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Solaris 10

Installation Guide: Basic Installations

11/06

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Preface

This document describes how to use CD or DVD media to install the Solaris™ Operating System (Solaris OS) on a non-networked system.

This document does not include instructions about how to set up system hardware or other peripherals.

Note – This Solaris release supports systems that use x86 families of processor architectures: AMD64, Pentium, and Xeon EM64T. The supported systems appear in the *Solaris 10 Hardware Compatibility List* at <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" points out specific 64-bit information about AMD64 or EM64T systems.
- "32-bit x86" points out specific 32-bit information about x86 based systems. For supported systems, see the *Solaris 10 Hardware Compatibility List*.

Typographic Conventions

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

TABLE P-2 Typographic Conventions

Typeface	Meaning	Example
AaBbCc123	The names of commands, files, and directories, and onscreen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name%</code> you have mail.
AaBbCc123	What you type, contrasted with onscreen computer output	<code>machine_name% su</code>
<i>aabbc123</i>	Placeholder: replace with a real name or value	Password: The command to remove a file is <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new terms, and terms to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . <i>Acache</i> is a copy that is stored locally. Do <i>not</i> 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 super-user prompt for the C shell, Bourne shell, and Korn shell.

TABLE P-3 Shell-Prompts

Shell	Prompt
C shell	<code>machine_name%</code>
C shell for superuser	<code>machine_name#</code>
Bourne shell and Korn shell	<code>\$</code>
Bourne shell and Korn shell for superuser	<code>#</code>

Platform Conventions

The following keyboard and mouse conventions are applicable to 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).

CHAPTER 1

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

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

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 x86 systems.

■ “System Requirements and Recommendations”

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

■ “Checklist for Installation”

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”

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

x86 Based System Size

Memory to install or upgrade 512 MB is the recommended size. 256 MB is the minimum size.

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 1–3.

Swap area 512 MB is the default size.

Note – You might need to customize the swap space. Swap space is based on the size of the system's hard disk.

Processor requirements 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-1CD 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 1–3 and Table 1–4.

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- 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 1–3 and Table 1–4 describe these environments and list memory requirements for displaying them.

TABLE 1–4 x86: Memory Requirements for Display Options

x86: Memory	Type of Installation	Description
256–511 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.
512 MB	GUI-based	Provides windows, pull-down menus, buttons, scrollbars, and iconic images.

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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 1–5 General Disk Space and Swap Space Planning

Conditions for Space Allocations Description

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.

The /var file system If you intend to use the crash dump feature savecore(1M), allocate double the amount of your physical memory in the /var file system.

Swap 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 Solaris 10 11/06 Installation Guide: Custom JumpStart and Advanced Installations.

For an overview of the swap space, see Chapter 21, "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 directory file systems

The Solaris software group you A software group is a grouping of software packages.

When you are planning disk space, remember

are installing 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 13.

TABLE 1–5 General Disk Space and Swap Space Planning (Continued) Conditions for Space Allocations Description

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 Solaris 10 11/06 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 Solaris 10 11/06 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 Allocate additional space. third-party software

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.

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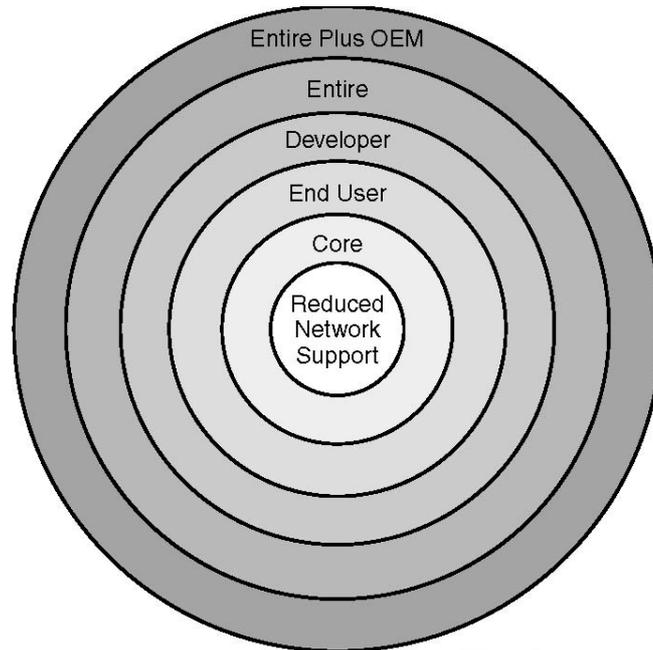


