Oracle® Solaris 10 9/10 Installation Guide: Basic Installations

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Contents

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Preface

This book describes how to use CD or DVD media to install the Solaris Operating System (Solaris OS) on a nonnetworked system.

This book does not include instructions about how to set up system hardware or other peripherals. This book provides instructions for installing both UFS file systems and ZFS root pools.

Note – This Solaris release supports systems that use the SPARC and x86 families of processor architectures. The supported systems appear in the Solaris OS: Hardware Compatibility Lists (`http://www.sun.com/bigadmin/hcl`). This document cites any implementation differences between the platform types.

In this document these x86 related terms mean the following:

- "x86" refers to the larger family of 64-bit and 32-bit x86 compatible products.
- "x64" relates specifically to 64-bit x86 compatible CPUs.
- "32-bit x86" points out specific 32-bit information about x86 based systems.

For supported systems, see the *Solaris OS: Hardware Compatibility Lists*.

Who Should Use This Book

This book is intended for system administrators who are responsible for installing the Solaris OS. This book provides basic Solaris installation information for system administrators who perform infrequent Solaris installations or upgrades.

If you need advanced Solaris installation information, see "Related Books" on page 6 to find the book that describes the information.

Related Books

Table P–1 lists documentation for system administrators.

TABLE P–1   Are You a System Administrator Who is Installing Solaris?

Description	Information
Do you need system requirements or high-level planning information? Or want a high-level overview of Solaris ZFS root pool installations, GRUB based booting, Solaris Zones partitioning technology, or creating RAID-1 volumes?	*Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
Do you need to upgrade or patch your system with almost no downtime? Save system downtime when upgrading by using Solaris Live Upgrade.	*Oracle Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning*
Do you need to install a secure installation over the network or Internet? Use WAN boot to install a remote client. Or, do you need to install over the network from a network installation image? The Solaris installation program steps you through an installation.	*Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*
Do you need to install Solaris on multiple machines? Use JumpStart to automate your installation.	*Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*
Do you need to install or patch multiple systems quickly? Use Solaris Flash software to create a Solaris Flash archive and install a copy of the OS on clone systems.	*Oracle Solaris 10 9/10 Installation Guide: Solaris Flash Archives (Creation and Installation)*
Do you need to back up your system?	Chapter 23, "Backing Up and Restoring UFS File Systems (Overview)," in *System Administration Guide: Devices and File Systems*
Do you need troubleshooting information, a list of known problems, or a list of patches for this release?	*Oracle Solaris Release Notes*
Do you need to verify that your system works on Solaris?	SPARC: *Solaris Sun Hardware Platform Guide*
Do you need to check on which packages have been added, removed, or changed in this release?	*Oracle Solaris Package List*
Do you need to verify that your system and devices work with Solaris SPARC and x86 based systems and other third-party vendors.	Solaris Hardware Compatibility List for x86 Platforms

Documentation, Support, and Training

See the following web sites for additional resources:

- Documentation (http://docs.sun.com)
- Support (http://www.oracle.com/us/support/systems/index.html)
- Training (http://education.oracle.com) – Click the Sun link in the left navigation bar.

Oracle Welcomes Your Comments

Oracle welcomes your comments and suggestions on the quality and usefulness of its documentation. If you find any errors or have any other suggestions for improvement, go to http://docs.sun.com and click Feedback. Indicate the title and part number of the documentation along with the chapter, section, and page number, if available. Please let us know if you want a reply.

Oracle Technology Network (http://www.oracle.com/technetwork/index.html) offers a range of resources related to Oracle software:

- Discuss technical problems and solutions on the Discussion Forums (http://forums.oracle.com).
- Get hands-on step-by-step tutorials with Oracle By Example (http://www.oracle.com/technology/obe/start/index.html).
- Download Sample Code (http://www.oracle.com/technology/sample_code/index.html).

Typographic Conventions

The following table describes the typographic conventions that are used in this book.

TABLE P–2 Typographic Conventions

Typeface	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your .login file. Use ls -a to list all files. machine_name% you have mail.
AaBbCc123	What you type, contrasted with onscreen computer output	machine_name% **su** Password:
aabbcc123	Placeholder: replace with a real name or value	The command to remove a file is rm *filename*.

TABLE P–2   Typographic Conventions   *(Continued)*

Typeface	Meaning	Example
AaBbCc123	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the *User's Guide*.
		A *cache* is a copy that is stored locally.
		Do *not* save the file.
		Note: Some emphasized items appear bold online.

Shell Prompts in Command Examples

The following table shows the default UNIX system prompt and superuser prompt for shells that are included in the Oracle Solaris OS. Note that the default system prompt that is displayed in command examples varies, depending on the Oracle Solaris release.

TABLE P–3   Shell Prompts

Shell	Prompt
Bash shell, Korn shell, and Bourne shell	`$`
Bash shell, Korn shell, and Bourne shell for superuser	`#`
C shell	`machine_name%`
C shell for superuser	`machine_name#`

Platform Conventions

The following keyboard and mouse conventions are applicable to SPARC and x86 based systems:

- The key referred to as Return is labeled Enter on some keyboards.

- From left to right on a three-button mouse, the default settings for CDE are SELECT, ADJUST, and MENU. For example, the text says, "Click SELECT" instead of "Click the left mouse button." Otherwise, these keys are referred to as mouse button 1, mouse button 2, and mouse button 3.

- From left to right on a two-button mouse, the default settings are SELECT and MENU. The ADJUST function is obtained by simultaneously pressing SELECT and the Shift key on the keyboard (Shift-SELECT).

1 CHAPTER 1

Planning for a Solaris Installation From CD or DVD Media (Tasks)

This book describes how to use CD or DVD media to install the Solaris Operating System (Solaris OS) on a nonnetworked system. You can install either a UFS-based file system or a ZFS-based root pool.

Note – This chapter provides planning information for installing a UFS root (/) file system and some planning information for a ZFS root pool.

- For more planning information for an installation of a ZFS root pool, see Chapter 6, "ZFS Root File System Installation (Planning)," in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.
- If you want to install a ZFS root pool, see Chapter 3, "Installing With the Solaris Interactive Text Installer for ZFS Root Pools (Planning and Tasks)."

This chapter describes the preparations for completing a successful installation, including the sections described below. The following chapter describes each step in an installation for SPARC systems and an installation for x86 systems.

- "System Requirements and Recommendations" on page 10

  This section describes system requirements to install the Solaris OS. General guidelines for planning the disk space are also provided.

- "Checklist for Installation" on page 17

  This section contains a checklist to help you gather all of the information that you need to install your system.

- "Where to Find Additional Installation Information" on page 28

> **Note –** This book uses the term *slice*, but some Solaris documentation and programs might refer to a slice as a partition. To avoid confusion, this book distinguishes between `fdisk` partitions (which are supported only in Solaris for x86 based systems) and the divisions within the Solaris `fdisk` partition, which might be called slices or partitions.

System Requirements and Recommendations

The following tables list basic system requirements to install the Solaris OS.

TABLE 1–1   Memory, Swap, and Processor Recommendations

Requirement	Size
Memory to install or upgrade	- For UFS file systems, the memory requirements are as follows. For SPARC systems: 384 MB is the minimum memory required. 512 MB is the recommended memory. For x86 systems: 768 MB is the minimum memory required. 1 GB is the recommended memory. **Note –** Some optional installation features are enabled only when sufficient memory is present. For example, if you install from a DVD with insufficient memory, you install through the Solaris installation program's text installer, not through the GUI. For more information about these memory requirements, see Table 1–2. - In previous Solaris releases, you could not install and boot the Solaris OS from a disk that was greater than 1 terabyte in size. **Starting with the Solaris 10 10/09 release**, you can install and boot the Solaris OS from a disk that is up to 2 TB in size. **Starting with the Solaris 10 10/09 release**, you can use the VTOC label on a disk of any size, but the addressable space by the VTOC is limited to 2 TB. This feature allows disks that are larger than 2 TB to be used as boot drives, but the usable space from the label is limited to 2 TB. **Note –** This feature is only available on systems that run a 64-bit kernel. A minimum of 1 GB of memory is required for x86 based systems. For detailed information, see "Two-Terabyte Disk Support for Installing and Booting the Solaris OS" in *System Administration Guide: Devices and File Systems*. - For ZFS root pools in SPARC and x86 systems: 768 MB is the minimum memory. 1 GB of memory is recommended for overall ZFS performance. - At least 16 GB of disk space is recommended.

TABLE 1–1 Memory, Swap, and Processor Recommendations *(Continued)*

Requirement	Size
Swap area	■ For UFS file systems, 512 MB is the default size
	■ For ZFS root pools, see "Disk Space Requirements for a ZFS Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
	Note – You might need to customize the swap space. Swap space is based on the size of the system's hard disk.
Processor requirements	■ For SPARC based systems: 200–MHz or faster processor is required.
	■ For x86 based systems: 120–MHz or faster processor is recommended. Hardware floating-point support is required.

Solaris Installation Program GUI or Text Installer Requirements

The Solaris installation program on the Solaris Operating System DVD or Solaris Software - 1 CD can be run with a graphical user interface (GUI) or as an interactive text installer in a desktop or console session. For x86 based systems, the Solaris Device Configuration Assistant is included in the Solaris installation program.

■ GUI – The Solaris installation GUI provides windows, pull-down menus, buttons, scrollbars, and iconic images to enable you to interact with the installation program. The GUI requires a local or remote DVD-ROM or CD-ROM drive or network connection, video adapter, keyboard, monitor, and enough memory. For more information about these memory requirements, see Table 1–2.

■ Text installer – The Solaris interactive text installer enables you to type information in a terminal or console window to interact with the installation program. You can run the text installer in a desktop session with a windowing environment, or in a console session. The text installer requires a local or remote DVD-ROM or CD-ROM drive or network connection, keyboard, and monitor. You can run the Solaris installation text installer with the `tip` command. For more information, see the man page, `tip(1)`.

You can choose to install the software with a GUI or with or without a windowing environment. If there is sufficient memory, the GUI is displayed by default. Other environments are displayed by default if memory is insufficient for the GUI. You can override defaults with the `nowin` or `text` boot options. But, you are limited by the amount of memory in your system or by installing remotely. Also if the Solaris installation program does not detect a video adapter, it automatically displays in a console-based environment. Table 1–2 describes these environments and list memory requirements for displaying them.

TABLE 1–2   Memory Requirements for Display Options

Memory	Type of Installation	Description
256-767 MB	Text-based	Contains no graphics, but provides a window and the ability to open other windows.
		If you install by using the text boot option and the system has enough memory, you are installing in a windowing environment. If you are installing remotely through a tip line or using the nowin boot option, you are limited to the console-based installation.
768 MB or greater	GUI-based	Provides windows, pull-down menus, buttons, scrollbars, and iconic images.

You can also specify the installer you want to use during the installation by entering a selection or special command at a prompt. For instructions, see the procedures in Chapter 2, "Installing With the Solaris Installation Program For UFS File Systems (Tasks)."

General Disk Space Planning and Recommendations

Planning disk space is different for everyone. Consider allocating space for the following conditions, depending on your needs.

TABLE 1–3 General Disk Space and Swap Space Planning

Conditions for Space Allocations	Description
For UFS file systems	For each file system that you create, allocate an additional 30 percent more disk space than you need to enable you to upgrade to future Solaris versions.
	By default, the Solaris installation methods create only root (/) and /swap. When space is allocated for OS services, the /export directory is also created. If you are upgrading to a major Solaris release, you might need to reslice your system or allocate double the space that you need at installation time. If you are upgrading to an update, you could prevent having to reslice your system by allocating extra disk space for future upgrades. A Solaris update release needs approximately 10 percent more disk space than the previous release. You can allocate an additional 30 percent of disk space for each file system to allow space for several Solaris updates.
	Note – In previous Solaris releases, you could not install and boot the Solaris OS from a disk that was greater than 1 terabyte in size. **Starting with the Solaris 10 10/09 release**, you can install and boot the Solaris OS from a disk that is up to 2 TB in size.
	Starting with the Solaris 10 10/09 release, you can use the VTOC label on a disk of any size, but the addressable space by the VTOC is limited to 2 TB. This feature allows disks that are larger than 2 TB to be used as boot drives, but the usable space from the label is limited to 2 TB.
	This feature is only available on systems that run a 64-bit kernel. A minimum of 1 GB of memory is required for x86 based systems.
	For detailed information, see "Two-Terabyte Disk Support for Installing and Booting the Solaris OS" in *System Administration Guide: Devices and File Systems*.
The /var file system for UFS file systems	If you intend to use the crash dump feature savecore(1M), allocate double the amount of your physical memory in the /var file system.

TABLE 1–3   General Disk Space and Swap Space Planning   *(Continued)*

Conditions for Space Allocations	Description
Swap	**Note** – For swap allocations for a ZFS root pool, see "Disk Space Requirements for a ZFS Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*. For a UFS file system, the Solaris installation program allocates a default swap area of 512 Mbytes under the following conditions: ■ If you use the installation program's automatic layout of disk slices ■ If you avoid manually changing the size of the swap slice By default, the Solaris installation programs allocate swap space by placing swap so that it starts at the first available disk cylinder (typically cylinder 0 on SPARC based systems). This placement provides maximum space for the root (/) file system during the default disk layout and enables the growth of the root (/) file system during an upgrade. If you think you might need to expand the swap area in the future, you can place the swap slice so that it starts at another disk cylinder by using one of the following methods. ■ For the Solaris installation program, you can customize the disk layout in cylinder mode and manually assign the swap slice to the desired location. ■ For the custom JumpStart installation program, you can assign the swap slice in the profile file. For more information about the JumpStart profile file, see "Creating a Profile" in *Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*. For an overview of the swap space, see Chapter 20, "Configuring Additional Swap Space (Tasks)," in *System Administration Guide: Devices and File Systems*.
A server that is providing home directory file systems	By default, home directories are usually located in the /export file system.
The Solaris software group you are installing	A software group is a grouping of software packages. When you are planning disk space, remember that you can add or remove individual software packages from the software group that you select. For information about software groups, see "Disk Space Recommendations for Software Groups" on page 15.
Upgrade	■ If you are using Solaris Live Upgrade to upgrade an inactive boot environment and want information about disk space planning, see "Solaris Live Upgrade Disk Space Requirements" in *Oracle Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning* ■ If you are using other Solaris installation methods to plan disk space, see "Upgrading With Disk Space Reallocation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.
Language support	For example, Chinese, Japanese, or Korean. If you plan to install a single language, allocate approximately 0.7 Gbytes of additional disk space for the language. If you plan to install all language supports, you need to allocate up to approximately 2.5 Gbytes of additional disk space for the language supports, depending on the software group you install.
Printing or mail support	Allocate additional space.
Additional software or third-party software	Allocate additional space.

Disk Space Recommendations for Software Groups

The Solaris software groups are collections of Solaris packages. Each software group includes support for different functions and hardware drivers.

- For an initial installation, you select the software group to install, based on the functions that you want to perform on the system.

- For an upgrade, you must upgrade to a software group that is installed on the system. For example, if you previously installed the End User Solaris Software Group on your system, you cannot use the upgrade option to upgrade to the Developer Solaris Software Group. However, during the upgrade you can add software to the system that is not part of the currently installed software group.

When you are installing the Solaris software, you can choose to add or remove packages from the Solaris software group that you selected. When you are selecting which packages to add or remove, you need to know about software dependencies and how the Solaris software is packaged.

The following figure shows the grouping of software packages. Reduced Network Support contains the minimal number of packages and Entire Solaris Software Group Plus OEM Support contains all the packages.

