Oracle® Server X6-2L Installation Guide for Oracle VM

Part No: E62181-02
January 2017

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Contents

Using This Documentation 7
Product Documentation Library 7
Feedback 7

About Oracle VM Server Software Installations 9
Oracle VM Overview 9
Oracle VM Server Installation Task Map 10
Supported Oracle VM Server Software 11
Oracle VM Server Installation Options 12
Single-Server Installation Methods 12
Manual Oracle VM Server Installation 13

Preparing to Install the Oracle VM Server Software 15
Selecting the Console Display 15
Console Display Options 15
▼ Set Up the Local Console 16
▼ Set Up the Remote Console 17
Preparing the Boot Environment 18
▼ Verify the UEFI Optimal Defaults 18
▼ Set the Boot Mode 21
Selecting the Boot Media Option 24
Boot Media Option Requirements 24
▼ Set Up the Boot Media for Local Installation 25
▼ Set Up the Boot Media for Remote Installation 25
Selecting the Installation Target 26
Installation Target Options 27
▼ Set Up a Local Storage Drive (HDD, SSD, or RAID Volume) as the Installation Target 27

▼ Set Up a Fibre Channel Storage Area Network Device as the Installation Target 28
Configuring RAID 28

Installing the Oracle VM Server Software 29
Before You Begin 29
Installing Oracle VM Server on a Single System Manually 30
▼ Install Oracle VM Server Using Local or Remote Media 30
▼ Install Oracle VM Server Using PXE Network Boot 34
Post Installation Tasks for Oracle VM Server Software 38
Update Oracle VM Server 38
Manage Oracle VM Server Resources 38

Configuring Network Interfaces 41
NIC Connectors 41

Index 43

Using This Documentation

- **Overview** – This installation guide contains procedures for installing the Oracle VM Server software, and initial software configuration procedures for bringing the Oracle Server X6-2L to a configurable and usable state.
- **Audience** – Technicians, system administrators, authorized service providers, and users.
- **Required knowledge** – Experience installing operating systems.

Product Documentation Library

Documentation and resources for this product and related products are available at http://www.oracle.com/goto/x6-2l/docs.

Feedback

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

About Oracle VM Server Software Installations

This section contains an overview of the process to install Oracle VM Server on your Oracle Server X6-2L.

Description	Links
Review an overview of Oracle VM.	“Oracle VM Overview” on page 9
Review the Oracle VM Server software installation steps.	“Oracle VM Server Installation Task Map” on page 10
Review the supported Oracle VM Server software versions.	“Supported Oracle VM Server Software” on page 11
Review Oracle VM Server installation options.	“Oracle VM Server Installation Options” on page 12

Related Information

- “Installing the Oracle VM Server Software” on page 29

Oracle VM Overview

Oracle VM is a platform that provides a fully equipped environment with all the latest benefits of virtualization technology. Oracle VM enables you to deploy operating systems and application software within a supported virtualization environment. The Oracle VM architecture includes Oracle VM Manager and Oracle VM Server.

Oracle VM Manager is used to manage Oracle VM Servers, virtual machines, and resources. It comprises of a number of subcomponents, include a web browser-based user interface and a command-line interface (CLI), enabling you to manage your infrastructure directly from the command line either via external scripts or by running manual command sequences. Each of these interfaces runs as a separate application to the Oracle VM Manager core and interfaces with this using the Web Services API.

Oracle VM Server is a managed virtualization environment that provides a lightweight, secure, server platform for running virtual machines, also known as domains. These virtual machines could be Linux, Oracle Solaris, or Microsoft Windows.

At least one Oracle VM Server is required, but several are needed to take advantage of clustering. On x86-based systems, Oracle VM Server is based upon an updated version of the underlying Xen hypervisor technology, and includes Oracle VM Agent. Oracle VM Agent is used to manage communication with Oracle VM Manager.

This document explains how to install Oracle VM Server on your Oracle Server X6-2L. For information about the complete Oracle VM environment and installation instructions for other components of Oracle VM, refer to the Oracle VM documentation at:

http://www.oracle.com/technetwork/documentation/vm-096300.html

Oracle VM Server Installation Task Map

The following table describes the high-level steps for installing Oracle VM Server.

Step	Description	Links
1.	Review the server product notes.	*Oracle Server X6-2L Product Notes at:* http://www.oracle.com/goto/x6-2l/docs
2.	Install the server hardware.	■ "Installing the Server Into a Rack" in *Oracle Server X6-2L Installation Guide* ■ "Cabling the Server and Applying Power" in *Oracle Server X6-2L Installation Guide*
3.	Configure the service processor.	■ "Connecting to Oracle ILOM" in *Oracle Server X6-2L Installation Guide*
4.	Review the Oracle VM Server versions supported on the server.	"Supported Oracle VM Server Software" on page 11
5.	Set up a second system with a static IP address on which you can install the Oracle VM Manager. This system must have one of the following operating systems installed: ■ Oracle Linux 5 Update 5, 64-bit or later ■ Oracle Linux 6, 64-bit or later ■ Oracle Linux 7, 64-bit or later ■ Red Hat Enterprise Linux 5 Update 5, 64-bit or later ■ Red Hat Enterprise Linux 6, 64-bit or later ■ Red Hat Enterprise Linux 7, 64-bit or later	*Oracle VM Release Notes for Release 3.4*, *Oracle VM Installation and Upgrade Guide for Release 3.4*, and *Oracle VM User's Guide for Release 3.4* at: http://www.oracle.com/technetwork/documentation/vm-096300.html
6.	Obtain the Oracle VM Server installation media and the Oracle VM documentation. The Oracle VM documentation should be used in conjunction with the installation procedures in this guide.	■ An ISO image of the Oracle VM Server installation program is available as a download at: https://edelivery.oracle.com/oraclevm

Step	Description	Links
		If you want to install the Oracle VM Server ISO image from a DVD, burn the Oracle VM Server ISO file to a bootable DVD. ■ The Oracle VM documentation is available at: http://www.oracle.com/technetwork/documentation/vm-096300.html
7.	Set up the boot environment, console, boot media, and installation target that you will use to perform the installation.	"Preparing to Install the Oracle VM Server Software" on page 15
8.	Install Oracle VM Server and, if necessary, Oracle VM Manager.	"Installing the Oracle VM Server Software" on page 29
9.	Perform the post installation tasks, if applicable.	"Post Installation Tasks for Oracle VM Server Software" on page 38

Related Information

- "Preparing to Install the Oracle VM Server Software" on page 15

Supported Oracle VM Server Software

The server supports the following Oracle VM Server software.

