



Solaris 8 Advanced Installation Guide

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Contents

Preface	13
1 Planning for Solaris Installation or Upgrade Topics	17
2 Overview of Planning for a Solaris Installation or Upgrade	19
Task Map: Installing or Upgrading the Solaris Software	19
Initial Installation or Upgrade	20
Initial Installation	21
Upgrade	21
System Requirements	22
Memory Requirement	23
Requirements When Using the Solaris 8 Installation CD	23
Installing From the Network or From DVD or CDs	25
Using DVD Media	26
IA: Accessing the Solaris 8 Device Configuration Assistant And PXE	26
3 Choosing a Solaris Installation Method	27
Solaris Web Start Installation Program	27
Solaris 8 Interactive Installation Program	28
Custom JumpStart Installation Method	28
Web Start Flash Installation Feature	29
SPARC: Factory JumpStart Installation Method	30

4	Guidelines for Allocating Disk Space	31
	General Disk Space Planning and Recommendations	31
	Disk Space Recommendations for Software Groups	32
5	Preparing for Solaris Installation or Upgrade Topics	35
6	Gathering Information Before Installation or Upgrade	37
	Checklist for Installation	37
	Worksheet for Installation	38
	Checklist for Upgrading	42
	Worksheet for Upgrading	43
7	Preconfiguring System Configuration Information	47
	Advantages of Preconfiguring System Configuration Information	47
	Ways to Preconfigure System Configuration Information	48
	Preconfiguring With the <code>sysidcfg</code> File	49
	Syntax Rules for the <code>sysidcfg</code> File	50
	<code>sysidcfg</code> File Keywords	51
	▼ To Create a <code>sysidcfg</code> Configuration File	54
	Preconfiguring With the Name Service	55
	▼ To Preconfigure the Locale Using NIS	56
	▼ To Preconfigure the Locale Using NIS+	57
	SPARC: Preconfiguring Power Management Information	58
8	Upgrading the Solaris Operating Environment	59
	Upgrading	59
	Using Custom JumpStart to Upgrade	60
	Upgrading With Disk Space Reallocation	61
	Backing Up Systems Before Upgrading	61
	Upgrading to a Solaris Update Release	62
	▼ To Run the <code>analyze_patches</code> Script	62
	▼ To Review the Patch Analyzer Output	63

9	Preparing to Install From the Network Topics	65
10	Preparing to Install Solaris Software From the Network (Overview)	67
	Planning for a Network Installation Introduction	67
	Required Servers for Network Installation	67
	Using DHCP to Provide Network Installation Parameters	69
11	Preparing to Install Solaris Software From the Network With DVD Media	71
	Task Map: Preparing to Install Solaris Software From the Network With DVD Media	71
	Creating an Install Server With DVD Media	72
	▼ To Create a SPARC Install Server With SPARC or IA DVD Media	72
	▼ To Create an IA Install Server With SPARC or IA DVD Media	74
	Creating a Boot Server on a Subnet With a DVD Image	76
	▼ To Create a Boot Server on a Subnet With a DVD Image	77
	Adding Systems to Be Installed From the Network	78
	▼ How to Add Systems to Be Installed From the Network With add_install_client From DVD Media	79
12	Preparing to Install Solaris Software From the Network With CD Media	83
	Task Map: Preparing to Install Solaris Software From the Network	84
	Creating a SPARC Install Server With CD Media	84
	▼ To Create an Install Server CD Media	85
	Creating a Boot Server on a Subnet With CD Media	88
	▼ To Create a Boot Server on a Subnet With CD Media	88
	Adding Systems to Be Installed From the Network	91
	▼ To Add Systems to Be Installed From the Network With add_install_client	91
13	Preparing to Install Solaris Software From the Network Reference	95
14	Using the Solaris Web Start Program	97
	Solaris Web Start Program GUI or CLI	97
	SPARC: Performing an Installation or Upgrade With the Solaris Web Start Program	98
	SPARC: Task Map: Performing a Solaris Web Start Installation	99

	▼ SPARC: To Perform an Installation or Upgrade With the Solaris Web Start Program	99
	IA: Performing an Installation or Upgrade With the Solaris Web Start Program	102
	IA: Task Map: Performing a Solaris Web Start Installation	103
	▼ IA: To Perform an Installation or Upgrade With the Solaris Web Start Program	103
	Solaris Web Start Post-Installation and Upgrade Tasks	108
	▼ To Correct Local Modifications After Upgrading	108
	▼ To Save And Access the Kiosk	108
15	Using the Solaris 8 Interactive Installation Program	111
	Solaris 8 Interactive Installation Program GUI or CLI	111
	SPARC: Performing an Installation or Upgrade With the Solaris 8 Interactive Installation Program	112
	SPARC: Task Map: Performing an Interactive Installation	112
	▼ SPARC: To Perform an Installation or Upgrade With the Solaris 8 Interactive Installation Program	113
	IA: Performing an Installation or Upgrade With the Solaris 8 Interactive Installation Program	114
	IA: Task Map: Performing an Interactive Installation	115
	▼ IA: To Perform an Installation or Upgrade With the Solaris 8 Interactive Installation Program	115
	Solaris 8 Interactive Installation Program Post-Upgrade Task	119
	▼ To Correct Local Modifications After Upgrading	120
16	Web Start Flash Installation Feature Topics	121
17	Web Start Flash Overview and Planning	123
	Web Start Flash Introduction	123
	Planning Your Web Start Flash Installation	124
	Designing the Installation of the Master System	124
	Planning the Creation of a Web Start Flash Archive	126
	Planning the Installation of Web Start Flash Archives	127
18	Creating Web Start Flash Archives	131
	Task Map: Creating Web Start Flash Archives	131
	Creating Web Start Flash Archives Tasks	131

	▼ To Install the Master System	132
	▼ To Create a Web Start Flash Archive	132
19	Installing Web Start Flash Archives	135
	Installing Web Start Flash Archives With the Solaris Web Start Program	135
	▼ To Install a Web Start Flash Archive With the Solaris Web Start Program	136
	Installing Web Start Flash Archives With the Solaris 8 Interactive Installation Program	137
	▼ To Install a Web Start Flash Archive With the Solaris 8 Interactive Installation Program	137
	Installing Web Start Flash Archives With a Custom JumpStart Installation	138
	▼ To Install a Web Start Flash Archive With a Custom JumpStart Installation	139
	Web Start Flash Custom JumpStart Profile Examples	140
20	Web Start Flash Reference	141
	Web Start Flash Archive Sections	141
	Web Start Flash Keywords	142
	General Keywords	142
	Identification Section Keywords	142
	Web Start Flash Commands	144
	flarcreate	144
	flar	146
21	Custom JumpStart Installation Topics	149
22	Custom JumpStart Overview	151
	Custom JumpStart Introduction	151
	How the JumpStart Program Installs Solaris Software	152
23	Preparing Custom JumpStart Installations	157
	Task Map: Preparing Custom JumpStart Installations	157
	Creating a Profile Server for Networked Systems	159
	▼ To Create a JumpStart Directory on a Server	159
	▼ To Allow All Systems Access to the Profile Server	161
	Creating a Profile Diskette for Standalone Systems	162

▼ SPARC: To Create a Profile Diskette	163
▼ IA: To Create a Profile Diskette	165
Creating the rules File	167
Syntax of the rules File	168
▼ To Create a rules File	168
rules File Example	170
Creating a Profile	171
Syntax of Profiles	171
▼ To Create a Profile	172
Profile Examples	172
Testing a Profile	175
▼ To Create a Temporary Solaris 8 Environment to Test a Profile	175
▼ To Test a Profile	176
Profile Test Examples	178
Validating the rules File	179
▼ To Validate the rules File	179
24 Using Optional Custom JumpStart Features	181
Creating Begin Scripts	181
Important Information About Begin Scripts	182
Creating Derived Profiles With a Begin Script	182
Creating Finish Scripts	183
Important Information About Finish Scripts	183
▼ To Add Files With a Finish Script	184
Adding Packages or Patches With a Finish Script	184
Customizing the Root Environment With a Finish Script	186
Setting a System's Root Password With a Finish Script	186
Installing Software With Web Start Installation Programs With Finish Scripts	188
Creating a Compressed Configuration File	188
▼ To Create a Compressed Configuration File	189
Compressed Configuration File Example	189
Creating Disk Configuration Files	190
▼ SPARC: To Create a Disk Configuration File	190
SPARC: Disk Configuration File Example	191
▼ IA: To Create a Disk Configuration File	192
IA: Disk Configuration File Example	193

	Using a Site-Specific Installation Program	195
25	Creating Custom Rule and Probe Keywords	197
	Probe Keywords	197
	Creating a custom_probes File	198
	Syntax of the custom_probes File	198
	Syntax of Function Names in custom_probes	199
	▼ To Create a custom_probes File	199
	Examples of a custom_probes File and Keyword	199
	Validating the custom_probes File	201
	▼ To Validate the custom_probes File	201
26	Performing a Custom JumpStart Installation	203
	SPARC: Performing a Custom JumpStart Installation	203
	SPARC: Task Map: Setting Up a System for a Custom JumpStart Installation	203
	▼ SPARC: To Perform an Installation or Upgrade With the Custom JumpStart Program	204
	IA: Performing a Custom JumpStart Installation	207
	IA: Task Map: Setting Up a System for a Custom JumpStart Installation	207
	▼ IA: To Perform an Installation or Upgrade With the Custom JumpStart Program	209
27	Example of Installing Solaris Software With Custom JumpStart	213
	Sample Site Setup	213
	Create an Install Server	214
	Create a Boot Server for Marketing Systems	216
	Create a JumpStart Directory	216
	Share the JumpStart Directory	217
	SPARC: Create the Engineering Group's Profile	217
	IA: Create the Marketing Group's Profile	218
	Update the rules File	218
	Validate the rules File	219
	SPARC: Set Up Engineering Systems to Install From the Network	219
	IA: Set Up Marketing Systems to Install From the Network	220
	SPARC: Boot the Engineering Systems and Install Solaris 8 Software	221
	IA: Boot the Marketing Systems and Install Solaris 8 Software	221

28	Custom JumpStart Reference	223
	Rule Keywords and Values	223
	Profile Keywords and Values	228
	Profile Keywords at a Glance	228
	Profile Keyword Descriptions and Examples	230
	Custom JumpStart Environment Variables	253
	Probe Keywords and Values	256
29	Solaris Software Reference Topics	259
30	Organization of Solaris 8 Media	261
	SPARC: Solaris 8 Media	261
	SPARC: Directory Organization of Solaris 8 Media	262
	SPARC: Solaris 8 <i>SPARC Platform Edition</i> DVD Directory Structure	263
	SPARC: Solaris 8 Installation CD Directory Structure	264
	SPARC: Solaris 8 Software <i>SPARC Platform Edition</i> CDs Directory Structures	264
	IA: Solaris 8 Media	266
	IA: Directory Organization of Solaris 8 Media	268
	IA: Solaris 8 <i>Intel Platform Edition</i> DVD Directory Structure	268
	IA: Solaris 8 Installation CD Directory Structure	270
	IA: Solaris 8 Software <i>Intel Platform Edition</i> CDs Directory Structures	271
	Solaris 8 Documentation CD Structure	272
	Solaris 8 Languages CD Directory Structure	274

31	Packages on the Solaris 8 Software 1 of 2 SPARC Platform Edition CD	277
32	Packages on the Solaris 8 Software 2 of 2 SPARC Platform Edition CD	301
33	Packages on the Solaris 8 Languages SPARC Platform Edition CD	309
34	Packages on the Solaris 8 Software 1 of 2 Intel Platform Edition CD	337
35	Packages on the Solaris 8 2 of 2 Intel Platform Edition CD	351
36	Packages on the Solaris 8 Languages Intel Platform Edition CD	357
37	Platform Names and Groups	383
38	Locale Values	385
A	Troubleshooting	391
	Setting Up Network Installations	391
	Booting a System	392
	Error Messages	392
	General Problems	393
	Booting a System Over the Network	396
	Error Messages	396
	General Problems	399
	Installing Solaris 8 (Initial)	400
	Installing Solaris 8 (Upgrade)	402
	Error Messages	402
	General Problems	402
B	Adding and Removing Software After Installing Solaris 8	405
	Adding Software With the Solaris Web Start Program	406
	▼ To Add Software With the Solaris Web Start Program	406
	Adding and Removing Software With the Product Registry	407

Purpose	407
How the Product Registry Works	408
▼ To List Information About All Installed Products	410
▼ To Check the Integrity of an Installed Product	410
▼ To Install Software With the Product Registry	411
▼ To Uninstall Products	412
Adding and Removing Packages With <code>Admintool</code>	413
▼ To Add Packages With <code>Admintool</code>	413
▼ To Remove Packages With <code>Admintool</code>	417
Adding and Removing Packages With <code>pkgadd</code> and <code>pkgrm</code>	420
▼ To Add Packages With <code>pkgadd</code>	420
▼ To Remove Packages With <code>pkgrm</code>	421
C Installing or Upgrading From a Remote DVD-ROM and CD-ROM	423
SPARC: Using the Solaris Web Start Program to Install or Upgrade From a Remote DVD-ROM or CD-ROM	423
▼ To Install or Upgrade From a Remote DVD-ROM and CD-ROM	424
Glossary	427
Index	435

Preface

The *Solaris 8 Advanced Installation Guide* describes how to install and upgrade the Solaris™ 8 operating environment on both networked and non-networked SPARC™ and Intel Architecture (IA) based systems.

The Solaris operating environment runs on two types of hardware, or platforms—SPARC and IA. The information in this document pertains to both platforms unless called out in a special chapter, section, note, bullet, figure, table, example, or code example.

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

Note – In this document, the term “IA” refers to the Intel 32-bit processor architecture, which includes the Pentium, Pentium Pro, Pentium II, Pentium II Xeon, Celeron, Pentium III, and Pentium III Xeon processors and compatible microprocessor chips made by AMD, Cyrix, and Transmeta. In this document, the term IA refers to the overall platform architecture, whereas Intel Platform Edition appears in the product name.

Note – In this document, the term “Solaris 8 Installation CD” refers to both the Solaris 8 Installation English CD and the Solaris 8 Installation Multilingual CD.

Who Should Use This Book

This book is intended for system administrators responsible for installing the Solaris operating environment. This book provides both of the following types of information.

- Advanced Solaris installation information for enterprise system administrators who manage multiple Solaris machines in a networked environment
- Basic Solaris installation information for system administrators who perform infrequent Solaris installations or upgrades

Related Books

Table P-1 lists related information that you need when you install the Solaris software.

TABLE P-1 Related Information

Platform	Information	Description
	<i>System Administration Guide, Volume I</i>	Describes how to back up system files
SPARC	<i>Solaris 8 (SPARC Platform Edition) Release Notes</i>	Describes any bugs, known problems, software that is being discontinued, and patches that are related to the Solaris release
	<i>Solaris 8 Sun Hardware Platform Guide</i>	Contains information about supported hardware
IA	<i>Solaris 8 (Intel Platform Edition) Device Configuration Guide</i>	Contains device configuration information
	<i>Solaris 8 (Intel Platform Edition) Hardware Compatibility List</i>	Contains supported hardware information
	<i>Solaris 8 (Intel Platform Edition) Release Notes</i>	Describes any bugs, known problems, software that is being discontinued, and patches that are related to the Solaris release

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Typographic Conventions

The following table describes the typographic changes used in this book.

TABLE P-2 Typographic Conventions

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name% you have mail.</code>
AaBbCc123	What you type, contrasted with on-screen computer output	<code>machine_name% su</code> Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm filename.</code>

TABLE P-2 Typographic Conventions (Continued)

Typeface or Symbol	Meaning	Example
<i>AaBbCc123</i>	Book titles, new words, or terms, or words to be emphasized.	Read Chapter 6 in <i>User's Guide</i> . These are called <i>class</i> options. You must be <i>root</i> to do this.

Shell Prompts in Command Examples

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

TABLE P-3 Shell Prompts

Shell	Prompt
C shell prompt	machine_name%
C shell superuser prompt	machine_name#
Bourne shell and Korn shell prompt	\$
Bourne shell and Korn shell superuser prompt	#

Planning for Solaris Installation or Upgrade Topics

This section guides you through planning the installation or upgrade of the Solaris operating environment.

Chapter 2	Provides information about decisions that you need to make before you install or upgrade.
Chapter 3	Provides details about the different Solaris installation technologies to help you choose which method is best for your environment.
Chapter 4	Provides guidelines to help you plan the disk space that you need to install or upgrade the Solaris operating environment.

Overview of Planning for a Solaris Installation or Upgrade

This chapter provides you with information about decisions you need to make before you install or upgrade the Solaris operating environment. This chapter contains the following sections:

- “Task Map: Installing or Upgrading the Solaris Software” on page 19
- “Initial Installation or Upgrade” on page 20
- “System Requirements” on page 22
- “Installing From the Network or From DVD or CDs” on page 25
- “Using DVD Media” on page 26
- “IA: Accessing the Solaris 8 Device Configuration Assistant And PXE” on page 26

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 *Intel Platform Edition*) and the divisions within the Solaris `fdisk` partition, which might be called slices or partitions.

Task Map: Installing or Upgrading the Solaris Software

The following task map is an overview of the steps necessary to install or upgrade the Solaris operating environment. Use this task map to identify all of the of the decisions that you need to make to complete the most efficient installation for your environment.

TABLE 2-1 Task Map: Installing or Upgrading the Solaris Software

Task	Description	For Instructions, Go To
Choose initial installation or upgrade.	Decide if you want to perform an initial installation or an upgrade.	“Initial Installation or Upgrade” on page 20
Review system requirements.	Determine if your system meets the minimum requirements to install or upgrade.	“System Requirements” on page 22
Choose an installation method.	The Solaris operating environment provides several methods for installation or upgrade. Choose the installation method that is most appropriate for your environment.	Chapter 3
Plan and allocate disk space.	Allocate disk space on your system for the components of the Solaris operating environment that you want to install.	Chapter 4
Choose an installation location.	You can install the Solaris software from local media or from the network. Decide on an installation location that is most appropriate for your environment.	“Installing From the Network or From DVD or CDs” on page 25
Gather information about your system.	Use the checklist and complete the worksheet to collect all of the information that you need to install or upgrade.	Chapter 6
(Optional) Preconfigure system information.	You can preconfigure system information to avoid being prompted for the information during the installation or upgrade.	Chapter 7
(Optional) Prepare to install the Solaris software from the network.	If you chose to install the Solaris software from the network, create an install server, create a boot server (if necessary), and set up the systems to be installed from the network.	Chapter 12
(Upgrade only) Perform the pre-upgrade tasks.	Back up your system, determine if you can upgrade with disk space reallocation, and search for patches that a Solaris Update release might override.	Chapter 8
Install or upgrade.	Use the Solaris installation method that you chose to install or upgrade the Solaris software.	The chapter or chapters that provide detailed instructions for the installation method

Initial Installation or Upgrade

You can choose to perform an initial installation or, if your system is already running the Solaris operating environment, you can upgrade your system.

Initial Installation

An initial installation overwrites the system's disk with the new version of the Solaris operating environment. If your system is not running the Solaris operating environment, you must perform an initial installation.

If the system is already running the Solaris operating environment, you can choose to perform an initial installation. If you want to preserve any local modifications, before you install, you must back up the local modifications. After you complete the installation, you can restore the local modifications.

You can use any of the Solaris installation methods to perform an initial installation. For detailed information about the different Solaris installation methods, refer to Chapter 3.

Upgrade

An upgrade merges the new version of the Solaris operating environment with the existing files on the system's disk. An upgrade saves as many modifications as possible that you have made to the previous version of the Solaris operating environment.

You can upgrade any system that is running the Solaris 2.5.1, Solaris 2.6, or Solaris 7 software. You can upgrade to a Solaris 8 Update release if your system is running the Solaris 8 software. Type the following command to see the version of Solaris software that is running on your system:

```
$ uname -a
```

You can upgrade the Solaris operating environment by using the following installation methods.

Note – Use the `smosservice` patch to upgrade diskless clients. For detailed instructions, refer to *Solaris 8 System Administration Supplement* or to `smosservice(1M)`.

TABLE 2-2 SPARC: Solaris Upgrade Methods

Current Solaris Operating Environment	Solaris Upgrade Methods
Solaris 2.5.1, Solaris 2.6, Solaris 7, Solaris 8	<ul style="list-style-type: none">■ Solaris™ Web Start program■ Solaris 8 Interactive Installation Program■ Custom JumpStart™ method

TABLE 2-3 IA: Solaris Upgrade Methods

Current Solaris Operating Environment	Solaris Upgrade Methods
Solaris 2.5.1, Solaris 2.6, Solaris 7	Installing from DVD media or a net installation image: <ul style="list-style-type: none"> ■ Solaris Web Start program ■ Solaris 8 Interactive Installation Program ■ Custom JumpStart method Installing from CD media: <ul style="list-style-type: none"> ■ Solaris 8 Interactive Installation Program ■ Custom JumpStart method
Solaris 8	Installing from DVD or CD media or a net installation image: <ul style="list-style-type: none"> ■ Solaris Web Start program ■ Solaris 8 Interactive Installation Program ■ Custom JumpStart method

You cannot upgrade your system to a software group that is not 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.

If you are already running the Solaris 8 operating environment and have installed individual patches, upgrading to a Solaris 8 Update release causes the following:

- Any patches that were supplied as part of the Solaris 8 Update release are reapplied to your system. You cannot back out these patches.
- Any patches that were previously installed on your system and are not included in the Solaris 8 Update release are removed.

You can use the Patch Analyzer to determine which patches, if any, will be removed by upgrading to the Solaris 8 Update release. For detailed instructions about using the Patch Analyzer, refer to “Upgrading to a Solaris Update Release” on page 62.

System Requirements

Verify that your system meets the requirements to install or upgrade to the Solaris operating environment.

Memory Requirement

To install or upgrade to the Solaris operating environment, the suggested memory size is 128 Mbytes or greater. You must have a minimum of 96 Mbytes to use DVD media to install and 64 Mbytes to use CD media to install.

Note – Some optional installation features are enabled only when sufficient memory is present. For example, if you install from a DVD with 96 Mbytes of memory, you install through the Solaris Web Start command line interface, not through the Solaris Web Start graphical user interface.

Requirements When Using the Solaris 8 Installation CD

When you use the Solaris Web Start program on Solaris 8 Installation CD, special requirements apply for SPARC slices and IA fdisk partitions. When installing from a DVD or a net installation image, the Solaris Web Start program does not have these requirements.

TABLE 2-4 Solaris 8 Installation CD Requirements

Platform	Requirements
Slice requirements for upgrading	When using the Solaris 8 Installation CD and the Solaris Web Start program to upgrade, you must have a slice on the disk that does not store files. The swap slice is preferred, but you can use any slice that is not located in any of the “upgradable” root slices that are listed in <code>/etc/vfstab</code> . The size of this slice must be at least 512 Mbytes.

TABLE 2-4 Solaris 8 Installation CD Requirements (Continued)

Platform	Requirements
IA: fdisk partition requirements	<p>When using the Solaris 8 Installation CD, the Solaris Web Start program requires two <code>fdisk</code> partitions on the system disk to perform an installation or upgrade.</p> <ul style="list-style-type: none">■ Solaris <code>fdisk</code> partition This is the typical Solaris <code>fdisk</code> partition. If you do not have a Solaris <code>fdisk</code> partition on your system, the Solaris Web Start program prompts you to create one. <p>Caution – If you change the size of an existing <code>fdisk</code> partition, all data on that partition is automatically deleted. Back up your data before you create a Solaris <code>fdisk</code> partition.</p> <ul style="list-style-type: none">■ x86 boot <code>fdisk</code> partition This is a 10 Mbyte <code>fdisk</code> partition that enables the Intel architecture to boot the miniroot that is placed on the newly created swap slice that is located on the Solaris <code>fdisk</code> partition. <p>Caution – Do not create the x86 boot partition manually.</p> <p>The Solaris Web Start installation program creates the x86 boot partition, removing 10-Mbytes from the Solaris <code>fdisk</code> partition. By allowing the installation program to create the x86 boot partition, you prevent any existing <code>fdisk</code> partitions from being altered.</p>
IA system upgrade limitations	<p>When you use the Solaris 8 Installation CD, you cannot use the Solaris Web Start program to upgrade to Solaris 8 from the Solaris 2.5.1, Solaris 2.6, or Solaris 7 operating environments. The Solaris 8 Installation CD requires a separate 10 Mbyte IA boot partition that was not required in previous Solaris releases. To upgrade, you must use the Solaris Web Start program from the Solaris 8 DVD or a network installation image, or use the Solaris 8 Interactive Installation Program or the custom JumpStart method.</p>

TABLE 2-4 Solaris 8 Installation CD Requirements (Continued)

Platform	Requirements
IA systems logical block addressing Requirement	<p>Do not use the Solaris 8 Installation CD unless your system can boot across the 1024-cylinder limit. Logical block addressing (LBA) enables the machine to boot beyond the 1024-cylinder limit and across Solaris disk slices. Use the Solaris 8 Installation CD when your system's BIOS and SCSI driver for the default boot disk supports LBA.</p> <p>To determine if your system supports LBA, type:</p> <pre># prtconf -pv grep -i lba</pre> <p>If the BIOS and SCSI driver for the default boot disk support LBA, the following message appears:</p> <pre>lba-access-ok:</pre> <p>If the SCSI driver for the default boot disk does not support LBA, the following message appears:</p> <pre>no-bef-lba-access</pre> <p>If the default boot disk BIOS and SCSI driver do not support LBA, use the Solaris 8 DVD, a net installation image, or another installation method to install or upgrade.</p>

Installing From the Network or From DVD or CDs

The Solaris software is distributed on DVD or CD media so that you can install or upgrade systems that have access to a DVD-ROM or CD-ROM drive.

If you have systems that do not have local DVD-ROM or CD-ROM drives or if you are installing several systems and do not want to insert the discs into every local drive to install Solaris, you can set up the systems to install from remote DVD or CD images.

You can use all of the Solaris installation methods to install a system from the network. However, by installing systems from the network with the Web Start Flash installation feature or with a custom JumpStart installation, you can centralize and automate the installation process in a large enterprise. For more details about the different installation methods, refer to Chapter 3.

Installing the Solaris software from the network requires initial setup. For detailed instructions on preparing to install from the network, refer to Chapter 12.

Using DVD Media

When you are using DVD media and if you use the `boot dvdrom` command at the `ok` prompt, the system does not boot from the DVD-ROM drive. When you are asked to boot from the OK prompt, always type the following command:

```
ok boot cdrom
```

IA: Accessing the Solaris 8 Device Configuration Assistant And PXE

The Solaris Device Configuration Assistant is a program that enables you to perform various hardware configuration and booting tasks. You use the Device Configuration Assistant to boot from either a DVD, a CD, a net installation image, or a copy of the software on a diskette. You can access the Solaris Device Configuration Assistant from the following:

- By booting from the Solaris 8 DVD, the Solaris 8 Installation CD, or Solaris 8 Software 1 of 2 CD. Your system's BIOS must support booting from a DVD or CD.
- By booting from the network by using Pre-boot eXecution Environment (PXE). PXE enables you to boot a system directly from the network without using the boot diskette. The system must support PXE. Enable the system to use PXE by using the system's BIOS setup tool or the network adapter's configuration setup Tool.
- By booting from the Solaris 8 Device Configuration Assistant *Intel Platform Edition* Diskette.

Note – You can download and copy the software to a diskette from the Solaris Developer Connection at: soldc.sun.com/support/drivers/dca_diskettes

Choosing a Solaris Installation Method

This chapter describes the different installation technologies. The Solaris operating environment provides several methods for installation or upgrade. Each installation technology offers different features that are designed for specific installation requirements and environments. Choose the technology that is most appropriate for your environment.

- “Solaris Web Start Installation Program” on page 27
- “Solaris 8 Interactive Installation Program” on page 28
- “Custom JumpStart Installation Method” on page 28
- “Web Start Flash Installation Feature” on page 29
- “SPARC: Factory JumpStart Installation Method” on page 30

Solaris Web Start Installation Program

The Solaris Web Start installation program on the Solaris 8 DVD or Solaris 8 Installation CD can be run with a graphical user interface (GUI) or with a command line interface (CLI). The Solaris Web Start program guides you step-by-step through installing or upgrading the Solaris software and additional software. You can install with the default option, or you can use the customize option to install only the software you want.

If you are new to the Solaris operating environment or to UNIX[®], the Solaris Web Start program enables you to easily move forward and back during the installation to make changes as needed. Installation tasks are divided into panels that prompt you to enter system configuration information.

Because the Solaris Web Start program prompts you to enter configuration information, you might need to interact with the installation program. Consequently, this installation method might not be the most efficient method when you need to

install or upgrade several systems. You might want to use the custom JumpStart method or the Web Start Flash installation feature.

For detailed instructions, refer to Chapter 14.

Solaris 8 Interactive Installation Program

The Solaris 8 Interactive Installation Program on the Solaris 8 Software 1 of 2 CD is run with a GUI or a CLI. The Solaris 8 Interactive Installation Program guides you step-by-step through installing or upgrading to the Solaris 8 software. This installation method is good if you are running the minimum of 64 Mbytes memory and running international locales.

The Solaris 8 Interactive Installation Program only installs the Solaris operating environment software. This program does not know of third-party applications or network downloadable software. You must install third-party applications after you have installed the Solaris operating environment. Also, you are prompted to enter system configuration information during installation, so the Solaris 8 Interactive Installation Program is not the most efficient installation method for installing several systems. The Solaris Web Start program enables you to install third-party applications. Or, for batch installations of a large number of systems, use custom JumpStart or the Web Start Flash installation feature.

For detailed instructions, refer to Chapter 15.

Custom JumpStart Installation Method

The custom JumpStart installation method is a command line interface that enables you to automatically install or upgrade several systems, based on profiles that you create. The profiles define specific software installation requirements. You can also incorporate shell scripts to include preinstallation and postinstallation tasks. You choose which profile and scripts to use for installation or upgrade and the custom JumpStart installation method installs or upgrades the system.

If you know the Solaris operating environment and the shell, and have multiple systems to install, the custom JumpStart installation method might be the most efficient way for you to install your systems.

If you plan to install only a few systems, this installation method is less efficient. The creation of a custom JumpStart environment might be so time consuming that you do not save time by using this installation method.

For detailed instructions, refer to Chapter 23.

Web Start Flash Installation Feature

The Web Start Flash installation feature allows you to install many systems, based on a configuration that you install on a master system. After you install and configure the master system, you create a Web Start Flash archive from the master system. You can create as many Web Start Flash archives as you need. You choose which Web Start Flash archive to install on each different system. This installation method enables you to efficiently install many systems with the same software and configuration.

When you use any of the Solaris installation methods and you do not select to install a Web Start Flash archive, the installation method installs each Solaris package individually. The package-based installation method is time consuming because the installation method must update the package map for each package. Web Start Flash archives install on your system much faster than when you install each of the individual Solaris packages.

Each of the Solaris installation methods enables you to install a Web Start Flash archive. The Solaris Web Start installation method and the Solaris 8 Interactive Installation Program prompt you to select the Web Start Flash archive that you want to install. If you are performing a custom JumpStart installation, you specify the Web Start Flash archive that you want to install in the profile file.

If you have many different configurations that you want to install on your systems, you need a Web Start Flash archive for each system. Web Start Flash archives are large files and require a significant amount of disk space. Also, after you create a Web Start Flash archive, you cannot change the archive. If you have many different installation configurations or if you want the flexibility to change your installation configuration, you might consider using the custom JumpStart installation method.

For detailed instructions, refer to Chapter 17.

SPARC: Factory JumpStart Installation Method

The JumpStart installation method automatically installs the Solaris software on a new SPARC system when you insert the Solaris 8 DVD or Solaris 8 Software 1 of 2 CD into the CD-ROM drive and turn on the system. A default profile is selected that is based on the model and disk size of the system. The profile determines which software components are installed on the system. You are not prompted for system configuration information and you cannot choose which software is installed.

A JumpStart boot image, which is required to use this installation method, is preinstalled on all new SPARC based systems. If you have an older SPARC based system, you can add the JumpStart installation method to the system by using the `re-preinstall(1M)` command. You cannot use the JumpStart installation method on IA based systems.

Guidelines for Allocating Disk Space

This chapter describes general guidelines for planning the disk space that you need to install or upgrade the Solaris operating environment. This chapter contains the following sections:

- “General Disk Space Planning and Recommendations” on page 31
- “Disk Space Recommendations for Software Groups” on page 32

General Disk Space Planning and Recommendations

Before you install the Solaris 8 software, you can determine if your system has enough disk space by doing some high-level planning. If you plan your disk space needs before you install, you can add more disks to your system, if you need them, before you install the Solaris 8 software. If you are upgrading, review “Upgrading With Disk Space Reallocation” on page 61.

Planning disk space is different for everyone. Consider the following general points when you are planning disk space:

- Allocate additional disk space for each language you select to install, for example, Chinese, Japanese, Korean.
- If you intend to support printing or mail, allocate additional disk space in 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.
- If a server provides home directory file systems for users on other systems, allocate additional disk space on the server. By default, home directories are usually located

in the `/export` file system.

- Allocate at least 512 Mbytes of swap space.
- Allocate space for the Solaris software group you want to install. The recommended disk space for the software groups is in Table 4–1. When you are planning disk space, remember that you can add or remove individual software packages from the software group that you select.
- Create a minimum number of file systems. By default, the Solaris installation methods create only root (`/`), and `/swap`. When space is allocated for OS services, the `/export` directory is also created. For each file system that you create, allocate an additional 30 percent more disk space than you need to allow you to upgrade to future Solaris versions. Each new Solaris release needs approximately 10 percent more disk space than the previous release. By allocating an additional 30 percent of disk space for each file system, you allow for several Solaris upgrades before you need to repartition your system.
- Allocate additional disk space for additional software or 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. You select the software group to install, based on the functions that you want to perform on the system.

- End User Solaris Software Group – Contains the minimum code that is required to boot and run a networked Solaris system and the Common Desktop Environment.
- Developer Solaris Software Group – Contains the End User 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.
- Entire Solaris Software Group – Contains the Developer Solaris Software Group and additional software that is needed for servers.
- Entire Solaris Software Group Plus OEM Support – Contains the Entire Solaris Software Group plus additional hardware drivers, including drivers for hardware that is not on the system at the time of installation.

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 table lists the Solaris software groups and the recommended amount of disk space that you need to install each group.

Note – Swap space is included in the disk space recommendations.

TABLE 4-1 Disk Space Recommendations for Software Groups

Software Group	Recommended Disk Space
Entire Solaris Software Group Plus OEM Support	2.4 Gbytes
Entire Solaris Software Group	2.3 Gbytes
Developer Solaris Software Group	1.9 Gbytes
End User Solaris Software Group	1.6 Gbytes

Preparing for Solaris Installation or Upgrade Topics

This section provides instructions for preparing to install or upgrade the Solaris operating environment.

Chapter 6	Provides a comprehensive list of the information about your system that you need to obtain before you begin the Solaris installation.
Chapter 7	Provides instructions for using the <code>sysidcfg</code> file to specify system information during the Solaris installation.
Chapter 8	Provides detailed requirements for upgrading the Solaris operating environment.

Gathering Information Before Installation or Upgrade

This chapter contains checklists and worksheets to help you gather all of the information that you need to install or upgrade your system.

- “Checklist for Installation” on page 37
- “Worksheet for Installation” on page 38
- “Checklist for Upgrading” on page 42
- “Worksheet for Upgrading” on page 43

Checklist for Installation

Use the following checklist to prepare to install the Solaris operating environment.

- If you intend to install the Solaris software on a system through a `tip(1)` line, make sure your window display is at least 80 columns wide and 24 rows long.
To determine the current dimensions of your `tip` window, use the `stty(1)` command.
- If the system is part of a network, verify that an Ethernet connector or similar network adapter is plugged into your system.
- If you are installing with the Solaris Web Start program using the Solaris 8 Installation CD, review the requirements in “Requirements When Using the Solaris 8 Installation CD” on page 23.
- Verify that you have enough disk space. For more information, refer to Chapter 4.
- When you are using DVD media and if you use the `boot dvdrom` command at the `ok` prompt, the system does not boot from the DVD-ROM drive. When you are asked to boot from the `OK` prompt, always type the following command: `boot cdrom`.

- Review the *Solaris 8 Release Notes* and vendor release notes to ensure that the software you use is supported in the new Solaris release.
- Review the *Solaris 8 Sun Hardware Platform Guide* to make sure your hardware is supported.
- Review the documentation that came with your system to make sure your system and devices are supported by the Solaris release.

Worksheet for Installation

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

Note – Ignore the shaded rows if you are installing a standalone, non-networked system.

TABLE 6-1 Installation Worksheet

Info Needed to Install	Description/Example	Enter Your Answers Here:
Network	Is the system connected to a network?	Yes/No
Host Name	Host name that you choose for the system.	
DHCP	Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	Yes/No
IP Address	If you are not using DHCP, supply the IP address for the system. Example: 129.200.9.1	
Subnet	If you are not using DHCP, is the system part of a subnet? If yes, what is the netmask of the subnet? Example: 255.255.0.0	Yes/No
IPv6	Do you want to enable IPv6 on this machine?	Yes/No

TABLE 6-1 Installation Worksheet (Continued)

Info Needed to Install	Description/Example	Enter Your Answers Here:
Kerberos	<p>Do you want to configure Kerberos security on this machine?</p> <p>If yes, gather this information:</p> <p style="text-align: right;">Default Realm:</p> <p style="text-align: right;">Administration Server:</p> <p style="text-align: right;">First KDC:</p> <p style="text-align: right;">(Optional) Additional KDCs:</p>	Yes/No
Name Service	Which name service should this system use?	NIS+/NIS/DNS/LDAP/None
Domain Name	If the system uses a name service, supply the name of the domain in which the system resides.	
NIS+ and NIS	<p>Do you want to specify a name server or let the installation program find one?</p> <p>If you want to specify a name server, provide the following information.</p> <p style="text-align: right;">Server's host name:</p> <p style="text-align: right;">Server's IP Address:</p>	Specify One/Find One
DNS	<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 style="text-align: right;">Server's IP Address(es):</p> <p>You can enter a list of domains to search when a DNS query is made.</p> <p style="text-align: right;">Search Domain:</p> <p style="text-align: right;">Search Domain:</p> <p style="text-align: right;">Search Domain:</p>	
LDAP	<p>Provide the following information about your LDAP profile.</p> <p style="text-align: right;">Profile Name:</p> <p style="text-align: right;">Profile Server:</p> <p style="text-align: right;">IP Address:</p>	

TABLE 6-1 Installation Worksheet (Continued)

Info Needed to Install	Description/Example	Enter Your Answers Here:
Default Router	<p>Do you want to specify a default IP router (gateway) or let the Solaris Web Start installation program find one?</p> <p>If you want to specify a default router, provide the following information.</p> <p style="text-align: right;">Router IP address:</p> <p>If you use the Solaris 8 Interactive Installation Program or the custom JumpStart installation method, you can specify the default router in the <code>sysidcfg</code> file.</p>	Specify One/Find One
Time Zone	How do you want to specify your default time zone?	Geographic region Offset from GMT Time zone file
Power Management (only available on SPARC systems that support Power Management)	Do you want to use Power Management?	Yes/No
Proxy Server Configuration (only available in the Solaris Web Start program)	<p>Do you have a direct connection to the Internet or do you need to use a proxy server to gain access to the Internet?</p> <p>If you use a proxy server, provide the following information.</p> <p style="text-align: right;">Host:</p> <p style="text-align: right;">Port:</p>	Direct Connection/Proxy Server
Locales	For which geographic regions do you want to install support?	
Software Group	Which Solaris Software Group do you want to install?	Entire Plus OEM Entire Developer End User Core

TABLE 6–1 Installation Worksheet (Continued)

Info Needed to Install	Description/Example	Enter Your Answers Here:
Automatic reboot or CD/DVD ejection	Reboot automatically after software installation? Eject CD/DVD automatically after software installation?	Yes/No Yes/No
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.	
64-bit (only available on SPARC systems)	Do you want to install support for 64-bit applications?	Yes/No
Select Disks	On which disks do you want to install the Solaris software? Example: c0t0d0	
IA: fdisk partitioning	Do you want to create, delete, or modify a Solaris fdisk partition? Each disk selected for file system layout must have a Solaris fdisk partition. Only one x86 Boot partition is allowed per system. Select Disks for fdisk Partition Customization? Customize fdisk partitions?	Yes/No 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? If yes, which file systems should be used for auto-layout? Example: /, /opt, /var If no, you must provide file system configuration information.	Yes/No

TABLE 6-1 Installation Worksheet (Continued)

Info Needed to Install	Description/Example	Enter Your Answers Here:
Mount Remote File Systems (only available in the Solaris 8 Interactive Installation Program)	Does this system need to access software on another file system? If yes, provide the following information about the remote file system. <div style="text-align: right;"> Server: IP Address: Remote File System: Local Mount Point: </div>	Yes/No

Checklist for Upgrading

Use the following checklist to prepare to upgrade the Solaris operating environment.

- If you intend to upgrade the Solaris software on a system through a `tip(1)`, line make sure your window display is at least 80 columns wide and 24 rows long. To determine the current dimensions of your `tip` window, use the `stty(1)` command.
- If the system is part of a network, verify that an Ethernet connector or similar network adapter is connected to your system.
- If you are using the Solaris Web Start program from the Solaris 8 Installation CD, verify that you have a 512 Mbyte slice on the disk. For detailed information including more requirements for IA systems, refer to "Requirements When Using the Solaris 8 Installation CD" on page 23. These requirements are not necessary if you are installing from a DVD or an installation image.
- Verify that you have enough disk space. For more information, refer to Chapter 4.
- When you are using DVD media and if you use the `boot dvdrom` command at the `ok` prompt, the system does not boot from the DVD-ROM drive. When you are asked to boot from the `OK` prompt, always type the following command: **`boot cdrom`**.
- Review the *Solaris 8 Release Notes* and vendor release notes to ensure that the software you use is still supported in the new release.
- Review the *Solaris 8 Sun Hardware Platform Guide* to make sure your hardware is supported.

- Review the documentation that came with your system to make sure your system and devices are supported by the Solaris release.
- Review vendor and third-party software documentation for additional upgrade instructions.
- Check for all of the available patches that you might need. The most recent patch list is provided at <http://sunsolve.sun.com>.
- Check the system for the existence of Prestoserve software. If you begin the upgrade process by shutting down the system with the `init 0` command, you might lose data. Refer to the Prestoserve documentation for shutdown instructions.
- IA: If you are using the Linux operating system, the Solaris `fdisk` partition and the Linux `swap` partition use the same identifier, `0x83`. To resolve the problem, you can do one of the following.
 - Choose not to use a swap partition at all, provided that you have enough memory.
 - Put the Linux `swap` partition on another drive.
 - Back up the Linux data you want to keep to storage media, install the Solaris operating environment, and *then* reinstall Linux.



Caution – If you decide to install Linux after the Solaris operating environment, when the Linux installation program asks if you want to format the Linux swap partition (actually the Solaris `fdisk` partition) as a swap file, reply no.

Worksheet for Upgrading

Use the following worksheet to gather the information that you need to upgrade the Solaris operating environment. You do not need to gather all of the information that is requested on the worksheet. You only need to collect the information that applies to your system. If you are performing the upgrade over the network, the installation program provides the information for you, based on the current system configuration.

You cannot change basic system identification, such as host name or IP address. The installation program might prompt you for basic system identification, but you must enter the original values. If you use the Solaris Web Start program to upgrade, the upgrade fails if you attempt to change any of the values.

Note – Ignore the shaded rows if you are upgrading a standalone, non-networked system.

