

Sun Server X4-2L

Installation Guide for Windows Server Operating
Systems



Part No.: E38155-03
February 2014

Copyright © 2013, 2014, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related software documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT END USERS. Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

Copyright © 2013, 2014, Oracle et/ou ses affiliés. Tous droits réservés.

Ce logiciel et la documentation qui l'accompagne sont protégés par les lois sur la propriété intellectuelle. Ils sont concédés sous licence et soumis à des restrictions d'utilisation et de divulgation. Sauf disposition de votre contrat de licence ou de la loi, vous ne pouvez pas copier, reproduire, traduire, diffuser, modifier, breveter, transmettre, distribuer, exposer, exécuter, publier ou afficher le logiciel, même partiellement, sous quelque forme et par quelque procédé que ce soit. Par ailleurs, il est interdit de procéder à toute ingénierie inverse du logiciel, de le désassembler ou de le décompiler, excepté à des fins d'interopérabilité avec des logiciels tiers ou tel que prescrit par la loi.

Les informations fournies dans ce document sont susceptibles de modification sans préavis. Par ailleurs, Oracle Corporation ne garantit pas qu'elles soient exemptes d'erreurs et vous invite, le cas échéant, à lui en faire part par écrit.

Si ce logiciel, ou la documentation qui l'accompagne, est concédé sous licence au Gouvernement des Etats-Unis, ou à toute entité qui délivre la licence de ce logiciel ou l'utilise pour le compte du Gouvernement des Etats-Unis, la notice suivante s'applique :

U.S. GOVERNMENT END USERS. Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

Ce logiciel ou matériel a été développé pour un usage général dans le cadre d'applications de gestion des informations. Ce logiciel ou matériel n'est pas conçu ni n'est destiné à être utilisé dans des applications à risque, notamment dans des applications pouvant causer des dommages corporels. Si vous utilisez ce logiciel ou matériel dans le cadre d'applications dangereuses, il est de votre responsabilité de prendre toutes les mesures de secours, de sauvegarde, de redondance et autres mesures nécessaires à son utilisation dans des conditions optimales de sécurité. Oracle Corporation et ses affiliés déclinent toute responsabilité quant aux dommages causés par l'utilisation de ce logiciel ou matériel pour ce type d'applications.

Oracle et Java sont des marques déposées d'Oracle Corporation et/ou de ses affiliés. Tout autre nom mentionné peut correspondre à des marques appartenant à d'autres propriétaires qu'Oracle.

Intel et Intel Xeon sont des marques ou des marques déposées d'Intel Corporation. Toutes les marques SPARC sont utilisées sous licence et sont des marques ou des marques déposées de SPARC International, Inc. AMD, Opteron, le logo AMD et le logo AMD Opteron sont des marques ou des marques déposées d'Advanced Micro Devices. UNIX est une marque déposée d'The Open Group.

Ce logiciel ou matériel et la documentation qui l'accompagne peuvent fournir des informations ou des liens donnant accès à des contenus, des produits et des services émanant de tiers. Oracle Corporation et ses affiliés déclinent toute responsabilité ou garantie expresse quant aux contenus, produits ou services émanant de tiers. En aucun cas, Oracle Corporation et ses affiliés ne sauraient être tenus pour responsables des pertes subies, des coûts occasionnés ou des dommages causés par l'accès à des contenus, produits ou services tiers, ou à leur utilisation.



Adobe PostScript

Contents

Using This Documentation vii

About Microsoft Windows Server Operating System Installs 1

Windows OS Installation Task Map 2

Supported Windows Operating Systems 3

SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2 4

Selecting the Console Display Option 4

Console Display Options 5

▼ Set Up the Local Console 5

▼ Set Up the Remote Console 6

Selecting the Boot Media Option 6

Boot Media Options Requirements 7

Local Boot Media Requirements 7

Remote Boot Media Requirements 7

▼ Set Up the Local Boot Media Option 7

▼ Set Up the Remote Boot Media Option 8

Selecting the Installation Target Option 9

Installation Target Options 9

▼ Set Up a Local Storage Drive (HDD or SSD) as the Installation Target 10

▼ Set Up a Fibre Channel Storage Area Network Device as the Installation Target 10

Windows OS Installation Options	10
Single-Server Installation Methods	11
Assisted OS Installation	12
Manual OS Installation	12
Windows Deployment Services OS Installation	12
Oracle System Assistant Overview	13
Oracle System Assistant Tasks	14
Get Updates and Install OS Tasks	14
Obtaining Oracle System Assistant	14

Preparing to Install the Operating System 17

Setting Up BIOS	17
▼ Verify the BIOS Factory Defaults	18
▼ Switch Between Legacy BIOS and UEFI BIOS	20
Configuring RAID	22

Installing a Windows Server Operating System 23

Before You Begin	23
Installing Windows Server on a Single System Using Oracle System Assistant	24
▼ Install Windows Server on a Single System Using Oracle System Assistant	25
Installing Windows Server on a Single System Using Media	28
▼ Install Windows Server 2008 (SP2 or R2 SP1) Using Local or Remote Media	29
▼ Install Windows Server 2012 or 2012 R2 Using Local or Remote Media	39
▼ Install Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 Using PXE Network Boot	54

Post Installation Tasks for Windows Server 59

Supplemental Software Component Options	59
---	----

Installing Device Drivers and Supplemental Software 60

▼ Install Server-Specific Device Drivers and Supplemental Software 61

Configuring Intel NIC Teaming 62

Index 63

Using This Documentation

This installation guide contains procedures for installing the Windows Operating System, and initial software configuration procedures for bringing the Sun Server X4-2L from Oracle to a configurable and usable state.

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

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

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

Getting the Latest Software and Firmware

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

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

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

For more information, see the *Sun Server X4-2L Installation Guide*, “Getting Server Firmware and Software Updates” on page 31.

About This Documentation

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

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

Related Documentation

Documentation	Link
All Oracle documentation	http://www.oracle.com/documentation
Sun Server X4-2L	http://www.oracle.com/goto/X4-2L/docs
<i>Oracle X4 Series Servers Administration Guide</i>	http://www.oracle.com/goto/x86AdminDiag/docs
Oracle Integrated Lights Out Manager (ILOM) 3.1	http://www.oracle.com/goto/ILOM/docs
Oracle Hardware Management Pack 2.2	http://www.oracle.com/goto/OHMP/docs

Feedback

You can provide feedback on this documentation at:

<http://www.oracle.com/goto/docfeedback>

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

About Microsoft Windows Server Operating System Installs

This section contains an overview for installing a new Microsoft Windows Server 2008 or Windows Server 2012 operating system (OS) on your server.

Description	Links
Learn about Windows operating system installation steps.	"Windows OS Installation Task Map" on page 2
Learn about the supported Windows operating systems.	"Supported Windows Operating Systems" on page 3
Learn about storage driver requirements for SAS HBAs.	"SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2" on page 4
Learn about console display options and how to set them up.	"Selecting the Console Display Option" on page 4
Learn about boot media options and how to set them up.	"Selecting the Boot Media Option" on page 6
Learn about installation target options and how to set them up.	"Selecting the Installation Target Option" on page 9
Learn about operating system installation options.	"Windows OS Installation Options" on page 10
Learn about Oracle System Assistant.	"Oracle System Assistant Overview" on page 13

Related Information

- ["Installing a Windows Server Operating System" on page 23](#)

Windows OS Installation Task Map

The following table lists and describes the steps for installing the Windows Server operating system.

Step	Description	Links
1.	Install your server hardware and configure the Oracle ILOM service processor.	<ul style="list-style-type: none">• <i>Sun Server X4-2L Installation Guide</i>, “Installing the Server Into a Rack” on page 41• <i>Sun Server X4-2L Installation Guide</i>, “Cabling the Server” on page 79• <i>Sun Server X4-2L Installation Guide</i>, “Connecting to Oracle ILOM” on page 87
2.	Obtain the Windows installation media.	http://technet.microsoft.com/en-us/windowsserver/default.aspx
3.	Review the product notes.	<i>Sun Server X4-2L Product Notes</i> at: http://www.oracle.com/goto/X4-2L/docs
4.	Set up the console, the boot media, and the installation target that you will use to perform the installation.	<ul style="list-style-type: none">• “Selecting the Console Display Option” on page 4• “Selecting the Boot Media Option” on page 6• “Selecting the Installation Target Option” on page 9
5.	Verify and, if necessary, configure BIOS.	“Setting Up BIOS” on page 17
6.	Install the Windows OS.	<ul style="list-style-type: none">• “Install Windows Server on a Single System Using Oracle System Assistant” on page 25• “Install Windows Server 2008 (SP2 or R2 SP1) Using Local or Remote Media” on page 29• “Install Windows Server 2012 or 2012 R2 Using Local or Remote Media” on page 39• “Install Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 Using PXE Network Boot” on page 54
7.	Perform the post installation tasks, if applicable.	“Post Installation Tasks for Windows Server” on page 59

Related Information

- “Preparing to Install the Operating System” on page 17

Supported Windows Operating Systems

The server supports the following Microsoft Windows operating systems:

Windows OS	Edition
• Windows Server 2008 SP2	<ul style="list-style-type: none">• Standard Edition (64-bit)• Enterprise Edition (64-bit)• Datacenter edition (64-bit)
• Windows Server 2008 R2 SP1	<ul style="list-style-type: none">• Standard Edition (64-bit)• Enterprise Edition (64-bit)• Datacenter edition (64-bit)
• Windows Server 2012	<ul style="list-style-type: none">• Standard Edition (64-bit)• Enterprise Edition (64-bit)• Datacenter edition (64-bit)
• Windows Server 2012 R2	<ul style="list-style-type: none">• Standard Edition (64-bit)• Enterprise Edition (64-bit)• Datacenter edition (64-bit)

Additionally, you can install any other supported operating system or virtual machine software on your server. For a complete list of operating systems supported by the server, see the latest version of the *Sun Server X4-2L Product Notes* at <http://www.oracle.com/goto/X4-2L/docs>. You can also view the list of supported operating systems at <http://wikis.oracle.com/display/SystemsComm/Sun+Server+X4-2L+-+Operating+Systems>.

Related Information

- “Installing a Windows Server Operating System” on page 23

SAS PCIe HBAs Requiring LSI Mass Storage Driver for Windows Server 2008 SP2

The following table identifies the SAS PCIe host bus adapter (HBA) options that are supported on the server at the time of this publication. If you have one of these SAS PCIe HBA options configured on your server and you are installing Microsoft Windows Server 2008 SP2, you will need to load the LSI mass storage driver for the PCIe HBA option. This LSI mass storage driver is available on the internal Oracle System Assistant USB flash drive and Oracle System Assistant provides tools for loading it.

TABLE: Supported SAS PCIe HBAs Requiring LSI Mass Storage Driver

Supported SAS PCIe HBAs	Option Number	Driver Required During Installation
Sun Storage 6 Gb SAS PCIe RAID HBA, Internal	SG-SAS6-R-INT-Z	LSI MegaRAID SAS 92xx-xx
Sun Storage 6 Gb SAS PCIe HBA, Internal	SG-SAS6-INT-Z	LSI Adapter SAS 2008 Falcon
Sun Storage 6 Gb SAS PCIe HBA, External	SG-SAS6-EXT-Z	LSI Adapter SAS 2008 Falcon

Instructions for loading the LSI mass storage driver during the Windows Server 2008 SP2 installation are provided in Step 8 of the [“Install Windows Server 2008 \(SP2 or R2 SP1\) Using Local or Remote Media”](#) on page 29.

