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How to Install the Oracle® Solaris 10 Operating System on x86 Systems

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Introduction

This white paper instructs users unfamiliar with the Oracle® Solaris 10 operating system installation on how to install Oracle Solaris 10 on an Oracle supported x86 system (including the family of 32-bit x86 systems as well as 64-bit AMD64™ and Intel® 64 systems). It is assumed that you are installing Oracle Solaris 10 5/09; all features described in this guide may not be available in earlier updates. This step-by-step guide, complete with screen shots, takes users through the installation process in 22 simple steps. Novice users should be able to complete an Oracle Solaris 5/09 operating system installation on a standalone x86 system using the instructions in this guide.

Installation Assumptions

This guide makes several assumptions, including

- The system is an x86 system.
- The system is compatible with the Oracle Solaris 10 5/09 OS and is listed on the Oracle Solaris Hardware Compatibility List (HCL).
- The system has a graphical interface.

While this guide is most appropriate for a standalone system that does not connect to a network or connects to a network with automatic configuration, it can be used to install a system with a fixed IP address if the network configuration information is available.

If problems arise during the installation process that are not discussed in this guide, refer to the *Oracle Solaris 10 OS Installation Guide: Basic Installations* for more information. This guide is part of the Oracle Solaris 10 Release and Installation Collection located on the Sun Web site at docs.sun.com/app/docs/prod/solaris.10.

Check the Hardware Compatibility List

The first step before the installation process is to verify that the system to be installed is on the hardware compatibility list located at: sun.com/bigadmin/hcl/.

Note: The term x86 refers to the family of 32-bit x86-compatible architecture and 64-bit AMD64 and Intel 64.

Basic System Requirements

Verify the computer system meets the following requirements. Note that the requirements below are recommended minimums. While it is possible to install Oracle Solaris 10 on a system with less disk capacity and CPU speed, it is not recommended.

- Minimum 1,024 MB of physical RAM
- Minimum 10 GB of available hard drive space
- Minimum 400 MHz CPU speed
- DVD or CD-ROM drive
- Attached monitor or integrated display

For more information on Oracle Solaris system requirements, visit www.oracle.com/solaris. For a catalog of the more than 5000 Oracle Solaris-ready applications and solutions, visit sun.com/bigadmin/apps.

Obtaining Media for the x86 Platform

The Oracle Solaris 10 5/09 OS release is available via download from the Oracle Web site.

1. Go to oracle.com/solaris/ and click on the Oracle Solaris logo if you want to obtain information about the Oracle Solaris 10 5/09 OS; if not, proceed to step 2.
2. Go to oracle.com/solaris/get to begin the download process.
3. Choose Oracle Solaris 10 on the list of available downloads.
4. Click on the appropriate media format (Oracle Solaris for x86 systems).
5. Register at the Sun Download Center, if you have not already done so.
6. Answer the short questionnaire.
7. Read and accept the license agreement.
8. Download and burn the CDs or DVDs.

See the Oracle Solaris 10 FAQs located at oracle.com/solaris/get for guidance, instruction, and tips on downloading Oracle Solaris 10 or burning installation CD and DVD media.

Power Up and Media Boot

If you do not want to substitute your current operating system and instead you want to run Oracle Solaris as a guest OS or virtual machine, please download and install Oracle VM VirtualBox for free from virtualbox.org/.

The following procedure can be used to install Oracle Solaris 10 5/09 on a new or used system.

1. Power up the system and insert the first installation CD or DVD into the drive tray.
2. Restart the system.
3. If the system appears to be booting from the hard disk and the Oracle Solaris OS installer does not start, power cycle the system (power cycle is shutting down the power on the system and then restarting the system). As the system begins to boot, enter setup mode. Typically, the system displays a message indicating which key to press (such as "Enter F2 to enter setup", although the key to press varies by manufacturer; the ESC and F12 keys are other common options.) If you miss the message, simply restart the system a couple of times until you are able to view it.

Once in setup mode, specify the boot device for the system. This example specifies the CD or DVD drive as the boot device. To do so, find the list that describes boot order and re-order as needed to ensure the CD or DVD drive appears first on the list. The system should boot from the CD or DVD drive to start the install process.



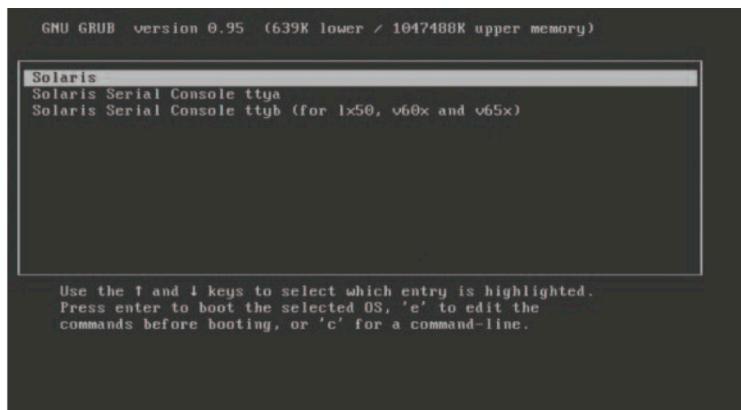
Installing the Oracle Solaris 10 5/09 Operating System

Identifying the Console

The next step in the installation process is to select the type of console for the hardware on which Oracle Solaris is being installed. Use the arrow keys to select the version of Oracle Solaris OS that matches the hardware configuration. For most x86 systems, use the default selection.

Press the ENTER key and boot the version of operating system selected. The highlighted entry boots in 60 seconds even if a key is not pressed.

Note: Prompts do not appear during the boot process. If a selection is not made, the screen times out and the system automatically boots the Oracle Solaris OS.



Selecting the Type of Installation

After the ENTER key is pressed or the counter times out, a series of dots will run on the screen and you will see the basic device configuration message along with a menu with six installation options.

```
SunOS Release 5.10 Version Generic_137138-08 32-bit
Copyright 1983-2008 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
NOTICE: MPO disabled because memory is interleaved

Configuring devices.
|
```

Before this new counter times out, select option 3 to install Oracle Solaris 10 5/09 from the beginning using the Oracle Solaris ZFS as the root file system. You can get more information on Oracle Solaris ZFS from <http://www.oracle.com/us/products/servers-storage/storage/storage-software/031857.htm>.

```
SunOS Release 5.10 Version Generic_137138-08 32-bit
Copyright 1983-2008 Sun Microsystems, Inc. All rights reserved.
Use is subject to license terms.
NOTICE: MPO disabled because memory is interleaved

Configuring devices.
|  

1. Solaris Interactive (default)
2. Custom JumpStart
3. Solaris Interactive Text (Desktop session)
4. Solaris Interactive Text (Console session)
   (Select option 3 or 4 to install a ZFS root file system)
5. Apply driver updates
6. Single user shell  

Enter the number of your choice.
Automatically continuing in 9 seconds
```

Note: If you don't want to use Oracle Solaris ZFS as your root file system, you can use option 1. Please refer to the previous version of this white paper.