TABLE 6-2 Upgrade Worksheet

Info Needed to Install	Description/Example	Enter Your Answers Here:
Network	Is the system connected to a network?	Yes/No
Host Name	Host name that you choose for the system.	
DHCP	Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	Yes/No
IP Address	If you are not using DHCP, supply the IP address for the system. Example: 129.200.9.1	
Subnet	If you are not using DHCP, is the system part of a subnet? If yes, what is the netmask of the subnet? Example: 255.255.0.0	Yes/No
IPv6	Do you want to enable IPv6 on this machine?	Yes/No
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:	Yes/No
Name Service	Which name service should this system use?	NIS+/NIS/DNS/LDAP/None
Domain Name	If the system uses a name service, supply the name of the domain in which the system resides.	
NIS+ and NIS	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. Server's host name: Server's IP Address:	Specify One/Find One

TABLE 6-2 Upgrade Worksheet (Continued)

Info Needed to Install	Description/Example	Enter Your Answers Here:
DNS	<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 style="text-align: right;">Server's IP Address(es):</p> <p>You can enter a list of domains to search when a DNS query is made.</p> <p style="text-align: right;">Search Domain:</p>	
LDAP	<p>Provide the following information about your LDAP profile.</p> <p style="text-align: right;">Profile Name:</p> <p style="text-align: right;">Profile Server:</p> <p style="text-align: right;">IP Address:</p>	
Default Router	<p>Do you want to specify a default IP router (gateway) or let the Solaris Web Start installation program find one?</p> <p>If you want to specify a default router, provide the following information.</p> <p style="text-align: right;">Router IP address:</p> <p>If you use the Solaris 8 Interactive Installation Program or the custom JumpStart installation method, you can specify the default router in the <code>sysidcfg</code> file.</p>	Specify One/Find One
Time Zone	How do you want to specify your default time zone?	Geographic region Offset from GMT Time zone file
Power Management (only available on SPARC systems that support Power Management)	Do you want to use Power Management?	Yes/No

TABLE 6-2 Upgrade Worksheet (Continued)

Info Needed to Install	Description/Example	Enter Your Answers Here:
Proxy Server Configuration (only available in the Solaris Web Start program)	Do you have a direct connection to the Internet or do you need to use a proxy server to gain access to the Internet? If you use a proxy server, provide the following information. Host: Port:	Direct Connection/Proxy Server
Locales	For which geographic regions do you want to install support?	
Automatic reboot or CD/DVD ejection	Reboot automatically after software installation? Eject CD/DVD automatically after software installation?	Yes/No Yes/No
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.	
64-bit (only available on SPARC systems)	Do you want to install support for 64-bit applications?	Yes/No

Preconfiguring System Configuration Information

This chapter describes how to preconfigure system information. Preconfiguration can help you to avoid being prompted for this information when you install the Solaris operating environment. This chapter also describes how to preconfigure Power Management™ information. This chapter contains the following sections:

- “Advantages of Preconfiguring System Configuration Information” on page 47
- “Ways to Preconfigure System Configuration Information” on page 48
- “Preconfiguring With the `sysidcfg` File” on page 49
- “Preconfiguring With the Name Service” on page 55
- “SPARC: Preconfiguring Power Management Information” on page 58

Advantages of Preconfiguring System Configuration Information

The installation methods require configuration information about a system, such as peripheral devices, host name, Internet Protocol (IP) address, and name service. Before the installation tools prompt you for configuration information, they check for the information in the `sysidcfg` file and then in the name service databases.

When the Solaris Web Start program, Solaris 8 Interactive Installation Program, or the custom JumpStart installation program detects preconfigured system information, the installation program does not prompt you to enter the information. For example, you have several systems and you do not want a time zone prompt every time you install the Solaris 8 software on one of the systems. You can specify the time zone in the `sysidcfg` file or the name service databases. When you install the Solaris 8 software, the installation tool does not prompt you to type a time zone.

Ways to Preconfigure System Configuration Information

You can choose one of the following ways to preconfigure system configuration information. You can add the system configuration information to either of the following.

- A `sysidcfg` file on a remote system or diskette
- The name service database available at your site

SPARC only – For SPARC based systems, preconfigure system configuration information by editing the name service database.

Use the following table to determine which method to use to preconfigure system configuration information for your system.

TABLE 7-1 Methods to Preconfigure System Configuration Information

Preconfigurable System Information	Platform	Preconfigurable With the <code>sysidcfg</code> File?	Preconfigurable With the Name Service?
Name service	All	Yes	Yes
Domain name	All	Yes	No
Name server	All	Yes	No
Network interface	All	Yes	No
Host name	All	Yes ¹	Yes
Internet Protocol (IP) address	All	Yes ¹	Yes
Netmask	All	Yes	No
DHCP	All	Yes	No
IPv6	All	Yes	No
Default router	All	Yes	No
Root password	All	Yes	No
Security policy	All	Yes	No

TABLE 7-1 Methods to Preconfigure System Configuration Information *(Continued)*

Preconfigurable System Information	Platform	Preconfigurable With the <code>sysidcfg</code> File?	Preconfigurable With the Name Service?
Language (locale) in which to display the install program and desktop	All	Yes	Yes, if NIS or NIS + No, if DNS or LDAP
Terminal type	All	Yes	No
Time zone	All	Yes	Yes
Date and time	All	Yes	Yes
Monitor type	IA	Yes	No
Keyboard language, keyboard layout	IA	Yes	No
Graphics card, color depth, display resolution, screen size	IA	Yes	No
Pointing device, number of buttons, IRQ level	IA	Yes	No
Power Management (autoshtutdown) ²	SPARC	No	No

1. Because this information is system specific, edit the name service rather than create a different `sysidcfg` file for each system.
2. You cannot preconfigure this system configuration information through the `sysidcfg` file or the name service. "SPARC: Preconfiguring Power Management Information" on page 58 contains details.

Preconfiguring With the `sysidcfg` File

You can specify a set of keywords in the `sysidcfg` file to preconfigure a system. The keywords are described in Table 7-2.

You must create a unique `sysidcfg` file for every system that requires different configuration information. You can use the same `sysidcfg` file to preconfigure the time zone on a set of systems if you want all the systems to be assigned the same time zone. However, if you want to preconfigure a different root (superuser) password for each of those systems, you need to create a unique `sysidcfg` file for each system.

You can place the `sysidcfg` file in one of the following.

- NFS file system – If you put the `sysidcfg` file in a shared NFS file system, you must use the `-p` option of the `add_install_client(1M)` command when you set up the system to install from the network. The `-p` option specifies where the system can find the `sysidcfg` file when you install the Solaris 8 software.
- UFS or PCFS diskette – Place the `sysidcfg` file in the root (`/`) directory on the diskette.

Note – If you are performing a custom JumpStart installation and you want to use a `sysidcfg` file on a diskette, you must place the `sysidcfg` file on the profile diskette. To create a profile diskette, see “Creating a Profile Diskette for Standalone Systems” on page 162.

Note – You can place only one `sysidcfg` file in a directory or on a diskette. If you are creating more than one `sysidcfg` file, you must place each file in a different directory or on a different diskette.

Syntax Rules for the `sysidcfg` File

You can use two types of keywords in the `sysidcfg` file: independent and dependent. Dependent keywords are guaranteed to be unique only within independent keywords. A dependent keyword exists only when it is identified with its associated independent keyword.

In this example, `name_service` is the independent keyword, while `domain_name` and `name_server` are the dependent keywords:

```
name_service=NIS {domain_name=marquee.central.sun.com
name_server=connor(129.152.112.3)}
```

Syntax Rule	Example
Independent keywords can be listed in any order.	<pre>pointer=MS-S display=ati {size=15-inch}</pre>
Keywords are not case sensitive.	<pre>TIMEZONE=US/Central terminal=PC Console</pre>
Enclose all dependent keywords in curly braces ({}) to tie them to their associated independent keyword.	<pre>name_service=NIS {domain_name=marquee.central.sun.com name_server=connor(129.152.112.3)}</pre>
You can optionally enclosed values in single (') or double quotes (").	<pre>network_interface='none'</pre>

Syntax Rule	Example
Only one instance of a keyword is valid. However, if you specify the keyword more than once, only the first instance of the keyword is used.	<pre>network_interface=none network_interface=le0</pre>

sysidcfg File Keywords

The following table describes the keywords you can use in the `sysidcfg` file.

TABLE 7-2 Keywords You Can Use in `sysidcfg`

Configuration Information	Platform	Keywords	Values or Examples
Name service, domain name, name server	All	<p><code>name_service=NIS, NIS+, DNS, LDAP, NONE</code></p> <p>Options for NIS and NIS+: <code>{domain_name=domain_name name_server=hostname(ip_address)}</code></p> <p>Options for DNS: <code>{domain_name=domain_name name_server=ip_address,ip_address, ip_address (three maximum) search=domain_name, domain_name,domain_name, domain_name,domain_name, domain_name (six maximum, total length less than or equal to 250 characters)}</code></p> <p>Options for LDAP: <code>{domain_name=domain_name profile=profile_name profile_server=ip_address}</code></p>	<pre>name_service=NIS {domain_name=west.arp.com name_server=timber(129.221.2.1)} name_service=NIS+ {domain_name=west.arp.com. name_server=timber(129.221.2.1)} name_service=DNS {domain_name=west.arp.com name_server=10.0.1.10,10.0.1.20 search=arp.com,east.arp.com} Note – Choose only one value for name_service. Include either, both, or neither the domain_name and name_server keywords, as needed. If neither keyword is used, omit the curly braces {}.</pre> <pre>name_service=LDAP {domain_name=west.arp.com profile=default profile_server=129.221.2.1}</pre>

TABLE 7-2 Keywords You Can Use in `sysidcfg` (Continued)

Configuration Information	Platform	Keywords	Values or Examples
Network interface, host name, Internet Protocol (IP) address, netmask, DHCP, IPv6	All	<p><code>network_interface=NONE, PRIMARY, or value</code></p> <p>where:</p> <ul style="list-style-type: none"> ■ NONE turns networking off ■ PRIMARY is the first up, non-loopback interface found on the system. The order is the same as with "ifconfig." If no interfaces are up, then the first non-loopback interface is used. If no non-loopback interfaces are found, then the system is set to NON-NETWORKED. ■ <i>value</i> specifies an interface such as <code>le0</code> or <code>hme0</code> <p>If DHCP <i>is</i> to be used, specify: <code>{ dhcp protocol_ipv6=yes_or_no }</code></p> <p>If DHCP <i>is not</i> to be used, specify: <code>{ hostname=host_name default_route=ip_address ip_address=ip_address netmask=netmask protocol_ipv6=yes_or_no }</code></p>	<p><code>network_interface=primary { dhcp protocol_ipv6=yes }</code></p> <p><code>network_interface=le0 { hostname=feron default_route=129.146.88.1 ip_address=129.146.88.210 netmask=255.255.0.0 protocol_ipv6=no }</code></p> <p>Note – Choose only one value for <code>network_interface</code>. Include any combination or none of the <code>hostname</code>, <code>ip_address</code>, and <code>netmask</code> keywords, as needed. If you do not use any of these keywords, omit the curly braces (<code>{}</code>).</p> <p>Note – If you do not use DHCP, you do not need to specify <code>protocol_ipv6</code> and <code>default_route</code>. But, a JumpStart installation requires <code>protocol_ipv6</code> to be specified now or you will be prompted interactively later.</p>
Root password	All	<code>root_password=root_password</code>	Encrypted from <code>/etc/shadow</code> .

TABLE 7-2 Keywords You Can Use in `sysidcfg` (Continued)

Configuration Information	Platform	Keywords	Values or Examples
Security policy	All	<code>security_policy=kerberos,</code> <code>NONE</code> Options for Kerberos: <code>{default_realm=FQDN</code> <code>admin_server=FQDN</code> <code>kdc=FQDN1, FQDN2, FQDN3}</code> where FQDN is a fully qualified domain name.	<code>security_policy=kerberos</code> <code>{default_realm=Yoursite.COM</code> <code>admin_server=krbadmin.Yoursite.COM</code> <code>kdc=kdc1.Yoursite.COM,</code> <code>kdc2.Yoursite.COM}</code> Note – You can list a maximum of three key distribution centers (KDCs), but at least one is required.
Language in which to display the install program and desktop	All	<code>system_locale=locale</code>	The <code>/usr/lib/locale</code> directory or Chapter 38 provides the valid locale values.
Terminal type	All	<code>terminal=terminal_type</code>	The subdirectories in the <code>/usr/share/lib/terminfo</code> directory provide the valid terminal values.
Time zone	All	<code>timezone=timezone</code>	The directories and files in the <code>/usr/share/lib/zoneinfo</code> directory provide the valid time zone values. The time zone value is the name of the path relative to the <code>/usr/share/lib/zoneinfo</code> directory. For example, the time zone value for mountain standard time in the United States is <code>US/Mountain</code> . The time zone value for Japan is <code>Japan</code> . You can also specify any valid Olson time zone.
Date and time	All	<code>timeserver=localhost,</code> <code>hostname, ip_addr</code>	If you specify <code>localhost</code> as the time server, the system's time is assumed to be correct. If you are not running a name service and you specify the <code>hostname</code> or <code>ip_addr</code> of a system, that system's time is used to set the time.
Monitor type	IA	<code>monitor=monitor_type</code>	On the system you want to install, run <code>kdmconfig -d filename</code> . Append output to <code>sysidcfg</code> file.
Keyboard language, keyboard layout	IA	<code>keyboard=keyboard_language</code> <code>{layout=value}</code>	On the system you want to install, run <code>kdmconfig -d filename</code> . Append output to <code>sysidcfg</code> file.

TABLE 7-2 Keywords You Can Use in `sysidcfg` (Continued)

Configuration Information	Platform	Keywords	Values or Examples
Graphics card, screen size, color depth, display resolution	IA	<code>display=graphics_card</code> <code>{size=screen_size</code> <code>depth=color_depth</code> <code>resolution=screen_resolution}</code>	On the system you want to install, run <code>kdmconfig -d filename</code> . Append output to <code>sysidcfg</code> file.
Pointing device, number of buttons, IRQ level	IA	<code>pointer=pointing_device</code> <code>{nbuttons=number_buttons</code> <code>irq=value}</code>	On the system you want to install, run <code>kdmconfig -d filename</code> . Append output to <code>sysidcfg</code> file.

▼ To Create a `sysidcfg` Configuration File

1. Using a text editor, create a file called `sysidcfg`.
2. Type the `sysidcfg` keywords you want.
3. Save the `sysidcfg` file.

Note – If you create more than one `sysidcfg` file, you must save each one in a separate directory or on a separate diskette.

4. Make the `sysidcfg` file available to clients through the following:
 - A shared NFS file system. Use `add_install_client(1M)` with the `-p` option to setup the system to install from the network.
 - The root (`/`) directory on a UFS diskette or PCFS diskette.

SPARC: Example `sysidcfg` File

The following is an example of a `sysidcfg` file for a group of SPARC based systems. The host names, IP addresses, and netmask of these systems have been preconfigured by editing the name service. Because all of the system configuration information is preconfigured in this file, you can use a custom JumpStart profile to perform a custom JumpStart installation.

```
system_locale=en_US
timezone=US/Central
terminal=sun-cmd
timeserver=localhost
name_service=NIS {domain_name=marquee.central.sun.com
                    name_server=connor(129.152.112.3)}
root_password=m4QPOWNY
```

IA: Example sysidcfg File

The following is an example of a `sysidcfg` file for a group of IA based systems that all use the same type of keyboard, graphics cards, and pointing devices. The device information (`keyboard`, `display`, and `pointer`) was obtained by running the `kdmconfig(1M)` command with the `-d` option. If the following example `sysidcfg` file is used, a prompt that asks you to select a language (`system_locale`) is displayed before installation can proceed.

```
keyboard=ATKBD {layout=US-English}
display=ati {size=15-inch}
pointer=MS-S
timezone=US/Central
timeserver=connor
terminal=ibm-pc
name_service=NIS {domain_name=marquee.central.sun.com
                  name_server=connor(129.152.112.3)}
root_password=URFUni9
```

Preconfiguring With the Name Service

The following table provides a high-level overview of the name service databases that you need to edit and populate to preconfigure system information.

System Information To Preconfigure	Name Service Databases
Host name and Internet Protocol (IP) address	<code>hosts</code>
Date and time	<code>hosts</code> . Specify the <code>timehost</code> alias next to the host name of the system that will provide the date and time for the systems that are being installed.
Time zone	<code>timezone</code>
Netmask	<code>netmasks</code>

You cannot preconfigure the locale for a system with the DNS or LDAP name service. If you use the NIS or NIS+ name service, follow the procedure for your name service to preconfigure the locale for a system:

- “To Preconfigure the Locale Using NIS” on page 56
- “To Preconfigure the Locale Using NIS+” on page 57

▼ To Preconfigure the Locale Using NIS

1. Become superuser on the name server.
2. Change `/var/yp/Makefile` to add the local map.

a. Insert this shell procedure after the last `variable.time` shell procedure.

```
locale.time: $(DIR)/locale
    -@if [ -f $(DIR)/locale ]; then \
        sed -e "/^#/d" -e s/#.*$$// $(DIR)/locale \
        | awk '{for (i = 2; i<=NF; i++) print $$i, $$0}' \
        | $(MAKEDBM) - $(YPDBDIR)/$(DOM)/locale.byname; \
        touch locale.time; \
        echo "updated locale"; \
        if [ ! $(NOPUSH) ]; then \
            $(YPPUSH) locale.byname; \
            echo "pushed locale"; \
        else \
            : ; \
        fi \
    else \
        echo "couldn't find $(DIR)/locale"; \
    fi
```

b. Find the string `all:` and, at the end of the list of variables, insert the word `locale`.

```
all: passwd group hosts ethers networks rpc services protocols \
    netgroup bootparams aliases publickey netid netmasks c2secure \
    timezone auto.master auto.home locale
```

c. Toward the end of the file, after the last entry of its type, insert the string `locale: locale.time` on a new line.

```
passwd: passwd.time
group: group.time
hosts: hosts.time
ethers: ethers.time
networks: networks.time
rpc: rpc.time
services: services.time
protocols: protocols.time
netgroup: netgroup.time
bootparams: bootparams.time
aliases: aliases.time
publickey: publickey.time
netid: netid.time
passwd.adjunct: passwd.adjunct.time
group.adjunct: group.adjunct.time
netmasks: netmasks.time
timezone: timezone.time
auto.master: auto.master.time
auto.home: auto.home.time
```



```
locale: locale.time
```

d. Save the file.

3. Create the file `/etc/locale` and make one entry for each domain or specific system:

```
locale domain_name
```

Or

```
locale system_name
```

Note – Chapter 38 contains a list of valid locales.

For example, the following entry specifies that French is the default language that is used in the `worknet.com` domain:

```
fr worknet.com
```

And the following entry specifies that Belgian French is the default locale used by a system named `charlie`:

```
fr_BE charlie
```

Note – Locales are available on the Solaris 8 DVD or Solaris 8 Software 1 of 2 CD.

4. Make the maps:

```
# cd /var/yp; make
```

Systems that are specified by domain or individually in the `locale` map are now set up to use the default locale. The default locale that you specified is used during installation and by the desktop after the system is rebooted.

▼ To Preconfigure the Locale Using NIS+

The following procedure assumes the NIS+ domain is set up. Setting up the NIS+ domain is documented in the *Solaris Naming Administration Guide*.

1. Log in to a name server as superuser or as a user in the NIS+ administration group.

2. Create the `locale` table:

```
# nistbladm -D access=og=rmcd,nw=r -c locale_tbl name=SI,nogw=
locale=,nogw= comment=,nogw= locale.org_dir.'nisdefaults -d'
```

3. Add needed entries to the `locale`.

```
# nistbladm -a name=name locale=locale comment=comment
locale.org_dir.'nisdefaults -d'
```

In this command:

- *name* is either the domain name or a specific system name for which you want to preconfigure a default locale.
- *locale* is the locale you want to install on the system and use on the desktop after the system is rebooted. Chapter 38 contains a list of valid locales.
- *comment* is the comment field. Use double quotation marks to begin and end comments that are longer than one word.

Note – Locales are available on the Solaris 8 DVD or Solaris 8 Software 1 of 2 CD.

Systems that are specified by domain or individually in the `locale` table are now set up to use the default locale. The default locale you specified is used during installation and by the desktop after the system is rebooted.

SPARC: Preconfiguring Power Management Information

You can use the *Power Management* software that is provided in the Solaris environment to automatically save the state of a system and turn it off after it is idle for 30 minutes. When you install the Solaris 8 software on a system that complies with Version 2 of the EPA's Energy Star guidelines, for example a sun4u SPARC system, the Power Management software is installed by default. You are then prompted after rebooting to enable or disable the Power Management software.

If you are performing interactive installations, you cannot preconfigure the Power Management information and avoid the prompt. However, by using a custom JumpStart installation, you can preconfigure the Power Management information by using a finish script to create an `/autoshtutdown` or `/noautoshtutdown` file on the system. When the system reboots, the `/autoshtutdown` file enables Power Management and the `/noautoshtutdown` file disables Power Management.

For example, the following line in a finish script enables the Power Management software and prevents the display of the prompt after the system reboots.

```
touch /a/autoshtutdown
```

Finish scripts are described in "Creating Finish Scripts" on page 183.

Upgrading the Solaris Operating Environment

This chapter provides specific information and instructions about tasks that you must perform before you upgrade to the Solaris operating environment.

- “Upgrading” on page 59
- “Using Custom JumpStart to Upgrade” on page 60
- “Upgrading With Disk Space Reallocation” on page 61
- “Backing Up Systems Before Upgrading” on page 61
- “Upgrading to a Solaris Update Release” on page 62

Upgrading

An upgrade merges the new version of the Solaris operating environment with the existing files on the system’s disk. An upgrade saves as many modifications as possible that you have made to the previous version of the Solaris operating environment.

You can upgrade any system that is running the Solaris 2.5.1, Solaris 2.6, or Solaris 7 software. You can upgrade to a Solaris 8 Update release if your system is running the Solaris 8 software. Type the following command to see the version of Solaris software that is running on your system:

```
$ uname -a
```

You can upgrade the Solaris operating environment by using the following installation methods.

Note – Use the `smossservice` patch to upgrade diskless clients. For detailed instructions, refer to *Solaris 8 System Administration Supplement* or to `smossservice(1M)`.

TABLE 8-1 SPARC: Solaris Upgrade Methods

Current Solaris Operating Environment	Solaris Upgrade Methods
Solaris 2.5.1, Solaris 2.6, Solaris 7, Solaris 8	<ul style="list-style-type: none">■ Solaris Web Start program■ Solaris 8 Interactive Installation Program■ Custom JumpStart method

TABLE 8-2 IA: Solaris Upgrade Methods

Current Solaris Operating Environment	Solaris Upgrade Methods
Solaris 2.5.1, Solaris 2.6, Solaris 7	Installing from DVD media or a net installation image: <ul style="list-style-type: none">■ Solaris Web Start program■ Solaris 8 Interactive Installation Program■ Custom JumpStart method Installing from CD media: <ul style="list-style-type: none">■ Solaris 8 Interactive Installation Program■ Custom JumpStart method
Solaris 8	Installing from DVD or CD media or a net installation image: <ul style="list-style-type: none">■ Solaris Web Start program■ Solaris 8 Interactive Installation Program■ Custom JumpStart method

You cannot upgrade your system to a software group that is not 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.

Using Custom JumpStart to Upgrade

You can use the custom JumpStart installation method to upgrade. In the custom JumpStart profile, specify `install_type upgrade`.

You must test the custom JumpStart profile against the system's disk configuration and currently installed software before you upgrade. Use the `pfinstall -D` command on the system that you are upgrading to test the profile. You cannot test an upgrade profile by using a disk configuration file. For more information about testing the upgrade option, refer to "Testing a Profile" on page 175.

Upgrading With Disk Space Reallocation

The upgrade option in the Solaris 8 Interactive Installation Program and in the Solaris Web Start installation method provide the ability to reallocate disk space if the current file systems do not have enough space for the upgrade. The auto-layout feature attempts to determine how to reallocate the disk space so an upgrade can succeed.

If you are using the Solaris Web Start program, and auto-layout cannot determine how to reallocate the disk space, you must use the Solaris 8 Interactive Installation Program to upgrade.

If you are using the Solaris 8 Interactive Installation Program, and auto-layout cannot determine how to reallocate disk space, you must specify the file systems that can be moved or changed and run auto-layout again.

If you are using the custom JumpStart method to upgrade and you create an upgrade profile, disk space might be a concern. If the current file systems do not contain enough disk space for the upgrade, you can use the `backup_media` and `layout_constraint` keywords to reallocate disk space. For an example of how to use the `backup_media` and `layout_constraint` keywords in a profile, refer to Example 23-5.

Backing Up Systems Before Upgrading

Back up existing file systems before you upgrade to the Solaris operating environment. If you copy file systems to removable media, such as tape, you can safeguard against data loss, damage, or corruption. For detailed instructions to back up your system, refer to *System Administration Guide, Volume I*.

Upgrading to a Solaris Update Release

If you are already running the Solaris 8 operating environment and have installed individual patches, upgrading to a Solaris 8 Update release causes the following:

- Any patches that are supplied as part of the Solaris 8 Update release are reapplied to your system. You cannot back out these patches.
- Any patches that were previously installed on your system that are not included in the Solaris 8 Update release are removed.

The Patch Analyzer performs an analysis on your system to determine which patches, if any, will be removed by upgrading to the Solaris 8 Update release. The Patch Analyzer is available in the following formats.

- If you are using the Solaris Web Start program to upgrade, the Patch Analyzer dialog box appears. Select Yes to perform the analysis.
- If you are using the Solaris 8 Interactive Installation Program to upgrade, select Analyze on the Patch Analysis dialog box to perform the analysis.
- If you are using a custom JumpStart installation to upgrade, run the `analyze_patches` script to perform the analysis. For detailed instructions, see “To Run the `analyze_patches` Script” on page 62.

After you perform the analysis, refer to “To Review the Patch Analyzer Output” on page 63 for detailed information about the patch analysis results.

▼ To Run the `analyze_patches` Script

Note – To run the `analyze_patches` script, the installed system and the Solaris 8 DVD, the Solaris 8 Software CDs, or the net image must be accessible by the script either through NFS or locally mounted media.

1. Change to the `Misc` directory.

- SPARC: If the image is located on locally mounted media, type:

```
# cd /cdrom/sol_8_Update_sparc/s0/Solaris_8/Misc
```

In this command, *Update* is the actual Update identifier, for example 600, 1000, or u4.

- IA: If the image is located on locally mounted media, type:

```
# cd /cdrom/sol_8_Update_ia/s2/Solaris_8/Misc
```

In this command, *Update* is the actual Update identifier, for example 600, 1000, or u4.

- If the image is available on an NFS file system, type:

```
# cd /NFS_mount_directory/Solaris_8/Misc
```

2. Run the `analyze_patches` script:

```
# ./analyze_patches [-R rootdir] [-N netdir] [-D databasedir]
```

<code>-R rootdir</code>	<code>rootdir</code> is the root of the installed system. The default is <code>/</code> .
<code>-N netdir</code>	<code>netdir</code> is the path to the root of the OS image to be installed. The default is <code>/cdrom/cdrom0</code> . <code>netdir</code> is the path to the directory that contains the <code>Solaris_8</code> directory. You must use this option if you are running the <code>patch_analyzer</code> from an NFS mount point.
<code>-D databasedir</code>	If the script is invoked from a directory other than the <code>Misc/</code> directory in the OS image, the program cannot find the database it uses for patch analysis. Use the <code>-D</code> option to supply the path to the database. Without this database, which is located in <code>Solaris_8/Misc/database</code> on the OS image, the script does not work properly.

▼ To Review the Patch Analyzer Output

After you perform the analysis, use these steps to review the output.

1. Review the output of the Patch Analyzer.

The Patch Analyzer provides a list of patches that will be removed, downgraded, accumulated, or obsoleted by other patches. Patch accumulations are similar to patch upgrades. The accumulated patch is removed and its fixes are delivered by a new patch. Messages such as the following are shown:

```
Patch 105644-03 will be removed.  
Patch 105925 will be downgraded from -02 to -01.  
Patch 105776-01 will be accumulated/obsoleted by patch 105181-05.
```

If the Patch Analyzer program does not provide a list, no action is taken against any patches that were previously installed on your system.

2. Decide if the patch replacements and deletions are acceptable.

- If yes, upgrade the system.
- If no, do not upgrade the system.

Instead of upgrading, you can use the Solaris 8 Maintenance Update to apply only patches to your system.

Note – The Solaris 8 Maintenance Update is located on the Solaris 8 Maintenance Update CD, which is included with the Solaris 8 Update release. Instructions for applying patches are provided in the *Maintenance Update Installation Guide*.

Preparing to Install From the Network Topics

This section provides instructions for setting up systems to install Solaris software from the network instead of DVD or CD media.

Chapter 10	Provides overview and planning information for installing Solaris software from an install server.
Chapter 11	Provides step-by-step instructions for copying Solaris software from DVD media to an install server.
Chapter 12	Provides step-by-step instructions for copying Solaris software from CD media to an install server.
Chapter 13	Describes commands to set up network installations.

Preparing to Install Solaris Software From the Network (Overview)

This chapter provides an introduction on how to set up your network and systems to install the Solaris software from the network instead of from DVD or CD media.

Planning for a Network Installation Introduction

This section provides you with information you need before you can perform an installation from the network. Network installations enable you to install the Solaris software from a system, called an install server, that has access to the Solaris 8 disc images to other systems on the network. You copy the contents of the Solaris 8 DVD or CD media to the install server's hard disk. Then, you can install the Solaris software from the network by using any of the Solaris installation methods.

Required Servers for Network Installation

To install the Solaris operating environment from the network, the systems to be installed require the following servers to be present on the network.

- **Install server** – A networked system that contains the Solaris 8 disc images from which you can install Solaris 8 on another system on the network. You create an install server by copying the images from one of the following media:
 - Solaris 8 DVD
 - Solaris 8 Software 1 of 2 CD

After you copy the image from the Solaris 8 Software 1 of 2 CD, you can also copy the images from the Solaris 8 Software 2 of 2 CD, Solaris 8 Installation CD, and Solaris 8 Languages CD as necessary for your installation requirements.

You can enable a single install server to provide disc images for different Solaris releases and for multiple platforms by copying the images on to the install server's hard disk. For example, a single install server could contain the disc images for the SPARC platform and IA platform.

For details about how to create an install server, refer to one of the following sections.

- "To Create a SPARC Install Server With SPARC or IA DVD Media" on page 72
- "To Create an IA Install Server With SPARC or IA DVD Media" on page 74
- "To Create an Install Server CD Media" on page 85
- **Boot server** – A system used to boot the system to be installed from the network. A boot server and install server are typically the same system. However, if the system on which the Solaris 8 software is to be installed is located in a different subnet than the install server and you are not using Dynamic Host Configuration Protocol (DHCP), a boot server is required on that subnet.

Note – When using DHCP, you do not need to create a separate boot server. For more information, see "Using DHCP to Provide Network Installation Parameters" on page 69.

A single boot server can provide Solaris 8 boot software for multiple releases, including the Solaris 8 boot software for different platforms. For example, a SPARC boot server can provide the Solaris 8 boot software for SPARC based systems. The same SPARC boot server can also provide the Solaris 8 boot software for IA based systems.

For details about how to create a boot server, refer to one of the following sections:

- "Creating a Boot Server on a Subnet With a DVD Image" on page 76
- "Creating a Boot Server on a Subnet With CD Media" on page 88
- **(Optional) Name server** – A system that manages a distributed network database, such as NIS+ or LDAP, that contains information about users and other systems on the network.

For details about how to create a name server, refer to *Solaris Naming Administration Guide*.

Note – The install server and name server can be the same or different systems.

Figure 10–1 illustrates the servers typically used for network installation.

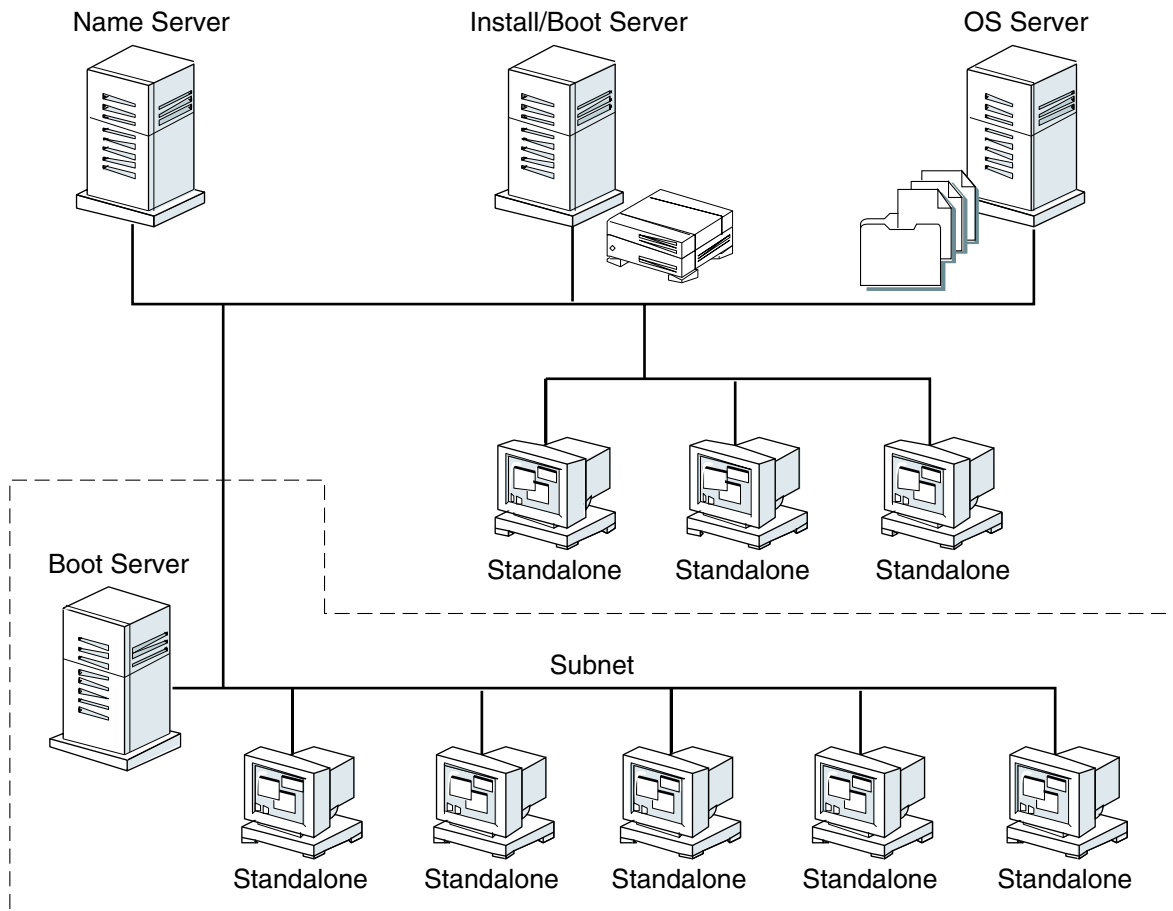


FIGURE 10–1 Network Installation Servers

Using DHCP to Provide Network Installation Parameters

When using Dynamic Host Configuration Protocol (DHCP), you do not need to create a separate boot server. Once you have created the install server, you add clients to the network with the `add_install_client` command. With the

`add_install_client`'s `-d` option, you can set up client systems for Solaris installation from the network using DHCP. DHCP provides the network parameters that are necessary for installation. For information on DHCP options for installation parameters, see *System Administration Guide, Volume 3*.

Preparing to Install Solaris Software From the Network With DVD Media

This chapter describes how to use DVD media to set up your network and systems to install the Solaris software from the network. Network installations enable you to install the Solaris software from a system that has access to the Solaris 8 disc images, called an install server, to other systems on the network. You copy the contents of the Solaris 8 DVD media to the install server's hard disk. Then, you can install the Solaris software from the network by using any of the Solaris installation methods. This chapter covers the following topics:

- "Task Map: Preparing to Install Solaris Software From the Network With DVD Media" on page 71
- "Creating an Install Server With DVD Media" on page 72
- "Creating a Boot Server on a Subnet With a DVD Image" on page 76
- "Adding Systems to Be Installed From the Network" on page 78

Task Map: Preparing to Install Solaris Software From the Network With DVD Media

TABLE 11-1 Preparing to Install Solaris Software From the Network With DVD Media Task Map

Task	Description	For Instructions
Create an install server.	Use the <code>setup_install_server(1M)</code> command to copy the Solaris 8 DVD to the install server's hard disk.	"Creating an Install Server With DVD Media" on page 72

TABLE 11-1 Preparing to Install Solaris Software From the Network With DVD Media Task Map (Continued)

Task	Description	For Instructions
(Optional) Create boot servers.	If you want to install systems from the network that are not on the same subnet as the install server and you are not using DHCP, you must create a boot server on the subnet to boot the systems.	"Creating a Boot Server on a Subnet With a DVD Image" on page 76
Add systems to be installed from the network.	Setup each system that you want to install from the network. Each system that you want to install needs to know where on the network to find the install server, the boot server, and configuration information.	"Adding Systems to Be Installed From the Network" on page 78

Creating an Install Server With DVD Media

You must create an install server to install the Solaris software on a system from the network. If systems that you are installing are not in the same subnet as the install server and you are not using DHCP, you must do one of the following:

- Create separate boot servers for each subnet
- Create an install server for each subnet. However, this requires more disk space.

▼ To Create a SPARC Install Server With SPARC or IA DVD Media

SPARC only – You cannot use a SunOS 4.1.x system as an install server.

Note – This procedure assumes that the system is running the Volume Manager. If you are not using the Volume Manager to manage media, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without the Volume Manager.

1. On the SPARC system that is to become the install server, become superuser.

The system must include a DVD-ROM drive and be part of the site's network and name service. If you use a name service, the system must also be in the NIS, NIS+, DNS, or LDAP name service. If you do not use a name service, you must distribute information about this system by following your site's policies.

2. Insert the Solaris 8 DVD into the system's drive.

3. Create a directory to contain the boot image.

```
# mkdir -p install_dir_path
```

install_dir_path

Specifies the directory where the DVD image is to be copied

4. Decide if you want to copy the Solaris 8 DVD to the install server's hard disk.

- If yes, continue.
- If no, go to step 8.

5. Change to the Tools directory on the mounted disc:

- For SPARC DVD media:

```
# cd /cdrom/cdrom0/s0/Solaris_8/Tools
```

- For IA DVD media:

```
# cd /cdrom/cdrom0/Solaris_8/Tools
```

6. Copy the disc in the drive to the install server's hard disk by using the setup_install_server command:

```
# ./setup_install_server install_dir_path
```

install_dir_path

Specifies the directory where the DVD image is to be copied

Note – The `setup_install_server` command indicates whether or not there is enough disk space available for the Solaris 8 Software disc images. To determine available disk space, use the `df -kl` command.

7. Eject the Solaris 8 DVD.

8. Decide if you want to patch the files that are located in the miniroot (Solaris_8/Tools/Boot) on the net install image that was created by setup_install_server.

- If no, continue.
- If yes, use the `patchadd -C` command to patch the files that are located in the `miniroot`.

9. Decide if you need to create a boot server.

- If the install server is on the same subnet as the system to be installed or you are using DHCP, you do not need to create a boot server. Go to “Adding Systems to Be Installed From the Network” on page 78.
- If the install server is not on the same subnet as the system to be installed and you are not using DHCP, you must create a boot server. For detailed instructions on how to create a boot server, refer to “Creating a Boot Server on a Subnet With a DVD Image” on page 76.

EXAMPLE 11-1 SPARC: Creating a SPARC Install Server With a SPARC DVD

The following example illustrates how to create an install server by copying the Solaris 8 DVD to the install server’s `/export/home/s8dvdsparc` directory:

```
# mkdir -p /export/home/s8dvdsparc
# cd /cdrom/cdrom0/s0/Solaris_8/Tools
# ./setup_install_server /export/home/s8dvdsparc
```

EXAMPLE 11-2 SPARC: Creating an SPARC Install Server With an IA DVD

The following example illustrates how to create an install server by copying the Solaris 8 DVD to the install server’s `/export/home/s8dvdia` directory:

```
# mkdir -p /export/home/s8dvdia
# cd /cdrom/cdrom0/Solaris_8/Tools
# ./setup_install_server /export/home/s8dvdia
```

▼ To Create an IA Install Server With SPARC or IA DVD Media

Note – This procedure assumes that the system is running the Volume Manager. If you are not using the Volume Manager to manage media, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without the Volume Manager.

1. On the IA system that is to become the install server, become superuser.

The system must include a DVD-ROM drive and be part of the site’s network and name service. If you use a name service, the system must also be in the NIS, NIS+, DNS, or LDAP name service. If you do not use a name service, you must distribute

information about this system by following your site's policies.

2. Insert the Solaris 8 DVD into the system's drive.

3. Create a directory to contain the boot image.

```
# mkdir -p install_dir_path
```

install_dir_path Specifies the directory where the DVD image is to be copied

4. Decide if you want to copy the Solaris 8 DVD to the install server's hard disk.

- If yes, continue.
- If no, go to step 8.

5. Change to the `Tools` directory on the mounted disc:

- For IA DVD media:

```
# cd /cdrom/cdrom0/s2/Solaris_8/Tools
```

- For SPARC DVD media:

```
# cd /cdrom/cdrom0/Solaris_8/Tools
```

6. Copy the disc in the drive to the install server's hard disk by using the `setup_install_server` command:

```
# ./setup_install_server install_dir_path
```

install_dir_path Specifies the directory where the DVD image is to be copied

Note – The `setup_install_server` command indicates whether or not there is enough disk space available for the Solaris 8 Software disc images. To determine available disk space, use the `df -kl` command.

7. Eject the Solaris 8 DVD.

8. Decide if you want to patch the files that are located in the miniroot (Solaris_8/Tools/Boot) on the net install image that was created by `setup_install_server`.

- If no, continue.
- If yes, use the `patchadd -C` command to patch the files that are located in the miniroot.

9. Decide if you need to create a boot server.

- If the install server is on the same subnet as the system to be installed or you are using DHCP, you do not need to create a boot server. Go to “Adding Systems to Be Installed From the Network” on page 78.
- If the install server is not on the same subnet as the system to be installed and you are not using DHCP, you must create a boot server. For detailed instructions on how to create a boot server, refer to “Creating a Boot Server on a Subnet With a DVD Image” on page 76.

EXAMPLE 11-3 Creating an IA Install Server With an IA DVD

The following example illustrates how to create an install server by copying the Solaris 8 DVD to the install server's `/export/home/s8dvdsparc` directory:

```
# mkdir -p /export/home/s8dvdsparc
# cd /cdrom/cdrom0/s2/Solaris_8/Tools
# ./setup_install_server /export/home/s8dvdsparc
```

EXAMPLE 11-4 Creating an IA Install Server With a SPARC DVD

The following example illustrates how to create an install server by copying the Solaris 8 DVD to the install server's `/export/home/s8dvdia` directory:

```
# mkdir -p /export/home/s8dvdia
# cd /cdrom/cdrom0/s0/Solaris_8/Tools
# ./setup_install_server /export/home/s8dvdia
```

Creating a Boot Server on a Subnet With a DVD Image

You can install the Solaris software from the network from any install server on the network. If you use the `add_install_client` command with the `-d` option for DHCP, you do not need to create a boot server. DHCP provides the installation parameters necessary for installation. However, a system that needs to use an install server on another subnet and does not use DHCP requires a separate boot server on its own subnet. A boot server contains enough of the boot software to boot systems from the network, and then the install server completes the installation of the Solaris software.

▼ To Create a Boot Server on a Subnet With a DVD Image

Note – This procedure assumes that the system is running the Volume Manager. If you are not using the Volume Manager to manage media, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without the Volume Manager.

1. **On the system you intend to make the boot server for the subnet, log in and become superuser.**

The system must have access to the remote Solaris 8 disc images. If you use a name service, the system must also be in the NIS, NIS+, DNS, or LDAP name service. If you do not use a name service, you must distribute information about this system by following your site's policies.

2. **Mount the Solaris 8 DVD from an image on an NFS server.**

```
# mount -F nfs -o ro,anon=0 server_name:path /mnt
```

server_name:path Is the host name and absolute path to the disc image

3. **Change directory to the mounted disc image:**

```
# cd /mnt
```

4. **Change to the `Tools` directory on the Solaris 8 DVD image by typing:**

```
# cd Solaris_8/Tools
```

5. **Copy the boot software to the boot server.**

```
# ./setup_install_server -b boot_dir_path
```

`-b` Specifies to setup the system as a boot server

boot_dir_path Specifies the directory where the boot software is to be copied

Note – The `setup_install_server` command indicates whether or not there is enough disk space available for the images. To determine available disk space, use the `df -k1` command.

You are now ready to set up systems to be installed from the network. See “Adding Systems to Be Installed From the Network” on page 78.

EXAMPLE 11-5 SPARC: Creating a Boot Server on a Subnet

The following example illustrates how to create a boot server on a subnet. These commands copy the boot software from the Solaris 8 DVD image to `/export/home/s8dvdsparc` on the system’s local disk.

```
# mount -F nfs -o ro,anon=0 crystal:/export/home/s8dvdsparc /mnt
# cd /mnt
# cd Solaris_8/Tools
# ./setup_install_server -b /export/home/s8dvdsparc
```

In this example, the disc is inserted and automatically mounted before the command. After the command, the disc is removed.

