button.**

This action ensures that the server has the latest firmware and before you begin the OS installation.

6 **To install the OS, click the Install OS button.**

The Install OS screen appears.



7 **From the Select Operating System drop-down list, select the OS.**

8 **Select the BIOS mode. For more information, refer to** *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide***.**

9 **In the Select your install media location section, indicate the location of the installation media .**

This is the location of the OS distribution media. If you attached a CD/DVD drive, you might need to click the Refresh button to see it in the drop-down list.

10 **To select a device, click View Installation Options.**

This is the device on which you install the OS.

Caution – Loss of data. The OS installation erases the contents of the disk. All data on the selected disk is erased.

11 **To begin the OS installation, click Install OS**

12 **Follow the prompts until the installation is finished.**

The server boots.

Next Steps "Installing Server System Tools and Updating Drivers" on page 38

Installing a Linux OS Manually

The easiest method for installing a Linux OS is to use the Oracle System Assistant application. For more, see "Install a Linux OS (Oracle System Assistant)" on page 29.

Use the procedures in the following sections to install a Linux OS manually—without the assistance of Oracle System Assistant:

- "Install Oracle Linux Manually" on page 33
- "Install SLES Manually" on page 35
- "Install RHEL Manually" on page 36

▼ Install Oracle Linux Manually

Use this procedure to install the Oracle Linux OS without the use of Oracle System Assistant.

Before You Begin

- Perform the steps in the section "Preparing to Install the OS" on page 17.
- To complete this installation, you need the following Oracle Linux installation articles:
  - For Oracle Linux 5, go to: `http://www.oracle-base.com/articles/linux/OracleEnterpriseLinux5Installation.php`
  - For Oracle Linux 6, go to: `http://www.oracle-base.com/articles/linux/OracleLinux6Installation.php`

1 **Download the OS-specific ZIP package file from My Oracle Support. See "Accessing Firmware and Software" on page 45.**

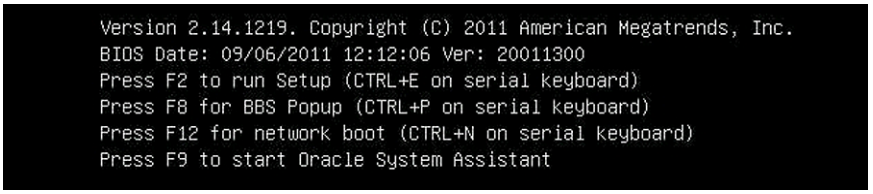
2 **Unzip the file to a location accessible to the server.**

These are the OS-specific drivers and supplemental software (tools) for the server. For information about the folder file system structure, refer to *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

3 **Insert the Linux distribution DVD, or access the ISO image distribution media.**

4 **Power on or reset the server.**

BIOS messages appear on the console.



5 **When you see a message offering a series of selections, press F8.**

After a delay, a menu offers a selection of boot devices (see the following example).

6 **Select a boot device from the list.**

To boot from a physical CD/DVD or from an ISO image, select CD/DVD.

Control passes to the OS installation program on the media.

7 **Do one of the following at the boot prompt, depending on which type of interface you want to use:**

- **Text mode:**

  Type the following command:`boot: linux text`.

- **Graphical mode:**

  Press Enter at the boot prompt.

8 **To complete the installation, refer to the version-specific installation article listed at the beginning of this procedure.**

Note – If you already have an operating system besides Linux installed (for example, the Oracle Solaris OS), it will appear as a partition during the installation process. If you choose to install Oracle Linux on that partition, it will overwrite the OS. If you wish to preserve the partition, you must install Oracle Linux on a different partition.

Next Steps "Installing Server System Tools and Updating Drivers" on page 38

▼ Install SLES Manually

Before You Begin

- Perform the steps in the section, "Preparing to Install the OS" on page 17.
- While configuring an operating system for a networked server, it is necessary to provide the logical names (assigned by the OS) and the physical name (MAC address) of each network interface. See "Identifying Logical and Physical Network Interface Names for Linux OS Configuration" on page 25 for details.
- Obtain the OEM OS installation guide available with the media kit.