If your server does not have an internal Oracle System Assistant USB flash drive, you can download the ISO image that includes the LSI mass storage driver. For download instructions, see the [Sun Server X4-2L Installation Guide, “Getting Server Firmware and Software Updates”](#) on page 31.

Selecting the Console Display Option

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

- [“Console Display Options”](#) on page 5

- “Set Up the Local Console” on page 5
- “Set Up the Remote Console” on page 6

Console Display Options

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

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

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

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

▼ Set Up the Local Console

1. **To connect a local console, do one of the following:**
 - Connect a terminal to the serial management port (SER MGT) either directly or through a terminal emulator.
 - Connect a VGA monitor, keyboard, and mouse to the video port (VGA) and the USB ports.
2. **For serial management port (SER MGT) connections only, to establish a connection to the host serial port:**
 - a. **Type your Oracle ILOM user name and password.**
 - b. **At the Oracle ILOM login prompt, type:**
-> **start /HOST/console**

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

Related Information

- Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at:
<http://www.oracle.com/goto/ILOM/docs>

▼ Set Up the Remote Console

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

To login to Oracle ILOM remotely using either the command-line interface or the web interface, you must know the IP address of the server's service processor (SP). For instructions, see the *Sun Server X4-2L Installation Guide*, "Determining the IP Address of the Server SP" on page 91.

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

a. In a web browser, type the IP address for the server SP.

b. Log in to the Oracle ILOM web interface.

c. Redirect the video output from the server to the web client by launching the Oracle ILOM Remote Console.

d. If necessary, enable device redirection (mouse, keyboard, etc.) in the Devices menu.

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

a. From a serial console, establish a SSH connection to the server SP (`ssh root@hostname`, where *hostname* can be the DNS name or the IP address for the server SP).

b. Log in to Oracle ILOM.

c. Redirect the serial output from the server to the SSH client by typing:

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

Related Information

- Oracle Integrated Lights Out Manager (ILOM) 3.1 Documentation Library at: <http://www.oracle.com/goto/ILOM/docs>

Selecting the Boot Media Option

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

- "Boot Media Options Requirements" on page 7
- "Set Up the Local Boot Media Option" on page 7

- [“Set Up the Remote Boot Media Option” on page 8](#)

Boot Media Options Requirements

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

- [“Local Boot Media Requirements” on page 7](#)
- [“Remote Boot Media Requirements” on page 7](#)

Local Boot Media Requirements

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

Supported OS local boot media sources can include:

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

Remote Boot Media Requirements

Remote media requires you to boot the install over the network. You can start the network install from a redirected boot storage device or another networked system that exports the installation over the network using a Pre-Boot eXecution Environment (PXE).

Supported OS remote boot media sources can include:

- CD/DVD-ROM installation media, and, if applicable, floppy device driver media
- CD/DVD-ROM ISO installation image, and, if applicable, floppy device driver media
- Automated installation image (requires PXE boot). For instructions for performing PXE network installations for the supported Windows Server operating systems, see [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 Using PXE Network Boot” on page 54](#).

▼ Set Up the Local Boot Media Option

To set up the local boot media, you must insert a storage device that contains the Windows Server OS installation media into the server using one of the following options:

1. If the server is equipped with an optional DVD drive, insert the Windows Server OS installation DVD into the DVD drive located on the front of the server; otherwise, proceed to the next step.
2. If your server does not contain a DVD drive, insert a USB flash drive that contains the Windows Server OS installation media into one of the external USB ports located on the front and rear of the server.

Note – For information about the location of the server’s external USB ports, see the [Sun Server X4-2L Installation Guide, “About Server Features and Components”](#) on page 19.

▼ Set Up the Remote Boot Media Option

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

1. **To redirect the boot media from a remote storage device, perform these steps; otherwise, go to the next step.**
 - a. **Mount or present the OS boot media so that it is accessible, for example:**
 - **For CD/DVD-ROM**, insert media into the built-in or external CD/DVD-ROM drive.
 - **For CD/DVD-ROM ISO image**, ensure that ISO image(s) are readily available on a network shared location.
 - **For device driver floppy ISO image**, ensure that ISO image, if applicable, is readily available on a network shared location or on a USB drive.
 - b. **Establish a web-based client connection to the server Oracle ILOM SP and launch the Oracle ILOM Remote Console application.**

For more details, see the setup requirements for web-based client connection in [“Selecting the Console Display Option”](#) on page 4.
 - c. **In the Devices menu of the Oracle ILOM Remote Console application, specify the location of the boot media, for example:**
 - **For CD/DVD-ROM boot media**, select CD-ROM.
 - **For CD/DVD-ROM ISO image boot media**, select CD-ROM Image.
 - **For floppy device driver boot media**, if applicable, select Floppy.
 - **For floppy image device driver boot media**, if applicable, select Floppy Image.
2. **To perform the installation using PXE, perform these steps.**
 - a. **Configure the network server to export the installation using PXE boot.**

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

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

For detailed instructions for automating the installation setup process, consult the Windows operating system documentation.

c. To boot the installation media, in the server's BIOS Boot Device menu, select the PXE boot interface card as the temporary boot device.

For details for performing a Windows Server installation using a PXE network boot, see [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 Using PXE Network Boot”](#) on page 54.

Selecting the Installation Target Option

This section describes how to set up the installation target.

- [“Installation Target Options”](#) on page 9
- [“Set Up a Local Storage Drive \(HDD or SSD\) as the Installation Target”](#) on page 10
- [“Set Up a Fibre Channel Storage Area Network Device as the Installation Target”](#) on page 10

Installation Target Options

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

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

Note – SSDs are supported only on Oracle Engineered Systems.

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

- **Ensure that the HDD or SSD is properly installed and powered on.**

For information about installing and powering on a HDD or SSD, see the *Sun Server X4-2L Service Manual, "Servicing Storage Drives and Rear Drives (CRU)"* on page 47.

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

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

For information about installing a PCIe HBA option, see the *Sun Server X4-2L Service Manual, "Servicing PCIe Cards (CRU)"* on page 79.

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

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

Windows 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 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 OS on multiple servers, For information, go to http://www.oracle.com/technetwork/ops-center/index.html

Option	Description
Single server	<p>Install an OS to a single server using one of the following methods:</p> <ul style="list-style-type: none"> • Locally: OS installation is performed locally at the server. This option is recommended if you have just completed the physical installation of the server in the rack. • Remotely: OS installation is performed from a remote location. Uses the Oracle ILOM Remote Console application to access the Oracle System Assistant or to perform a manual OS installation. <p>Note - Oracle recommends the use of Oracle System Assistant for single server OS installations.</p>

For more information about single-server OS installation methods and Oracle System Assistant, see:

- [“Single-Server Installation Methods” on page 11](#)
- [“Oracle System Assistant Overview” on page 13](#)

Single-Server Installation Methods

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

Media Delivery Method	Additional Requirements
<p>Local assisted OS installation – Uses Oracle System Assistant. (Recommended)</p>	<p>A monitor, USB keyboard and mouse, a USB device, and Windows distribution media. For more information, see “Assisted OS Installation” on page 12.</p>
<p>Remote assisted OS installation – Uses Oracle System Assistant. (Recommended)</p>	<p>Oracle ILOM Remote Console application, a redirected CD/DVD drive or ISO image file, and Windows distribution media. For more information, see “Assisted OS Installation” on page 12.</p>
<p>Local Using a CD/DVD drive – Uses a physical CD/DVD drive connected to the server.</p>	<p>A monitor, USB keyboard and mouse, a USB CD/DVD drive, and Windows distribution media. For more information, see “Manual OS Installation” on page 12.</p>

Media Delivery Method	Additional Requirements
Remote Using a CD/DVD drive or a 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, Windows distribution media, and network access to the server’s management port. For more information, see “Manual OS Installation” on page 12 .
WDS WIM image – Uses a customized Windows Imaging Format (WIM) image on a Windows Deployment Services (WDS) server.	A server running WDS and a WIM image customized for your server. For more information, see “Windows Deployment Services OS Installation” on page 12 .

Assisted OS Installation

This is the recommended method for installing a supported OS on your server. This method involves using Oracle System Assistant. You deliver the Windows 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 gathers and installs the needed drivers when necessary. Your server must support Oracle System Assistant, and it must be installed in the server.

Manual OS Installation

With this method, you deliver the Windows distribution media on either a local or remote CD/DVD drive, USB device, or CD/DVD image. You also need to install any necessary drivers. The drivers for your server are available on the server’s internal Oracle System Assistant flash drive (if installed) and from the My Oracle Support web site as either OS-specific and server-specific packages or as an ISO image file. To install the OS, use the distribution media’s installation wizard.

Windows Deployment Services OS Installation

You can install the Windows OS from a deployment server environment. For the advanced user, you can create a customized Windows Imaging Format (WIM) image for your server on a system running Windows Deployment Services (WDS). Once this installation image file has been created, you can boot your server from its network card and select the image from the WDS system for unattended deployment. For more information about WDS, go to:

<http://technet.microsoft.com/en-us/library/cc770667%28WS.10%29.a.spx>.

Oracle System Assistant Overview

Oracle System Assistant is a single-server system management tool for Oracle x86 servers. It integrates Oracle's single system management products, the Oracle System Assistant application, and a selection of related software to provide a suite of tools that allow for the quick and convenient configuration and maintenance of your server.

You can access Oracle System Assistant locally, using a local console connection, or remotely, using the Oracle ILOM Remote Console application.

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

The components of Oracle System Assistant include:

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

Oracle System Assistant resides inside the server as an embedded storage device and is factory configured with a server-specific version of tools and drivers that is maintained as such through use of online updates.

For more information about Oracle System Assistant, see the following topics:

- ["Oracle System Assistant Tasks" on page 14](#)
- ["Get Updates and Install OS Tasks" on page 14](#)
- ["Obtaining Oracle System Assistant" on page 14](#)

For more information about Oracle System Assistant, refer to the *Oracle X4 Series Servers Administration Guide* at:

<http://www.oracle.com/goto/x86AdminDiag/docs>.

Oracle System Assistant Tasks

The Oracle System Assistant application combines a selected set of the most common and useful single-server management provisioning tasks.

The following information and tasks allow for quick and convenient server setup and ongoing server management:

- System overview and system inventory information
- Online update acquisition for all components (including tools, drivers, and firmware)
- System firmware (BIOS and Oracle ILOM) and host bus adapter firmware updates
- RAID, Oracle ILOM, and BIOS configuration
- Assisted OS installation
- Network configuration
- Disable feature and embedded media integrity check
- Multilingual keyboard
- Oracle System Assistant shell terminal window allowing use of the runtime environment
- Oracle Hardware Management Pack access (using Oracle System Assistant shell)
- Oracle System Assistant recovery

Get Updates and Install OS Tasks

If you want to use Oracle System Assistant to update the OS drivers and other firmware components (such as BIOS, Oracle ILOM, HBAs, and expanders, if applicable), you should perform the Get Updates tasks before you install the OS.

The Oracle System Assistant application's Install OS task provides a guided installation of a supported OS. You supply the OS installation media, and Oracle System Assistant guides you through the installation process. It then fetches the appropriate drivers based on your server hardware configuration. The Install OS task is not available for all server supported operating systems. The Install OS task is not available for all server supported operating systems.

Obtaining Oracle System Assistant

Since your server supports Oracle System Assistant, the Oracle System Assistant USB flash drive might be already installed in your server. If it is installed, you can update to the latest software release using the Oracle System Assistant Get Updates task. If

Oracle System Assistant is installed in your server, but it has been corrupted or overwritten, then download the Oracle System Assistant Updater image from the My Oracle Support site. For download instructions, see the *Sun Server X4-2L Installation Guide*, “Getting Server Firmware and Software Updates” on page 31.