Once option 3 is selected, you'll see the following screen with some information regarding your hardware. Keep in mind that the hardware information displayed (such as "nge0") may differ from the exact data displayed below and that each step can take up to a couple of minutes to complete.

```
NOTICE: MPO disabled because memory is interleaved

Configuring devices.
|  

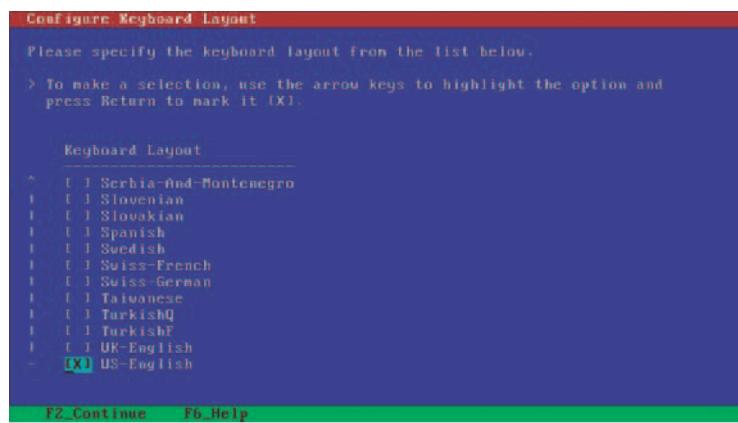
1. Solaris Interactive (default)
2. Custom JumpStart
3. Solaris Interactive Text (Desktop session)
4. Solaris Interactive Text (Console session)
   (Select option 3 or 4 to install a ZFS root file system)
5. Apply driver updates
6. Single user shell  

Enter the number of your choice.
Selected: 4  

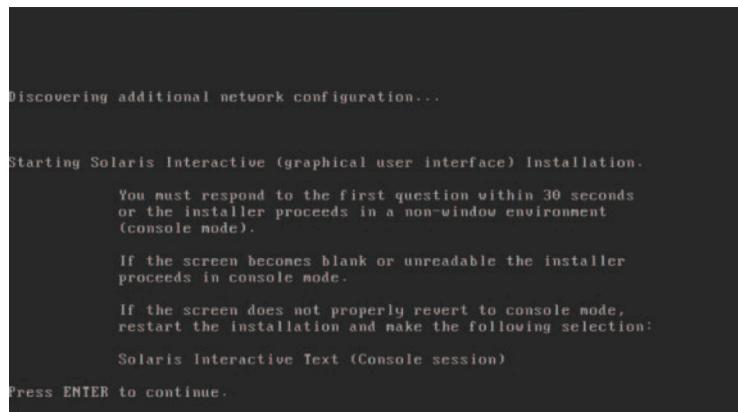
Solaris Interactive Text (Console session)  

Using install cd in /dev/dsk/c1t0d0p0
Using RPC Bootparams for network configuration information.
Attempting to configure interface e1000g0...
Skipped interface e1000g0
Reading ZFS config: done.
Setting up Java. Please wait...
```

After a few seconds, you are presented with the keyboard layout configuration in case you don't have a standard keyboard or if you have a localized keyboard. If you have a US keyboard, press the [F2] key; if not, select the right language using the arrow keys to move up or down, make your selection with the [space bar] and then press [F2] to continue.



Immediately, you'll see the following message. Press ENTER to continue.



System Configuration

A series of screens guides you through the Oracle Solaris configuration process. Note that the graphical screens require a mouse to be rolled over the window in order to answer questions posed throughout the configuration process.

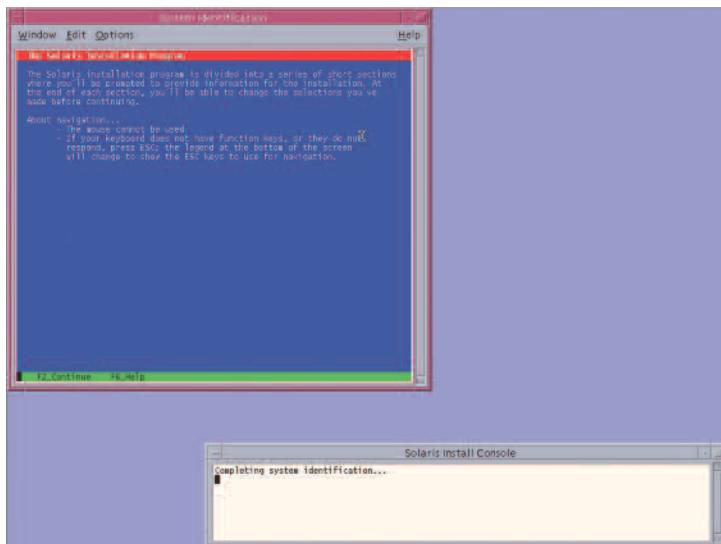
1. After you press ENTER, the system configuration process will start through a series of windows. Please roll the mouse over the window, click the mouse, and press ENTER to continue.



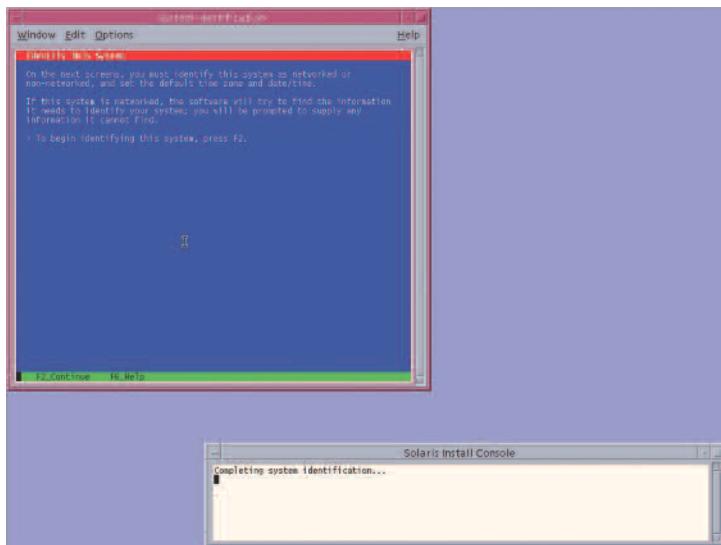
2. Select a language for the system.



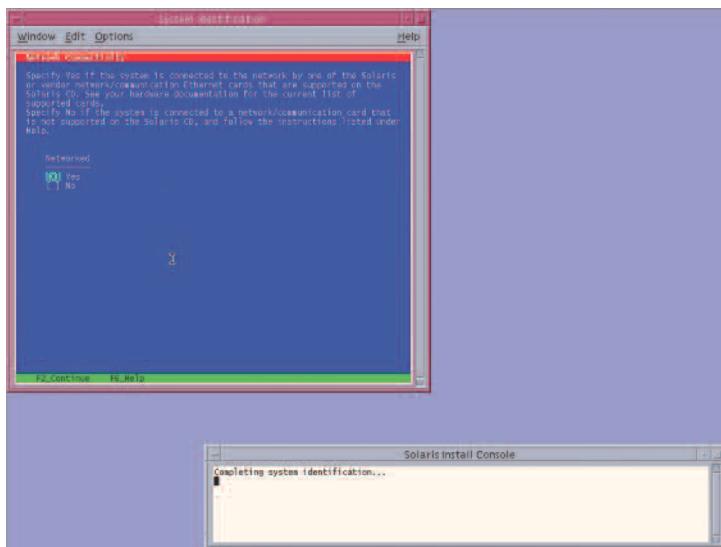
3. A new window, the Oracle Solaris Install Console, appears in the bottom-right corner. This window is used to display pertinent installation messages. Another window appears in which the Oracle Solaris OS installation questions should be answered. Press [F2] to continue.



