Sun Blade X6275 M2 Server Module Installation Guide for Oracle® VM Operating Systems

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Using This Documentation

This section describes related documentation, submitting feedback, and a document change history.

Product Information Web Site

For information about the Sun Blade X6275 M2 server module, go to the `http://www.oracle.com/goto/blades` page and click on your server model listed near the bottom.

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

- Product information and specifications
- Software and firmware downloads

Related Books

The following is a list of documents related to Oracle's Sun Blade X6275 M2 server module. These and additional support documents are available on the web at:

`http://download.oracle.com/docs/cd/E19962-01/`

Document Group	Document	Description
Sun Blade X6275 M2 Server Module Documentation	Sun Blade X6275 M2 Server Module Product Documentation	Integrated HTML version of all starred (*) documents, including Search and Index.
	Sun Blade X6275 M2 Server Module Getting Started Guide	Pictorial setup quick reference.
	Sun Blade X6275 M2 Server Module Installation Guide *	How to install, rack, and configure the server up to initial power-on.
	Sun Blade X6275 M2 Server Module Product Notes *	Important late-breaking information about your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Oracle Solaris Operating Systems *	How to install the Oracle Solaris OS on your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Linux Operating Systems *	How to install a supported Linux OS on your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Windows Operating Systems *	How to install a supported version of Microsoft Windows OS on your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Oracle VM Operating Systems *	How to install a supported version of Oracle VM OS on your server.
	Oracle x86 Servers Diagnostics Guide *	How to diagnose problems with your server.
	Sun Blade X6275 M2 Server Module Service Manual *	How to service and maintain your server.
	Sun Blade X6275 M2 Server Module Safety and Compliance Guide	Safety and compliance information about your server.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module *	Version-specific supplemental information for your server's Integrated Lights Out Manager.
Sun Disk Management Documentation	*Sun x64 Server Disk Management Overview*	Information about managing your server's storage.
x64 Servers Applications and Utilities Documentation	*Sun x64 Server Utilities Reference Manual*	How to use the available utilities included with your server.

Document Group	Document	Description
Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation	*Oracle Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes*	Information about new ILOM features.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide	Overview of ILOM 3.0.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide	Conceptual information about ILOM 3.0.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide	How to use ILOM through the web interface.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide	How to use ILOM through commands.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide	Information about management protocols.

Translated versions of some of these documents are available at the web site described previously in Simplified Chinese, Korean, Japanese, French and Spanish. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

About This Documentation (PDF and HTML)

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.

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

Note – The "Documentation Information" and "Index" topics do not have associated PDF.

Documentation Comments

Oracle is interested in improving the product documentation and welcomes your comments and suggestions. You can submit comments at: `http://www.oracle.com/goto/docfeedback`.

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Change History

The following lists the release history of this documentation set:

- November 2010. Initial publication.
- November 2010. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.1. Added new firmware version, PC-Check 6.27s support, CRs 6994690, 6992284, 6994464.
- January 2011. Information added to the *Sun Blade X6275 M2 Installation Guide* for configuring pre-installed Oracle Solaris or Oracle VM. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.2. Added new firmware version, CRs 6971164, 7009654, 7009666, 7010601. Information added to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module* for proving physical presence, reading `available_power` in ILOM.
- March 2011. Information removed from the *Sun Blade X6275 M2 Installation Guide* for configuring pre-installed Oracle Solaris OS or Oracle VM on FMod. Information removed from the *Sun Blade X6275 M2 Product Notes* on available pre-installed Oracle Solaris OS or Oracle VM on FMod.
- September 2011. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.3, including new firmware version and new OS version support. Added information about BIOS hardware prefetch options to the *Sun Blade X6275 M2 Server Module Product Notes* and the *Sun Blade X6275 M2 Server Module Service Manual*. Fixed CRs 6971164 and 7009654.
- January 2012. Updated physical dimension specifications in the *Sun Blade X6275 M2 Server Module Installation Guide* and the *Sun Blade X6275 M2 Server Module Service Manual*. Added information to the *Sun Blade X6275 M2 Server Module Product Notes* for OS support for Oracle VM 3.0.1 (1GbE), 3.0.2 (1GbE) and 3.0.3 (10GbE).
- March 2012. Information corrected in the *Sun Blade X6275 M2 Installation Guide* for the number of 10 GbE ports per node. Information added to the *Sun Blade X6275 M2 Product Notes* for CR 7072665.

Introduction to Oracle VM Installation

This document provides information about installing the Oracle VM server. It provides the following topics.