VM Software	Edition
Oracle VM Server	Release 3.4.1 with Unbreakable Enterprise Kernel 4

If the Oracle VM software is installed on your server, but you do not want to use it, you can install any other supported operating system or virtual machine software on your server.

For an updated list of operating systems supported by the server, refer to the latest version of the *Oracle Server X6-2L Product Notes* at http://www.oracle.com/goto/x6-2l/docs.

The Hardware Compatibility Lists (HCL) also identifies the latest operating system version supported on Oracle hardware. To find the latest version of Oracle VM Server supported on the Oracle Server X6-2L, go to the following site and search using your server model number:

http://linux.oracle.com/pls/apex/f?p=117:1:3991604960223967

Related Information

- "Installing the Oracle VM Server Software" on page 29

- "Supported Operating Systems" in *Oracle Server X6-2L Product Notes*

Oracle VM Server Installation Options

You can choose to install Oracle VM Server on a single server or on multiple servers. The scope of this document is for single server Oracle VM Server installations. The table below provides some information about these two installation options.

Option	Description
Multiple servers	You can use Oracle Enterprise Manager Ops Center to install an operating system on multiple servers. For information, go to `http://www.oracle.com/technetwork/oem/ops-center/index.html`.
Single server	Install Oracle VM Server to a single server using one of the following methods: ■ Locally: Perform the Oracle VM Server installation with physical access to the server. This option is recommended if you have just completed the physical installation of the server in the rack. ■ Remotely: Perform the Oracle VM Server installation from a remote location. This option uses the Oracle ILOM Remote System Console Plus application to perform a manual Oracle VM Server installation.

Single-Server Installation Methods

Select a method for providing the Oracle VM Server installation media. Use the following information to determine the local or remote Oracle VM Server installation that best meets your needs.

Media Delivery Method	Additional Requirements
Local Oracle VM Server installation using a DVD drive – Uses a physical DVD drive connected to the server.	A monitor, USB keyboard, USB mouse, DVD drive, and the Oracle VM Server installer ISO image on a DVD. For more information, see "Manual Oracle VM Server Installation" on page 13.
Remote Oracle VM Server installation using a DVD drive or DVD ISO image – Uses a redirected physical DVD drive on a remote system running the Oracle ILOM Remote System Console Plus application.	A remote system with a web browser, an attached physical DVD drive, the Oracle VM Server installer ISO image on a DVD, and network access to the server management port (NET MGT). For more information, see "Manual Oracle VM Server Installation" on page 13.
PXE Image – Uses the server Preboot eXecution Environment (PXE) to launch the Oracle VM installer from a network interface.	A PXE server with the Oracle VM installation image. For additional information, refer to the Oracle VM

Media Delivery Method	Additional Requirements
	documentation at http://www.oracle.com/technetwork/documentation/vm-096300.html.

Manual Oracle VM Server Installation

To install Oracle VM Server manually, you deliver the Oracle VM Server distribution media on either a local or remote DVD drive, USB device, or DVD image. You also need to install any necessary drivers. The drivers for your server are included with the Oracle VM Server distribution media, and from the My Oracle Support web site as either OS-specific or server-specific packages, or as an ISO image file. To install Oracle VM Server, use the distribution media's installation wizard.

To access the My Oracle Support web site, go to https://support.oracle.com.

Preparing to Install the Oracle VM Server Software

This section describes how to prepare your environment for an Oracle VM Server installation.

Description	Links
Access the host console locally or remotely.	“Selecting the Console Display” on page 15
Set the BIOS to optimal defaults.	“Preparing the Boot Environment” on page 18
Prepare the boot media.	“Selecting the Boot Media Option” on page 24
Prepare the installation target.	“Selecting the Installation Target” on page 26
Configure RAID on the server.	“Configuring RAID” on page 28

Related Information

- “Installing Oracle VM Server on a Single System Manually” on page 30

Selecting the Console Display

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

- “Console Display Options” on page 15
- “Set Up the Local Console” on page 16
- “Set Up the Remote Console” on page 17

Console Display Options

You can install an OS or virtual management software 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 any of the four exterior USB connectors

You can also install an OS or virtual management software 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 Plus application
- Secure Shell (SSH) client connection to the network management port (NET MGT)

▼ Set Up the Local Console

1. **Connect a terminal to the serial management (SER MGT) port either directly or through a terminal emulator.**

   Set the terminal device to 9600 baud, 8 bit, no parity, 1 stop bit (9600/8-N-1).

2. **Press Enter on the terminal device to create a connection between the serial console and the Oracle ILOM SP.**

   The Oracle ILOM Login prompt appears.

3. **Log in to Oracle ILOM. At the Login prompt, type your Oracle ILOM user name and password.**

   The default Oracle ILOM user name is `root` and the password is `changeme`.

   The Oracle ILOM CLI prompt (->) appears.

4. **Connect to host console. At the CLI prompt, type:**

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

   The serial management port output is automatically routed to the server's host serial local console.

Related Information

- Oracle Integrated Lights Out Manager (ILOM) 3.2 Documentation Library at: http://www.oracle.com/goto/ilom/docs

▼ Set Up the Remote Console

1. **View or establish an IP address for the server SP.**
   To log in to Oracle ILOM remotely using either the command-line interface (CLI) or the web interface, you must know the IP address of the server SP. For instructions on determining the server's IP address, refer to "Modifying the Service Processor Network Settings Using Oracle ILOM" in *Oracle Server X6-2L Installation Guide*.