FIGURE 1–1 Solaris Software Groups

Table 1–6 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 1–6 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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.

TABLE 1–6 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.	6.8Gbytes
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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.

TABLE 1-7 Installation Checklist

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

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TABLE 1-7 Installation Checklist (Continued) TABLE 1-7 Installation Checklist (Continued)

Answer — Defaults are noted with an asterisk (*)	Description or Example	Information for

<p>Restricted/Open network security</p>	<p>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.</p> <p>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 Solaris 10 11/06 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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.</p>	<p>Installation Network security</p>
<p>Yes/No*</p>	<p>Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces? DHCP provides the network parameters that are necessary for installation.</p>	<p>DHCP</p>
<p>Answer — Defaults are noted with an asterisk (*)</p>	<p>Description or Example</p>	<p>Information for Installation</p>

	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	IPAddress	If you are not using DHCP, note the network address.
	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	Subnet	
Yes/No*	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.	IPv6	
	Host name that you choose for the system. To find this information on a running system, type the following command. # uname -n	Host Name	
Yes/No*	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.	Kerberos	

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TABLE 1-7 Installation Checklist (Continued) TABLE 1-7 Installation Checklist (Continued)

Answer — Defaults are noted with an asterisk (*)	Description or Example	Information for Installation	
NIS+/NIS/DNS/	Which naming service should this system use?	Naming Service	If the system

LDAP/None	<p>To find this information on a running system, type the following command.</p> <pre># cat /etc/nsswitch.conf</pre> <p>Anaming 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.</p>		uses a naming service, provide the following information.
	<p>Provide the name of the domain in which the system resides. 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.</p>	Domain Name	

Answer — Defaults are noted with an asterisk (*)	Description or Example	Information for Installation	
Specify One/Find One*	<p>Do you want to specify a name server or let the installation program find one? If you want to specify a name server, provide the following information.</p> <p>Server's host name:</p> <ul style="list-style-type: none"> ■ For NIS clients, type the following command to display the server's host name. <pre># ypwhich</pre> <ul style="list-style-type: none"> ■ For NIS+ clients, type the following command to display the server's host name. <pre># nisping</pre> <p>Server's IPAddress:</p> <ul style="list-style-type: none"> ■ For NIS clients, type the following command to display the server's IP address. 	NIS+ and NIS	

	<pre># 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.</pre>		
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TABLE 1-7 Installation Checklist (Continued) TABLE 1-7 Installation Checklist (Continued)

Answer — Defaults are noted with an asterisk (*)	Description or Example	Information for Installation	
	<p>Provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses.</p> <p>Server's IPAddress: To display the server's IP address, type the following command.</p> <pre># getent ipnodes dns</pre> <p>You can enter a list of domains to search when a DNS query is made.</p> <p>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.</p>	DNS	
	<p>Provide the following information about your LDAP profile.</p> <p>Profile Name: Profile Server: If you specify a proxy credential level in your LDAP profile, gather this information.</p>	LDAP	

	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.	
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Answer — Defaults are noted with an asterisk (*)	Description or Example	Information for Installation
Detect one*/Specify one/None	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: <ul style="list-style-type: none"> ■ 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. 	Default Route
Geographic region* Offset from GMT Time zone file	How do you want to specify your default time zone?	Time Zone
	Provide the root password for the system.	Root Password

	For which geographic regions do you want to install support?	Locales
Yes*/No	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.	SPARC: Power Management (only available on SPARC systems that support Power Management)
Yes*/No	Reboot automatically after software installation?	Automatic reboot or CD/DVD ejection
Yes*/No	Eject CD/DVD automatically after software installation?	