Description	Link
Describes how to install Oracle VM.	"Installing Oracle VM" on page 11
Describes how to create a PXE installation image for Oracle VM.	"Creating a PXE Installation Image for Oracle VM" on page 17

Installing Oracle VM

Oracle VM is a virtualization environment platform that enables users to create and manage virtual machines (VMs). These virtual machines exist on the same physical server but behave like independent physical servers. Each virtual machine created with Oracle VM has its own virtual CPUs, operating system, network interfaces, and storage.

Your server is compatible for use with Oracle VM 2.2.1. See `http://www.oracle.com/goto/x6275m2` for the latest list of supported operating systems.

Oracle VM includes the following components:

- **Oracle VM Manager:** A web application that acts as the user interface for creating and managing your virtual machines. This includes virtual machine creation (including templates), life cycle management (deploying, migrating and deleting), and resource management (ISO files, templates, and shared storage resources).
- **Oracle VM Server:** A lightweight, secure virtualization environment based on Xen hypervisor used to run virtual machines and the Oracle VM agent.
- **Oracle VM Agent:** Installed on Oracle VM Server, it communicates with Oracle VM Manager and includes a Web Services API for managing the Oracle VM Server, server pools, and resources.

The following list provides an outline of the installation, and provides links to topics containing detailed instructions.

Step	Description	Link
1	Check system requirements.	"System Requirements" on page 12
2	Obtain the installation image and burn it to a DVD or copy it onto a server.	"How to Obtain Oracle VM Software" on page 12
3	Install Oracle VM Server.	"How to Install Oracle VM Server" on page 13
4	Install server-specific drivers.	"How to Install Drivers" on page 15
5	Install Oracle VM Manager.	"How to Install Oracle VM Manager" on page 15
6	Create shared storage, a server pool, and virtual machines.	"Creating and Managing VM Resources" on page 16

System Requirements

- Two systems with static IP addresses are required to install Oracle VM: one system to run Oracle VM Server, and one to run Oracle VM Manager.
- For the system that will be running Oracle VM Server, you must start out with a clean installation that has no preinstalled OS or firmware-level RAID volumes.
- The system that will be running Oracle VM Manager must have one of the following OSes installed:
  - Oracle Linux Release 4.5 or later
  - Red Hat Enterprise Linux Release 4 or later
- Oracle VM media set or an equivalent ISO image. The ISO image can be used for remote installation or for creating an installation CD/DVD.
- Review the release notes for the Oracle VM software. The documentation set can be found at: `http://download.oracle.com/docs/cd/E15458_01/index.htm`
- DVD-ROM drive.

Note – If you are installing remotely, the DVD-ROM drive, keyboard, mouse, and monitor are connected to the remote system instead of the server. Also, if you are installing remotely, you can use an ISO image instead of an actual CD/DVD.

- USB keyboard and mouse.
- Monitor.
- While configuring an operating system for a networked server, it might be necessary to provide the logical names (assigned by the OS) and the physical name (MAC address) of each network interface being used on the Oracle VM Server.

See Also

- "How to Obtain Oracle VM Software" on page 12
- "How to Install Oracle VM Server" on page 13
- "How to Install Drivers" on page 15
- "How to Install Oracle VM Manager" on page 15
- "Creating and Managing VM Resources" on page 16

▼ How to Obtain Oracle VM Software

1 Download the Oracle VM software from the web at:

`http://www.oracle.com/virtualization`

2. **If you plan on installing the software at the system, burn the ISO images to CD/DVDs.**

   You should have a Oracle VM Manager CD/DVD, and a bootable Oracle VM Server CD/DVD.

Next Steps

- "How to Install Oracle VM Server" on page 13
- "How to Install Drivers" on page 15
- "How to Install Oracle VM Manager" on page 15
- "Creating and Managing VM Resources" on page 16

▼ How to Install Oracle VM Server

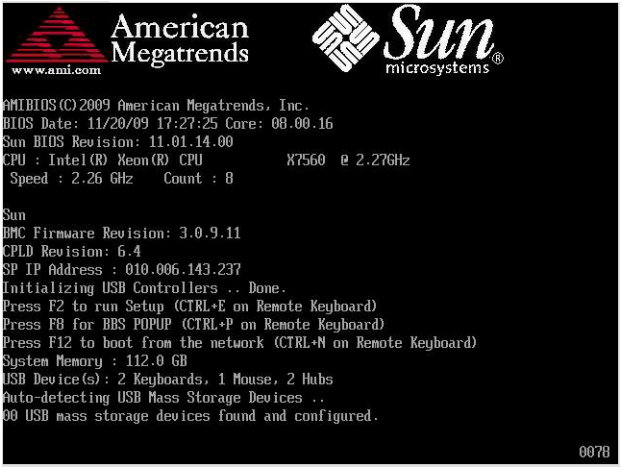
Before You Begin See "System Requirements" on page 12.