FIGURE 1–1   Solaris Software Groups
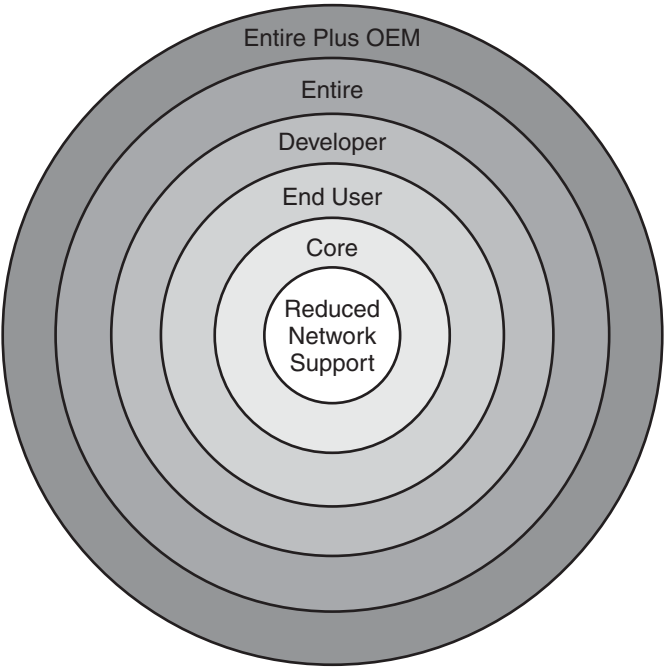
Table 1–4 lists the Solaris software groups and the recommended amount of disk space that you need to install each group.

Note – The disk space recommendations in Table 1–4 include space for the following items.

- Swap space
- Patches
- Additional software packages

You might find that the software groups require less disk space than the amount that is listed in this table.

For additional information about how to plan your disk space, see "Allocating Disk and Swap Space" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

TABLE 1–4   Disk Space Recommendations for Software Groups

Software Group	Description	Recommended Disk Space
Entire Solaris Software Group Plus OEM Support	Contains the packages for the Entire Solaris Software Group plus additional hardware drivers, including drivers for hardware that is not on the system at the time of installation.	6.8 Gbytes

TABLE 1–4 Disk Space Recommendations for Software Groups *(Continued)*

Software Group	Description	Recommended Disk Space
Entire Solaris Software Group	Contains the packages for the Developer Solaris Software Group and additional software that is needed for servers.	6.7 Gbytes
Developer Solaris Software Group	Contains the packages for the End User Solaris Software Group plus additional support for software development. The additional software development support includes libraries, include files, man pages, and programming tools. Compilers are not included.	6.6 Gbytes
End User Solaris Software Group	Contains the packages that provide the minimum code that is required to boot and run a networked Solaris system and the Common Desktop Environment.	5.3 Gbytes
Core System Support Software Group	Contains the packages that provide the minimum code that is required to boot and run a networked Solaris system.	2.0 Gbytes
Reduced Network Support Software Group	Contains the packages that provide the minimum code that is required to boot and run a Solaris system with limited network service support. The Reduced Network Support Software Group provides a multiuser text-based console and system administration utilities. This software group also enables the system to recognize network interfaces, but does not activate network services.	2.0 Gbytes

Checklist for Installation

Use the following checklist to gather the information that you need to install the Solaris OS. You do not need to gather all of the information that is requested on the checklist. You only need to collect the information that applies to your system.

Use this checklist if you are performing an initial installation. If you are upgrading your system, see "Checklist for Upgrading" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

Note – If you have a system that contains non-global zones, Solaris Live Upgrade is the recommended upgrade program or program to add patches. Other upgrade programs might require extensive upgrade time, because the time required to complete the upgrade increases linearly with the number of installed non-global zones.

For information about upgrading with Solaris Live Upgrade, see Part I, "Upgrading With Solaris Live Upgrade," in *Oracle Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning*.

TABLE 1–5   Installation Checklist

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
Network connection	Is the system connected to a network?	Networked/Nonnetworked

TABLE 1–5 Installation Checklist *(Continued)*

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
Credentials and proxy information for Auto Registration	Do you want to provide your support credentials and proxy information for Auto Registration with Oracle? Oracle Solaris Auto Registration is new in the Oracle Solaris 10 9/10 release. When you install or upgrade your system, configuration data about your system is, on rebooting, automatically communicated through the existing service tag technology to the Oracle Product Registration System. This service tag data about your system is used, for example, to help Oracle enhance customer support and services. You can learn about service tags at `http://wikis.sun.com/display/ServiceTag/Sun+Service+Tag+FAQ`. You can use this same configuration data to create and manage your own inventory of your systems. By registering with your support credentials using one of the registration options below, you have a straightforward way to inventory your systems, by recording and tracking the service tags for the systems and for the software products installed on the systems. For instructions about tracking your registered products, see `http://wikis.sun.com/display/SunInventory/Sun+Inventory`. Prior to an installation or upgrade, you can add an `auto_reg` keyword to your `sysidcfg` file to configure your Auto Registration preferences as follows: - Provide your support credentials and proxy information for Auto Registration. - Set up an anonymous registration so that the configuration data sent to Oracle has no link to the name of a customer. - Disable Auto Registration so that no configuration data is sent to Oracle. For instructions, see "auto_reg Keyword" in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*. If you do not preset the `auto_reg` keyword in the `sysidcfg` file, then during the interactive installation or upgrade, the installer asks you to provide your support credentials, or to register anonymously. If you do not provide your support credentials, the system is registered as an anonymous system. You are, also, asked to provide proxy information, if needed. Alternately, you can disable Auto Registration at the end of the installation or upgrade prior to rebooting. See the disabling instructions included as part of the installation procedures in this guide.	My Oracle Support (or Sun Online Support) user name and password Proxy server host name and port number HTTP proxy user name and password

TABLE 1–5   Installation Checklist   *(Continued)*

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
Network security	**Starting with the Solaris 10 11/06 release**, you have the option during an initial installation to change the network security settings so that all network services, except Secure Shell, are disabled or restricted to respond to local requests only. This security option is only available during an initial installation, not during an upgrade. An upgrade maintains any previously set services. If necessary, you can restrict network services after an upgrade by using the netservices command. During the installation, you can select restricted network security. Or, you can enable a larger set of services as in previous Solaris releases. You can safely select the restricted network security option, as any services can be individually enabled after installation. For further information about these options, see "Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*. The network services can be enabled after installation by using the netservices open command or by enabling individual services by using SMF commands. See "Revising Security Settings After Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.	Restricted/Open network security
DHCP	Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces? DHCP provides the network parameters that are necessary for installation.	Yes/No*

TABLE 1–5   Installation Checklist   *(Continued)*

Information for Installation		Description or Example	Answer — Defaults are noted with an asterisk (*)
If you are not using DHCP, note the network address.	IP Address	If you are not using DHCP, supply the IP address for the system. Example: 172.31.255.255 To find this information on a running system, type the following command. `# ypmatch host-name hosts`	
	Subnet	If you are not using DHCP, is the system part of a subnet? If yes, what is the netmask of the subnet? Example: 255.255.255.0 To find this information on a running system, type the following command. `# more /etc/netmasks`	
	IPv6	Do you want to enable IPv6 on this machine? IPv6 is a part of the TCP/IP Internet protocol that facilitates IP addressing by adding better security and increasing Internet addresses.	Yes/No*
Host Name		Host name that you choose for the system. To find this information on a running system, type the following command. `# uname -n`	
Kerberos		Do you want to configure Kerberos security on this machine? If yes, gather this information: Default Realm: Administration Server: First KDC: (Optional) Additional KDCs: The Kerberos service is a client-server architecture that provides secure transactions over networks.	Yes/No*

TABLE 1–5 Installation Checklist *(Continued)*

Information for Installation		Description or Example	Answer — Defaults are noted with an asterisk (*)
If the system uses a naming service, provide the following information.	Naming Service	Which naming service should this system use? To find this information on a running system, type the following command. # **cat /etc/nsswitch.conf** A naming service stores information in a central place, which enables users, machines, and applications to communicate across the network. Examples of information that is stored are host names and addresses or user names and passwords.	NIS+/NIS/DNS/ LDAP/None
	Domain Name	Provide the name of the domain in which the system resides. During installation, you can choose the default NFSv4 domain name. Or, you can specify a custom NFSv4 domain name. For instructions about how to find the domain name on a running system, see "Checking for the NFS Version 4 Domain" in *System Administration Guide: Network Services*. For more information about specifying a domain name, see "NFSv4 Domain Name Configurable During Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*. To preconfigure the NFSv4 domain name in the sysidcfg file, see "nfs4_domain Keyword" in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.	

TABLE 1–5 Installation Checklist   *(Continued)*

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
NIS+ and NIS	Do you want to specify a name server or let the installation program find one?	Specify One/Find One*
	If you want to specify a name server, provide the following information.	
	Server's host name:	

	■ For NIS clients, type the following command to display the server's host name.
	
	    `# ypwhich`
	
	■ For NIS+ clients, type the following command to display the server's host name.
	
	    `# nisping`	

	Server's IP Address:	

	■ For NIS clients, type the following command to display the server's IP address.
	
	    `# ypmatch` *nameserver-name* `hosts`
	
	■ For NIS+ clients, type the following command to display the server's IP address.
	
	    `# nismatch` *nameserver-name*
	    `hosts.org_dir`	

	Network Information Service (NIS) makes network administration more manageable by providing centralized control over a variety of network information, such as machine names and addresses.	

TABLE 1–5 Installation Checklist   *(Continued)*

Information for Installation		Description or Example	Answer — Defaults are noted with an asterisk (*)
	DNS	Provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses. Server's IP Address: To display the server's IP address, type the following command. **# getent hosts dns** You can enter a list of domains to search when a DNS query is made. List of domains to be searched: The domain name system (DNS) is the naming service that the Internet provides for TCP/IP networks. DNS provides host names to the IP address service. DNS simplifies communication by using machine names instead of numerical IP addresses. DNS also serves as a database for mail administration.	
	LDAP	Provide the following information about your LDAP profile. Profile Name: Profile Server: If you specify a proxy credential level in your LDAP profile, gather this information. Proxy-bind distinguished name: Proxy-bind password: Lightweight Directory Access Protocol (LDAP) defines a relatively simple protocol for updating and searching directories that are running over TCP/IP.	

TABLE 1–5 Installation Checklist *(Continued)*

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
Default Route	Do you want to specify a default route IP address or let the Solaris installation program find one? The default route provides a bridge that forwards traffic between two physical networks. An IP address is a unique number that identifies each host on a network. You have the following choices: ■ You can specify the IP address. An /etc/defaultrouter file is created with the specified IP address. When the system is rebooted, the specified IP address becomes the default route. ■ You can let the Solaris installation program detect an IP address. However, the system must be on a subnet that has a router that advertises itself by using the ICMP router discovery protocol. If you are using the command-line interface, the software detects an IP address when the system is booted. ■ You can choose None if you do not have a router or do not want the software to detect an IP address at this time. The software automatically tries to detect an IP address on reboot.	Detect one*/Specify one/None
Time Zone	How do you want to specify your default time zone?	Geographic region* Offset from GMT Time zone file
Root Password	Provide the root password for the system.	
Keyboard	If the keyboard is self-identifying, the keyboard language and layout automatically configures during installation. If the keyboard is not self-identifying, you can select from a list of supported keyboard layouts during installation. PS/2 keyboards are not self-identifying. You will be asked to select the keyboard layout during the installation. **SPARC only** – Previously, all of keyboards that were not self-identifying always configured for the U.S. English layout during installation. For further information, see "keyboard Keyword" in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.	
Locales	For which geographic regions do you want to install support?	

TABLE 1–5 Installation Checklist   *(Continued)*

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
SPARC: Power Management (only available on SPARC systems that support Power Management)	Do you want to use Power Management? **Note** – If your system has Energy Star version 3 or later, you are not prompted for this information.	Yes*/No
Automatic reboot or CD/DVD ejection	Reboot automatically after software installation? Eject CD/DVD automatically after software installation?	Yes*/No Yes*/No
Default or Custom Install	Do you want to perform a default installation, or customize the installation? ■ Select Default installation to format the entire hard disk and install a preselected set of software. ■ Select Custom installation to modify the hard disk layout and select the software that you want to install. **Note** – The text installer does not prompt you to select a Default or Custom Installation. To perform a default installation, accept the default values that are provided in the text installer. To perform a custom installation, edit the values in the text installer screens.	Default installation*/Custom installation
Software Group	Which Solaris Software Group do you want to install?	Entire Plus OEM Entire* Developer End User Core Reduced Networking
Custom Package Selection	Do you want to add or remove software packages from the Solaris Software Group that you install? **Note** – When you select which packages to add or remove, you need to know about software dependencies and how Solaris software is packaged.	
Select Disks	On which disks do you want to install the Solaris software? Example: `c0t0d0`	

TABLE 1–5 Installation Checklist *(Continued)*

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
x86: `fdisk` partitioning	Do you want to create, delete, or modify a Solaris `fdisk` partition?	
	Each disk that is selected for file system layout must have a Solaris `fdisk` partition.	
	If your system currently has a service partition, the Solaris installation program preserves the service partition by default. If you do not want to preserve the service partition, you must customize the `fdisk` partitions. For more information about preserving a service partition, see "Default Boot-Disk Partition Layout Preserves the Service Partition" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.	
	Select Disks for `fdisk` Partition Customization?	Yes/No*
	Customize `fdisk` partitions?	Yes/No*
Preserve Data	Do you want to preserve any data that exists on the disks where you are installing the Solaris software?	Yes/No*
Auto-layout File Systems	Do you want the installation program to automatically lay out file systems on your disks?	Yes*/No
	If yes, which file systems should be used for auto-layout?	
	Example: `/`, `/opt`, `/var`	
	If no, you must provide file system configuration information.	
	Note – The Solaris installation GUI lays out file systems automatically by default.	
Mount Remote File Systems	Does this system need to access software on another file system?	Yes/No*
	If yes, provide the following information about the remote file system.	
	Server:	
	IP Address:	
	Remote File System:	
	Local Mount Point:	
If you are installing through a `tip` line, follow these instructions.	Ensure that your window display is at least 80 columns wide and 24 rows long. For more information, see `tip(1)`.	
	To determine the current dimensions of your `tip` window, use the `stty` command. For more information, see the man page, `stty(1)`.	

TABLE 1–5   Installation Checklist   *(Continued)*

Information for Installation	Description or Example	Answer — Defaults are noted with an asterisk (*)
Check your Ethernet connection.	If the system is part of a network, verify that an Ethernet connector or similar network adapter is connected to your system.	
Review the planning chapter and other relevant documentation.	■ Review the entire planning chapter or specific sections in Part I, "Overall Planning of Any Solaris Installation or Upgrade," in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*. ■ Review the *Oracle Solaris 10 9/10 Release Notes* on `http://docs.sun.com` and vendor release notes to ensure that the software you use is supported in the new Solaris release. ■ Review the *Oracle Solaris 10 9/10 Sun Hardware Platform Guide* to ensure that your hardware is supported. ■ Review the documentation that accompanied your system to ensure that your system and devices are supported by the Solaris release.	

Where to Find Additional Installation Information

For additional information about requirements and recommendations for installing the Solaris OS, see the following sections in the *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*. This document provides system requirements and high-level planning information, such as planning guidelines for file systems and upgrade planning.

TABLE 1–6   Installation References

Topic	Reference
New installation features	Chapter 2, "What's New in Solaris Installation," in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
Network security planning	"Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
Disk space guidelines and recommendations	"Allocating Disk and Swap Space" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*

TABLE 1–6   Installation References   *(Continued)*

Topic	Reference
Additional requirements and recommendations for upgrading to the Solaris OS	"Upgrade Planning" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
	"Checklist for Upgrading" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
Information about working with x86 partitions during your installation	"Partitioning Recommendations" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
Information about ZFS installations, GRUB based booting, Solaris Zones partitioning technology, and RAID-1 volumes that can be created at installation	Part II, "Understanding Installations That Relate to ZFS, Booting, Solaris Zones, and RAID-1 Volumes," in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*
Road map of the overall installation process	"Task Map: Installing or Upgrading the Solaris Software" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*

2

Installing With the Solaris Installation Program For UFS File Systems (Tasks)

This chapter explains how to use the Solaris installation program on the Solaris Operating System DVD or Solaris Software - 1 CD to install or upgrade Solaris software.

Note – This chapter provides installation instructions for a UFS (/) root file system. If you want to install a ZFS root pool, see Chapter 3, "Installing With the Solaris Interactive Text Installer for ZFS Root Pools (Planning and Tasks)."