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TABLE 1–7 Installation Checklist (Continued) TABLE 1–7 Installation Checklist (Continued)

Answer — Defaults are noted with an asterisk (*)	Description or Example	Information for Installation
Default installation*/Custom installation	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 or Custom Install
Entire Plus OEM Entire* Developer End User Core Reduced Networking	Which Solaris Software Group do you want to install?	Software Group
	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	Custom Package Selection

	software dependencies and how Solaris software is packaged.	
	On which disks do you want to install the Solaris software? Example: c0t0d0	Select Disks
Yes/No* Yes/No*	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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade. Select Disks for fdisk Partition Customization? Customize fdisk partitions?	x86: fdisk partitioning

Answer — Defaults are noted with an asterisk (*)	Description or Example	Information for Installation
Yes/No*	Do you want to preserve any data that exists on the disks where you are installing the Solaris software?	Preserve Data
Yes*/No	Do you want the installation program to automatically lay out file systems on your disks? 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.	Auto-layout File Systems

Yes/No*	Does this system need to access software on another file system? If yes, provide the following information about the remote file system. Server: IPAddress: Remote File System: Local Mount Point:	Mount Remote File Systems
	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).	If you are installing through a tip line, follow these instructions.
	If the system is part of a network, verify that an Ethernet connector or similar network adapter is connected to your system.	Check your Ethernet connection.
	<p>■ Review the entire planning chapter or specific sections in Part I, "Overall Planning of Any Solaris Installation or Upgrade," in Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.</p> <p>■ Review the Solaris 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.</p> <p>■ Review the Solaris 10 11/06 Sun Hardware Platform Guide to ensure that your hardware is supported.</p> <p>■ Review the documentation that accompanied your system to ensure that your system and devices are supported by the Solaris release.</p>	Review the planning chapter and other relevant documentation.

CHAPTER 2

Installing With the Solaris Installation Program (Tasks)

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

This chapter contains the following topics:

- “SPARC: Performing an Installation or Upgrade With the Solaris Installation Program”
- “x86: Performing an Installation or Upgrade With the Solaris Installation Program”

For information about new installation features, see Chapter 2, “What’s New in Solaris Installation,” in Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade. For information about all the new features in the Solaris OS, see Solaris 10 What’s New.

SPARC: Performing an Installation or Upgrade With the Solaris Installation Program

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.

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 Solaris 10 11/06 Installation Guide: Network-Based Installations.

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

- Ensure that you have the following media.
- For a DVD installation, the Solaris Operating System for SPARC Platforms DVD
- For a CD installation:
 - Solaris Software CDs.
 - Solaris Languages for SPARC Platforms CD—The installation program prompts you for this CD if necessary to support languages for specific geographic regions.

Note – If you want to upgrade a system that has non-global zones installed, you cannot use the Solaris Software CDs. You must use the Solaris Operating System DVD or a DVD-based network installation image.

- Verify that your system meets the minimum requirements. Your system should meet the following requirements.
- Memory—128Mbytes or greater
- Disk space—6.8Gbytes or greater
- Processor speed—200 MHz or greater

For detailed information about system requirements, see “System Requirements and Recommendations” on page 9.

- Gather the information you need to install the Solaris OS.
- 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 Solaris 10 11/06 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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.

- Host name of the system that you are installing
- 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
- 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 15. If you are upgrading your system, see “Checklist for Upgrading” in Solaris 10 11/06

Installation Guide: Planning for Installation and Upgrade.

- (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 24, “Backing Up and Restoring 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 10.

The installation begins. The installation program prompts you to select a language to use during the installation.

4 Select the language you want to use during the installation, and press Enter.

After a few seconds, the Solaris Installation Program Welcome screen appears.

■ If you are running the Solaris GUI installation program, the screen that is shown in Figure 2–1 is displayed.

■ If you are running the Solaris text installer in a desktop session, the screen that is shown in Figure 2–2 is displayed.