2. **If you are using a web-based client connection, perform these steps; otherwise, go to Step 3.**

   a. **On a remote system with network access to the server network management port (NET MGT), open a web browser.**

   b. **In the browser address bar, type the IP address of the server SP, and then press Enter.**
      The Oracle ILOM Login prompt appears.

   c. **Log in to the Oracle ILOM web interface. At the Login prompt, type your Oracle ILOM user name and password.**
      The default Oracle ILOM user name is `root` and the default password is `changeme`.
      The Oracle ILOM Summary Information page appears.

   d. **In the Actions panel, click the Remote Console Launch button.**
      The Oracle ILOM Remote System Console Plus screen appears.
      For details, refer to "Redirect Host Server Desktop or Storage Devices Using Oracle ILOM" in *Oracle Server X6-2L Installation Guide*.

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; type:**
      `ssh root@`*hostname*
      Where *hostname* can be the DNS name or the IP address for the server SP.
      The Oracle ILOM Login prompt appears.

   b. **Log in to Oracle ILOM. At the Login prompt, type your Oracle ILOM user name and password.**
      The default Oracle ILOM user name is `root` and the default password is `changeme`.

The Oracle ILOM CLI prompt (->) appears.

c. **Redirect the serial output from the server to the SSH client; type:**

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

Related Information

- Oracle Integrated Lights Out Manager (ILOM) 3.2 Documentation Library at: http://www.oracle.com/goto/ilom/docs

Preparing the Boot Environment

Before you install Oracle VM Server, ensure that the Unified Extensible Firmware Interface (UEFI) settings are configured to support the type of installation you plan to perform. You can change UEFI settings, such as the boot order and boot mode in the BIOS Setup Utility.

The following topics provide specific instructions on how to configure UEFI to support the installation:

- "Verify the UEFI Optimal Defaults" on page 18
- "Set the Boot Mode" on page 21

For more information about changing boot properties, refer to the *Oracle X6 Series Servers Administration Guide* at http://www.oracle.com/goto/x86admindiag/docs.

▼ Verify the UEFI Optimal Defaults

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

In the BIOS Setup Utility, you can set optimal defaults, as well as view and edit UEFI settings, as needed. By setting optimal defaults, you ensure that the server is operating efficiently with a configuration that is known to be good. You can review the optimal defaults in the *Oracle Server X6-2L Service Manual*.

Any changes you make in the BIOS Setup Utility using the F2 key are permanent until the next time you change them.

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

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

- The server is equipped with a hard disk drive (HDD) or solid state drive (SSD).
- The HDD or SSD is properly installed in the server. For instructions, refer to "Servicing Storage Drives and Rear Drives (CRU)" in *Oracle Server X6-2L Service Manual*.
- A console session is established to the server. For details, see "Selecting the Console Display" on page 15.

The following server BIOS settings may be required to use Oracle VM Server:

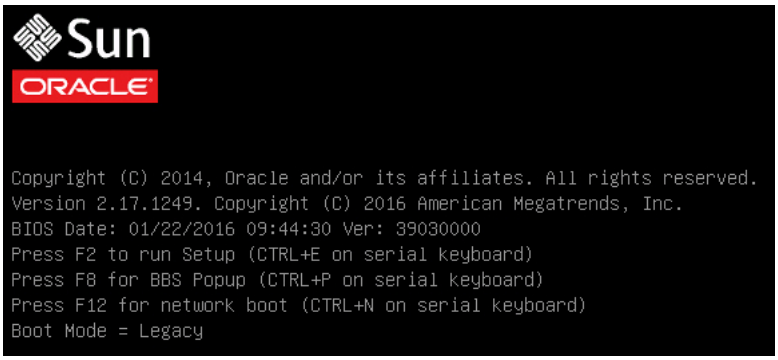
- AHCI mode may be necessary to recognize the CDROM device to perform an installation from CDROM.
- Disable I/O MMU Virtualization Settings; for Intel-based servers this is *VT-d*. I/O MMU (I/O Memory Management Unit) is not supported in this release.

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

   For example, to reset the server, do one of the following:

   - **From the local server**, press the Power button on the front panel of the server (for approximately 1 second) to power off the server, and then press the Power button again to power on the server.
   - **From the Oracle ILOM web interface**, select Host Management → Power Control, select Reset from the Select Action list box, then click Save.
   - **From the Oracle ILOM CLI**, type: `reset /System`

The server begins the boot process, and the BIOS screen appears.

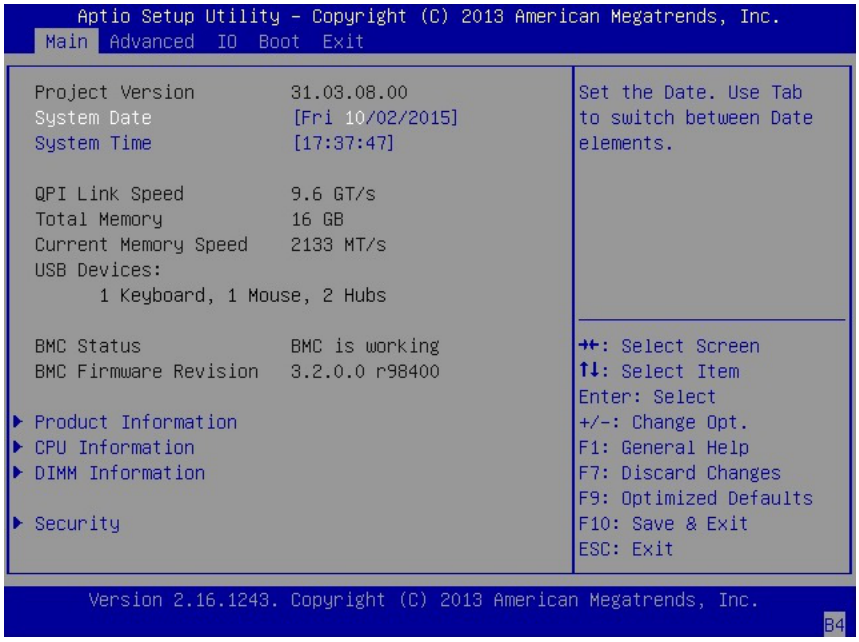


Note - The next events occur very quickly; therefore, be ready to press the F2 key. Watch carefully for messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

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

   `[Setup Selected]` and the Boot Mode (Legacy or UEFI) are displayed at the bottom of the BIOS screen, then the BIOS Setup Utility appears.