For more information about how to determine if your server has Oracle System Assistant or how to perform updates and recovery procedures, refer to the *Oracle X4 Series Servers Administration Guide* at:

<http://www.oracle.com/goto/x86AdminDiag/docs>.

Related Information

- *Oracle X4 Series Servers Administration Guide* at:
<http://www.oracle.com/goto/x86AdminDiag/docs>

Preparing to Install the Operating System

This section describes how to prepare the server for installing the operating system.

Description	Links
Setting up BIOS.	“Setting Up BIOS” on page 17
Configure RAID on the server.	“Configuring RAID” on page 22

Setting Up BIOS

Before you install the operating system, you should ensure that BIOS settings are configured to support the type of installation you plan to perform. The following topics provide specific instructions on how to configure BIOS to support the installation:

- [“Verify the BIOS Factory Defaults” on page 18](#)
- [“Switch Between Legacy BIOS and UEFI BIOS” on page 20](#)

Related Information

- [“Installing Windows Server on a Single System Using Oracle System Assistant” on page 24](#)
- [“Installing Windows Server on a Single System Using Media” on page 28](#)

▼ Verify the BIOS Factory Defaults

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

In the BIOS Setup Utility, you can set defaults, as well as view and edit BIOS settings as needed. Any changes you make in the BIOS Setup Utility (through F2) are permanent until the next time you change them.

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

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, see the [Sun Server X4-2L Service Manual, "Servicing Storage Drives and Rear Drives \(CRU\)"](#) on page 47.
- A console connection is established to the server. For details, see ["Selecting the Console Display Option"](#) on page 4.

1. Reset or power on the server.

For example, to reset the server:

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

The BIOS screen appears.



2. **When prompted in the BIOS screen, press F2 to access the BIOS Setup Utility.**
After a few moments, the BIOS Setup Utility appears.
3. **To ensure that the factory defaults are set, do the following:**
 - a. **Press F9 to automatically load the factory default settings.**
A message appears prompting you to continue this operation by selecting OK or to cancel this operation by selecting CANCEL.
 - b. **In the message, highlight OK then press Enter.**
The BIOS Setup Utility screen appears with the cursor highlighting the first value in the system time field.
4. **In the BIOS Setup Utility, do the following to edit the values associated with the system time or date.**
 - a. **Highlight the values you want to change.**
Use up or down arrow keys to change between the system time and date selection.
 - b. **To change the values in the highlighted fields use these keys:**
 - PLUS (+) to increment the current value shown
 - MINUS (-) to decrement the current value shown
 - ENTER to move the cursor to the next value field
5. **To access the boot settings, select the Boot menu.**
The Boot menu appears.
6. **In the Boot menu, verify that the UEFI/BIOS Boot Mode is set to the appropriate value for your installation.**
To change the boot mode, use the up and down arrow keys to select the UEFI/BIOS Boot Mode field and use the + and - keys to toggle between UEFI and Legacy.

7. In the Boot menu, use the down arrow key to select `Boot Device Priority`, then press `Enter`.

The Boot Device Priority menu appears listing the order of the known bootable devices. The first device in the list has the highest boot priority.

8. In the Boot Option Priority menu, do the following to edit the first boot device entry in the list:
 - a. Use the up and down arrow keys to select the first entry in the list, then press `Enter`.
 - b. In the Options menu, use the up and down arrow keys to select the default permanent boot device, then press `Enter`.

Note – You can change the boot order for other devices in the list by repeating Steps 8a and 8b for each device entry you want to change.

9. To save changes and exit the BIOS Setup Utility, press `F10`.

Alternatively, you can save the changes and exit the BIOS Setup Utility by selecting `Save` and `Reset` on the `Save & Exit` menu. A message appears prompting you to save changes and exit setup. In the message dialog, select `OK`, then press `Enter`.

Note – When using the Oracle ILOM Remote Console, `F10` is trapped by the local OS. You must use the `F10` option listed in the Keyboard drop-down menu that is available at the top of the Remote Console application.

▼ Switch Between Legacy BIOS and UEFI BIOS

The BIOS firmware supports both Legacy BIOS and Unified Extensible Firmware Interface (UEFI) BIOS. The default setting is Legacy BIOS. Because the Windows Server 2008 and 2012 operating systems support both Legacy BIOS and UEFI BIOS, you have the option of setting BIOS to either Legacy BIOS Boot Mode or UEFI BIOS Boot Mode before you perform the installation.

Note – After you have installed the Windows Server operating system, if you decide you want to switch from legacy BIOS to UEFI BIOS, or vice versa, you must remove all partitions and reinstall the operating system.

1. Reset or power on the server.

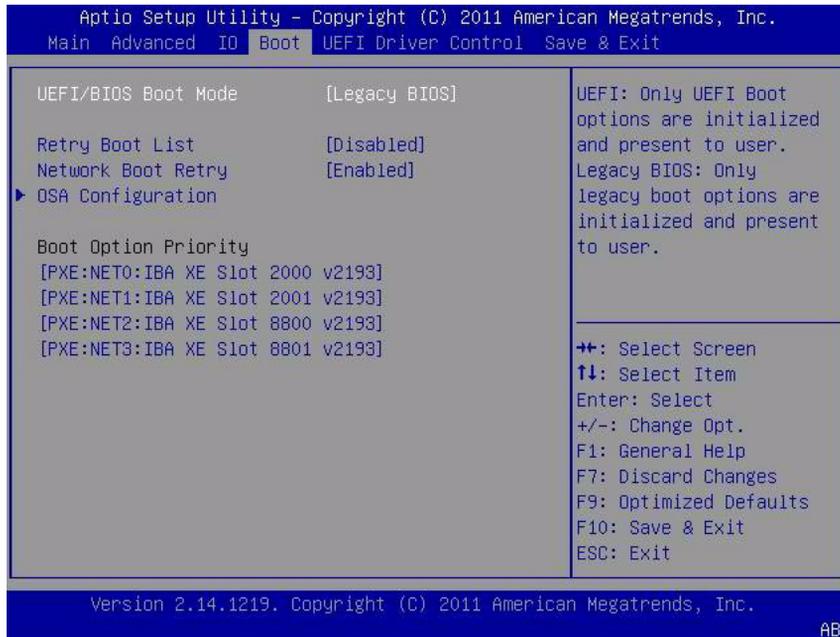
For example, to reset the server:

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

The BIOS screen appears.



2. **When prompted in the BIOS screen, press F2 to access the BIOS Setup Utility.**
After a few moments, the BIOS Setup Utility appears.
3. **In the BIOS Setup Utility, select Boot from the top menu bar.**
The Boot menu screen appears.



4. Select the UEFI/BIOS Boot Mode field and use the +/- keys to change the setting to UEFI.
5. To save changes and exit BIOS, press the F10 key.

Configuring RAID

If you want to configure the server storage drives in a RAID configuration, configure RAID on your server before you install a Windows OS. For instructions for configuring RAID, refer to the *Sun Server X4-2L Installation Guide*, “Configuring Server Drives for OS Installation” on page 115.

Related Information

- *Oracle X4 Series Servers Administration Guide* at:
<http://www.oracle.com/goto/x86AdminDiag/docs>

Installing a Windows Server Operating System

This section provides instructions for installing the Microsoft Windows Server 2008 (SP2 and R2 SP1) and Windows Server 2012 operating systems.

Description	Links
Before you begin the OS install.	“Before You Begin” on page 23
Using Oracle System Assistant to install the Windows operating system.	“Installing Windows Server on a Single System Using Oracle System Assistant” on page 24
Using media to install the Windows operating system.	“Installing Windows Server on a Single System Using Media” on page 28

Before You Begin

Ensure that the following requirements are met:

- If you want to configure RAID (Redundant Array of Independent Disks) on the server’s storage drives, you must do so before you install the operating system. For instructions for configuring RAID, see the [Sun Server X4-2L Installation Guide, “Configuring Server Drives for OS Installation” on page 115](#).

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

- Verify that the BIOS settings are set to the defaults. For instructions on how to verify and, if necessary, set the BIOS settings, see [“Verify the BIOS Factory Defaults” on page 18](#).

- Ensure that BIOS is configured for the desired mode: Legacy BIOS or UEFI BIOS. For instructions on how to set the BIOS mode, see “Switch Between Legacy BIOS and UEFI BIOS” on page 20.
- The console display option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see “Selecting the Console Display Option” on page 4.
- The boot media option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see “Selecting the Boot Media Option” on page 6.
- The installation target option should have been selected and set up prior to performing the installation. For more information about this option and setup instructions, see “Selecting the Installation Target Option” on page 9.
- For local installation, insert the Windows installation media into the attached physical CD/DVD-ROM drive.
- For remote installation, insert the Windows installation media into the Oracle ILOM Remote Console system’s CD/DVD-ROM drive. Ensure that you have selected CD-ROM from the Oracle ILOM Remote Console system’s Devices menu.
- For a Windows image installation, ensure that the Windows ISO image is accessible from the Oracle ILOM Remote Console system. Ensure that you have selected CD-ROM Image from the Oracle ILOM Remote Console system’s Devices menu.
- Gather the Microsoft Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 operating system documentation so that you can use it in conjunction with the Windows Server operating system instructions provided in this section. You can obtain a copy of Microsoft Windows Server 2008 and 2012 installation documentation at:
<http://technet.microsoft.com/en-us/windowsserver/default.aspx>.

Installing Windows Server on a Single System Using Oracle System Assistant

The Oracle System Assistant application’s Install OS task is the recommended method for installing a supported Microsoft Windows Server OS on the server.

- “Install Windows Server on a Single System Using Oracle System Assistant” on page 25

▼ Install Windows Server on a Single System Using Oracle System Assistant

- Performed the steps in “Preparing to Install the Operating System” on page 17.
- If you want to configure the boot drive (that is, the storage drive onto which you are installing the Windows Server OS) for RAID, you must do so before you install the OS. For instructions on how to configure RAID on your server, see the *Sun Server X4-2L Installation Guide*, “Configuring Server Drives for OS Installation” on page 115.

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

- **For Distribution CD/DVD.** Insert the Windows Server Distribution media (CD labeled number 1 or the single DVD) into the local or external USB CD/DVD-ROM drive.
- **For ISO image.** Ensure that the ISO images are available and that the Oracle ILOM Remote Console application is aware of the first ISO image location.
For additional information about how to set up the installation media, see “Selecting the Boot Media Option” on page 6.

2. To launch Oracle System Assistant directly from the Oracle ILOM Interface (recommended), perform the following steps; otherwise proceed to Step 3.

- a. In the Actions panel on the Oracle ILOM web interface (shown below), click the Oracle System Assistant Launch button.

The screenshot displays the Oracle ILOM web interface. The main content area is titled "Summary" and contains three panels: "General Information", "Actions", and "Status".