This chapter contains the following topics:

- "SPARC: Performing an Installation or Upgrade With the Solaris Installation Program for UFS File Systems" on page 31
- "x86: Performing an Installation or Upgrade With the Solaris Installation Program for UFS File Systems" on page 44

For information about new installation features, see Chapter 2, "What's New in Solaris Installation," in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*. For information about all the new features in the Solaris OS, see *Oracle Solaris 10 9/10 What's New*.

SPARC: Performing an Installation or Upgrade With the Solaris Installation Program for UFS File Systems

For UFS file systems, you can either install or upgrade the Solaris OS by using the Solaris installation program. This section lists the tasks you need to perform to install the Solaris OS, and provides detailed instructions about how to install the Solaris OS from DVD or CD media.

▼ SPARC: To Install or Upgrade With the Solaris Installation Program

This procedure describes how to install a standalone SPARC based system from CD or DVD media for UFS file systems.

Note – If you want to install the Solaris OS on a machine or domain that does not have a directly attached DVD-ROM or CD-ROM drive, you can use a DVD-ROM or CD-ROM drive that is attached to another machine. For detailed instructions, refer to Appendix B, "Installing or Upgrading Remotely (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

Before You Begin   Perform the following tasks before you begin your installation.

- Ensure that you have the necessary media.

  Select one of the following options:
  - For a DVD installation, you need the Solaris Operating System for SPARC Platforms DVD.
  - For a CD installation:

    You need the following media:
    - Solaris Software CDs.
    - Solaris Languages for SPARC Platforms CDs – The installation program prompts you for these CDs if necessary to support languages for specific geographic regions.

      Note – Starting with the Oracle Solaris 10 9/10 release, only a DVD is provided. Solaris Software CDs are no longer provided.

- Verify that your system meets the minimum requirements.

  Your system should meet the following requirements.
  - Memory – 384 Mbytes or greater
  - Disk space – 6.8 Gbytes or greater
  - Processor speed – 200 MHz or greater

  For detailed information about system requirements, see "System Requirements and Recommendations" on page 10.
- Gather the information you need to install the Solaris OS.

Select one of the following options:

- For a nonnetworked system:

  Gather the following information.

  - Host name of the system that you are installing
  - Language and locales that you intend to use on the system

- For a networked system, gather the following information.

  Note – Starting with the Solaris 10 11/06 release, you have the option during an initial installation to change the network security settings so that all network services, except Secure Shell, are disabled or restricted to respond to local requests only. This security option is only available during an initial installation, not during an upgrade. An upgrade maintains any previously set services. If necessary, you can restrict network services after an upgrade by using the netservices command. See "Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

  The network services can be enabled after installation by using the netservices open or by enabling individual services by using SMF commands. See "Revising Security Settings After Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

  - Host name of the system that you are installing
  - Keyboard layout

    Note – If the keyboard is self-identifying, the keyboard layout automatically configures during installation. If the keyboard is not self-identifying, you can select from a list of supported keyboard layouts during installation.

    PS/2 keyboards are not self-identifying. You will be asked to select the keyboard layout during the installation.

    For further information, see "keyboard Keyword" in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

  - Language and locales that you intend to use on the system
  - Host IP address
  - Subnet mask
  - Type of naming service (for example, DNS, NIS, or NIS+)
  - Domain name

> **Note –** During installation, you can choose the default NFSv4 domain name. Or, you can specify a custom NFSv4 domain name. For further information, see "NFSv4 Domain Name Configurable During Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

- Host name of the name server
- Host IP address of the name server
- Root password

For information that you need to gather to install your system, see "Checklist for Installation" on page 17. If you are upgrading your system, see "Checklist for Upgrading" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade* . Note that you may need to provide your support credentials and proxy information during the installation or upgrade for Auto Registration, as described in the checklists.

> **Note –** If you have a system that contains non-global zones, Solaris Live Upgrade is the recommended upgrade program or program to add patches. Other upgrade programs might require extensive upgrade time, because the time required to complete the upgrade increases linearly with the number of installed non-global zones.
>
> For information about upgrading with Solaris Live Upgrade, see Part I, "Upgrading With Solaris Live Upgrade," in *Oracle Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning*.

- (Optional) Back up your system.

  If you want to preserve any existing data or applications, back up the system. For detailed instructions about how to back up your system, see Chapter 23, "Backing Up and Restoring UFS File Systems (Overview)," in *System Administration Guide: Devices and File Systems*.

1. **Insert the Solaris Operating System for SPARC Platforms DVD or Solaris Software for SPARC Platforms - 1 CD.**

2. **Boot the system.**

   - **If the system is new, out-of-the-box, turn on the system.**

   - **If you want to install a system that is currently running, shut down the system.**

   The ok prompt is displayed.

3 Start the Solaris installation program.

- **To boot from the local DVD or CD and start the Solaris installation GUI in a desktop session, type the following command.**

  ok **boot cdrom**

- **To boot from the local DVD or CD and start the text installer in a desktop session, type the following command.**

  ok **boot cdrom - text**

  text   Specifies to run the text installer in a desktop session. Use this option to override the default GUI installer.

- **To boot from the local DVD or CD and start the text installer in a console session, type the following command.**

  ok **boot cdrom - nowin**

  nowin   Specifies to run the text installer in a console session. Use this option to override the default GUI installer.

For detailed information about the Solaris installation GUI and text installer, see "Solaris Installation Program GUI or Text Installer Requirements" on page 11.

If the operating system cannot locate a self-identifying keyboard, the next screen displays keyboard layout selections.

Note – PS/2 keyboards are not self-identifying. You will be asked to select the keyboard layout during the installation.

---

4 (Optional) Select the desired keyboard layout from the screen below and press F2 to continue.

```
Configure Keyboard Layout
+----------------------------------------------------------------------+
|    Please specify the keyboard layout from the list below.           |
|                                                                      |
|    To make a selection, use the arrow keys to highlight the option and |
|    press Return to mark it [X].                                      |
|                                                                      |
|            Keyboard  Layout                                          |
|            ----------------------                                    |
|        [ ] Serbia-And Montenegro                                     |
|        [ ] Slovenian                                                 |
|        [ ] Slovakian                                                 |
|        [ ] Spanish                                                   |
|        [ ] Swedish                                                   |
|        [ ] Swiss-French                                              |
|        [ ] Swiss-German                                              |
|        [ ] Taiwanese                                                 |
|        [ ] TurkishQ                                                  |
|        [ ] TurkishF                                                  |
```

```
|         [  ] UK-English                                                   |
|         [ X] US-English                                                   |
|                                                                           |
|    F2_Continue        F6_Help                                             |
+---------------------------------------------------------------------------+
```

The system configures the devices and interfaces and searches for configuration files. If you selected a GUI installation in the earlier steps, the next two screens confirm GUI functioning.

5   (Optional) In the following screen, press Enter.

```
Starting Solaris Interactive (graphical user interface)
Installation
+------------------------------------------------------------+
| You must respond to the first question within 30 seconds   |
| or the installer proceeds in a non-window environment      |
| (console mode).                                            |
|                                                            |
| If the screen becomes blank or unreadable the installer    |
| proceeds in console mode.                                  |
|                                                            |
| If the screen does not properly revert to console mode,    |
| restart the installation and make the following selection: |
|                                                            |
|      Solaris Interactive Text (Console session)            |
------------------------------------------------------------+
```

Note – If your system has insufficient memory to display a graphical user interface (GUI), the program exists and displays an error message. You can upgrade your memory and restart the installation.

For an alternative that requires less memory to install, restart the installation and select a text installer option instead of the GUI installer option.
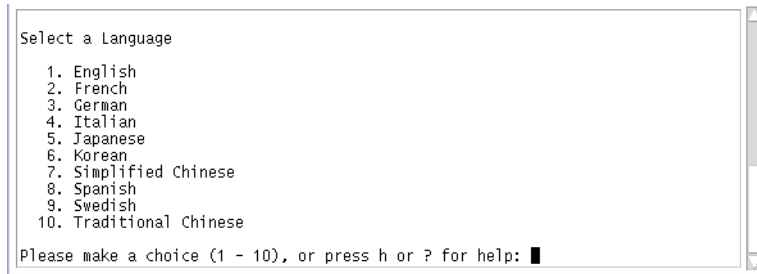
After progress messages are completed, another confirmation screen is displayed.

6   (Optional) Move your cursor into the following text screen and press Enter.

```
If the screen is legible, press ENTER in this window.
█
```
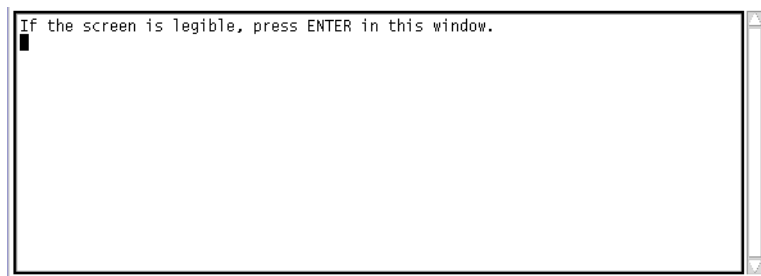
A list of language choices is displayed.

7 **In the following screen, select the language you want to use during the installation, and press Enter.**

```
Select a Language

    1. English
    2. French
    3. German
    4. Italian
    5. Japanese
    6. Korean
    7. Simplified Chinese
    8. Spanish
    9. Swedish
   10. Traditional Chinese

Please make a choice (1 - 10), or press h or ? for help: ▮
```

8 **If you are prompted, answer the system configuration questions.**

- If you preconfigured all of the system information, the installation program does not prompt you to enter any configuration information. See Chapter 2, "Preconfiguring System Configuration Information (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations* for more information.

- If you did not preconfigure all the system information, the installation program prompts you for this information on several screens. Use the "Checklist for Installation" on page 17 to help you answer the configuration questions.

- During installation, you can choose the default NFSv4 domain name. Or, you can specify a custom NFSv4 domain name. For more information about specifying a domain name, see "NFSv4 Domain Name Configurable During Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

- One configuration question asks you whether you want to enable network services for use by remote clients. The default response is "Yes, I would like to enable network services for use by remote clients."

  Selecting "No" provides a more secure configuration in which Secure Shell is the only network service provided to remote clients. Selecting "Yes" enables a larger set of services as in previous Solaris releases. You can safely select "No" as any services can be enabled after installation. For further information about these options, see "Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

  The network services can be enabled after installation by using the netservices open command or by enabling individual services by using SMF commands. See "Revising Security Settings After Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

9 **After you answer the configuration questions, the Welcome to Solaris screen appears. Click Next.**

The Installer Questions screen appears.

10 Decide if you want to reboot the system automatically and if you want to automatically eject the disc. Click Next.

Important: If you intend to disable Auto Registration after installation, deselect the automatic reboot.

The Specify Media screen appears.

11 Specify the media you are using to install. Click Next.

The License panel appears.

12 Accept the license agreement to continue the installation. Click Next.

The Solaris installation program then determines if the system can be upgraded. To upgrade, the system must have an existing Solaris root (/) file system. The Solaris installation program detects the necessary conditions and then upgrades the system.

The Select Upgrade or Initial Install screen appears.

13 Decide if you want to perform an initial installation or an upgrade. Click Next.

The next screen enables you to choose a default installation or a custom installation.

14 Select the type of installation you want to perform. Click Next.

- **Select Default Install to install the Entire Solaris Software Group.**

- **Select Custom Install if you want to perform the following tasks.**
  - Install a specific software group
  - Install additional software
  - Install specific software packages
  - Install a specific locale
  - Customize the disk layout

  For more information about software groups, see "Disk Space Recommendations for Software Groups" on page 15.

Note – The text installer does not prompt you to select a Default or Custom Installation. To perform a default installation, accept the default values that are provided in the text installer. To perform a custom installation, edit the values in the text installer screens.

---

15 If you are prompted, answer any additional configuration questions.

- **If you had set up your Auto Registration preferences using the `auto_reg` keyword in the `sysidcfg` file prior to the installation or upgrade, the installer does not prompt you for that information as part of completing the configuration questions.**

> **Note** – For information about Auto Registration, see "Oracle Solaris Auto Registration" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

- **If you did not include the `auto_reg` keyword in the `sysidcfg` file, the installer prompts you to provide Auto Registration information as part of completing the configuration questions.**

> **Note** – If you intend to disable Auto Registration at the end of the installation or upgrade, you can proceed through these Auto Registration screens without providing any information.

a. **Choose to either register using your support credentials or to have data sent anonymously.**

   The GUI screen is displayed. Select or deselect registering with your credentials. Click Next to continue.

   FIGURE 2–1 GUI Auto Registration Screen
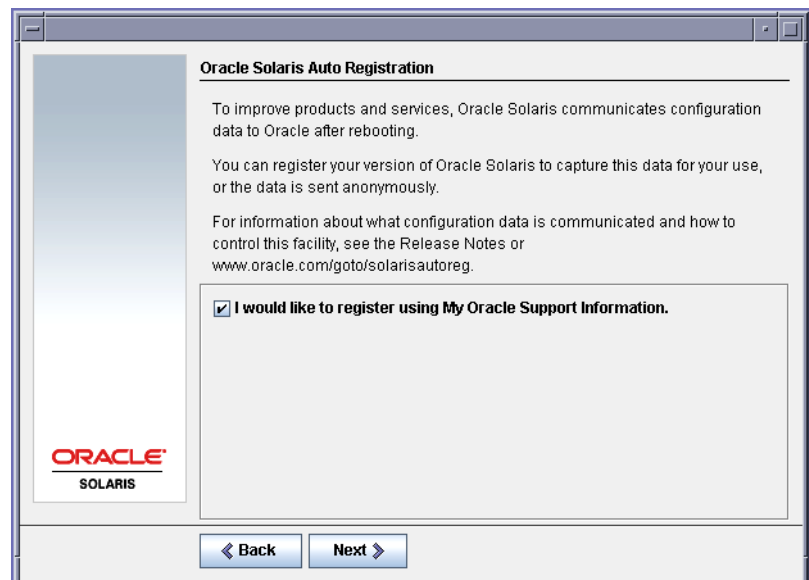
   Alternately, the text installer screen displays.
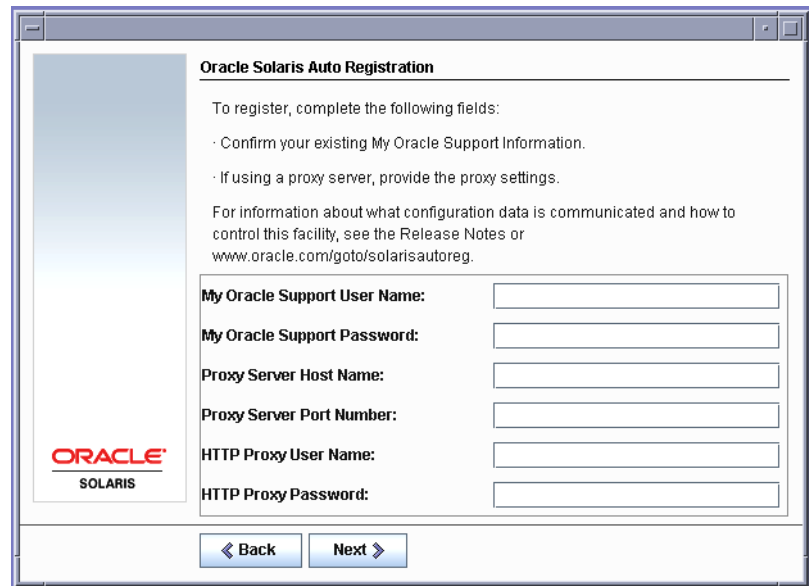
FIGURE 2–2   Text Auto Registration Screen
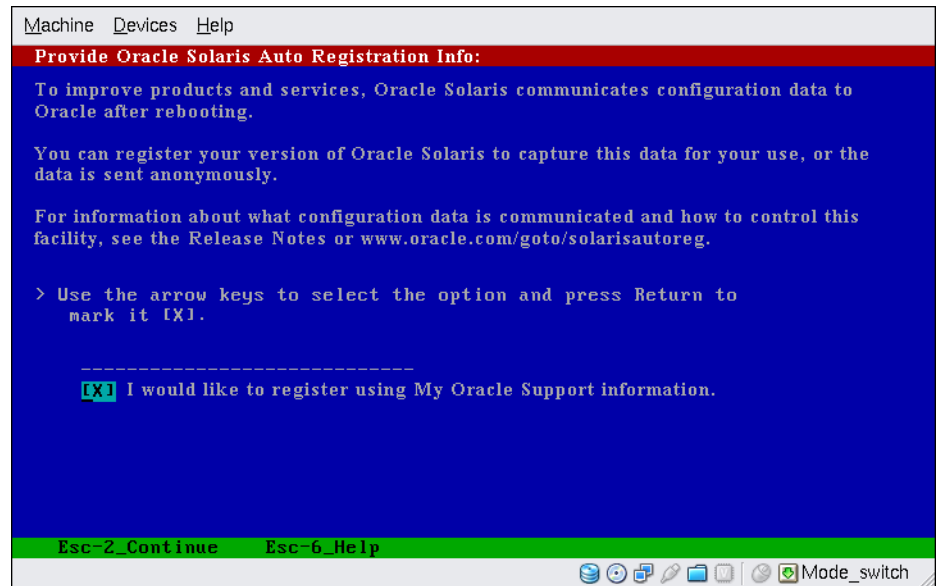
In the text screen, use the arrow keys to navigate to the option box. Press Return to mark the option box to select registering with your support credentials. Press the Esc_2 key to continue.

b. Provide the requested proxy and credential information.