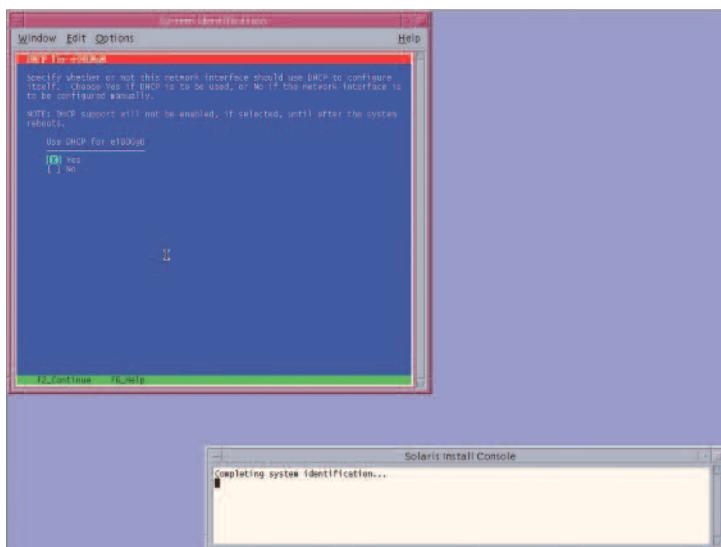
4. The system identification process begins. Press [F2] to continue.



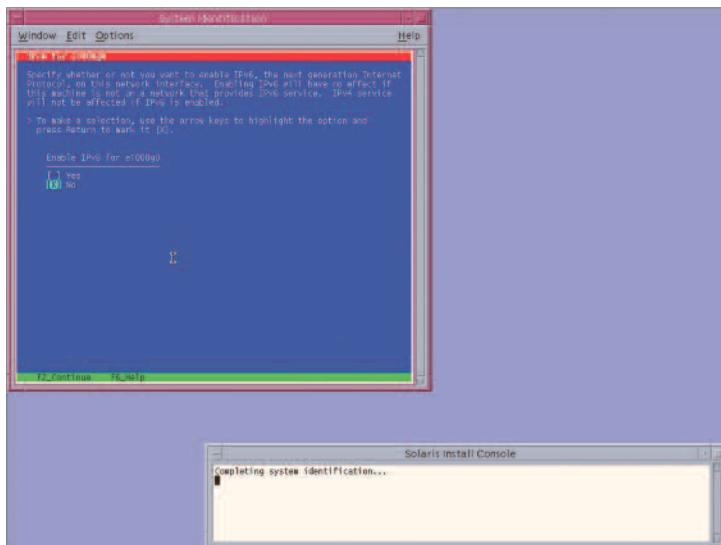
5. The Network Connectivity window appears. Use the default answer, (unless you don't have a network) and press [F2] to continue.



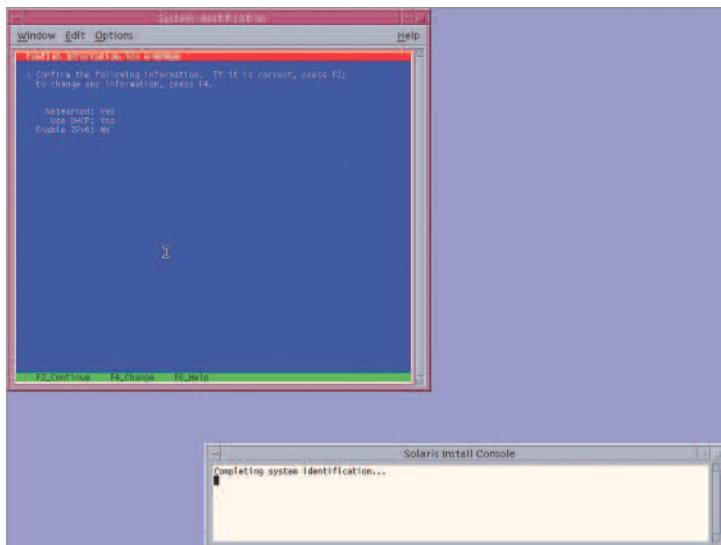
6. The DHCP selection appears. For most cases, just select DHCP for your network configuration using the arrow keys and the space bar to make the selection and then press [F2] to continue.



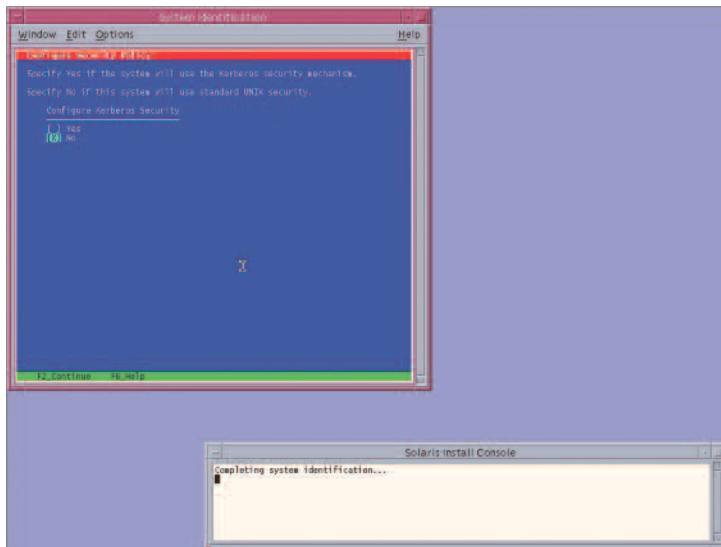
7. The IPv6 window appears. Just use the default and press [F2] to continue.



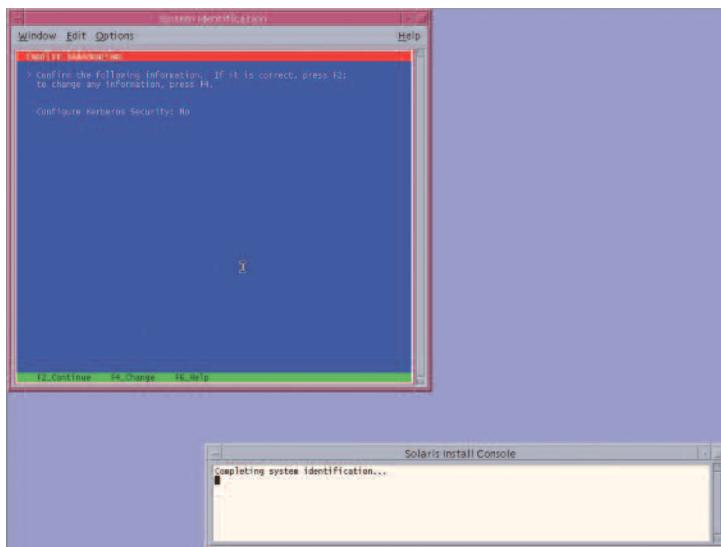
8. The Confirmation window appears. If you agree with your selections, press [F2] to continue; if not, press [F4] and the process will go back to step 5.



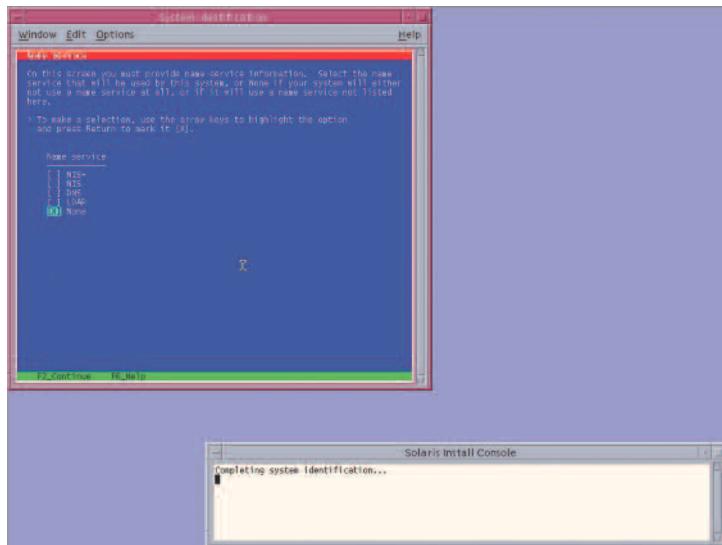
9. The Security Policy window appears. Use the default for No Kerberos configuration. Press [F2] to continue.