Adding Systems to Be Installed From the Network

After you create an install server and, if necessary, a boot server, you must set up each system that you want to install from the network. Each system that you want to install needs to find the following:

- Install server
- Boot server if required
- `sysidcfg` file if you use a `sysidcfg` file to preconfigure system information
- Name server if you use a name service to preconfigure system information
- The profile in the JumpStart directory on the profile server if you are using the custom JumpStart installation method

When you install from the network, a system checks for this information in the name service in the `bootparams` database in the `/etc` files, NIS, NIS+, DNS, or LDAP. You must add this information to the name service for every system that is to be installed from the network. You add this information by using the `add_install_client` command.

Note – If you use the `/etc` files to store network installation information, the information must be located on the install server or the boot server, if a boot server is required

▼ How to Add Systems to Be Installed From the Network With `add_install_client` From DVD Media

You use the `add_install_client(1M)` command to set up systems to be installed from the network. You need to run this command on the install server and the boot server if a boot server is required.

Note – The `add_install_client` command updates only the `/etc` files.

In this procedure *host1* is the install server and *host2* is boot server.

1. On the install server, *host1*, become superuser.
2. If you use the NIS or NIS+ name service, verify that the following information about the system to be installed has been added to the name service in the `/etc` files:
 - Host name
 - IP address
 - Ethernet address

3. Change to the `Tools` directory on the Solaris 8 DVD image on the install server:

```
host1# cd Solaris_8/Tools
```

4. Use the `add_install_client` command to set up a system to be installed from the network:

```
host1# ./add_install_client [-d] [-c server:jumpstart_dir_path] \
[-p server:path] client_name platform_group
```

`-d` Specifies that the client is to use DHCP to obtain the network install parameters.

For IA clients, use this option to boot the systems from the network using PXE network boot.

<code>-c server:jumpstart_dir_path</code>	Specifies a JumpStart directory for custom JumpStart installations. <i>server</i> is the host name of the server on which the JumpStart directory is located. <i>jumpstart_dir_path</i> is the absolute path to the JumpStart directory.
<code>-p server:path</code>	Specifies the <code>sysidcfg</code> file for preconfiguring system information. <i>server</i> is either a valid host name or IP address for the server that contains the file. <i>path</i> is the absolute path to the <code>sysidcfg</code> file.
<i>client_name</i>	Is the name of the system to be installed from the network. This name is <i>not</i> the host name of the install server. The client must be in the name service for this command to work.
<i>platform_group</i>	Is the platform group of the system to be installed. For more information, see Chapter 37.

5. Decide if you need to run the command on a boot server.

- If a boot server is not required, you are finished.
- If a boot server is required, continue.

6. On the boot server, *host2*, become superuser.

7. Change to the `Tools` directory on the Solaris 8 DVD image on the boot server's boot directory:

```
host2# cd Solaris_8/Tools
```

8. Use the `add_install_client` command to set up a system to boot from the boot server and to be installed from the network:

```
host2# ./add_install_client [-d] [-c server:jumpstart_dir_path] \
-s install_server:install_dir_path [-p server:path] client_name platform_group
```

<code>-d</code>	Specifies that the client is to use DHCP to obtain the network install parameters. For IA clients, use this option to boot the systems from the network by using PXE network boot.
<code>-c server:jumpstart_dir_path</code>	Specifies a JumpStart directory for custom JumpStart installations. <i>server</i> is the host name of the server on which the JumpStart directory is located. <i>jumpstart_dir_path</i> is the absolute path to the JumpStart directory.
<code>-s</code> <i>install_server:install_dir_path</i>	Specifies the install server. This option is required only when you are using <code>add_install_client</code> on a boot server. <i>install_server</i> is the host name of the install server. <i>install_dir_path</i> is the absolute path to the Solaris 8 DVD image for your platform.

<code>-p server:path</code>	Specifies the <code>sysidcfg</code> file for preconfiguring system information. <code>server</code> is either a valid host name or IP address for the server that contains the file. <code>path</code> is the absolute path to the <code>sysidcfg</code> file.
<code>client_name</code>	Is the name of the system to be installed from the network. This name is <i>not</i> the host name of the install server. The client must be in the name service for this command to work.
<code>platform_group</code>	Is the platform group of the system to be installed. For more information, see Chapter 37.

EXAMPLE 11-6 SPARC: Adding SPARC Systems to Be Installed From the Network With `add_install_client`

The following example illustrates how to add a system that is named `basil`, which is a Ultra™ 5, to be installed from the network. The system requires a boot server, so the command is run on the install server and is run again on the boot server. The `-s` option is used to specify the install server that is named `install_server1`, which contains a Solaris 8 *SPARC Platform Edition* DVD image in `export/home/s8dvdsparc`.

```
host1# cd /export/install/boot/Solaris_8/Tools
host1# ./add_install_client basil sun4u
host2# cd /export/install/boot/Solaris_8/Tools
host2# ./add_install_client -s install_server1:/export/home/s8dvdsparc basil sun4u
```

EXAMPLE 11-7 x86: Adding IA Systems to Be Installed From the Network With `add_install_client`

The following example illustrates how to set up IA systems to be booted and installed from the network by using the DHCP protocol. The `-d` option is used to specify that clients are to use the DHCP protocol for configuration. If you plan to use PXE network boot, you must use the DHCP protocol. The DHCP class name `SUNW.i86pc` indicates that this command applies to all Solaris IA network boot clients, not just a single client. The `-s` option is used to specify that the clients are to be installed from the install server that is named `install_server1`, which contains a Solaris 8 *Intel Platform Edition* DVD image in `/export/home/s8dvdia`:

```
# cd /export/boot/Solaris_8/Tools
# ./add_install_client -d -s install_server1:/export/home/s8dvdia SUNW.i86pc i86pc
```


Preparing to Install Solaris Software From the Network With CD Media

This chapter describes how to use CD media to set up your network and systems to install the Solaris software from the network. Network installations enable you to install the Solaris software from a system that has access to the Solaris 8 disc images, called an install server, to other systems on the network. You copy the contents of the CD media to the install server's hard disk. Then, you can install the Solaris software from the network by using any of the Solaris installation methods. This chapter covers the following topics:

- "Task Map: Preparing to Install Solaris Software From the Network" on page 84
- "Creating a SPARC Install Server With CD Media" on page 84
- "Creating a Boot Server on a Subnet With CD Media" on page 88
- "Adding Systems to Be Installed From the Network" on page 91

Task Map: Preparing to Install Solaris Software From the Network

TABLE 12-1 Preparing to Install Solaris Software From the Network Task Map

Task	Description	For Instructions, Go To
Create an install server.	Use the <code>setup_install_server(1M)</code> command to copy the Solaris 8 Software 1 of 2 CD to the install server's hard disk. Use the <code>add_to_install_server(1M)</code> command to copy the Solaris 8 Software 2 of 2 CD and the Solaris 8 Languages to the install server's hard disk Use the <code>modify_install_server(1M)</code> command to add the Solaris Web Start user interface software to the net installation image	"Creating a SPARC Install Server With CD Media" on page 84
(Optional) Create boot servers.	If you want to install systems from the network that are not on the same subnet as the install server and you are not using DHCP, you must create a boot server on the subnet to boot the systems.	"Creating a Boot Server on a Subnet With CD Media" on page 88
Add systems to be installed from the network.	Setup each system that you want to install from the network. Each system that you want to install needs to know where on the network to find the install server, the boot server, and configuration information.	"Adding Systems to Be Installed From the Network" on page 91

Creating a SPARC Install Server With CD Media

You must create an install server to install the Solaris software on a system from the network. If systems that you are installing are not in the same subnet as the install server and you are not using DHCP, you must do one of the following:

- Create separate boot servers for each subnet
- Create an install server for each subnet. However, this requires more disk space.

▼ To Create an Install Server CD Media

SPARC only – You cannot use a SunOS 4.1.x system as an install server.

Note – This procedure assumes that the system is running the Volume Manager. If you are not using the Volume Manager to manage media, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without the Volume Manager.

1. On the system that is to become the install server, become superuser.

The system must include a CD-ROM drive and be part of the site's network and name service. If you use a name service, the system must also be in the NIS, NIS+, DNS, or LDAP name service. If you do not use a name service, you must distribute information about this system by following your site's policies.

2. Insert the Solaris 8 Software 1 of 2 CD into the system's drive.

3. Create a directory for the boot image.

```
# mkdir -p install_dir_path
```

install_dir_path Specifies the directory where the CD image is to be copied

4. Decide if you want to copy the Solaris 8 Software 1 of 2 and Solaris 8 Software 2 of 2 CDs to the install server's hard disk.

- If yes, continue.
- If no, go to step 19.

5. Change to the `Tools` directory on the mounted disc:

- For the SPARC Platform Edition CD type:

```
# cd /cdrom/cdrom0/s0/Solaris_8/Tools
```

- For the Intel Platform Edition CD type:

```
# cd /cdrom/cdrom0/s2/Solaris_8/Tools
```

6. Copy the disc in the drive to the install server's hard disk by using the `setup_install_server` command:

```
# ./setup_install_server install_dir_path
```

install_dir_path Specifies the directory where the CD image is to be copied

Note – The `setup_install_server` command indicates whether or not there is enough disk space available for the Solaris 8 Software disc images. To determine available disk space, use the `df -k1` command.

7. Eject the Solaris 8 Software 1 of 2 CD.

8. Insert the Solaris 8 Software 2 of 2 CD into the system's CD-ROM drive.

9. Change to the `Tools` directory on the mounted CD:

```
# cd /cdrom/cdrom0/Solaris_8/Tools
```

10. Copy the CD in the CD-ROM drive to the install server's hard disk by using the `add_to_install_server` command:

```
# ./add_to_install_server install_dir_path
```

install_dir_path Specifies the directory where the CD image is to be copied

11. Eject the Solaris 8 Software 2 of 2 CD.

12. Insert the Solaris 8 Languages into the system's CD-ROM drive.

13. Change to the `Tools` directory on the mounted CD:

```
# cd /cdrom/cdrom0/Tools
```

14. Copy the CD in the CD-ROM drive to the install server's hard disk by using the `add_to_install_server` command:

```
# ./add_to_install_server install_dir_path
```

install_dir_path Specifies the directory where the CD image is to be copied

15. Decide if you want to enable users to use the Solaris Web Start installation method to boot a system and install the Solaris 8 software from a network.

- If no, eject the Solaris 8 Languages and go to step 19.
- If yes, eject the Solaris 8 Languages and continue.

16. Insert the Solaris 8 Installation CD into the system's CD-ROM drive.

17. Change to the directory that contains `modify_install_server` on the mounted CD:

```
# cd /cdrom/cdrom0/s0
```

18. Use the `modify_install_server` command to copy the Solaris Web Start interface software to the install server:

```
# ./modify_install_server -p install_dir_path installer_miniroot_path
```

<code>-p</code>	Preserves the existing image's miniroot in <code>install_dir_path/Solaris_8/Tools/Boot.orig</code>
<code>install_dir_path</code>	Specifies the directory where the Solaris Web Start interface is to be copied
<code>installer_miniroot_path</code>	Specifies the directory on the CD from which the Solaris Web Start interface is to be copied

19. Decide if you want to patch the files that are located in the miniroot (Solaris_8/Tools/Boot) on the net install image that was created by `setup_install_server`.

- If no, continue.
- If yes, use the `patchadd -C` command to patch the files that are located in the miniroot.

20. Decide if you need to create a boot server.

- If the install server is on the same subnet as the system to be installed or you are using DHCP, you do not need to create a boot server. Go to "Adding Systems to Be Installed From the Network" on page 91.
- If the install server is not on the same subnet as the system to be installed and you are not using DHCP, you must create a boot server. For detailed instructions on how to create a boot server, refer to "To Create a Boot Server on a Subnet With CD Media" on page 88.

EXAMPLE 12-1 SPARC: Creating a SPARC Install Server With SPARC CD Media

The following example illustrates how to create an install server by copying the CDs that are labeled Solaris 8 Software 1 of 2 *SPARC Platform Edition*, Solaris 8 Software 2 of 2 *SPARC Platform Edition*, Solaris 8 Languages *SPARC Platform Edition*, and Solaris 8 Installation Multilingual *SPARC Platform Edition* to the install server's `/export/install` directory:

```
# mkdir -p /export/install
# cd /cdrom/cdrom0/s0/Solaris_8/Tools
# ./setup_install_server /export/install
# cd /cdrom/cdrom0/Solaris_8/Tools
# ./add_to_install_server /export/install
```

EXAMPLE 12-1 SPARC: Creating a SPARC Install Server With SPARC CD Media
(Continued)

```
# cd /cdrom/cdrom0/Tools
# ./add_to_install_server /export/install
# cd /cdrom/cdrom0/s0
# ./modify_install_server /export/install /cdrom/cdrom0/s2
```

In this example, each CD is inserted and automatically mounted before you issue each of the commands. After you issue each command, the CD is removed.

Creating a Boot Server on a Subnet With CD Media

You can install the Solaris software from the network from any install server on the network. If you use the `add_install_client` command with the `-d` option for DHCP, you do not need to create a boot server. DHCP provides the installation parameters necessary for installation. However, a system that needs to use an install server on another subnet and does not use DHCP requires a separate boot server on its own subnet. A boot server contains enough of the boot software to boot systems from the network, and then the install server completes the installation of the Solaris software.

▼ To Create a Boot Server on a Subnet With CD Media

Note – This procedure assumes that the system is running the Volume Manager. If you are not using the Volume Manager to manage media, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without the Volume Manager.

1. **On the system you intend to make the boot server for the subnet, log in and become superuser.**

The system must include a local CD-ROM drive or have access to the remote Solaris 8 disc images. If you use a name service, the system must also be in the NIS, NIS+, DNS, or LDAP name service. If you do not use a name service, you must distribute information about this system by following your site's policies.

2. **Decide if you want to mount the Solaris 8 Software 1 of 2 CD from the drive or from an image on an NFS server.**

- If you want to mount the disc from the drive, insert Solaris 8 Software 1 of 2 CD.
- If you want to mount the disc from an image on an NFS server, follow these steps.
 1. Mount the Solaris 8 Software 1 of 2 CD image.

```
# mount -F nfs -o ro server_name:path /mnt
```

server_name:path Is the host name and absolute path to the disc image

2. Change directory to the mounted disc image:

```
# cd /mnt
```

3. **Change to the Tools directory on the Solaris 8 Software 1 of 2 CD image by typing:**

```
# cd Solaris_8/Tools
```

4. **Copy the boot software to the boot server.**

```
# ./setup_install_server -b boot_dir_path
```

-b Specifies to setup the system as a boot server

boot_dir_path Specifies the directory where the boot software is to be copied

Note – The `setup_install_server` command indicates whether or not there is enough disk space available for the images. To determine available disk space, use the `df -kl` command.

5. **Eject Solaris 8 Software 1 of 2 CD.**

6. **Insert the Solaris 8 Installation CD into the system's drive.**

7. **Change to the directory that contains `modify_install_server` on the mounted CD:**

For SPARC CD media:

```
# cd /cdrom/cdrom0/s0
```

For IA CD media:

```
# cd /cdrom/cdrom0/s2
```

8. **Use the `modify_install_server` command to copy the Solaris Web Start interface software to the install server:**

```
# ./modify_install_server install_dir_path installer_miniroot_path
```

install_dir_path Specifies the directory where the Solaris Web Start interface is to be copied

installer_miniroot_path Specifies the directory on the CD from which the Solaris Web Start interface is to be copied

You are now ready to set up systems to be installed from the network. See “Adding Systems to Be Installed From the Network” on page 91.

EXAMPLE 12-2 SPARC: Creating a Boot Server on a Subnet With SPARC CD Media

The following example illustrates how to create a boot server on a subnet. These commands copy the boot software from the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD image to `/export/install/boot` on the system’s local disk. Also, the Solaris Web Start interface software is copied to the install server.

```
# mount -F nfs -o ro crystal:/export/install/boot /mnt
# cd /mnt
# cd /cdrom/sol_8_sparc/s0/Solaris_8/Tools
# ./setup_install_server -b /export/install/boot
# cd /cdrom/cdrom0/s0
# ./modify_install_server /export/install/boot /cdrom/cdrom0/s1
```

In this example, the disc is inserted and automatically mounted before the command. After the command, the disc is removed.

EXAMPLE 12-3 IA: Creating a Boot Server on a Subnet With IA CD Media

The following example illustrates how to create a boot server on a subnet. These commands copy the boot software from the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD image to `/export/install/boot` on the system’s local disk. Also, the Solaris Web Start interface software is copied to the install server.

```
# mount -F nfs -o ro crystal:/export/install/boot /mnt
# cd /mnt
# cd /cdrom/cdrom0/s02/Solaris_8/Tools
# ./setup_install_server -b /export/install/boot
# cd /cdrom/cdrom0/s2
# ./modify_install_server /export/install/boot /cdrom/cdrom0/s0
```

In this example, the disc is inserted and automatically mounted before the command. After the command, the disc is removed.

Adding Systems to Be Installed From the Network

After you create an install server and, if necessary, a boot server, you must set up each system that you want to install from the network. Each system that you want to install needs to find the following:

- Install server
- Boot server if required
- `sysidcfg` file if you use a `sysidcfg` file to preconfigure system information
- Name server if you use a name service to preconfigure system information
- The profile in the JumpStart directory on the profile server if you are using the custom JumpStart installation method

When you install from the network, a system checks for this information in the name service in the `bootparams` database in the `/etc` files, NIS, NIS+, DNS, or LDAP. You must add this information to the name service for every system that is to be installed from the network. You add this information by using the `add_install_client` command.

Note – If you use the `/etc` files to store network installation information, the information must be located on the install server or the boot server, if a boot server is required

▼ To Add Systems to Be Installed From the Network With `add_install_client`

You use the `add_install_client(1M)` command to set up systems to be installed from the network. You need to run this command on the install server and the boot server if a boot server is required.

Note – The `add_install_client` command updates only the `/etc` files.

In this procedure *install server* is the install server and *boot server* is boot server.

1. On the install server, become superuser.
2. If you use the NIS or NIS+ name service, verify that the following information

about the system to be installed has been added to the name service in the `/etc` files:

- Host name
- IP address
- Ethernet address

3. Change to the `Tools` directory on the Solaris 8 Software 1 of 2 CD image on the install server:

```
install server# cd Solaris_8/Tools
```

4. Use the `add_install_client` command to set up a system to be installed from the network:

```
install server# ./add_install_client [-d] [-c server:jumpstart_dir_path] \  
[-p server:path] client_name platform_group
```

<code>-d</code>	Specifies that the client is to use DHCP to obtain the network install parameters. For IA clients, use this option to boot the systems from the network using PXE network boot.
<code>-c server:jumpstart_dir_path</code>	Specifies a JumpStart directory for custom JumpStart installations. <i>server</i> is the host name of the server on which the JumpStart directory is located. <i>jumpstart_dir_path</i> is the absolute path to the JumpStart directory.
<code>-p server:path</code>	Specifies the <code>sysidcfg</code> file for preconfiguring system information. <i>server</i> is either a valid host name or IP address for the server that contains the file. <i>path</i> is the absolute path to the <code>sysidcfg</code> file.
<i>client_name</i>	Is the name of the system to be installed from the network. This name is <i>not</i> the host name of the install server. The client must be in the name service for this command to work.
<i>platform_group</i>	Is the platform group of the system to be installed. A detailed list of platform groups appears in Chapter 37.

5. Decide if you need to run the command on a boot server.

- If a boot server is not required, you are finished.
- If a boot server is required, continue.

6. On the boot server, become superuser.

7. Change to the `Tools` directory on the Solaris 8 Software 1 of 2 CD image on the boot server's boot directory:

```
Boot server# cd Solaris_8/Tools
```

8. Use the `add_install_client` command to set up a system to boot from a boot server and to be installed from the network:

```
boot server# ./add_install_client [-d] [-c server:jumpstart_dir_path] /  
-s install_server:install_dir_path [-p server:path] client_name platform_group
```

<code>-d</code>	Specifies that the client is to use DHCP to obtain the network install parameters. For IA clients, use this option to boot the systems from the network by using PXE network boot.
<code>-c server:jumpstart_dir_path</code>	Specifies a JumpStart directory for custom JumpStart installations. <i>server</i> is the host name of the server on which the JumpStart directory is located. <i>jumpstart_dir_path</i> is the absolute path to the JumpStart directory.
<code>-s</code> <code>install_server:install_dir_path</code>	Specifies the install server. This option is required only when you are using <code>add_install_client</code> on a boot server. <i>install_server</i> is the host name of the install server. <i>install_dir_path</i> is the absolute path to the Solaris 8 Software 1 of 2 CD image for your platform.
<code>-p server:path</code>	Specifies the <code>sysidcfg</code> file for preconfiguring system information. <i>server</i> is either a valid host name or IP address for the server that contains the file. <i>path</i> is the absolute path to the <code>sysidcfg</code> file.
<code>client_name</code>	Is the name of the system to be installed from the network. This name is <i>not</i> the host name of the install server. The client must be in the name service for this command to work.
<code>platform_group</code>	Is the platform group of the system to be installed. A detailed list of platform groups appears in Chapter 37.

EXAMPLE 12-4 SPARC: Adding SPARC Systems to Be Installed From the Network With `add_install_client`

The following example illustrates how to add a system that is named `basil`, which is a Ultra™ 5, to be installed from the network. The system requires a boot server, so the command is run on the install server and is run again on the boot server. The `-s` option is used to specify the install server that is named `install_server1`, which contains a Solaris 8 Software 1 of 2 SPARC Platform Edition CD image in `export/home/s8cdsparc`.

```
install server# cd /export/install/boot/Solaris_8/Tools  
install server# ./add_install_client basil sun4u  
boot server# cd /export/install/boot/Solaris_8/Tools  
boot server# ./add_install_client -s install_server1:/export/home/s8cdsparc basil sun4u
```

EXAMPLE 12-5 x86: Adding IA Systems to Be Installed From the Network With `add_install_client`

The following example illustrates how to set up IA systems to be booted and installed from the network by using the DHCP protocol. The `-d` option is used to specify that clients are to use the DHCP protocol for configuration. If you plan to use PXE network boot, you must use the DHCP protocol. The DHCP class name `SUNW.i86pc` indicates that this command applies to all Solaris IA network boot clients, not just a single client. The `-s` option is used to specify that the clients are to be installed from the install server that is named `install_server1`, which contains a Solaris 8 Software 1 of 2 *Intel Platform Edition* CD image in `/export/home/s8cdia`:

```
install server# cd /export/boot/Solaris_8/Tools
install server# ./add_install_client -d -s install_server1:/export/home/s8cdia SUNW.\
i86pc i86pc
```

Preparing to Install Solaris Software From the Network Reference

This chapter lists the commands you need to use to set up network installations.

TABLE 13-1 Network Installation Commands

Command	Platform	Description
<code>add_install_client</code>	All	A command that adds network installation information about a system to an install server's or boot server's <code>/etc</code> files so the system can install from the network.
<code>setup_install_server</code>	All	A script that copies the Solaris 8 DVDs or CDs to an install server's local disk or copies the boot software to a boot server. The <code>setup_install_server(1M)</code> man page contains more information.
(CD media only) <code>add_to_install_server</code>	All	A script that copies additional packages within a product tree on the CDs to the local disk on an existing install server. The <code>add_to_install_server(1M)</code> man page contains more information.
(CD media only) <code>modify_install_server</code>	All	A script that adds the Solaris Web Start user interface software to the Solaris 8 CD images on an existing install server. This script enables you to use the Solaris Web Start program to boot a system and install the Solaris 8 software from a network. The <code>modify_install_server(1M)</code> man page contains more information. If you are installing from a system with only 64 Mbytes memory, you do not have enough memory to use <code>modify_install_server</code> .
<code>mount</code>	All	A command that shows mounted file systems, including the file system on the Solaris 8 DVD or Solaris 8 Software and Solaris 8 Languages. The <code>mount(1M)</code> man page contains more information.

TABLE 13-1 Network Installation Commands (Continued)

Command	Platform	Description
<code>uname -i</code>	All	A command for determining a system's platform name, for example, SUNW, SPARCstation-5 or i86pc. You might need the system's platform name when you install the Solaris software. The <code>uname(1)</code> man page contains more information.
<code>patchadd -C net_install_image</code>	All	A command to add patches to the files that are located in the miniroot, <code>Solaris_8/Tools/Boot</code> , on an net installation image of a DVD or CD that is created by <code>setup_install_server</code> . This facility enables you to patch Solaris installation commands and other miniroot-specific commands. <code>net_install_image</code> is the absolute path name of the net installation image. The <code>patchadd(1M)</code> man page contains more information.
<code>reset</code>	SPARC	A command for resetting the terminal settings and display. You can use <code>reset</code> before booting. Or, if you boot and see a series of error messages about I/O interrupts, press the Stop and A keys at the same time, and then type <code>reset</code> at the <code>ok</code> or <code>> PROM</code> prompt.
<code>banner</code>	SPARC	A command that displays system information, such as model name, Ethernet address, and memory installed. You can issue this command only at the <code>ok</code> or <code>> PROM</code> prompt.

Using the Solaris Web Start Program

This chapter explains how to use the Solaris Web Start program on the Solaris 8 DVD or the Solaris 8 Installation CD to install or upgrade the Solaris software.

Note – If you want to install the Solaris operating environment 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 a CD-ROM drive that is attached to another machine. For detailed instructions, refer to Appendix C.

This chapter contains the following topics.

- “Solaris Web Start Program GUI or CLI” on page 97
- “SPARC: Performing an Installation or Upgrade With the Solaris Web Start Program” on page 98
- “IA: Performing an Installation or Upgrade With the Solaris Web Start Program” on page 102
- “Solaris Web Start Post-Installation and Upgrade Tasks” on page 108

Solaris Web Start Program GUI or CLI

You can run the Solaris Web Start program and for Intel systems, the Device Configuration Assistant, with a GUI or with a CLI.

- GUI – Requires a local or remote DVD-ROM or CD-ROM drive or network connection, video adapter, keyboard, monitor, and enough memory.
- CLI – Requires a local or remote DVD-ROM or CD-ROM drive or network connection, keyboard, and monitor. You can run the Solaris Web Start installation CLI with `tip(1)`.

If the Solaris Web Start program detects a video adapter for the system, it automatically displays the GUI. If the Solaris Web Start program does not detect a video adapter, it automatically displays the CLI. The content and sequence of instructions in both the GUI and the CUI are generally the same.

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

You can either install or upgrade the Solaris operating environment on your SPARC system by using the Solaris Web Start program on the Solaris 8 DVD or the Solaris 8 Installation CD.

Note – If you are installing from the Solaris 8 Installation CD, for special requirements see “Requirements When Using the Solaris 8 Installation CD” on page 23.

Ensure that you have the following:

- If you are installing from a DVD, use the Solaris 8 *SPARC Platform Edition* DVD
- If you are installing from CD media, use the following:
 - Solaris 8 Installation *SPARC Platform Edition* CD
 - Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
 - Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD – The installation program prompts you for this CD if necessary.
 - Solaris 8 Languages *SPARC Platform Edition* CD – The installation program prompts you for this CD if necessary to support languages for specific geographic regions.

SPARC: Task Map: Performing a Solaris Web Start Installation

TABLE 14-1 Task Map: Performing a Solaris Web Start Installation

Task	Description	For Instructions, Go To
Verify system requirements	Verify that your system meets the requirements to install or upgrade with the Solaris Web Start program.	"System Requirements" on page 22
Gather the necessary information.	Follow the checklist and complete the worksheet to be sure that you have all of the information you need to install the Solaris software.	Chapter 6
(Optional) Preconfigure system configuration information.	You can use the <code>sysidcfg</code> file or the name service to preconfigure installation information, for example, <code>locale</code> , for a system so that the installation program does not prompt you to supply the information during the installation.	Chapter 7
(Upgrade only) Prepare to upgrade the system.	Back up the system.	<i>System Administration Guide, Volume 1</i>
(Optional) Set up the system to install from the network.	To install a system from a remote DVD or CD image, you need to set up the system to boot and install from an install server or a boot server.	Chapter 12
Install or upgrade.	Boot the system and follow the prompts to install or upgrade the Solaris software.	"SPARC: To Perform an Installation or Upgrade With the Solaris Web Start Program" on page 99
(Upgrade only) Perform post-upgrade tasks.	Correct any local modifications that were lost during the upgrade.	"To Correct Local Modifications After Upgrading" on page 108

▼ SPARC: To Perform an Installation or Upgrade With the Solaris Web Start Program

1. Decide if you want to install the software by using the DVD-ROM or CD-ROM drive or by using a net image.

- If you are using a DVD-ROM or CD-ROM drive, insert the Solaris 8 *SPARC Platform Edition* DVD or the Solaris 8 Installation *SPARC Platform Edition* CD.
- If you are using a net installation image, change directories to where the installation media is located. You might need to contact your network administrator for the location. The following command is an example.

```
% cd /net/install-svr/export/s8/sparc
```

2. Boot the system.

- If the system is new, out-of-the-box, turn on the system.
- If you want to install or upgrade an existing system, shut down the system.

- To boot from the local DVD or CD, type:

```
ok boot cdrom
```

- To boot from an install server on a network, type:

```
ok boot net
```

The Solaris Web Start installation begins.

3. If you are prompted, answer the system configuration questions.

- If you preconfigured all of the system configuration information, the Solaris Web Start program does not prompt you to enter any configuration information. Proceed to step 7.
- If you did not preconfigure the system configuration information, use the “Worksheet for Installation” on page 38 or the “Worksheet for Upgrading” on page 43 to help you answer the system configuration questions.

If you are using the GUI, after you confirm the system configuration information, the Solaris Web Start Installation Kiosk and Welcome to Solaris dialog box appear. If your system has insufficient memory, the Kiosk does not display.



You can click any link in the Kiosk menu.

Note – In some situations, the Kiosk might cover a dialog box. To display a hidden dialog box, choose Send Kiosk to Background from the Kiosk menu.

If you want to use the Kiosk after you install the Solaris software, see “To Save And Access the Kiosk” on page 108.

The Installer Questions screen appears.

- 4. 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.

- 5. Specify the media you are using to install, CD or DVD, Network, HTTP, or Local tape.**

- 6. Decide if you want to perform an initial installation or an upgrade.**

The Solaris Web Start program determines if the system can be upgraded. You must have an existing Solaris root (/) file system and if you are upgrading using the Solaris 8 Installation CD, you must have a 512 Mbyte slice. The Solaris Web Start program detects the necessary conditions and then upgrades the system.

- 7. Follow the instructions on the screen to install the Solaris software and any additional software on the system.**

When the Solaris Web Start program finishes 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 following directories:

- `/var/sadm/system/logs`
- `/var/sadm/install/logs`

- 8. If you are upgrading the Solaris software, you might need to correct some local modifications that were not preserved. For detailed instructions, refer to “To Correct Local Modifications After Upgrading” on page 108.**

IA: Performing an Installation or Upgrade With the Solaris Web Start Program

You can install the Solaris operating environment on your IA system by using the Solaris Web Start program on the Solaris 8 DVD or on the Solaris 8 Installation CD.

IA only – You cannot use the Solaris Web Start program to upgrade to Solaris 8 from the Solaris 2.5.1, Solaris 2.6, or Solaris 7 operating environments. The Solaris Web Start program requires a separate 10 Mbyte IA boot partition that was not required in previous Solaris releases. You must use the Solaris 8 Interactive Installation Program upgrade. For details about the Solaris 8 Interactive Installation Program, refer to Chapter 15.

You can use the Solaris Web Start program to upgrade from the Solaris 8 release to a Solaris 8 Update release.

Note – If you are installing from the Solaris 8 Installation CD, for special requirements see “Requirements When Using the Solaris 8 Installation CD” on page 23.

Ensure that you have the following:

- If you are installing from a DVD, the Solaris 8 *Intel Platform Edition* DVD
- If you are installing from CD media, use the following:
 - Solaris 8 Installation *Intel Platform Edition* CD
 - Solaris 8 Software 1 of 2 *Intel Platform Edition* CD
 - Solaris 8 Software 2 of 2 *Intel Platform Edition* CD – The installation program prompts you for this CD if necessary.
 - Solaris 8 Languages *Intel Platform Edition* CD – The installation program prompts you for this CD if necessary to support languages for specific geographic regions.

IA: Task Map: Performing a Solaris Web Start Installation

TABLE 14-2 IA: Task Map: Performing a Solaris Web Start Installation

Task	Description	For Instructions, Go To
Verify system requirements	Verify that your system meets the requirements to install or upgrade with the Solaris Web Start program.	“System Requirements” on page 22
Gather the necessary information.	Follow the checklist and complete the worksheet to be sure that you have all of the information you need to install the Solaris software.	Chapter 6
(Optional) Preconfigure system configuration information.	You can use the <code>sysidcfg</code> file or the name service to preconfigure installation information, for example, <code>locale</code> , for a system so that the installation program does not prompt you to supply the information during the installation.	Chapter 7
(Upgrade only) Prepare to upgrade the system.	Back up the system.	<i>System Administration Guide, Volume 1</i>
(Optional) Set up the system to install from the network.	To install a system from a remote Solaris 8 <i>Intel Platform Edition</i> DVD or a Solaris 8 Software <i>Intel Platform Edition</i> net installation image, you must set up the system to boot and install from an install server or a boot server.	Chapter 12
Install or upgrade.	Boot the system and follow the prompts to install or upgrade the Solaris software.	“IA: To Perform an Installation or Upgrade With the Solaris Web Start Program” on page 103
(Upgrade only) Perform post-upgrade task.	Correct any local modifications that were lost during the upgrade.	“To Correct Local Modifications After Upgrading” on page 108

▼ IA: To Perform an Installation or Upgrade With the Solaris Web Start Program

1. **Decide if you want to install the software by using the DVD-ROM or the CD-ROM drive or by using a net installation image.**
 - If you’re using a DVD-ROM or CD-ROM drive, insert the Solaris 8 *Intel Platform Edition* DVD or the Solaris 8 *Installation Intel Platform Edition* CD.
 - If you are using a net installation image, change directories to where the installation media is located. You might need to contact your network administrator for the location. The following command is an example.

```
% cd /net/install-svr/export/s8/ia
```

2. Decide how to boot the system.

- If you boot from the Solaris 8 DVD or the Solaris 8 Installation CD, insert the disc. Your system's BIOS must support booting from a DVD or CD.
- If you boot from the network, use Pre-boot eXecution Environment (PXE) network boot. The system must support PXE. Enable the system to use PXE by using the system's BIOS setup tool or the network adapter's configuration setup Tool.
- If you boot from a diskette, insert Solaris 8 Device Configuration Assistant *Intel Platform Edition* diskette into the system's diskette drive.

IA only – You can access the boot diskette software by downloading and copying the software to a diskette from the Solaris Developer Connection at http://soldc.sun.com/support/drivers/dcs_diskettes.

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

A memory test and hardware detection are executed. The screen refreshes.

4. When the Solaris Device Configuration Assistant screen is displayed, press F2_Continue.

The Bus Enumeration screen appears with the message:

```
Determining bus types and gathering hardware configuration data ...
```

The Scanning Devices screen appears. System devices are scanned. When scanning is complete, the Identified Devices screen appears.

5. Decide if you need to make any changes.

- Press F2_Continue to make no changes.
- Select changes and press F4.

The Loading screen is displayed with messages about drivers that are loaded to boot your system. After a few seconds, the Boot Solaris screen appears.

6. On the Boot Solaris screen, select DVD, CD, Net, or Disk and press F2_Continue.

The Solaris Web Start program checks the default boot disk for the requirements to install or upgrade the system.

Note – If you are installing using the Solaris 8 Installation CD, your system must meet several requirements. If the system does not meet the requirements, you must use the Solaris Web Start program from the Solaris 8 DVD or a network installation image, the Solaris 8 Interactive Installation Program, or the custom JumpStart method. The requirements are the following:

- The BIOS and SCSI driver for the default boot disk must support logical block addressing (LBA).
 - If the default boot disk does not have a Solaris `fdisk` partition, you are prompted to create one. The partition is created on 100 percent of the disk. If you do not want the Solaris `fdisk` partition to use the entire disk, answer No and the `fdisk` user interface launches so that you can manually partition the disk.
 - If the default boot disk does not have an x86 boot partition, the Solaris Web Start program creates one for you from a portion of the Solaris `fdisk` partition. Any data on the Solaris `fdisk` partition is destroyed. You cannot create this partition manually. The program asks permission to create the x86 boot partition. If you answer No, you must choose another installation method.
 - Later in the installation, you can create, modify, or delete partitions through format panels. But, after the Solaris `fdisk` partition and x86 boot partition are created, the disk is frozen and you cannot edit the disk. If you have multiple disks, you can edit those disk at the format panels.
-

The Solaris Web Start program detects each requirement on the default boot disk and prompts you for configuration information that was not found.

7. If you are prompted, answer the system configuration questions.

- If you preconfigured all of the system configuration information, proceed to step 8.
- If you did not preconfigure the system configuration information use the “Worksheet for Installation” on page 38 or the “Worksheet for Upgrading” on page 43 to help you answer the system configuration questions.

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

8. On the Solaris Installation Program screen, press F2_Continue.

The `kdmconfig` – Introduction screen appears.

9. Decide if you have enough memory to run the GUI.

- Press F2_Continue if you have enough memory to display the GUI.
- Press F4_Bypass if you don’t have enough memory and the CLI displays.

The `kdmconfig` - View and Edit Window System Configuration screen appears.

If the `kdmconfig` utility cannot detect the video driver, the `kdmconfig` utility selects the 640x480 VGA driver. The Solaris Web Start GUI cannot display with the 640x480 VGA driver. As a result, the Solaris Web Start CLI displays. To use the Solaris Web Start GUI, use the `kdmconfig` utility to select the correct video driver for your system.

10. (Optional) Examine the configuration information on the kdmconfig - View and Edit Window System Configuration screen and make any changes you need.

If the kdmconfig utility cannot detect the video driver, the kdmconfig utility selects the 640x480 VGA driver. The Solaris Web Start GUI cannot display with the 640x480 VGA driver. As a result, the Solaris Web Start CLI is displayed. To use the Solaris Web Start GUI, use the kdmconfig utility to select the correct video driver for your system.

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

The kdmconfig Window System Configuration Test screen appears.

12. Press F2_Continue.

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

13. 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. Repeat step 10 through step 13 until the colors are displayed accurately and you can move the pointer as expected.
- If the colors are displayed accurately, click Yes.

The Solaris Web Start Welcome screen appears.

14. If you are prompted, answer any remaining system configuration questions.

The Installer Questions screen appears.

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

Note – If you are using PXE to boot from the network, select manual reboot. You must ensure that the system does not boot from the network when it reboots. To disable network boot, during the reboot use the system's BIOS setup tool or network adapter's configuration setup tool.

The Specify Media screen appears.

16. Specify the media you are using to install, DVD or CD, Network, HTTP, or Local Tape.

The Solaris Web Start Installation Kiosk and Welcome to Solaris dialog box appear. If your system has insufficient memory, the Kiosk does not display.



You can click on any link in the Kiosk menu.

Note – In some situations, the Kiosk might cover a dialog box. To display a hidden dialog box, from the Kiosk menu, choose Send Kiosk to Background.

If you want to use the Kiosk after you install the Solaris software, see “To Save And Access the Kiosk” on page 108.

17. Decide if you want to perform an initial installation or an upgrade.

The Solaris Web Start program determines if the system can be upgraded. You must have an existing Solaris root (/) file system and if you are upgrading using the Solaris 8 Installation CD, you must have a 512 Mbyte slice. The Solaris Web Start program detects the necessary conditions and then upgrades the system.

18. Follow the instructions on the screen to install the Solaris software and any additional software on the system.

When the Solaris Web Start 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 following directories:

- /var/sadm/system/logs
- /var/sadm/install/logs

19. If you are upgrading the Solaris software, you might need to correct some local modifications that were not preserved. For detailed instructions, refer to “To Correct Local Modifications After Upgrading” on page 108.

Solaris Web Start Post-Installation and Upgrade Tasks

After you install or upgrade the Solaris operating environment, you might need to perform these tasks.

▼ To Correct Local Modifications After Upgrading

When you upgrade, the Solaris Web Start program merges local software modifications of the existing system with the new Solaris software. However, in some situations, merging is not possible. After you finish upgrading a system, you might need to correct some local modifications that were not preserved.



Caution – Your system might not boot if you do not correct the local modifications that were not preserved.

1. **Review the contents of the following file to determine whether you need to correct local modifications that the Solaris Web Start program could not preserve.**

```
/a/var/sadm/system/data/upgrade_cleanup
```

2. **Correct any local modifications that were not preserved.**
3. **Reboot the system.**

```
# reboot
```

▼ To Save And Access the Kiosk

If you want to use the Kiosk after you install the Solaris software, you can copy the Kiosk to your system by clicking Save Kiosk on System. The Kiosk is saved in the `/var/sadm/webstart/kiosk` directory.

To access the Kiosk, after you install the Solaris software and reboot, follow these steps.

1. **Open Netscape Communicator.**
2. **Open the `/var/sadm/webstart/kiosk/index.html` file.**
3. **In the CDE Style Manager, check Point In Window To Make Active and uncheck**

Raise Window When Made Active.

Using the Solaris 8 Interactive Installation Program

This chapter explains how to use the Solaris 8 Interactive Installation Program on the Solaris 8 Software 1 of 2 CD to install or upgrade the Solaris software.

- “Solaris 8 Interactive Installation Program GUI or CLI” on page 111
- “SPARC: Performing an Installation or Upgrade With the Solaris 8 Interactive Installation Program” on page 112
- “IA: Performing an Installation or Upgrade With the Solaris 8 Interactive Installation Program” on page 114
- “Solaris 8 Interactive Installation Program Post-Upgrade Task” on page 119

Solaris 8 Interactive Installation Program GUI or CLI

You can run the Solaris 8 Interactive Installation Program and for Intel systems, the Device Configuration Assistant, with a GUI or with a CLI.

- GUI – Requires a local or remote CD-ROM drive or network connection, video adapter, keyboard, and monitor.
- CLI – Requires a local or remote CD-ROM drive or network connection, keyboard, and monitor. You can run the Solaris 8 Interactive Installation Program CLI with `tip(1)`.

Note – When using the CLI, navigate through the text by using Control-U to move up a page and Control-D to move down a page.

If the Solaris 8 Interactive Installation Program detects a video adapter for the system, it automatically displays the GUI. If the Solaris 8 Interactive Installation Program does not detect a video adapter it automatically displays the CLI. The content and sequence of instructions in both the GUI and the CLI are generally the same.

SPARC: Performing an Installation or Upgrade With the Solaris 8 Interactive Installation Program

You can either install or upgrade the Solaris operating environment on your SPARC system by using the Solaris 8 Interactive Installation Program on the Solaris 8 Software 1 of 2 CD. You cannot install any additional software with the Solaris 8 Interactive Installation Program.

Ensure that you have the following CDs:

- Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
- Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD – The installation program prompts you for this CD if necessary.
- Solaris 8 Languages *SPARC Platform Edition* CD – The installation program prompts you for this CD if necessary to support languages for specific geographic regions.

SPARC: Task Map: Performing an Interactive Installation

TABLE 15-1 SPARC: Task Map: Performing an Interactive Installation

Task	Description	For Instructions, Go To
Gather the necessary information.	Follow the checklist and complete the worksheet to be sure that you have all of the information you need to install the Solaris software.	Chapter 6

TABLE 15-1 SPARC: Task Map: Performing an Interactive Installation (Continued)

Task	Description	For Instructions, Go To
(Upgrade only) Prepare to upgrade the system.	Back up the system.	<i>System Administration Guide, Volume 1</i>
(Optional) Preconfigure system configuration information.	You can use the <code>sysidcfg</code> file or the name service to preconfigure installation information (for example, <code>locale</code>) for a system so the installation program does not prompt you to supply the information during the installation.	Chapter 7
(Optional) Set up the system to install from the network.	To install a system from a remote Solaris 8 Software <i>SPARC Platform Edition</i> CD image, you need to set up the system to boot and install from an install server or a boot server.	Chapter 12
Install or upgrade.	Boot the system and follow the prompts to install or upgrade the Solaris software.	"SPARC: To Perform an Installation or Upgrade With the Solaris 8 Interactive Installation Program" on page 113
(Upgrade only) Perform post-upgrade task.	Correct any local modifications that were lost during the upgrade.	"Solaris 8 Interactive Installation Program Post-Upgrade Task" on page 119

▼ SPARC: To Perform an Installation or Upgrade With the Solaris 8 Interactive Installation Program

1. Decide if you want to install the software by using CD-ROM drive or by using a net image.

- If you're using a CD-ROM drive, insert the Solaris 8 Software 1 of 2 *SPARC Platform Edition*
- If you're using a net installation image, change directories to where the installation media is located. You might need to check with your network administrator for the location. The command below is an example.

```
% cd /net/install-svr/export/s8/sparc
```

2. Boot the system.

- If the system is new, out-of-the-box, turn on the system.
- If you want to install or upgrade an existing system, shut down the system.
 - To boot from the local CD type:

```
ok boot cdrom
```

- To boot from an install server on a network type:

```
ok boot net
```

The Solaris 8 Interactive Installation Program begins.