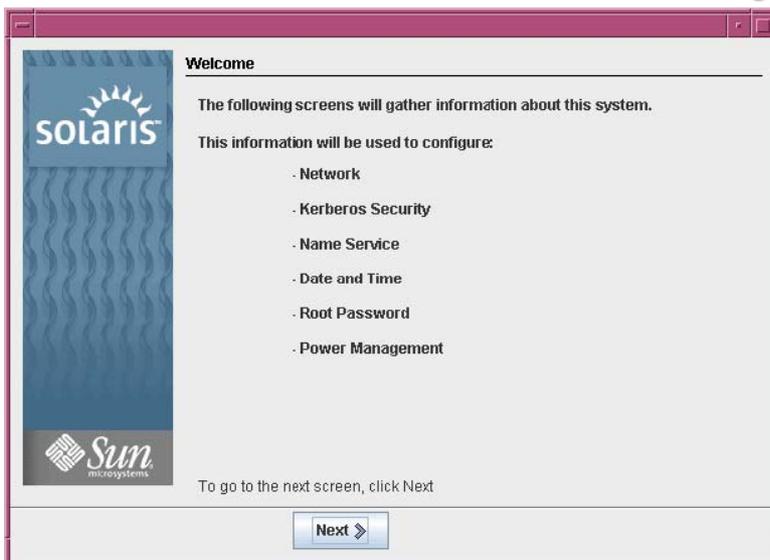


FIGURE 2–1 Solaris GUI Installation Program Welcome Screen

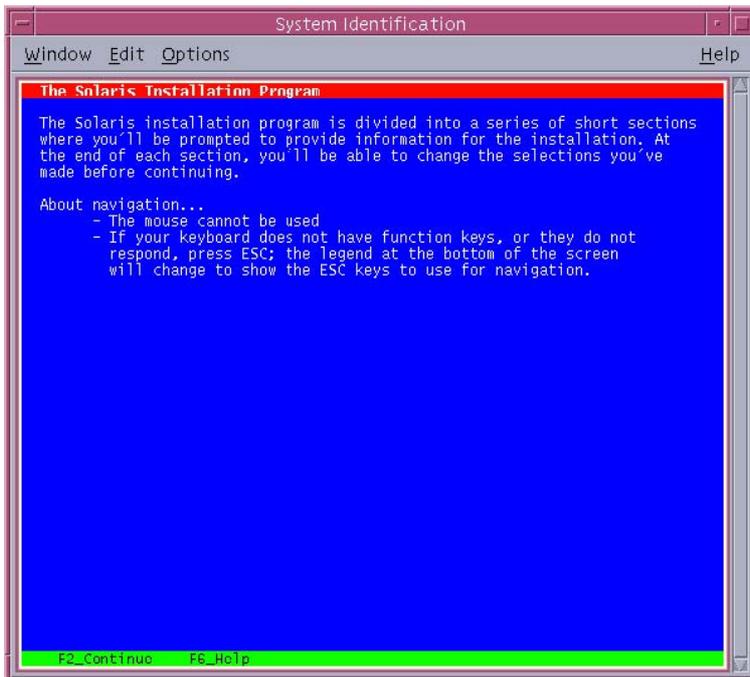


FIGURE 2–2 Solaris Text Installer Welcome Screen
Chapter 2 • Installing With the Solaris Installation Program (Tasks)

5

Click Next to begin the installation. 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 Solaris 10 11/06 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 15 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 Solaris 10 11/06 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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.