1. **Connect to your server console using one of the methods described in "Accessing the Host Console Through ILOM" in *Sun Blade X6275 M2 Server Module Installation Guide*.**

2. **If not done already, insert your Oracle VM Server distribution CD/DVD or access the ISO image distribution media for the method you chose in step 1.**

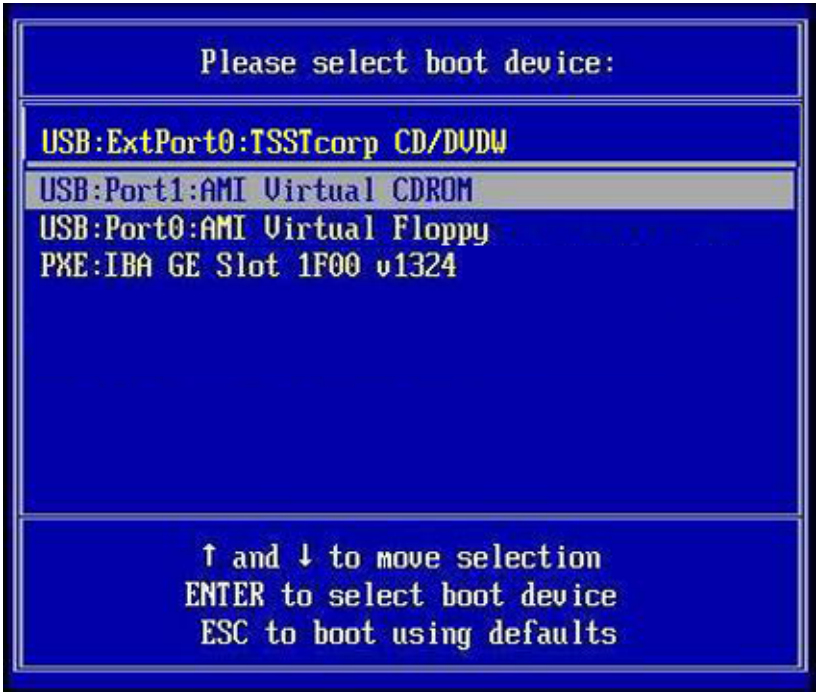
3. **Power on or reset the server.**

   BIOS messages appear on the console.



4 **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).



5 **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.

6 **Enter the following command at the boot prompt:** `Enter`

7 **Follow the prompts to install the software.**

Oracle VM Server and Oracle VM Agent software are installed.

For additional information refer to the Oracle VM Server installation documentation at:

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

Next Steps

- "How to Install Drivers" on page 15
- "How to Install Oracle VM Manager" on page 15
- "Creating and Managing VM Resources" on page 16

How to Install Drivers

After installing Oracle VM server, use the tools and drivers image to install the correct network drivers.

Before You Begin Install Oracle VM Server as described in "How to Install Oracle VM Server" on page 13.

1. **Mount the Tools and Drivers CD/DVD ISO image.**
2. **Complete one of the following actions:**
   - **Install the drivers using a script. Navigate to \Oracle_VM on the tools and drivers image and run the `install.sh` script.**

     —Or—
   - **Install the drivers manually. They are located on the tools and drivers image under `\Oracle_VM`.**
     - For 1GbE systems, install the Intel NIC driver version 15.5 or later.
     - For 10GbE systems, install the Mellanox ConnectX–2 driver version 1.5.1.3 or later.

Next Steps
- "How to Install Oracle VM Manager" on page 15
- "Creating and Managing VM Resources" on page 16

How to Install Oracle VM Manager

Before You Begin If you are installing Oracle VM Server on a Sun server, you can use the Integrated Lights Out Manager (ILOM) to install software using either a CD/ DVD or an ISO image mounted on a remote system. The remote console feature allows you to use the keyboard, mouse, video, and storage of the remote system as if it were connected to the server where you are installing the operating system. Once the remote console session is configured, the server can boot from the remotely mounted distribution media (either a CD/DVD or equivalent ISO file).

1. **On a server running a supported operating system, insert and mount the Oracle VM Manager CD.**
2. **Navigate to the root of the CD and run the following script:**

   ```
   # sh runInstaller.sh
   ```

Note – If you are not already the root user, use the `su` command and enter the root password to give yourself the necessary privileges to launch the install script.

3 **Follow the prompts to install the software.**

For additional information refer to the Oracle VM Manager installation documentation at:

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

Next Steps "Creating and Managing VM Resources" on page 16

Creating and Managing VM Resources

After installing Oracle VM Server (with Oracle VM Agent) and Oracle VM Manager, you can create and manage virtual resources.