FIGURE 2–3 GUI Auto Registration Data Entry Screen

If you chose to register in the prior screen, you are prompted to provide your My Oracle Support user name and password. If you use a proxy server, you can provide the server host name and port number, and the proxy user name and password.

If you chose an anonymous registration in the prior screen, this screen asks only for the proxy information.

Alternately, for text installs, the following screen is displayed.

FIGURE 2–4 Text Auto Registration Data Entry Screen

Use the arrow keys to navigate between lines. Type your support credentials and optional proxy entries. Press the Esc_2 key to continue.

The Ready to Install screen is displayed.

16   Review the Ready to Install screen.

Note – The GUI screen is displayed. The text install screen contains the same summary information.

FIGURE 2–5   Ready to Install Screen
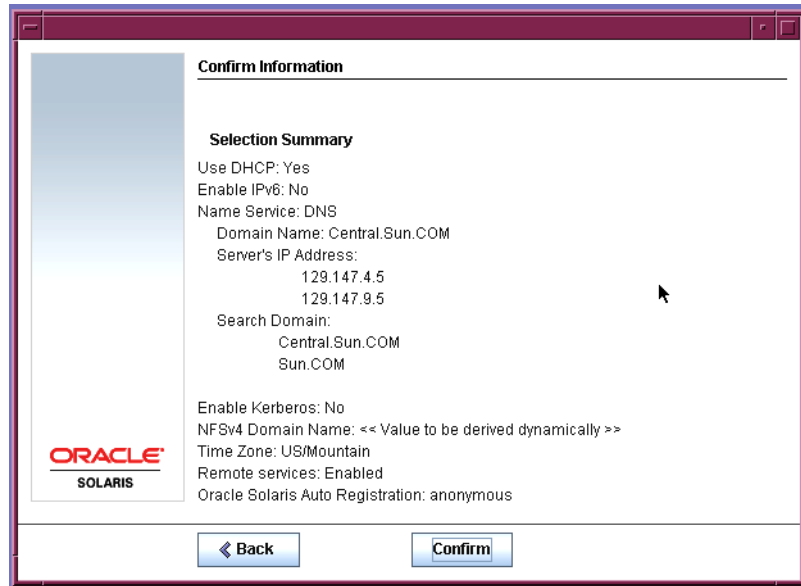
17   **Click Install Now to install the Solaris software. Follow the instructions on the screen to install the Solaris software.**

When the Solaris installation program finishes installing the Solaris software, the system reboots automatically or prompts you to reboot manually.

If you are installing additional products, you are prompted to insert the DVD or CD for those products. For installation procedures, refer to the appropriate installation documentation.

After the installation is finished, installation logs are saved in a file. You can find the installation logs in the `/var/sadm/system/logs` and `/var/sadm/install/logs` directories.

- **If you are performing an initial installation, the installation is complete.**

- **If you are upgrading the Solaris software, you might need to correct some local modifications that were not preserved. Continue to Step a.**

    a. **Review the contents of the `/a/var/sadm/system/data/upgrade_cleanup` file to determine whether you need to correct local modifications that the Solaris installation program could not preserve.**

    b. **Correct any local modifications that were not preserved.**

18 If you previously deselected automatic rebooting, choose one of the following two options:

- **If you do not want to disable Auto Registration, eject any installation media, then manually reboot the system as follows:**

  ```
  # reboot
  ```

- **If you want to disable Auto Registration so that no configuration data is sent to Oracle on reboot, perform the following steps prior to manually rebooting the system.**

⚠️ **Caution** – To disable Auto Registration using the following procedure, you must have deselected automatic reboot earlier in the installation screens.

If the system does automatically reboot, you cannot use the following steps to disable Auto Registration. Instead, after the automatic reboot, you can disable Auto Registration by using the regadm command. See Chapter 16, "Working With the Oracle Solaris Auto Registration regadm Command (Tasks)," in *System Administration Guide: Basic Administration*.

  a. **When the installation is complete and before manually rebooting, open a terminal window as follows:**

     - **For a GUI install, right-click to open a terminal window.**

     - **For a text install, press "!" to open a terminal window.**

  b. **At the command line, remove the `/a/var/tmp/autoreg_config` file.**

  c. **Save the file.**

  d. **Eject any installation media and manually reboot the system.**

     ```
     # reboot
     ```

Troubleshooting   If you encountered any problems during the installation or upgrade, see Appendix A, "Troubleshooting (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*.

x86: Performing an Installation or Upgrade With the Solaris Installation Program for UFS File Systems

You can either install or upgrade the Solaris OS by using the Solaris installation program. This section lists the task you need to perform to install the Solaris OS, and provides detailed instructions about how to install the Solaris OS from DVD or CD media.

▼ x86: To Install or Upgrade With the Solaris Installation Program With GRUB

The Solaris installation programs for x86 based systems use the GRUB boot loader. This procedure describes how to install a standalone x86 based system with the GRUB bootloader from CD or DVD media for a UFS file system. For overview information about the GRUB boot loader, see Chapter 7, "SPARC and x86 Based Booting (Overview and Planning)," in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

Note – If you want to install the Solaris OS on a machine or domain that does not have a directly attached DVD-ROM or CD-ROM drive, you can use a DVD-ROM or CD-ROM drive that is attached to another machine. For detailed instructions, refer to Appendix B, "Installing or Upgrading Remotely (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

Before You Begin   Perform the following tasks before you begin your installation.

- Ensure that you have the necessary media.

  Select one of the following options:
  - If you are installing from a DVD, use the Solaris Operating System for x86 Platforms DVD.
  - If you are installing from CD media:

    You need the following media:
    - Solaris Software CDs.
    - Solaris Languages for x86 Platforms CDs – The installation program prompts you for these CDs if necessary to support languages for specific geographic regions.

      Note – Starting with the Oracle Solaris 10 9/10 release, only a DVD is provided. Solaris Software CDs are no longer provided.

- Check your system BIOS to make sure you can boot from CD or DVD media.
- Acquire any install time updates (ITUs) or drivers that you need to install the Solaris OS on your hardware. To determine if you need an ITU or additional drivers, see your hardware documentation.
- Verify that your system meets the minimum requirements.

Your system should meet the following requirements.

- Memory – 768 Mbytes or greater
- Disk space – 6.8 Gbytes or greater
- Processor speed – 120 MHz or greater with hardware floating point

For detailed information about system requirements, see "System Requirements and Recommendations" on page 10.

If you are installing the Solaris OS on a system that is not produced by Sun Microsystems, Inc., check the Solaris Hardware Compatibility List at `http://www.sun.com/bigadmin/hcl` before you begin to install.

- Gather the information you need to install the Solaris OS.

  - For a nonnetworked system:

    You need the following information:

    - Host name of the system that you are installing
    - Language and locales that you intend to use on the system

  - For a networked system, gather the following information.

    Note – Starting with the Solaris 10 11/06 release, you have the option during an initial installation to change the network security settings so that all network services, except Secure Shell, are disabled or restricted to respond to local requests only. This security option is only available during an initial installation, not during an upgrade. An upgrade maintains any previously set services. If necessary, you can restrict network services after an upgrade by using the netservices command. See "Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

    The network services can be enabled after installation by using the netservices open command or by enabling individual services by using SMF commands. See "Revising Security Settings After Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

    - Host name of the system that you are installing
    - Keyboard layout

Note – If the keyboard is self-identifying, the keyboard layout automatically configures during installation. If the keyboard is not self-identifying, you can select from a list of supported keyboard layouts during installation.

For further information, see "keyboard Keyword" in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

- Language and locales that you intend to use on the system
- Host IP address
- Subnet mask
- Type of naming service (for example, DNS, NIS, or NIS+)
- Domain name

Note – During installation, you can choose the default NFSv4 domain name. Or, you can specify a custom NFSv4 domain name. For more information about specifying a domain name, see "NFSv4 Domain Name Configurable During Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

- Host name of the name server
- Host IP address of the name server
- Root password

For information that you need to gather to install your system, see "Checklist for Installation" on page 17. If you are upgrading your system, see "Checklist for Upgrading" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*. Note that you may need to provide your support credentials and proxy information during the installation or upgrade for Auto Registration, as described in the checklists.

Note – If you have a system that contains non-global zones, Solaris Live Upgrade is the recommended upgrade program or program to add patches. Other upgrade programs might require extensive upgrade time, because the time required to complete the upgrade increases linearly with the number of installed non-global zones.

For information about upgrading with Solaris Live Upgrade, see Part I, "Upgrading With Solaris Live Upgrade," in *Oracle Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning*.

- (Optional) Back up your system.

If you want to preserve any existing data or applications, back up the system. For detailed instructions about how to back up your system, see Chapter 23, "Backing Up and Restoring UFS File Systems (Overview)," in *System Administration Guide: Devices and File Systems*.

1   Insert the appropriate media in your system.

If you boot from the Solaris Operating System DVD or the Solaris Software - 1 CD, insert the disc. Your system's BIOS must support booting from a DVD or CD.

You might need to manually set your BIOS to boot from a DVD or CD. See your hardware documentation for more information about how to set the BIOS.

2   Boot the system by shutting it down and then turning it off and on.

3   If you need to manually set the BIOS to boot from CD or DVD, type the appropriate key sequence to interrupt your system boot process.

Modify the boot priority in the BIOS, and exit the BIOS to return to the installation program.

A memory test and hardware detection are executed. The screen refreshes. The GRUB menu is displayed.

```
GNU GRUB version 0.95 (631K lower / 2095488K upper memory)
+-----------------------------------------------------------------------+
| Solaris                                                               |
| Solaris Serial Console ttya                                           |
| Solaris Serial Console ttyb (for lx50, v60x and v65x)                 |
|                                                                       |
|                                                                       |
+-----------------------------------------------------------------------+
Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the
commands before booting, or 'c' for a command-line.
```

4   Select the appropriate installation option.

   ■   **If you want to install the Solaris OS from CD or DVD on your current system, select Solaris, then press Enter.**

   Select this option if you want to install the system by using the default values.

   ■   **If you want to install the Solaris OS and send the screen output to serial console ttya (COM1), select Solaris Serial Console ttya.**

   Select this option if you want to change the system display to a device that is connected to serial port COM1.

   ■   **If you want to install the Solaris OS and send the screen output to serial console ttyb (COM2), select Solaris Serial Console ttyb.**

   Select this option if you want to change the system display to a device that is connected to serial port COM2.

- **If you want to install the Solaris OS with specific boot arguments, follow these steps.**

  You might want to use specific boot arguments to customize the system configuration during the installation.

  a. **On the GRUB menu, select the installation option you want to edit, then press e.**

     Boot commands that are similar to the following text are displayed in the GRUB menu.

     ```
     kernel /boot/multiboot kernel/unix -B install_media=cdrom
     module /boot/x86.miniroot
     ```

  b. **Use the arrow keys to select the boot entry that you want to edit, then press e.**

     The boot command that you want to edit is displayed in the GRUB edit window.

  c. **Edit the command by typing the boot arguments or options you want to use.**

     The command syntax for the Grub edit menu is as follows.

     ```
     grub edit>kernel /boot/multiboot kernel/unix/ \
     install [url|ask] -B options install_media=media_type

     grub edit>kernel$ /boot/platform/i86pc/$ISADIR/kernel/unix/ \
     install [url|ask] -B options install_media=media_type
     ```

     For information about boot arguments and command syntax, see Chapter 9, "Installing From the Network (Command Reference)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

  d. **To go back to the GRUB menu, select one of the following alternatives.**

     - **To go back to the GRUB menu and save your edits, press Enter.**

       The GRUB menu is displayed. The edits you made to the boot command are displayed.

     - **To go back to the GRUB menu without saving your edits, press Escape.**

       The original GRUB menu is displayed.

  e. **To begin the installation, type b in the GRUB menu.**

The Solaris installation program checks the default boot disk for the requirements to install or upgrade the system. If the Solaris installation cannot detect the system configuration, the program prompts you for any missing information.

When the check is completed, the installation selection screen is displayed.

5   Select an installation type.

The installation selection screen displays the following options.

```
Select the type of installation you want to perform:

    1 Solaris Interactive
    2 Custom JumpStart
    3 Solaris Interactive Text (Desktop session)
    4 Solaris Interactive Text (Console session)
    5 Apply driver updates
    6 Single user shell

    Enter the number of your choice followed by the <ENTER> key.
    Alternatively, enter custom boot arguments directly.

    If you wait 30 seconds without typing anything,
    an interactive installation will be started.
```

- **To install the Solaris OS, choose from the following options.**

  - **To install with the Solaris interactive installation GUI, type 1, then press Enter.**

  - **To perform an unattended custom JumpStart installation, type 2, then press Enter.**

    For information about JumpStart installations, see *Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*.

  - **To install with the interactive text installer in a desktop session, type 3, then press Enter. You can also type b - `text` at the prompt.**

    Select this installation type to override the default GUI installer and run the text installer.

    For detailed information about the Solaris installation GUI and text installer, see "System Requirements and Recommendations" on page 10.

  - **To install with the interactive text installer in a console session, type 4, then press Enter. You can also type b - `nowin` at the prompt.**

    Select this installation type to override the default GUI installer and run the text installer.

  The system configures the devices and interfaces, and searches for configuration files. If the operating system cannot locate a self-identifying keyboard, the next screen displays keyboard layout selections. If the system locates a self-identifying keyboard, skip to Step 9.

Note – To perform system administration tasks before your installation, choose one of the two options described below, instead of selecting one of the previously-described installation options.

- To update drivers or install an install time update (ITU), insert the update media, type 5, then press Enter.

  You might need to update drivers or install an ITU to enable the Solaris OS to run on your system. Follow the instructions for your driver update or ITU to install the update.

- To perform system administration tasks, type 6, then press Enter.

  You might want to launch a single user shell if you need to perform any system administration tasks on your system before you install. For information about system administration tasks you can perform prior to installation, see *System Administration Guide: Basic Administration*.

After you perform these system administration tasks, the previous list of options is displayed. Select the appropriate option to continue the installation.

---

6   **(Optional) Select the desired keyboard layout from the screen below and press F2 to continue.**

```
Configure Keyboard Layout
+------------------------------------------------------------------------+
|    Please specify the keyboard layout from the list below.              |
|                                                                        |
|    To make a selection, use the arrow keys to highlight the option and  |
|    press Return to mark it [X].                                        |
|                                                                        |
|             Keyboard  Layout                                           |
|             ----------------------                                      |
|        [ ] Serbia-And Montenegro                                       |
|        [ ] Slovenian                                                   |
|        [ ] Slovakian                                                   |
|        [ ] Spanish                                                     |
|        [ ] Swedish                                                     |
|        [ ] Swiss-French                                                |
|        [ ] Swiss-German                                                |
|        [ ] Taiwanese                                                   |
|        [ ] TurkishQ                                                    |
|        [ ] TurkishF                                                    |
|        [ ] UK-English                                                  |
|        [ X] US-English                                                 |
|                                                                        |
|    F2_Continue      F6_Help                                            |
+------------------------------------------------------------------------+
```

The system configures the devices and interfaces and searches for configuration files. If you selected a GUI installation in the earlier steps, the next two screens confirm GUI functioning.