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

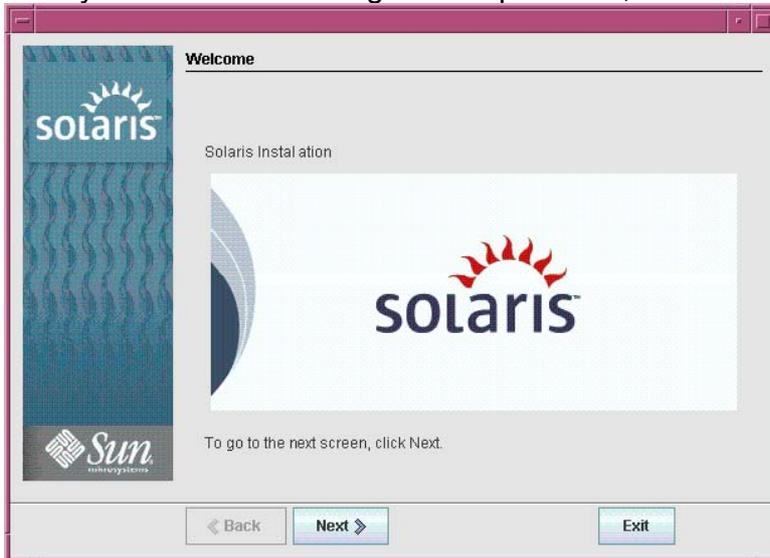


FIGURE 2–3 Welcome to Solaris Screen The Installer Questions screen appears.

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

The Specify Media screen appears.

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

The License panel appears.

8 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.

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

If you are upgrading a system that has non-global zones installed, follow these steps.

a. When you are prompted to select initial installation or upgrade, choose Upgrade. Click Next.

b. If your system has multiple root (/) partitions, select the partition that you want to upgrade on the Select Version to Upgrade panel.

The Solaris installation program displays a message that indicates that you cannot customize your upgrade. The Solaris installation program analyzes your system to determine if the system

can be upgraded. The Ready to Upgrade panel is displayed.

If your system has only one root partition, the Solaris installation program does not prompt you

to select a partition to upgrade. The partition is automatically selected.

c. If you want to continue the upgrade, click Install Now on the Ready to Upgrade panel. The Solaris installation program begins to upgrade your system. After the upgrade is completed,

you might need to correct some local modifications that were not preserved. For more information, go to Step 12.

If you do not want to continue the upgrade, click Back to perform an initial installation.

10 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 13.

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.

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

When you have provided the information that is required to install the system, the Ready to Install screen is displayed.

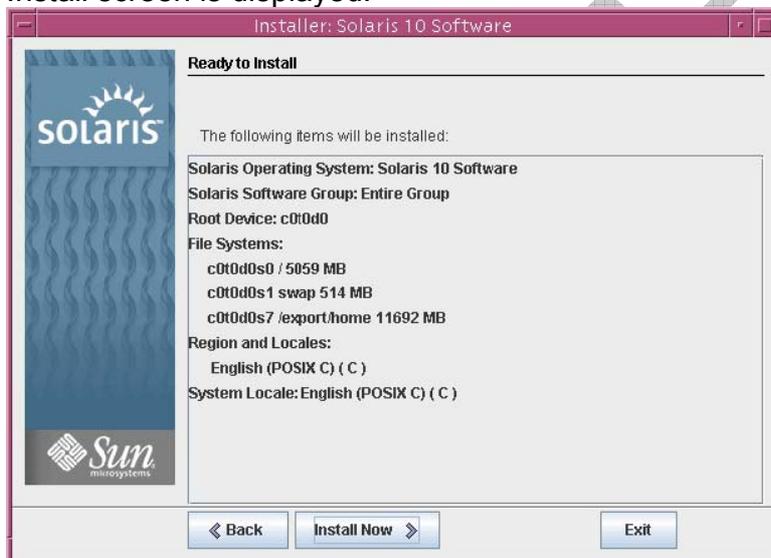


FIGURE 2–4 Solaris Installation Ready to Install Screen

12 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. Go to Step 13.
- 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 /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.

13 If you did not select automatic reboot during the installation, reboot the system.

reboot

Troubleshooting If you encountered any problems during the installation or upgrade, see Appendix A, “Troubleshooting (Tasks),” in Solaris 10 11/06 Installation Guide: Custom JumpStart and Advanced Installations.

x86: Performing an Installation or Upgrade With the Solaris Installation Program

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 boot loader from CD or DVD media. For overview information about the GRUB boot loader, see Chapter 6, “GRUB Based Booting for Solaris Installation,” in Solaris 10 11/06 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 Solaris 10 11/06 Installation Guide: Network-Based Installations.