Note - The BIOS Setup Utility screen might take a few minutes to appear.



3. **Press the F9 key to automatically load the optimal default settings.**

   A message appears prompting you to continue this operation by selecting `OK`, or to cancel this operation by selecting `Cancel`.

4. **In the message, highlight `OK`, and then press Enter.**

5. **To save your changes and exit the BIOS Setup Utility, press the F10 key.**

   Alternatively, you can select `Save Changes and Exit` from the Exit menu.

▼ Set the Boot Mode

The server is equipped with Unified Extensible Firmware Interface (UEFI), which supports both Legacy BIOS and UEFI boot modes. Legacy BIOS boot mode is enabled by default.

To determine or change the boot mode, see the following procedure.

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

   For example, to reset the server, do one of the following:

   - **From the local server**, press the Power button on the front panel of the server (for approximately 1 second) to power off the server, and then press the Power button again to power on the server.
   - **From the Oracle ILOM web interface**, select Host Management → Power Control, select Reset from the Select Action list box, then click Save.
   - **From the Oracle ILOM CLI**, type: `reset /System`

   The server begins the boot process, and the BIOS screen appears.

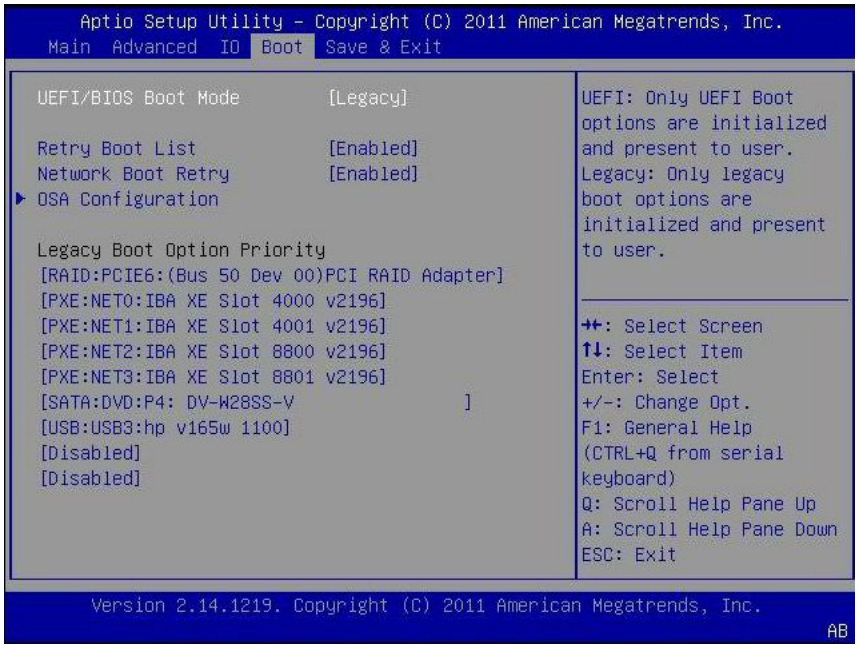
Note - The next events occur very quickly; therefore, be ready to press the F2 key. Watch carefully for messages as they appear on the screen for a brief time.

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

   After a few moments, the BIOS Setup Utility Main menu appears.

3. **In the BIOS Setup Utility, use the arrow keys to navigate to the Boot menu.**

The Boot menu appears. The `UEFI/BIOS Boot Mode` field displays the current boot mode.



Note - The options in the boot order list differ depending on the storage drive configuration and whether you have enabled the Persistent Boot Support feature. For more information about Persistent Boot Support, refer to the *Oracle X6 Series Servers Administration Guide* at `http://www.oracle.com/goto/x86admindiag/docs`.

4. **Use the down arrow key to select the `UEFI/BIOS Boot Mode` field, and then press Enter.**

5. **Select your preferred boot mode, and then press Enter.**

   You must select the desired boot mode, Legacy BIOS or UEFI, before starting the software installation.

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

   Alternatively, you can select `Save Changes and Exit` from the Exit menu.

Selecting the Boot Media Option

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

- "Boot Media Option Requirements" on page 24
- "Set Up the Boot Media for Local Installation" on page 25
- "Set Up the Boot Media for Remote Installation" on page 25

Boot Media Option Requirements

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

- "Local Boot Media Requirements" on page 24
- "Remote Boot Media Requirements" on page 24

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.

Remote Boot Media Requirements

Remote boot media enables you to boot the install over the network. You can start the installation from a redirected boot storage device or another networked system that exports an ISO image over the network using a PreBoot eXecution environment (PXE).

Supported OS remote boot media sources include:

- DVD-ROM installation media installed in remote DVD drive, or remote USB removable flash drive installation media
- DVD-ROM ISO image available in a location on the network that is setup for virtual redirection
- DVD-ROM installation media image mounted on the server service processor (SP)

  For instructions on mounting an installation image onto the server SP, refer to the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `http://www.oracle.`

com/goto/ilom/docs. Alternatively, refer to the More Details link in the Oracle ILOM Remote Control → Remote Device web interface page.

- PXE boot – Oracle VM supports PXE boots. Once the PXE boot has been initiated, the Oracle VM installation is accomplished using the Automated Installation (AI) installer. For instructions for performing PXE network installations for the supported Oracle VM, refer to the *Oracle VM Installation and Upgrade Guide for Release 3.4* at: http://www.oracle.com/technetwork/documentation/vm-096300.html

▼ Set Up the Boot Media for Local Installation

1. **On a system with a DVD burner, download the Oracle VM Server installer ISO image from the Oracle Software Delivery Cloud web site at https://edelivery.oracle.com/oraclevm.**

2. **Burn the ISO image to a CD, DVD, or flash drive.**

3. **Insert the Oracle VM Server installation DVD into a DVD drive attached to the server:**

   - **If the server is equipped with an optional DVD drive, insert the installation media into the DVD drive on the server front panel.**

   - **If the server is not equipped with a DVD drive, attach an external USB DVD drive or USB flash drive that contains the Oracle VM installer image into one of the server USB ports located on the front and rear of the server.**

     For information about how to attach local devices to the server, refer to "Cabling the Server and Applying Power" in *Oracle Server X6-2L Installation Guide*.