7   (Optional) In the following screen, press Enter.

```
Starting Solaris Interactive (graphical user interface)
Installation
+-----------------------------------------------------------+
| You must respond to the first question within 30 seconds  |
| or the installer proceeds in a non-window environment     |
| (console mode).                                           |
|                                                           |
| If the screen becomes blank or unreadable the installer   |
| proceeds in console mode.                                 |
|                                                           |
| If the screen does not properly revert to console mode,   |
| restart the installation and make the following selection:|
|                                                           |
|      Solaris Interactive Text (Console session)           |
-----------------------------------------------------------+
```

Note – If your system has insufficient memory, the program exists and displays an error message. You can upgrade your memory and restart the installation.

For an alternative that requires less memory to install, restart the installation and select a text installer option instead of a GUI installer option.

After progress messages are completed, another confirmation screen is displayed.

8   (Optional) Move your cursor into the following text screen and press Enter.

```
If the screen is legible, press ENTER in this window.
```
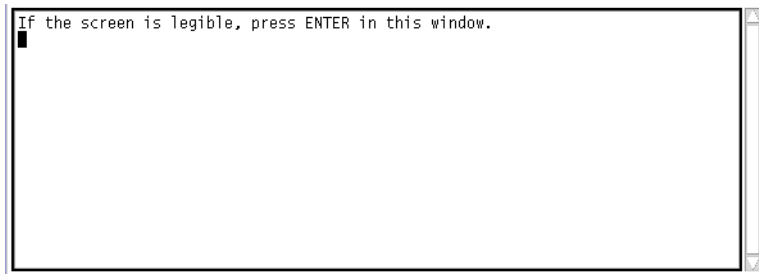
A list of language choices is displayed.

9 **In the following screen, select the language you want to use during the installation, and press Enter.**

```
Select a Language

    1. English
    2. French
    3. German
    4. Italian
    5. Japanese
    6. Korean
    7. Simplified Chinese
    8. Spanish
    9. Swedish
   10. Traditional Chinese

Please make a choice (1 - 10), or press h or ? for help: █
```

10 **If you are prompted, answer any remaining configuration questions.**

- If you preconfigured all of the system information, the installation program does not prompt you to enter any configuration information. See Chapter 2, "Preconfiguring System Configuration Information (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations* for more information.

- If you did not preconfigure all the system information, the installation program prompts you for this information on several screens. Use the "Checklist for Installation" on page 17 to help you answer the configuration questions.

- One configuration question asks you whether you want to enable network services for use by remote clients. The default response is "Yes, I would like to enable network services for use by remote clients."

  Selecting "No" provides a more secure configuration in which Secure Shell is the only network service provided to remote clients. Selecting "Yes" enables a larger set of services as in previous Solaris releases. You can safely select "No" as any services can be enabled after installation. For further information about these options, see "Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

  The network services can be enabled after installation by using the netservices open command or by enabling individual services by using SMF commands. See "Revising Security Settings After Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

After you answer the configuration questions, the Welcome to Solaris panel appears.

11 **Click Next in the Welcome screen.**

The Installer Questions screen displays.

12 **Decide if you want to reboot the system automatically and if you want to automatically eject the disc. Click Next.**

Important: If you intend to disable Auto Registration after installation, deselect the automatic reboot.

The Specify Media screen appears.

13   Specify the media you are using to install. Click Next.

The License screen appears.

14   Accept the license agreement to continue the installation. Click Next.

The Solaris installation program then determines if the system can be upgraded. To upgrade, the system must have an existing Solaris root (/) file system. The Solaris installation program detects the necessary conditions and then upgrades the system.

The Select Upgrade or Initial Install screen appears.

15   Decide if you want to perform an initial installation or an upgrade. Click Next.

Note – If you restored the diagnostic or service partition on your system before you started the installation, you might not be able to upgrade to the Solaris OS. For more information, see "Service Partition Not Created by Default on Systems With No Existing Service Partition" in *Oracle Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning*.

The next screen enables you to choose a default installation or a custom installation.

16   Select the type of installation you want to perform. Click Next.

-   **Select Default Install to install the Entire Solaris Software Group.**

-   **Select Custom Install if you want to perform the following tasks.**
    -   Install a specific software group
    -   Install additional software
    -   Install specific software packages
    -   Install a specific locale
    -   Customize the disk layout

For more information about software groups, see "Disk Space Recommendations for Software Groups" on page 15. For information about customizing fdisk partitions, see "Partitioning Recommendations" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

Note – The text installer does not prompt you to select a Default or Custom Installation. To perform a default installation, accept the default values that are provided in the text installer. To perform a custom installation, edit the values in the text installer screens.

---

17 **If you are prompted, answer any additional configuration questions.**

■ **If you had set up your Auto Registration preferences using the `auto_reg` keyword in the `sysidcfg` file prior to the installation or upgrade, the installer does not prompt you for that information as part of completing the configuration questions.**

Note – For information about Auto Registration, see "Oracle Solaris Auto Registration" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

■ **If you did not include the `auto_reg` keyword in the `sysidcfg` file, the installer prompts you to provide Auto Registration information as part of completing the configuration questions.**

Note – If you intend to disable Auto Registration at the end of the installation or upgrade, you can proceed through these Auto Registration screens without entering any information.

a. Choose to either register using your support credentials or to have data sent anonymously.

The GUI screen is displayed. Select or deselect registering with your credentials. Click Next to continue.

FIGURE 2–6   GUI Auto Registration Screen
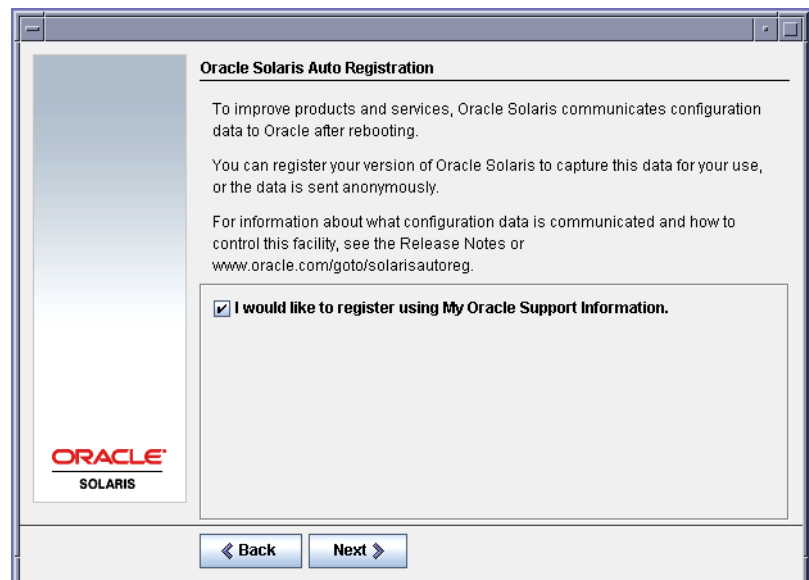
Alternately, the text installer screen displays.
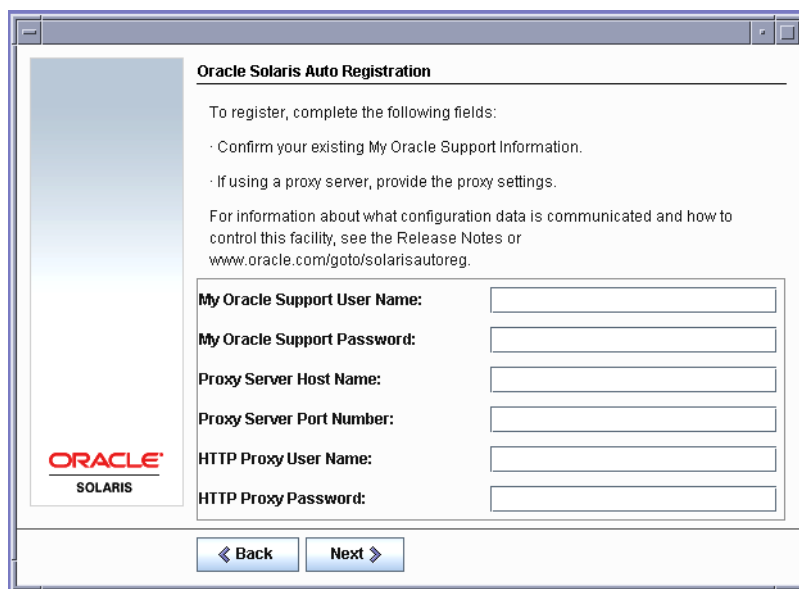
FIGURE 2–7   Text Auto Registration Screen
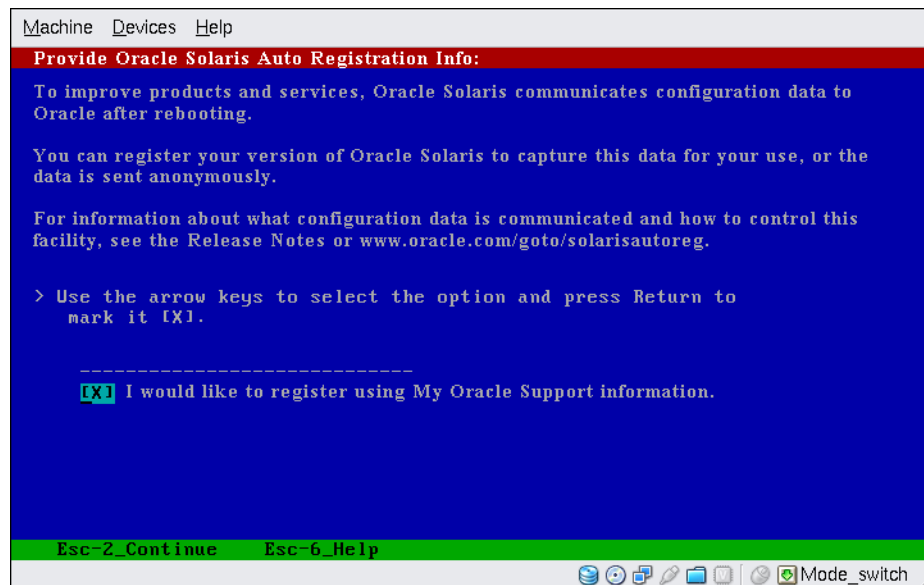
In the text screen, use the arrow keys to navigate to the option box. Press Return to mark the option box to select registering with your support credentials. Press the Esc_2 key to continue.

b. Provide the requested proxy and credential information.

FIGURE 2–8 GUI Auto Registration Data Entry Screen

If you chose to register in the prior screen, you are prompted to provide your My Oracle Support user name and password. If you use a proxy server, you can provide the server host name and port number, and the proxy user name and password.

If you chose an anonymous registration in the prior screen, this screen asks only for the proxy information.

Alternately, for text installs, the following screen is displayed.

FIGURE 2–9   Text Auto Registration Data Entry Screen

Use the arrow keys to navigate between lines. Type your support credentials and optional proxy entries. Press the Esc_2 key to continue.

The Ready to Install screen is displayed.

18   **Review the Ready to Install screen.**

Note – The GUI screen is shown here. The text version of this screen contains the same information.

FIGURE 2–10   Solaris Installation Ready to Install Screen
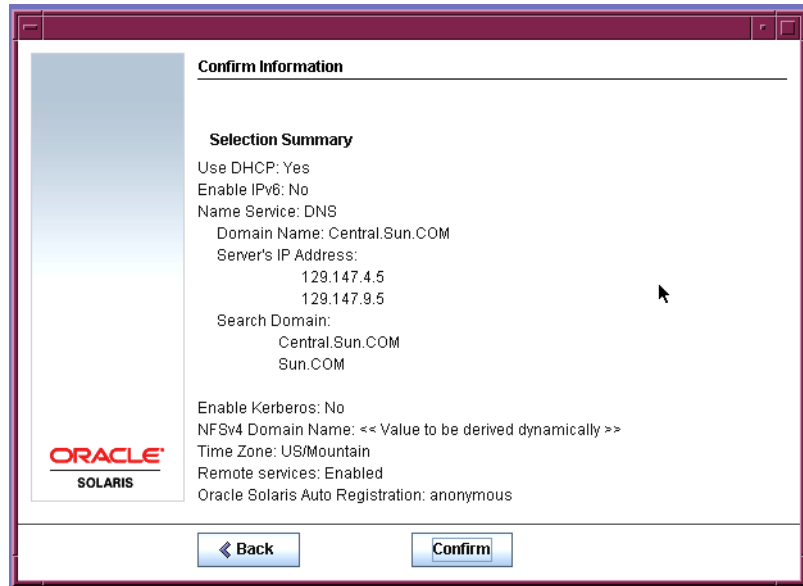
19   **Click Install Now to install the Solaris software. Follow the instructions on the screen to install the Solaris software and any additional software on the system.**

When the Solaris installation program is finished installing the Solaris software, the system reboots automatically or prompts you to reboot manually.

After the installation is finished, installation logs are saved in a file. You can find the installation logs in the /var/sadm/system/logs and /var/sadm/install/logs directories

- **If you are performing an initial installation, the installation is complete. If you deselected automatic reboot, continue to Step 20.**

- **If you are upgrading the Solaris software, you might need to correct some local modifications that were not preserved. Go to Step a.**

   a. **Review the contents of the /a/var/sadm/system/data/upgrade_cleanup file to determine whether you need to correct local modifications that the Solaris installation program could not preserve.**

   b. **Correct any local modifications that were not preserved.**

20   If you previously deselected automatic rebooting, choose one of the following two options:

- **If you do not want to disable Auto Registration, eject any installation media, then manually reboot the system as follows:**

  ```
  # reboot
  ```

- **If you want to disable Auto Registration so that no configuration data is sent to Oracle on reboot, perform the following steps prior to manually rebooting the system.**

![warning icon]

Caution – To disable Auto Registration using the following procedure, you must have deselected automatic reboot earlier in the installation screens.

If the system does automatically reboot, you cannot use the following steps to disable Auto Registration. Instead, after the automatic reboot, you can disable Auto Registration by using the regadm command. See Chapter 16, "Working With the Oracle Solaris Auto Registration regadm Command (Tasks)," in *System Administration Guide: Basic Administration*.

a.   **When the installation is complete and before manually rebooting, open a terminal window as follows:**

- **For a GUI install, right-click to open a terminal window.**

- **For a text install, press "!" to open a terminal window.**

b.   **At the command line, remove the /a/var/tmp/autoreg_config file.**

c.   **Save the file.**

d.   **Eject any installation media and manually reboot the system.**

```
# reboot
```

After the system reboots, a GRUB menu lists the operating systems that are installed, including the newly installed Solaris OS.

e.   **Select which operating system you want to boot.**

The default selection loads if you do not make another selection.

More Information   Next Steps

If you install multiple operating systems on your machine, you need to instruct the GRUB boot loader to recognize these operating systems in order to boot. For more information, see "Modifying Boot Behavior by Editing the GRUB Menu at Boot Time" in *System Administration Guide: Basic Administration*.

Troubleshooting   If you encounter any problems during the installation or upgrade, see Appendix A, "Troubleshooting (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*.

3

Installing With the Solaris Interactive Text Installer for ZFS Root Pools (Planning and Tasks)

This chapter explains how to use the Solaris interactive installation program on the Solaris Operating System DVD or Solaris Software - 1 CD to perform an initial installation of a ZFS root pool.

This chapter contains the following topics:

ZFS Root Pool Installation (Planning)

You can perform an initial installation by using the Solaris interactive text installer to create a ZFS storage pool that contains a bootable ZFS root pool. You cannot use the standard GUI installation program to install a ZFS root pool.

The Solaris interactive text installation process is similar to previous Solaris releases. The difference is that you have the option to install a UFS (/) root file system or ZFS root pool. UFS is the still the default file system. You must select the ZFS option, to create and install a ZFS storage pool.