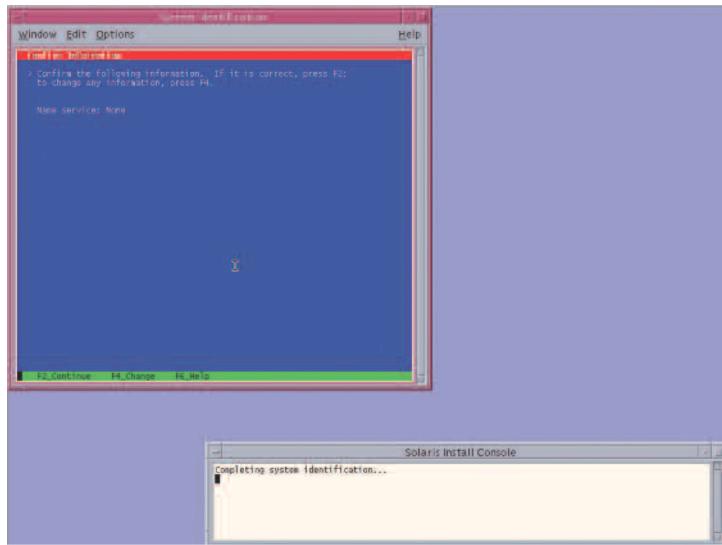
10. For confirmation of your policy selection, press [F2] and continue to the next screen.



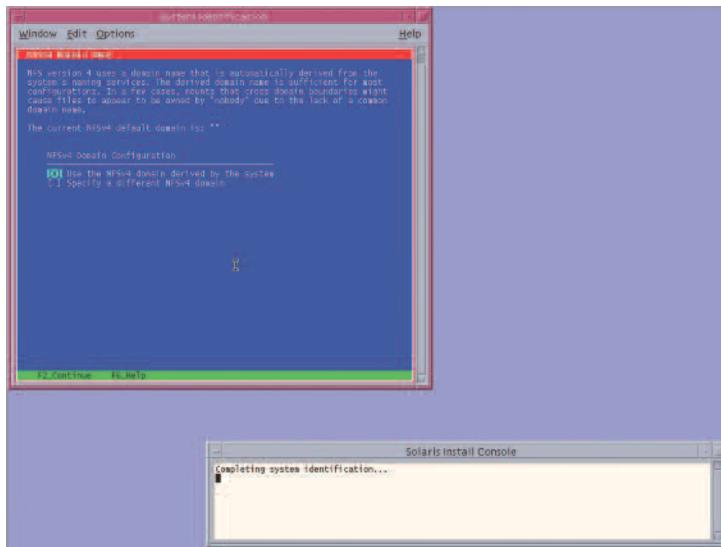
11. The Name Service window appears. Select NONE using the arrow keys and pressing the space bar to select, then press [F2] to continue.



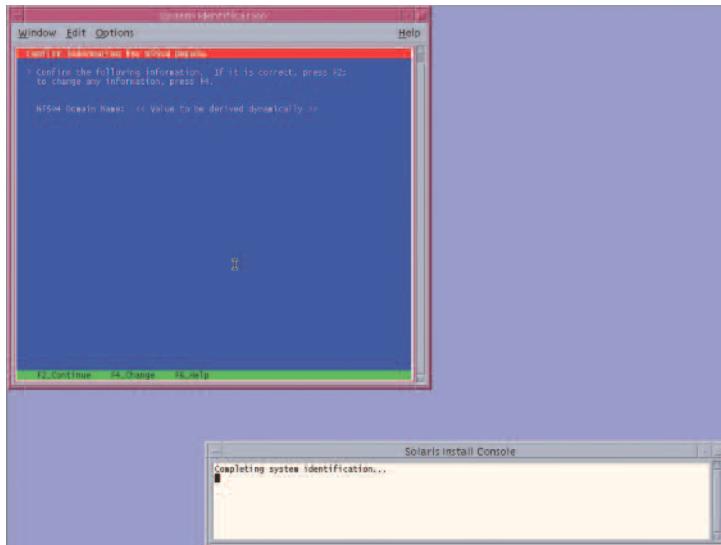
12. For confirmation of your selection, press [F2] and continue to the next screen.



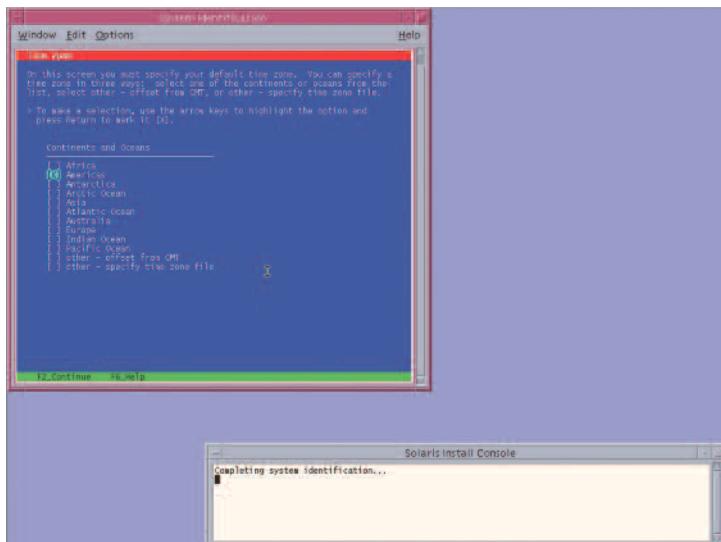
13. The NFSv4 domain name window appears. Let the system use the default option and press [F2] to continue.



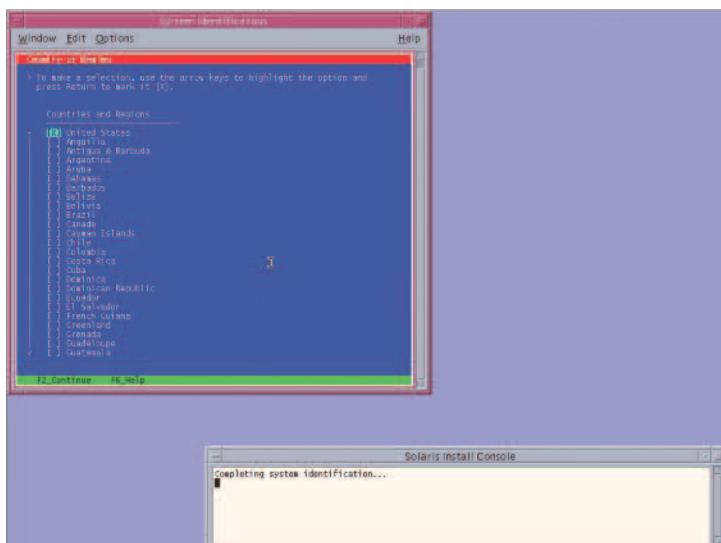
14. For confirmation of your selection, press [F2] to continue to the next screen.



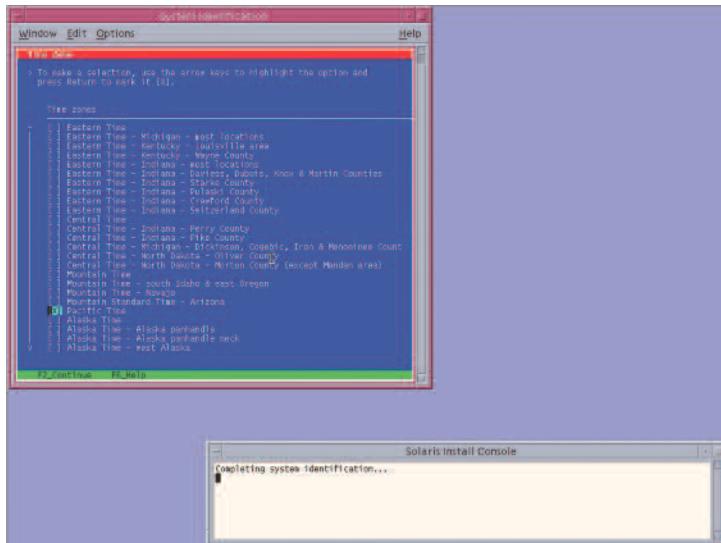
15. The Time Zone window appears. Next, set the time zone for the system. This example sets the Americas time zone. Use the arrow keys and the space bar to make the selection. Press [F2] to continue.