1. **Download the OS-specific ZIP package file from My Oracle Support. See "Accessing Firmware and Software" on page 45.**

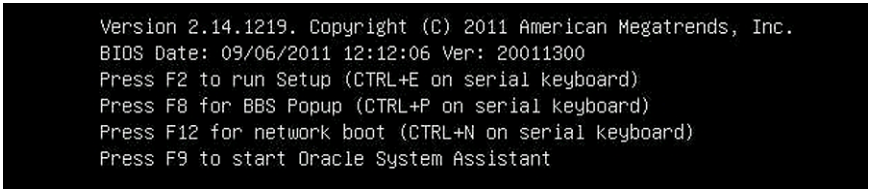
2. **Unzip the file to a location accessible to the server.**

   These are the OS-specific drivers and supplemental software (tools) for the server. For information about the file system structure, refer to *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

3. **Insert the Linux distribution DVD, or access the ISO image distribution media.**

4. **Power on or reset the server.**

   BIOS messages appear on the console.



5 **When you see a message offering a series of selections, press F8.**

After a delay, a menu offers a selection of boot devices (see the following example).

6 **Select a boot device from the list.**

To boot from a physical CD/DVD or from an ISO image, select CD/DVD.

Control passes to the OS installation program on the media.

7 **Follow the instructions provided with the OEM installation guide to complete the installation of the system software.**

Note – If you already have an operating system besides Linux installed (for example, the Solaris OS), it will appear as a partition during the installation process. If you choose to install SLES on that partition, it will overwrite the OS. If you wish to preserve the partition, you must install SLES on a different partition.

Next Steps "Installing Server System Tools and Updating Drivers" on page 38

▼ Install RHEL Manually

Before You Begin

- Perform the steps in the section, "Preparing to Install the OS" on page 17.
- While configuring an operating system for a networked server, it is necessary to provide the logical names (assigned by the OS) and the physical name (MAC address) of each network interface. See "Identifying Logical and Physical Network Interface Names for Linux OS Configuration" on page 25 for details.
- OEM OS installation guide available with the media kit.

1 **Download the OS-specific ZIP package file from My Oracle Support. See "Accessing Firmware and Software" on page 45.**

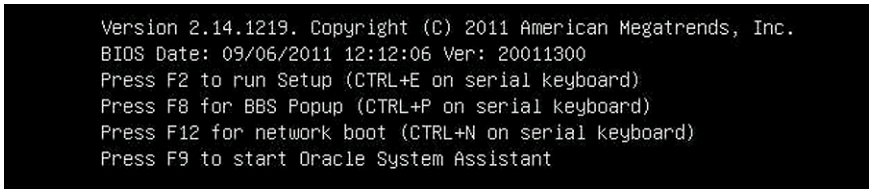
2. **Unzip the file to a location accessible to the server.**

   These are the OS-specific drivers and supplemental software (tools) for the server. For information about the file system structure, refer to *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

3. **Insert the Linux distribution DVD or access the ISO image distribution media.**

4. **Power on or reset the server.**

   BIOS messages appear on the console.



5. **When you see a message offering a series of selections, press F8.**

   After a delay, a menu offers a selection of boot devices (see the following example).

6. **Select a boot device from the list.**

   To boot from a physical CD/DVD or from an ISO image, select CD/DVD.

   Control passes to the OS installation program on the media.

7. **Do one of the following at the boot prompt, depending on which type of interface you want to use:**

   - **For text mode, type the following command: `boot: linux text`.**
   - **For graphical mode, press Enter at the boot prompt.**

8 **Refer to the *Red Hat Enterprise Linux Installation Guide* to guide you through the remainder of the installation process.**

Note – If you already have an operating system besides Linux installed (for example, the Solaris OS), it will appear as a partition during the installation process. If you choose to install RHEL on that partition, it will overwrite the OS. If you wish to preserve the partition, you must install RHEL on a different partition.

Next Steps "Installing Server System Tools and Updating Drivers" on page 38

Installing Server System Tools and Updating Drivers

These procedures describe how to access server system tools and update system drivers using the software available with Oracle System Assistant or the downloaded OS–specific software package:

- "Install Server System Tools" on page 38
- "Update or Install System Drivers" on page 39

▼ Install Server System Tools

Server system tools, which include Oracle Hardware Management Pack, LSI MegaRAID Storage Manager, and MegaCLI are available with Oracle System Assistant software and the downloaded Linux OS software package. Use this procedure to install the tools.

1 **Do one of the following:**

- **If your system does *not* have Oracle System Assistant:**

  a. **Download the latest server system tools and drivers package from the My Oracle Support site.**

     For more information, see "Getting Server Firmware and Software" on page 43.

  b. **Unzip the downloaded tools and drivers package to the server.**

  c. **Within the unzipped directory file system, navigate to the Linux OS Tools folder:**

     `Linux/`*OS_name*`/`*version*`/Tools/`*tool*

     where *OS_name* is the installed OS as OL (Oracle Linux), RHEL (Red Hat), or SLES (SUSE), *version* is the version of the installed Linux OS, and *tool* is the tool as `MSM`, `MegaCLI`, or `hmp-tools`.