3. If you are prompted, answer the system configuration questions.

If you preconfigured all of the system configuration information, the Solaris 8 Interactive Installation Program does not prompt you to enter any configuration information.

If you did not preconfigure the system configuration information, use the “Worksheet for Installation” on page 38 or the “Worksheet for Upgrading” on page 43 to help you answer the system configuration questions.

4. Follow the instructions on the screen to install the Solaris software on the system.

When the Solaris 8 Interactive Installation Program finishes 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 following directories:

- /var/sadm/system/logs
- /var/sadm/install/logs

5. If you are upgrading the Solaris software, you might need to correct some local modifications that were not preserved. For detailed instructions, refer to “Solaris 8 Interactive Installation Program Post-Upgrade Task” on page 119.

6. (Optional) To install additional software, such as the Solaris 8 Documentation CD, refer to Appendix B.

IA: Performing an Installation or Upgrade With the Solaris 8 Interactive Installation Program

You can either install or upgrade the Solaris operating environment on your IA system by using the Solaris 8 Interactive Installation Program on the Solaris 8 Software 1 of 2 CD. You cannot install any additional software with the Solaris 8 Interactive Installation Program.

Ensure that you have the following CDs:

- Solaris 8 Software 1 of 2 *Intel Platform Edition* CD

- Solaris 8 Software 2 of 2 *Intel Platform Edition* CD – The installation program prompts you for this CD if necessary.
- Solaris 8 Languages *Intel Platform Edition* CD – The installation program prompts you for this CD if necessary to support languages for specific geographic regions.

IA: Task Map: Performing an Interactive Installation

TABLE 15–2 IA: Task Map: Performing an Interactive Installation

Task	Description	For Instructions, Go To
Gather the necessary information.	Follow the checklist and complete the worksheet to be sure that you have all of the information you need to install the Solaris software.	Chapter 6
(Upgrade only) Prepare to upgrade the system.	Back up the system.	<i>System Administration Guide, Volume 1</i>
(Optional) Preconfigure system configuration information.	You can use the <code>sysidcfg</code> file or the name service to preconfigure installation information (for example, <code>locale</code>) for a system so the installation program does not prompt you to supply the information during the installation.	Chapter 7
(Optional) Set up the system to install from the network.	To install a system from a remote Solaris 8 Software Intel Platform Edition CD image, you need to set up the system to boot and install from an install server or a boot server.	Chapter 12
Install or upgrade.	Boot the system and follow the prompts to install or upgrade the Solaris software.	“IA: To Perform an Installation or Upgrade With the Solaris 8 Interactive Installation Program” on page 115
(Upgrade only) Perform post-upgrade task.	Correct any local modifications that were lost during the upgrade.	“Solaris 8 Interactive Installation Program Post-Upgrade Task” on page 119

▼ IA: To Perform an Installation or Upgrade With the Solaris 8 Interactive Installation Program

1. Decide if you want to install the software by using the CD-ROM drive or by using a net image.

- If you're using a CD-ROM drive, insert the Solaris 8 Software 1 of 2 *Intel Platform Edition*.
- If you're using a net image, change directories to where the installation media is located. You might need to check with your network administrator for the location. The command below is an example.

```
% cd /net/install-svr/export/s8/ia
```

2. Decide how to boot the system.

- If you boot from the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD, insert the CD. Your system's BIOS must support booting from a CD.
- If you boot from the network, use Pre-boot eXecution Environment (PXE) network boot. The system must support PXE. Enable the system to use PXE by using the system's BIOS setup tool or the network adapter's configuration setup Tool.
- If you boot from a diskette, insert Solaris 8 Device Configuration Assistant *Intel Platform Edition* diskette into the system's diskette drive.

IA only – You can access the boot diskette software by downloading and copying the software to a diskette from the Solaris Developer Connection at http://soldc.sun.com/support/drivers/dcs_diskettes.

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

A memory test and hardware detection are executed. The screen refreshes.

- If you are using the Solaris 8 Software 1 of 2 *Intel Platform Edition* and Solaris 8 Software 2 of 2 *Intel Platform Edition* CDs, the following message appears.

```
SunOS - Intel Platform Edition Primary Boot Subsystem, vsn 2.0
```

Then, information similar to the following text appears.

```
SunOS Secondary Boot version 3.00
```

```
Solaris Intel Platform Edition Booting System
```

```
Running Configuration Assistant...
```

- If you are using PXE network boot to boot over the network, the following message appears.

```
Solaris network boot...
```

Then, information similar to this appears.

```
SunOS Secondary Boot version 3.00
```

Solaris Intel Platform Edition Booting System

Running Configuration Assistant...

- If you are using the diskette that is labeled Solaris 8 Device Configuration Assistant *Intel Platform Edition*, the following appears.

Solaris Boot Sector Version 1

Then, information similar to the following text appears.

Solaris for x86 - FCS DCB Version 1.242

loading /solaris/boot.bin

The screen refreshes and information similar to the following text appears.

SunOS Secondary Boot version 3.00

Solaris Intel Platform Edition Booting System

Running Configuration Assistant...

4. When the Solaris Device Configuration Assistant screen appears, press F2_Continue.

The Bus Enumeration screen appears with the message:

Determining bus types and gathering hardware configuration data ...

The Scanning Devices screen appears. System devices are scanned. When scanning is complete, the Identified Devices screen appears.

5. Decide if you need to make any changes.

- Press F2_Continue to make no changes.
- Select changes and press F4.

The Loading screen appears and contains messages about drivers that are loaded to boot your system. After a few seconds, the Boot Solaris screen appears.

6. On the Boot Solaris screen, select CD, Net, or Disk and press F2_Continue.

The Solaris 8 Interactive Installation Program checks the default boot disk for the requirements to install or upgrade the system.

7. If you are prompted, answer the system configuration questions.

- If you preconfigured all of the system configuration information, proceed to step 8.

- If you did not preconfigure the system configuration information use the “Worksheet for Installation” on page 38 or the “Worksheet for Upgrading” on page 43 to help you answer the system configuration questions.
After a few seconds, the Solaris Installation Program screen appears.
8. **Press F2_Continue.**
The kdmconfig – Introduction screen appears.
 9. **Press F2_Continue.**
The kdmconfig - View and Edit Window System Configuration screen appears.
 10. **(Optional) Examine the configuration information on the kdmconfig - View and Edit Window System Configuration screen and make any changes you need.**
 11. **When you are finished, select No changes needed - Test/Save and Exit, and press F2_Continue.**
The kdmconfig Window System Configuration Test screen appears.
 12. **Press F2_Continue.**
The screen refreshes and the kdmconfig Window System Configuration Test palette and pattern screen appears.
 13. **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. Repeat step 10 through step 13 until the colors are displayed accurately and you can move the pointer as expected.
 - If the colors are displayed accurately, click Yes.
The Solaris 8 Interactive Installation Program begins.
 14. **If you are prompted, answer the system configuration questions.**
 - If you preconfigured all of the system configuration information, the Solaris 8 Interactive Installation Program does not prompt you to enter any configuration information.
 - If you did not preconfigure the system configuration information, use the “Worksheet for Installation” on page 38 or the “Worksheet for Upgrading” on page 43 to help you answer the system configuration questions.
 15. **Decide if you want to reboot the system automatically and if you want to automatically eject the disc.**

Note – If you are using PXE to boot from the network, select manual reboot. You must ensure that the system does not boot from the network when it reboots. To disable network boot, during the reboot use the system’s BIOS setup tool or network adapter’s configuration setup tool.

16. Follow the instructions to install the Solaris software.

When the Solaris 8 Interactive 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 following directories:

- /var/sadm/system/logs
- /var/sadm/install/logs

17. If you are upgrading the Solaris software, you might need to correct some local modifications that were not preserved. For detailed instructions, refer to “Solaris 8 Interactive Installation Program Post-Upgrade Task” on page 119.

18. (Optional) To install additional software, such as the Solaris 8 Documentation CD, refer to Appendix B.

Solaris 8 Interactive Installation Program Post-Upgrade Task

When you upgrade, the Solaris 8 Interactive Installation Program merges local software modifications of the existing system with the new Solaris software. However, in some situations, merging is not possible. After you finish upgrading a system, you might need to correct some local modifications that were not preserved.



Caution – Your system might not boot if you do not correct the local modifications that were not preserved.

▼ To Correct Local Modifications After Upgrading

1. **Review the contents of the following file to determine whether you need to correct local modifications that the Solaris 8 Interactive Installation Program could not preserve.**

```
/a/var/sadm/system/data/upgrade_cleanup
```

2. **Correct any local modifications that were not preserved.**
3. **Reboot the system.**

```
# reboot
```


Web Start Flash Installation Feature Topics

This section provides instructions for creating Web Start Flash archives and using Web Start Flash archives to install the Solaris operating environment on multiple systems.

Chapter 17	Provides overview and planning information on creating and installing Web Start Flash archives.
Chapter 18	Provides step-by-step instructions for creating Web Start Flash archives.
Chapter 19	Provides step-by-step instructions for using Web Start Flash archives to install systems.
Chapter 20	Describes syntax and options for the <code>flarcreate</code> and <code>flar</code> commands. Describes keywords for Web Start Flash archive information.

Web Start Flash Overview and Planning

This chapter provides an introduction to the Web Start Flash installation feature. Also included in the chapter is information necessary for planning a Web Start Flash installation in your environment.

- “Web Start Flash Introduction” on page 123
- “Planning Your Web Start Flash Installation” on page 124

Web Start Flash Introduction

The Web Start Flash installation feature enables you to create a single reference installation of the Solaris operating environment on a system, which is called the master system. Then you can replicate that installation on a number of systems, which are called clone systems. Installing clone systems with the Web Start Flash installation method is a three-part process.

1. Install the master system. You select a system and use any of the Solaris installation methods to install the Solaris operating environment and any other software.
2. Create the Web Start Flash archive. The Web Start Flash archive contains a copy of all of the files on the master system.
3. Install the Web Start Flash archive on clone systems. When you install the Web Start Flash archive on a system, all of the files in the archive are copied to that system. The newly installed system now has the exact same installation configuration as the original master system, thus it is called a clone system.

Note – You cannot upgrade a system that is running the Solaris operating environment by using the Web Start Flash installation feature. You can only perform an initial installation.

Planning Your Web Start Flash Installation

Before you create and install a Web Start Flash archive, you must make some decisions about how you want to install the Solaris operating environment on your systems.

Designing the Installation of the Master System

The first task in the Web Start Flash installation process is to install a system, the master system, with the configuration that you want each of the clone systems to have. You can use any of the Solaris installation methods to install a subset or a complete installation of the Solaris operating environment on the master system. After you complete the installation, you can add or remove software or modify any configuration files.

The master system and the clone systems must have the same kernel architectures. For example, you can use a Web Start Flash archive that was created from a master system that has a sun4u architecture only to install other systems with a sun4u architecture.

You must install the master system with the exact configuration that you want on each of the systems that you are installing with the Web Start Flash archive that was created from this master system. The decisions you make when you design the installation of the master system depend on:

- The software you want to install on the clone systems
- Peripheral devices that are connected to the master system and the clone systems
- The architecture of the master system and the clone systems

Customizing the Solaris Installation on the Master System

After you install the Solaris operating environment on the master system by using any of the Solaris installation methods, you can add or delete software and modify system configuration information as necessary.

- Delete software. You can remove software that you determine is not necessary to install on the clone systems. To see a list of software that is installed on the master system, use the Product Registry. For detailed instructions, refer to “To List Information About All Installed Products” on page 410.
- Add software. You can install software that is included in the Solaris release and software that is not delivered as part of the Solaris operating environment. All of the software that you install on the master system is included in the Web Start Flash archive and is installed on the clone systems.
- Modify configuration files. You can alter configuration files on the master system. For example, you can modify the `/etc/inet/inetd.conf` file to restrict the daemons that the system runs. All of the modifications that you make are saved as part of the Web Start Flash archive and are installed on the clone systems.

Note – After you install the Web Start Flash archive on a clone system, some host-specific files are deleted and recreated for the clone machine. The installation program uses the `sys-unconfig(1M)` command and the `sysidtool(1M)` programs to delete and recreate the host-specific network configuration files. The files that are recreated include such files as `/etc/hosts`, `/etc/defaultrouter`, and `/etc/defaultdomain`.

Creating Archives for SPARC and IA Systems

If you want to use the Web Start Flash installation method to install the Solaris software on both SPARC and IA systems, you must create a separate Web Start Flash archive for each platform. Use the Web Start Flash archive that was created from the SPARC master system to install SPARC systems. Use the Web Start Flash archive that was created from the IA master system to install IA systems.

Supporting Peripheral Devices Not Found on the Master System

You might be installing a master system that has different peripheral devices than the clone systems. If you install the master system with the Core, End User, Developer, or Entire Software Group, the master system supports only the peripheral devices that are attached to the master system at the time of installation.

For example, if you install the Entire Software Group on a master system that has a `cg6` frame buffer, the installation contains support for only the `cg6` frame buffer. Consequently, you can only install the archive that you create from this system on clone systems that have either the `cg6` frame buffer or no frame buffers. If you use the archive to install a clone system with an Elite 3D frame buffer, the Elite 3D will be unusable because the required drivers will not be installed.

You might have clone systems that have peripheral devices that the master system does not have. You can install support for these peripheral devices on the master system even though the master system does not have the devices. The Web Start Flash archive you create from this master system contains support for the peripheral devices on the clone systems.

If you plan to install clone systems that have different peripherals from the master system, you can install support for those peripherals on the master system in one of the following ways.

- Install the Entire Plus OEM Software Group – The Entire Plus OEM Software Group is the largest Software Group available and contains every package found in the Solaris operating environment. If you install the Entire Plus OEM Software group on the master system, the master system includes all of the drivers that are included with the Solaris release. A Web Start Flash archive created from a master system that you install with the Entire plus OEM Software Group works on any clone system that has peripheral devices supported by the installed release of the Solaris operating environment.
Installing master systems with the Entire Plus OEM Software Group guarantees compatibility with other peripheral configurations. However, the Entire Plus OEM Software Group requires over 1 Gbyte of disk space. The clone systems might not have the space that is required to install the Entire Plus OEM Software Group.
- Install selected packages – When you install the master system, you can install only the packages that you need for the master system and the clone systems. By selecting specific packages, you can install only support for the peripherals that you know exist on the master system or clone systems.

Planning the Creation of a Web Start Flash Archive

After you install the master system, the next task in the Web Start Flash installation process is to create a Web Start Flash archive. All of the files on the master system are copied to a Web Start Flash archive along with various pieces of identification information. You can create a Web Start Flash archive while the master system is running in multiuser mode or single-user mode. You can also create a Web Start Flash archive after you boot from one of the following:

- Solaris 8 DVD
- Solaris 8 Software 1 of 2 CD
- An image of the Solaris 8 Software and the Solaris 8 Languages CDs

Create the archive when the system is in as static a state as possible.

Archive Identification Information

A Web Start Flash archive contains archive identification information in addition to the actual files from the master system that will be installed on the clone systems. You are required to specify a name for the Web Start Flash archive. Other information that you can specify about the archive includes:

- The author of the archive
- The date the archive was created
- The name of the master system that you used to create the archive

For a complete list of the archive identification information that you can specify, refer to “Identification Section Keywords” on page 142.

Use the `flar` command to retrieve information about the archive. For detailed instructions, refer to “`flar`” on page 146.

Where to Store the Web Start Flash Archive

After you create the Web Start Flash archive, you can save the archive on the hard disk of the master system or on a tape. After you save the archive, you can copy it to any file system or media that you choose.

- Network File System (NFS)
- HTTP server
- Tape
- CD, DVD
- Diskette
- Local drive of clone system that you want to install

Compressing the Archive

When you create the Web Start Flash archive, you can specify that the archive be saved as a compressed file by using the `compress(1)` utility. An archive that is compressed requires smaller disk storage space and creates less congestion when you install the archive over a network.

Planning the Installation of Web Start Flash Archives

The final task in the Web Start Flash installation process is to install Web Start Flash archives on clone systems.

Deciding How to Install Web Start Flash Archives

You can use any of the Solaris installation methods to install Web Start Flash archives on clone systems.

The Solaris Web Start program on the Solaris 8 DVD or on the Solaris 8 Installation CD enables you to install Web Start Flash archives that are stored on the following:

- disc (DVD or CD)
- NFS server
- HTTP server
- Local tape

The CLI of the Solaris 8 Interactive Installation Program on the Solaris 8 Software 1 of 2 CD enables you to install Web Start Flash archives that are stored on the following:

- HTTP server
- NFS server
- Local file
- Local tape
- Local device, including CD

The custom JumpStart installation program enables you to install Web Start Flash archives that are stored on the following:

- NFS server
- HTTP server
- Local tape
- Local device, including DVD or CD
- Local file

Installing Layered Web Start Flash Archives

The Web Start Flash installation feature provides the ability to layer Web Start Flash archives. You can create partial Web Start Flash archives to install in a variety of ways.

For example, you can create one archive that contains the Solaris operating environment files, a second archive that contains the files necessary to run a Web server, and a third archive that contains the files for an NFS server. You can install the first and second archives to a system to create a Web server. You can install the first and third archives to another system to create an NFS server.

By using layered archives, you can increase the flexibility of the Web Start Flash installation while you reduce the disk space that is required to store Web Start Flash archives. When you install layered archives to a clone system, one of the archives must contain the Solaris operating environment.

Note – If you use layered Web Start Flash archives to install additional software on clone systems separately from the Solaris operating environment, the Solaris package database has no record of the additional software.

Creating Web Start Flash Archives

This chapter provides the procedures for creating a Web Start Flash archive.

- “Task Map: Creating Web Start Flash Archives” on page 131
- “Creating Web Start Flash Archives Tasks” on page 131

Task Map: Creating Web Start Flash Archives

TABLE 18-1 Task Map: Creating a Web Start Flash Archive

Task	Description	For Instructions, Go To
Install your chosen configuration on the master system.	Determine the configuration that meets your needs and use any of the Solaris installation methods to install the master system.	Chapter 2
Create the Web Start Flash archive.	Use the <code>flarcreate</code> command to create an archive.	“To Create a Web Start Flash Archive” on page 132

Creating Web Start Flash Archives Tasks

This section provides the procedures for installing a master system and then creating a Web Start Flash archive from that master system.

▼ To Install the Master System

You install the master system with the configuration that you want other systems to have. Use any of the Solaris installation methods to install the Solaris operating environment on the master system.

1. **Identify the system configuration that you want to install.**
2. **With the use of the Solaris installation methods, install the Solaris operating environment on the master system. For a discussion of the different installation methods, refer to Chapter 2.**
3. **Customize your Solaris installation in any of the following ways:**
 - Delete software
 - Add software
 - Modify configuration files
 - Add support for peripheral devices on the clone system

▼ To Create a Web Start Flash Archive

After you install the master system, create a Web Start Flash archive to use to install other systems.

1. **Boot the master system and run it in as inactive a state as possible.**

When possible, run the system in single-user mode. If that is not possible, shut down any applications that you want to archive and any applications that require extensive operating system resources.

You can create a Web Start Flash archive while the master system is running in multiuser mode, single-user mode, or while booted from one of the following:

 - Solaris 8 DVD
 - Solaris 8 Software 1 of 2 CD
 - An image of the Solaris 8 Software and the Solaris 8 Languages CDs
2. **To create the archive, use the `flarcreate` command.**

```
# flarcreate -n name options path/filename
```

In this command line:

- *name* is the name that you give the archive. The *name* you specify is the value of the `content_name` keyword.
- *path* is the path to the directory in which you want to save the archive file. If you do not specify a path to save the archive, `flarcreate` saves the archive file in the current directory.
- *filename* is the name of the archive file.

For a list of command line options, refer to “flarcreate” on page 144.

If the archive creation is successful, the `flarcreate` command returns an exit code of 0. If the archive creation fails, the `flarcreate` command returns a nonzero exit code.

Installing Web Start Flash Archives

This chapter provides the procedures for installing Web Start Flash archives on clone systems. You can use any of the Solaris installation methods to install Web Start Flash archives.

- “Installing Web Start Flash Archives With the Solaris Web Start Program” on page 135
- “Installing Web Start Flash Archives With the Solaris 8 Interactive Installation Program” on page 137
- “Installing Web Start Flash Archives With a Custom JumpStart Installation” on page 138

Installing Web Start Flash Archives With the Solaris Web Start Program

This section provides the procedure for using the Solaris Web Start program on the Solaris 8 DVD or on the Solaris 8 Installation CD to install Web Start Flash archives that are stored on the following:

- disc (DVD or CD)
- NFS server
- HTTP server
- Local tape

▼ To Install a Web Start Flash Archive With the Solaris Web Start Program

1. **Begin the Solaris Web Start installation as described in Chapter 14.**
2. **On the Specify Media panel, select the location of the Web Start Flash archive.**
The Solaris Web Start program prompts you to proceed, depending on the media you selected.
3. **Type the information that you are prompted to enter.**

Media Selected	Prompt
DVD or CD	Insert the disc where the Web Start Flash archive is located.
Network File System	Specify the path to the network file system where the Web Start Flash archive is located. You can also specify the archive filename.
HTTP	Specify the URL and proxy information that is needed to access the Web Start Flash archive.
Local tape	Specify the local tape device and the position on the tape where the Web Start Flash archive is located.

If you selected to install an archive from a DVD, CD, or from an NFS server, the Select Flash Archives panel displays.

4. **For archives stored on a DVD, CD, or an NFS server, on the Select Flash Archives panel, select one or more Web Start Flash archives to install.**
5. **On the Flash Archives Summary panel, confirm the selected archives and click Next.**
6. **On the Additional Flash Archives panel, you can select to install layered Web Start Flash archives by specifying the media where another archive is located. If you do not want to install additional archives, select None and click Next to continue the installation.**

Installing Web Start Flash Archives With the Solaris 8 Interactive Installation Program

This section provides the procedure for using the CLI of the Solaris 8 Interactive Installation Program on the Solaris 8 Software 1 of 2 CD to install Web Start Flash archives that are stored on the following:

- HTTP server
- NFS server
- Local file
- Local tape
- Local device, including CD

▼ To Install a Web Start Flash Archive With the Solaris 8 Interactive Installation Program

1. **Begin the CLI of the Solaris 8 Interactive Installation Program. You must use the CLI of the Solaris 8 Interactive Installation Program, not the GUI.**
 - SPARC: To begin the CLI of the Solaris 8 Interactive Installation Program, boot the system by using the `- w` argument.
 - To boot from a CD, type:

```
ok boot cdrom - w
```
 - To boot from a Solaris 8 Software 1 of 2 image, type:

```
ok boot net - w
```
 - IA: To begin the CLI of the Solaris 8 Interactive Installation Program, follow these instructions:
 1. Boot the system to begin the Solaris 8 Interactive Installation Program as described in “IA: To Perform an Installation or Upgrade With the Solaris 8 Interactive Installation Program” on page 115.
 2. When the `kdmconfig` – Introduction screen appears, press F4 to bypass the `kdmconfig` test and begin the installation.
2. **On the Flash Archive Retrieval Method screen, select the location of the Web Start Flash archive.**

The Solaris 8 Interactive Installation Program installation prompts you to proceed, depending on the media you selected.

3. Type the information that you are prompted to enter.

Media Selected	Prompt
HTTP	Specify the URL and proxy information that is needed to access the Web Start Flash archive.
Network File System	Specify the path to the network file system where the Web Start Flash archive is located. You can also specify the archive filename.
Local file	Specify the path to the local file system where the Web Start Flash archive is located.
Local tape	Specify the local tape device and the position on the tape where the Web Start Flash archive is located.
Local device	Specify the local device, the path to the Web Start Flash archive, and the type of file system on which the Web Start Flash archive is located.

4. On the Flash Archive Selection screen, you can select to install layered Web Start Flash archives by selecting New. If you do not want to install additional archives, click Continue to complete the installation.

Installing Web Start Flash Archives With a Custom JumpStart Installation

This section provides the procedure for using the custom JumpStart installation method to install Web Start Flash archives that are stored on the following:

- NFS server
- HTTP server
- Local tape
- Local device, including DVD and CD
- Local file

▼ To Install a Web Start Flash Archive With a Custom JumpStart Installation

1. On the install server, create the custom JumpStart rules file.

For detailed instructions about creating custom JumpStart files, refer to Chapter 23.

2. On the install server, create the custom JumpStart profile file.

a. Set the value of the keyword `install_type` as `flash_install`.

b. Add the path to the Web Start Flash archive by using the new `archive_location` keyword.

For details about the `archive_location` keyword, refer to “`archive_location` Keyword” on page 230.

c. Specify the file system configuration.

The Web Start Flash archive extraction process does not support auto-layout of partitions.

d. (Optional) If you want to install layered Web Start Flash archives on the clone system, add one `archive_location` line for each archive that you want to install.

Note – From the existing list of custom JumpStart keywords in Chapter 23, the only keywords valid when you install a Web Start Flash archive are:

- `fdisk` (IA only)
 - `fileSYS` – You cannot set the `fileSYS` keyword to the value `auto`.
 - `install_type` (required)
 - `partitioning` – You can only set the `partitioning` keyword to the values `explicit` or `existing`.
-

3. On the install server, add the clients that you are installing with the Web Start Flash archive.

For detailed instructions, refer to “Adding Systems to Be Installed From the Network” on page 91.

4. Perform the custom JumpStart installation on the clone systems.

For detailed instructions, refer to Chapter 26.

Web Start Flash Custom JumpStart Profile Examples

Following are examples of profiles that can be used to install a Web Start Flash archive with the custom JumpStart installation method.

In the following example, the profile indicates that the custom JumpStart program retrieve the Web Start Flash archive from an HTTP server.

EXAMPLE 19-1 Installing a Web Start Flash Archive From an HTTP Server

```
install_type flash_install
archive_location http installserver /flasharchive/solaris8archive
partitioning explicit
filesystems c0t1d0s0 4000 /
filesystems c0t1d0s1 512 swap
filesystems c0t1d0s7 free /export/home
```

In the following example, the profile indicates that the custom JumpStart program retrieve the Web Start Flash archive from an NFS server.

EXAMPLE 19-2 Installing a Web Start Flash Archive From an NFS Server

```
install_type flash_install
archive_location nfs installserver:/export/solaris/flasharchive/solaris8archive
partitioning explicit
filesystems rootdisk.s0 6000 /
filesystems rootdisk.s1 512 swap
filesystems rootdisk.s7 free /export/home
```

Web Start Flash Reference

The Web Start Flash installation feature provides tools for administering and managing Web Start Flash archives. After you create an archive, you can extract archive information, split an archive into sections, or combine archive sections.

- “Web Start Flash Archive Sections” on page 141
- “Web Start Flash Keywords” on page 142
- “Web Start Flash Commands” on page 144

Web Start Flash Archive Sections

Web Start Flash archives contain at least three sections. The sections include both archive identification information and the actual files that were copied from the master system to be installed on the Clone system.

1. Archive Cookie Section – The first section of a Web Start Flash archive contains a cookie that identifies the file as a Web Start Flash archive. The cookie must be present for an archive to be valid.
2. Archive Identification Section – The second section contains keywords with values that provide identification information about the archive.
3. User-Defined Sections – Following the Archive Identification Section, you can define and insert sections. The Web Start Flash archive does not process any sections that you insert. User-defined sections must be line oriented and terminated with newline (ASCII 0x0a) characters. The length of individual lines has no limit. If you include binary data in a user-defined section, you must encode it by using base64 or a similar algorithm.

The name for user-defined sections must begin with “X” and can contain any characters other than linefeeds, equal signs, null characters, and forward slashes (/). For example, X-department is a valid user-defined section name.

4. Archive Files Section – The Archive Files Section contains the files that were saved from the master system.

Web Start Flash Keywords

Keywords and values are separated by a single equal sign with only one pair per line. Individual lines can be any length. The keywords are case insensitive.

General Keywords

The beginning and ending of each Web Start Flash archive section is defined by the `section_begin` and `section_end` keywords. The values for the `section_begin` and `section_end` keywords are described in the following table.

TABLE 20-1 Values for `section_begin` and `section_end` Keywords

Archive Section	Value for <code>section_begin</code> and <code>section_end</code> keywords
Archive cookie	<code>cookie</code>
Archive identification	<code>identification</code>
User-defined sections	<code>section_name</code>
Archive files	<code>archive</code>

Identification Section Keywords

This section describes the keywords for use in the Archive Identification section and the values you can define for them.

The following table explains keywords that describe the archive.

TABLE 20–2 Identification Section Keywords

Keywords	Value Definitions
<code>content_name</code> (required)	<p>The Web Start Flash archive deployment utilities use the value of the <code>content_name</code> keyword to identify the archive. The value can be no longer than 256 characters.</p> <p>You might want the value of the <code>content_name</code> keyword to describe the function and purpose of the archive because the <code>content_name</code> value might be presented to the user during the archive selection and extraction processes.</p>
<code>creation_date</code>	<p>The value of the <code>creation_date</code> keyword is a textual timestamp that represents the time that you created the archive. The value must be in the format <code>YYYYMMDDhhmmss</code>. For example, <code>20000131221409</code>, represents January 31st, 2000 10:14:09p.m. If you do not specify a creation date, the default date is set in Greenwich mean time (GMT).</p>
<code>creation_master</code>	<p>The value of the <code>creation_master</code> keyword is the name of the master system you used to create the archive. If you do not specify a value for <code>creation_master</code>, <code>flarcreate</code> uses the system name reported by <code>uname -n</code>.</p>
<code>content_type</code>	<p>You define the value of the <code>content_type</code> keyword to specify a category for the archive. The Web Start Flash archive deployment utilities display the value of the <code>content_type</code> keyword during deployment.</p>
<code>content_description</code>	<p>You define the value of the <code>content_description</code> keyword to provide a description of the contents of the archive. The value of this keyword has no length limit.</p>
<code>content_author</code>	<p>You define the value of the <code>content_author</code> keyword to identify the creator of the archive. Suggested values include the full name of the creator and the creator's email address.</p>
<code>content_architectures</code>	<p>The value of the <code>content_architectures</code> keyword is a comma-delimited list of the kernel architectures that the archive supports. When you create a Web Start Flash archive, the archive generates the value of the <code>content_architectures</code> keyword.</p> <p>If the archive contains this keyword, the Web Start Flash archive deployment utilities validate the kernel architecture of the clone system against the list of architectures that the archive supports. The deployment fails if the archive does not support the kernel architecture of the clone system. If the keyword is not present, the deployment utilities do not validate the architecture of the clone system.</p>

In addition to the keywords that are defined by the Web Start Flash archive, you can define keywords. The Web Start Flash archive ignores user-defined keywords, but you can provide scripts or programs that process the identification section and use user-defined keywords. The name of a user-defined keyword must begin with "X" and can contain any characters other than linefeeds, equal signs, and null characters. For example, `X-department` is a valid name for a user-defined keyword.

Web Start Flash Commands

Use the Web Start Flash commands to create and manage Web Start Flash archives.

flarcreate

Use the `flarcreate` command to create a Web Start Flash archive from a master system. You can use this command when the master system is running in multiuser or single-user mode. You can also use `flarcreate` when the master system was booted from the Solaris 8 DVD, the Solaris 8 Software 1 of 2 CD or from an image of the Solaris 8 Software and Solaris 8 Languages CDs. The master system should be in as stable a state as possible when you create a Web Start Flash archive. The syntax of the command is:

```
flarcreate -n name [-R root] [-S] [-H] [-c] [-x exclude] [-t [-p posn] [-b blocksize]] [-i date] [-m [-u section [-d dir]] [-f file_list] [-F] [-U key=val] master] [-a author] [-e descr:-E descr_file] [-T type] path/filename
```

In this command line, *path* is the directory in which you want the archive file to be saved and *filename* is the name of the archive file. If you do not specify a path, `flarcreate` saves the archive file in the current directory.

TABLE 20-3 Command-Line Options for `flarcreate`

Option	Description
Required Options	
-n <i>name</i>	The value of this flag is the name of the archive. The <i>name</i> you specify is the value of the <code>content_name</code> keyword.
Option for Compression	
-c	Compresses the archive by using <code>compress(1)</code> .
Options for Directories and Sizes	
-R <i>root</i>	Creates the archive from the file system tree that is rooted at <i>root</i> . If you do not specify this option, <code>flarcreate</code> creates an archive from a file system that is rooted at <code>/</code> .
-S	Does not include sizing information in the archive.
-x <i>exclude</i>	Excludes the directory <i>exclude</i> from the archive. If you specify a file system with -R <i>root</i> , the path to the directory <i>exclude</i> is assumed to be relative to <i>root</i> .

TABLE 20-3 Command-Line Options for `flarcreate` (Continued)

Option	Description
<code>-H</code>	Does not generate the hash identifier.
Options Used With User-Defined Sections	
<code>-u section</code>	Includes a user-defined section. To include more than one user-defined section, <i>section</i> must be a space-separated list of section names.
<code>-d dir</code>	Retrieves the section file that is specified with <code>-u</code> from <i>dir</i> .
Options Used With Tape Archives	
<code>-t</code>	Creates an archive on a tape device. The <i>filename</i> argument is the name of the tape device.
<code>-p posn</code>	Use only with the <code>-t</code> option. Specifies the position on the tape device for <code>flarcreate</code> to store the archive. If you do not use this option, <code>flarcreate</code> places the archive in the current position of the tape.
<code>-b blocksize</code>	Specifies the block size <code>flarcreate</code> uses when creating the archive. If you do not specify a block size, <code>flarcreate</code> uses the default block size of 64k.
Options for Specifying Files	
<code>-f file_list</code>	Adds the files in the file <i>file_list</i> to the archive. The <i>file_list</i> file must contain one file per line. The path to each file must be relative to the alternate root directory or an absolute path. If you use <code>"-"</code> as the value of <i>file_list</i> , <code>flarcreate</code> uses the output of <code>stdin</code> as the list of files. When you use the value <code>"-"</code> , the archive size is not calculated.
<code>-F</code>	Uses only the files in <i>file_list</i> to create the archive.
Options for Archive Identification	
<code>-U key=val</code>	Includes user-defined keyword(s) and values in the Archive Identification section.
<code>-i date</code>	Uses <i>date</i> as the value for the <code>creation_date</code> keyword. If you do not specify a date, <code>flarcreate</code> uses the current system time and date.
<code>-m master</code>	Uses <i>master</i> as the name of the master system on which you created the archive for the <code>creation_master</code> keyword. If you do not specify a <i>master</i> , <code>flarcreate</code> uses the system name that is reported by <code>uname -n</code> .
<code>-e descr</code>	Uses <i>descr</i> for the value of the <code>content_description</code> keyword. You cannot use this option when you use the <code>-E</code> option.

TABLE 20-3 Command-Line Options for `flarcreate` (Continued)

Option	Description
<code>-E descr_file</code>	Retrieves the value for the <code>content_description</code> keyword from the file <code>descr_file</code> . You cannot use this option when you use the <code>-e</code> option.
<code>-a author</code>	Uses <code>author</code> as the author name in the Archive Identification section for the <code>content_author</code> keyword. If you do not specify an author, <code>flarcreate</code> does not include the <code>content_author</code> keyword in the Archive Identification section.
<code>-T type</code>	Uses <code>type</code> as the value for the <code>content_type</code> keyword. If you do not specify a type, <code>flarcreate</code> does not include the <code>content_type</code> keyword.

flar

The `flar` command allows you to administer archives. With the `flar` command you can accomplish the following tasks.

- “Extracting Information From an Archive” on page 146
- “Splitting Archives” on page 146
- “Combining Archives” on page 147

Extracting Information From an Archive

Use the `flar` command with the `-i` option to get information about archives you have already created. The syntax of the command is:

```
flar -i:info [-l] [-k keyword] [-t [-p posn] [-b blocksize]] filename
```

TABLE 20-4 Command-Line Options for `flar -i`

Option	Description
<code>-k keyword</code>	Returns only the value of the keyword <code>keyword</code> .
<code>-l</code>	Lists all the files in the archive section.

Splitting Archives

The `flar` command with the `-s` option splits a Web Start Flash archive into sections. The `flar` command copies each section into a separate file in the current or specified directory. The files are named after the sections, for example, the archive cookie is

saved in a file named `cookie`. You can specify that the `flar` command only save one section. The syntax of the command is:

```
flar -s:split[-d dir] [-u section] [-f archive] [-S section] [-t [ -p posn] [-b
blocksize]] filename
```

TABLE 20-5 Command-Line Options for `flar -s`

Option	Description
<code>-d dir</code>	Retrieves the sections to copy from <i>dir</i> , rather than from the current directory.
<code>-u section</code>	If you do not use this option, <code>flar</code> copies all sections in the current directory. If you use this option, <code>flar</code> copies the Cookie, Identification, Archive, and <i>section</i> sections. You can specify a single section name or a space-separated list of section names.
<code>-f archive</code>	Extracts the Archive section into a directory called <i>archive</i> , rather than place it in a file with the name <i>archive</i> .
<code>-S section</code>	Only copies the section named <i>section</i> from the archive.

Combining Archives

The `flar` command with the `-c` option creates a Web Start Flash archive from individual sections. Each section is assumed to be in a separate file, the names of which are the section names. At a minimum, the Archive Cookie (`cookie`), Archive Identification (`identification`), and Archive Files (`archive`) sections must be present. If `archive` is a directory, the `flar` command uses `cpio` to archive it before including it in the combined archive. If the Archive Identification section specifies to compress the archive, `flar` compresses the contents of the newly combined archive.

```
flar -c:combine [-d dir] [-u section] [-t [ -p posn] [-b blocksize]] filename
```

Note – No validation is performed on any of the sections. In particular, no fields in the Archive Identification section are validated or updated.

TABLE 20-6 Command-Line Options for `flar -c`

Option	Description
<code>-d dir</code>	Retrieves the sections to combine from <i>dir</i> , rather than from the current directory.

TABLE 20-6 Command-Line Options for `flar -c` (Continued)

Option	Description
<code>-u <i>section</i></code>	If you do not use this option, <code>flar</code> combines all sections in the current directory. If you use this option, <code>flar</code> combines only the Cookie, Identification, Archive, and <i>section</i> sections. You can specify a single section name or a space-separated list of section names.

Custom JumpStart Installation Topics

This section provides instructions for creating, preparing, and performing custom JumpStart installations.

Chapter 22	Provides an introduction and overview of the custom JumpStart installation method.
Chapter 23	Provides instructions about how to prepare the systems at your site from which and on which you are installing the Solaris 8 software with the custom JumpStart installation method.
Chapter 24	Describes the optional features that you can use to create additional custom JumpStart installation tools.
Chapter 25	Provides information and procedures for creating your own custom rule and custom probe keywords.
Chapter 26	Describes how to perform a custom JumpStart installation on a SPARC based or an IA based system. You need to follow these procedures on the system on which you intend to install the Solaris 8 software.
Chapter 27	Provides an example of setting up and installing Solaris software on both SPARC based and IA based systems by using the custom JumpStart installation method.
Chapter 28	Contains lists of keywords and values to be used in the <code>rules</code> file, <code>profiles</code> , <code>begin</code> scripts, and <code>finish</code> scripts.

Custom JumpStart Overview

This chapter provides an introduction and overview to the custom JumpStart installation process.

- “Custom JumpStart Introduction” on page 151
- “How the JumpStart Program Installs Solaris Software” on page 152

Custom JumpStart Introduction

The custom JumpStart installation method is a command line interface that enables you to automatically install or upgrade several systems, based on profiles that you create. The profiles define specific software installation requirements. You can also incorporate shell scripts to include preinstallation and postinstallation tasks. You choose which profile and scripts to use for installation or upgrade. The custom JumpStart installation method installs or upgrades the system, based on the profile and scripts that you select. Also, you can use a `sysidcfg` file to specify configuration information so that the custom JumpStart installation is completely hands-off.

The custom JumpStart process can be described by using an example scenario. In this example scenario, the systems need to be set up with the following parameters:

- Install Solaris on 100 new systems.
- Seventy of the systems are SPARC systems that are owned by the engineering group and need to be installed as standalone systems with the Solaris operating environment software group for developers.
- The remaining 30 systems are IA (Intel Architecture) based, owned by the marketing group, and need to be installed as standalone systems with the Solaris operating environment software group for end users.

First, the system administrator must create a `rules` file and a profile for each group of systems. The `rules` file is a text file that contains a rule for each group of systems or single systems on which you want to install the Solaris software. Each rule distinguishes a group of systems that are based on one or more system attributes. Each rule also links each group to a profile.

A profile is a text file that defines how the Solaris software is to be installed on each system in the group. Both the `rules` file and profile must be located in a JumpStart directory.

For the example scenario, the system administrator creates a `rules` file that contains two different rules, one for the engineering group and another for the marketing group. For each rule, the platform group for each type of system is used to distinguish the engineering group from the marketing group: SPARC and IA, respectively.

Each rule also contains a link to an appropriate profile. For example, in the rule for the engineering group, a link is added to the profile, `eng_profile`, that was created for the engineering group. In the rule for the marketing group, a link is added to the profile, `market_profile`, that was created for the marketing group.

You can save the `rules` file and the profiles on a diskette or on a server.

- A profile diskette is required when you want to perform custom JumpStart installations on non-networked, standalone systems.
- A profile server is used when you want to perform custom JumpStart installations on networked systems that have access to a server.

After creating the `rules` file and profiles, validate the files with the `check` script. If the `check` script runs successfully, the `rules.ok` file is created. The `rules.ok` is a generated version of the `rules` file that the JumpStart program uses to install the Solaris software.

How the JumpStart Program Installs Solaris Software

After you validate the `rules` file and the profiles, you can begin a custom JumpStart installation. The JumpStart program reads the `rules.ok` file. Then, the JumpStart program searches for the first rule with defined system attributes that match the system on which the JumpStart program is attempting to install the Solaris software. If a match occurs, the JumpStart program uses the profile that is specified in the rule to install the Solaris software on the system.

Figure 22-1 illustrates how a custom JumpStart installation works on a standalone, non-networked system. The system administrator initiates the custom JumpStart installation on Pete's system. The JumpStart program accesses the rules files on the diskette in the system's diskette drive. The JumpStart program matches rule 2 to the system. rule 2 specifies that the JumpStart program use Pete's profile to install

the Solaris software. The JumpStart program reads Pete's profile and installs the Solaris software based on the instructions that the system administrator specified in Pete's profile.

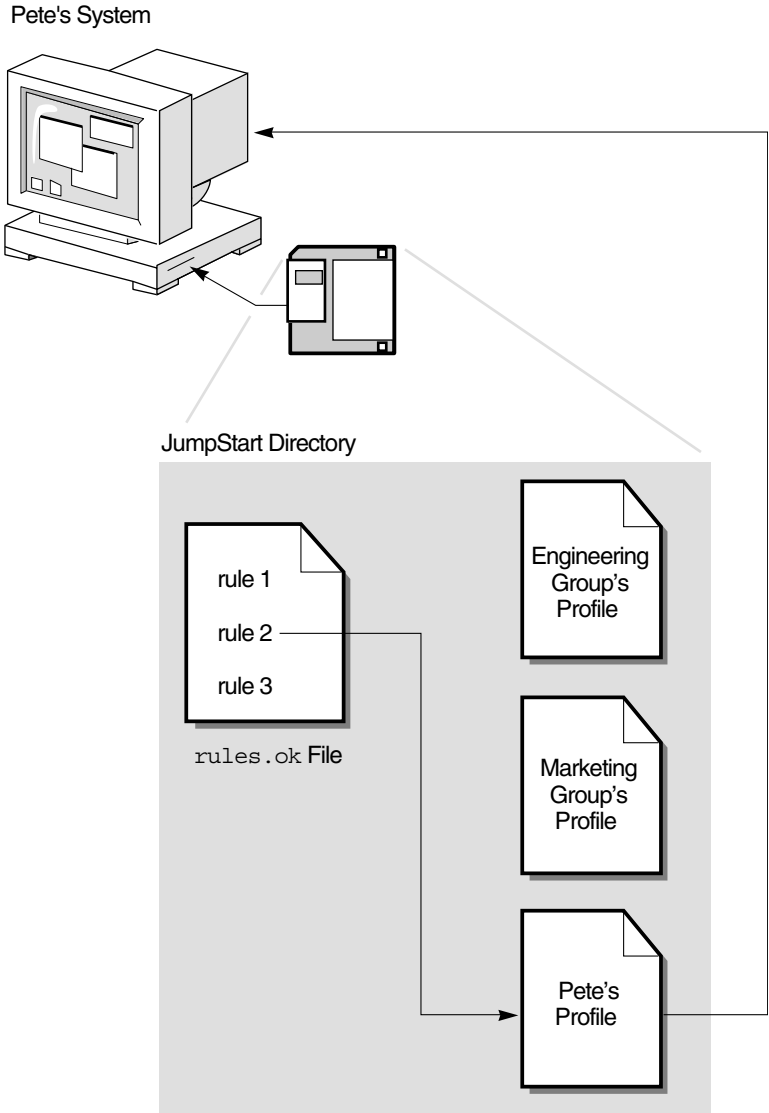


FIGURE 22-1 How a Custom JumpStart Installation Works: Non-Networked Example

Figure 22-2 illustrates how a custom JumpStart installation works with more than one system on a network. The system administrator set up different profiles and saved the profiles on a single server. The system administrator initiates the custom JumpStart

installation on one of the engineering systems. The JumpStart program accesses the rules files in the JumpStart/ directory on the server. The JumpStart program matches the engineering system to rule 1. rule 1 specifies that the JumpStart program use Engineering Group's Profile to install the Solaris software. The JumpStart program reads Engineering Group's Profile and installs the Solaris software, based on the instructions that the system administrator specified in Engineering Group's Profile.