General Information:

System Type	Rack Mount
Model	Sun Server X4-2
Part Number	
Serial Number	1237FM506L
System Identifier	-
System Firmware Version	3.1.2.0
Primary Operating System	Oracle System Assistant 1.0.0.80755
Host Primary MAC Address	
ILOM Address	
ILOM MAC Address	

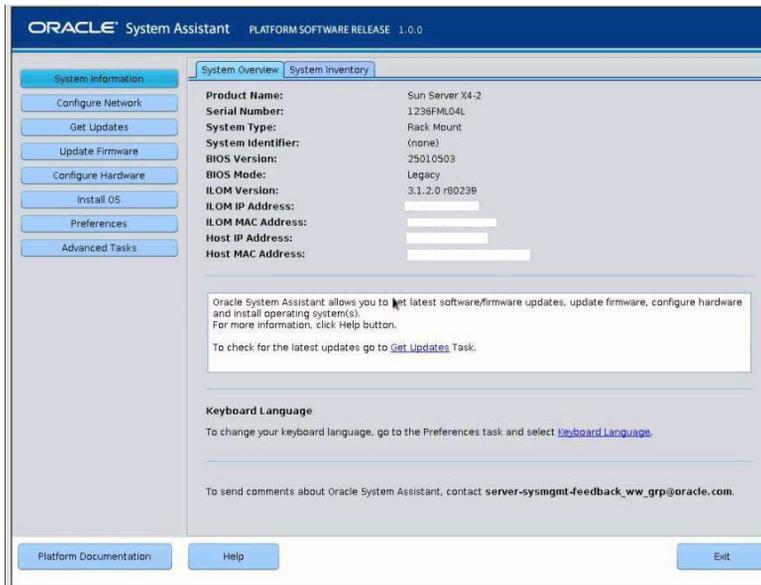
Actions:

- Power State: ON (Turn Off)
- Locator Indicator: OFF (Turn On)
- Oracle System Assistant Version: 6.0.0.0 (Launch)
- System Firmware Update (Update)
- Remote Console (Launch)

Status:

Subsystem	Status	Details	Inventory
Processors	OK	Processor Architecture: x86_64-bit Processor Summary: One Intel Xeon Processor T500 Series	Processors (Installed / Maximum): 1 / 2
Memory	OK	Installed RAM Size: 8 GB	DIMMs (Installed / Maximum): 1 / 16
Power	OK	Permitted Power Consumption: 479 watts Actual Power Consumption: 154 watts	P5Us (Installed / Maximum): 2 / 2
Cooling	OK	Inlet Air Temperature: 29 °C Exhaust Air Temperature: 29 °C	Chassis Fans (Installed / Maximum): 8 / 8 PSU Fans (Installed / Maximum): Not Supported / Not Supported
Storage	OK	Installed Disk Size: 545 GB Disk Controllers: 1	Internal Disks (Installed / Maximum): 4 / 8
Network	OK		Installed Ethernet NICs: 4

The Oracle System Assistant Overview screen appears.



b. Proceed to [Step 4](#).

3. To launch Oracle System Assistant using the Oracle ILOM Remote Console and BIOS, perform the following steps:

a. From the Oracle ILOM web interface, click Summary > Launch Remote Console.

The Oracle ILOM Remote Console screen appears.

b. Reset or power on the server.

For example:

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

The BIOS screen appears in the Oracle ILOM Remote Console.



Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Watch carefully for these messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

c. Press the F9 key.

The Oracle System Assistant System Overview screen appears.

4. To update to the latest software release package, click the Get Updates button in Oracle System Assistant.

This action ensures that the server has the latest software release package installed 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 BIOS before you begin the OS installation.

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

The Install OS screen appears.

7. From the Supported OS drop-down list, select your OS.

8. In the Select a BIOS mode if applicable portion of the screen, select the BIOS mode (UEFI or Legacy BIOS) that you want to use for the OS installation.

9. Indicate the location of the installation media in the Select your media location section.

This is the location of the OS distribution media. The options are CD/DVD devices.

Note – Oracle System Assistant does not support Preboot eXecution Environment (PXE) installs.

10. Click View Installation Options.

The Installation Options dialog appears.

11. In the Installation Options dialog, deselect any items that you do not want to install.

Note – In the Installation Options dialog, the OS and Drivers options are mandatory and cannot be deselected.

12. Click the OS Install button at the bottom of the Operating System Installation screen.

13. Follow the prompts until the installation is finished.

The server boots.

Installing Windows Server on a Single System Using Media

This section provides instructions for installing the Windows Server 2008 and Windows Server 2012 (64-bit) operating systems.

- [“Install Windows Server 2008 \(SP2 or R2 SP1\) Using Local or Remote Media” on page 29](#)
- [“Install Windows Server 2012 or 2012 R2 Using Local or Remote Media” on page 39](#)
- [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 Using PXE Network Boot” on page 54](#)

▼ Install Windows Server 2008 (SP2 or R2 SP1) Using Local or Remote Media

This procedure describes how to boot the Microsoft Windows Server 2008 (SP2 or R2 SP1) operating system from local or remote media. It assumes that you are booting the Windows installation media from one of the following sources:

- Windows Server 2008 SP2 or Windows Server 2008 R2 SP1 CD or DVD
- Windows Server 2008 SP2 or Windows Server 2008 R2 SP1 ISO image

Note – The Windows Server 2008 (SP2 or R2 SP1) ISO image can be used for remote installation or for creating an installation CD or DVD.

Note – If you are booting the installation media from a PXE environment, refer to [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 Using PXE Network Boot”](#) on page 54 for instructions.

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

- **For Distribution CD/DVD.** Insert the Windows Server 2008 Distribution media (CD labeled number 1 or the single DVD) into the local or remote CD/DVD-ROM drive.
- **For ISO image.** Ensure that the ISO image is available and that the Oracle ILOM Remote Console application is aware of the ISO image location.
For additional information about how to set up the installation media, see [“Selecting the Boot Media Option”](#) on page 6.

2. Reset the server.

For example:

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

The BIOS screen appears.



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

Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Watch carefully for these messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

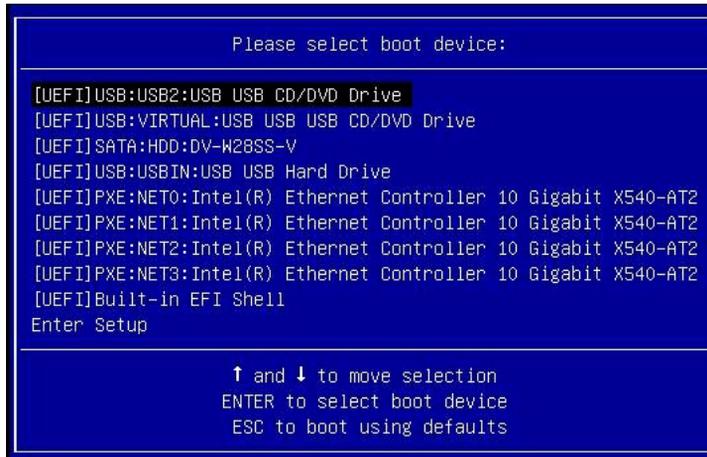
3. In the BIOS screen, press F8 to specify a temporary boot device for the Windows installation.

The Please Select Boot Device menu appears. The screen that appears will be different depending on whether you have BIOS configured for Legacy mode or UEFI mode.

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



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



Note – The boot device menu that appears in your installation might differ depending on the type of disk controller installed in your server.

- 4. In the Please Select Boot Device menu, select the menu item according to the Windows media installation method and BIOS mode you elected to use, then press Enter.**

For example:

- If you elected to use the Windows local delivery method, select `SATA:HDD:P4 DV-W28SS-V` from the Legacy BIOS screen or `[UEFI]USB2:USB USB CD/DVR Drive` from the UEFI BIOS screen.
- If you elected to use the Oracle ILOM Remote Console delivery method, select `USB:VIRTUAL:AMI VIRTUAL CDROM 1.00` from the Legacy BIOS screen or `[UEFI]USB:VIRTUAL:USB USB CD/DVD Drive` from the UEFI BIOS screen.

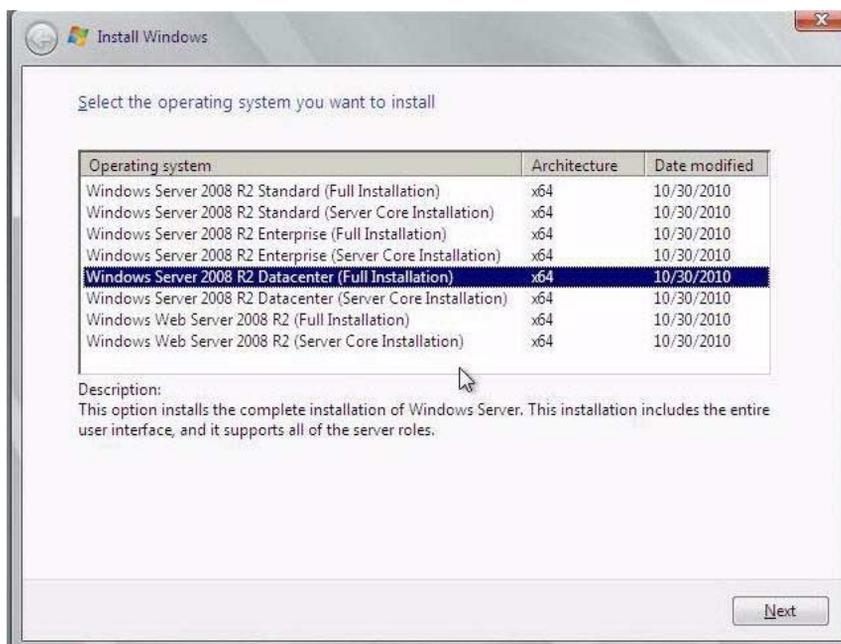
- 5. If prompted with Press any key to boot from CD, press any key.**

The Windows installation wizard starts.

Continue the Windows installation wizard until the Language Localization dialog appears.



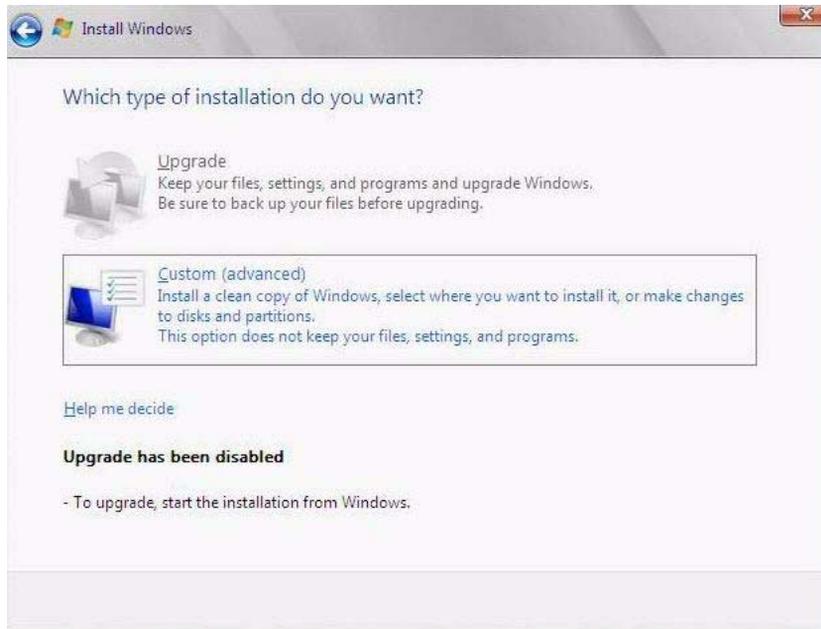
6. Select your language and other preferences, then click **Next** to continue. The Select Operating System dialog appears.



Note – The above dialog varies depending on the type Windows software license: Educational, Volume, or Retail.

7. In the **Select the Operating System You Want to Install** dialog, select the desired operating system, then click **Next** to continue.

The Installation Type dialog appears.



8. In the **Installation Type** dialog, click **Custom (advanced)**.

The **Where Do You Want to Install Windows** dialog appears.