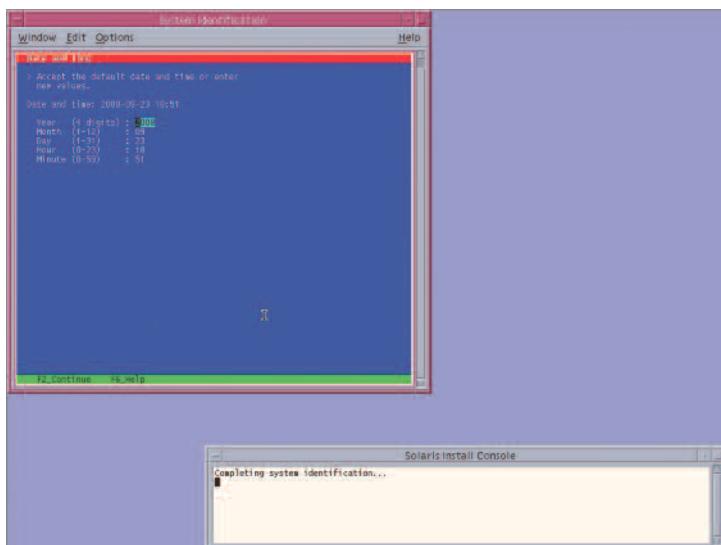
16. Time Zone cont'd. Set the United States Country & Region, then press [F2] to continue.



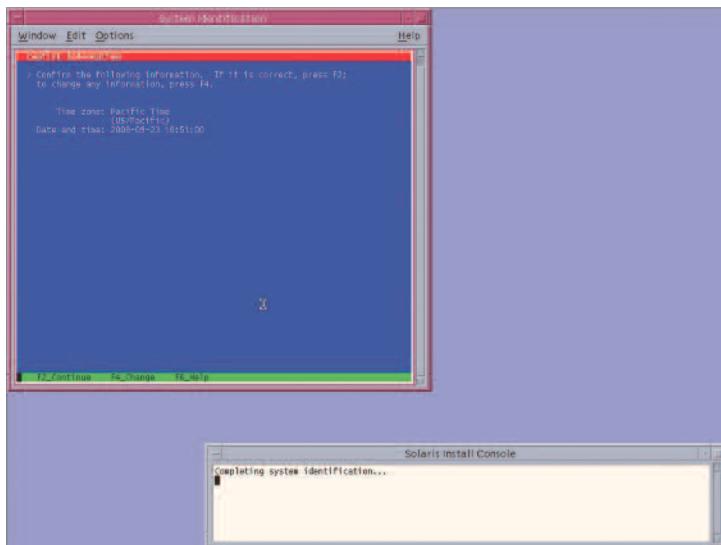
17. Time Zone cont'd. Set the Pacific Time. Press [F2] to continue.



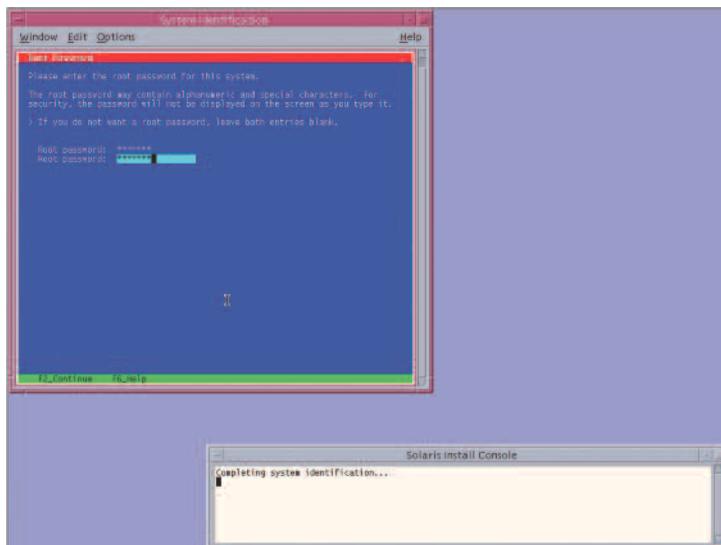
18. Set current date and time. Use arrow keys and keyboard to change the proposed date and time, then press [F2] to continue.



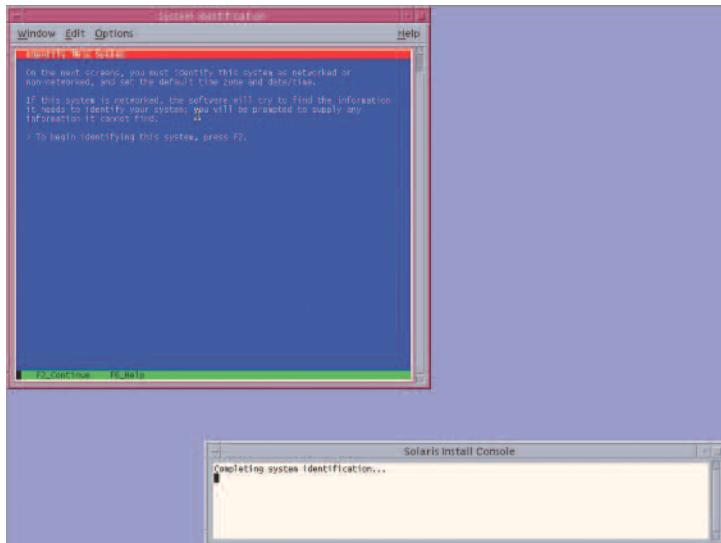
19. To confirm your selection, press [F2] to continue.



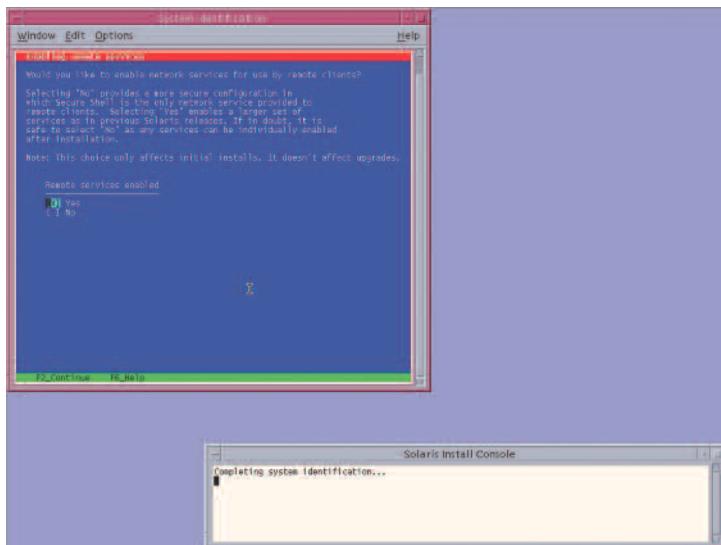
20. The Root Password window appears. Set the root password. Note the password typed remains invisible. Re-enter the password in the second box and press [F2] to continue.