If you already have ZFS storage pools on the system, they remain untouched, unless you select the disks in the existing pool to create the new storage pool. If you have an existing ZFS storage pool that you want to use for your ZFS root file system, you must use Solaris Live Upgrade to migrate your existing UFS root (/) file system to a ZFS root pool. Solaris Live Upgrade also provides the means to upgrade a ZFS root pool. For more information, see Chapter 11, "Solaris Live Upgrade and ZFS (Overview)," in *Oracle Solaris 10 9/10 Installation Guide: Solaris Live Upgrade and Upgrade Planning*.

Before you begin the initial installation to create a ZFS storage pool, see Chapter 6, "ZFS Root File System Installation (Planning)," in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

> **Note** – Installations to ZFS root file systems for both SPARC and x86 systems require a minimum of 768 MB memory. The recommended memory is 1 GB.

What's New in Solaris 10 10/09 Release

Starting with the Solaris 10 10/09 release, you can set up a JumpStart profile to identify a flash archive of a ZFS root pool.

A Flash archive can be created on a system that is running a UFS root file system or a ZFS root file system. A Flash archive of a ZFS root pool contains the entire pool hierarchy, except for the swap and dump volumes, and any excluded datasets. The swap and dump volumes are created when the Flash archive is installed.

You can use the Flash archive installation method as follows:

- Generate a Flash archive that can be used to install and boot a system with a ZFS root file system.
- Perform a JumpStart installation of a system by using a ZFS Flash archive.

> **Note** – Creating a ZFS Flash archive backs up an entire root pool, not individual boot environments. Individual datasets within the pool can be excluded by using the `flarcreate` command and `flar` command's `-D` option.

For detailed instructions and limitations, see "Installing a ZFS Root File System (Oracle Solaris Flash Archive Installation)" in *Oracle Solaris ZFS Administration Guide*.

Performing Initial Installation With the Solaris Interactive Text Installer for ZFS

This procedure describes how to install a standalone SPARC based system from CD or DVD media.

▼ SPARC: How to Install a ZFS Root Pool

Before You Begin   If you want to install the Solaris OS on a machine or domain that does not have a directly attached DVD-ROM or CD-ROM drive, you can use a DVD-ROM or CD-ROM drive that is attached to another machine. For detailed instructions, refer to Appendix B, "Installing or Upgrading Remotely (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

Ensure that you have the necessary media.

- For a DVD installation, you need the Solaris Operating System for SPARC Platforms DVD.
- For a CD installation:

  You need to following media.

  - Solaris Software CDs.
  - Solaris Languages for SPARC Platforms CDs – The installation program prompts you for these CDs if necessary to support languages for specific geographic regions.

    Note – Starting with the Oracle Solaris 10 9/10 release, only a DVD is provided. Solaris Software CDs are no longer provided.

If you want to preserve any existing data or applications, back up the system.

- For backing up a UFS file system, see Chapter 23, "Backing Up and Restoring UFS File Systems (Overview)," in *System Administration Guide: Devices and File Systems*
- For backing up a ZFS root pool, see "Sending and Receiving ZFS Data" in *Oracle Solaris ZFS Administration Guide*

1 **Insert the Solaris Operating System for SPARC Platforms DVD or Solaris Software for SPARC Platforms - 1 CD.**

2 **Boot the system.**

- **If the system is new, just removed from its packaging, turn on the system.**

- **If you want to install a system that is currently running, shut down the system.**

The ok prompt is displayed.

3 **Start the Solaris interactive text installer. You cannot run the installation GUI to install a ZFS root pool. To boot from the local DVD or CD and start the text installer in a desktop session, type the following command:**

ok **boot cdrom - text**

text   Specifies to run the text installer in a desktop session. Use this option to override the default GUI installer.

If the operating system cannot locate a self-identifying keyboard, the next screen displays keyboard layout selections.

Note – PS/2 keyboards are not self-identifying. You will be asked to select the keyboard layout during the installation.

---

4 (Optional) Select the desired keyboard layout from the following screen and press F2 to continue.

```
Configure Keyboard Layout
+---------------------------------------------------------------------------+
|    Please specify the keyboard layout from the list below.                 |
|                                                                            |
|    To make a selection, use the arrow keys to highlight the option and     |
|    press Return to mark it [X].                                            |
|                                                                            |
|             Keyboard  Layout                                               |
|             ----------------------                                         |
|         [ ] Serbia-And Montenegro                                          |
|         [ ] Slovenian                                                      |
|         [ ] Slovakian                                                      |
|         [ ] Spanish                                                        |
|         [ ] Swedish                                                        |
|         [ ] Swiss-French                                                   |
|         [ ] Swiss-German                                                   |
|         [ ] Taiwanese                                                      |
|         [ ] TurkishQ                                                       |
|         [ ] TurkishF                                                       |
|         [ ] UK-English                                                     |
|         [ X] US-English                                                    |
|                                                                            |
|     F2_Continue      F6_Help                                               |
+---------------------------------------------------------------------------+
```

The system configures the devices and interfaces and searches for configuration files. A list of language choices might be displayed. If this screen is not displayed, skip to Step 6.

5 (Optional) You might see a screen to select a language. Select the language you want to use during the installation, and press F2.

```
Select a Language
+---------------------------------------------------------------------------+
|    Please specify the the language from the list below.                    |
|                                                                            |
|    To make a selection, use the arrow keys to highlight the option and     |
|    press Return to mark it [X].                                            |
|                                                                            |
|        [ ] English                                                         |
|        [ ] French                                                          |
|        [ ] German                                                          |
|        [ ] Italian                                                         |
|        [ ] Japanese                                                        |
|        [ ] Korean                                                          |
|        [ ] Simplified Chinese                                              |
|        [ ] Spanish                                                         |
|        [ ] Swedish                                                         |
|        [ ] Traditional Chinese                                             |
```

```
|      [  ] UK-English                                                 |
|                                                                      |
|    F2_Continue       F6_Help                                         |
+----------------------------------------------------------------------+
```

6   **Press F2 to begin the installation. If you are prompted, answer any remaining configuration questions.**

■   **Preconfiguring system information**.

Select one of the following options:

■   If you preconfigured all of the system information, the installation program does not prompt you to type any configuration information. See Chapter 2, "Preconfiguring System Configuration Information (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations* for more information.

■   If you did not preconfigure all the system information, the installation program prompts you for this information on several screens. Use the "Checklist for Installation" on page 17 to help you answer the configuration questions.

■   **Network configuration**.

One configuration question asks you whether you want to enable network services for use by remote clients. The default response is "Yes, I would like to enable network services for use by remote clients."

Selecting "No" provides a more secure configuration in which Secure Shell is the only network service provided to remote clients. Selecting "Yes" enables a larger set of services as in previous Solaris releases. You can safely select "No," as any services can be enabled after installation. For further information about these options, see "Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

The network services can be enabled after installation by using the netservices open command or by enabling individual services by using SMF commands. See "Revising Security Settings After Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

After you answer the configuration questions and set the root password, the Solaris Interactive Installation screen is displayed.

```
Solaris Interactive Installation
+----------------------------------------------------------------------+
|On the following screens, you can accept the defaults or you can customize |
| how Solaris software will be install by:                             |
|  - Selecting the type of Solaris software to install                 |
|  - Selecting disks to hold the software you've selected              |
|  - Selecting unbundled products to be installed with Solaris         |
|  - Specifying how file systems are laid out on the disks             |
|                                                                      |
|After completing these tasks, a summary of your selections            |
|(called a profile) will be displayed.                                 |
|                                                                      |
```

```
|There are two ways to install your Solaris software:                    |
|                                                                        |
|   - "Standard" installs your system from a standard Solaris            |
|     Distribution. Selecting "standard" allows you to choose            |
|     between initial install and upgrade, if your system is upgradeable. |
|                                                                        |
|   - "Flash" installs your system from one or more Flash Archives.      |
|                                                                        |
|     F2_Continue       F6_Help                                          |
+------------------------------------------------------------------------+
```

7   Decide whether you want to reboot the system automatically and whether you want to automatically eject the disc. Press F2.

Important: If you want to disable Auto Registration after the installation and prior to rebooting, deselect automatic rebooting.

If you already have ZFS storage pools on the system, they are acknowledged by the following message, but remain untouched, unless you select the disks in the existing pools to create the new storage pool.

```
There are existing ZFS pools available on this system.  However, they can only be upgraded
using the Live Upgrade tools.  The following screens will only allow you to install a ZFS root system,
not upgrade one.
```

The License screen appears.

8   Accept the license agreement to continue the installation. Press F2.

The Select Upgrade or Initial Install screen might display. If you have UFS file system that is upgradeable, this screen is displayed. If this screen does not display, skip to Step 10.

9   To perform a ZFS installation, you must press F4 for an initial installation.

Screens for choosing geographic regions, locales, and additional products are displayed.

10   Make your choices for geographic regions, locales, and additional products.

The Choose a Filesystem Type screen is displayed.

11   To create a ZFS root pool, select the ZFS option and press F2.

```
Choose a Filesystem Type
+------------------------------------------------------------------------+
|    Select the filesystem to use for your Solaris installation          |
|                                                                        |
|            [ ] UFS                                                     |
|            [X] ZFS                                                     |
|                                                                        |
|     F2_Continue       F6_Help                                          |
+------------------------------------------------------------------------+
```

The Select Software screen is displayed.

12 Select the type of installation you want to perform. Press F2.

To perform a default installation, accept the default value that is provided. To perform a custom installation, edit the values in the text installer screen. In this example screen, the default Entire Distribution Software Group is checked for installation.

For more information about software groups, see "Disk Space Recommendations for Software Groups" on page 15.

```
Select Software
+--------------------------------------------------------------------------+
|Select the Solaris software to install on the system                      |
|                                                                          |
|Note: After selecting a software group, you can add or remove             |
|software by customizing it. However this requires understanding of        |
|software dependencies and how Solaris software is packaged.               |
|                                                                          |
|  [ ] Entire Distribution plus OEM support ......5838.00 MB               |
|  [X] Entire Distribution.......................5830.00 MB                |
|  [ ] Developer System Support..................5695.00 MB                |
|  [ ] End User System Support...................4747.00 MB                |
|  [ ] Core System Support.......................1558.00 MB                |
|  [ ] Reduced Networking Core System Support.....1512.00 MB               |
|                                                                          |
|    F2_Continue        F6_Help                                            |
+--------------------------------------------------------------------------+
```

The Select Disks screen is displayed.

13 After you select the software to be installed, you are prompted to select the disks to create your ZFS storage pool. This screen is similar to previous Solaris releases, except for the following text:

```
For ZFS, multiple disks will be configured as mirrors, so the disk you choose,
or the slice within the disk must exceed the Suggested Minimum value.
```

You can select the disk or disks to be used for your ZFS root pool.

- If you select a single disk and want to configure mirroring later, see the zpool attach command in "Managing Devices in ZFS Storage Pools" in *Oracle Solaris ZFS Administration Guide*.

- If you select two disks, a mirrored two-disk configuration is set up for your root pool. Either a two-disk or three-disk mirrored pool is optimal.

- If you have eight disks and you select all eight disks, those eight disks are used for the root pool as one big mirror. This is not an optimal configuration.

A RAID-Z pool configuration for the root pool is not supported. For more information about configuring ZFS storage pools, see "Replication Features of a ZFS Storage Pool" in *Oracle Solaris ZFS Administration Guide*.

```
Select Disks
+--------------------------------------------------------------------------+
|On this screen you must select the disks for installing Solaris           |
|software. Start by looking at the Suggested Minimum Field;                |
```

```
|this value is the approximate space needed to install the software    |
|you've selected. For ZFS, multiple disks will be configured as mirrors, |
|so the disk you choose on the slice within the disk must exceed        |
|the Suggested Minimum Value.                                           |
|                                                                       |
|  Note: xx denotes the current boot disk                               |
|                                                                       |
|Disk Device                                    Available Space         |
|====================================================================== |
|                                                                       |
|[X]xx c0t0d0                                    29164 MB (F4 to edit)   |
|                                                                       |
|                          Maximum Root Size: 29164 MB                  |
|                          Suggested Minimum: 5838 MB                   |
|                                                                       |
|    F2_Continue      F6_Help                                           |
+-----------------------------------------------------------------------+
```

The Preserve Data screen is displayed.

14 **(Optional) Preserve data on the disk where you are installing the software.**

If a disk that you have selected for installing contains file systems or has unnamed slices that you want to save, you can save these file systems or unnamed slices now.

```
Preserve Data?
+-----------------------------------------------------------------------+
|Do you want to preserve existing data? At least one of the disks you've |
|selected for installing Solaris software has file systems or unnamed slices|
|that you may want to save                                              |
|                                                                       |
|                                                                       |
|    F2_Continue      F4_Preserve    F6_Help                            |
+-----------------------------------------------------------------------+
```

If you pressed F4 to save data, the screen for saving data is displayed.

15 **(Optional) Select the data to save.**

```
Preserve Data
+-----------------------------------------------------------------------+
|On this screen you can perserve the data on some or all disk slices. Any |
|slice you preserve will not be touched when Solaris software is installed |
|If  you preserve data on / (root), /usr, or /var you  must rename them  |
|because new versions of these file systems are created when Solaris     |
|software is installed.                                                 |
|                                                                       |
|Warning: Preserving an 'overlap' slice will not preserve any data within |
|it. To preserve this data, you must explicitly set the mount point name. |
|                                                                       |
|Mount Point or Pool               State    Disk/Slice         Size    |
|====================================================================== |
|[ ] zfs: rpool                    Online   c0t0d0s0        27133 MB   |
|[ ]swap                                    c0t1d0s1         2047 MB   |
|[X]overlap                                 c0t2d0s2        29188 MB   |
|                                                                       |
|                                                                       |
|    F2_Continue                   F6_Help                             |
```

```
+-------------------------------------------------------------------------+
```

The screen for configuring ZFS settings is displayed.

16   You can accept the default values. Or, you can change the name of the ZFS pool, the dataset name, the pool size, swap and dump. In addition, you can modify the way the /var file system is created and mounted.

```
Configure ZFS Settings
+-------------------------------------------------------------------------- -+
|Specify the name of the pool to be created from the disk(s) you have chosen.|
|Also specify the name of the dataset to be created within the pool that is  |
|to be used as the root directory for the filesystem.                        |
|                                                                            |
|                                                                            |
|                ZFS Pool Name: rpool                                        |
|      ZFS Root Dataset Name: szboot_0507                                    |
|           ZFS Pool Size in (MB): 17270                                     |
|            Size of swap area in (MB): 1024                                 |
|            Size of dump area in (MB): 1024                                 |
|          (Pool size must be between 9472 MB and 17270 MB)                  |
|                                                                            |
|                       [X] Keep / and /var combined                         |
|                       [ ] Put /var on a separate dataset                   |
|                                                                            |
|    F2_Continue       F6_Help                                               |
+-------------------------------------------------------------------------- --+
```

The screen for mounting a remote file system is displayed.

17   Decide if you want to mount a remote file system.

```
Mount Remote File System
+-------------------------------------------------------------------------- -+
|Do you want to mount a software from a remote file server? This may          |
|be necessary if you had to remove software because of disk space problems.   |
|                                                                            |
|                                                                            |
|    F2_Continue       F6_Help                                               |
+-------------------------------------------------------------------------- --+
```

18   If you are prompted, answer any additional configuration questions.

- **If you set up your Auto Registration preferences using the auto_reg keyword in the sysidcfg file prior to the installation or upgrade, the installer does not prompt you for that information as part of completing the configuration questions.**

   Note – For information about using the auto_reg keyword, see "auto_reg Keyword" in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

- **If you did not include the auto_reg keyword in the sysidcfg file, the installer prompts you to provide Auto Registration information as part of completing the configuration questions.**

Note – If you intend to disable Auto Registration at the end of the installation or upgrade, you can proceed through these Auto Registration screens without entering any information.