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

- Ensure that you have the following media.
- If you are installing from a DVD, use the Solaris Operating System for x86 Platforms DVD.
- If you are installing from CD media, use the following:
 - Solaris Software CDs.
 - Solaris Languages for x86 Platforms CD—The installation program prompts you for this CD if necessary to support languages for specific geographic regions.

Note – If you want to upgrade a system that has non-global zones installed, you cannot use the Solaris Software CDs. You must use the Solaris Operating System DVD or a DVD-based network installation image.

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

For detailed information about system requirements, see “System Requirements and Recommendations”.

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, 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.

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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 Solaris 10 11/06 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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.

- Host name of the system that you are installing
- 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
- 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 15. If you are upgrading your system, see “Checklist for Upgrading” in Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.

■ (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 24, “Backing Up and Restoring 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
```

For information about boot arguments and command syntax, see Chapter 8, “Installing From the Network (Command Reference),” in Solaris 10 11/06 Installation Guide: Network-Based Installations.

d. To go back to the GRUB menu, press Enter.

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

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 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.

- To install with the interactive text installer in a console session, type 4, 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.

If you want to perform an unattended custom JumpStart installation (option 2), see Solaris 10 11/06 Installation Guide: Custom JumpStart and Advanced Installations.

For detailed information about the Solaris installation GUI and text installer, see “System Requirements and Recommendations” on page 9.

The system configures the devices and interfaces, and searches for configuration files. The kdmconfig utility detects the drivers that are necessary to configure the keyboard, display, and mouse on your system. The installation program begins. Go to Step 6 to continue the installation.

- To perform system administration tasks before your installation, choose from the following 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 Decide if you need to modify the configuration settings.