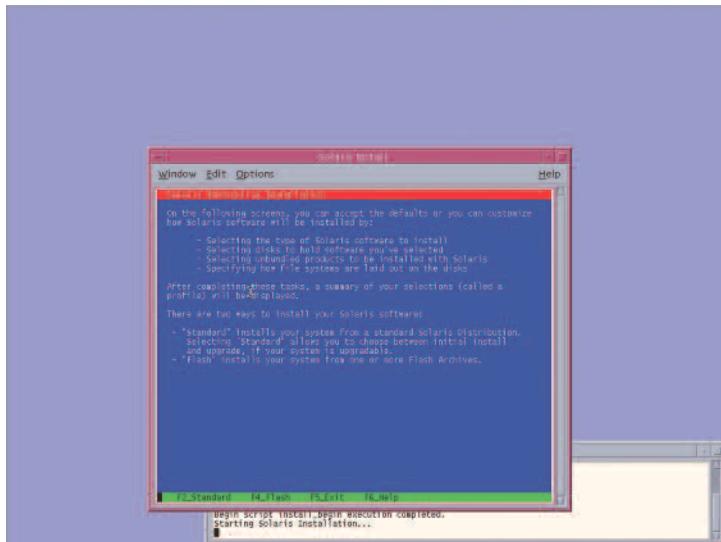
21. The Network Services window appears. Click [F2] to continue.



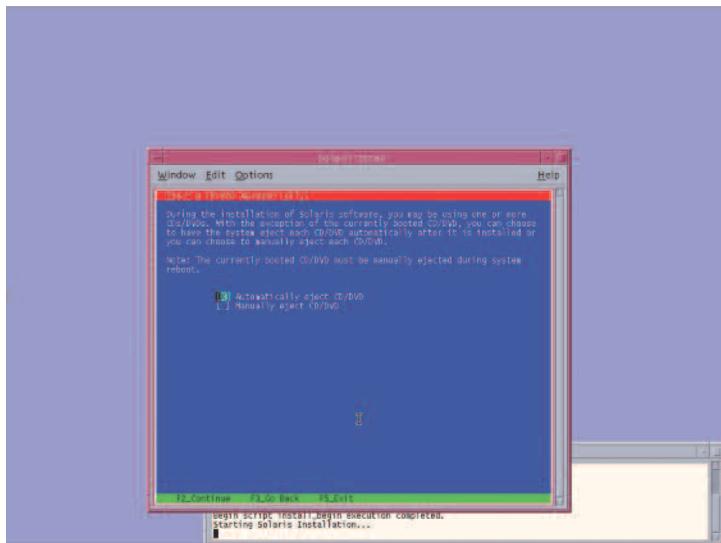
22. The Remote Services window appears. In this window, you can choose a “Secure by default” Oracle Solaris installation, but afterwards individual services should be enabled. If you are unsure of your type of installation, follow the default “Yes” to enable all remote services and press [F2] to continue.



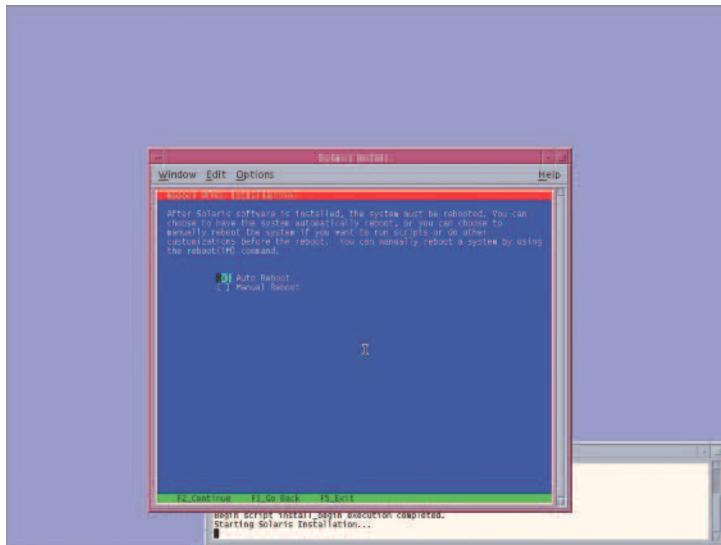
23. The Install Progress window appears. Wait for a few minutes while Oracle Solaris installs on your system. After the installation is completed, the system will reboot automatically and will start the Oracle Solaris OS. Remember that in some cases, you will have to eject the media manually.



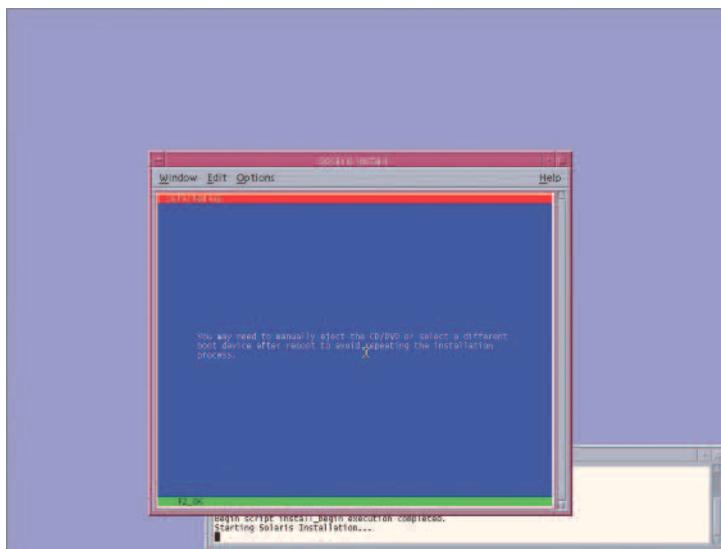
24. The Eject CD/DVD window appears. Use the default. Press [F2] to continue; the system will automatically eject the media after installation.



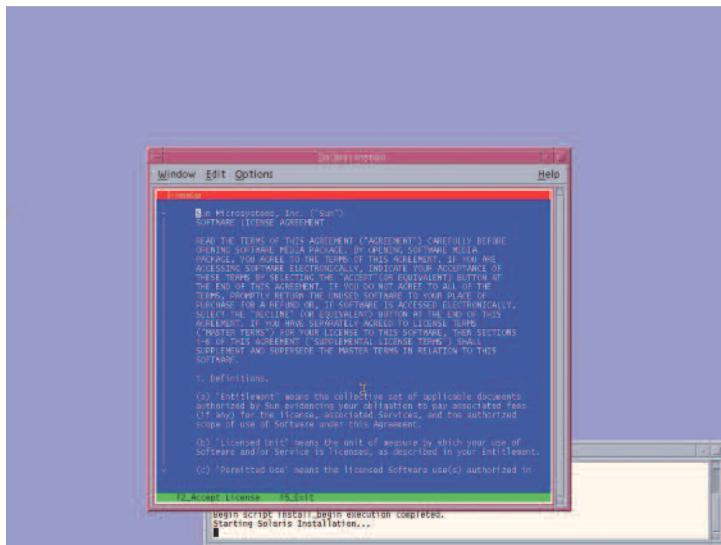
25. The Reboot After Installation window appears. Use the default. Press [F2] to continue.