9. In the Where Do You Want to Install Windows dialog, perform one of the following tasks:

- **(This task only applies to Windows Server 2008 SP2 installations)** If you do not see any storage targets listed and have a Sun Storage SAS PCIe RAID HBA option configured on your server, click **Load Driver**, then proceed to [Step 10](#).
- or -
- If you see the storage target where you want to install the operating system but want to change the default partition settings associated with that target, select the target, click **Drive Options (Advanced)**, then proceed to [Step 11](#).
- or -
- If you see the storage target where you want to install the operating system and do not want to change the default partition settings for that target, select the target and click **Next**, then proceed to [Step 12](#).

10. (Load Driver) In the Load Driver dialog, do the following:



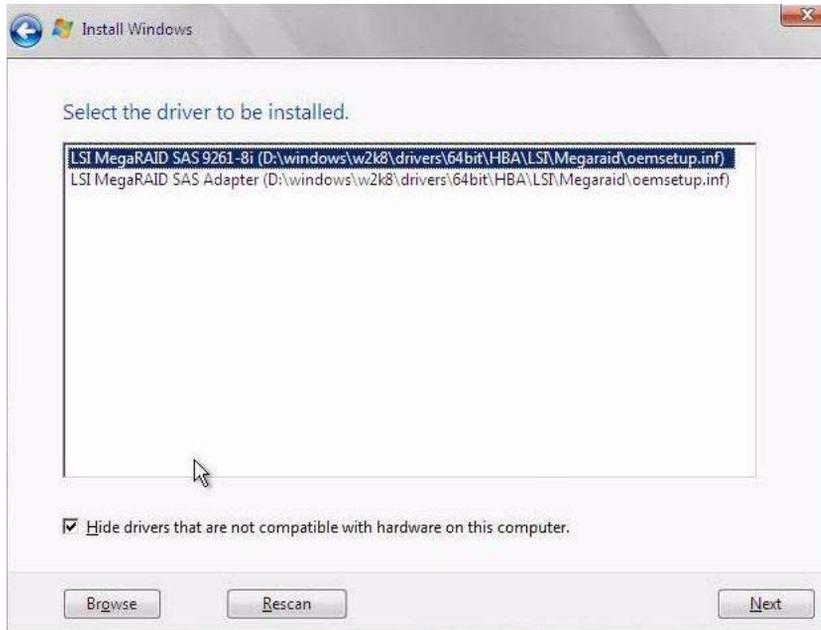
- a. **Ensure that the driver(s) are accessible according to the installation method chosen (described in “Selecting the Boot Media Option” on page 6).**
 For example:
 - Storage driver(s) are on a disk mounted as a device from the Oracle ILOM Remote Console.
 - Storage driver(s) are on a local physical storage media, such as the Oracle System Assistant USB flash drive (if installed), which is mounted internally in the server’s chassis; a CD/DVD; or virtual media mounted from the Oracle ILOM Remote Console.
- b. **In the Load Driver dialog, click Browse to navigate to the appropriate driver media folder as described below.**
 - For a system configured with the Sun Storage 6 Gb SAS PCIe RAID HBA option (SG-SAS6-R-INT-Z), navigate to the following directory on the internal Oracle System Assistant USB flash drive to load the appropriate LSI driver: `windows/w2k8/drivers/LSI-HBA-MegaSAS2`
 - For a system configured with either of these Sun Storage 6 Gb SAS PCIe HBA options: SG-SAS6-INT-Z or SG-SAS6-EXT-Z, navigate to the following directory on the internal Oracle System Assistant USB flash drive to load the appropriate LSI driver: `windows/w2k8/drivers/LSI-HBA-MPT2`

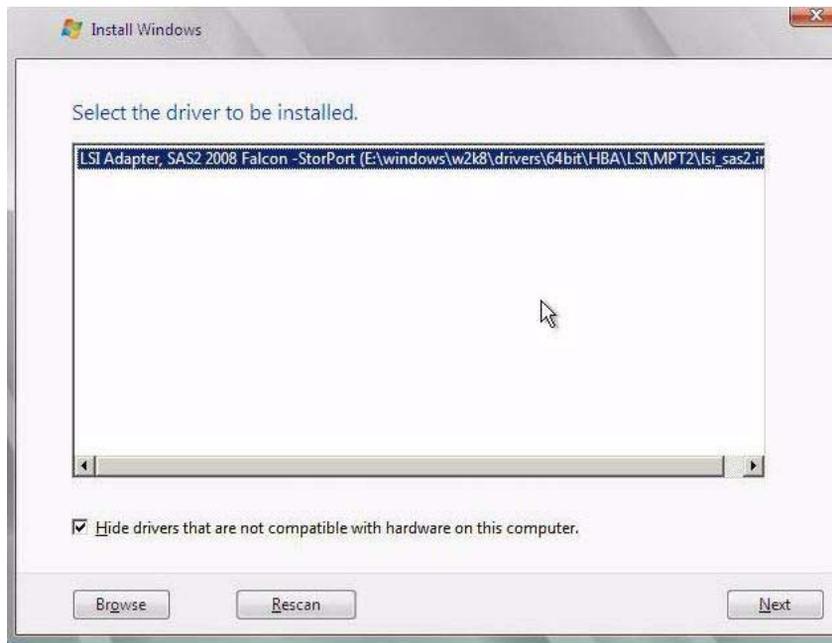
- c. In the Browse for Folder dialog, select the appropriate driver, then click OK to load the driver.

The selected driver appears in the Select the Driver to Be Installed dialog.

For example:

- Two example dialogs follow showing the selected driver to be installed for the two SAS PCIe HBA options. Note that the SAS PCIe HBA drivers are required only for Windows Server 2008 SP2 installations.





- d. In the Select the Driver to Be Installed dialog, click Next to install the driver. The Where Do You Want to Install Windows dialog appears.

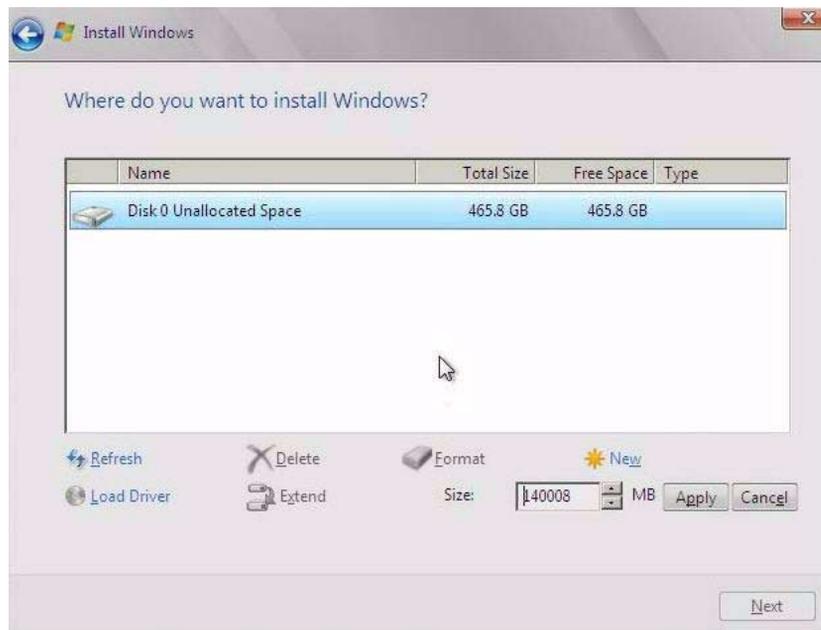


Note – If you previously removed or unmounted the Windows Server install media to load the drivers from the internal Oracle System Assistant USB flash drive, you might see the following message: **Windows Cannot be installed to this disk**. If this message appears, insert or re-mount the Windows install media, then click **Refresh**.

e. In the Where Do You Want to Install Windows dialog, do one of following:

- Select the storage target listed and click **Next** to install the operating system, then proceed to [Step 12](#).
- or -
- If any partitions exist on your target disk, it is recommended that you allow setup to create the appropriate partitions. To delete pre-existing partitions, proceed to [Step 11](#).

11. (Partition Drive, advanced) In the lower portion of the Where Do You Want to Install Windows dialog, do the following:



a. Click **Delete to delete the selected storage target existing partition configuration.**

A confirmation window appears.

b. Click **OK to confirm the partition deletion.**

c. If any additional partitions exist on the target disk, repeat [Step a](#) and [Step b](#).

- d. Click **Next** to install the operating system to the selected storage target.
12. The Windows installation program begins and will reboot the server multiple times during the installation process.
13. When the Windows installation is complete, Windows starts and prompts you to change the user password.
14. In the user password dialog, click **OK** and set up the initial user login account.

Note – Windows Server 2008 enforces stricter password schemes for user accounts. Password standards include restrictions on length, complexity, and history. For more details, click the [Accessibility](#) link at the account creation page.

After the initial user account is created, the Windows Server 2008 desktop appears.

15. Proceed to [“Post Installation Tasks for Windows Server”](#) on page 59 to perform the post installation tasks.

▼ Install Windows Server 2012 or 2012 R2 Using Local or Remote Media

This procedure describes how to boot the Microsoft Windows Server 2012 or Windows Server 2012 R2 operating system from local or remote media. It assumes that you are booting the Windows installation media from one of the following sources:

- Windows Server 2012 or Windows Server 2012 R2 CD or DVD
- Windows Server 2012 or Windows Server 2012 R2 ISO image

Note – The Windows Server 2012 or Windows Server 2012 R2 ISO image can be used for remote installation or for creating an installation CD or DVD.

Note – If you are booting the installation media from a PXE environment, refer to [“Install Windows Server 2008 \(SP2 or R2 SP1\) or Windows Server 2012 Using PXE Network Boot”](#) on page 54 for instructions.

1. **Ensure that the installation media is available to boot.**
 - **For Distribution CD/DVD.** Insert the Windows 2012 Distribution media (CD labeled number 1 or the single DVD) into the local or remote CD/DVD-ROM drive.

- **For ISO image.** Ensure that the ISO image is available and that the Oracle ILOM Remote Console application is aware of the ISO image location.

For additional information about how to set up the installation media, see [“Selecting the Boot Media Option” on page 6.](#)

2. Reset the server.

For example:

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

The BIOS screen appears.



Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Watch carefully for these messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

3. In the BIOS screen, press F8 to specify a temporary boot device for the Windows installation.

The Please Select Boot Device menu appears. The screen that appears will be different depending on whether you have BIOS configured for Legacy mode or UEFI mode.

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

```
Please select boot device:

SATA:HDD:P4: DV-W28SS-V
SAS:PCIE1:Bus 00-1212BED9 HITACHI H10606
USB:USBIN:ORACLE SSM PMAP
SAS:PCIE1:Bus 00-120F06A5 HITACHI H10603
USB:VIRTUAL:AMI Virtual CDR0M 1.00
USB:USB2:SAMSUNG CDRW/DVD SM-352FT950
PXE:NET0:IBA XE Slot 4000 v2181
PXE:NET1:IBA XE Slot 4001 v2181
PXE:NET2:IBA XE Slot 8800 v2181
PXE:NET3:IBA XE Slot 8801 v2181
Enter Setup

↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```

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

```
Please select boot device:

[UEFI]USB:USB2:USB USB CD/DVD Drive
[UEFI]USB:VIRTUAL:USB USB CD/DVD Drive
[UEFI]SATA:HDD:DV-W28SS-V
[UEFI]USB:USBIN:USB USB Hard Drive
[UEFI]PXE:NET0:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]PXE:NET1:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]PXE:NET2:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]PXE:NET3:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]Built-in EFI Shell
Enter Setup

↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```

Note – The boot device menu that appears in your installation might differ depending on the type of disk controller installed in your server.