     For more information, refer to the *Oracle VM Installation and Upgrade Guide for Release 3.4* at: http://www.oracle.com/technetwork/documentation/vm-096300.html

▼ Set Up the Boot Media for Remote Installation

1. **On a remote system with network access to the server network management port (NET MGT), download the Oracle VM Server installer ISO image from the Oracle Software Delivery Cloud web site at https://edelivery.oracle.com/oraclevm.**

Alternatively, you can do either of the following:

- **Burn the installation image to a CD or DVD, and then insert the installation media into a DVD drive attached to the remote system.**

- **Download the installation image to another location on the network, and then redirect the image to the server service processor using NFS or Samba protocol.**

  For instructions on redirecting the ISO image from another location on the network, refer to the Oracle ILOM Remote Device section in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance*, or to the More Details link in the Oracle ILOM Remote Control → Host Storage Device web interface page.

2. **Establish a web-based client connection to the server Oracle ILOM SP and launch the Oracle ILOM Remote System Console Plus on the remote system.**

   For instructions, see "Set Up the Remote Console" on page 17.

3. **In the remote console, do the following:**

   a. **Click KVMS to display the KVMS menu.**

   b. **Click Storage.**

      The Storage Devices dialog box appears.

   c. **In the Storage Devices dialog box, click Add.**

      The Add Storage Devices dialog box appears.

   d. **Browse to the ISO image, select it, and then click Select.**

      The Storage Devices screen appears and lists the ISO image.

   e. **Select the ISO image, and then click Connect.**

      The ISO image is mounted to the remote console and can be used to perform the OS installation.

Selecting the Installation Target

Before you boot the Oracle VM Server installer, select and prepare an installation target.

- "Installation Target Options" on page 27
- "Set Up a Local Storage Drive (HDD, SSD, or RAID Volume) as the Installation Target" on page 27
- "Set Up a Fibre Channel Storage Area Network Device as the Installation Target" on page 28

Installation Target Options

You can install the software on any of the storage drives installed in the server. Hard disk drives (HDDs), solid state drives (SSDs), NVMe Express (NVMe) storage drives, and RAID volumes are valid installation targets for Oracle VM software.

For servers equipped with a Fibre Channel PCIe host bus adapter (HBA), you can choose to install the operating system to an external Fibre Channel storage device.

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

1. **Ensure that the target hard 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 "Servicing Storage Drives and Rear Drives (CRU)" in *Oracle Server X6-2L Service Manual*.

2. **Ensure that the target drives are configured to suit your environment.**

   By default, each physical drive on the server is configured as a logical RAID 0 volume. To implement an alternative configuration, refer to the following resources:

   - "Configuring Storage Drives for Operating System Installation" in *Oracle Server X6-2L Installation Guide*
   - *Oracle X6 Series Servers Administration Guide* at: `http://www.oracle.com/goto/x86admindiag/docs`

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

1. **Ensure that the fibre channel PCIe host bus adapter (HBA) is properly installed in the server.**

   For more information about installing a PCIe HBA option, refer to "Servicing PCIe Cards (CRU)" in *Oracle Server X6-2L Service Manual*.

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

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

Configuring RAID

If you want to configure the server storage drives in a redundant array of independent disks (RAID) configuration, you must configure the RAID volume before you install the Oracle VM Server software. For instructions for configuring RAID, refer to "Configuring Storage Drives for Operating System Installation" in *Oracle Server X6-2L Installation Guide*.

Related Information

- *Oracle X6 Series Servers Administration Guide* at: `http://www.oracle.com/goto/x86admindiag/docs`

Installing the Oracle VM Server Software

This section provides instructions for installing Oracle VM Server on the Oracle Server X6-2L.

Description	Links
Preinstallation requirements.	“Before You Begin” on page 29
Using media to install the Oracle VM Server software on a single server.	“Installing Oracle VM Server on a Single System Manually” on page 30
Performing post installation tasks.	“Post Installation Tasks for Oracle VM Server Software” on page 38

Related Information

- “About Oracle VM Server Software Installations” on page 9

Before You Begin

Ensure that the following requirements are met:

- You have access to the host console. For more information, see “Selecting the Console Display” on page 15.
- You have prepared the boot environment. For more information, see “Preparing the Boot Environment” on page 18.
- You have prepared the boot media. For more information, see “Selecting the Boot Media Option” on page 24.
- You have selected the installation target and ensured that it is properly installed. For more information, see “Selecting the Installation Target” on page 26.
- Two systems with static IP addresses have been set up:
  - One system to install Oracle VM Server.
  - One system for Oracle VM Manager with one of the following:

  - Oracle Linux 5 Update 5, 64-bit or later
  - Oracle Linux 6, 64-bit or later
  - Oracle Linux 7, 64-bit or later
  - Red Hat Enterprise Linux 5 Update 5, 64-bit or later
  - Red Hat Enterprise Linux 6, 64-bit or later
  - Red Hat Enterprise Linux 7, 64-bit or later
- You have reviewed the additional preinstallation tasks and requirements in the *Oracle VM Installation and Upgrade Guide for Release 3.4* at `http://www.oracle.com/technetwork/documentation/vm-096300.html`.
- You have access to the Oracle VM Server installation documentation. The Oracle VM 3.4 Documentation Library is available at `http://www.oracle.com/technetwork/documentation/vm-096300.html`.

Installing Oracle VM Server on a Single System Manually

This section provides information about installing Oracle VM Server 3.4.1 (with Unbreakable Enterprise Kernel 4) software.

- "Install Oracle VM Server Using Local or Remote Media" on page 30

▼ Install Oracle VM Server Using Local or Remote Media

Before you begin, review the installation prerequisites in "Before You Begin" on page 29.