- **If your system has Oracle System Assistant:**

  a. **From the OS, open a file browser, and navigate to the Oracle System Assistant USB device.**

     The USB device is named: `ORACLE_SSM`

  b. **Navigate to the appropriate Linux OS `Tools` folder using the following path structure:**

     `Linux/`*OS_name*`/`*version*`/Tools/`*tool*

     where *OS_name* is the installed OS as OL (Oracle Linux), RHEL (Red Hat), or SLES (SUSE), *version* is the version of the installed Linux OS, and *tool* is the tool as `MSM`, `MegaCLI`, or `hmp-tools`.

2 **To install the software tools, refer to the `.txt` file located in the tool's directory.**

For more information, refer to the following documents:

- For Oracle Hardware Management Pack, refer to: `http://www.oracle.com/pls/topic/lookup?ctx=ohmp`
- For LSI MSM, refer to: `http://www.lsi.com/sep/Pages/oracle/sg_x_sas6-r-rem-z.aspx`

▼ Update or Install System Drivers

Oracle System Assistant installs most supported drivers during the OS installation process. To install or update individual drivers or to update all drivers after the OS installation, use the `.rpm` file or the Linux OS InstallPack application, respectively. The `InstallPack` application and the `.rpm` files are available with the Oracle System Assistant software on the USB drive and the downloaded OS-specific software package.

1 **Do one of the following:**

- **If your system does *not* have Oracle System Assistant:**

  a. **Download the latest server system tools and drivers package from the My Oracle Support site.**

     For more information, see "Getting Server Firmware and Software" on page 43.

  b. **Unzip the downloaded tools and drivers package to the server.**

  c. **Within the unzipped directory file system, navigate to the Linux OS InstallPack folder:**

     `Linux/`*OS_name*`/`*version*`/InstallPack`

     where *OS_name* is the installed OS as OL (Oracle Linux), RHEL (Red Hat), or SLES (SUSE), and *version* is the version of the installed Linux OS.

- **If your system has Oracle System Assistant:**

  a. **From the OS, navigate to the Oracle System Assistant USB device.**

     The USB device is named: `ORACLE_SSM`

  b. **Navigate to the Linux OS folder using the following path structure:**

     `Linux/`*`OS_name`*`/`*`version`*

     where *OS_name* is the installed OS as OL (Oracle Linux), RHEL (Red Hat), or SLES (SUSE), and *version* is the version of the installed Linux OS.

2 **Do one of the following:**

- **To update or install *all* supported drivers, navigate to the InstallPack directory and run the `InstallPack.py` file.**

  `Linux/`*`OS_name`*`/`*`version`*`/InstallPack`

  Follow the InstallPack application instructions to complete the driver update.

- **To update or install other drivers, navigate to the driver directory and double-click the `.rpm` files.**

  `Linux/`*`OS_name`*`/`*`version`*`/Drivers/`*`driver`* where *driver* is the directory name containing the driver.

Updating a Linux OS to a New Version

Use the procedures in the following sections to update a Linux OS to a new version:

- "Update the Oracle Linux Operating System Version" on page 40
- "Update the SLES Operating System Version" on page 41
- "Update the RHEL Operating System Version" on page 42

▼ Update the Oracle Linux Operating System Version

Before You Begin You must already have Oracle Linux installed the server.

- **Choose a method for updating the Oracle Linux operating system:**

  - **For Oracle Unbreakable Linux Network (ULN) installations, create local yum repositories and configure yum and up2date to install update packages from them.**

    Go to `http://www.oracle.com/technology/tech/linux/htdocs/yum-repository-setup.html`.

- **For Oracle Linux installations without Unbreakable Linux Network support, use the Oracle Public yum server and a yum client to install updates.**

  Go to `http://public-yum.oracle.com/`.

Note – This yum server is offered without support of any kind. If you require errata, security patches, and other updates, you should use the Oracle Unbreakable Linux Network (ULN) at `http://linux.oracle.com/`.

▼ Update the SLES Operating System Version

This procedure uses YaST to update SLES.

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

Before You Begin Obtain a Novell Customer Center user name and password, and a SLES product activation code.