4. In the Please Select Boot Device menu, select the menu item according to the Windows media installation method and BIOS mode you elected to use, then press Enter.

For example:

- If you elected to use the Windows local delivery method, select `SATA:HDD:P4 DV-W28SS-V` from the Legacy BIOS screen or `[UEFI]USB2:USB USB CD/DVR Drive` from the UEFI BIOS screen.

- If you elected to use the Oracle ILOM Remote Console delivery method, select `USB:VIRTUAL:AMI VIRTUAL CDROM 1.00` from the Legacy BIOS screen or `[UEFI]USB:VIRTUAL:USB USB CD/DVD Drive` from the UEFI BIOS screen.

5. If prompted with Press any key to boot from CD, press any key.

The Windows installation wizard starts and the Loading files... screen appears.



The Windows installation wizard continues until the Language Localization dialog appears.



6. Select your language and other preferences, then click `Next` to continue.

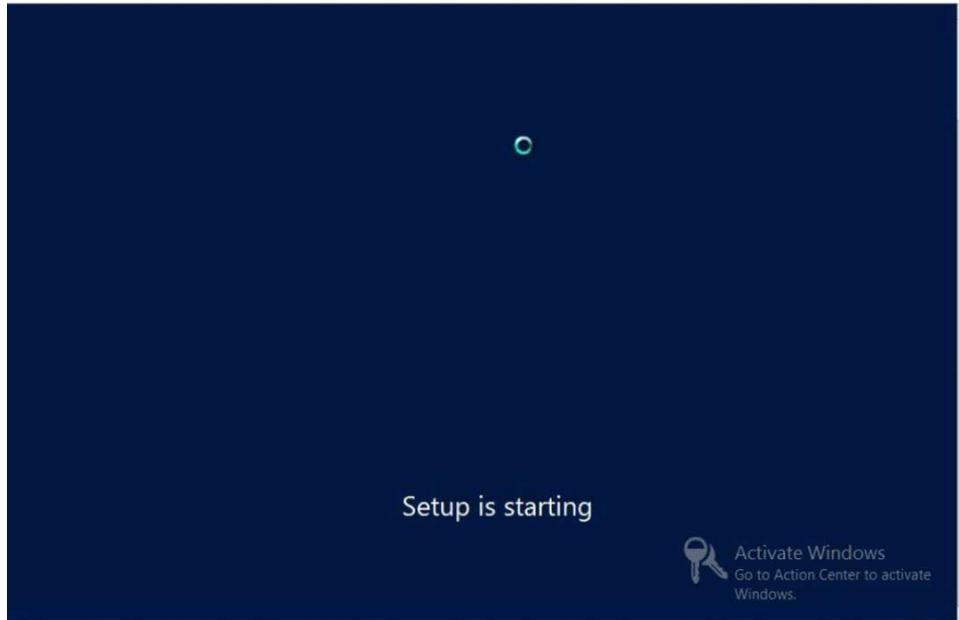
The Install Now screen appears.

Note – The Install Now screen allows you to continue the installation or access an optional Repair menu (see lower left of the screen) for troubleshooting.

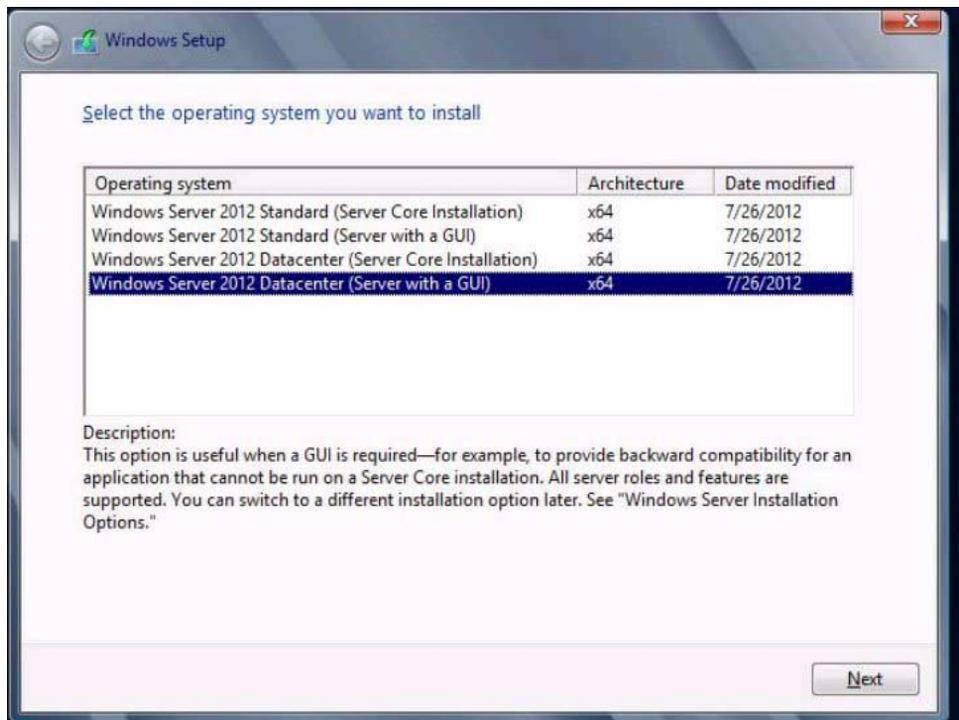


7. Click Install now.

The Setup Is Starting screen appears.



Then the Select Operating System dialog appears.

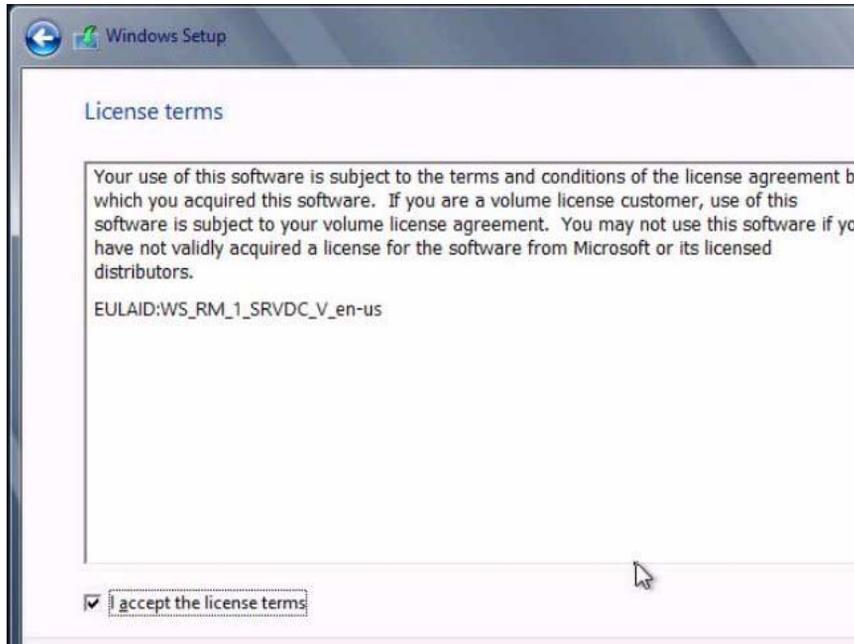


- 8. In the Select Operating System dialog, select the desired operating system, then click Next to continue.**

For most installs, select Windows Server 2012 Datacenter (Server with GUI) at the bottom of the list.

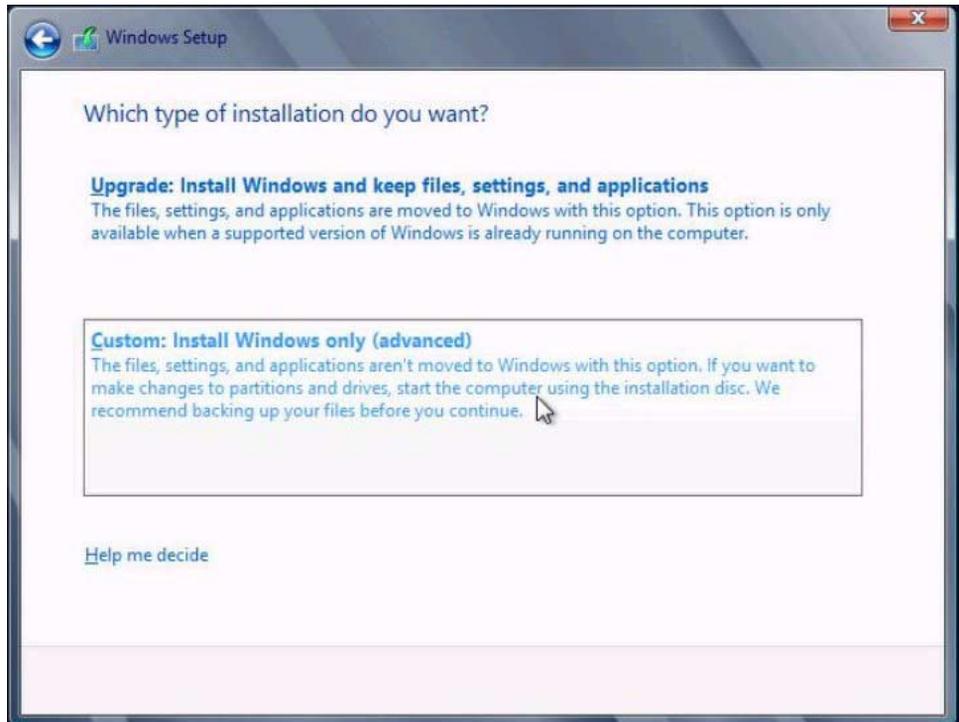
For more information on the different types of Windows operating systems, see the Windows 2012 or Windows Server 2012 R2 documentation at <http://technet.microsoft.com/en-us/windowsserver/default.aspx>.

The License Terms screen appears.

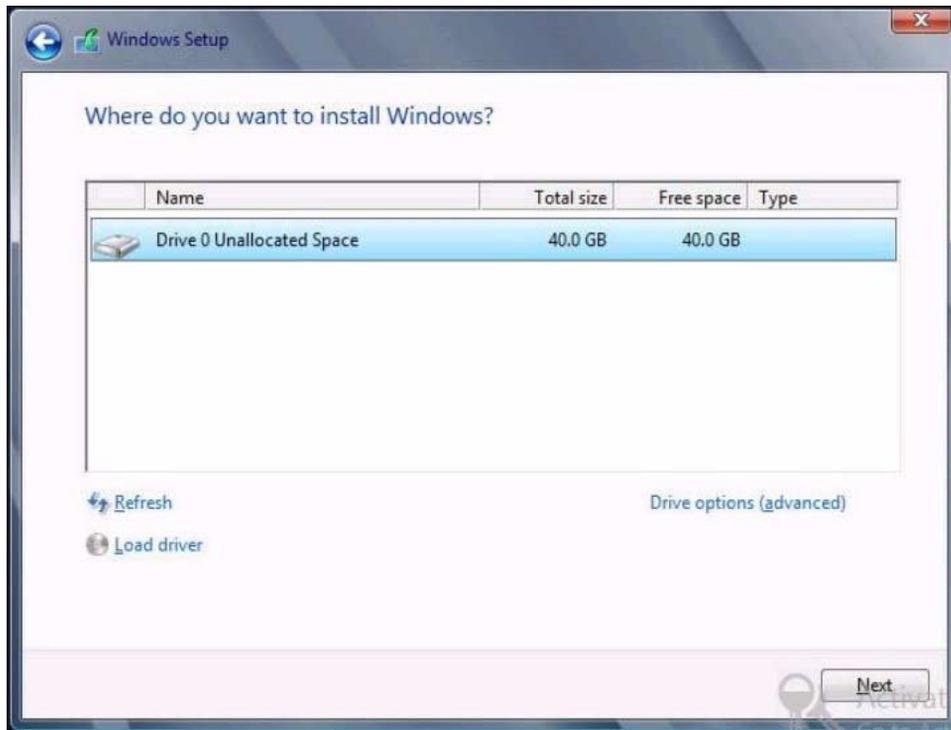


- 9. In the License Terms screen, check the I accept the license terms box, then click Next to continue.**

The Which Type of Installation Do You Want dialog appears.