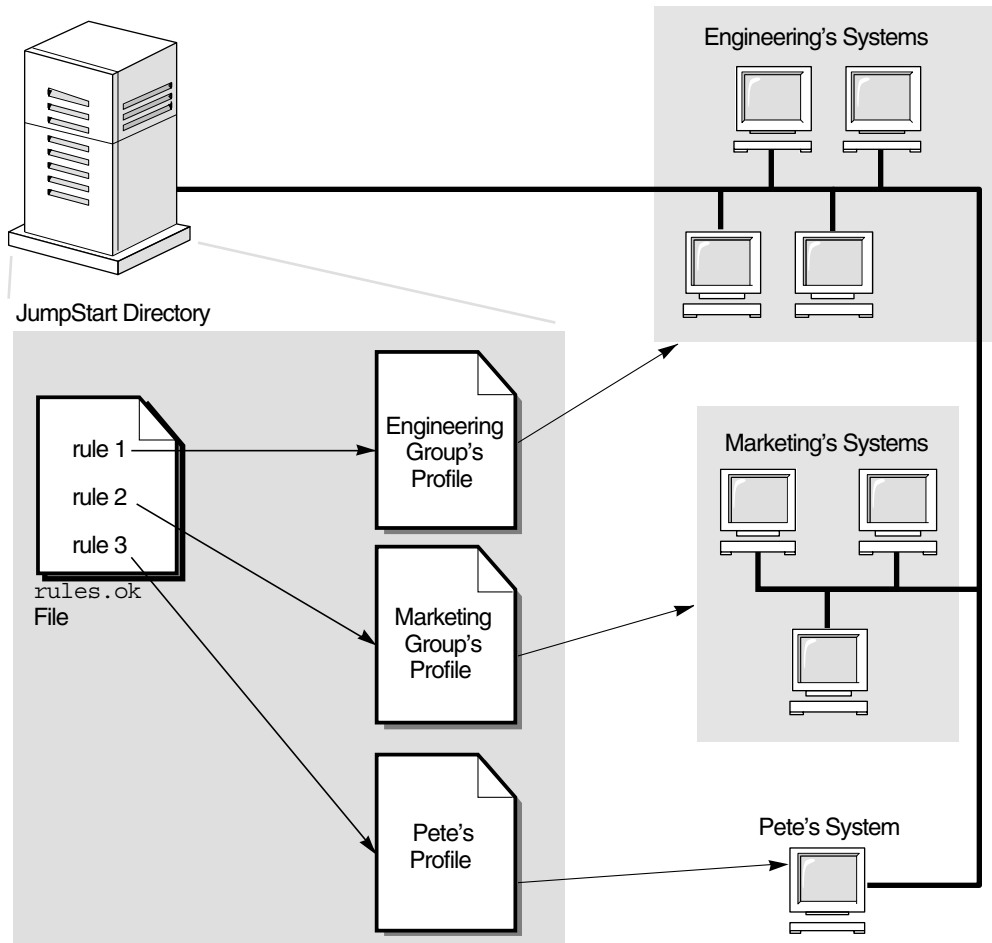


FIGURE 22-2 How a Custom JumpStart Installation Works: Networked Example

Figure 22-3 describes the order in which the JumpStart program searches for custom JumpStart files.

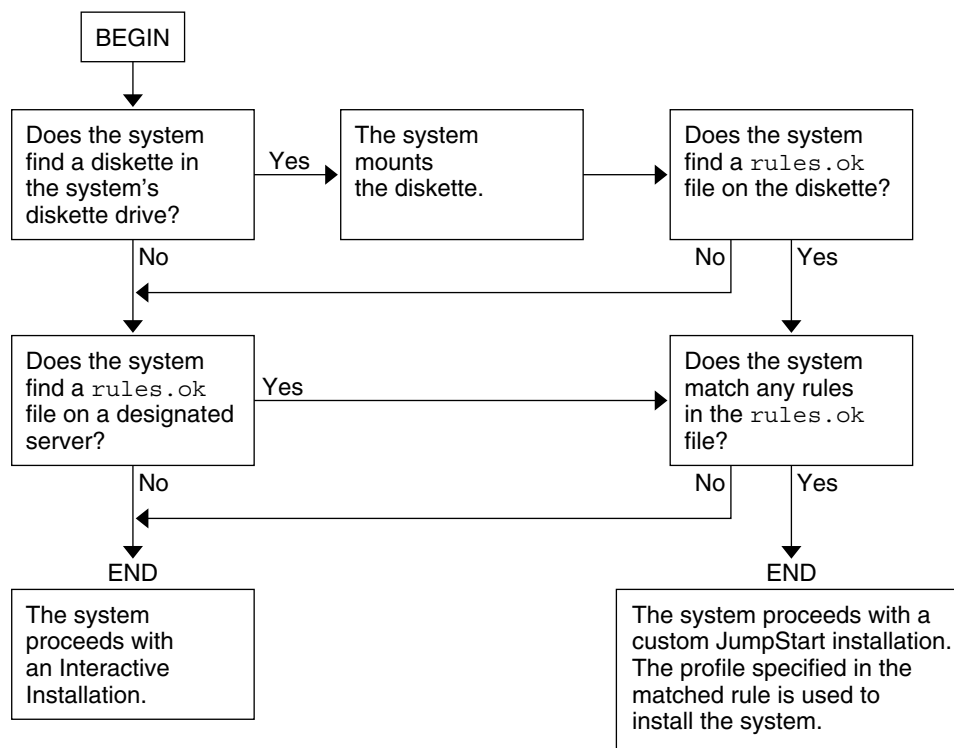


FIGURE 22-3 What Happens During a Custom JumpStart Installation

Preparing Custom JumpStart Installations

This chapter provides step-by-step instructions about how to prepare the systems at your site from which and on which you intend to install the Solaris 8 software by using the custom JumpStart installation method.

- “Task Map: Preparing Custom JumpStart Installations” on page 157
- “Creating a Profile Server for Networked Systems” on page 159
- “Creating a Profile Diskette for Standalone Systems” on page 162
- “Creating the rules File” on page 167
- “Creating a Profile” on page 171
- “Testing a Profile” on page 175
- “Validating the rules File” on page 179

Task Map: Preparing Custom JumpStart Installations

TABLE 23-1 Task Map: Preparing Custom JumpStart Installations

Task	Description	For Instructions
Decide how to upgrade the system if a previous version of the Solaris software is installed on the system	If a previous release of Solaris is installed on the system, you need to determine how to upgrade the system. Ensure that you know what to do before and after you upgrade a system. Planning helps you to create your profiles, begin scripts, and finish scripts.	Chapter 8

TABLE 23-1 Task Map: Preparing Custom JumpStart Installations (Continued)

Task	Description	For Instructions
Create a JumpStart directory	On a server If you want to perform custom JumpStart installations on systems that are connected to a network, you must create a profile server. The profile server contains a JumpStart directory for the custom JumpStart files.	"Creating a Profile Server for Networked Systems" on page 159
	On a diskette If you want to perform custom JumpStart installations on systems that are not connected to a network, you must create a profile diskette. A profile diskette contains the custom JumpStart files.	"Creating a Profile Diskette for Standalone Systems" on page 162
Add rules to the <code>rules</code> file	After you decide how you want each group of systems or single systems to be installed, create a rule for each group that you want to install. Each rule distinguishes a group based on one or more system attributes. The rule links each group to a profile.	"Creating the <code>rules</code> File" on page 167
Create a profile for every rule	A profile is a text file that defines how to install the Solaris software, for example, which software group to install on a system. Every rule specifies a profile to define how a system is to be installed with the Solaris software when the rule is matched. You usually create a different profile for every rule. However, the same profile can be used in more than one rule.	"Creating a Profile" on page 171
(Optional) Test the profiles	After you create a profile, use the <code>pfinstall(1M)</code> command to test the profile before you use the profile to install or upgrade a system.	"Testing a Profile" on page 175
Validate the <code>rules</code> file	The <code>rules.ok</code> file is a generated version of the <code>rules</code> file that the JumpStart program uses to match the system to be installed with a profile. You must use the <code>check</code> script to validate the <code>rules</code> file.	"Validating the <code>rules</code> File" on page 179

Creating a Profile Server for Networked Systems

When setting up custom JumpStart installations for systems on the network, you need to create a directory on a server that is called a JumpStart directory. The JumpStart directory contains all of the essential custom JumpStart files, for example, the `rules` file, `rules.ok` file, and profiles. You must save the JumpStart directory in the root (`/`) directory of the profile server.

The server that contains a JumpStart directory is called a profile server. A profile server can be the same system as an install server or a boot server, or the server can be a completely different server. A profile server can provide custom JumpStart files for different platforms. For example, an IA server can provide custom JumpStart files for both SPARC systems and IA systems.

Note – After you create a profile server, you must allow systems to access the server. For detailed instructions, see “To Allow All Systems Access to the Profile Server” on page 161.

▼ To Create a JumpStart Directory on a Server

Note – This procedure assumes that the system is running *Volume Manager*. If you are not using Volume Manager to manage discs, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without Volume Manager.

1. **Log in as superuser on the server on which you want to create the JumpStart directory.**
2. **Create the JumpStart directory anywhere on the server.**

```
# mkdir -m 755 jumpstart_dir_path
```

In the command, `jumpstart_dir_path` is the absolute path of the JumpStart directory.

For example, the following command creates a directory called `jumpstart` in the root (`/`) directory and sets the permissions to 755:

```
# mkdir -m 755 /jumpstart
```

3. **Edit the `/etc/dfs/dfstab` file by adding the following entry.**

```
share -F nfs -o ro,anon=0 jumpstart_dir_path
```

For example, the following entry shares the /jumpstart directory:

```
share -F nfs -o ro,anon=0 /jumpstart
```

4. Type shareall and press Enter.

5. Determine if you want to copy examples of custom JumpStart files to your JumpStart directory.

- If no, go to step 8.
- If yes, use the following decision table to determine what to do next.

Example Locations	Instructions
The Solaris 8 DVD or the Solaris 8 Software 1 of 2 CD for your platform	Insert the Solaris 8 DVD or the Solaris 8 Software 1 of 2 CD into the server's CD-ROM drive. Volume Manager automatically mounts the CD.
An image of the Solaris 8 DVD or the Solaris 8 Software 1 of 2 CD for your platform on a local disk	Change directory to the location of the Solaris 8 DVD or the Solaris 8 Software 1 of 2 image. For example, type the following command: <code>cd /export/install</code>

6. Copy the example custom JumpStart files into the JumpStart directory on the profile server.

```
# cp -r media_path/Solaris_8/Misc/jumpstart_sample/* jumpstart_dir_path
```

<i>media_path</i>	The path to the CD, DVD, or image on the local disk
<i>jumpstart_dir_path</i>	The path on the profile server where you are placing the example custom JumpStart files

For example, the following command copies the `jumpstart_sample` directory into the /jumpstart directory on the profile server:

```
cp -r /cdrom/sol_8_sparc/s0/Solaris_8/Misc/jumpstart_sample/* /jumpstart
```

7. Update the example JumpStart files so that the files work in your environment.

8. Ensure that root owns the JumpStart directory and that the permissions are set to 755.

9. Allow systems on the network to access the profile server.

For detailed instructions, see "To Allow All Systems Access to the Profile Server" on page 161.

▼ To Allow All Systems Access to the Profile Server

When you create a profile server, you must ensure that systems can access the JumpStart directory on the profile server during a custom JumpStart installation. Use one of the following ways to ensure access:

- `add_install_client` command – Each time that you add a system for network installation, use the `-c` option with the `add_install_client` command. For detailed instructions, refer to “Adding Systems to Be Installed From the Network” on page 91.
- `boot` command – Specify the location of the JumpStart directory on the profile server when you boot the system. You must compress the custom JumpStart configuration files into one file. Then, save the compressed configuration file on an NFS server, an HTTP server, or on media that the system can access locally. For detailed instructions, refer to “Creating a Compressed Configuration File” on page 188.

When you boot the system to initiate the custom JumpStart installation, specify the location of the compressed file. For detailed instructions, for SPARC systems refer to step 5 in “SPARC: To Perform an Installation or Upgrade With the Custom JumpStart Program” on page 204 and for IA systems refer to step 8 in “IA: To Perform an Installation or Upgrade With the Custom JumpStart Program” on page 209.

- `/etc/bootparams` file – Use a wildcard in the `/etc/bootparams` file. Use the following steps to add a wildcard in the `etc/bootparams` file.

Note – The following procedure is not necessary if you save the JumpStart directory on a diskette or if you specify the location of the profile server when you boot the system.

The following procedure is valid only if you store network installation information in the `/etc/bootparams` file. You can also store network installation information in one of the following places:

- Name service database – If you store network installation information in the name service `bootparams` database, you must update the `bootparams` database with the entry that is shown in step 3.
- DHCP server – If you store network installation information on a DHCP server, use the `boot` command to specify that the custom JumpStart program use the DHCP server. For detailed instructions, for SPARC systems refer to step 5 in “SPARC: To Perform an Installation or Upgrade With the Custom JumpStart Program” on page 204 and for IA systems refer to step 8 in “IA: To Perform an Installation or Upgrade With the Custom JumpStart Program” on page 209.

1. On the install or boot server, log in as superuser.

2. Use a text editor to open `/etc/bootparams`.

3. Add this entry.

```
* install_config=server:jumpstart_dir_path
```

*	A wildcard character that specifies that all systems have access
<i>server</i>	The host name of the profile server where the JumpStart directory is located
<i>jumpstart_dir_path</i>	The absolute path of the JumpStart directory

For example, the following entry allows all systems to access the `/jumpstart` directory on the profile server that is named `sherlock`:

```
* install_config=sherlock:/jumpstart
```



Caution – Use of this procedure might produce the following error message when an install client is booted:

```
WARNING: getfile: RPC failed: error 5: (RPC Timed out).
```

“General Problems” on page 399 contains details about this error message.

All systems can now access the profile server.

Creating a Profile Diskette for Standalone Systems

A diskette that contains a JumpStart directory is called a profile diskette. A system that is not connected to the network does not have access to a profile server. As a result, you must create a JumpStart directory on a diskette if a system is not connected to a network. The system on which you create a profile diskette must have a diskette drive.

The JumpStart directory contains all of the essential custom JumpStart files, for example, the `rules` file, `rules.ok` file, and profiles. You must save the JumpStart directory in the root (`/`) directory of the profile diskette.

▼ SPARC: To Create a Profile Diskette

Note – This procedure assumes that the system is running Volume Manager. If you are not using Volume Manager to manage diskettes, CDs, and DVDs refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without Volume Manager.

1. Log in as superuser on a SPARC system to which a diskette drive is attached.
2. Insert a blank diskette or a diskette that can be overwritten into the diskette drive.
3. Mount the diskette.

```
# volcheck
```

4. Determine if the diskette contains a UNIX file system (UFS).

Examine the contents of the file `/etc/mnttab` on the system for an entry like the following:

```
/vol/dev/diskette0/scrap /floppy/scrap ufs suid,rw,largefiles,dev=1740008 927147040
```

- If the entry exists, go to step 7.
- If the entry does not exist, go to the next step.

5. Format the diskette.



Caution – Formatting erases all data on the diskette.

```
# fdformat -U
```

6. Create a UFS on the diskette.

```
# newfs /vol/dev/aliases/floppy0
```

7. Determine if you want to copy examples of custom JumpStart files to your JumpStart directory.

- If no, go to step 10.
- If yes, use the following decision table to determine what to do next.

Example Locations	Instructions
The Solaris 8 <i>SPARC Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>SPARC Platform Edition</i>	Insert the Solaris 8 <i>SPARC Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>SPARC Platform Edition</i> into the server's CD-ROM drive. Volume Manager automatically mounts the CD.
An image of the Solaris 8 <i>SPARC Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>SPARC Platform Edition</i> on a local disk	Change the directory to the location of the Solaris 8 <i>SPARC Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>SPARC Platform Edition</i> image. For example, type the following command: <code>cd /export/install</code>

8. Copy the example custom JumpStart files into the JumpStart directory on the profile diskette.

```
# cp -r media_path/Solaris_8/Misc/jumpstart_sample/* jumpstart_dir_path
```

media_path

The path to the CD, DVD, or image on the local disk

jumpstart_dir_path

The path to the profile diskette where you want to place the example custom JumpStart files

Note – You must place all custom JumpStart installation files in the root (/) directory on the diskette.

For example, the following command copies the contents of `jumpstart_sample` on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* to the root (/) directory on a profile diskette that is named `scrap`:

```
cp -r /cdrom/sol_8_sparc/s0/Solaris_8/Misc/jumpstart_sample/* /floppy/scrap
```

9. Update the example JumpStart files on the profile diskette so that the files work in your environment.

10. Ensure that `root` owns the JumpStart directory and that permissions are set to 755.

11. Eject the diskette.

```
# eject floppy
```

You have completed the creation of a profile diskette. You can now update the `rules` file and create profiles on the profile diskette to perform custom JumpStart installations. To continue, go to “Creating the rules File” on page 167.

▼ IA: To Create a Profile Diskette

Note – This procedure assumes that the system is running Volume Manager. If you are not using Volume Manager to manage diskettes, CDs, and DVDs refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without Volume Manager.

1. Log in as superuser on an IA system to which a diskette drive is attached.
2. Insert the Solaris 8 Device Configuration Assistant *Intel Platform Edition* into the diskette drive (usually drive A:). You use this diskette as the profile diskette.

IA only – You can access the boot diskette software by downloading and copying the software to a diskette from the Solaris Developer Connection at http://soldc.sun.com/support/drivers/dcs_diskettes.

3. Mount the diskette.

```
# volcheck
```

4. Copy the image of the Solaris 8 Device Configuration Assistant to the system's hard disk.

```
# dd if=/vol/dev/aliases/floppy0 of=boot_image
```

In the command, *boot_image* is the name of the file into which you want to copy the image of the Solaris 8 Device Configuration Assistant. You can specify an absolute path name.

For example, the following command copies the boot diskette to a file that is named *boot_save*:

```
dd if=/vol/dev/aliases/floppy0 of=boot_save
```

5. Eject the diskette by clicking Eject Disk in the File Manager window or by typing `eject floppy` on the command line.
6. In the Removable Media Manager dialog box, click OK.
7. Manually eject the Solaris 8 Device Configuration Assistant *Intel Platform Edition*.
8. Insert a blank diskette or a diskette that can be overwritten into the diskette drive.
9. Mount the diskette.

```
# volcheck
```

10. Format the diskette.



Caution – Formatting erases all data on the diskette.

```
# fdformat -d -U
```

11. **Copy the Solaris 8 Device Configuration Assistant image from the system's hard disk to the formatted diskette.**

```
# dd if=boot_image of=/vol/dev/aliases/floppy0
```

In the command, *boot_image* is the name of the file where you want to copy the image of the Solaris 8 Device Configuration Assistant. You can specify an absolute path name.

12. **Determine if you want to copy examples of custom JumpStart files to your JumpStart directory.**

- If no, go to step 15.
- If yes, use the following decision table to determine what to do next.

Example Locations	Instructions
The Solaris 8 <i>Intel Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>Intel Platform Edition</i>	Insert the Solaris 8 <i>Intel Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>Intel Platform Edition</i> into the server's CD-ROM drive. Volume Manager automatically mounts the CD.
An image of the Solaris 8 <i>Intel Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>Intel Platform Edition</i> on a local disk	Change directory to the location of the Solaris 8 <i>Intel Platform Edition</i> DVD or the Solaris 8 Software 1 of 2 <i>Intel Platform Edition</i> image. For example, type the following: <code>cd /export/install</code>

13. **Copy the example custom JumpStart files into the JumpStart directory on the profile diskette.**

```
# cp -r media_path/Solaris_8/Misc/jumpstart_sample/* jumpstart_dir_path
```

media_path

The path to the CD, DVD, or image on the local disk

jumpstart_dir_path

The path to the profile diskette where you want to place the example custom JumpStart files

Note – You must place all custom JumpStart installation files in the root (/) directory on the profile diskette.

For example, the following command copies the contents of `jumpstart_sample` on the Solaris 8 Software 1 of 2 *Intel Platform Edition* to the root (/) directory on a profile diskette that is named `scrap`:

```
cp -r /cdrom/sol_8_ia/s2/Solaris_8/Misc/jumpstart_sample/* /floppy/scrap
```

14. Update the example JumpStart files on the profile diskette so the files work in your environment.
15. Ensure that `root` owns the JumpStart directory and that permissions are set to 755.
16. Eject the diskette by clicking Eject Disk in the File Manager window or by typing `eject floppy` on the command line.
17. In the Removable Media Manager dialog box, click OK.
18. Manually eject the diskette.

You have completed the creation of a profile diskette. Now you can update the `rules` file and create profiles on the profile diskette to perform custom JumpStart installations. To continue, go to “Creating the rules File” on page 167.

Creating the rules File

The `rules` file is a text file that contains a rule for each group of systems on which you want to install the Solaris operating environment. Each rule distinguishes a group of systems that are based on one or more system attributes. Each rule also links each group to a profile. A profile is a text file that defines how the Solaris software is to be installed on each system in the group. For example, the following rule specifies that the JumpStart program use the information in the `basic_prof` profile to install any system with the `i86pc` platform group.

```
karch i86pc - basic_prof -
```

The `rules` file is used to create the `rules.ok` file, which is required for custom JumpStart installations.

Note – If you set up the JumpStart directory by using the procedures in “Creating a Profile Diskette for Standalone Systems” on page 162 or “Creating a Profile Server for Networked Systems” on page 159, an example `rules` file is already located in the JumpStart directory. The sample `rules` file contains documentation and some example rules. If you use the sample `rules` file, ensure that you comment out the example rules you do not intend to use.

Syntax of the `rules` File

The `rules` file must have the following attributes:

- The file must be assigned the name `rules`.
- The file must contain at least one rule.

The `rules` file can contain any of the following:

- Commented text
Any text that is included after the `#` symbol on a line is treated by JumpStart as commented text. If a line begins with the `#` symbol, the entire line is treated as a comment.
- One or more blank lines
- One or more multiline rules
To continue a single rule onto a new line, include a backslash character (`\`) just before pressing Enter.

▼ To Create a `rules` File

1. **Use a text editor to create a text file that is named `rules`. Or, open the sample `rules` file in the JumpStart directory that you created.**
2. **Add a rule in the `rules` file for each group of systems on which you want to install the Solaris software.**

For a list of `rules` file keywords and values, see “Rule Keywords and Values” on page 223.

A rule within a `rules` file must adhere to the following syntax:

```
[!] rule_keyword rule_value [&& [!] rule_keyword rule_value] ... begin profile finish
```


TABLE 23–2 Syntax Elements of a Rule

Element	Description
!	A symbol that used before a keyword to indicate negation.
<i>rule_keyword</i>	A predefined lexical unit or word that describes a general system attribute, such as host name, <code>hostname</code> , or memory size, <code>memsize</code> . <i>rule_keyword</i> is used with the rule value to match a system with the same attribute to a profile. For the list of rule keywords, see “Rule Keywords and Values” on page 223.
<i>rule_value</i>	A value that provides the specific system attribute for the corresponding rule keyword. Rule values are described in “Rule Keywords and Values” on page 223.
&&	A symbol you must use to join rule keyword and rule value pairs in the same rule (a logical AND). During a custom JumpStart installation, a system must match every pair in the rule before the rule matches.
<i>begin</i>	<p>The name of an optional Bourne shell script that can be executed before the installation begins. If no <i>begin</i> script exists, you must type a minus sign (-) in this field. All <i>begin</i> scripts must be located in the JumpStart directory.</p> <p>Information about how to create <i>begin</i> scripts is presented in “Creating Begin Scripts” on page 181.</p>
<i>profile</i>	<p>The name of a text file that defines how the Solaris software is to be installed on the system when a system matches the rule. The information in a profile consists of profile keywords and their corresponding profile values. All profiles must be located in the JumpStart directory.</p> <p>Note – Optional ways to use the profile field are described in “Using a Site-Specific Installation Program” on page 195 and “Creating Derived Profiles With a Begin Script” on page 182.</p>
<i>finish</i>	<p>The name of an optional Bourne shell script that can be executed after the installation is completed. If no <i>finish</i> script exists, you must type a minus sign (-) in this field. All <i>finish</i> scripts must be located in the JumpStart directory.</p> <p>Information about how to create <i>finish</i> scripts is presented in “Creating Finish Scripts” on page 183.</p>

At the minimum, each rule must contain the following:

- A keyword, a value, and a corresponding profile
- A minus sign (-) in the *begin* and *finish* fields if no *begin* or *finish* scripts are specified

3. Save the rules file in the JumpStart directory.

4. Ensure that root owns the rules file and that the permissions are set to 644.

rules File Example

The following example shows several example rules in a `rules` file. Each line has a rule keyword and a valid value for that keyword. The JumpStart program scans the rules file from top to bottom.

When the JumpStart program matches a rule keyword and value with a known system, the JumpStart program installs the Solaris software that is specified by the profile that is listed in the profile field.

EXAMPLE 23-1 rule File

```
# rule keywords and rule values      begin script      profile      finish script
# -----
hostname eng-11                      -              basic_prof   -
network 192.43.34.0 && !model \
'SUNW,SPARCstation-20'2              -              net_prof     -
model SUNW,SPARCstation-LX3         -              lx_prof      complete
network 193.144.2.0 && karch i86pc  setup4         IA_prof       done
memsize 16-32 && arch i3865          -              prog_prof    -
any6 -                               -              generic_prof -
```

1. The rule matches if the system's host name is `eng-1`. The `basic_prof` profile is used to install the Solaris software on the system that matches the rule.
2. The rule matches if the system is on subnet `192.43.34.0` and if the system is *not* a SPARCstation™ 20 (`SUNW, SPARCstation-20`). The `net_prof` profile is used to install the Solaris software on systems that match this rule. The rule also provides an example of rule wrap, which is defined in "Syntax of the rules File" on page 168.
3. The rule matches if the system is a SPARCstation LX. The `lx_prof` profile and the `complete` finish script are used to install the Solaris software on systems that match this rule.
4. The rule matches if the system is on subnet `193.144.2.0` and if the system is an IA based system. The `setup` begin script, the `IA_prof` profile, and the `done` finish script are used to install the Solaris software on systems that match the rule.
5. The rule matches if the system has between 16 and 32 Mbytes of memory and is an IA based system. The `prog_prof` profile is used to install the Solaris software on systems that match the rule.
6. The rule matches any system that did not match the previous rules. The `generic_prof` profile is used to install the Solaris software on systems that match the rule. If any is used, it should always be the last rule in the `rules` file.

Creating a Profile

A profile is a text file that defines how to install the Solaris software on a system. A profile defines elements of the installation, for example, the software group to install. Every rule specifies a profile that defines how a system is to be installed. You can create different profiles for every rule or the same profile can be used in more than one rule.

A profile consists of one or more profile keywords and their values. Each profile keyword is a command that controls one aspect of how the JumpStart program is to install the Solaris software on a system. For example, the following profile keyword and value specify that the JumpStart program install the system as a server:

```
system_type server
```

Note – If you created the JumpStart directory by using the procedures that are presented in “Creating a Profile Server for Networked Systems” on page 159 or “Creating a Profile Diskette for Standalone Systems” on page 162, sample profiles are already located in the JumpStart directory.

Syntax of Profiles

A profile must contain the following:

- The `install_type` profile keyword as the first entry
- One keyword per line
- The `root_device` keyword if the systems that are being upgraded by the profile contain more than one root (/) file system that can be upgraded

A profile can contain the following:

- Commented text
Any text that is included after the # symbol on a line is treated by the JumpStart program as commented text. If a line begins with the # symbol, the entire line is treated as a comment.
- One or more blank lines

▼ To Create a Profile

1. Use a text editor to create a text file. Name the file descriptively. Or, open a sample profile in the JumpStart directory that you created.

Note – Ensure that the name of the profile reflects how you intend to use the profile to install the Solaris software on a system. For example, you might name the profiles `basic_install`, `eng_profile`, or `user_profile`.

2. Add profile keywords and values to the profile.

For a list of profile keywords and values, see “Profile Keywords and Values” on page 228.

Note – Profile keywords and their values are case sensitive.

3. Save the profile in the JumpStart directory.
4. Ensure that `root` owns the profile and that the permissions are set to 644.
5. Test the profile (optional).
“Testing a Profile” on page 175 contains information about testing profiles.

Profile Examples

The following examples of profiles show how to use different profile keywords and profile values to control how the Solaris software is installed on a system. “Profile Keywords and Values” on page 228 contains a description of profile keywords and values.

EXAMPLE 23–2 Mounting Remote File Systems and Adding and Deleting Packages

```
# profile keywords      profile values
# -----
install_type           initial_install1
system_type            standalone2
partitioning           default3
filesystem             any 512 swap # specify size of /swap
cluster                SUNWCprog4
package                SUNWman delete5
package                SUNWolman delete
package                SUNWxwman delete
package                SUNWoldem add
package                SUNWxdem add
```

EXAMPLE 23-2 Mounting Remote File Systems and Adding and Deleting Packages
(Continued)

```
package          SUNWoldim add
package          SUNWxdim add
```

1. The `install_type` keyword is required in every profile.
2. The `system_type` keyword defines that the system is to be installed as a standalone system.
3. The file system slices are determined by the software to be installed with the value `default`. The size of `swap` is set to 512 Mbytes and is installed on any disk, value `any`. The standard man pages are mounted from the file server, `s_ref`, on the network.
4. The Developer System Support software group, `SUNWCprog`, is installed on the system.
5. Because the man pages are being mounted remotely, the man page packages are not to be installed on the system. The packages that contain the OPEN LOOK and X Window System demonstration programs and images are selected to be installed on the system.

EXAMPLE 23-3 Specifying Where to Install File Systems

```
# profile keywords      profile values
# -----
install_type           initial_install
system_type            standalone

partitioning           explicit1
filesys                c0t0d0s0 auto /
filesys                c0t3d0s1 auto swap
filesys                any auto usr
cluster                SUNWCall2
```

1. The file system slices are determined by the `filesys` keywords, value `explicit`. The size of root (/) is based on the selected software, value `auto`, and is installed on `c0t0d0s0`. The size of `swap` is set to the necessary size and is installed on `c0t3d0s1`. `usr` is based on the selected software and the installation program determines where `usr` is installed, based on the value `any`.
2. The Entire Distribution software group, `SUNWCall`, is installed on the system.

EXAMPLE 23-4 IA: Using the `fdisk` Keyword

```
# profile keywords      profile values
# -----
install_type           initial_install
system_type            standalone

fdisk                  c0t0d0 0x04 delete1
fdisk                  c0t0d0 solaris maxfree2
```

EXAMPLE 23-4 IA: Using the `fdisk` Keyword (Continued)

```
cluster          SUNWCa113
cluster          SUNWCacc delete4
```

1. All `fdisk` partitions of type DOSOS16 (04 hexadecimal) are deleted from the `c0t0d0` disk.
2. A Solaris `fdisk` partition is created on the largest contiguous free space on the `c0t0d0` disk.
3. The Entire Distribution software group, `SUNWCa11`, is installed on the system.
4. The system accounting utilities, `SUNWCacc`, are not to be installed on the system.

EXAMPLE 23-5 Reallocating Disk Space for an Upgrade

```
# profile keywords      profile values
# -----
install_type           upgrade1

root_device            c0t3d0s22

backup_media           remote_filesystem timber:/export/scratch3
layout_constraint     c0t3d0s2 changeable 1004
layout_constraint     c0t3d0s4 changeable
layout_constraint     c0t3d0s5 movable

package               SUNWbcp delete5
package               SUNWolman add6
package               SUNWxwman add
cluster               SUNWCumux add

locale                 de7
```

1. The profile upgrades a system by reallocating disk space. In this example, disk space must be reallocated because some file systems on the system did not have enough room for the upgrade.
2. The root file system on `c0t3d0s2` is upgraded.
3. A remote system that is named `timmer` is to be used to back up data during the disk space reallocation.
4. The `layout_constraint` keywords designate that auto-layout can perform the following when auto-layout attempts to reallocate disk space for the upgrade.
 - Change slices 2 and 4. The slices can be moved to another location and the size can be changed.
 - Move slice 5. The slice can be moved to another location but its size must stay the same.
5. The binary compatibility package, `SUNWbcp`, is not installed on the system after the upgrade.

EXAMPLE 23–5 Reallocating Disk Space for an Upgrade (Continued)

6. The code ensures that the OPEN LOOK and X Window System man pages and the universal multiplexor software are to be installed if they are not already installed on the system. All packages already on the system are automatically upgraded.
7. The German localization packages are to be installed on the system.

Testing a Profile

After you create a profile, use the `pfinstall(1M)` command to test the profile. Test the profile before you use the profile to install or upgrade a system. Testing a profile is especially useful when you are creating upgrade profiles that reallocate disk space.

By looking at the installation output that is generated by `pfinstall`, you can quickly determine if a profile works as you intended. For example, use the profile to determine if a system has enough disk space to upgrade to a new release of the Solaris software before you perform the upgrade on that system.

`pfinstall` enables you to test a profile against the following:

- The system's disk configuration where `pfinstall` is being run.
- Other disk configurations. You use a disk configuration file that represents a structure of a disk, for example, a disk's bytes/sector, flags, and slices. Creating disk configuration files is described in "Creating Disk Configuration Files" on page 190 and "IA: To Create a Disk Configuration File" on page 192.

Note – You cannot use a disk configuration file to test a profile you intend to use to upgrade a system. Instead, you must test the profile against the system's actual disk configuration and the software that is currently installed on that system.

▼ To Create a Temporary Solaris 8 Environment to Test a Profile

To test a profile for a particular Solaris release successfully and accurately, you must test a profile within the Solaris environment of the same release. For example, if you want to test a Solaris 8 initial installation profile, run the `pfinstall` command on a system that is running Solaris 8.

You need to create a temporary installation environment if you are testing a profile under one of the following conditions:

- You want to test a Solaris 8 upgrade profile on a system that is running a previous version of the Solaris software.
- You do not have a Solaris 8 system installed yet to test Solaris 8 initial installation profiles.

1. Boot a system from an image of one of the following:

- Solaris 8 *SPARC Platform Edition* DVD
- Solaris 8 *Intel Platform Edition* DVD
- Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
- Solaris 8 Software 1 of 2 *Intel Platform Edition* CD

Note – If you want to test an upgrade profile, boot the system that you are upgrading.

2. Respond to the system identification questions.

3. Select the Solaris 8 Interactive Installation Program as the program to install the Solaris 8 operating environment.

4. Exit the first screen that is displayed.

5. Execute the `pinstall` command from the shell.

▼ To Test a Profile

1. Locate a system on which to test the profile that is the same type of platform, SPARC or IA, for which the profile was created.

If you are testing an upgrade profile, you must test the profile on the actual system that you intend to upgrade.

2. Use the following decision table to determine what to do next.

Test Scenario	Instructions
Test an initial installation profile and have a system that is running the Solaris 8 software	Become superuser on the system and go to step 5.
Test an upgrade profile, or you do not have a system that is running Solaris 8 to test an initial installation profile	Create a temporary Solaris 8 environment to test the profile. For details, see “To Create a Temporary Solaris 8 Environment to Test a Profile” on page 175. Then, go to step 3.

3. Create a temporary mount point.

```
# mkdir /tmp/mnt
```

4. Mount the directory that contains the profile or profiles that you want to test.

Mount Scenario	Typing Instructions
Mount a remote NFS file system for systems on the network	<code>mount -F nfs server_name:path /tmp/mnt</code>
Mount a UFS-formatted diskette	<code>mount -F ufs /dev/diskette /tmp/mnt</code>
Mount a PCFS-formatted diskette	<code>mount -F pcfs /dev/diskette /tmp/mnt</code>

5. To test the profile with a specific system memory size, set `SYS_MEMSIZE` to the specific memory size in Mbytes.

```
# SYS_MEMSIZE=memory_size  
# export SYS_MEMSIZE
```

6. Did you mount a directory in step 4?

- If yes, change the directory to `/tmp/mnt`.

```
# cd /tmp/mnt
```
- If no, change the directory to where the profile is located, which is usually the JumpStart directory.

```
# cd jumpstart_dir_path
```

7. Test the profile with the `pfinstall(1M)` command.

```
# /usr/sbin/install.d/pfinstall -D: -d disk_config_file[-c path] profile
```



Caution – You *must* include the `-d` or `-D` option. If you do not include one of these options, `pfinstall` uses the profile you specify to install the Solaris 8 software. All of the data on the system is overwritten.

<code>-D</code>	<code>pfinstall</code> uses the current system's disk configuration to test the profile. You must use the <code>-D</code> option to test an upgrade profile.
-----------------	--

<i>-d disk_config_file</i>	<p><code>pfinstall</code> uses the disk configuration file, <i>disk_config_file</i>, to test the profile. If <i>disk_config_file</i> is not located in the directory where <code>pfinstall</code> is run, you must specify the path.</p> <p>For instructions on how to create a disk configuration file, see “Creating Disk Configuration Files” on page 190.</p> <p>Note – You cannot use the <code>-d disk_config_file</code> option with an upgrade profile, <code>install_type upgrade</code>. You must always test an upgrade profile against a system’s disk configuration, that is, you must use the <code>-D</code> option.</p>
<i>-c path</i>	<p>The path to the Solaris 8 software image. You use this option, for example, if the system is using Volume Manager to mount the Solaris 8 Software 1 of 2 CD for your platform.</p> <p>Note – The <code>-c</code> option is not required if you booted from a Solaris 8 DVD or a Solaris 8 Software 1 of 2 CD image for your platform. The DVD or CD image is mounted on <code>/cdrom</code> as part of the booting process.</p>
<i>profile</i>	<p>The name of the profile to test. If <i>profile</i> is not in the directory where <code>pfinstall</code> is being run, you must specify the path.</p>

Profile Test Examples

The following example shows how to use `pfinstall` to test a profile that is named `basic_prof`. The profile is tested against the disk configuration on a system on which the Solaris 8 software is installed. The `basic_prof` profile is located in the `/jumpstart` directory, and the path to the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD or Solaris 8 Software 1 of 2 *Intel Platform Edition* CD image is specified because Volume Manager is being used.

EXAMPLE 23–6 Profile Test Using a Solaris 8 System

```
# cd /jumpstart
# /usr/sbin/install.d/pfinstall -D -c /cdrom/pathname basic_prof
```

The following example shows how to use `pfinstall` to test the profile that is named `basic_prof` on a Solaris 8 system. The test is performed against the `535_test` disk configuration file. The test checks for 64 Mbytes of system memory. This example uses a Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD or Solaris 8 Software 1 of 2 *Intel Platform Edition* CD image that is located in the `/export/install` directory.

EXAMPLE 23–7 Profile Test Using a Disk Configuration File

```
# SYS_MEMSIZE=64
# export SYS_MEMSIZE
# /usr/sbin/install.d/pfinstall -d 535_test -c /export/install basic_prof
```

Validating the rules File

Before you can use a profile and rules file, you must run the check script to validate that the files are set up correctly. If all rules and profiles are correctly set up, the rules.ok file is created, which is required by the custom JumpStart installation software to match a system to a profile.

Table 23-3 describes what the check script does.

TABLE 23-3 What Happens When You Use the check Script

Stage	Description
1	The rules file is checked for syntax. check verifies that the rule keywords are legitimate and that the <i>begin</i> , <i>class</i> , and <i>finish</i> fields are specified for each rule. The <i>begin</i> and <i>finish</i> fields can consist of a minus sign (-) instead of a file name.
2	If no errors are found in the rules file, each profile that is specified in the rules is checked for syntax.
3	If no errors are found, check creates the rules.ok file from the rules file, removes all comments and blank lines, retains all rules, and adds the following comment line at the end: # version=2 checksum=num

▼ To Validate the rules File

1. **Ensure that the check script is located in the JumpStart directory.**

Note – The check script is in the Solaris_8/Misc/jumpstart_sample directory on the Solaris 8 DVD or on the Solaris 8 Software 1 of 2 CD.

2. **Change the directory to the JumpStart directory.**
3. **Run the check script to validate the rules file:**

```
$ ./check [-p path -r file_name]
```

<code>-p path</code>	Validates the <code>rules</code> by using the <code>check</code> script from the Solaris 8 software image, instead of the <code>check</code> script from the system you are using. <code>path</code> is the image on a local disk or a mounted Solaris 8 DVD or a Solaris 8 Software 1 of 2 CD. Use this option to run the most recent version of <code>check</code> if your system is running a previous version of Solaris.
<code>-r file_name</code>	Specifies a rules file other than the one that is named <code>rules</code> . Using this option, you can test the validity of a rule before you integrate the rule into the <code>rules</code> file.

As the `check` script runs, the script reports the checking of the validity of the `rules` file and each profile. If no errors are encountered, the script reports: `The custom JumpStart configuration is ok.`

4. Ensure that `root` owns the `rules.ok` file and that the permissions are set to `644`.

After you validate the `rules` file, you can learn more about optional custom JumpStart features in Chapter 24. You can learn about performing custom JumpStart installations in Chapter 26.

Using Optional Custom JumpStart Features

This chapter describes the optional features that are available to create additional custom JumpStart installation tools.

- “Creating Begin Scripts” on page 181
- “Creating Finish Scripts” on page 183
- “Creating a Compressed Configuration File” on page 188
- “Creating Disk Configuration Files” on page 190
- “Using a Site-Specific Installation Program” on page 195

Note – Instructions in this chapter are valid for either a SPARC server or an IA server that is being used to provide custom JumpStart files, called a profile server. A profile server can provide custom JumpStart files for different platform types. For example, a SPARC server can provide custom JumpStart files for both SPARC systems and IA systems.

Creating Begin Scripts

A begin script is a user-defined Bourne shell script that you specify in the `rules` file. A begin script performs tasks before the Solaris software is installed on a system. You can use begin scripts only when using custom JumpStart to install the Solaris software.

Use a begin script to perform one of the following tasks:

- Create derived profiles
- Back up files before upgrading

Important Information About Begin Scripts

- Do not specify something in the script that would prevent the mounting of file systems onto /a during an initial or upgrade installation. If the JumpStart program cannot mount the file systems onto /a, an error occurs and installation fails.
- Output from the begin script is deposited in /var/sadm/begin.log.
- Ensure that root owns the begin script and that the permissions are set to 644.
- You can use custom JumpStart Environment variables in your begin scripts. For a list of environment variables, see “Custom JumpStart Environment Variables” on page 253.
- Save begin scripts in the JumpStart directory.

Creating Derived Profiles With a Begin Script

A derived profile is a profile that is dynamically created by a begin script during a custom JumpStart installation. Derived profiles are needed when you cannot set up the rules file to match specific systems to a profile. For example, you might need to use derived profiles for identical system models that have different hardware components, for example, systems that contain different frame buffers.

To set up a rule to use a derived profile, you must perform the following tasks:

- Set the profile field to an equal sign (=) instead of a profile.
- Set the begin field to a begin script that creates a derived profile that depends on the system on which you intend to install Solaris.

When a system matches a rule with the profile field equal to an equal sign (=), the begin script creates the derived profile that is used to install the Solaris software on the system.

The following is an example of a begin script that creates the same derived profile every time. You can write a begin script to create different derived profiles that depend on the evaluation of rules.

EXAMPLE 24-1 A Begin Script That Creates a Derived Profile

```
#!/bin/sh
echo "install_type      initial_install"    > ${SI_PROFILE}
echo "system_type      standalone"        >> ${SI_PROFILE}
echo "partitioning     default"           >> ${SI_PROFILE}
echo "cluster          SUNWCprog"         >> ${SI_PROFILE}
echo "package          SUNWman    delete" >> ${SI_PROFILE}
echo "package          SUNWolman  delete" >> ${SI_PROFILE}
echo "package          SUNWxwman  delete" >> ${SI_PROFILE}
```

EXAMPLE 24-1 A Begin Script That Creates a Derived Profile (Continued)

In the example, the begin script must use the `SI_PROFILE` environment variable for the name of the derived profile, which is set to `/tmp/install.input` by default.