Note – If the kdmconfig utility cannot detect the video driver for your system, the kdmconfig utility selects the 640x480 VGA driver. The Solaris installation GUI cannot be displayed with the 640x480 VGA driver. As a result, the Solaris installation text installer is displayed. To use the Solaris installation GUI, use the kdmconfig utility to select the correct video driver for your system.

- If you do not need to modify the configuration settings, let the Window System Configuration for Installation screen time out. Go to Step 12.

- If you need to modify the configuration settings follow these steps,

- a. Press the ESC key.

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Note – You must press the ESC key within five seconds to interrupt the installation and modify device settings.

The kdmconfig–Introduction screen is displayed.

- b. Examine the configuration information on the kdmconfig – View and Edit Window System Configuration screen, and determine which devices you need to edit.

- c. Select the device you want to change, and press F2_Continue.

- d. Select the appropriate driver for the device, and press F2_Continue.

- e. Repeat Step a through Step b for each device you need to change.

- f. When you are finished, select No changes needed – Test/Save and Exit and press F2_Continue.

The kdmconfig Window System Configuration Test screen appears.

- g. Press F2_Continue.

The screen refreshes and the kdmconfig Window System Configuration Test palette and pattern screen appears.

h. Move the pointer and examine the colors that are shown on the palette to ensure that they are displayed accurately.

- If the colors are not displayed accurately, click No. If possible, press any key on the keyboard, or wait until kdmconfig exits the kdmconfig Window System Configuration Test screen automatically. RepeatStep athroughStep huntil the colors are displayed accurately and you can move the pointer as expected.

- If the colors are displayed accurately, click Yes.

After a few seconds, the Select a Language screen is displayed.

Select the language you want to use during the installation, and press Enter.

After a few seconds, the Solaris Installation Program screen appears.

- If you are running the Solaris GUI installation program, the screen that is shown inFigure 2–5is displayed.

- If you are running the Solaris text installer in a desktop session, the screen that is shown inFigure 2–6is displayed.

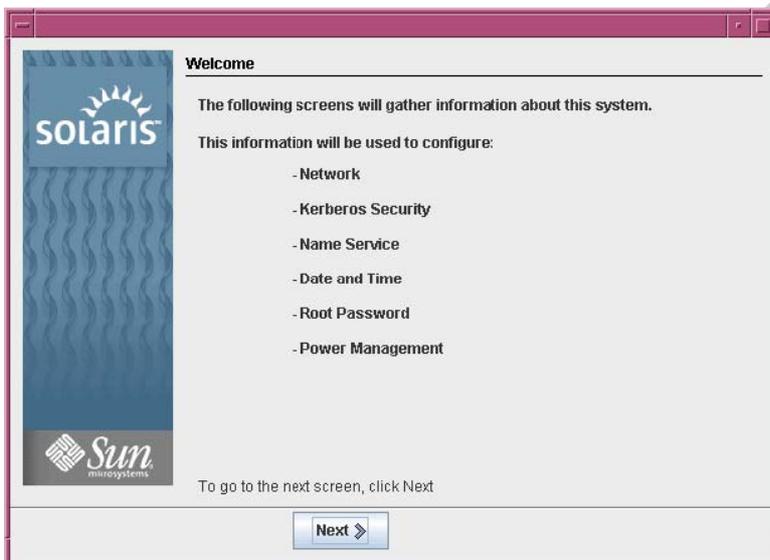


FIGURE 2–5 Solaris GUI Installation Program Welcome Screen

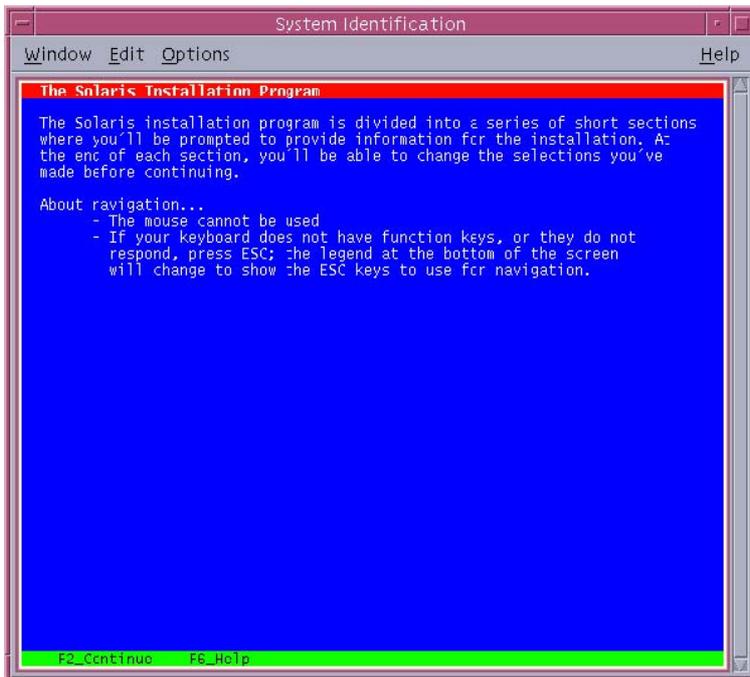


FIGURE 2–6 Solaris Text Installation Program Welcome Screen

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Click Next to begin the installation. 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 Solaris 10 11/06 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 15 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 Solaris 10 11/06 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 Solaris 10 11/06 Installation Guide: Planning for Installation and Upgrade.