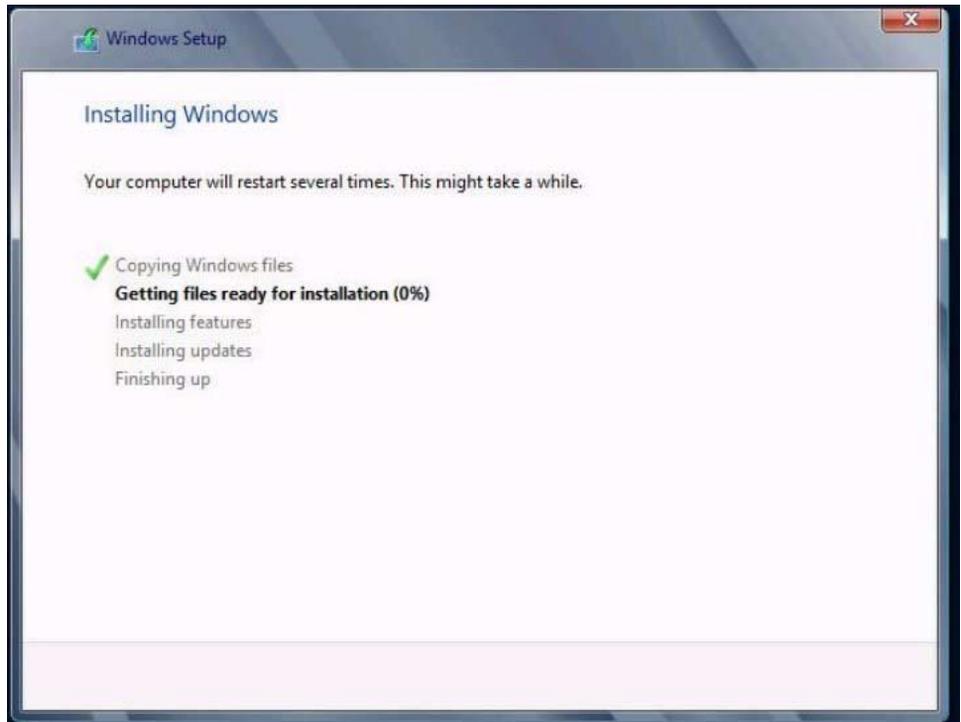


10. For all new installations, in the Which Type of Installation Do You Want dialog, click Custom: Install Windows only (advanced)
The Where Do You Want to Install Windows dialog appears.

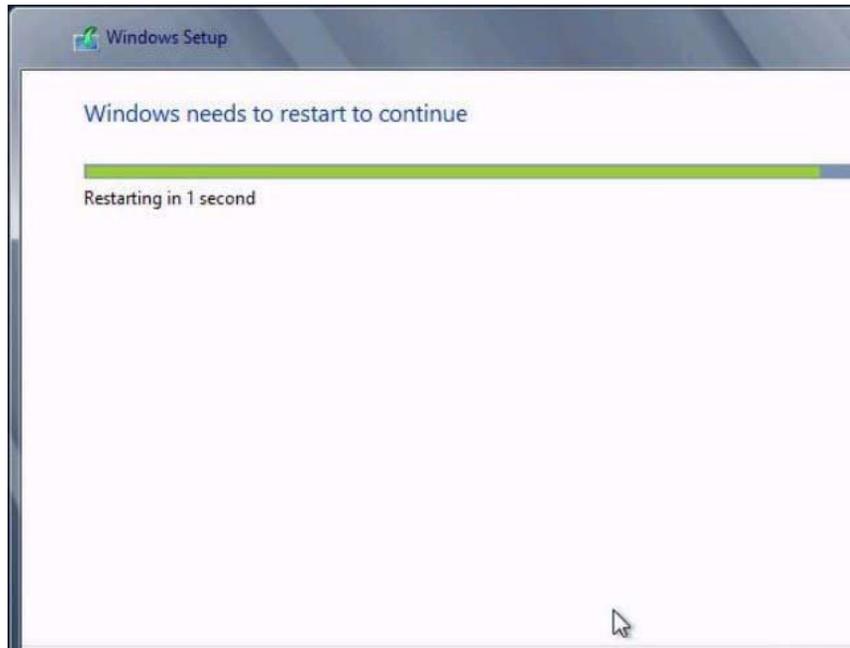


11. Select (highlight) the disk to which you want to install Windows, then click Next.

The Installing Windows screen appears.

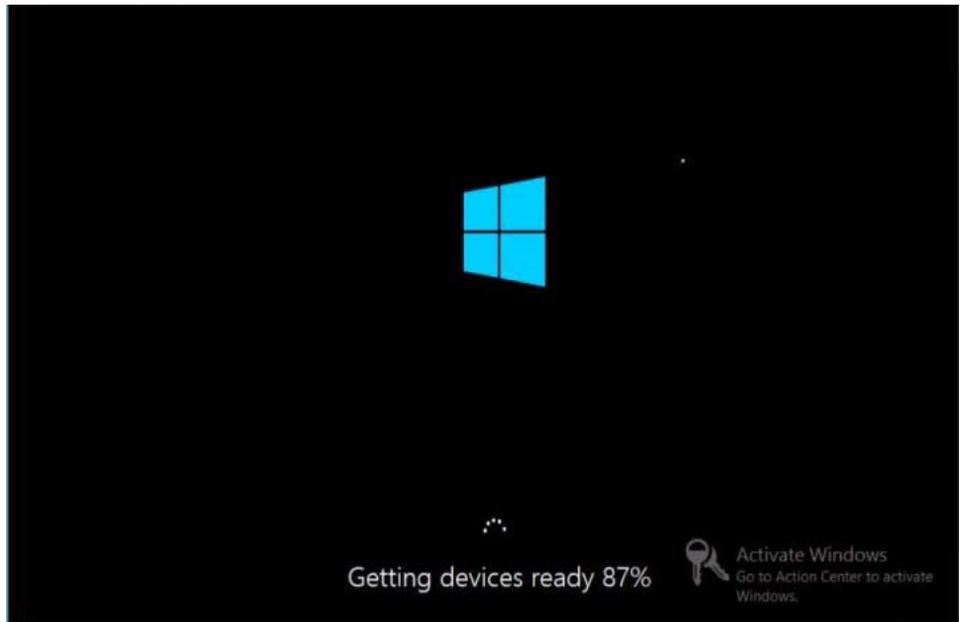


The setup and installation process begins and files are copied to the target. The Windows Needs to Restart to Continue screen appears.

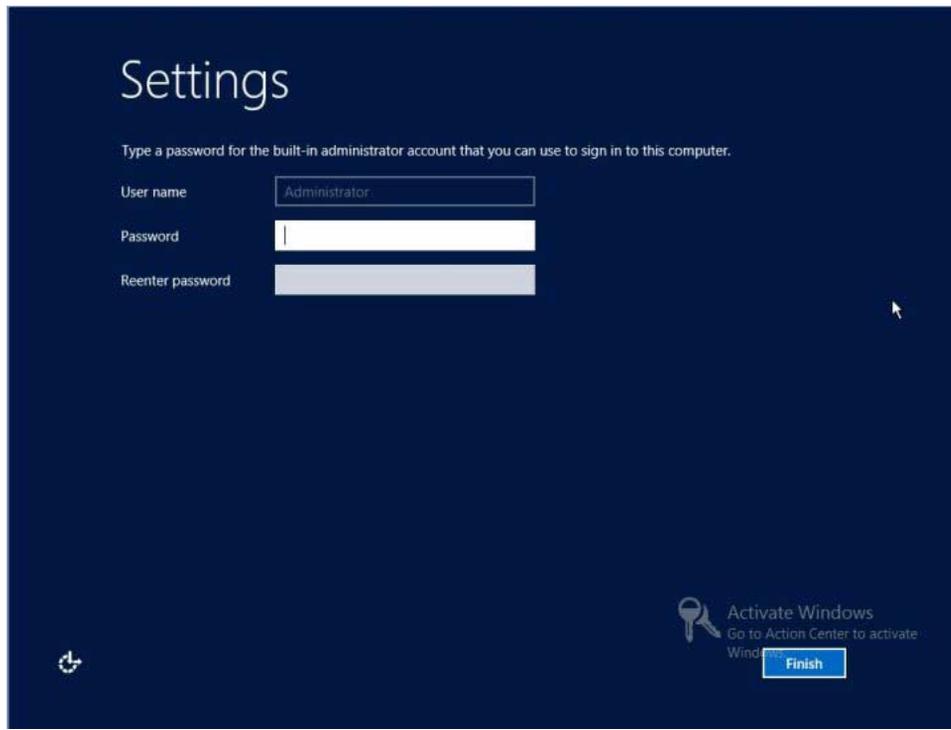


The system reboots.

12. After the system reboots, the Getting Devices Ready screen appears and the Windows Installation Wizard configures the device settings.



After the devices are configured, the system reboots again and the Settings screen appears.



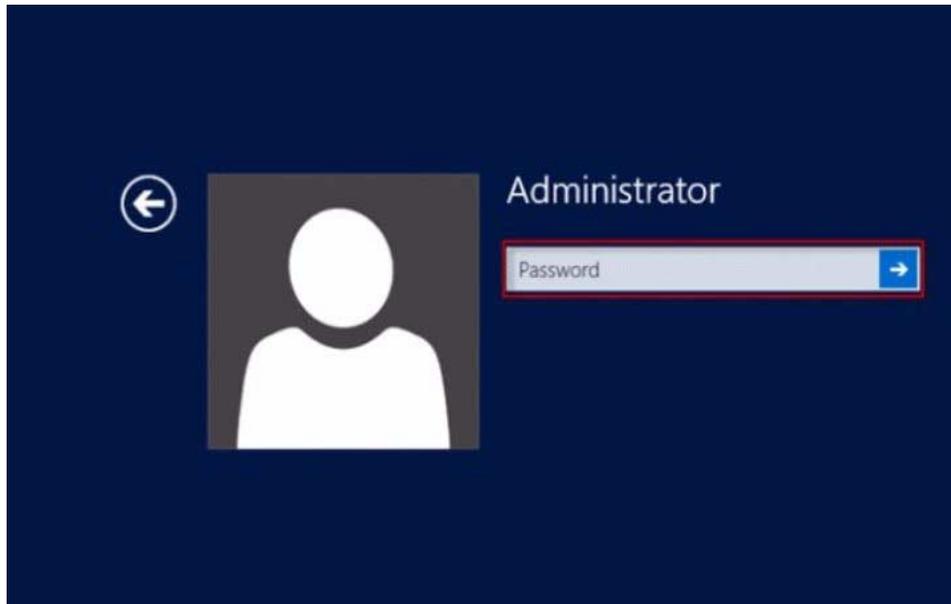
13. Enter the Administrator user name and password, then click Finish.

The Finalizing Your Settings screen appears.

This screen indicates that Windows has been installed.



14. After the installation completes, type **Ctrl+Alt+Delete** to log in.
The Administrator log in screen appears.



15. Enter the Administrator password, then click the arrow to log in.

The Windows Server 2012 desktop appears.