---

a. **Choose to either register using your support credentials, or to have data sent anonymously.**

FIGURE 3–1 Text Auto Registration Screen
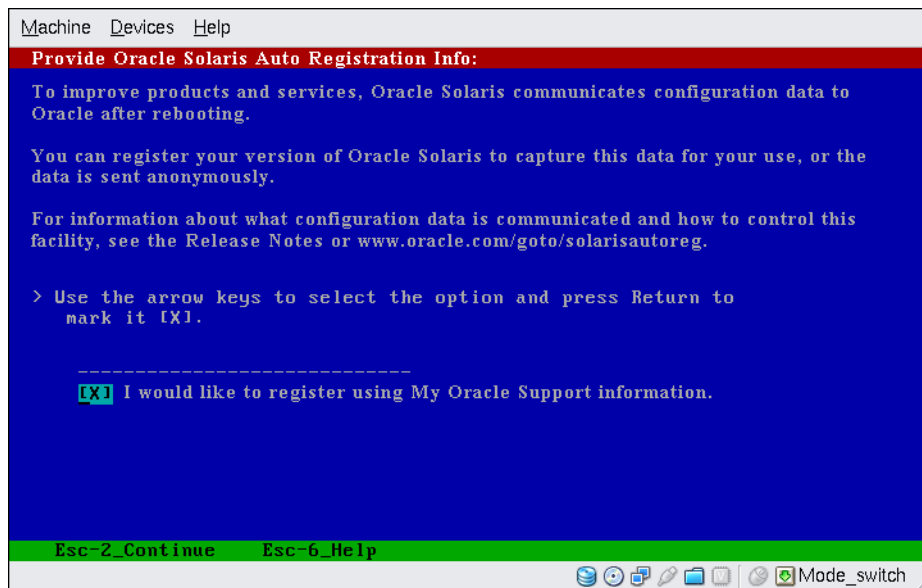
In this screen, use the arrow keys to navigate to the option box. Press Return to mark the option box to select registering with your support credentials. Press the Esc_2 key to continue.

b. **Provide the requested proxy and credential information.**

If you chose to register in the prior screen, you are prompted to provide your My Oracle Support user name and password. If you use a proxy server, you can provide the server host name and port number, and the proxy user name and password.

If you chose an anonymous registration in the prior screen, this screen asks only for the proxy information.

FIGURE 3–2   Text Auto Registration Data Entry Screen

In this screen, use the arrow keys to navigate between lines. Type your support credentials and optional proxy entries. Press the Esc_2 key to continue.

The Profile screen is displayed.

19   Review the Profile screen that displays your choices for installation. You can change the installation profile if needed. The following example is of a final installation Profile screen.

```
Profile
+------------------------------------------------------------------------- -+
|The information shown below is your profile for installing Solaris software.|
|It reflects the choices you've made on previous screens.                    |
|                                                                            |
|===========================================================================|
|                                                                            |
|              Installation Option: Initial                                  |
|                     Boot Device: c1t2d0                                    |
|           Root File System Type: ZFS                                       |
|                 Client Services: None                                      |
|                                                                            |
|                         Regions: North America                             |
|                   System Locale: C ( C )                                   |
|                                                                            |
|                        Software: Solaris 10, Entire Distribution           |
|                       Pool Name: rpool                                     |
|           Boot Environment Name: szboot_0507                               |
|                       Pool Size: 17270 MB                                  |
|                 Devices in Pool: c1t2d0                                    |
|                                                                            |
|                                                                            |
```

```
|    F2_Continue      F6_Help                                          |
+---------------------------------------------------------------------- --+
```

20   To install the Solaris software, press F2. Follow the instructions on the screen to install the Solaris software.

When the Solaris interactive text program finishes installing the Solaris software, the system reboots automatically or prompts you to reboot manually.

If you are installing additional products, you are prompted to insert the DVD or CD for those products. For installation procedures, refer to the appropriate installation documentation.

After the installation is finished, installation logs are saved in a file. You can find the installation logs in the `/var/sadm/system/logs` and `/var/sadm/install/logs` directories.

The installation is complete. If you deselected automatic rebooting after installation, continue to Step 21.

21   If you previously deselected automatic rebooting, choose one of the following two options:

■   **If you do not want to disable Auto Registration, eject any installation media, then manually reboot the system as follows:**

   `# reboot`

■   **If you want to disable Auto Registration so that no configuration data is sent to Oracle on reboot, perform the following steps prior to manually rebooting the system.**

Caution – To disable Auto Registration using the following procedure, you must have deselected automatic reboot earlier in the installation screens.

If the system does automatically reboot, you cannot use the following steps to disable Auto Registration. Instead, after the automatic reboot, you can disable Auto Registration by using the `regadm` command. See Chapter 16, "Working With the Oracle Solaris Auto Registration regadm Command (Tasks)," in *System Administration Guide: Basic Administration*.

---

a.   **When the installation is complete and before manually rebooting, press "!" to open a terminal window.**

b.   **At the command line, remove the `/a/var/tmp/autoreg_config` file.**

c.   **Save the file.**

d.   **Eject any installation media and manually reboot the system.**

   `# reboot`

Your system boots to the ZFS root pool that you installed.

You can display a list of available boot environments by using the boot command with the -L option. For more information about SPARC based booting, see "Booting From a Specified ZFS Root File System on a SPARC Based System" in *System Administration Guide: Basic Administration*.

22 (Optional) You can review the resulting ZFS storage pool and file system information, as in the following example.

The ZFS root pool is a special kind of pool that requires no administration. The sample zfs list output identifies the root pool components, such as the rpool/ROOT entries that are not accessible by default.

```
# zpool status
  pool: rpool
 state: ONLINE
 scrub: none requested
config:

        NAME        STATE     READ WRITE CKSUM
        rpool       ONLINE       0     0     0
        c1t2d0s0  ONLINE       0     0     0

errors: No known data errors
# zfs list
NAME                    USED  AVAIL  REFER  MOUNTPOINT
rpool                   6.83G  9.66G    62K  /rpool
rpool/ROOT              5.82G  9.66G    18K  legacy
rpool/ROOT/szboot_0507  5.82G  9.66G   5.82G
rpool/dump               512M  9.66G    512M  -
rpool/swap               518M  9.66G    518M  -
```

If you initially created your ZFS storage pool with one disk, you can convert the disk to a mirrored ZFS configuration after the installation. For more information about adding or attaching disks, see "Managing Devices in ZFS Storage Pools" in *Oracle Solaris ZFS Administration Guide*.

Troubleshooting If you encountered any problems during the installation, see Appendix A, "Troubleshooting (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*.

x86: Performing an Initial Installation With the Solaris Interactive Text Installer for ZFS

You can perform an initial installation the Solaris OS by using the Solaris interactive text installer. An initial installation overwrites the data on the disks being installed. This section provides detailed instructions about how to install the Solaris OS from DVD or CD media.

▼ x86: To Install With the Solaris Interactive Text Installer With GRUB for ZFS

The Solaris installation program for x86 based systems uses the GRUB boot loader. This procedure describes how to install a standalone x86 based system with the GRUB boot loader from CD or DVD media. For overview information about the GRUB boot loader, see "Modifying Boot Behavior by Editing the GRUB Menu at Boot Time" in *System Administration Guide: Basic Administration*.

Before You Begin Perform the following tasks before you begin your installation.

- If you want to install the Solaris OS on a machine or domain that does not have a directly attached DVD-ROM or CD-ROM drive, you can use a DVD-ROM or CD-ROM drive that is attached to another machine. For detailed instructions, refer to Appendix B, "Installing or Upgrading Remotely (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations*.

- Ensure that you have the necessary media.

  Select one of the following options:

  - If you are installing from a DVD, use the Solaris Operating System for x86 Platforms DVD.

  - If you are installing from CD media:

    You need the following media.

    - Solaris Software CDs.

    - Solaris Languages for x86 Platforms CDs – The installation program prompts you for these CDs if necessary to support languages for specific geographic regions.

    Note – Starting with the Oracle Solaris 10 9/10 release, only a DVD is provided. Solaris Software CDs are no longer provided.

- Check your system BIOS to ensure you can boot from CD or DVD media.

- If you are installing the Solaris OS on a system that is not produced by Sun Microsystems, Inc., check the Solaris Hardware Compatibility List at `http://www.sun.com/bigadmin/hcl` before you begin to install.

- (Optional) Back up your system.

If you want to preserve any existing data or applications, back up the system.

- For backing up a UFS file system, see Chapter 23, "Backing Up and Restoring UFS File Systems (Overview)," in *System Administration Guide: Devices and File Systems*.
- For backing up a ZFS root pool, see "Sending and Receiving ZFS Data" in *Oracle Solaris ZFS Administration Guide*.

1 Insert the appropriate media in your system.

If you boot from the Solaris Operating System DVD or the Solaris Software - 1 CD, insert the disc. Your system's BIOS must support booting from a DVD or CD.

You might need to manually set your BIOS to boot from a DVD or CD. See your hardware documentation for more information about how to set the BIOS.

2 Boot the system by shutting it down and then turning it off and on.

3 If you need to manually set the BIOS to boot from CD or DVD, type the appropriate key sequence to interrupt your system boot process.

Modify the boot priority in the BIOS, and exit the BIOS to return to the installation program.

A memory test and hardware detection are executed. The screen refreshes. The GRUB menu is displayed.

```
GNU GRUB version 0.95 (631K lower / 2095488K upper memory)
+-------------------------------------------------------------------+
| Solaris                                                           |
| Solaris Serial Console ttya                                       |
| Solaris Serial Console ttyb (for lx50, v60x and v65x)             |
|                                                                   |
|                                                                   |
+-------------------------------------------------------------------+
Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, 'e' to edit the
commands before booting, or 'c' for a command-line.
```

4 Select Solaris, then press Enter.

The Solaris installation program checks the default boot disk for the requirements to install or upgrade the system. If the installation program cannot detect the system configuration, the program prompts you for any missing information.

When the check is completed, the installation selection screen is displayed.

5 Select an installation type. To install the Solaris OS with the interactive text installer in a desktop session, type 3, then press Enter.

Select this installation type to override the default GUI installer and run the text installer for a ZFS installation.

```
        Select the type of installation you want to perform:
```

```
1 Solaris Interactive
2 Custom JumpStart
3 Solaris Interactive Text (Desktop session)
4 Solaris Interactive Text (Console session)
5 Apply driver updates
6 Single user shell

Enter the number of your choice followed by the <ENTER> key.
Alternatively, enter custom boot arguments directly.

If you wait 30 seconds without typing anything,
an interactive installation will be started.
```

The system configures the devices and interfaces, and searches for configuration files. If the operating system cannot locate a self-identifying keyboard, the next screen displays keyboard layout selections. If the system locates a self-identifying keyboard, skip to Step 7.

6   (Optional) Select the desired keyboard layout from the following screen and press F2 to continue.

```
Configure Keyboard Layout
+---------------------------------------------------------------------------+
|    Please specify the keyboard layout from the list below.                |
|                                                                           |
|    To make a selection, use the arrow keys to highlight the option and    |
|    press Return to mark it [X].                                           |
|                                                                           |
|             Keyboard  Layout                                              |
|             ----------------------                                        |
|        [  ] Serbia-And Montenegro                                         |
|        [  ] Slovenian                                                     |
|        [  ] Slovakian                                                     |
|        [  ] Spanish                                                       |
|        [  ] Swedish                                                       |
|        [  ] Swiss-French                                                  |
|        [  ] Swiss-German                                                  |
|        [  ] Taiwanese                                                     |
|        [  ] TurkishQ                                                      |
|        [  ] TurkishF                                                      |
|        [  ] UK-English                                                    |
|        [ X] US-English                                                    |
|                                                                           |
|      F2_Continue       F6_Help                                            |
+---------------------------------------------------------------------------+
```

The system configures the devices and interfaces and searches for configuration files. You might see two screens that confirm that windows are functioning. Confirm the next two screens and continue in text mode.

7   (Optional) In the following screen, press Enter.

```
Starting Solaris Interactive (graphical user interface)
Installation
+-------------------------------------------------------------+
| You must respond to the first question within 30 seconds    |
| or the installer proceeds in a non-window environment       |
```

```
| (console mode).                                             |
|                                                             |
| If the screen becomes blank or unreadable the installer     |
| proceeds in console mode.                                   |
|                                                             |
| If the screen does not properly revert to console mode,     |
| restart the installation and make the following selection:  |
|                                                             |
|      Solaris Interactive Text (Console session)             |
-------------------------------------------------------------+
```

After progress messages are completed, another confirmation screen is displayed.

8 (Optional) Move your cursor into the following text screen and press Enter.

```
+-------------------------------------------------------------+
|If the screen is legible, press ENTER in this window.        |
|                                                             |
|                                                             |
|                                                             |
|-------------------------------------------------------------+
```

A list of language choices might be displayed. If this screen is not displayed, skip to Step 10.

9 (Optional) In the following screen, select the language you want to use during the installation, and press F2.

```
Select a Language
+----------------------------------------------------------------------------+
|   Please specify the the language from the list below.                      |
|                                                                             |
|   To make a selection, use the arrow keys to highlight the option and       |
|   press Return to mark it [X].                                              |
|                                                                             |
|       [  ] English                                                          |
|       [  ] French                                                           |
|       [  ] German                                                           |
|       [  ] Italian                                                          |
|       [  ] Japanese                                                         |
|       [  ] Korean                                                           |
|       [  ] Simplified Chinese                                               |
|       [  ] Spanish                                                          |
|       [  ] Swedish                                                          |
|       [  ] Traditional Chinese                                              |
|       [  ] UK-English                                                       |
|                                                                             |
|    F2_Continue      F6_Help                                                 |
+----------------------------------------------------------------------------+
```

10 Press F2 to begin the installation. If you are prompted, answer any remaining configuration questions.

- **Preconfiguring system information**.

Select one of the following options:

- If you preconfigured all of the system information, the installation program does not prompt you to type any configuration information. See Chapter 2, "Preconfiguring System Configuration Information (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Network-Based Installations* for more information.

- If you did not preconfigure all the system information, the installation program prompts you for this information on several screens. Use the "Checklist for Installation" on page 17 to help you answer the configuration questions.

- **Network configuration**.

   One configuration question asks you whether you want to enable network services for use by remote clients. The default response is "Yes, I would like to enable network services for use by remote clients."

   Selecting "No" provides a more secure configuration in which Secure Shell is the only network service provided to remote clients. Selecting "Yes" enables a larger set of services as in previous Solaris releases. You can safely select "No," as any services can be enabled after installation. For further information about these options, see "Planning Network Security" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

   The network services can be enabled after installation by using the netservices open command or by enabling individual services by using SMF commands. See "Revising Security Settings After Installation" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

After you answer the configuration questions and set the root password, the Solaris Interactive Installation screen is displayed.

```
Solaris Interactive Installation
+------------------------------------------------------------------------+
|On the following screens, you can accept the defaults or you can customize |
| how Solaris software will be install by:                               |
|  - Selecting the type of Solaris software to install                   |
|  - Selecting disks to hold the software you've selected                |
|  - Selecting unbundled products to be installed with Solaris           |
|  - Specifying how file systems are laid out on the disks               |
|                                                                        |
|After completing these tasks, a summary of your selections              |
|(called a profile) will be displayed.                                   |
|                                                                        |
|There are two ways to install your Solaris software:                    |
|                                                                        |
|  - "Standard" installs your system from a standard Solaris             |
|     Distribution. Selecting "standard" allows you to choose            |
|     between initial install and upgrade, if your system is upgradeable. |
|                                                                        |
|  - "Flash" installs your system from one or more Flash Archives.       |
|                                                                        |
|    F2_Continue      F6_Help                                            |
+------------------------------------------------------------------------+
```

11   Decide if you want to reboot the system automatically and if you want to automatically eject the disc. Press F2.

Important: If you want to disable Auto Registration prior to rebooting the system, deselect automatic rebooting.

If you already have ZFS storage pools on the system, they are acknowledged by the following message, but remain untouched, unless you select the disks in the existing pools to create the new storage pool.

```
There are existing ZFS pools available on this system.  However, they can only be upgraded
using the Live Upgrade tools.  The following screens will only allow you to install a ZFS root system,
not upgrade one.
```

The License screen appears.

12   Accept the license agreement to continue the installation. Press F2.

The Select Upgrade or Initial Install screen might display. If you have UFS file system that is upgradeable, this screen is displayed. If this screen does not display, skip to Step 14.

13   To perform a ZFS installation, you must press F4 for an initial installation.

Screens for choosing geographic regions, locales, and additional products are displayed.

14   Make your choices for geographic regions, locales, and additional products.

The Choose a Filesystem Type is displayed.