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

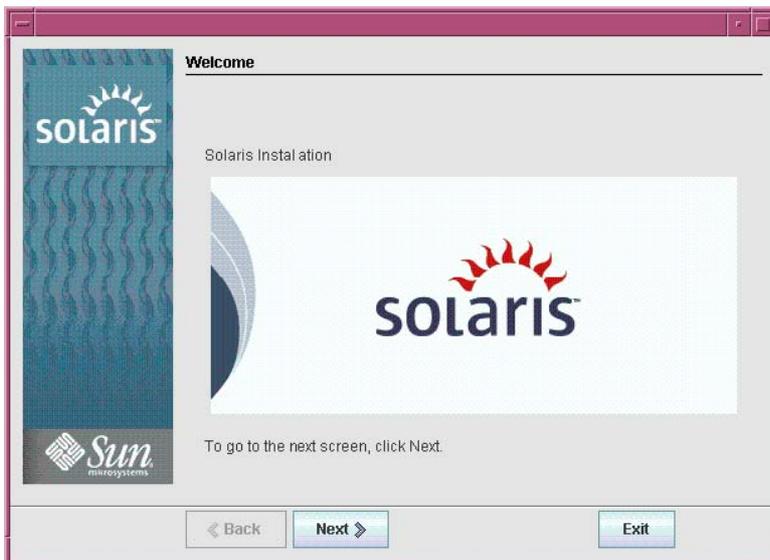


FIGURE 2-7 Welcome to Solaris Screen

9

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

The Specify Media screen appears.

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

The License screen appears.

11 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.

12 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 Solaris 10 11/06 Installation Guide: Solaris Live Upgrade and Upgrade Planning.

If you are upgrading a system that has non-global zones installed, follow these steps.

- a. When you are prompted to select initial installation or upgrade, choose Upgrade. Click Next.
- b. If your system has multiple root (/) partitions, select the partition that you want to upgrade on the Select Version to Upgrade panel.

The Solaris installation program displays a message that indicates that you cannot customize your upgrade. The Solaris installation program analyzes your system to determine if the system can be upgraded. The Ready to Upgrade panel is displayed.

If your system has only one root partition, the Solaris installation program does not prompt you to select a partition to upgrade. The partition is automatically selected.

- c. If you want to continue the upgrade, click Install Now on the Ready to Upgrade panel.

The Solaris installation program begins to upgrade your system. After the upgrade is completed, you might need to correct some local modifications that were not preserved. For more information, go to Step 15.

If you do not want to continue the upgrade, click Back to perform an initial installation.

13 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 13. For information about customizing fdisk partitions, see “Partitioning Recommendations” in Solaris 10 11/06 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.

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

When you have provided the information that is required to install the system, the Ready to Install screen is displayed.

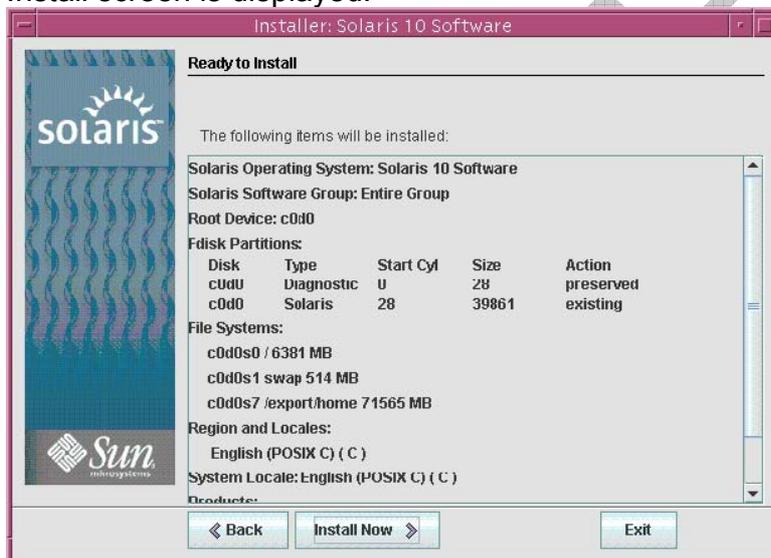


FIGURE 2–8 Solaris Installation Ready to Install Screen

15 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. Go to Step 16.

■ 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.

If you did not select automatic reboot during the installation, reboot the system.

```
# reboot
```

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 the Solaris Boot Behavior by Editing the GRUB Menu” in *System Administration Guide: Basic Administration*.

If you encounter any problems during the installation or upgrade, see Appendix A, “Troubleshooting (Tasks),” in *Solaris 10 11/06 Installation Guide: Custom JumpStart and Advanced Installations*.

16

More Information

Trouble shooting