1. **Access the host console.**

   For instructions, see "Selecting the Console Display" on page 15.

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

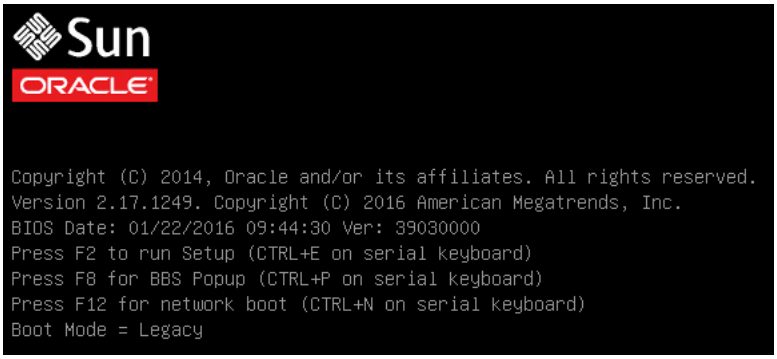
   For instructions, see "Selecting the Boot Media Option" on page 24.

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

   For example, to reset the server, do one of the following:

- **From the local server**, press the Power button on the front panel of the server (for approximately 1 second) to power off the server, and then press the Power button again to power on the server.
- **From the Oracle ILOM web interface**, select Host Management → Power Control, select Reset from the Select Action list box, then click Save.
- **From the Oracle ILOM CLI**, type: **`reset /System`**

The server begins the boot process and the BIOS screen appears.



Note - The next events occur very quickly; therefore, be ready to press the F8 key. Watch carefully for 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.

---

4. **In the BIOS screen, press the F8 key to specify a temporary boot device for the Oracle VM Server installation.**

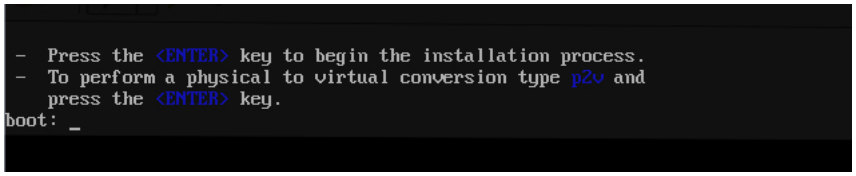
   The Please Select Boot Device menu appears.

5. **In the Please Select Boot Device menu, select either the external or virtual CD/DVD device as the boot device, and 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 Oracle VM Server appears. The screen that appears will be different depending on whether you have the UEFI/BIOS Boot Mode configured for Legacy BIOS or UEFI.

   - For Legacy BIOS Boot Mode, a screen similar to the following appears:



- For UEFI Boot Mode, a screen similar to the following appears:

6. **Press Enter to begin the installation.**

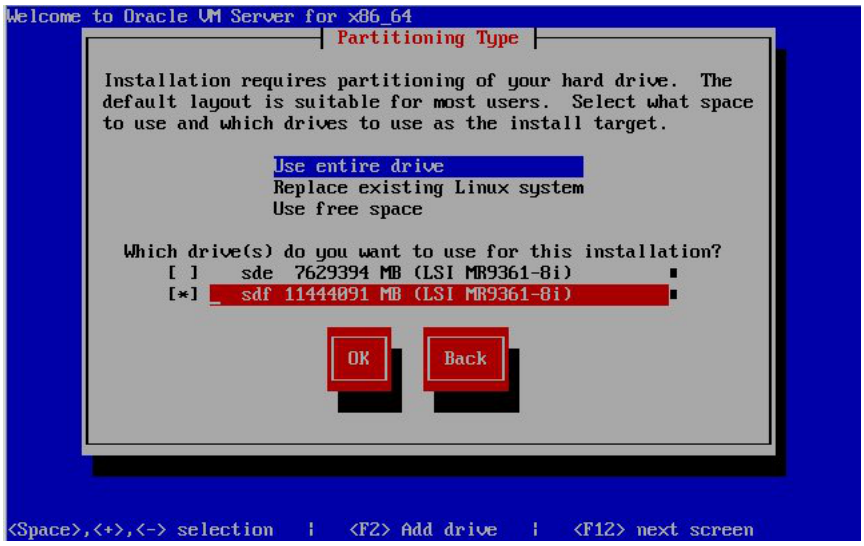
   If you do not press a key, after one minute, the installer automatically starts. The installer is only available in text mode.

7. **Refer to the *Oracle VM Installation and Upgrade Guide for Release 3.4* at http://www.oracle.com/technetwork/documentation/vm-096300.html.**

   The *Oracle VM Installation and Upgrade Guide for Release 3.4* provides step-by-step instructions for installing Oracle VM.

8. **Follow the on-screen prompts to install Oracle VM Server and Oracle VM Server Agent.**

9. **As you progress through the on-screen prompts, the Partitioning Type screen appears.**



Note - Although the next step is described in the *Oracle VM Installation and Upgrade Guide for Release 3.4* at `http://www.oracle.com/technetwork/documentation/vm-096300.html`, it is included here because you must exercise caution when you select the drive onto which to install Oracle VM Server.

---

10. **In the Partitioning Type screen, do the following:**

    a. **Select one of following partition layouts:**

    - Use entire drive
    - Replace existing Linux system
    - Use free space

    b. **Select the drive(s) you want to use for the installation.**

    c. **Select `OK` to continue the installation.**

11. **To complete the installation, refer to the Oracle VM installation documentation and follow the instructions.**
    Refer to the *Oracle VM Installation and Upgrade Guide for Release 3.4* at `http://www.oracle.com/technetwork/documentation/vm-096300.html`.

    Note - The Oracle VM installation will require two passwords: one for the root Oracle VM Server account and one for the Oracle VM Agent.

12. **After completing the installation of Oracle VM Server and Oracle VM Agent, do one of the following:**
    - If you *do not* have an Oracle VM Manager configured to manage the Oracle VM Server, you will need to install it before proceeding to "Post Installation Tasks for Oracle VM Server Software" on page 38.