- Create a shared storage repository. For fault tolerance, multiple virtual machines using this storage can be set up in a clustered configuration. Options for your shared storage include:
  - OCFS2 (Oracle Cluster File System) using the iSCSI (Internet SCSI) network protocol
  - OCFS2 using SAN (storage area network)
  - NFS (network file system)
  - Partition with multipath failover
- Create a server pool for your virtual machines.
- Create your virtual machines in the server pool.

For detailed information, refer to the Oracle VM installation documentation at:

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

See Also

- "System Requirements" on page 12
- "How to Obtain Oracle VM Software" on page 12
- "How to Install Oracle VM Server" on page 13
- "How to Install Drivers" on page 15
- "How to Install Oracle VM Manager" on page 15

Creating a PXE Installation Image for Oracle VM

This section describes how to create a PXE image for Oracle VM.

See "How to Create a PXE Installation Image for Oracle VM" on page 17.

▼ How to Create a PXE Installation Image for Oracle VM

At the release of this document, Oracle VM 2.2.1 is the minimum supported version of Oracle VM. These instructions are for creating a PXE installation image of Oracle VM Server.

Before You Begin The PXE installation procedure requires the following items:

- You must have already completed the network infrastructure setup to support PXE.
- A CD/DVD drive accessible to the PXE server.
- Oracle VM Server distribution media set. This can be a set of CDs or a DVD.

1 Set up the directory structure that will hold the Oracle VM Server software:

```
# mkdir -p /home/pxeboot/ovm_svr_2.2/
```

2 Enter the following commands to copy the contents of each Oracle VM distribution CD to the appropriate PXE subdirectory:

Note – Eject and insert CDs only when the CD/DVD drive is unmounted.

```
# mount dev/cdrom /mnt/cdrom

# cp -r /mnt/cdrom/* /home/pxeboot/ovm_svr_2.2/

# umount /mnt/cdrom
```

If you are installing from a DVD, you have to do this only once. When the copy is done, proceed to the next step.

3 Copy the `vmlinuz` and `initrd.img` files to the appropriate PXE target subdirectory:

```
# cp /home/pxeboot/ovm_svr_2.2/images/pxeboot/vmlinuz /home/pxeboot/ovm_svr_2.2
```

```
# cp /home/pxeboot/ovm_svr_2.2/images/pxeboot/initrd.img
/home/pxeboot/ovm_svr_2.2
```

4 Using a text editor, create a kickstart file (`ks.cfg`) in the following location on your PXE server:

`/home/pxeboot/ovm_svr_2.2/ks.cfg`

5 Add the necessary kickstart commands.

If you know the required commands, type them in. Or, you can copy and insert the following content:

```
lang en_US
#langsupport en_US
keyboard us
#mouse genericusb
timezone --utc America/Los_Angeles
rootpw xxxx
reboot
bootloader --location=mbr
install
nfs --server n.n.n.n --dir /home/pxeboot/ovm_svr_2.2
clearpart --all
part /boot --fstype ext3 --size 512 --ondisk sda
part  swap --size 4096 --ondisk sda
part / --fstype ext3 --size 1 --grow --ondisk sda
network --bootproto dhcp
# password : abc123
ovsagent --iscrypted Y2fEjdGT1W6nsLqtJbGUVeUp9e4=
#ovsmgmntif eth0
auth  --useshadow  --enablemd5
firewall --disabled
#Do not configure the X Window System
skipx
text

%packages
@Everything

%pre

%post --nochroot

%post
```

where *n.n.n.n* is the IP address of your PXE server. Ensure that the location indicated after `--dir` is pointing to the top level of your image.

6 Save the kickstart file.

7 Using a text editor, create the PXE configuration file (to be named `default`). This file defines the menu shown to the target system during network boot.

The following shows two examples labels for an Oracle VM menu:

Note – Type the text block from `append` through `ks.cfg` as one continuous string with no returns.

```
label ovm_svr_2.2 sda eth select
kernel ovm_svr_2.2/images/pxeboot/vmlinuz
append initrd=ovm_svr_2.2/images/pxeboot/initrd.img load_ramdisk=1 network
ks=nfs:n.n.n.n:/home/pxeboot/ovm_svr_2.2/ks.cfg mem=32g

label ovm_svr_2.2 sda eth select serial console
kernel ovm_svr_2.2/images/pxeboot/vmlinuz
append initrd=ovm_svr_2.2/images/pxeboot/initrd.img load_ramdisk=1 network
ks=nfs:n.n.n.n:/home/pxeboot/ovm_svr_2.2/ks.cfg mem=32g
console=ttyS0,115200
```

where *n.n.n.n* is the IP address of your PXE server.

8 Save the file as `default` in the following location on the PXE server:

`/home/pxeboot/pxelinux.cfg/default`