Note – If a begin script is used to create a derived profile, ensure the script does not have any errors. A derived profile is not verified by the check script because derived profiles are not created until the execution of the begin script.

Creating Finish Scripts

A finish script is a user-defined Bourne shell script that you specify in the `rules` file. A finish script performs tasks after the Solaris software is installed on a system, but before the system reboots. You can use finish scripts only when using custom JumpStart to install Solaris.

Tasks that you can perform with a finish script include the following:

- Add files
- Add individual packages or patches in addition to the ones that are installed in a particular software group
- Customize the root environment
- Set the system's root password
- Install additional software

Important Information About Finish Scripts

- The Solaris 8 Interactive Installation Program mounts the system's file systems onto `/a`. The file systems remain mounted on `/a` until the system reboots. You can use the finish script to add, change, or remove files from the newly installed file system hierarchy by modifying the file systems that are respective to `/a`.
- Output from the finish script is deposited in `/var/sadm/finish.log`.
- Ensure that `root` owns the finish script and that the permissions are set to `644`.
- You can use custom JumpStart Environment variables in your finish scripts. For a list of environment variables, see "Custom JumpStart Environment Variables" on page 253.

- Save finish scripts in the JumpStart directory.

▼ To Add Files With a Finish Script

Through a finish script, you can add files from the JumpStart directory to an already installed system. You can add the files because the JumpStart directory is mounted on the directory that is specified by the `SI_CONFIG_DIR` variable. The directory is set to `/tmp/install_config` by default.

Note – You can also replace files by copying files from the JumpStart directory to already existing files on the installed system.

1. **Copy all of the files that you are adding to the installed system into the JumpStart directory.**
2. **Insert the following line into the finish script for each file you want copied into the newly installed file system hierarchy:**

```
cp ${SI_CONFIG_DIR}/file_name /a/path_name
```

For example, assume you have a special application, `site_prog`, developed for all users at your site. If you place a copy of `site_prog` into the JumpStart directory, the following line in a finish script copies `site_prog` from the JumpStart directory into a system's `/usr/bin` directory:

```
cp ${SI_CONFIG_DIR}/site_prog /a/usr/bin
```

Adding Packages or Patches With a Finish Script

You can create a finish script to automatically add packages or patches after the Solaris software is installed on a system. By adding packages with a finish script, you reduce time and ensure consistency in what packages and patches are installed on different systems at your site.

When you use the `pkgadd(1M)` or `patchadd(1M)` commands in finish scripts, use the `-R` option to specify `/a` as the root path.

Example 24–2 shows an example of a finish script that adds packages.

EXAMPLE 24–2 Adding Packages With a Finish Script

```
#!/bin/sh

BASE=/a
MNT=/a/mnt
ADMIN_FILE=/a/tmp/admin
```


EXAMPLE 24-2 Adding Packages With a Finish Script (Continued)

```
mkdir ${MNT}
mount -f nfs sherlock:/export/package ${MNT}1
cat >${ADMIN_FILE} <<DONT_ASK2
mail=root
instance=overwrite
partial=nocheck
runlevel=nocheck
idepend=nocheck
rdepend=nocheck
space=ask
setuid=nocheck
conflict=nocheck
action=nocheck
basedir=default
DONT_ASK

/usr/sbin/pkgadd -a ${ADMIN_FILE} -d ${MNT} -R ${BASE} SUNWxyz3
umount ${MNT}
rmdir ${MNT}
```

1. Mounts a directory on a server that contains the package to install.
2. Creates a temporary package administration file, `admin`, to force the `pkgadd(1M)` command not to perform checks or prompt for questions when installing a package. Use the temporary package administration file to maintain a hands-off installation when you are adding packages.
3. Adds the package by using the `-a` option, specifying the package administration file, and the `-R` option, specifying the root path.

Note – In the past, the `chroot(1M)` command was used with the `pkgadd` and `patchadd` commands in the finish script environment. In rare instances, some packages or patches do not work with the `-R` option. You must create a dummy `/etc/mnttab` file in the `/a` root path before issuing the `chroot` command.

To create a dummy `/etc/mnttab` file, add the following line to your finish script:

```
cp /etc/mnttab /a/etc/mnttab
```

Customizing the Root Environment With a Finish Script

You can also use finish scripts to customize files that are already installed on a system. For example, the finish script in Example 24–3 customizes the root environment by appending information to the `.cshrc` file in the root (`/`) directory.

EXAMPLE 24–3 Customizing the Root Environment With a Finish Script

```
#!/bin/sh
#
# Customize root's environment
#
echo "****adding customizations in /.cshrc"
test -f a/.cshrc || {
cat >> a/.cshrc <<EOF
set history=100 savehist=200 filec ignoreeof prompt="\$user@`uname -n`> "
alias cp cp -i
alias mv mv -i
alias rm rm -i
alias ls ls -FC
alias h history
alias c clear
unset autologout
EOF
}
```

Setting a System's Root Password With a Finish Script

After the Solaris software is installed on a system, the system reboots. Before the boot process is completed, the system prompts for the root password. Until someone types a password, the system cannot finish booting.

A finish script that is named `set_root_pw` is saved in the `auto_install_sample` directory. The finish script shows how to set the root password automatically, without prompting. `set_root_pw` is shown in Example 24-4.

EXAMPLE 24-4 Setting the System's Root Password With a Finish Script

```
#!/bin/sh
#
#      @(#)set_root_pw 1.4 93/12/23 SMI
#
# This is an example Bourne shell script to be run after installation.
# It sets the system's root password to the entry defined in PASSWD.
# The encrypted password is obtained from an existing root password entry
# in /etc/shadow from an installed machine.

echo "setting password for root"

# set the root password
PASSWD=dK05IBkSF42lw
#create a temporary input file1
cp /a/etc/shadow /a/etc/shadow.orig2

mv /a/etc/shadow /a/etc/shadow.orig
nawk -F: '{
    if ( $1 == "root" )3
        printf"%s:%s:%s:%s:%s:%s:%s:%s:%s\n", $1,passwd,$3,$4,$5,$6,$7,$8,$9
    else
        printf"%s:%s:%s:%s:%s:%s:%s:%s:%s\n", $1,$2,$3,$4,$5,$6,$7,$8,$9
}' passwd="$PASSWD" /a/etc/shadow.orig > /a/etc/shadow
#remove the temporary file
rm -f /a/etc/shadow.orig4
# set the flag so sysidroot won't prompt for the root password
sed -e 's/0 # root/1 # root/' ${SI_SYS_STATE} > /tmp/state.$$5
mv /tmp/state.$$ ${SI_SYS_STATE}
```

1. Sets the variable `PASSWD` to an encrypted root password that is obtained from an existing entry in a system's `/etc/shadow` file.
2. Creates a temporary input file of `/a/etc/shadow`.
3. Changes the root entry in the `/etc/shadow` file for the newly installed system using `$PASSWD` as the password field.
4. Removes the temporary `/a/etc/shadow` file.
5. Changes the entry from 0 to a 1 in the state file so that the user is not prompted for the root password. The state file is accessed by using the variable `SI_SYS_STATE`, which has a value currently of `/a/etc/.sysIDtool.state`. To avoid problems with your scripts if this value changes, always reference this file by using `$(SI_SYS_STATE)`. The `sed` command that is shown here contains a tab character after the 0 and after the 1.

Note – If you set the system’s root password with a finish script, users might attempt to discover the root password from the encrypted password in your finish script. Ensure that you safeguard against users that might try to determine the root password.

Installing Software With Web Start Installation Programs With Finish Scripts

You can use finish scripts to install additional software after the Solaris operating environment is installed. Some software programs are installed by the Solaris Web Start program, which prompts you to enter information during the installation. To maintain a hands-off installation, you can run the Solaris Web Start program with the `-nodisplay` or `-noconsole` options.

TABLE 24-1 Solaris Web Start Options

Option	Description
<code>-nodisplay</code>	Runs the installer without a graphic user interface. Use the default product installation unless the installation was modified by the <code>-locales</code> option.
<code>-noconsole</code>	Runs the installation without any interactive text console device. Useful when paired with <code>-nodisplay</code> for UNIX script use.

Creating a Compressed Configuration File

Rather than using the `add_install_client` command to specify the location of the custom JumpStart configuration files, you can specify the location of the files when you boot the system. However, you can only specify the name of one file when you issue the `boot` command. As a result, you must compress all of the custom JumpStart configuration files into one file. The compressed configuration file can be one of the following types:

- tar
- compressed tar
- zip

- `bzip tar`

▼ To Create a Compressed Configuration File

1. Change the directory to the JumpStart directory on the profile server.

```
# cd jumpstart_dir_path
```

2. Use a compression tool to compress the custom JumpStart configuration files into one file.

Note – The compressed configuration file cannot contain relative paths. The custom JumpStart configuration files must be in the same directory as the compressed file.

The compressed configuration file must contain the following files:

- `profile`
- `rules`
- `rules.ok`

You can also include the `sysidcfg` file in the compressed configuration file.

3. Save the compressed configuration file on an NFS server, an HTTP server, or on a local hard disk.

Compressed Configuration File Example

The following example shows how to use the `tar` command to create a compressed configuration file that is named `config.tar`. The custom JumpStart configuration files are located in the `/jumpstart` directory.

EXAMPLE 24-5 Creating a Compressed Configuration File

```
# cd /jumpstart
# tar -cvf config.tar *
a profile 1K
a rules 1K
a rules.ok 1K
a sysidcfg 1K
```

Creating Disk Configuration Files

This section describes how to create single-disk and multiple-disk configuration files. Disk configuration files enable you to use `pfinstall(1M)` from a single system to test profiles against different disk configurations.

▼ SPARC: To Create a Disk Configuration File

1. **Locate a SPARC system with a disk you want to test.**
2. **Become superuser.**
3. **Create a single-disk configuration file by redirecting the output of the `prtvtoc(1M)` command to a file.**

```
# prtvtoc /dev/rdisk/device_name >disk_config_file
```

/dev/rdisk/device_name

The device name of the system's disk.
device_name must be in the form *cwtxdys2* or *cx dys2*.

disk_config_file

The name of the disk configuration file

4. **Determine if you are testing the installation of Solaris software on multiple disks.**
 - If no, stop. You are finished.
 - If yes, concatenate the single-disk configuration files and save the output in a new file.

```
# cat disk_file1 disk_file2 >multi_disk_config
```

The new file becomes the multiple-disk configuration file, as in the following example:

```
# cat 104_disk2 104_disk3 104_disk5 >multi_disk_test
```

5. **Determine if the target numbers in the disk device names are unique in the multiple-disk configuration file that you created in the previous step.**
 - If yes, stop. You are finished.
 - If no, open the file with a text editor and make the target numbers unique in the disk device names.

For example, if the file contains the same target number, `t0`, for different disk device names, as shown here:

```

* /dev/rdisk/c0t0d0s2 partition map
...
* /dev/rdisk/c0t0d0s2 partition map
Change the second target number to t2, as shown here:
* /dev/rdisk/c0t0d0s2 partition map
...
* /dev/rdisk/c0t2d0s2 partition map

```

SPARC: Disk Configuration File Example

The following example shows how to create a single-disk configuration file, `104_test`, on a SPARC system with a 104-Mbyte disk.

EXAMPLE 24-6 SPARC: Creating a Disk Configuration File

You redirect the output of the `prtvtoc` command to a single-disk configuration file that is named `104_test`:

```
# prtvtoc /dev/rdisk/c0t3d0s2 >104_test
```

The contents of the `104_test` file look like the following:

```

* /dev/rdisk/c0t3d0s2 partition map
*
* Dimensions:
*   512 bytes/sector
*   72 sectors/track
*   14 tracks/cylinder
*   1008 sectors/cylinder
*   2038 cylinders*   2036 accessible cylinders
* Flags:
* 1: unmountable
* 10: read-only
*
*
* Partition  Tag  Flags   First   Sector   Last   Mount Directory
*           2    00      0     164304  164303  /
*           5    00      0    2052288 2052287
*           0    00    164304   823536  987839  /disk2/b298
*           0    00    987840   614880 1602719  /install/298/sparc/work
*           0    00   1602720  449568 2052287  /space

```

You have created disk configuration files for a SPARC based system. “Testing a Profile” on page 175 contains information about using disk configuration files to test profiles.

▼ IA: To Create a Disk Configuration File

1. Locate an IA based system that contains a disk that you are testing.
2. Become superuser.
3. Create part of the single disk-configuration file by saving the output of the `fdisk(1M)` command in a file.

```
# fdisk -R -W disk_config_file -h /dev/rdisk/device_name
```

disk_config_file

The name of a disk configuration file

/dev/rdisk/device_name

The device name of the `fdisk` layout of the entire disk. *device_name* must be in the form `cwtxdyp0` or `cxdyp0`.

4. Append the output of the `prtvtoc(1M)` command to the disk configuration file:

```
# prtvtoc /dev/rdisk/device_name >>disk_config
```

/dev/rdisk/device_name

The device name of the system's disk. *device_name* must be in the form `cwtxdys2` or `cxdys2`.

disk_config

The name of the disk configuration file

5. Determine if you are testing the installation of Solaris software on multiple disks.
 - If no, stop. You are finished.
 - If yes, concatenate the single-disk configuration files and save the output in a new file:

```
# cat disk_file1 disk_file2 >multi_disk_config
```

The new file becomes the multiple-disk configuration file, as in the following example:

```
# cat 104_disk2 104_disk3 104_disk5 >multi_disk_test
```

6. Determine if the target numbers in the disk device names are unique in the multiple-disk configuration file that you created in the previous step.

- If yes, stop. You are finished.
- If no, open the file with a text editor and make the target numbers unique. For example, if the file contains the same target number, `t0`, for different disk device names as shown here:


```
* /dev/rdisk/c0t0d0s2 partition map
...
* /dev/rdisk/c0t0d0s2 partition map
```

Change the second target number to t2, as shown here:

```
* /dev/rdisk/c0t0d0s2 partition map
...
* /dev/rdisk/c0t2d0s2 partition map
```

IA: Disk Configuration File Example

The following example shows how to create a single-disk configuration file, `500_test`, on an IA system that contains a 500-Mbyte disk.

EXAMPLE 24-7 IA: Creating a Disk Configuration File

First, you save the output of the `fdisk` command to a file that is named `500_test`:

```
# fdisk -R -W 500_test -h /dev/rdisk/c0t0d0p0
```

The `500_test` file looks like the following:

```
* /dev/rdisk/c0t0d0p0 default fdisk table
* Dimensions:
*   512 bytes/sector
*   94 sectors/track
*   15 tracks/cylinder
* 1455 cylinders
*
* HBA Dimensions:
*   512 bytes/sector
*   94 sectors/track
*   15 tracks/cylinder
* 1455 cylinders
*
* systid:
* 1:  DOSOS12
* 2:  PCIIXOS
* 4:  DOSOS16
* 5:  EXTDOS
* 6:  DOSBIG
* 86: DOSDATA
* 98: OTHEROS
* 99: UNIXOS
* 130: SUNIXOS
*
* Id  Act  Bhead  Bsect   Bcyl  Ehead  Esect   Ectl  Rsect  Numsect
130  128  44     3       0     46     30     1001  1410  2050140
```

Second, you append the output of the `prtvtoc` command to the `500_test` file:

EXAMPLE 24-7 IA: Creating a Disk Configuration File (Continued)

```
# prtvtoc /dev/rdisk/c0t0d0s2 >>500_test
```

The 500_test file is now a complete disk configuration file:

```
* /dev/rdisk/c0t0d0p0 default fdisk table
* Dimensions:
*   512 bytes/sector
*   94 sectors/track
*   15 tracks/cylinder
*   1455 cylinders
*
* HBA Dimensions:
*   512 bytes/sector
*   94 sectors/track
*   15 tracks/cylinder
*   1455 cylinders
*
* systid:
* 1:  DOSOS12
* 2:  PCIXOS
* 4:  DOSOS16
* 5:  EXTDOS
* 6:  DOSBIG
* 86: DOSDATA
* 98: OTHEROS
* 99: UNIXOS
* 130: SUNIXOS
*
* Id Act Bhead Bsect Bcyl Ehead Esec Ectl Rsect Numsect
130 128 44 3 0 46 30 1001 1410 2050140
*/dev/rdisk/c0t0d0s2 partition map
*
* Dimensions:
*   512 bytes/sector
*   94 sectors/track
*   15 tracks/cylinder
*   1110 sectors/cylinder
*   1454 cylinders
*   1452 accessible cylinders
*
* Flags:
* 1: unmountable
* 10: read-only
*
* Partition Tag Flags First Sector Last Sector Mount Directory
2 5 01 1410 2045910 2047319
7 6 00 4230 2043090 2047319 /space
8 1 01 0 1410 1409
9 9 01 1410 2820 422987
```

EXAMPLE 24-7 IA: Creating a Disk Configuration File (Continued)

You have created disk configuration files for an IA based system. “Testing a Profile” on page 175 contains information about using disk configuration files to test profiles.

Using a Site-Specific Installation Program

You can also use begin and finish scripts to create your own installation program to install Solaris software.

When you specify a minus sign (-) in the profile field, begin and finish scripts control how Solaris software is installed on a system instead of the profile and the Solaris 8 Interactive Installation Program.

For example, if the following rule matches a system, the `x_install.beg` begin script and the `x_install.fin` finish script install Solaris software on the system that is named `clover`:

```
hostname clover x_install.beg - x_install.fin
```


Creating Custom Rule and Probe Keywords

This chapter provides information and procedures for creating your own custom rule and probe keywords.

- “Probe Keywords” on page 197
- “Creating a custom_probes File” on page 198
- “Validating the custom_probes File” on page 201

Probe Keywords

To understand what a probe keyword is, you first need to recall what a rule keyword is. A rule keyword is a predefined lexical unit or word that describes a general system attribute, such as host name, `hostname`, or memory size, `memsize`. Rule keywords and the values that are associated with them enable you to match a system that has the same attribute to a profile. This match of a system’s attributes defines how the Solaris software is to be installed on each system in the group.

Custom JumpStart environment variables, which you use in begin and finish scripts, are set on demand. For example, information about which operating system is already installed on a system is only available in `SI_INSTALLED` after the `installed` rule keyword is used.

In some situations, you might need to extract the same information in a begin or finish script for a purpose other than to match a system and run a profile. Probe keywords provide the solution. Probe keywords extract attribute information without you having to set up a matching condition and run a profile.

For a list of probe keywords and values, see “Probe Keywords and Values” on page 256.

Creating a custom_probes File

If the rule and probe keywords that are described in “Rule Keywords and Values” on page 223 and “Probe Keywords and Values” on page 256 are not precise enough for your needs, you can define your own custom rule or probe keywords by creating a custom_probes file.

The custom_probes file is a Bourne shell script that contains two types of functions. You must save the custom_probes file in the same JumpStart directory where you saved the rules file. The two types of functions that you can define in a custom_probes file are as follows:

- **Probe** – Gathers the information you want or does the actual work and sets a corresponding SI_ environment variable that you define. Probe functions become probe keywords.
- **Comparison** – Calls a corresponding probe function, compares the output of the probe function, and returns 0 if the keyword matches or 1 if the keyword does not match. Comparison functions become rule keywords.

Syntax of the custom_probes File

The custom_probes file can contain any valid Bourne shell command, variable, or algorithm.

Note – You can define probe and comparison functions that require a single argument in the custom_probes file. When you use the corresponding custom probe keyword in the rules file, the argument after the keyword is interpreted (as \$1).

When you use the corresponding custom rule keyword in the rules file, the argument is interpreted starting after the keyword and ending before the next && or begin script, whichever comes first.

The custom_probes file must meet the following requirements:

- Have the name custom_probes
- Have root as its owner
- Be executable and have permissions set to 755
- Contain at least one probe function and one corresponding comparison function

To improve clarity and organization, define all probe functions first, at the top of the file, followed by all comparison functions.

Syntax of Function Names in `custom_probes`

The name of a probe function must begin with `probe_`. The name of a comparison function must begin with `cmp_`.

Functions that begin with `probe_` define new probe keywords. For example, the function `probe_tcx` defines the new probe keyword `tcx`. Functions that begin with `cmp_` define new rule keywords. For example, `cmp_tcx` defines the new rule keyword `tcx`.

▼ To Create a `custom_probes` File

1. Use a text editor to create a Bourne shell script text file. Name the file `custom_probes`.
2. In the `custom_probes` text file, define your probe and comparison functions.

Note – You can define probe and comparison functions that require arguments in the `custom_probes` file. When you use the corresponding custom probe keyword in the rules file, the arguments after the keyword are interpreted in sequence (as \$1, \$2, and so on).

When you use the corresponding custom rule keyword in the rules file, the arguments are interpreted in sequence after the keyword and before the next `&&` or begin script, whichever comes first.

3. Save the `custom_probes` file in the JumpStart directory next to the rules file.
4. Ensure that `root` owns the rules file and that the permissions are set to 644.

Examples of a `custom_probes` File and Keyword

You can find additional examples of probe and comparison functions in the following directories:

- `/usr/sbin/install.d/chkprobe` on a system that has the Solaris software installed
- `/Solaris_8/Tools/Boot/usr/sbin/install.d/chkprobe` on the Solaris 8 DVD or on the Solaris 8 Software 1 of 2 CD

The following `custom_probes` file contains a probe and comparison function that tests for the presence of a TCX graphics card.

EXAMPLE 25-1 custom_probes File

```
#!/bin/sh
#
# custom_probe script to test for the presence of a TCX graphics card.
#
#
# PROBE FUNCTIONS
#
probe_tcx() {
    SI_TCX=`modinfo | grep tcx | nawk '{print $6}'`
    export SI_TCX
}

#
# COMPARISON FUNCTIONS
#
cmp_tcx() {
    probe_tcx

    if [ "X${SI_TCX}" = "X${1}" ]; then
        return 0
    else
        return 1
    fi
}
```

The following example `rules` file shows the use of the probe keyword that is defined in the preceding example, `tcx`. If a TCX graphics card is installed and found in a system, `profile_tcx` is run. Otherwise, `profile` is run.

Note – Always place probe keywords at or near the beginning of the `rules` file to ensure that the keywords are read and run before other rule keywords that might rely on the probe keywords.

EXAMPLE 25-2 Custom Probe Keyword Used in a `rules` File

```
probe tcx
tcx    tcx    -    profile_tcx    -
any    any    -    profile        -
```

Validating the custom_probes File

Before you can use a profile, rules, and custom_probes file, you must run the check script to validate that the files are set up correctly. If all profiles, rules, and probe and comparison functions are correctly set up, the rules.ok and custom_probes.ok files are created. Table 25-1 describes what the check script does.

TABLE 25-1 What Happens When You Use the check Script

Stage	Description
1	check searches for a custom_probes file.
2	If the file exists, check creates the custom_probes.ok file from the custom_probes file, removes all comments and blank lines, retains all Bourne shell commands, variables, and algorithms, and adds the following comment line at the end: # version=2 checksum=num

▼ To Validate the custom_probes File

1. Verify that the check script is located in the JumpStart directory.

Note – The check script is in the Solaris_8/Misc/jumpstart_sample directory on the Solaris 8 DVD or on the Solaris 8 Software 1 of 2 CD.

2. Change to the JumpStart directory.
3. Run the check script to validate the rules and custom_probes files.

```
$ ./check [-p path -r file_name]
```

-p path

Validates the custom_probes file by using the check script from the Solaris 8 software image for your platform, instead of the check script from the system you are using. *path* is the image on a local disk or a mounted Solaris 8 DVD or Solaris 8 Software 1 of 2 CD.

Use this option to run the most recent version of check if your system is running a previous version of the Solaris software.

<code>-r file_name</code>	Specifies a file name other than the one that is named <code>custom_probes</code> . By using the <code>-r</code> option, you can test the validity of a set of functions before integrating the functions into the <code>custom_probes</code> file.
---------------------------	---

As the check script runs, the script reports the validity of the `rules` and `custom_probes` files and each profile. If no errors are encountered, the script reports: "The custom JumpStart configuration is ok" and creates the `rules.ok` and `custom_probes.ok` files in the JumpStart directory.

4. Determine if the `custom_probes.ok` file is executable.

- If yes, go to step 5.
- If no, type the following command:
`chmod +x custom_probes`

5. Ensure that `root` owns the `custom_probes.ok` file and that the permissions are set to 755.

Performing a Custom JumpStart Installation

This chapter describes how to perform a custom JumpStart installation on a SPARC based or an IA based system. You need to follow these procedures on the system on which you intend to install the Solaris 8 software.

- “SPARC: To Perform an Installation or Upgrade With the Custom JumpStart Program” on page 204
- “IA: To Perform an Installation or Upgrade With the Custom JumpStart Program” on page 209

SPARC: Performing a Custom JumpStart Installation

SPARC: Task Map: Setting Up a System for a Custom JumpStart Installation

During a custom JumpStart installation, the JumpStart program attempts to match the system that is being installed to the rules in the `rules.ok` file. The JumpStart program reads the rules from the first rule through the last. A match occurs when the system that is being installed matches all the system attributes that are defined in the rule. As soon as a system matches a rule, the JumpStart program stops reading the `rules.ok` file and begins to install the system, based on the matched rule’s profile.

TABLE 26-1 SPARC: Task Map: Setting Up a System for a Custom JumpStart Installation

Task	Description	For instructions, go to
Check if the system is supported	Check the hardware documentation for system support in the Solaris 8 environment.	<i>Solaris 8 Sun Hardware Platform Guide</i>
Check if the system has enough disk space for the Solaris 8 software	Verify that you have planned enough space to install the Solaris software on your system.	Chapter 4
(Optional) Preconfigure system configuration information	You can use the <code>sysidcfg</code> file or the name service to preconfigure installation information for a system. If you preconfigure system information, the installation program does not prompt you to supply the information during the installation.	Chapter 7
Prepare the system for custom Jumpstart installation	Create and validate a <code>rules</code> file and profile files.	Chapter 23
(Optional) Prepare optional custom JumpStart features	If you are using <code>begin</code> scripts, <code>finish</code> scripts, or other optional features, prepare the scripts or files.	Chapter 24 and Chapter 25
(Optional) Set up the system to install over the network	To install a system from a remote Solaris 8 DVD or Solaris 8 Software <i>SPARC Platform Edition</i> CD image, you need to set up the system to boot and install from an install server or a boot server.	Chapter 12
Install or upgrade	Boot the system to initiate the installation or upgrade.	"SPARC: To Perform an Installation or Upgrade With the Custom JumpStart Program" on page 204

▼ SPARC: To Perform an Installation or Upgrade With the Custom JumpStart Program

1. If the system is part of a network, ensure that an Ethernet connector or similar network adapter is attached to your system.

2. **If you are installing a system that is connected through a `tip(1)` line, ensure that your window display is at least 80 columns wide and 24 rows long.**
To determine the current dimensions of your `tip` window, use the `stty(1)` command.
 3. **If you are using the system's DVD-ROM or CD-ROM drive to install the Solaris 8 software, insert the Solaris 8 *SPARC Platform Edition* DVD or the Solaris 8 Software 1 of 2 *SPARC Platform Edition* into the drive.**
 4. **If you are using a profile diskette, insert the profile diskette into the system's diskette drive.**
5. **Boot the system.**
- If the system is new, out-of-the-box, turn on the system.
 - If you want to install or upgrade an existing system, shut down the system. At the `ok` prompt, type the following command:

```
ok boot cdrom:net - install [url:ask] [dhcp] [nowin]
```

<code>cdrom</code>	Specifies to boot from a CD or a DVD. For a system with an older EEPROM, replace <code>cdrom</code> with <code>sd(0,6,2)</code> to boot from the system's CD-ROM or DVD-ROM drive.
<code>net</code>	Specifies to boot from an install server on the network.

<i>url</i>	<p>Specifies the location of the custom JumpStart files. You can specify a URL for files that are located in the following places:</p> <ul style="list-style-type: none"> ■ Local hard disk <ul style="list-style-type: none"> <code>file://jumpstart_dir_path/compressed_config_file</code> ■ NFS server <ul style="list-style-type: none"> <code>nfs://server_name:IP_address/jumpstart_dir_path/compressed_config_file</code> ■ HTTP server <ul style="list-style-type: none"> <code>http://server_name:IP_address/jumpstart_dir_path/compressed_config_file&proxy_info</code> <p>If you placed a <code>sysidcfg</code> file in the compressed configuration file, you must specify the IP address of the server that contains the file, as in the following example:</p> <pre>http://131.141.2.32/jumpstart/config.tar</pre> <p>If you saved the compressed configuration file on an HTTP server that is behind a firewall, you must use a proxy specifier during boot. You do not need to specify an IP address for the server that contains the file. You must specify an IP address for the proxy server, as in the following example:</p> <pre>http://www.shadow.com/jumpstart/config.tar&proxy=131.141.6.151</pre>
<i>ask</i>	<p>Specifies that the installation program prompt you to type the location of the compressed configuration file after the system boots and connects to the network.</p> <p>If you bypass the prompt by pressing Return, the installation program interactively configures the network parameters. The installation program then prompts you for the location of the compressed configuration file. If you bypass the prompt by pressing Return, the Solaris 8 Interactive Installation Program begins.</p>
<i>dhcp</i>	<p>Specifies to use a DHCP server to obtain network installation information that is needed to boot the system.</p> <p>If you do not specify to use a DHCP server, the system uses the <code>/etc/bootparams</code> file or the name service <code>bootparams</code> database.</p>
<i>nowin</i>	<p>Specifies not to begin the X program. You do not need to use the X program to perform a custom JumpStart installation, so you can reduce the installation time by using the <code>nowin</code> option.</p>

SPARC only – The system checks hardware and system components and your SPARC system boots. Booting lasts several minutes.

6. **If you did not preconfigure system information in the `sysidcfg` file, when prompted, answer the questions about system configuration.**

7. **Follow the instructions on the screen to install the software.**

When the JumpStart program finishes installing the Solaris software, the system reboots automatically.

After the installation is finished, installation logs are saved in a file. You can find the installation logs in the following directories:

- `/var/sadm/system/logs`
- `/var/sadm/install/logs`

IA: Performing a Custom JumpStart Installation

IA: Task Map: Setting Up a System for a Custom JumpStart Installation

During a custom JumpStart installation, the JumpStart program attempts to match the system that is being installed to the rules in the `rules.ok` file. The JumpStart program reads the rules from the first rule through the last rule. A match occurs when the system that is being installed matches all of the system attributes that are defined in the rule. As soon as a system matches a rule, the JumpStart program stops reading the `rules.ok` file and begins to install the system, based on the matched rule's profile.

TABLE 26-2 x86: Task Map: Setting Up a System for a Custom JumpStart Installation

Task	Description	For instructions, go to
Determine if you need to preserve an existing operating system and user data	If the existing operating system on the system uses the entire disk, you must preserve the existing operating system so it can co-exist with the Solaris 8 software. This decision determines how to specify the <code>fdisk(1M)</code> keyword in the system's profile.	"IA: <code>fdisk</code> Profile Keyword" on page 240
Check if the system is supported	Check the hardware documentation for system support in the Solaris 8 environment.	<i>Solaris 8 Hardware Compatibility Guide</i>
Check if the system has enough disk space for the Solaris 8 software	Verify that you have planned enough space to install the Solaris software on your system.	Chapter 4
(Optional) Preconfigure system configuration information	You can use the <code>sysidcfg</code> file or the name service to preconfigure installation information for a system. If you preconfigure system information, the installation program does not prompt you to supply the information during the installation.	Chapter 7
Prepare the system for custom JumpStart installation	Create and validate a <code>rules</code> file and profile files.	Chapter 23
(Optional) Prepare optional custom JumpStart features	If you are using <code>begin</code> scripts, <code>finish</code> scripts, or other optional features, prepare the scripts or files.	Chapter 24 and Chapter 25
(Optional) Set up the system to install over the network	To install a system from a remote Solaris 8 <i>Intel Platform Edition</i> DVD or Solaris 8 Software <i>Intel Platform Edition</i> CD image, you need to set up the system to boot and install from an install server or a boot server.	Chapter 12

TABLE 26-2 x86: Task Map: Setting Up a System for a Custom JumpStart Installation
(Continued)

Task	Description	For instructions, go to
Install or upgrade	Boot the system to initiate the installation or upgrade.	"IA: To Perform an Installation or Upgrade With the Custom JumpStart Program" on page 209

▼ IA: To Perform an Installation or Upgrade With the Custom JumpStart Program

1. If the system is part of a network, ensure that an Ethernet connector or similar network adapter is attached into your system.
2. If you want to install a system that is connected through a `tip(1)` line, ensure that your window display is at least 80 columns wide and 24 rows long.
To determine the current dimensions of your `tip` window, use the `stty(1)` command.
3. If you are using a profile diskette, insert the profile diskette into the system's diskette drive.

Note – The profile diskette contains a copy of the Solaris 8 Device Configuration Assistant in addition to profile information. If you are using PXE network boot to boot the system over the network, you must configure your system so that the system boots from the network and not from the diskette.

4. If you are using the system's DVD-ROM or CD-ROM drive to install the Solaris 8 software, insert the Solaris 8 *Intel Platform Edition* DVD or the Solaris 8 Software 1 of 2 *Intel Platform Edition* into the drive.
5. Decide how to boot the system.
 - If you boot from the Solaris 8 DVD or the Solaris 8 Software 1 of 2 CD, insert the disc. Your system's BIOS must support booting from a DVD or a CD.
 - From the network by using PXE network boot – Ensure that the capability is turned on by using your system's BIOS setup tool or your network adapter's configuration setup tool. For detailed instructions on configuring your system to use PXE network boot, see *Solaris 8 (Intel Platform Edition) Hardware Compatibility List*.
 - From a Diskette – Use the profile diskette that you inserted into the drive in step 3 or insert the Solaris 8 Device Configuration Assistant *Intel Platform Edition* into the system's diskette drive.

IA only – You can access the boot diskette software by downloading and copying the software to a diskette from the Solaris Developer Connection at http://soldc.sun.com/support/drivers/dcs_diskettes.

6. If the system is off, turn the system on. If the system is on, reboot the system.

The Device Configuration Assistant identifies the system's devices.

7. On the Boot Solaris screen, select the device from which to boot the system. Select DVD, CD, Net, or Disk.

8. At the prompt, perform one of the following:

Select the type of installation you want to perform:

```
1 Solaris Interactive
2 Custom JumpStart
```

Enter the number of your choice followed by the <ENTER> key.

If you enter anything else, or if you wait for 30 seconds, an interactive installation will be started.

To select the custom JumpStart method, perform one of the following actions:

Note – If you do not type 2 or type a boot command within 30 seconds, the Solaris 8 Interactive Installation Program begins. You can stop the timer by typing any key on the command line.

- Type 2 and press Enter.
- To specify the location of the custom JumpStart configuration files, type the following command:

```
b install [url:ask] [dhcp] [nowin]
```

<i>url</i>	<p>Specifies the location of the custom JumpStart files. You can specify a URL for files that are located in the following places:</p> <ul style="list-style-type: none"> ■ Local hard disk <p style="margin-left: 2em;"><i>file://jumpstart_dir_path/compressed_config_file</i></p> ■ NFS server <p style="margin-left: 2em;"><i>nfs://server_name:IP_address/jumpstart_dir_path/compressed_config_file</i></p> ■ HTTP server <p style="margin-left: 2em;"><i>http://server_name:IP_address/jumpstart_dir_path/compressed_config_file&proxy_info</i></p> <p>If you placed a <i>sysidcfg</i> file in the compressed configuration file, you must specify the IP address of the server that contains the file, as in the following example:</p> <p><i>http://131.141.2.32/jumpstart/config.tar</i></p> <p>If you saved the compressed configuration file on an HTTP server that is behind a firewall, you must use a proxy specifier during boot. You do not need to specify an IP address for the server that contains the file. You must specify an IP address for the proxy server, as in the following example:</p> <p><i>http://www.shadow.com/jumpstart/config.tar&proxy=131.141.6.151</i></p>
<i>ask</i>	<p>Specifies that the installation program prompt you to type the location of the compressed configuration file after the system boots and connects to the network.</p> <p>If you bypass the prompt by pressing Return, the installation program interactively configures the network parameters. The installation program then prompts you for the location of the compressed configuration file. If you bypass the prompt by pressing Return, the Solaris 8 Interactive Installation Program begins.</p>
<i>dhcp</i>	<p>Specifies to use a DHCP server to obtain network installation information that is needed to boot the system.</p> <p>If you do not specify to use a DHCP server, the system uses the <i>/etc/bootparams</i> file or the name service <i>bootparams</i> database.</p>
<i>nowin</i>	<p>Specifies not to begin the X program. You do not need to use the X program to perform a custom JumpStart installation, so you can reduce the installation time by using the <i>nowin</i> option.</p>

9. If you did not preconfigure system information in the *sysidcfg* file, when prompted, answer the questions about system configuration.

10. Follow the instructions on the screen to install the software.

When the JumpStart program finishes installing the Solaris software, the system reboots automatically.

After the installation is finished, installation logs are saved in a file. You can find the installation logs in the following directories:

- `/var/sadm/system/logs`
- `/var/sadm/install/logs`

Example of Installing Solaris Software With Custom JumpStart

This chapter provides an example of setting up and installing Solaris software on both SPARC based and IA based systems by using a custom JumpStart installation.

- “Sample Site Setup” on page 213
- “Create an Install Server” on page 214
- “Create a Boot Server for Marketing Systems” on page 216
- “Create a JumpStart Directory” on page 216
- “Share the JumpStart Directory” on page 217
- “SPARC: Create the Engineering Group’s Profile” on page 217
- “IA: Create the Marketing Group’s Profile” on page 218
- “Update the `rules` File” on page 218
- “Validate the `rules` File” on page 219
- “SPARC: Set Up Engineering Systems to Install From the Network” on page 219
- “IA: Set Up Marketing Systems to Install From the Network” on page 220
- “SPARC: Boot the Engineering Systems and Install Solaris 8 Software” on page 221
- “IA: Boot the Marketing Systems and Install Solaris 8 Software” on page 221

Sample Site Setup

Figure 27–1 shows the site setup for this example.

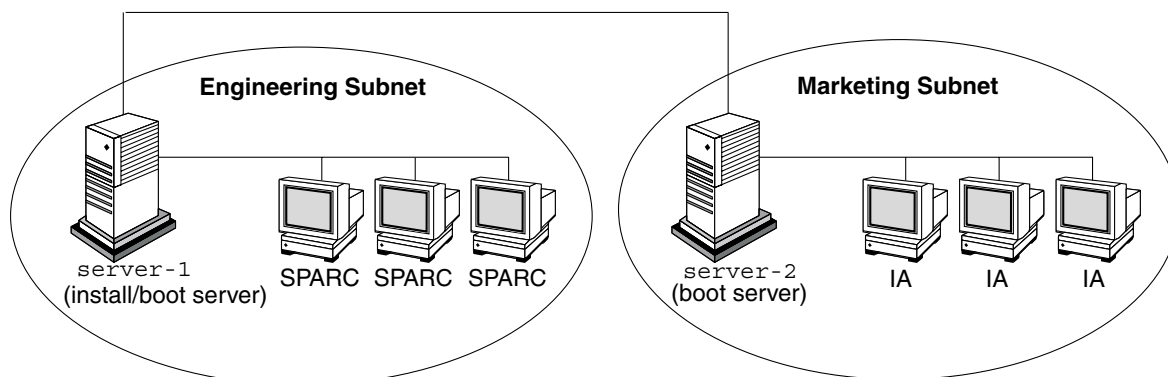


FIGURE 27-1 Sample Site Setup

At this sample site, the conditions are as follows:

- SPARC: The engineering group is located on its own subnet. This group uses SPARCstation™ systems for software development.
- IA: The marketing group is located on its own subnet. This group uses IA based systems for running word processors, spreadsheets, and other office productivity tools.
- The site uses NIS. The Ethernet addresses, IP addresses, and host names of the systems are preconfigured in the NIS maps. The subnet mask, date and time, and geographic region for the site are also preconfigured in the NIS maps.

Note – The peripheral devices for the marketing systems are preconfigured in the `sysidcfg` file.

- Both the engineering and marketing systems are to be installed with Solaris 8 software from the network.

Create an Install Server

Because the groups need to install Solaris 8 software from the network, you make `server-1` an install server for both groups. You use the `setup_install_server(1M)` command to copy the images to the `server-1` local disk (in the `/export/install` directory). Copy the images from the Solaris 8 Software CDs and the Solaris 8 Languages CD or from the Solaris 8 DVDs.

You must copy the image from the disc to an empty directory, in these examples, the `sparc_8` and `ia_8` directories.

EXAMPLE 27-1 Copying the Solaris 8 CDs

Insert the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD in the CD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# mkdir -p /export/install/sparc_8
server-1# cd /CD_mount_point/Solaris_8/Tools
server-1# ./setup_install_server /export/install/sparc_8
```

Insert the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD in the CD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# cd /CD_mount_point/Solaris_8/Tools
server-1# ./add_to_install_server /export/install/sparc_8
```

Insert the Solaris 8 Languages *SPARC Platform Edition* CD in the CD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# cd /CD_mount_point/Tools
server-1# ./add_to_install_server /export/install/sparc_8
```

Insert the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD in the CD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# mkdir -p /export/install/ia_8
server-1# cd /CD_mount_point/Solaris_8/Tools
server-1# ./setup_install_server /export/install/ia_8
```

Insert the Solaris 8 Software 2 of 2 *Intel Platform Edition* CD in the CD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# cd /CD_mount_point/Solaris_8/Tools
server-1# ./add_to_install_server /export/install/ia_8
```

Insert the Solaris 8 Languages *Intel Platform Edition* CD in the CD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# cd /CD_mount_point/Tools
server-1# ./add_to_install_server /export/install/ia_8
```

EXAMPLE 27-2 Copying the Solaris 8 DVDs

Insert the Solaris 8 *SPARC Platform Edition* DVD in the DVD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# mkdir -p /export/install/sparc_8
server-1# cd /DVD_mount_point/Solaris_8/Tools
server-1# ./setup_install_server /export/install/sparc_8
```

Insert the Solaris 8 *Intel Platform Edition* DVD in the DVD-ROM drive that is attached to `server-1` and type the following commands:

```
server-1# mkdir -p /export/install/ia_8
server-1# cd /DVD_mount_point/Solaris_8/Tools
```

EXAMPLE 27-2 Copying the Solaris 8 DVDs (Continued)

```
server-1# ./setup_install_server /export/install/ia_8
```

Create a Boot Server for Marketing Systems

Systems cannot boot from an install server on a different subnet, so you make `server-2` a boot server on the marketing group's subnet. You use the `setup_install_server(1M)` command to copy the boot software from the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD or from the from the Solaris 8 *Intel Platform Edition* DVD to the `server-2` local disk (in the `/export/boot` directory).

If you insert the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD in the CD-ROM drive that is attached to `server-2`, type the following command:

```
server-2# cd /CD_mount_point/Solaris_8/Tools
server-2# ./setup_install_server -b /export/boot
```

If you insert the Solaris 8 *Intel Platform Edition* DVD in the DVD-ROM drive that is attached to `server-2`, type the following command:

```
server-2# cd /DVD_mount_point/Solaris_8/Tools
server-2# ./setup_install_server -b /export/boot
```

In the `setup_install_server` command, `-b` specifies that `setup_install_server` is to copy the boot information to the directory that is named `/export/boot`.

Create a JumpStart Directory

Now that you have the install server and boot server set up, you create a JumpStart directory on `server-1`. You can use any system on the network. This directory holds files that are required for a custom JumpStart installation of Solaris software. You set up this directory by copying the sample directory from the Solaris 8 DVD image or from the Solaris 8 Software 1 of 2 CD image that has been copied to `/export/install`:


```
server-1# mkdir /jumpstart
server-1# cp -r /export/install/sparc_8/Solaris_8/Misc/jumpstart_sample /jumpstart
```

Share the JumpStart Directory

To make the rules file and profiles accessible to systems on the network, you share the `/jumpstart` directory. To enable the sharing of a directory, you add the following line to the `/etc/dfs/dfstab` file:

```
share -F nfs -o ro,anon=0 /jumpstart
```

Then, at the command line, you type the `shareall` command:

```
server-1# shareall
```

SPARC: Create the Engineering Group's Profile

For the engineering systems, you create a file that is named `eng_prof` in the `/jumpstart` directory. The `eng_prof` file contains the following entries, which define the Solaris 8 software to be installed on systems in the engineering group:

```
install_type  initial_install1
system_type   standalone2
partitioning  default3
cluster       SUNWCprog4
fileys        any 512 swap5
```

1. Specifies that the installation is to be treated as an initial installation, as opposed to an upgrade.
2. Specifies that the engineering systems are standalone systems.
3. Specifies that the JumpStart software uses default disk partitioning for installing Solaris software on the engineering systems.
4. Specifies that the Developer System Support software group is to be installed.
5. Specifies that each system in the engineering group is to have 512 Mbytes of swap space.

IA: Create the Marketing Group's Profile

For the marketing systems, you create a file that is named `marketing_prof` in the `/jumpstart` directory. The `marketing_prof` file contains the following entries, which define the Solaris 8 software to be installed on systems in the marketing group:

```
install_type  initial_install1
system_type   standalone2
partitioning  default3
cluster       SUNWCuser4package      SUNWaudio5
```

1. Specifies that the installation is to be treated as an initial installation, as opposed to an upgrade.
2. Specifies that the marketing systems are standalone systems.
3. Specifies that the JumpStart software is to use default disk partitioning for installing Solaris on the marketing systems.
4. Specifies that the End User System Support software group is to be installed.
5. Specifies that the audio demo software package is to be added to each system.

Update the rules File

Now you must add rules to the `rules` file. The Solaris 8 Interactive Installation Program uses the rules to select the correct installation (profile) for each system during a custom JumpStart installation.

At this site, each department is located on its own *subnet* and has its own network address. The engineering department is located on subnet 255.222.43.0. The marketing department is located on 255.222.44.0. You can use this information to control how the engineering and marketing systems are installed with the Solaris 8 software. In the `/jumpstart` directory, you edit the `rules` file, delete all of the example rules, and add the following lines to the file:

```
network 255.222.43.0 - eng_prof -
network 255.222.44.0 - marketing_prof -
```

Basically, these rules state that systems on the 255.222.43.0 network are to be installed with the Solaris 8 software by using the `eng_prof` profile. The systems on the 255.222.44.0 network are to be installed with the Solaris 8 software by using the `marketing_prof` profile.

Note – You can use the sample rules to use a network address to identify the systems to be installed with the Solaris 8 software by using `eng_prof` and `marketing_prof`, respectively. You can also use host names, memory size, or model type as the rule keyword. Table 28-1 contains a complete list of keywords you can use in a `rules` file.

Validate the `rules` File

After the `rules` and profiles are set up, you run the check script to verify that the files are correct:

```
server-1# cd /jumpstart
server-1# ./check
```

If the check script does not find any errors, the script creates the `rules.ok` file.

SPARC: Set Up Engineering Systems to Install From the Network

After setting up the `/jumpstart` directory and files, you use the `add_install_client` command on the install server, `server-1`, to set up the engineering systems to install the Solaris 8 software from the install server. `server-1` is also the boot server for the engineering group's subnet.