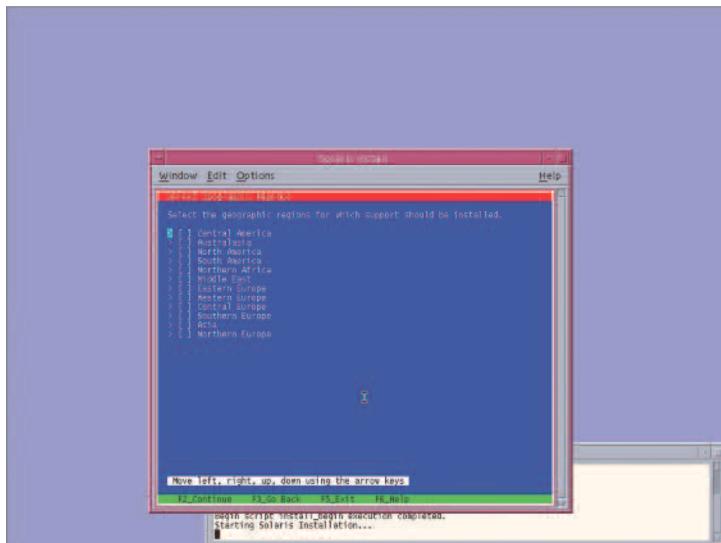
26. The Confirmation window appears; press [F2] to continue. In some cases, the system will not be able to eject the media after installation. Be sure to eject it manually to avoid starting the installation process again; if after the installation your system didn't eject the media and the install process started again, you can simply reboot your system. During the boot process, eject the media and the system will boot from the hard disk using the freshly installed Oracle Solaris 10 image.



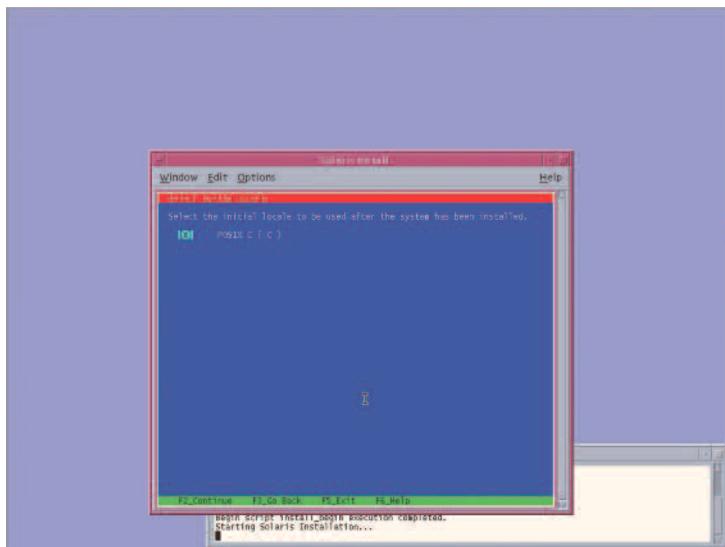
27. The License window appears. Please read the Oracle Solaris License Agreement, and if you agree, press [F2] to continue.



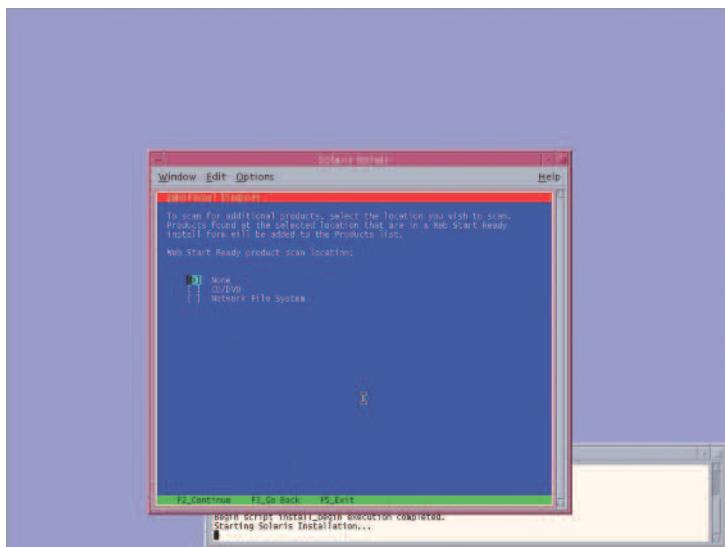
28. The Geographic Regions window appears. To add support for other regions, select the desired region; if not, press [F2] to continue.



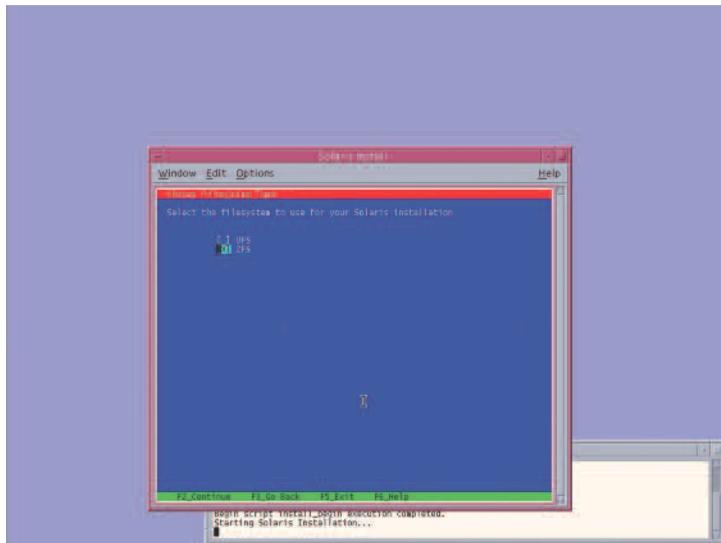
29. The System Locale window appears. Press [F2] to continue.



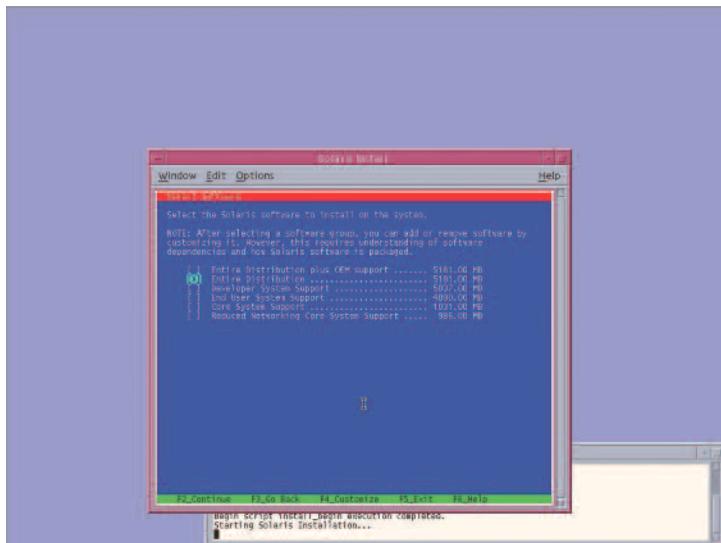
30. The Selection of Additional Products window appears. Press [F2] to continue.



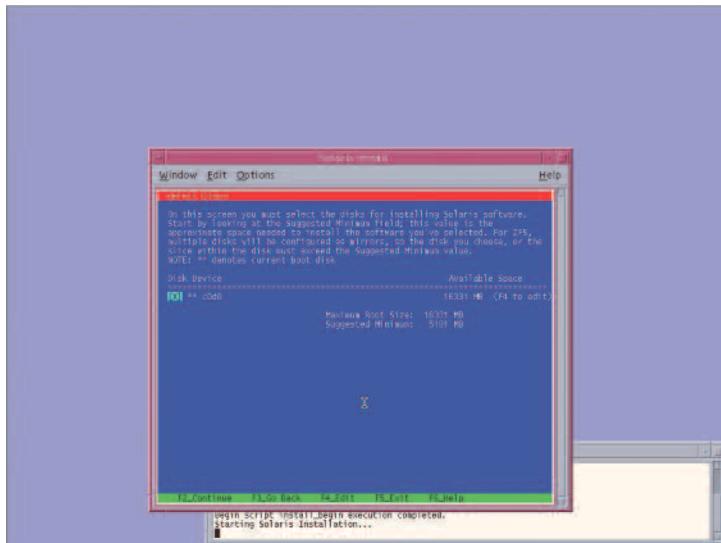
31. The Root File System selection window appears. Select ZFS and press [F2] to continue.