      For instructions for installing Oracle VM Manager, refer to the *Oracle VM Installation and Upgrade Guide for Release 3.4* at `http://www.oracle.com/technetwork/documentation/vm-096300.html`.
    - If you already have an Oracle VM Manager configured to manage the Oracle VM Server, proceed to "Post Installation Tasks for Oracle VM Server Software" on page 38.

▼ Install Oracle VM Server Using PXE Network Boot

The following procedure describes how to install the Oracle VM Server 3.4.1 (with Unbreakable Enterprise Kernel 4) software from a PXE network environment.

Before you begin, ensure that the following requirements are met prior to starting the Oracle VM Server 3.4.1 (with Unbreakable Enterprise Kernel 4) PXE boot installation.

- To use PXE to boot the installation media over the network, ensure that the Automated Installation (AI) image install server is setup and accessible to your server over the network.
- If your AI server requires the MAC address of an install client, you can obtain your system's MAC address by logging in to the Oracle ILOM SP as `root`, and typing:

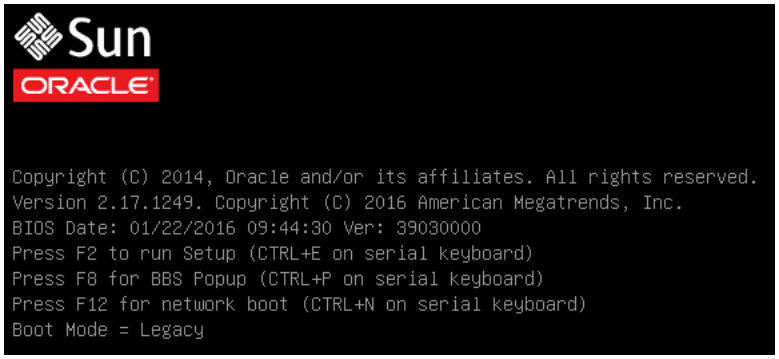
```
-> show /SYS/MB/NET0 fru_macaddress
  /SYS/MB/NET0
    Properties:
       fru_macaddress = 00:21:28:e7:77:24
```

1. **Ensure that the PXE network environment is properly set up.**
2. **Reset or power on the server.**

For example, do one of the following to reset the server:

- **From the local server**, press the Power button on the front panel of the server (for approximately 1 second) to turn the server off, then press the Power button again to power on the server.
- **From the Oracle ILOM web interface**, click Host Management → Power Control, select Reset from the Select Action list box, then click Save.
- **From the Oracle ILOM CLI**, type: `reset /System`

The system begins the boot process and the BIOS screen appears.



Note - The next step occurs very quickly; therefore, be ready to press the F2 key. Watch carefully for 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. **To verify that PXE boot is enabled, perform the following steps:**

Note - PXE boot is enabled by default; however, this step directs you to verify that PXE boot is enabled in the event that it was disabled. Once you have verified that PXE boot is enabled, you can omit this step on subsequent PXE boots.

a. **Press the F2 key to access the BIOS Setup Utility.**

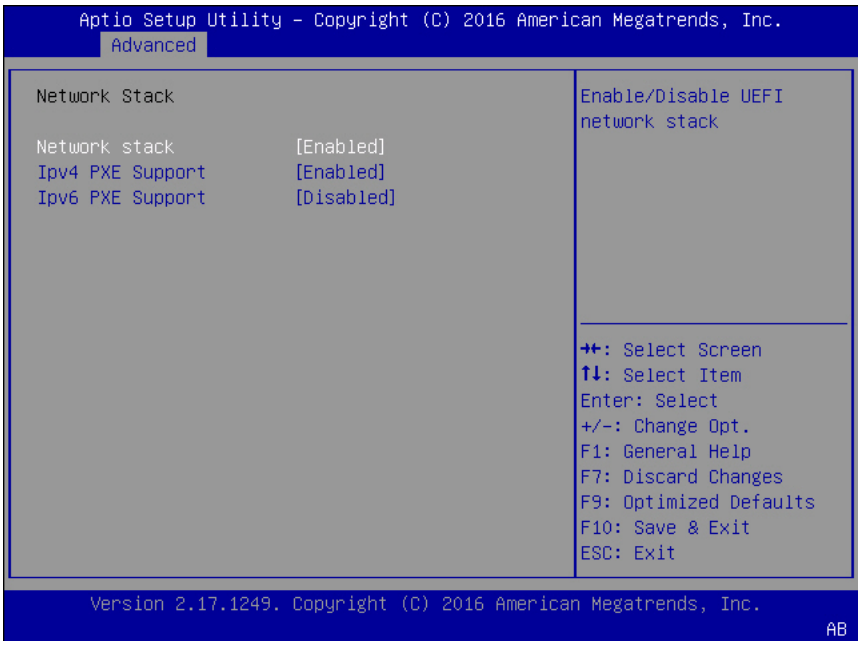
   The BIOS Setup Utility appears.

b. **Select Advanced in the top menu bar.**

   The BIOS Setup Utility Advanced screen appears.

c. Select Network Stack from the list of available options.

The BIOS Setup Utility Network Stack screen appears.



d. If necessary, set the appropriate PXE Support setting (either IPv4 or IPv6) to Enabled.

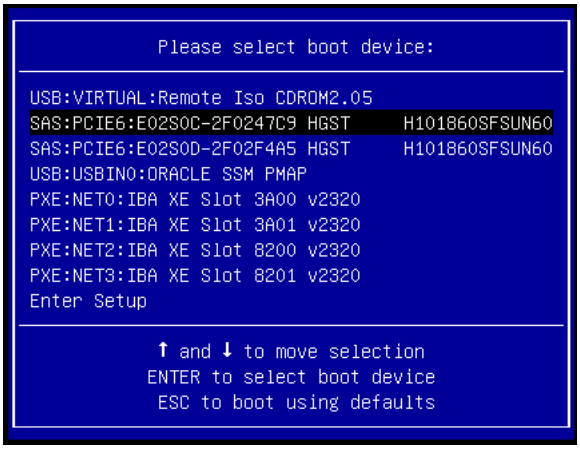
e. To save the changes and exit the BIOS Setup Utility, press the F10 key.