```
server-1# cd /export/install/sparc_8/Solaris_8/Tools
server-1# ./add_install_client -c server-1:/jumpstart host-eng1 sun4m
server-1# ./add_install_client -c server-1:/jumpstart host-eng2 sun4m
.
.
.
.
```

In the `add_install_client` command, the options that are used have the following meanings:

<code>-c</code>	Specifies the server (<code>server-1</code>) and path (<code>/jumpstart</code>) to the JumpStart directory.
-----------------	---

host-eng1	The name of a system in the engineering group.
host-eng2	The name of another system in the engineering group.
sun4m	Specifies the platform group of the systems that use server-1 as an install server. The platform group is for SPARCstation 5 systems.

IA: Set Up Marketing Systems to Install From the Network

Next, you use the `add_install_client` command on the boot server (`server-2`) to set up the marketing systems to boot from the boot server and install the Solaris 8 software from the install server (`server-1`):

```
server-2# cd /marketing/boot-dir/Solaris_8/Tools
server-2# ./add_install_client -s server-1:/export/install/ia_8 \
-c server-1:/jumpstart host-mkt1 i86pc
server-2# ./add_install_client -s server-1:/export/install/ia_8 \
-c server-1:/jumpstart host-mkt2 i86pc
server-2# ./add_install_client -d -s server-1:/export/install/ia_8 \
-c server-1:/jumpstart SUNW.i86pc i86pc
.
.
.
```

In the `add_install_client` command, the options that are used have the following meanings:

-d	Specifies that the client is to use DHCP to obtain the network install parameters. This option is required for clients to use PXE network boot to boot from the network and is optional for network boot clients that do not use PXE network boot.
-s	Specifies the install server (<code>server-1</code>) and the path to the Solaris 8 software (<code>/export/install/ia_8</code>).
-c	Specifies the server (<code>server-1</code>) and path (<code>/jumpstart</code>) to the JumpStart directory.
host-mkt1	The name of a system in the marketing group.
host-mkt2	The name of another system in the marketing group.
SUNW.i86pc	The DHCP class name for all Solaris IA clients. If you want to configure all Solaris IA DHCP clients with a single command, use this class name.

i86pc

Specifies the platform group of the systems that use this boot server. The platform name represents IA based systems.

SPARC: Boot the Engineering Systems and Install Solaris 8 Software

After setting up the servers and files, you can boot the engineering systems by using the following `boot` command at the `ok (PROM)` prompt of each system:

```
ok boot net - install
```

The Solaris operating environment is automatically installed on the engineering group's systems.

IA: Boot the Marketing Systems and Install Solaris 8 Software

You can boot the system from one of the following:

- Solaris 8 Software 1 of 2 *Intel Platform Edition* CD
- Solaris 8 *Intel Platform Edition* DVD
- The network by using PXE network boot
- The profile diskette
- The Solaris 8 Device Configuration Assistant *Intel Platform Edition*

Solaris 8 is automatically installed on the marketing group's systems.

Custom JumpStart Reference

This chapter lists keywords and values that you can use in the `rules` file, profiles, and begin and finish scripts.

- “Rule Keywords and Values” on page 223
- “Profile Keywords and Values” on page 228
- “Custom JumpStart Environment Variables” on page 253
- “Probe Keywords and Values” on page 256

Rule Keywords and Values

Table 28–1 describes the keywords and values that you can use in the `rules` file. For detailed instructions to create a `rules` file, see “Creating the `rules` File” on page 167.

TABLE 28–1 Descriptions of Rule Keywords and Values

Keyword	Value	Matches
<code>any</code>	minus sign (-)	Anything. The <code>any</code> keyword always succeeds.
<code>arch</code>	<p><i>processor_type</i></p> <p>Valid values for <i>processor_type</i> are the following:</p> <ul style="list-style-type: none"> ■ SPARC: <code>sparc</code> ■ IA: <code>i386</code> 	<p>A system’s processor type.</p> <p>The <code>uname -p</code> command reports the system’s processor type.</p>

TABLE 28-1 Descriptions of Rule Keywords and Values (Continued)

Keyword	Value	Matches
disksize	<p><i>actual_disk_name size_range</i></p> <p><i>actual_disk_name</i> - A disk name in the form <i>cxt ydz</i>, such as <code>c0t3d0</code> or <code>c0d0</code>, or the special word <code>rootdisk</code>. If <code>rootdisk</code> is used, the disk to be matched is determined in the following order:</p> <ul style="list-style-type: none"> ■ SPARC: The disk that contains the preinstalled boot image, which is a new SPARC based system with factory JumpStart installed ■ The <code>c0t3d0s0</code> disk, if the disk exists ■ The first available disk (searched in kernel probe order) <p><i>size_range</i> - The size of the disk, which must be specified as a range of Mbytes (<i>x-x</i>).</p>	<p>The name and size of a system's disk in Mbytes.</p> <p>Example:</p> <pre>disksize c0t3d0 250-300</pre> <p>In the example, the JumpStart program attempts to match a system disk that is named <code>c0t3d0</code>. The disk can hold between 250 and 300 Mbytes of information.</p> <p>Example:</p> <pre>disksize rootdisk 750-1000</pre> <p>In the example, the JumpStart program first attempts to match a system disk that contains a preinstalled boot image. Next, the JumpStart program attempts to match the <code>c0t3d0s0</code> disk, if the disk exists. Finally, the JumpStart program attempts to match the first available disk that can hold between 750 Mbytes and 1 Gbyte of information.</p> <p>Note – When calculating <i>size_range</i>, remember that a Mbyte equals 1,048,576 bytes. A disk might be advertised as a “535-Mbyte” disk, but the disk might contain only 510 million bytes of disk space. The JumpStart program views the “535-Mbyte” disk as a 510-Mbyte disk because $535,000,000 / 1,048,576 = 510$. A “535-Mbyte” disk does not match a <i>size_range</i> equal to 530–550.</p>
domainname	<i>actual_domain_name</i>	<p>A system's domain name, which controls how a name service determines information.</p> <p>If you have a system already installed, the <code>domainname</code> command reports the system's domain name.</p>
hostaddress	<i>actual_IP_address</i>	A system's IP address.

TABLE 28-1 Descriptions of Rule Keywords and Values (Continued)

Keyword	Value	Matches
hostname	<i>actual_host_name</i>	A system's host name. If you have a system that is already installed, the <code>uname -n</code> command reports the system's host name.
installed	<i>slice version</i> <i>slice</i> - A disk slice name in the form <i>cwtxdysz</i> , such as <code>c0t3d0s5</code> , or the special words <code>any</code> or <code>rootdisk</code> . If <code>any</code> is used, the JumpStart program attempts to match all of the system's disks in kernel probe order. If <code>rootdisk</code> is used, the disk to be matched is determined in the following order: <ul style="list-style-type: none"> ■ SPARC: The disk that contains the preinstalled boot image, which is a new SPARC based system with factory JumpStart installed ■ The <code>c0t3d0s0</code> disk, if the disk exists ■ The first available disk searched in kernel probe order <i>version</i> - A version name or the special words <code>any</code> or <code>upgrade</code> . If <code>any</code> is used, any Solaris or SunOS release is matched. If <code>upgrade</code> is used, any Solaris 2.1 or compatible release that can be upgraded is matched. If the JumpStart program finds a Solaris release but is unable to determine the version, the version that is returned is <code>SystemV</code> .	A disk that has a root (/) file system that corresponds to a particular version of Solaris software. Example: <pre>installed c0t3d0s1 Solaris_9</pre> In the example, the JumpStart program attempts to match a system that has a Solaris 8 root (/) file system on <code>c0t3d0s1</code> .
karch	<i>actual_platform_group</i> Valid values are <code>sun4m</code> , <code>sun4u</code> , <code>i86pc</code> , <code>prep</code> . A list of systems and their corresponding platform group is presented in the <i>Solaris 8 Sun Hardware Platform Guide</i> .	A system's platform group. If you have a system that is already installed, the <code>arch -k</code> command or the <code>uname -m</code> command reports the system's platform group.

TABLE 28-1 Descriptions of Rule Keywords and Values (Continued)

Keyword	Value	Matches
memsize	<i>physical_mem</i> The value must be a range of Mbytes , <i>x-x</i> , or a single Mbyte value.	A system's physical memory size in Mbytes. Example: <code>memsize 16-32</code> The example tries to match a system with a physical memory size between 16 and 32 Mbytes. If you have a system that is already installed, the output of the <code>prtconf</code> command, line 2, reports the system's physical memory size.
model	<i>actual_platform_name</i>	A system's platform name. See the <i>Solaris 8 Sun Hardware Platform Guide</i> for a list of valid platform names. To find the platform name of an installed system, use the <code>uname -i</code> command or the output of the <code>prtconf</code> command, line 5. Note – If the <i>actual_platform_name</i> contains spaces, you must replace spaces with underscores (_). Example: <code>SUNW,Sun_4_50</code>
network	<i>network_num</i>	A system's network number, which the JumpStart program determines by performing a logical AND between the system's IP address and the subnet mask. Example: <code>network 193.144.2.8</code> The example tries to match a system with a 193.144.2.8 IP address, if the subnet mask is 255.255.255.0.

TABLE 28-1 Descriptions of Rule Keywords and Values (Continued)

Keyword	Value	Matches
osname	Solaris_2.x	<p>A version of Solaris software already installed on a system.</p> <p>Example:</p> <pre>osname Solaris_7</pre> <p>In the example, the JumpStart program attempts to match a system with the Solaris 7 operating environment already installed.</p>
probe	probe_keyword	<p>A valid probe keyword or a valid custom probe keyword.</p> <p>Example:</p> <pre>probe disks</pre> <p>The example returns the size of a system's disks in Mbytes and in kernel probe order, for example, c0t3d0s1, c0t4d0s0, on a SPARC system. The JumpStart program sets the SI_DISKLIST, SI_DISKIZES, SI_NUMDISKS, and SI_TOTALDISK environment variables.</p> <p>Note – The probe keyword is unique in that the keyword does not attempt to match an attribute and run a profile. The probe keyword returns a value. Consequently, you cannot specify begin scripts, profiles, and finish scripts with the probe rule keyword.</p> <p>Probe keywords are described in Chapter 25.</p>

TABLE 28-1 Descriptions of Rule Keywords and Values (Continued)

Keyword	Value	Matches
totaldisk	<i>size_range</i> The value must be specified as a range of Mbytes (x-x).	<p>The total disk space on a system in Mbytes. The total disk space includes all the operational disks that are attached to a system.</p> <p>Example:</p> <pre>totaldisk 300-500</pre> <p>In the example, the JumpStart program tries to match a system with a total disk space between 300 and 500 Mbytes.</p> <p>Note – When calculating <i>size_range</i>, remember that one Mbyte equals 1,048,576 bytes. A disk might be advertised as a “535-Mbyte” disk, but the disk might have only 510 million bytes of disk space. The JumpStart program views the “535-Mbyte” disk as a 510-Mbyte disk because $535,000,000 / 1,048,576 = 510$. A “535-Mbyte” disk does not match a <i>size_range</i> equal to 530-550.</p>

Profile Keywords and Values

This section describes the profile keywords and values that you can use in a profile. For detailed instructions to create a profile, see “Creating a Profile” on page 171.

Profile Keywords at a Glance

Table 28-2 provides a quick way to determine which keywords you can use based on your installation scenario. Unless otherwise noted in the keyword descriptions, the keyword can only be used with the initial installation option.

TABLE 28-2 Overview of Profile Keywords

Profile Keywords	Installation Scenarios				
	Standalone System (Non-Networked)	Standalone System (Networked) or Server	OS Server	Upgrade	Upgrade With Disk Space Reallocation
archive_location	✓	✓			
backup_media					✓
boot_device	✓	✓	✓		
client_arch			✓		
client_root			✓		
client_swap			✓		
cluster (adding software groups)	✓	✓	✓		
cluster (adding or deleting clusters)	✓	✓	✓	✓	✓
dontuse	✓	✓	✓		
fdisk (IA only)	✓	✓	✓		
filesystem (mounting remote file systems)		✓	✓		
filesystem (creating local file systems)	✓	✓	✓		
geo	✓	✓	✓	✓	✓
install_type	✓	✓	✓	✓	✓
isa_bits	✓	✓	✓	✓	✓
layout_constraint					✓
locale	✓	✓	✓	✓	✓
num_clients			✓		
package	✓	✓	✓	✓	✓
partitioning	✓	✓	✓		
root_device	✓	✓	✓	✓	✓
system_type	✓	✓	✓		
usedisk	✓	✓	✓		

Profile Keyword Descriptions and Examples

archive_location Keyword

`archive_location retrieval_type location`

The values of *retrieval_type* and *location* depend on where the Web Start Flash archive is stored. The following sections contain the values you can use for *retrieval_type* and *location* and examples of how to use the `archive_location` keyword.

- “NFS Server” on page 230
- “HTTP Server” on page 231
- “Local Tape” on page 232
- “Local Device” on page 233
- “Local File” on page 234

NFS Server

If the archive is stored on an NFS server, use the following syntax for the `archive_location` keyword.

`archive_location nfs server_name:/path/filename retry n`

Valid <i>retrieval_type</i> Values	Valid <i>location</i> Values	Specifies
nfs	<code>server_name:/path/filename retry n</code>	<ul style="list-style-type: none">■ <i>server_name</i> is the name of the server where you stored the archive.■ <i>path</i> is the location of the archive to be retrieved from the specified server. If the path contains \$HOST, the Web Start Flash installation utilities replace \$HOST with the name of the clone system that you are installing.■ <i>filename</i> is the name of the Web Start Flash archive file.■ <i>retry n</i> is an optional keyword. <i>n</i> is the maximum number of times the Web Start Flash utilities attempt to mount the archive.

Examples:

`archive_location nfs golden:/archives/usrarchive`

`archive_location nfs://golden/archives/usrarchive`

HTTP Server

If the archive is stored on an HTTP server, use the following syntax for the `archive_location` keyword.

```
archive_location http server_name:port path/filename optional_keywords
```

Valid <i>retrieval_type</i> Values	Valid <i>location</i> Values	Specifies
http	<i>server_name:port path/filename optional_keywords</i>	<ul style="list-style-type: none"> ■ <i>server_name</i> is the name of the server where you stored the archive. <i>server_name</i> can be a port number or the name of a TCP service that has a port number that is determined at runtime. ■ <i>port</i> is an optional port. If you do not specify a port, the Web Start Flash installation utilities use the default HTTP port number, 80. ■ <i>path</i> is the location of the archive to be retrieved from the specified server. If the path contains \$HOST, the Web Start Flash installation utilities replace \$HOST with the name of the clone system that you are installing. ■ <i>filename</i> is the name of the Web Start Flash archive file. ■ <i>optional_keywords</i> are the optional keywords that you can specify when you retrieve a Web Start Flash archive from an HTTP server.

TABLE 28-3 Optional Keywords to Use With `archive_location http`

Keywords	Value Definitions
<code>auth basic user_name password</code>	<p>If the archive is located on an HTTP server that is password protected, you must include the user name and password that you need to access the HTTP server in the profile file.</p> <p>Note – The use of this authentication method in a profile that is intended for use with custom JumpStart is risky. Unauthorized users might have access to the profile file that contains the password.</p>

TABLE 28-3 Optional Keywords to Use With `archive_location http` (Continued)

Keywords	Value Definitions
<code>timeout min</code>	<p>The <code>timeout</code> keyword enables you to specify, in minutes, the maximum length of time that is allowed to pass without receipt of data from the HTTP server before the connection is closed, reopened, and resumed from the point where the timeout occurred. If you specify a <code>timeout</code> value of 0 (zero), the connection is not reopened because of inactivity.</p> <p>If a time-out reconnection occurs, the Web Start Flash installation utilities attempt to resume the installation at the last known position in the archive. If the Web Start Flash installation utilities cannot resume the installation at the last known position, the retrieval restarts from the beginning of the archive and the data that was retrieved prior to the timeout is discarded.</p>
<code>proxy host:port</code>	<p>The <code>proxy</code> keyword allows you to specify a proxy host and proxy port. You can use a proxy host to retrieve a Web Start Flash archive from the other side of a firewall. You must supply a proxy port when you specify the <code>proxy</code> keyword.</p>

Examples:

```
archive_location http silver /archives/usrarchive auth basic user1 secret timeout 5
```

```
archive_location http silver /archives/usrarchive auth basic user1 secret timeout 5
```

Local Tape

If the archive is stored on a tape, use the following syntax for the `archive_location` keyword.

```
archive_location local_tape device position
```


Valid <i>retrieval_type</i> Values	Valid <i>location</i> Values	Specifies
local_tape	<i>device position</i>	<ul style="list-style-type: none"> ■ <i>device</i> is the name of the tape drive where you stored the Web Start Flash archive. If the device name is a canonical path, the Web Start Flash installation utilities retrieve the archive from the path to the device node. If you supply a device name that is not a canonical path, the Web Start Flash installation utilities add <code>/dev/rmt/</code> to the path. ■ <i>position</i> designates the place on the tape drive where you saved the archive. If you do not supply a position, the Web Start Flash installation utilities retrieve the archive from the current position on the tape drive. By specifying a <i>position</i>, you can place a begin script or a <code>sysidcfg</code> file on the tape drive before the archive.

Examples:

```
archive_location local_tape /dev/rmt/0n 5
```

```
archive_location local_tape 0n 5
```

Local Device

You can retrieve a Web Start Flash archive from a local device if you stored the Web Start Flash archive on a file system-oriented, random-access device, such as a diskette or a CD-ROM. Use the following syntax for the `archive_location` keyword.

Note – You can retrieve an archive from stream-oriented devices, such as tape, by using the syntax for local tape.

```
archive_location local_device device path/filename file_system_type
```

Valid <i>retrieval_type</i> Values	Valid <i>location</i> Values	Specifies
local_device	<i>device path/filename</i> <i>file_system_type</i>	<ul style="list-style-type: none"> ■ <i>device</i> is the name of the drive where you stored the Web Start Flash archive. If the device name is a canonical path, the device is mounted directly. If you supply a device name that is not a canonical path, the Web Start Flash installation utilities add <code>/dev/dsk/</code> to the path. ■ <i>path</i> is the path to the Web Start Flash archive, relative to the root of the file system on the device you specified. If the path contains <code>\$HOST</code>, the Web Start Flash installation utilities replace <code>\$HOST</code> with the name of the clone system that you are installing. ■ <i>filename</i> is the name of the Web Start Flash archive file. ■ <i>file_system_type</i> specifies the type of file system on the device. If you do not supply a file system type, the Web Start Flash installation utilities attempt to mount a UFS file system. If the UFS mount fails, the Web Start Flash installation utilities attempt to mount an HSFS file system.

Examples:

To retrieve an archive from a local hard drive that is formatted as a UFS file system, use the following command:

```
archive_location local_device c0t0d0s0 /archives/$HOST
```

To retrieve an archive from a local CD-ROM that has an HSFS file system, use the following command:

```
archive_location local_device c0t0d0s0 /archives/usrarchive
```

Local File

You can retrieve an archive that you stored in the miniroot from which you booted the clone system as a local file. When you perform a custom JumpStart installation, you boot the system from a CD-ROM or an NFS-based miniroot. The installation software is loaded and run from this miniroot. Therefore, a Web Start Flash archive that you stored in the CD-ROM or NFS-based miniroot is accessible as a local file. Use the following syntax for the `archive_location` keyword.

archive_location local_file *path/filename*

Valid <i>retrieval_type</i> Values	Valid <i>location</i> Values	Specifies
local_file	<i>path/filename</i>	<ul style="list-style-type: none">■ <i>path</i> is the location of the archive. The path must be accessible to the system as a local file while the system is booted from the Solaris 8 Installation CD or from the Solaris 8 DVD. The system cannot access <i>/net</i> when it is booted from the Solaris 8 Installation CD or from the Solaris 8 DVD.■ <i>filename</i> is the name of the Web Start Flash archive file.

Examples:

```
archive_location local_file /archives/usrarchive
```

```
archive_location local_file /archives/usrarchive
```

backup_media Profile Keyword

backup_media *type path*

Note – You can use `backup_media` only with the upgrade option when disk space reallocation is required.

`backup_media` defines the media that is to be used to back up file systems if space needs to be reallocated during an upgrade because of a lack of space. If multiple tapes or diskettes are required for the backup, you are prompted to insert tapes or diskettes during the upgrade.

Valid <i>type</i> Values	Valid <i>path</i> Values	Specifies
local_tape	<i>/dev/rmt/n</i>	A local tape drive on the system that is being upgraded. <i>path</i> must be the character (raw) device path for the tape drive, where <i>n</i> is the number of the tape drive.

Valid <i>type</i> Values	Valid <i>path</i> Values	Specifies
local_diskette	<i>/dev/rdisketten</i>	A local diskette drive on the system that is being upgraded. <i>path</i> must be the character (raw) device path for the diskette drive, where <i>n</i> is the number of the diskette drive. Diskettes that you use for the backup must be formatted.
local_filesystem	<i>/dev/dsk/cwtxdysz</i> <i>/file_system</i>	A local file system on the system that is being upgraded. You cannot specify a local file system that is being changed by the upgrade. <i>path</i> can be a block device path for a disk slice. For example, the <i>tx</i> in <i>/dev/dsk/cwtxdysz</i> might not be needed. Or, <i>path</i> can be the absolute path to a file system mounted by the <i>/etc/vfstab</i> file.
remote_filesystem	<i>host:/file_system</i>	An NFS file system on a remote system. <i>path</i> must include the name or IP address of the remote system, <i>host</i> , and the absolute path to the NFS file system, <i>file_system</i> . The NFS file system must have read/write access.
remote_system	<i>user@host:/directory</i>	A directory on a remote system that can be reached by a remote shell, <i>rsh</i> . The system that is being upgraded must have access to the remote system through the remote system's <i>.rhosts</i> file. <i>path</i> must include the name of the remote system <i>host</i> and the absolute path to the directory <i>directory</i> . If a user login ID <i>user</i> is not specified, <i>root</i> is used by default.

Examples:

```

backup_media local_tape /dev/rmt/0

backup_media local_diskette /dev/rdiskette1

backup_media local_filesystem /dev/dsk/c0t3d0s4

backup_media local_filesystem /export

backup_media remote_filesystem system1:/export/temp

backup_media remote_system user1@system1:/export/temp

```

boot_device Profile Keyword

```
boot_device device eeprom
```

`boot_device` designates the device where the JumpStart program is to install the root (/) file system and the system's boot device.

If you do not specify the `boot_device` keyword in a profile, the following `boot_device` keyword is specified by default during the installation: `boot_device` any update.

device – Use one of the following values.

- SPARC: `cwtxdysz` or `cxdsz` – The disk slice where the JumpStart program places the root (/) file system, for example, `c0t0d0s0`.
- IA: `cwtxdy` or `cxdy` – The disk where the JumpStart program places the root (/) file system, for example, `c0d0`.
- `existing` – The JumpStart program places the root (/) file system on the system's existing boot device.
- `any` – The JumpStart program chooses where to place the root (/) file system. The JumpStart program attempts to use the system's existing boot device. The JumpStart program might choose a different boot device if necessary.

eeprom – Choose to update or preserve the system's EEPROM.

Choose if you want to update or preserve the system's EEPROM to the specified boot device.

You must specify the `preserve` value.

- `update` – The JumpStart program updates the system's EEPROM to the specified boot device so that the installed system automatically boots from it.
- `preserve` – The boot device value in the system's EEPROM is not changed. If you specify a new boot device without changing the system's EEPROM, you need to change the system's EEPROM manually so it can automatically boot from the new boot device.

SPARC only – On SPARC systems, the *eeprom* value also allows you to update the system's EEPROM if you change the system's current boot device. By updating the system's EEPROM, the system can automatically boot from the new boot device.

Example:

```
boot_device c0t0d0s2 update
```

Note – `boot_device` must match any `filesystem` keywords that specify the root (/) file system and the `root_device` keyword, if specified.

client_arch Profile Keyword

`client_arch karch_value ...`

`client_arch` specifies that the operating system server is to support a different platform group than the server uses. If you do not specify `client_arch` in the profile, any diskless client that uses the operating system server must contain the same platform group as the server. You must specify each platform group that you want the operating system server to support.

Valid values for *karch_value* are `sun4m`, `sun4u`, and `i86pc`. For a detailed list of platform names and various systems, see *Solaris 8 Sun Hardware Guide*.

Note – You can use `client_arch` only when `system_type` is specified as `server`.

client_root Profile Keyword

`client_root root_size`

`client_root` defines the amount of root space, *root_size* in Mbytes, to allocate for each client. If you do not specify `client_root` in a server's profile, the installation software allocates 15 Mbytes of root space per client. The size of the client root area is used in combination with the `num_clients` keyword to determine how much space to reserve for the `/export/root` file system.

Note – You can use `client_root` only when `system_type` is specified as `server`.

client_swap Profile Keyword

`client_swap swap_size`

`client_swap` defines the amount of swap space, *swap_size* in Mbytes, to allocate for each diskless client. If you do not specify `client_swap` in the profile, 512 Mbytes of swap space is allocated by default.

Example:

```
client_swap 512
```

The example specifies that each diskless client is to have a swap space of 512 Mbytes.

Note – You can use `client_swap` only when `system_type` is specified as `server`.

cluster Profile Keyword (Adding Software Groups)

`cluster group_name`

`cluster` designates the software group to add to the system. The `group_name` for each software group is listed in the following table.

Software Group	group_name
Core	SUNWCreq
End User System Support	SUNWCuser
Developer System Support	SUNWCprog
Entire Distribution	SUNWCa11
Entire Distribution Plus OEM Support	SUNWCXa11

You can specify only one software group in a profile. The software group must be specified before other `cluster` and `package` entries. If you do not specify a software group with `cluster` in the profile, the end-user software group, `SUNWCuser`, is installed on the system.

cluster Profile Keyword (Adding or Deleting Clusters)

`cluster cluster_name add_delete_switch`

Note – `cluster` (adding or deleting clusters) can be used with both the initial installation and upgrade options.

`cluster` designates whether a cluster is to be added or deleted from the software group that is to be installed on the system.

`cluster_name` must be in the form `SUNWCname`. To view detailed information about clusters and their names, start `Admintool` on an installed system and choose `Software` from the `Browse` menu.

add_delete_switch represents the option `add` or `delete`. Use *add_delete_switch* to indicate whether to add or delete the cluster that is specified. If you do not specify *add_delete_switch*, `add` is used by default.

When you use `cluster` (adding or deleting clusters) during an upgrade, the following conditions apply:

- All clusters that are already on the system are automatically upgraded.
- If you specify *cluster_name* `add`, and *cluster_name* is not installed on the system, the cluster is installed.
- If you specify *cluster_name* `delete`, and *cluster_name* is installed on the system, the package is deleted *before* the upgrade begins.

dontuse Profile Keyword

`dontuse disk_name ...`

By default, the JumpStart program uses all of the operational disks on the system when `partitioning default` is specified. `dontuse` designates one or more disks that you do not want the JumpStart program to use. *disk_name* must be specified in the form `cxydz` or `cydz`, for example, `c0t0d0`.

Note – You cannot specify the `dontuse` keyword and the `usedisk` keyword in the same profile.

IA: fdisk Profile Keyword

`fdisk disk_name type size`

`fdisk` defines how the `fdisk` partitions are set up on an IA based system. You can specify `fdisk` more than once. When `fdisk` partitions an IA based system, the following occurs:

- All `fdisk` partitions on the disk are preserved, unless you delete the partitions with the `fdisk` keyword, by assigning *size* the value of `delete` or `0`. Also, all existing `fdisk` partitions are deleted when *size* is set to `all`.
- A Solaris `fdisk` partition that contains a root (`/`) file system is always designated as the active partition on the disk.

IA only – The system boots from the active partition by default.

- If the `fdisk` keyword is not specified in a profile, the following `fdisk` keyword is used by default during the installation:


```
fdisk all solaris maxfree
```

- `fdisk` entries are processed in the order in which the entries are listed in the profile.

disk_name – Use the following values to specify where the `fdisk` partition is to be created or deleted:

- `cxydz` or `cydz` – A specific disk, for example, `c0t3d0`.
- `rootdisk` – The variable that contains the value of the system’s root disk, which is determined by the JumpStart program as described in “How the System’s Root Disk Is Determined” on page 251.
- `all` – All the selected disks.

type – Use the following values to specify the type of `fdisk` partition that is to be created or deleted on the specified disk:

- `solaris` – A Solaris `fdisk` partition (SUNIXOS `fdisk` type).
- `dosprimary` – An alias for primary DOS `fdisk` partitions, not for `fdisk` partitions that are extended or reserved for data DOS. When you delete `fdisk` partitions by assigning *size* the value `delete`, `dosprimary` is an alias for the `DOSHUGE`, `DOSOS12`, and `DOSOS16` `fdisk` types. When you create an `fdisk` partition, `dosprimary` is an alias for the `DOSHUGE` `fdisk` partition.
- `DDD` – An integer `fdisk` partition. `DDD` is an integer between 1 and 255 inclusive.

IA only – You can specify this value only if *size* is `delete`.

- `0xHH` – A hexadecimal `fdisk` partition. `HH` is a hexadecimal number between 01 and FF.

IA only – You can specify this value only if *size* is `delete`.

The following table shows the integer and hexadecimal numbers for some of the `fdisk` types.

<i>fdisk</i> Type	<i>DDD</i>	<i>HH</i>
DOSOS12	1	01
PCIXOS	2	02
DOSOS16	4	04
EXTDOS	5	05
DOSHUGE	6	06

<i>fdisk</i> Type	<i>DDD</i>	<i>HH</i>
DOSDATA	86	56
OTHEROS	98	62
UNIXOS	99	63

size – Use one of the following values:

- *DDD* – An *fdisk* partition of size *DDD* in Mbytes is created on the specified disk. *DDD* must be an integer, and the JumpStart program automatically rounds the number up to the nearest cylinder boundary. Specifying a value of 0 is the same as specifying *delete*.
- *all* – An *fdisk* partition is created on the entire disk. All existing *fdisk* partitions are deleted.

IA only – The *all* value can be specified only if *type* is *solaris*.

- *maxfree* – An *fdisk* partition is created in the largest contiguous free space on the specified disk. If an *fdisk* partition of the specified *type* already exists on the disk, the existing *fdisk* partition is used. A new *fdisk* partition is *not* created on the disk.

IA only – The disk must contain at least one unused *fdisk* partition. Also, the disk must have free space or installation fails. The *maxfree* value can be specified only if *type* is *solaris* or *dosprimary*.

- *delete* – All *fdisk* partitions of the specified *type* are deleted on the specified disk.

filesys Profile Keyword (Mounting Remote File Systems)

```
filesys server:path server_address mount_pt_name [mount_options]
```

By using *filesys* with the listed values, the JumpStart program sets up the installed system to automatically mount remote file systems when the system boots. You can specify *filesys* more than once.

Example:

```
filesys sherlock:/export/home/user2 - /home
```

server: – The name of the server where the remote file system is located, followed by a colon.

path – The remote file system's mount point name. For example, `/usr` or `/export/home`.

server_address – The IP address of the server that is specified in *server:path*. If a name service is not running on the network, the *server_address* value can be used to populate the `/etc/hosts` file with the server's host name and IP address. If you are not specifying the server's IP address, you must specify a minus sign (-). For example, if you have a name service that is running on the network, you do not need to specify the server's IP address.

mount_pt_name – The name of the mount point on which the remote file system is to be mounted.

mount_options – One or more mount options, which is the same as the `-o` option of the `mount(1M)` command. The mount options are added to the `/etc/vfstab` entry for the specified *mount_pt_name*.

Note – If you need to specify more than one mount option, the mount options must be separated by commas and no spaces (`ro,quota`, for example).

filesys Profile Keyword (Creating Local File Systems)

`filesys slice size [file_system optional_parameters]`

By using `filesys` with the values that are listed, the JumpStart program creates local file systems during the installation. You can specify `filesys` more than once.

slice – Use one of the following values:

- `any` – The JumpStart program places the file system on any disk.

Note – You cannot specify `any` when `size` is `existing`, `all`, `free`, `start:size`, or `ignore`.

- `cwtxdysz` or `cxdysz` – The disk slice where the JumpStart program places the file system, for example, `c0t0d0s0` or `c0d0s0`.
- `rootdisk.sn` – The variable that contains the value for the system's root disk, which is determined by the JumpStart program as described in "How the System's Root Disk Is Determined" on page 251. The `sn` suffix indicates a specific slice on the disk.

size – Use one of the following values:

- *num* – The size of the file system is set to *num* in Mbytes.
- *existing* – The current size of the existing file system is used.

Note – When you use the *existing* value, you can change the name of an existing slice by specifying *file_system* as a different *mount_pt_name*.

- *auto* – The size of the file system is automatically determined, depending on the software that is selected.
- *all* – The specified *slice* uses the entire disk for the file system. When you specify the *all* value, no other file systems can be placed on the specified disk.
- *free* – The remaining unused space on the disk is used for the file system.

Note – If *free* is used as the value to *fileSYS*, the *fileSYS* entry must be the last entry in a profile.

- *start:size* – The file system is explicitly partitioned. *start* is the cylinder where the slice begins. *size* is the number of cylinders for the slice.

file_system – The *file_system* value is optional and used when *slice* is specified as any or *cwtxdysz*. If *file_system* is not specified, *unnamed* is set by default. If *unnamed* is set, you cannot specify the *optional_parameters* value. Use one of the following values:

- *mount_pt_name* – The file system's mount point name, for example, */var*.
- *swap* – The specified *slice* is used as swap.
- *overlap* – The specified *slice* is defined as a representation of a disk region. The VTOC value is *V_BACKUP*. By default, slice 2 is an overlap slice that is a representation of the whole disk.

Note – You can specify *overlap* only when *size* is *existing*, *all*, or *start:size*.

- *unnamed* – The specified *slice* is defined as a raw slice, so *slice* does not have a mount point name. If you do not specify *file_system*, *unnamed* is used by default.
- *ignore* – The specified *slice* is not used or recognized by the JumpStart program. You can use this option to specify that you want a file system to be ignored on a disk during installation. The JumpStart program creates a new file system on the same disk with the same name. You can use *ignore* only when partitioning *existing* is specified.

optional_parameters – Use one of the following values:

- *preserve* – The file system on the specified *slice* is preserved.

Note – `preserve` can be specified only when `size` is existing and `slice` is `cwtxdysz`.

- `mount_options` - One or more mount options, which is the same as the `-o` option of the `mount(1M)` command. The mount options are added to the `/etc/vfstab` entry for the specified `mount_pt_name`.

Note – If you need to specify more than one mount option, the mount options must be separated by commas and no spaces, for example, `ro,quota`, for example.

geo Profile Keyword

`geo locale`

Note – You can use `geo` with both the initial installation and upgrade options.

`geo` designates the regional locale or locales that you want to install on a system or to add when upgrading a system. Values you can specify for `locale` are listed in the following table:

Value	Description
<code>N_Africa</code>	Northern Africa, including Egypt
<code>C_America</code>	Central America, including Costa Rica, El Salvador, Guatemala, Mexico, Nicaragua, Panama
<code>N_America</code>	North America, including Canada, United States
<code>S_America</code>	South America, including Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela
<code>Asia</code>	Asia, including Japan, Republic of Korea, People’s Republic of China, Taiwan, Thailand
<code>Ausi</code>	Australasia, including Australia, New Zealand
<code>C_Europe</code>	Central Europe, including Austria, Czech Republic, Germany, Hungary, Poland, Slovakia, Switzerland
<code>E_Europe</code>	Eastern Europe, including Albania, Bosnia, Bulgaria, Croatia, Estonia, Latvia, Lithuania, Macedonia, Romania, Russia, Serbia, Slovenia, Turkey

Value	Description
N_Europe	Northern Europe, including Denmark, Finland, Iceland, Norway, Sweden
S_Europe	Southern Europe, including Greece, Italy, Portugal, Spain
W_Europe	Western Europe, including Belgium, France, Great Britain, Ireland, Netherlands
M_East	Middle East, including Israel

A complete list of the component locale values that compose each regional locale that is listed previously is presented in Chapter 38.

Note – You can specify a geo keyword for each locale you need to add to a system.

install_type Profile Keyword

install_type *initial_install_upgrade_switch*

install_type defines whether to erase and install a new Solaris operating environment on a system or upgrade the existing Solaris environment on a system.

Note – You must specify *install_type* in a profile, and *install_type* must be the first profile keyword in every profile.

initial_install_upgrade_switch represents the option *initial_install* or *upgrade*, which you use to indicate the type of installation to be performed.

You must specify *initial_install_upgrade_switch*.

Note – Some profile keywords can only be used with the *initial_install* option. Some profile keywords can only be used with the *upgrade* option.

isa_bits Profile Keyword

isa_bits *bit_switch*

isa_bits specifies whether 64-bit or 32-bit Solaris 8 packages are to be installed.

bit_switch represents the option *64* or *32*, which you use to indicate whether 64-bit or 32-bit Solaris 8 packages are to be installed. If you do not set this keyword in the profile, the JumpStart program installs systems as follows:

- 64-bit packages on UltraSPARC™ systems
- 32-bit packages on all other systems

Note – If you use the `isa_bits` keyword, you must also use the latest check script in the `solaris_9/Misc/jumpstart_sample` directory on the Solaris 8 Software 1 of 2 CD or on the Solaris 8 DVD.

layout_constraint Profile Keyword

`layout_constraint slice constraint [minimum_size]`

Note – You can use `layout_constraint` only for the upgrade option when you need to reallocate disk space.

`layout_constraint` designates the constraint auto-layout has on a file system if auto-layout needs to reallocate space during an upgrade because of space problems.

If you do not specify the `layout_constraint` keyword, the JumpStart program lays out the disk as follows:

- File systems that require more space for the upgrade are marked changeable.
- File systems that are on the same disk as the file system that requires more space and that are mounted by the `/etc/vfstab` file are marked changeable.
- Remaining file systems are marked fixed because auto-layout cannot change the file systems.

If you specify one or more `layout_constraint` keywords, the JumpStart program lays out the disk as follows:

- File systems that require more space for the upgrade are marked changeable.
- File systems for which you specified a `layout_constraint` keyword are marked with the specified constraint.
- The remaining file systems are marked fixed.

You cannot change the constraint on file systems that require more space for the upgrade because the file systems must be marked changeable. You can use the `layout_constraint` keyword to change the `minimum_size` values on file systems that require more space for the upgrade.

Note – To help auto-layout reallocate space, select more file systems to be changeable or movable, especially those file systems that are located on the same disks as the file systems that require more space for the upgrade.

slice – *slice* specifies the file system's disk slice on which to specify the constraint. You must specify the system's disk slice in the form *cwtxdysz* or *cxdysz*.

constraint – Use one the following constraints for the specified file system:

- **changeable** – Auto-layout can move the file system to another location and it can change the file system size. The **changeable** constraint can only be specified on file systems that are mounted by the `/etc/vfstab` file. You can change the file system's size by specifying the *minimum_size* value.

When you mark a file system as **changeable** and *minimum_size* is not specified, the file system's minimum size is set to 10 percent more than the minimum size that is required. For example, if the minimum size for a file system is 100 Mbytes, the changed size is 110 Mbytes. If *minimum_size* is specified, any free space that remains, original size minus minimum size, is used for other file systems.

- **movable** – Auto-layout can move the file system to another slice on the same disk or different disk. The file system size remains the same.
- **available** – Auto-layout can use all of the space on the file system to reallocate space. All of the data in the file system is lost. The **available** constraint can only be specified on file systems that are not mounted by the `/etc/vfstab` file.
- **collapse** – Auto-layout moves and collapses the specified file system into the parent file system. You can use the **collapse** option to reduce the number of file systems on a system as part of the upgrade. For example, if a system has the `/usr` and `/usr/share` file systems, collapsing the `/usr/share` file system moves the file system into `/usr`, the parent file system. You can specify the **collapse** constraint only on file systems that are mounted by the `/etc/vfstab` file.

minimum_size – Specifies the size of the file system after auto-layout reallocates space. The *minimum_size* option enables you to change the size of a file system. The size of the file system might be larger if unallocated space is added to the file system. But, the size is never less than the value you specify. The *minimum_size* value is optional. Use this value only if you have marked a file system as **changeable** and the minimum size cannot be less than what the file system needs for the existing file system contents.

Examples:

```
layout_constraint c0t3d0s1 changeable 200
```

```
layout_constraint c0d0s4 movable
```

```
layout_constraint c0t3d1s3 available
```

```
layout_constraint c0t2d0s1 collapse
```


locale Profile Keyword

`locale locale_name`

Note – You can use `locale` with both the initial installation and upgrade options.

`locale` designates the locale packages you want to install or add when upgrading for the specified `locale_name`. The `locale_name` values are the same as those values that are used for the `$LANG` environment variable. Chapter 38 contains a list of valid locale values.

When you use the `local` keyword, consider the following:

- If you have preconfigured a default locale, the locale is automatically installed. The English language packages are installed by default.
- You can specify a `locale` keyword for each locale you need to add to a system.

num_clients Profile Keyword

`num_clients client_num`

When a server is installed, space is allocated for each diskless client's root (`/`) and swap file systems. `num_clients` defines the number of diskless clients, `client_num`, that a server supports. If you do not specify `num_clients` in the profile, five diskless clients are allocated by default.

Note – You can use `num_clients` only when `system_type` is specified as `server`.

package Profile Keyword

`package package_name [add_delete_switch]`

Note – You can use `package` with both the initial installation and upgrade options.

`package` designates whether a package is to be added to or deleted from the software group that is to be installed on the system.

You must specify `package_name` in the form `SUNWname`. To view detailed information about packages and their names, on an installed system use the `pkginfo -l` command or Admintool. In Admintool, choose Software from the Browse menu.

add_delete_switch represents the option `add` or `delete`, which you use to indicate whether to add or delete the specified package. If you do not specify *add_delete_switch*, `add` is used by default.

When you use `package` for an upgrade, the JumpStart program performs the following actions:

- All packages already on the system are automatically upgraded.
- If you specify *package_name* `add` and *package_name* is not installed on the system, the package is installed.
- If you specify *package_name* `delete` and *package_name* is installed on the system, the package is deleted *before* the upgrade begins.
- If you specify *package_name* `delete` and *package_name* is not installed on the system, the package is not installed if the package is part of a cluster that is designated to be installed.

partitioning Profile Keyword

partitioning type

`partitioning` defines how the disks are divided into slices for file systems during the installation.

type – Use one of the following values:

- `default` – The JumpStart program selects the disks and creates the file systems on which to install the specified software, except for any file systems that are specified by the `fileSYS` keywords. `rootdisk` is selected first. The JumpStart program uses additional disks if the specified software does not fit on `rootdisk`.
- `existing` – The JumpStart program uses the existing file systems on the system's disks. All file systems except `/`, `/usr`, `/usr/openwin`, `/opt`, and `/var` are preserved. The JumpStart program uses the last mount point field from the file system superblock to determine which file system mount point the slice represents.

Note – When you use both the `fileSYS` and `partitioning existing` profile keywords, you must set *size size* to `existing`.

- `explicit` – The JumpStart program uses the disks and creates the file systems that are specified by the `fileSYS` keywords. If you specify only the root (`/`) file system with the `fileSYS` keyword, all of the Solaris software is installed in the root (`/`) file system.

Note – If you use the `explicit` profile value, you must use the `filesys` keyword to specify the disks to use and file systems to create.

If you do not specify partitioning in the profile, the default type of partitioning is used by default.

root_device Profile Keyword