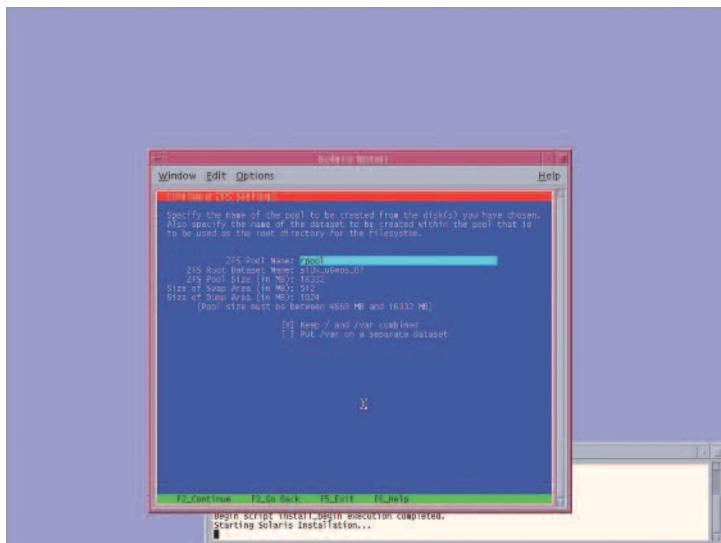
32. The Software Selection window appears. Use the default and press [F2] to continue.



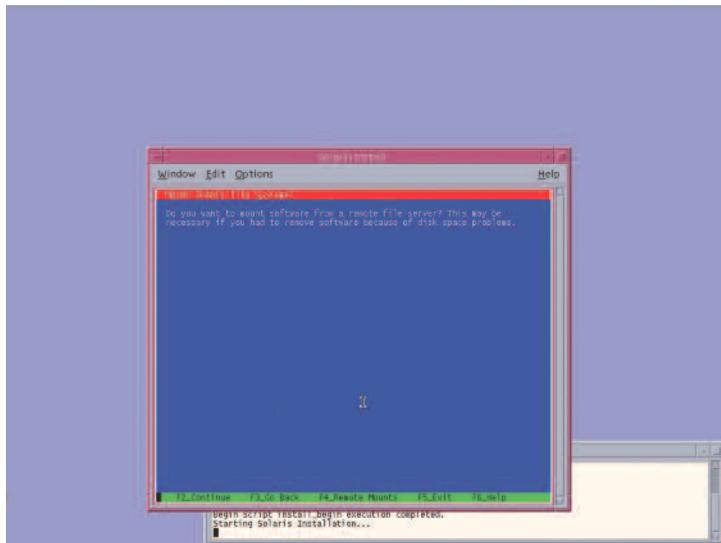
33. The Disk Selection window appears. Use the default and press [F2] to continue.



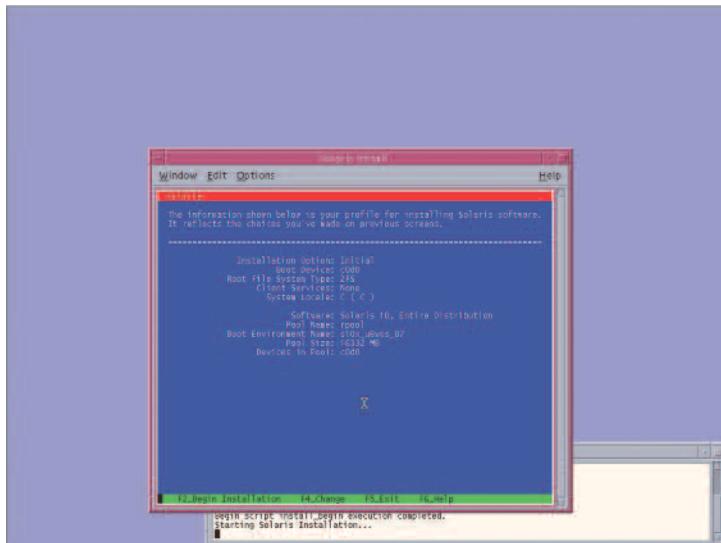
34. The ZFS Configuration window appears. Use the default and press [F2] to continue.



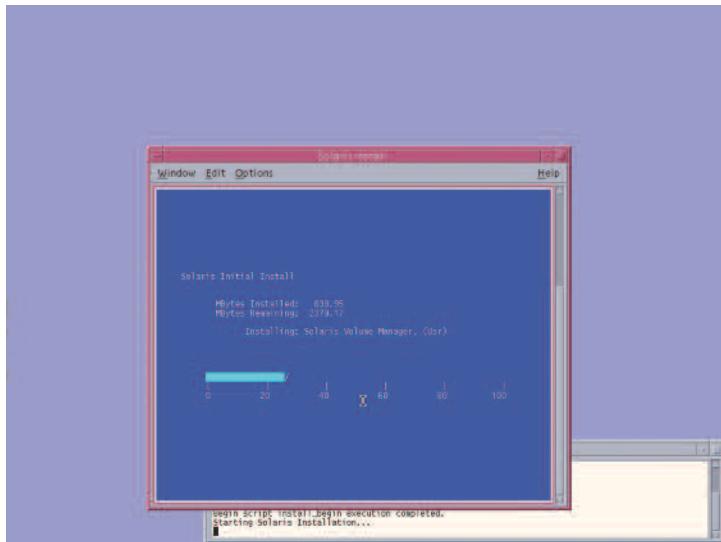
35. The Remote Mounts window appears. Use the default and press [F2] to continue.



36. The Profile window appears. On this window, you can see a technical description of how Oracle Solaris will be installed on your system. Press [F2] to continue.



37. The Install Progress window appears. Wait for a few minutes while Oracle Solaris installs on your system. After the installation is completed, the system will reboot automatically and will start the Oracle Solaris OS. Remember that in some cases, you will have to eject the media manually.



38. Now you have successfully installed Oracle Solaris 10 5/09 on your system. Login using the root user and the password you assigned on step 19.



For More Information

For more information regarding the Oracle Solaris 10 OS, visit
<http://www.oracle.com/us/products/servers-storage/solaris/index.html>.

TABLE 1. REFERENCES

DOCUMENTATION AND COMMUNITY	
Sun Documentation	docs.sun.com/
Big Admin System Administration Portal	sun.com/bigadmin/
SUN BLUEPRINTS ARTICLES	
Configuring JumpStart Servers to Provision Sun x86 Systems	sun.com/blueprints/0205/819
Performing Network Installations Without a Local Boot Server	sun.com/blueprints/0504/817
Configuring Multiboot Environments on Sun x86 Systems with AMD Opteron Processors	sun.com/blueprints/0905/819
RELATED WEB SITES	
Solaris Hardware Compatibility List	sun.com/bigadmin/hcl
Solaris 10 System Requirements	developers.sun.com/solaris/docs/solaris-sys.pdf
NEXT STEPS TO SOLARIS 10 ADOPTION	
Get hands on experience with Solaris 10 using "Solaris 10 White Papers"	http://developers.sun.com/solaris/whitepapers/index.jsp
Get trained on Solaris 10	http://education.oracle.com/pls/web_prod-plq-dad/db_pages.getpage?page_id=402&p_nl=JSOL
Get a support contract	http://www.oracle.com/us/support/systems/operating-systems/index.html
Participate in the OpenSolaris community	www.opensolaris.org



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April 2010
Author: Angel Camacho, Larry Wake

Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
Phone: +1.650.506.7000
Fax: +1.650.506.7200
oracle.com



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