This completes the installation.

16. Proceed to “[Post Installation Tasks for Windows Server](#)” on page 59 and perform the post installation tasks.

▼ Install Windows Server 2008 (SP2 or R2 SP1) or Windows Server 2012 Using PXE Network Boot

This section explains the initial information you will need and provides the instructions you need to follow to install the Windows Server 2008 (SP2 or R2 SP1), Windows Server 2012 or Windows Server 2012 R2 operating system over an established PXE-based network using a customer-provided Windows Imaging Format (WIM) image.

Note that the procedure presented in this section documents the initial steps to install Windows Server over the network using a Windows Deployment Services (WDS). Specifically, it explains the steps for selecting the server PXE network interface card that will communicate with your WDS installation server. For further information about using WDS to install the Windows Server 2008 or Windows Server 2012, see Microsoft’s Windows Deployment Services documentation.

- To use PXE to boot the installation media over the network, you must:

- Configure the network (NFS, FTP, HTTP) server to export the installation tree.

Note – Configuring a DHCP server may not be necessary, because only one DHCP server is needed in the local network.

- Configure the files on the TFTP server that are necessary for PXE booting.
- Configure the server's MAC network port address to boot from the PXE configuration.
- Configure Dynamic Host Configuration Protocol (DHCP).
- To use WDS to perform the installation, you must:
 - Add the required system device drivers to the `install.wim` image and, if necessary, the `boot.wim` image.

For instructions for adding drivers to the WIM installation image(s), see the Microsoft Windows Deployment Services documentation.

- Obtain the WIM Administrator password.

1. Ensure that the PXE network environment is properly set up and the Windows installation media is available for PXE boot.

2. Reset the server.

For example, to reset the server:

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

The BIOS screen appears.



Note – The next events occur very quickly; therefore, focused attention is needed for the following steps. Watch carefully for these messages as they appear on the screen for a brief time. You might want to enlarge the size of your screen to eliminate scroll bars.

3. In the BIOS screen, press F8 to specify a temporary boot device.

The Please Select Boot Device menu appears. The screen that appears will be different depending on whether you have BIOS configured for Legacy mode or UEFI mode.

- For Legacy BIOS, the following screen appears:

```
Please select boot device:
SATA:HDD:P4: DV-W28SS-V
SAS:PCIE1:Bus 00-1212BED9 HITACHI H10606
USB:USBIN:ORACLE SSM PMAP
SAS:PCIE1:Bus 00-120F06A5 HITACHI H10603
USB:VIRTUAL:AMI Virtual CDROM 1.00
USB:USB2:SAMSUNG CDRW/DVD SM-352FT950
PXE:NET0:IBA XE Slot 4000 v2181
PXE:NET1:IBA XE Slot 4001 v2181
PXE:NET2:IBA XE Slot 8800 v2181
PXE:NET3:IBA XE Slot 8801 v2181
Enter Setup

↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```

- For UEFI BIOS, the following screen appears:

```
Please select boot device:
[UEFI]USB:USB2:USB USB CD/DVD Drive
[UEFI]USB:VIRTUAL:USB USB CD/DVD Drive
[UEFI]SATA:HDD:DV-W28SS-V
[UEFI]USB:USBIN:USB USB Hard Drive
[UEFI]PXE:NET0:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]PXE:NET1:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]PXE:NET2:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]PXE:NET3:Intel(R) Ethernet Controller 10 Gigabit X540-AT2
[UEFI]Built-in EFI Shell
Enter Setup

↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```

Note – The boot device menu that appears in your installation might differ depending on the type of disk controller installed in your server.

4. In the Boot Device menu, select the network port that is configured to communicate with your PXE network install server.

The network bootloader loads and a boot prompt appears. After a few seconds the installation kernel will begin to load.

5. To complete the installation, do one of the following depending on which version of Windows Server you are installing:

- For Windows Server 2008, refer to [Step 5 of “Install Windows Server 2008 \(SP2 or R2 SP1\) Using Local or Remote Media”](#) on page 29.
- For Windows Server 2012, refer to [Step 5 of “Install Windows Server 2012 or 2012 R2 Using Local or Remote Media”](#) on page 39.

Post Installation Tasks for Windows Server

Note – The procedures in this section assume that you installed the Microsoft Windows Server operating system using the manual procedure, that is, you did not use Oracle System Assistant. If you used Oracle System Assistant to install your operating system, you can skip this section because Oracle System Assistant performed these post installation tasks for you.

After completing a manual installation of the Windows Server 2008 operating system (SP2 or R2 SP1), Windows Server 2012 or Windows Server 2012 R2 and rebooting the server, you should review the following post installation tasks and, if necessary, perform the tasks that are applicable to your server.

description	Link
About supplemental software.	“Supplemental Software Component Options” on page 59
Install device drivers and supplemental software.	“Installing Device Drivers and Supplemental Software” on page 60
Configure NIC teaming.	“Configuring Intel NIC Teaming” on page 62

Supplemental Software Component Options

Oracle System Assistant makes several Supplemental Software components available for the server. You have two options for installation:

- Typical: Installs all Supplemental Software applicable for your server.
- Custom: Installs only the Supplement Software selected for installation.

The following table identifies the optional Supplemental Software components that Oracle System Assistant makes available for your server.

TABLE: Optional Supplemental Software

Available Supplemental Software Components	LSI Integrated RAID Controller
<p>LSI MegaRAID Storage Manager Enables you to configure, monitor, and maintain RAID on the SAS internal RAID host bus adapter (HBA).</p>	Typical
<p>Oracle Hardware Management Pack The Oracle Hardware Management Pack provides tools to help you manage and configure your server. It enables you to:</p> <ul style="list-style-type: none"> • Use a management agent at the operating system level to enable in-band monitoring of your server hardware over Simple Network Management Protocol (SNMP). You can use this information to integrate your server into your data center management infrastructure. • Use a management agent to enable in-band monitoring of your server’s storage devices, including RAID arrays. You can view this information from the Oracle Integrated Lights Out Manager (ILOM) web interface or command-line interface (CLI). • Use a BIOS configuration tool, which runs on the host operating system and configures the host BIOS CMOS settings, host boot order, and some service processor (SP) settings. • Use IPMItool to access the server’s service processor via the IPMI protocol and perform management tasks. 	Not typical
<p>Intel NIC Teaming Enables the network interfaces on a server to be grouped together into a team of physical ports called a virtual interface.</p>	Typical

Installing Device Drivers and Supplemental Software

The InstallPack application provides an installation wizard for installing platform-specific device drivers and supplemental software. This application is included in Oracle System Assistant and is also available for download from My Oracle Support. For download instructions, see the [Sun Server X4-2L Installation Guide, “Getting Server Firmware and Software Updates”](#) on page 31.

If your server is equipped with Oracle System Assistant and you used it to install the operating system, then the required platform-specific device drivers and supplemental software are installed for you. However, if your server is not equipped

with Oracle System Assistant, then you can use InstallPack, which is included in the OS (operating system) Pack, to install the platform-specific device drivers and supplemental software. For instructions on obtaining the OS Pack, see the *Sun Server X4-2L Installation Guide*, “Getting Server Firmware and Software Updates” on page 31.

The following procedure describes how to use InstallPack to install the device drivers and supplemental software.

- “Install Server-Specific Device Drivers and Supplemental Software” on page 61

Related Information

- “Supplemental Software Component Options” on page 59

▼ Install Server-Specific Device Drivers and Supplemental Software

1. **Click on the Install Pack wizard executable:** `InstallPack.hta`.

The Install Pack dialog appears.



2. In the Install Pack dialog, click `Next` to accept the default installable items.

Note – You should always accept the “default installable items” to ensure that the most recent versions of the drivers are installed.

The Install Pack notice dialog appears.

- 3. Follow the on-screen prompts to complete the installation of the device drivers and supplemental software.**

Configuring Intel NIC Teaming

For more information on setting up Intel NIC teaming for your environment, refer to the Intel Connectivity web page on Advanced Networking Services Teaming at:

<http://www.intel.com/support/network/sb/CS-009747.htm>

Additionally, you can download the complete set of Intel Network Connections User Guides for your server’s network adapters at:

<http://www.intel.com/support/network/sb/cs-009715.htm>

Index

B

BIOS

- procedure for editing and viewing settings, 18
- setting up
 - Windows OS, 17
- switching between Legacy BIOS and UEFI
 - BIOS, 20
- verification of factory defaults settings
 - Windows OS, 18

boot media

- requirements
 - Windows OS, 7

boot media option

- selecting
 - Windows OS, 6

C

configuration

- Intel NIC teaming
 - Windows OS, 62
- RAID
 - Windows OS, 22

console display

- options
 - Windows OS, 5

console display option

- selecting
 - Windows OS, 4

D

device drivers

- loading instructions
 - Windows OS, 4
- SAS PCIe HBAs requiring drivers
 - , 4

H

Hardware Management Pack

- capabilities
 - Windows OS, 60

I

install boot media, 6

Install Pack

- installing supplemental software
 - Windows OS, 60

installation

- loading drivers
 - Windows OS, 34
- manual
 - Windows OS, 12

options

- Windows OS, 10
- Oracle Enterprise Manager Ops Center
 - Windows OS, 10

Oracle System Assistant

- Windows OS, 12

selecting installation type

- Windows OS, 33, 46

selecting language

- Windows OS, 31, 42

selecting specific operating system

- Windows OS, 32, 43

selecting where you want to install

- Windows OS, 33

single server

- Windows OS, 11

task map

- Windows OS, 2

using local or remote media

- , 29, 39

using media

- Windows OS, 28

- using Oracle System Assistant
 - Windows OS, 24
- using PXE network boot
 - Windows OS, 54
- installation methods
 - boot media options, 6
- installation target
 - options
 - Windows OS, 9
 - setting up Fibre Channel storage area network (SAN) device
 - Windows OS, 10
 - setting up local storage drive
 - Windows OS, 10
- installation target option
 - selecting
 - Windows OS, 9
- installing operating system
 - overview, 1
 - supported operating systems, 3
- Intel NIC teaming configuration
 - post installation
 - , 62

L

- local boot media
 - requirements
 - Windows OS, 7
 - setting up, 7
- local console
 - setting up
 - Windows OS, 5
- LSI MegaRAID Storage Manager
 - Windows OS, 60

O

- Oracle System Assistant
 - install OS task
 - Windows OS, 14
 - obtaining, 14
 - Windows OS, 14
 - overview
 - Windows OS, 13
 - tasks
 - Windows OS, 14
- overview of operating system installation, 1

P

- post installation
 - configuring Intel NIC teaming
 - Windows OS, 62
 - installing device drivers
 - Windows OS, 60
 - installing supplemental software
 - Windows OS, 59, 60
 - tasks overview
 - Windows OS, 59
- post installation tasks
 - configuring Intel NIC teaming, 62
 - install device drivers, 60
- PXE installation
 - Windows OS, 55

R

- RAID
 - configuring
 - Windows OS, 22
- remote boot media
 - setting up
 - Windows OS, 8
- remote console
 - setting up
 - Windows OS, 6

S

- server, resetting power, 55
- supplemental software
 - Hardware Management Pack
 - Windows OS, 60
 - installing
 - Windows OS, 60
 - LSI MegaRAID Storage Manager
 - Windows OS, 60
- supplemental software options
 - Windows OS, 59
- supported operating systems, 3
 - Windows OS, 3

T

- task map
 - installation
 - Windows OS, 2

W

windows deployment services

Windows OS, 12

Windows OS

supported operating systems, 3

Windows Server 2008

media installation, 25, 29, 39

PXE network installation

, 54