15   To create and install a ZFS root pool, select the ZFS option.

```
Choose a Filesystem Type
+------------------------------------------------------------------------+
|    Select the filesystem to use for your Solaris installation          |
|                                                                        |
|            [ ] UFS                                                     |
|            [X] ZFS                                                     |
|                                                                        |
|    F2_Continue       F6_Help                                           |
+------------------------------------------------------------------------+
```

The Select Software screen is displayed.

16   Select the type of installation you want to perform. Press F2.

To perform a default installation, accept the default value that is provided. To perform a custom installation, edit the values in the text installer screen. In this example screen, the default Entire Distribution Software Group is checked for installation.

For more information about software groups, see "Disk Space Recommendations for Software Groups" on page 15.

```
Select Software
+------------------------------------------------------------------------+
|Select the Solaris software to install on the system                    |
```

```
|                                                                        |
|Note: After selecting a software group, you can add or remove           |
|software by customizing it. However this requires understanding of      |
|software dependencies and how Solaris software is packaged.             |
|                                                                        |
|   [ ] Entire Distribution plus OEM support ......5838.00 MB            |
|   [X] Entire Distribution.......................5830.00 MB            |
|   [ ] Developer System Support..................5695.00 MB            |
|   [ ] End User System Support...................4747.00 MB            |
|   [ ] Core System Support.......................1558.00 MB            |
|   [ ] Reduced Networking Core System Support.....1512.00 MB           |
|                                                                        |
|     F2_Continue        F6_Help                                         |
+------------------------------------------------------------------------+
```

The Select Disks screen is displayed.

17 **After you select the software to be installed, you are prompted to select the disks to create your ZFS storage pool. This screen is similar to previous Solaris releases, except for the following text:**

```
For ZFS, multiple disks will be configured as mirrors, so the disk you choose,
or the slice within the disk must exceed the Suggested Minimum value.
```

You can select the disk or disks to be used for your ZFS root pool.

- If you select a single disk and want to configure mirroring later, see the zpool attach command in "Managing Devices in ZFS Storage Pools" in *Oracle Solaris ZFS Administration Guide*.

- If you select two disks, a mirrored two-disk configuration is setup for your root pool. Either a two-disk or three-disk mirrored pool is optimal.

- If you have eight disks and you select all eight disks, those eight disks are used for the root pool as one big mirror. This is not an optimal configuration.

A RAID-Z pool configuration for the root pool is not supported. For more information about configuring ZFS storage pools, see "Replication Features of a ZFS Storage Pool" in *Oracle Solaris ZFS Administration Guide*.

```
Select Disks
+------------------------------------------------------------------------+
|On this screen you must select the disks for installing Solaris         |
|software. Start by looking at the Suggested Minimum Field;              |
|this value is the approximate space needed to install the software      |
|you've selected. For ZFS, multiple disks will be configured as mirrors, |
|so the disk you choose on the slice within the disk must exceed         |
|the Suggested Minimum Value.                                            |
|                                                                        |
|  Note: xx denotes the current boot disk                                |
|                                                                        |
|Disk Device                                      Available Space        |
|====================================================================== |
|                                                                        |
|[X]xx c0d0                                       29164 MB (F4 to edit)  |
|                                                                        |
|                               Maximum Root Size: 29164 MB             |
```

```
|                              Suggested Minimum: 5838 MB                |
|                                                                       |
|     F2_Continue       F6_Help                                         |
+-----------------------------------------------------------------------+
```

The Preserve Data screen is displayed.

18   (Optional) Preserve data on the disk where you are installing the software.

If a disk that you have selected for installing contains file systems or have unnamed slices that you want to save, you can save these file systems or unnamed slices now.

```
Preserve Data?
+-----------------------------------------------------------------------+
|Do you want to preserve existing data? At least one of the disks you've |
|selected for installing Solaris software has file systems or unnamed slices|
|that you may want to save                                              |
|                                                                       |
|                                                                       |
|     F2_Continue       F4_Preserve    F6_Help                          |
+-----------------------------------------------------------------------+
```

If you pressed F4 to save data, the screen for saving data is displayed.

19   (Optional) Select the data to save.

```
Preserve Data
+-----------------------------------------------------------------------+
|On this screen you can perserve the data on some or all disk slices. Any |
|slice you preserve will not be touched when Solaris software is installed |
|If  you preserve data on / (root), /usr, or /var you  must rename them   |
|because new versions of these file systems are created when Solaris      |
|software is installed.                                                 |
|                                                                       |
|Warning: Preserving an 'overlap' slice will not preserve any data within |
|it. To preserve this data, you must explicitly set the mount point name. |
|                                                                       |
|Mount Point or Pool                 State     Disk/Slice          Size |
|===================================================================== |
|[ ] zfs: rpool                      Online    c0d0s0           27133 MB |
|[ ]swap                                       c0d0s1            2047 MB |
|[X]overlap                                    c0d0s2           29188 MB |
|                                                                       |
|                                                                       |
|     F2_Continue                    F6_Help                            |
+-----------------------------------------------------------------------+
```

The screen for configuring ZFS settings is displayed.

20   You can accept the default values. Or, you can change the name of the ZFS pool, the dataset name, the pool size, swap, and dump. In addition, you can modify the way the /var file system is created and mounted.

```
Configure ZFS Settings
+----------------------------------------------------------------------- -+
|Specify the name of the pool to be created from the disk(s) you have chosen.|
|Also specify the name of the dataset to be created within the pool that is  |
```

```
|to be used as the root directory for the filesystem.                      |
|                                                                          |
|                                                                          |
|             ZFS Pool Name: rpool                                         |
|       ZFS Root Dataset Name: szboot_0507                                 |
|           ZFS Pool Size in (MB): 17270                                   |
|           Size of swap area in (MB): 1024                                |
|           Size of dump area in (MB): 1024                                |
|         (Pool size must be between 9472 MB and 17270 MB)                 |
|                                                                          |
|                      [X] Keep / and /var combined                        |
|                      [ ] Put /var on a separate dataset                  |
|                                                                          |
|    F2_Continue       F6_Help                                             |
+------------------------------------------------------------------------ --+
```

The screen for mounting a remote file system is displayed.

21   Decide if you want to mount a remote file system.

```
Mount Remote File System
+------------------------------------------------------------------------ -+
|Do you want to mount a software from a remote file server? This may       |
|be necessary if you had to remove software because of disk space problems. |
|                                                                          |
|                                                                          |
|    F2_Continue       F6_Help                                             |
+------------------------------------------------------------------------ --+
```

22   If you are prompted, answer any additional configuration questions.

-   **If you set up your Auto Registration preferences using the `auto_reg` keyword in the `sysidcfg` file prior to the installation or upgrade, the installer does not prompt you for that information as part of completing the configuration questions.**

    Note – For information about Auto Registration, see "Oracle Solaris Auto Registration" in *Oracle Solaris 10 9/10 Installation Guide: Planning for Installation and Upgrade*.

-   **If you did not include the `auto_reg` keyword in the `sysidcfg` file, the installer prompts you to provide Auto Registration information as part of completing the configuration questions.**

    Note – If you intend to disable Auto Registration at the end of the installation or upgrade, you can proceed through these Auto Registration screens without entering any information.

    a.   Choose to either register using your support credentials or to have data sent anonymously.

FIGURE 3–3   Text Auto Registration Screen
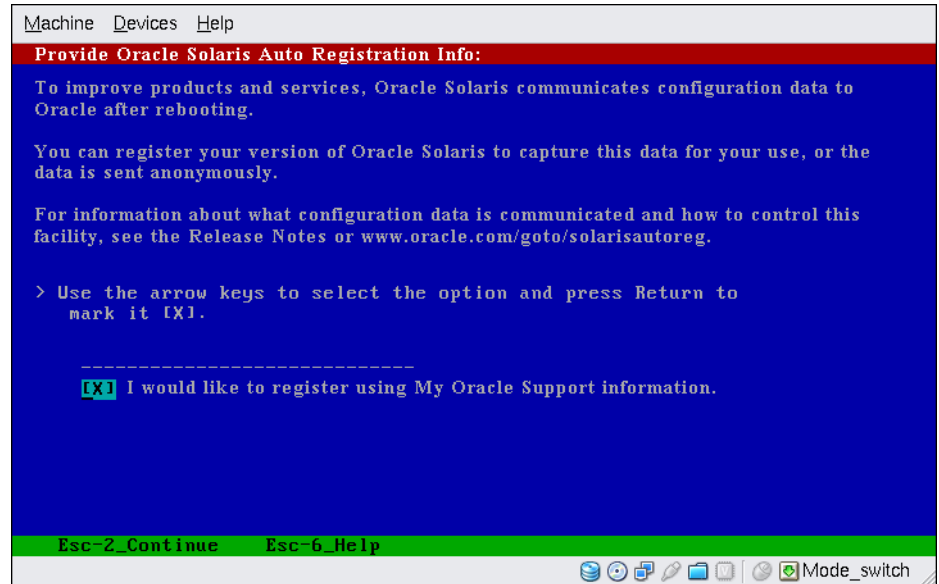
In the text screen, use the arrow keys to navigate to the option box. Press Return to mark the option box to select registering with your support credentials. Press the Esc_2 key to continue.

b. Provide the requested proxy and credential information.

If you chose to register in the prior screen, you are prompted to provide your My Oracle Support user name and password. If you use a proxy server, you can provide the server host name and port number, and the proxy user name and password.

If you chose an anonymous registration in the prior screen, this screen asks only for the proxy information.

FIGURE 3–4   Text Auto Registration Data Entry Screen
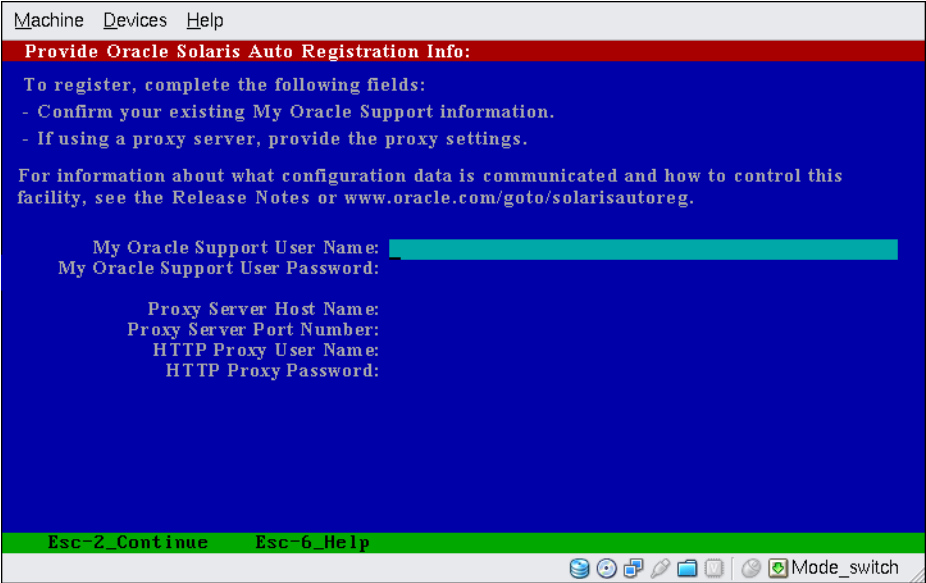
Use the arrow keys to navigate between lines. Type your support credentials and optional proxy entries. Press the Esc_2 key to continue.

The Profile screen is displayed.

23   Review the Profile screen that displays your choices for installation. You can change the installation profile if needed. The following example is of a final installation Profile screen.

```
Profile
+----------------------------------------------------------------------- -+
|The information shown below is your profile for installing Solaris software.|
|It reflects the choices you've made on previous screens.                 |
|                                                                         |
|=========================================================================|
|                                                                         |
|              Installation Option: Initial                               |
|                      Boot Device: c0d0                                  |
|              Root File System Type: ZFS                                 |
|                   Client Services: None                                 |
|                                                                         |
|                          Regions: North America                        |
|                    System Locale: C ( C )                               |
|                                                                         |
|                         Software: Solaris 10, Entire Distribution       |
|                        Pool Name: rpool                                 |
|              Boot Environment Name: szboot_0507                         |
|                        Pool Size: 17270 MB                              |
|                   Devices in Pool: c1t2d0                               |
|                                                                         |
|                                                                         |
```

```
|    F2_Continue       F6_Help                                              |
+--------------------------------------------------------------------- --+
```

24   To install the Solaris software, press F2. Follow the instructions on the screen to install the Solaris software.

When the Solaris interactive text program finishes installing the Solaris software, the system reboots automatically or prompts you to reboot manually.

If you are installing additional products, you are prompted to insert the DVD or CD for those products. For installation procedures, refer to the appropriate installation documentation.

After the installation is finished, installation logs are saved in a file. You can find the installation logs in the /var/sadm/system/logs and /var/sadm/install/logs directories.

The installation is complete. If you deselected automatic reboot previously in the installer screens, continue to Step 25.

25   If you previously deselected automatic rebooting, choose one of the following two options:

■   **If you do not want to disable Auto Registration, eject any installation media, then manually reboot the system as follows:**

   # **reboot**

■   **If you want to disable Auto Registration so that no configuration data is sent to Oracle on reboot, perform the following steps prior to manually rebooting the system.**

Caution – To disable Auto Registration using the following procedure, you must have deselected automatic reboot earlier in the installation screens.

If the system does automatically reboot, you cannot use the following steps to disable Auto Registration. Instead, after the automatic reboot, you can disable Auto Registration by using the regadm command. See Chapter 16, "Working With the Oracle Solaris Auto Registration regadm Command (Tasks)," in *System Administration Guide: Basic Administration*.

   a.   **When the installation is complete and before manually rebooting, press "!" to open a terminal window.**

   b.   **At the command line, remove the /a/var/tmp/autoreg_config file.**

   c.   **Save the file.**

   d.   **Eject any installation media and manually reboot the system.**
         # **reboot**

After the system reboots, a GRUB menu lists the operating systems that are installed, including the newly installed Solaris OS.

26   Select which operating system you want to boot.

The default selection loads if you do not make another selection.

The GRUB menu list is displayed.

```
GNU GRUB version 0.95 (637K lower / 3144640K upper memory)
+-------------------------------------------------------------------------+
|szboot_0507                                                              |
|szboot_0507 Failsafe                                                     |
|                                                                         |
|+-----------------------------------------------------------------------+

     Use the ^ and v keys to select which entry is highlighted.
     Press enter to boot the selected OS, .e. to edit the
     commands before booting, or .c. for a command-line.
```

27   When the GRUB menu is displayed, press Enter to boot the default OS instance. The default is the newly installed root pool.

In this example, the boot environment name is szboot_0507. If you do not select an entry within 10 seconds, the system automatically boots.

28   When the installation is complete, review the resulting ZFS storage pool and file system information, as in the following example.

The ZFS root pool is a special kind of pool that requires no administration. The sample zfs list output identifies the root pool components, such as the rpool/ROOT entries that are not accessible by default.

```
# zpool status
  pool: rpool
 state: ONLINE
 scrub: none requested
config:

        NAME         STATE     READ WRITE CKSUM
        rpool        ONLINE       0     0     0
        c1d0s0  ONLINE      0     0     0

errors: No known data errors
# zfs list
NAME                    USED  AVAIL  REFER  MOUNTPOINT
rpool                   6.83G  9.66G    62K  /rpool
rpool/ROOT              5.82G  9.66G    18K  legacy
rpool/ROOT/szboot_0507  5.82G  9.66G  5.82G
rpool/dump               512M  9.66G   512M  -
rpool/swap               518M  9.66G   518M  -
```

If you initially created your ZFS storage pool with one disk, you can convert the disk to a mirrored ZFS configuration after the installation. For more information about adding or attaching disks, see "Managing Devices in ZFS Storage Pools" in *Oracle Solaris ZFS Administration Guide*.

More Information   Next Steps

If you install multiple operating systems on your machine, you need to instruct the GRUB boot loader to recognize these operating systems in order to boot. For more information, see "Modifying Boot Behavior by Editing the GRUB Menu at Boot Time" in *System Administration Guide: Basic Administration*.

Troubleshooting   If you encounter any problems during the installation, see Appendix A, "Troubleshooting (Tasks)," in *Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations*.

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