1. **Log in as superuser.**
2. **Open the YaST Online Update service:**

   ```
   # you
   ```

   The YaST user window appears.
3. **If you are behind a network firewall and need to use a proxy server to access the Internet, configure YaST with the correct proxy information:**

   a. **Click the Network Services tab.**

   b. **Click the Proxy screen on the right of the display.**

   c. **Enter the correct proxy URLs in both the HTTP and HTTPS fields.**

   d. **Exit YaST.**

   e. **Enter the following command:**

      `# rug set-prefs proxy-url` *proxy URL*

      where *proxy URL* is the fully qualified URL of the proxy server. For example:

      `http://` *proxy.yourdomain*`:3128/`

   f. **Restart YaST.**

4. **To register with the Novell Customer center:**

   a. **Click the Software tab.**

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

      This requires your Novell Customer Center user name and password, and a SLES product activation code.

5. **To perform the software update, select the Online Update tab.**

▼ Update the RHEL Operating System Version

Before You Begin You must already have RHEL installed the server.

The server must have access to the web.

1. **Run the `yum` update program.**

   ```
   # yum
   ```

2. **Answer the questions and make your choices before the packages are downloaded and installed.**

   You should periodically update the system using `yum`.

   For more information, refer to the man page. Type:

   ```
   # man yum
   ```

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 43
Learn about the options for accessing firmware and software.	"Firmware and Software Access Options" on page 44
View the available firmware and software packages.	"Available Software Release Packages" on page 44
Access the firmware and software packages through Oracle System Assistant, My Oracle Support, or a physical media request.	"Accessing Firmware and Software" on page 45
Install firmware and software updates.	"Installing Updates" on page 49

Firmware and Software Updates

Firmware and software, such as hardware drivers and tools for the server, are updated periodically. Updates are made available as a software release. The software release is a set of downloads (patches) that include all available firmware, hardware drivers, and utilities for the server. All these have been tested together. The Read Me document that is included with the download explains what has changed and what has not changed from the prior software release.

You should update your server firmware and software as soon as possible after the software release becomes available. Software releases often include bug fixes, and updating ensures that your server module software is compatible with the latest chassis firmware and other chassis component firmware and software.

A Read Me file in the download package and the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Product Notes* contain information about the updated files in the download package, as well as bugs that are fixed with the current release. The product notes also provide information about which server module software versions are supported with the latest chassis firmware.

Firmware and Software Access Options

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

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

  For more information about using Oracle System Assistant, refer to Access Oracle System Assistant From Oracle ILOM Web Interface.

- **My Oracle Support** – All system firmware and software are available from My Oracle Support at `http://support.oracle.com`.

  For more information about what is available on the My Oracle Support, see "Available Software Release Packages" on page 44.

  For instructions on how to download software releases from My Oracle Support, see: "Download Firmware and Software Using My Oracle Support" on page 46.

- **Physical media request (PMR)** – You can request a DVD that contains any of the downloads (patches) available from My Oracle Support.

  For information see: "Request Physical Media (Online)" on page 47.

Available Software Release Packages

Downloads on My Oracle Support are grouped by product family, then product, then version. The version contains one or more downloads (patches).

For servers and blades, the pattern is similar. The product is the server. Each server contains a set of releases. These releases are not true software product releases, but releases of updates for the server. These updates are called software releases and comprise several downloads, all tested together. Each download contains firmware, drivers, or utilities.

My Oracle Support has the same set of download types for this server family as shown in the following table. These can also be requested through a physical media request (PMR). The same firmware and software can also be downloaded using Oracle System Assistant.

Package Name	Description	When to Download This Package
X3-2B SW*version* – Firmware Pack	All the system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.

Package Name	Description	When to Download This Package
X3-2B 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.	You need to update OS-specific drivers, tools, or utilities.
X3-2B SW*version* – All packs	Includes the Firmware Pack, all OS Packs, and all documents. This pack does not include SunVTS or the Oracle System Assistant image.	You need to update a combination of system firmware and OS-specific software.
X3-2B SW*version* – Diagnostics	SunVTS diagnostics image.	You need the SunVTS diagnostics image.
X3-2B SW*version* – Oracle System Assistant Updater	Oracle System Assistant updater and ISO update image.	You need to manually recover or update Oracle System Assistant.

Each of the downloads is a zip file that contains a Read Me and a set of subdirectories containing firmware or software files. The Read Me file contains details on the components that have changed since the prior software release and the bugs that have been fixed. For more details on the directory structure of these downloads, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

Accessing Firmware and Software

This section covers instructions for downloading or requesting software release files.