This causes the server to reset. After resetting, the BIOS screen appears again.

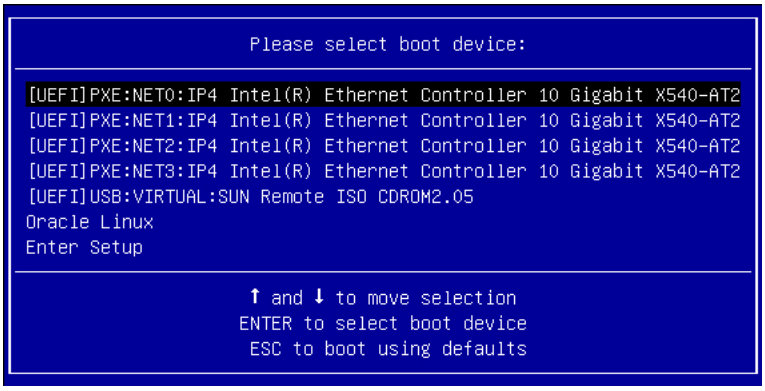
4. In the BIOS screen, press the F8 key to specify a temporary boot device or press the F12 key to network boot (PXE).

The Please Select Boot Device menu appears, listing the available boot devices. The screen that appears will differ depending on whether you have BIOS configured for Legacy BIOS Boot Mode or UEFI Boot Mode.

- For Legacy BIOS Boot Mode, a screen similar to the following appears:



- For UEFI Boot Mode, a screen similar to the following appears:



Note - The Please Select Boot Device menu options might differ depending on the type of disk controller and other hardware, such as PCIe network cards, installed in your server.

5. **In the Please Select Boot Device menu, select the appropriate PXE boot port, then press Enter.**

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

The GRUB menu appears.

6. **Follow the on-screen prompts to complete the PXE installation.**

   For instructions for completing the PXE installation, refer to *Oracle VM Installation and Upgrade Guide for Release 3.4* at: http://www.oracle.com/technetwork/documentation/vm-096300.html.

7. **Proceed to the section "Post Installation Tasks for Oracle VM Server Software" on page 38 to perform post installation tasks.**

Related Information

- "Post Installation Tasks for Oracle VM Server Software" on page 38

Post Installation Tasks for Oracle VM Server Software

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

- "Update Oracle VM Server" on page 38
- "Manage Oracle VM Server Resources" on page 38

Update Oracle VM Server

The Oracle VM Server installation media might not contain the most up-to-date versions of the software. If necessary, update the Oracle VM Server software with the latest updates. To download the most recent version of the software, go to the Oracle Software Delivery Cloud web site at:

https://edelivery.oracle.com/oraclevm

Manage Oracle VM Server Resources

To learn how to configure, access, and manage Oracle VM Server resources, refer to the Oracle VM Release 3.4 Documentation Library at:

http://www.oracle.com/technetwork/documentation/vm-096300.html

Configuring Network Interfaces

This section contains information about the network connectors on the server:

- “NIC Connectors” on page 41

NIC Connectors

The network interface card connectors are labeled physically on the server as follows.

TABLE 1 NIC Connector Label

NIC Connector Label	Interface Type
NET0	First interface (eth 0)
NET1	Second interface (eth 1)
NET2	Third interface (eth 2)
NET3	Fourth interface (eth 3)

Note - Ethernet ports NET 2 and NET 3 are nonfunctional in single-processor systems.

Index

B

BIOS
- setting the boot mode, 21
- verifying optimal default settings, 18

BIOS Setup Utility, 18
boot device menu
- selections, 31

boot device, temporary, 31
boot media options
- changing boot properties, 18
- local boot media requirements, 24
- remote boot media requirements, 24

boot mode
- setting, 21

booting from ISO image, 30

C

configuring
- network interface cards, 41

console
- connecting to, 15
- local, 16
- remote, 17
- selecting display option, 15

D

documentation
- feedback, 7
- for Oracle ILOM, 16
- for Oracle VM, 38
- for server, 11
- Oracle X6 Series Servers Administration Guide, 23

F

feedback
- for documentation, 7

H

Hardware Compatibility Lists, 11

I

install boot media, 24
installation
- overview, 9
- prerequisites, 29
- task map, 10
- using installation media, 30
- using PXE network boot, 24, 34

installation methods
- boot media options, 24
- local, 12
- manual, 13
- multiple servers, 12
- PXE image, 12
- remote, 12
- single server, 12

installation options, 12
installation target
- fibre channel storage area network (SAN) device, 28

local storage drive, 27
options, 27
preparing, 26
installing Oracle VM Server
on a single system using media, 30
overview, 9
post installation tasks, 38
using local or remote media, 30
using PXE network boot, 24
using remote media from a PXE-based network, 34
IP address of server, 17
ISO image
Oracle VM, 30

L

local boot media
requirements, 24
setting up, 25
local console
setting up, 16
local installation
setting boot media, 25
setting up, 25

M

My Oracle Support, 13

N

network interface cards
configuring, 41
labeling and type, 41

O

operating system
installation options, 10
versions supported, 11
Oracle ILOM Remote System Console Plus
used to install OS, 16
Oracle VM
configuring network interface, 41
documentation, 38
post installation tasks, 38
supported operating systems, 11
updating software, 38
Oracle VM Server
installation options, 12
software versions supported, 11
Oracle VM Server install
using PXE, 34

P

post installation tasks, 38
power on server, 30
product notes, 11
PXE installation, 24
Oracle VM Server, 34

R

RAID
configuring, 28
RAID volume
as installation target, 27
remote boot media
requirements, 24
setting up, 25
remote console
setting up, 17
remote installation
setting boot media, 25
resetting server power, 30

S

serial management port
baud rate, 16
connection to host serial port, 16
server power

power on, 22
resetting, 22
software
installation options, 27
versions supported, 11
supported software versions, 11

T

task map for installation, 10
temporary boot device
specifying, 31

U

UEFI
prerequisites, 19
verification of optimal default settings, 18
updating software
Oracle VM, 38