Note – You can also use Oracle System Assistant to easily download and use the latest software release. For further information, refer to the *Sun Blade X3-2B (formerly Sun Blade X6270 M3) Administration Guide*.

There are two other methods for obtaining updated firmware and software.

- "Download Firmware and Software Using My Oracle Support" on page 46
- "Requesting Physical Media" on page 46

▼ Download Firmware and Software Using My Oracle Support

1. **Go to:** `http://support.oracle.com`
2. **Sign in to My Oracle Support.**
3. **At the top of the page, click the Patches and Updates tab.**
   The Patches and Updates screen appears.
4. **In the Search screen, click Product or Family (Advanced Search).**
   The screen 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 Blade X3-2B) until a match appears.
6. **In the Release field, select a software release from the drop-down list.**
   Expand the folders to see all available software releases.
7. **Click Search.**
   The software release comprises a set of downloads (patches) .
   See "Available Software Release Packages" on page 44 for a description of the available downloads.
8. **To select a patch, click the check box next to the patch name (you can select more than one patch).**
   A pop-up action panel appears. The panel contains several action options.
9. **To download the update, click Download in the pop-up panel.**
   The download begins automatically.

Requesting Physical Media

If your processes do not allow downloads from Oracle web sites, you can access the latest software release through a physical media request (PMR).

The following table describes the high-level tasks for making a physical media request and provides links for further information.

Description	Link
Gather information you will need to provide for the request.	"Gathering Information for the Physical Media Request" on page 47
Make the physical media request either online or by calling Oracle Support.	"Request Physical Media (Online)" on page 47 "Request Physical Media (by Phone)" on page 48

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 46 to determine the latest software release and view available downloads (patches). After viewing the list of patches, you can navigate away from Patch 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 "Available Software Release Packages" on page 44 to determine which packages you want, then request these 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 for the request.

▼ Request Physical Media (Online)

Before You Begin Gather the information described in "Gathering Information for the Physical Media Request" on page 47 before making the request.

1. **Go to `http://support.oracle.com` and sign in.**
2. **Click on the Contact Us link in the upper right corner of the page.**
3. **In the Request Description section, fill in the following:**
   a. **In the Request Category drop-down list, select the following:**
      Physical Media Request (Legacy Oracle Products, Primavera, BEA, Sun Products)

b. **In the Request Summary field, type: .**

   `PMR for latest software release for Sun Blade Sun Blade X3-2B`

4 **In the Request Details section, answer the questions shown 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?	*Product Name*: Sun Blade X3-2B *Version*: 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

5 **Fill in the Ship-To contact, phone number, email address, company name, and shipping address information.**

6 **Click Next.**

7 **Under Relevant Files, type: `Knowledge Article 1361144.1`**

8 **Click Submit.**

▼ Request Physical Media (by Phone)

Before You Begin Gather the information described in "Gathering Information for the Physical Media Request" on page 47 before making the request.

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

   `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 Sun Blade X3-2B.**

   - **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 not able to access the software release information, request the latest software release for the Sun Blade X3-2B.**

Installing Updates

The following topics provide information about installing firmware and software updates:

Installing Firmware

Updated firmware can be installed using one of the following:

- **Oracle Enterprise Manager Ops Center** – Ops Center Enterprise Controller can 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/us/products/enterprise-manager/opscenter/index.html`
- **Oracle System Assistant** – Oracle System Assistant can download and install the latest firmware from Oracle.

  For more information, refer to Using Oracle System Assistant for Server Configuration.
- **Oracle Hardware Management Pack** – The `fwupdate` CLI tool within the Oracle Hardware Management Pack can be used to update firmware within the system.

  For more information, go to:`http://www.oracle.com/pls/topic/lookup?ctx=ohmp`.
- **Oracle ILOM** – Oracle ILOM and BIOS firmware are the only firmware that can be updated using the Oracle ILOM web interface and Oracle ILOM CLI.

  For more information, go to: `http://www.oracle.com/pls/topic/lookup?ctx=ilom31`.

Installing Hardware Drivers and OS Tools

Updated hardware drivers and operating system (OS)-related tools, such as the Oracle Hardware Management Pack, can be installed using one of the following:

- **Oracle Enterprise Manager Ops Center** – For more information, go to:

  `http://www.oracle.com/us/products/enterprise-manager/opscenter/index.html`
- **Oracle System Assistant** – For more information, refer to Setting Up the Server With Oracle System Assistant.
- Other deployment mechanisms such as JumpStart, Kickstart or third-party tools.

  For more information, refer to your OS documentation.

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