```
root_device slice
```

Note – You can use `root_device` with both the initial installation and upgrade options.

`root_device` designates the system's root disk. "How the System's Root Disk Is Determined" on page 251 contains additional information.

When you are upgrading a system, `root_device` designates the root (/) file system and the file systems that are mounted by its `/etc/vfstab` file to be upgraded. You must specify `root_device` if more than one root (/) file system can be upgraded on a system. You must specify `slice` in the form `cwt.xdysz` or `cxdysz`.

Example:

```
root_device c0t0d0s2
```

When you use the `root_device` keyword, consider the following:

- If you specify `root_device` on a system with only one disk, the `root_device` and the disk must match. Also, any `filesys` keywords that specify the root (/) file system must match `root_device`.
- If you are upgrading a mirror, the value specified for `root_device` should be one side of the mirror. The other side of the mirror is automatically upgraded.

How the System's Root Disk Is Determined

A system's root disk is the disk on the system that contains the root (/) file system. In a profile, you can use the `rootdisk` variable in place of a disk name, which the JumpStart program sets to the system's root disk. Table 28-4 describes how the JumpStart program determines the system's root disk for the installation.

Note – The JumpStart program only determines a system’s root disk size during an initial installation. You cannot change a system’s root disk during an upgrade.

TABLE 28–4 How JumpStart Determines a System’s Root Disk (Initial Installation)

Stage	Action
1	If the <code>root_device</code> keyword is specified in the profile, the JumpStart program sets <code>rootdisk</code> to the root device.
2	If <code>rootdisk</code> is not set and the <code>boot_device</code> keyword is specified in the profile, the JumpStart program sets <code>rootdisk</code> to the boot device.
3	If <code>rootdisk</code> is not set and a <code>filesys cwtxdysz size /</code> entry is specified in the profile, the JumpStart program sets <code>rootdisk</code> to the disk that is specified in the entry.
4	If <code>rootdisk</code> is not set and a <code>rootdisk.sn</code> entry is specified in the profile, the JumpStart program searches the system’s disks in kernel probe order for an existing root file system on the specified slice. If a disk is found, the JumpStart program sets <code>rootdisk</code> to the found disk.
5	If <code>rootdisk</code> is not set and <code>partitioning existing</code> is specified in the profile, the JumpStart program searches the system’s disks in kernel probe order for an existing root file system. If a root file system is not found or more than one is found, an error occurs. If a root file system is found, the JumpStart program sets <code>rootdisk</code> to the found disk.
6	If <code>rootdisk</code> is not set, the JumpStart program sets <code>rootdisk</code> to the disk where the root (/) file system is installed.

system_type Profile Keyword

`system_type type_switch`

`system_type` defines the type of system on which the Solaris environment is to be installed.

`type_switch` represents the option `standalone` or `server`, which you use to indicate the type of system on which the Solaris software is to be installed. If you do not specify `system_type` in a profile, `standalone` is used by default.

usedisk Profile Keyword

`usedisk disk_name ...`

By default, the JumpStart program uses all of the operational disks on the system when you specify `partitioning default`. The `usedisk` profile keyword

designates one or more disks that you want the JumpStart program to use. You must specify *disk_name* in the form *cxydz* or *cydz*, for example, *c0t0d0* or *c0d0s0*.

If you specify *usedisk* in a profile, the JumpStart program uses only the disks that you specify after the *usedisk* keyword.

Note – You cannot specify the *usedisk* keyword and the *dontuse* keyword in the same profile.

Custom JumpStart Environment Variables

You can use environment variables in your begin and finish scripts. For example, a begin script might extract the disk size, *SI_DISKSIZES*, and install or not install particular packages on a system, based on the actual disk size the script extracts.

Information that is gathered about a system is stored in these environment variables, which are generally set or not, depending on the rule keywords and values you use in the *rules* file.

For example, information about which operating system is already installed on a system is only available in *SI_INSTALLED* after the *installed* keyword is used.

Table 28–5 describes these variables and their values.

TABLE 28–5 Installation Environment Variables

Environment Variable	Value
CHECK_INPUT	The path to the <i>rules</i> file in the JumpStart directory, which is mounted on <i>/tmp/install_config/rules</i> .
HOME	The root's home directory during installation, which is <i>/tmp/root</i> .
PATH	The shell search path during installation, which is <i>/sbin:/usr/sbin/install.d:/usr:/usr/sbin:/usr/bin</i>
SI_ARCH	The hardware architecture of the install client. The <i>SI_ARCH</i> variable is set when the <i>arch</i> keyword is used in the <i>rules</i> file.
SI_BEGIN	The name of the begin script, if one is used.
SI_CLASS	The name of the profile that is used to install the install client.

TABLE 28-5 Installation Environment Variables (Continued)

Environment Variable	Value
SI_CONFIG_DIR	The path to the JumpStart directory, which is mounted on /tmp/instal_config.
SI_CONFIG_FILE	The path to the rules file in the JumpStart directory, which is mounted on /tmp/install_config/rules.
SI_CONFIG_PROG	The rules file.
SI_CUSTOM_PROBES_FILE	The custom_probes.ok file, in which you can define your own rule and probe keywords. If you create a custom_probes.ok file, you can use the file to extend the list of default rule keywords, which are described in "Rule Keywords and Values" on page 223 and the list of default probe keywords that are described in "Probe Keywords and Values" on page 256.
SI_DISKLIST	A comma-separated list of disk names on the install client. The SI_DISKLIST variable is set when the disksize keyword is used and matched in the rules file. The SI_DISKLIST and SI_NUMDISKS variables are used to determine the physical disk to use for the rootdisk. rootdisk is described in "How the System's Root Disk Is Determined" on page 251.
SI_DISKSIZE	A comma-separated list of disk sizes on the install client. The SI_DISKSIZE variable is set when the disksize keyword is used and matched in the rules file.
SI_DOMAINNAME	The domain name. The SI_DOMAINNAME variable is set when the domainname keyword is used and matched in the rules file.
SI_FINISH	The name of the finish script, if one is used.
SI_HOSTADDRESS	The install client's IP address.
SI_HOSTID	The install client's Ethernet address.
SI_HOSTNAME	The install client's host name. The SI_HOSTNAME variable is set when the hostname keyword is used and matched in the rules file.
SI_INSTALLED	The device name of a disk with a specific operating system on the disk, for example, Solaris, SunOS, or System V. The SI_INSTALLED variable is set when the installed keyword is used and matched in the rules file. SI_INST_OS and SI_INST_VER are used to determine the value of SI_INSTALLED.
SI_INST_OS	The name of the operating system. SI_INST_OS and SI_INST_VER are used to determine the value of SI_INSTALLED.
SI_INST_VER	The version of the operating system. SI_INST_OS and SI_INST_VER are used to determine the value of SI_INSTALLED.
SI_KARCH	The install client's kernel architecture. The SI_KARCH variable is set when the karch keyword is used and matched in the rules file.

TABLE 28-5 Installation Environment Variables (Continued)

Environment Variable	Value
SI_MEMSIZE	The amount of physical memory on the install client. The <code>SI_MEMSIZE</code> variable is set when the <code>memsize</code> keyword is used and matched in the <code>rules</code> file.
SI_MODEL	The install client's model name. The <code>SI_MODEL</code> variable is set when the <code>model</code> keyword is used and matched in the <code>rules</code> file.
SI_NETWORK	The install client's network number. The <code>SI_NETWORK</code> variable is set when the <code>network</code> keyword is used and matched in the <code>rules</code> file.
SI_NUMDISKS	The number of disks on an install client. The <code>SI_NUMDISKS</code> variable is set when the <code>disksize</code> keyword is used and matched in the <code>rules</code> file. The <code>SI_NUMDISKS</code> and <code>SI_DISKLIST</code> variables are used to determine the physical disk to use for the <code>rootdisk</code> . <code>rootdisk</code> is described in "How the System's Root Disk Is Determined" on page 251.
SI_OSNAME	The operating system release on the Solaris 8 software image. For example, you can use the <code>SI_OSNAME</code> variable in a script if you are installing the Solaris software on systems that are based on the version of the operating system on the Solaris 8 DVD or the Solaris 8 Software 1 of 2 CD image.
SI_PROFILE	The path to the profile in the mounted JumpStart directory. The path is <code>/tmp/install_config/profile_name</code> . If you are creating a derived profile, <code>SI_PROFILE</code> is set to the <code>/tmp/install.input</code> file.
SI_ROOTDISK	The device name of the disk that is represented by the logical name <code>rootdisk</code> . The <code>SI_ROOTDISK</code> variable is set when the <code>disksize</code> or the <code>installed</code> keyword is set to <code>rootdisk</code> in the <code>rules</code> file.
SI_ROOTDISKSIZE	The size of the disk that is represented by the logical name <code>rootdisk</code> . The <code>SI_ROOTDISKSIZE</code> variable is set when the <code>disksize</code> or the <code>installed</code> keyword is set to <code>rootdisk</code> in the <code>rules</code> file.
SI_SYS_STATE	The <code>/a/etc/.sysidtool.state</code> file. You can edit this file in a finish script to prevent the <code>sysidroot</code> program from prompting for a root password before the system reboots.
SI_TOTALDISK	The total amount of disk space on the install client. The <code>SI_TOTALDISK</code> variable is set when the <code>totaldisk</code> keyword is used and matched in the <code>rules</code> file.
SHELL	The default shell during installation, which is <code>/sbin/sh</code> .
TERM	The install client's terminal type.
TZ	The default time zone, as specified in the NIS or NIS+ name service.

Probe Keywords and Values

Table 28–6 describes each rule keyword and its equivalent probe keyword.

Note – Always place probe keywords at or near the beginning of the `rules` file.

TABLE 28–6 Descriptions of Probe Keywords

Rule Keyword	Equivalent Probe Keyword	Description of Probe Keyword
any	None	
arch	arch	Determines the kernel architecture, i386 or SPARC, and sets <code>SI_ARCH</code> .
disksize	disks	Returns the size of a system's disks in Mbytes in kernel probe order, c0t3d0s0, c0t3d0s1, c0t4d0s0. <code>disksize</code> sets <code>SI_DISKLIST</code> , <code>SI_DISKSIZE</code> , <code>SI_NUMDISKS</code> , and <code>SI_TOTALDISK</code> .
domainname	domainname	Returns a system's NIS or NIS+ domain name or blank and sets <code>SI_DOMAINNAME</code> . The <code>domainname</code> keyword returns the output of <code>domainname(1M)</code> .
hostaddress	hostaddress	Returns a system's IP address, the first address that is listed in the output of <code>ifconfig(1M) -a</code> that is not <code>lo0</code> , and sets <code>SI_HOSTADDRESS</code> .
hostname	hostname	Returns a system's host name that is the (output from <code>uname(1) -n</code> and sets <code>SI_HOSTNAME</code> .
installed	installed	Returns the version name of the Solaris operating environment that is installed on a system and sets <code>SI_ROOTDISK</code> and <code>SI_INSTALLED</code> . If the JumpStart program finds a Solaris release but is unable to determine the version, the version that is returned is <code>SystemV</code> .
karch	karch	Returns a system's platform group, for example <code>i86pc</code> , <code>sun4m</code> , and <code>sun4</code> , and sets <code>SI_KARCH</code> . For a list of platform names, see <i>Solaris 8 Sun Hardware Platform Guide</i> .
memsize	memsize	Returns the size of physical memory on a system in Mbytes and sets <code>SI_MEMSIZE</code> .
model	model	Returns a system's platform name and sets <code>SI_MODEL</code> . For a list of platform names, see the <i>Solaris 8 Sun Hardware Platform Guide</i> .
network	network	Returns a system's network number, which the JumpStart program determines by performing a logical AND between the system's IP address and the subnet mask. The system's IP address and the subnet mask are extracted from the first address that listed in the output of <code>ifconfig(1M) -a</code> that is not <code>lo0</code> . The <code>network</code> keyword sets <code>SI_NETWORK</code> .

TABLE 28-6 Descriptions of Probe Keywords (Continued)

Rule Keyword	Equivalent Probe Keyword	Description of Probe Keyword
osname	osname	Returns the version and operating system name of the Solaris operating environment that is found on a CD and sets <code>SI_OSNAME</code> . If the JumpStart program finds a Solaris release but is unable to determine the version, the version that is returned is <code>SystemV</code> .
	rootdisk	Returns the name and size in Mbytes of a system's root disk and sets <code>SI_ROOTDISK</code> .
totaldisk	totaldisk	Returns the total disk space on a system (in Mbytes and sets <code>SI_TOTALDISK</code>). The total disk space includes all of the operational disks that are attached to a system.

Solaris Software Reference Topics

This section provides reference information about the Solaris 8 DVDs, the Solaris 8 CDs, locales, and packages.

Chapter 30	Describes the primary DVD and CD media that are included in the media kits for the Solaris 8 software.
Chapter 31	Contains a list of the packages on each of the Solaris CDs.
Chapter 32	
Chapter 33	
Chapter 34	
Chapter 35	
Chapter 36	
Chapter 37	Contains a list of the platform names and groups of various hardware platforms.
Chapter 38	Contains a list of the values needed to set the <code>locale</code> keyword in a profile or to preconfigure a locale. .

Organization of Solaris 8 Media

This chapter describes the primary DVD and CD media that are included in the media kits for Solaris 8 software.

SPARC: Solaris 8 Media

The following tables list the primary DVD and CD media for the Solaris 8 *SPARC Platform Edition* software. You receive a multilingual media kit that contains a DVD or CDs for English, other languages, and locale software.

TABLE 30-1 SPARC: Multilingual DVD Media

DVD Title	Description
Solaris 8 <i>SPARC Platform Edition</i> DVD	Contains the following: <ul style="list-style-type: none">■ Software, tools, and configuration information to install the Solaris product and all partial locales■ Source code for some third-party public domain software■ Interface software and documentation that has been localized■ The Solaris documentation set for English, European, and Asian languages that includes Japanese For directory structures, see Figure 30-1.

TABLE 30-2 SPARC: Multilingual CD Media

CD Title	Description
You receive one of these CDs: <ul style="list-style-type: none">■ Solaris 8 Installation <i>SPARC Platform Edition</i> CD■ Solaris 8 Installation Multilingual <i>SPARC Platform Edition</i> CD	<ul style="list-style-type: none">■ Contains scripts to install Solaris software. For directory structures, see Figure 30-2.■ Contains scripts to install Solaris software and all partial locales. For directory structures, see Figure 30-2.
Solaris 8 Software 1 of 2 <i>SPARC Platform Edition</i> CD	Contains the software, tools, and configuration information to install the Solaris product. For directory structures, see Figure 30-3.
Solaris 8 Software 2 of 2 <i>SPARC Platform Edition</i> CD	Contains the following: <ul style="list-style-type: none">■ A limited number of packages, which the software prompts you to install if necessary■ Source code for some third-party public domain software For directory structures, see Figure 30-4. The installation program prompts you for this CD if necessary.
Solaris 8 Languages <i>SPARC Platform Edition</i> CD	Contains interface software and documentation that has been localized. For directory structures, see Figure 30-10. The installation program prompts you for this CD if it is necessary to support languages for specific geographic regions.
Solaris 8 Documentation CD	Contains the Solaris documentation sets. For directory structures, see Figure 30-9.

SPARC: Directory Organization of Solaris 8 Media

This section describes top-level directories on each DVD and CD.

SPARC: Solaris 8 *SPARC Platform Edition* DVD Directory Structure

The following figure shows the directory structure on the Solaris 8 *SPARC Platform Edition* DVD.

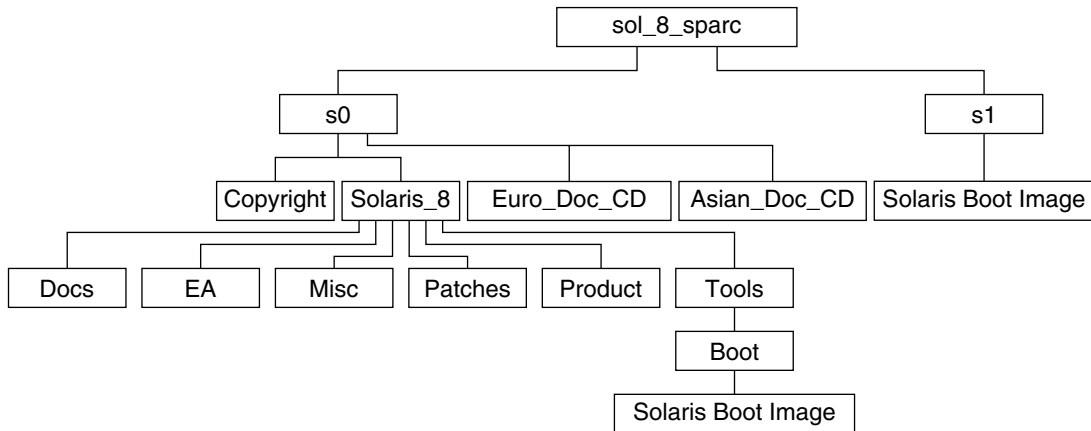


FIGURE 30-1 Solaris 8 *SPARC Platform Edition* DVD

- Slice 0 (s0) contains Copyright and the following directories:
 - Euro_Doc_CD directory – Contains the tools and software necessary to install the Solaris 8 Documentation European.
 - Asian_Doc_CD directory – Contains the tools and software necessary to install the Solaris 8 Documentation Asian.
 - Solaris_8 directory – Contains the tools, software, and configuration information necessary to install the Solaris 8 software product. The Solaris_8 directory contains the following subdirectories:
 - Docs – An empty directory.
 - EA – Preliminary evaluation software and Solaris products not directly part of the Solaris operating environment
 - Misc – The jumpstart_sample directory, which includes a rules file, a check script, profiles, begin scripts, finish scripts, and other JumpStart software and files.
 - Patches – All the Solaris 8 patches available at the time of this release.
 - Product – The Solaris 8 packages and control files.
 - Tools – The Solaris 8 installation tools, which include add_install_client, dial, rm_install_client, and setup_install_server. The Tools directory also contains the Boot subdirectory, which contains the Solaris 8 miniroot.

- Slice 1 (s1) contains the Solaris 8 miniroot.

SPARC: Solaris 8 Installation CD Directory Structure

The following figure shows the directory structure on the Solaris 8 Installation Multilingual *SPARC Platform Edition* CD or Solaris 8 Installation *SPARC Platform Edition* CD.

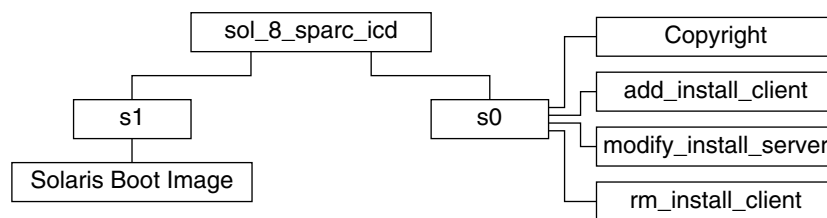


FIGURE 30-2 SPARC: Solaris 8 Installation *SPARC Platform Edition* CD

- Slice 0 (s0) contains the Copyright and scripts that install the Solaris software. These scripts include the following:
 - add_install_client
 - modify_install_server
 - rm_install_client
- Slice 1 (s1) contains the Solaris 8 miniroot.

SPARC: Solaris 8 Software *SPARC Platform Edition* CDs Directory Structures

The following figures show the directory structure on the Solaris 8 Software *SPARC Platform Edition* CDs.

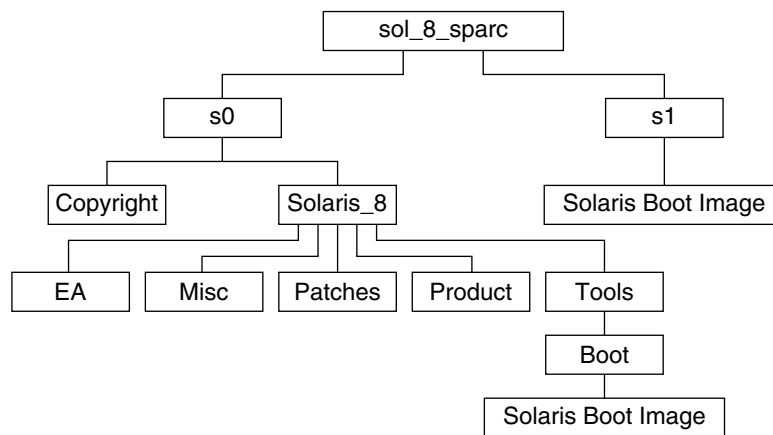


FIGURE 30-3 SPARC: Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD

- Slice 0 (s0) contains the Copyright and Solaris_8 directory. The Solaris_8 directory contains all the tools, software, and configuration information necessary to install, at a minimum, the Solaris 8 software product, including the Solaris Core and End User System Support software groups. The Solaris_8 directory contains the following subdirectories:
 - Docs – An empty directory.
 - EA – A text file that directs you to the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD.
 - Misc – The jumpstart_sample directory, which includes a rules file, a check script, profiles, begin scripts, finish scripts, and other JumpStart software and files.
 - Patches – All the Solaris 8 patches available at the time the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD was created.
 - Product – The Solaris 8 packages and control files.
 - Tools – The Solaris 8 installation tools, which include add_install_client, dial, rm_install_client, and setup_install_server.
- Slice 1 (s1) contains the Solaris 8 miniroot.

The following figure shows the directories on the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD.

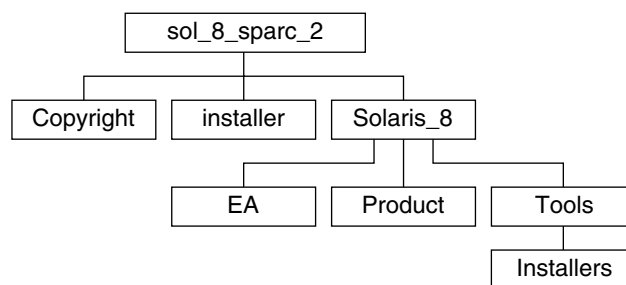


FIGURE 30-4 SPARC: Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD

The `sol_8_sparc_2` directory contains the `Copyright`, the Solaris Web Start `installer`, and the `Solaris_8` directory. The `Solaris_8` directory contains the following subdirectories:

- `EA` – Preliminary evaluation software and Solaris products not directly part of the Solaris operating environment.
- `Product` – A limited number of packages, Developer system Support, Entire Distribution, and Entire Distribution Plus OEM Support software groups.
- `Tools` – Solaris 8 installation tools, which include `add_to_install_server` and `install_source` scripts.

IA: Solaris 8 Media

The following tables list the primary DVD and CDs for Solaris 8 *Intel Platform Edition* software. You receive a multilingual media kit that contains a DVD or CDs for English, other languages, and locale software.

TABLE 30-3 IA: Multilingual DVD Media

DVD Title	Description
Solaris 8 <i>Intel Platform Edition</i> DVD	<p>Contains the following:</p> <ul style="list-style-type: none"> ■ Software, tools, and configuration information to install the Solaris product all partial locales. This includes the Solaris 8 Device Configuration Assistant which performs various configuration and booting tasks. ■ Source code for some third-party public domain software ■ Interface software and documentation that have been localized ■ The Solaris documentation set for English, European, and Asian languages that includes Japanese <p>For directory structures, see Figure 30-5.</p>

TABLE 30-4 IA: Multilingual CD Media and Diskette

CD Title	Description
<p>You receive one of these CDs:</p> <ul style="list-style-type: none"> ■ Solaris 8 Installation <i>Intel Platform Edition</i> CD ■ Solaris 8 Installation Multilingual <i>Intel Platform Edition</i> CD 	<ul style="list-style-type: none"> ■ Contains scripts to install Solaris software. This includes the Solaris 8 Device Configuration Assistant which performs various configuration and booting tasks. For directory structures, see Figure 30-6. ■ Contains scripts to install Solaris software and all partial locales. This includes the Solaris 8 Device Configuration Assistant which performs various configuration and booting tasks. For directory structures, see Figure 30-6.
Solaris 8 Software 1 of 2 <i>Intel Platform Edition</i> CD	<p>Contains the software, tools, and configuration information to install the Solaris product. This includes the Solaris 8 Device Configuration Assistant which performs various configuration and booting tasks. For directory structures, see Figure 30-7.</p>

TABLE 30-4 IA: Multilingual CD Media and Diskette (Continued)

CD Title	Description
Solaris 8 Software 2 of 2 <i>Intel Platform Edition</i> CD	(Optional) Contains: <ul style="list-style-type: none">■ A limited number of packages, which the software prompts you to install if necessary■ Source code for some third-party public domain software For directory structures, see Figure 30-8. The installation program prompts you for this CD if necessary.
Solaris 8 Languages <i>Intel Platform Edition</i> CD	Contains localized interface software and documentation. For directory structures, see Figure 30-10. The installation program prompts you for this CD if it is necessary to support languages for specific geographic regions.
Solaris 8 Documentation CD	Contains the Solaris documentation set for English and European languages. For directory structures, see Figure 30-9.
Solaris 8 Device Configuration Assistant <i>Intel Platform Edition</i> Diskette	Contains the Solaris 8 Device Configuration Assistant which performs various configuration and booting tasks.

IA: Directory Organization of Solaris 8 Media

This section describes top-level directories on each DVD and CD.

IA: Solaris 8 *Intel Platform Edition* DVD Directory Structure

The following figure shows the directories on the Solaris 8 *Intel Platform Edition* DVD.

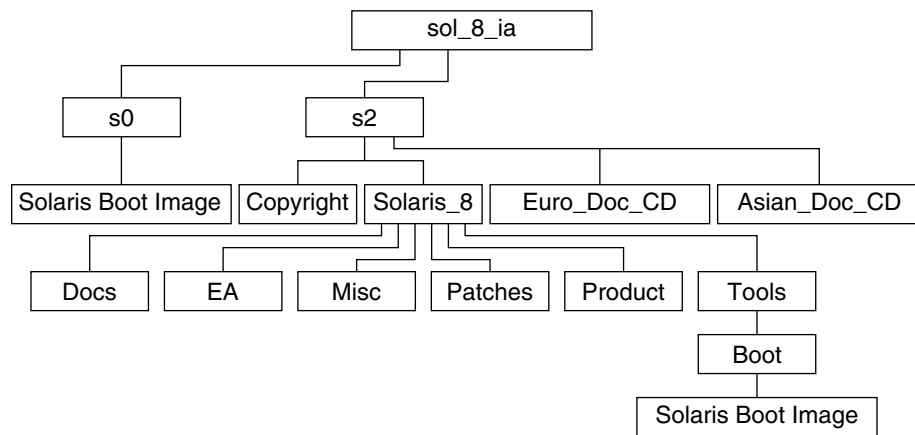


FIGURE 30-5 Solaris 8 *Intel Platform Edition* DVD

- Slice 0 (s0) contains the Solaris 8 miniroot.
- Slice 2 (s2) contains Copyright and the following directories:
 - Euro_Doc_CD directory – Contains the tools and software necessary to install the Solaris 8 Documentation European.
 - Asian_Doc_CD directory – Contains the tools and software necessary to install the Solaris 8 Documentation Asian.
 - Solaris_8 directory – Contains the tools, software, and configuration information necessary to install the Solaris 8 software product. The Solaris_8 directory contains the following subdirectories:
 - Docs – An empty directory.
 - EA – Preliminary evaluation software and Solaris products not directly part of the Solaris operating environment.
 - Misc – The jumpstart_sample directory, which includes a rules file, a check script, profiles, begin scripts, finish scripts, and other JumpStart software and files.
 - Patches – All the Solaris 8 patches available at the time of this release
 - Product – The Solaris 8 packages and control files.
 - Tools – The Solaris 8 installation tools, which include add_install_client, dial, rm_install_client, and setup_install_server. The Tools directory also contains the Boot subdirectory, which contains the Solaris 8 miniroot.

IA: Solaris 8 Installation CD Directory Structure

The following figure shows the directories on the Solaris 8 Installation Multilingual *Intel Platform Edition* CD or Solaris 8 Installation *Intel Platform Edition* CD.

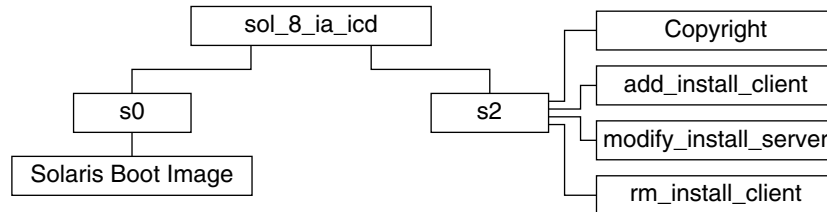


FIGURE 30-6 IA: Solaris 8 Installation *Intel Platform Edition* CD

- Slice 0 (s0) contains the Copyright and scripts that install the Solaris software. These scripts include:
 - add_install_client
 - modify_install_server
 - rm_install_client
- Slice 1 (s1) contains the Solaris 8 miniroot.

IA: Solaris 8 Software *Intel Platform Edition* CDs Directory Structures

The following figures show the directory structure of the Solaris 8 Software *Intel Platform Edition* CDs.

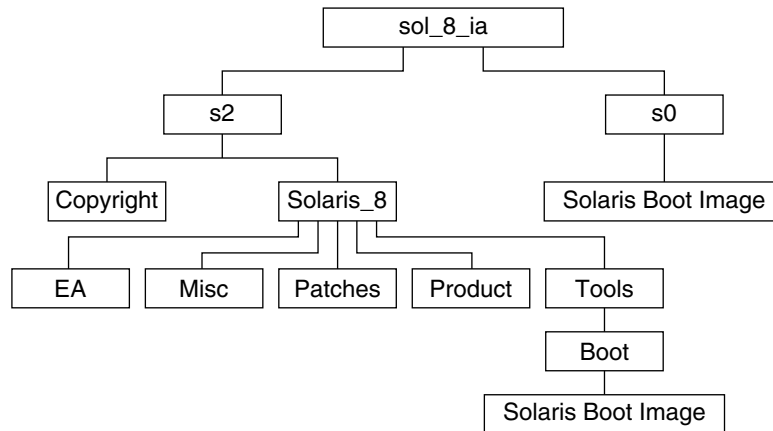


FIGURE 30-7 IA: Solaris 8 Software 1 of 2 *Intel Platform Edition* CD

Slice 0 (s0) contains the Copyright and the Solaris_8 directory. The Solaris_8 directory contains all the tools, software, and configuration necessary to install, at a minimum, the Solaris 8 software product, including the Solaris Core and End User System Support software groups. The Solaris_8 directory contains the following subdirectories:

- Docs – Empty
- EA – A text file that directs you to the Solaris 8 Software 2 of 2 *Intel Platform Edition* CD.
- Misc – The `jumpstart_sample` directory, which includes a rules file, a check script, profiles, begin scripts, finish scripts, and other JumpStart software and files.
- Patches – All the Solaris 8 patches available at the time the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD was created.
- Product – The Solaris 8 packages and control files.
- Tools – The Solaris 8 installation tools, which include `boot` miniroot, `add_install_client`, `dial`, `rm_install_client`, and `setup_install_server`.

The following figure shows the directories on the Solaris 8 Software 2 of 2 *Intel Platform Edition* CD.

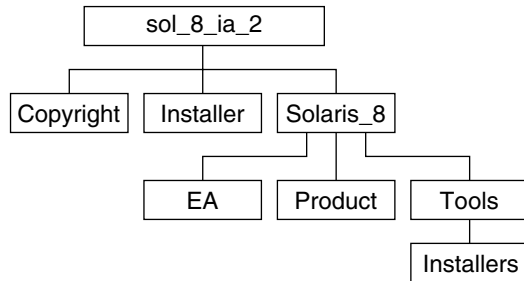


FIGURE 30-8 Solaris 8 Software 2 of 2 *Intel Platform Edition* CD

The `sol_8_ia_2` directory contains the `Copyright`, the Solaris Web Start installer, and the `Solaris_8` directory. The `Solaris_8` directory contains the following subdirectories:

- `EA` – Preliminary evaluation software and Solaris products not directly part of the Solaris operating environment
- `Product` – A limited number of packages, Developer system Support, Entire Distribution, and Entire Distribution Plus OEM Support software groups.
- `Tools` – The Solaris 8 installation tools, which include `add_to_install_server`, and `install_source`.

Solaris 8 Documentation CD Structure

The following figure shows the directories on the Solaris 8 Documentation CD. This structure applies to the following CDs:

- Solaris 8 Documentation CD
- Solaris 8 Documentation European CD
- Solaris 8 Documentation Asian CD

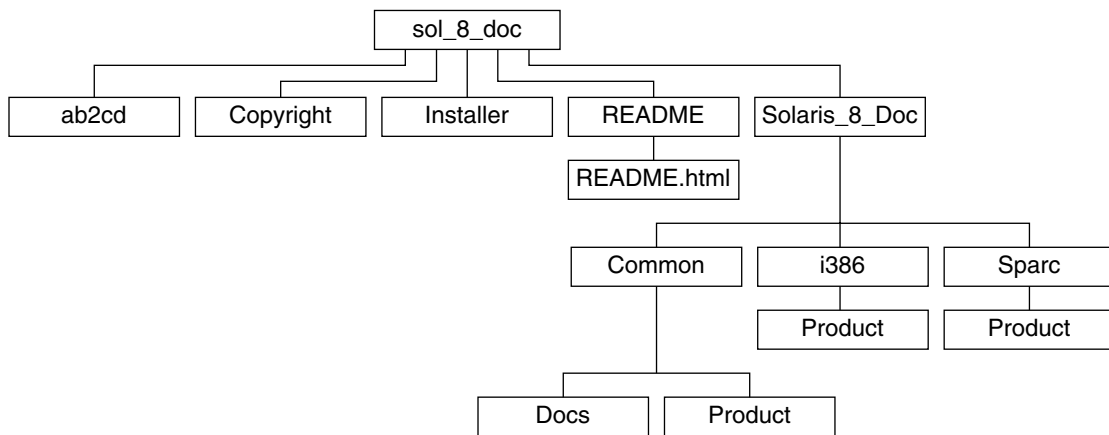


FIGURE 30-9 Solaris 8 Documentation CD

- `ab2cd` – Enables you to run the AnswerBook2™ server and access the document collections directly from the CD.
- `installer` – A point-and-click installation utility you can use to install the AnswerBook2 server software and document collections.
- `Release_Notes_SPARC.html` and `Release_Notes_Intel.html` – Contain descriptions of bugs, late-breaking new features, end-of-software support statements, patch information, driver update information, and documentation issues in AnswerBook2, PDF, and HTML format. Printed Release Notes, which focus on installation issues, are supplied in the Solaris 8 Media Kit. Release Notes Update is also available at <http://docs.sun.com>.
- `README` – Contains `README.html`, which presents an overview and description of the contents of the Solaris 8 Documentation CD and describes how to access and install its contents.
- `Solaris_8_Doc` – Contains the subdirectories `sparc` and `i386`, which contain, respectively, the AnswerBook2 server software for installation on a SPARC and an IA based system. The subdirectory `common` contains online documentation in AnswerBook2, PDF, and HTML format.

Solaris 8 Languages CD Directory Structure

The following figure shows the directories on the Solaris 8 Languages *SPARC Platform Edition* and Solaris 8 Languages *Intel Platform Edition* CDs.

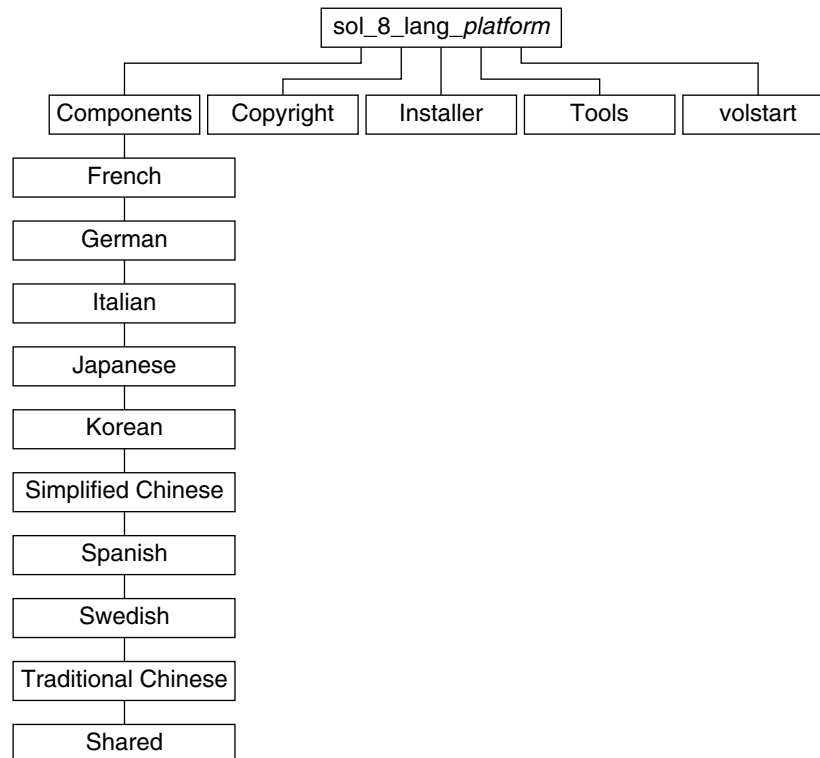


FIGURE 30-10 Solaris 8 Languages CD

Slice 0 (s0) contains the `sol_8_lang_platform` directory, where *platform* is *sparc* or *ia*. The `sol_8_lang_platform` directory contains the Solaris Web Start installer that installs the Solaris language and locale software. You can choose to install the nine languages in default directories or install specific languages. The `sol_8_lang_platform` directory contains these subdirectories:

- `components` – Chinese, French, German, Italian, Japanese, Korean, Spanish, Swedish, and Traditional Chinese locale packages and also includes packages shared by all locales

- Copyright – Copyright page
- installer – Solaris Web Start installer
- Tools – The `add_to_install_server` script for creating an install server

Packages on the Solaris 8 Software 1 of 2 SPARC Platform Edition CD

This chapter lists and describes the packages included on the Solaris 8 Software 1 of 2 *SPARC Platform Edition CD*.

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition CD*

This Package	Contains
FJSVhea	SunOS C/C++ header files for general development of software
FJSVvplr.us	Fujitsu platform links
FJSVvplu.us	Fujitsu <code>usr/platform</code> links
NSCPcom	Application and configuration files of Netscape Communicator 4.7 supporting International security
NSCPcpcom	Simplified Chinese partial version of Netscape Communicator 4.7 supporting International security
NSCPphpcom	Traditional Chinese partial version of Netscape Communicator 4.7 supporting International security
NSCPjacom	Japanese (common) localization of Netscape Communicator 4.7 supporting International security
NSCPkpcom	Korean Partial version of Netscape Communicator 4.7 supporting International security
PFUdfb.m	S-4/Leia LCD Dumb Frame Buffer Driver
PFUvplr.m	PFU/Fujitsu platform links
PFUvplu.m	PFU/Fujitsu <code>usr/platform</code> links
SMEvplr.u	SME platform links (<code>root</code>)
SMEvplu.u	SME platform links (<code>usr</code>)
SUNW1251f	Russian additional locale fonts (1251)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNW5dt	Traditional Chinese Localizations for CDE Desktop Login Environment
SUNW5leu	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese BIG5 Language Environment
SUNW5leux	Traditional Chinese (BIG5) Language Environment User Files (64-bit)
SUNW5ttf	Traditional Chinese True Type Fonts Package
SUNW5xmft	Chinese/Traditional Chinese BIG5 X Window System Platform Required Fonts Package
SUNW5xp1t	Traditional Chinese BIG5 X Window System Platform Software Package
SUNW5xp1x	Traditional Chinese (BIG5) X Window System Platform Software Package (64-bit)
SUNWadmap	Software used to perform system administration tasks
SUNWadmc	Core software libraries used for system administration
SUNWadmfw	System and network administration libraries and services
SUNWadmj	Java libraries used for system administration tools
SUNWadmr	root programs and scripts for initializing system installation
SUNWafb.u	Device driver for the UPA Bus Elite3D graphics accelerator
SUNWafbcf	Configuration software for the UPA Bus Elite3D graphics accelerator
SUNWafbr	Boot-time device initialization support for the UPA Bus Elite3D graphics accelerator
SUNWafb.w	X server loadable module for the UPA Bus Elite3D graphics accelerator
SUNWafbx.u	Device driver for the UPA Bus Elite3D graphics accelerator (64-bit)
SUNWale	Common files shared by Chinese, Japanese, and Korean locales; it is a required package to run Asian Language Environment
SUNWaled	Man pages shared by Chinese, Japanese, and Korean locales
SUNWalex	Common files shared by Chinese, Japanese, and Korean locales; it is a required package to run Asian Language Environment (64-bit)
SUNWami	Authentication Management Infrastructure (AMI) - core libraries and utilities
SUNWamir	Authentication Management Infrastructure (AMI) - configuration files
SUNWamix	Authentication Management Infrastructure (AMI) - 64-bit core libraries
SUNWarrf	X11 fonts for Arabic character set (required fonts)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWatfsr	Configuration and start-up files for the AutoFS file system
SUNWatfsu	Utilities and a daemon (automountd) for the AutoFS file system
SUNWauadt	Australasia CDE Support
SUNWauaos	Australasia OS Support
SUNWauaow	Australasia OW Support
SUNWauaox	Australasia 64-bit OS Support
SUNWauda	SunOS audio applications
SUNWaudd	SunOS audio device drivers using the new audio driver architecture
SUNWauddx	SunOS audio device drivers using the new audio driver architecture (64-bit)
SUNWaudio	Audio binaries
SUNWbcp	Utilities to provide a binary-compatible execution environment for SunOS 4.x applications
SUNWcamdt	Central America CDE Support
SUNWcamos	Central America OS Support
SUNWcamow	Central America OW Support
SUNWcamox	Central America 64-bit OS Support
SUNWcar.d	Core software for a specific hardware platform group
SUNWcar.m	Core software for a specific hardware platform group
SUNWcar.u	Core software for a specific hardware platform group
SUNWcar.us	Core software for a specific hardware platform group
SUNWcarx.u	Core 64-bit software for a specific hardware platform group
SUNWcarx.us	Core 64-bit software for a specific hardware platform group
SUNWcdt	Simplified Chinese (EUC) Localizations for CDE Desktop Login Environment
SUNWceudt	Central Europe CDE Support
SUNWceuos	Central Europe OS Support
SUNWceuow	Central Europe OW Support
SUNWceuox	Central Europe 64-bit OS Support
SUNWcg6.d	Kernel device driver for the GX frame buffer

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWcg6.m	Kernel device driver for the GX frame buffer
SUNWcg6.u	Kernel device driver for the GX frame buffer
SUNWcg6.us	Kernel device driver for the GX frame buffer
SUNWcg6x.u	Kernel device driver (64-bit) for the GX frame buffer
SUNWcg6x.us	Kernel device driver (64-bit) for the GX frame buffer
SUNWciu8	Simplified Chinese (EUC) iconv modules for UTF-8
SUNWciu8x	Simplified Chinese (EUC) iconv modules for UTF-8 (64-bit)
SUNWcleu	Simplified Chinese (EUC) Language Environment specific files; it is a required package to run Simplified Chinese (EUC) Language Environment
SUNWcleux	Simplified Chinese (EUC) Language Environment specific files; it is a required package to run Simplified Chinese (EUC) Language Environment (64-bit)
SUNWcpr.m	Suspend, Resume package
SUNWcpr.u	Suspend, Resume package
SUNWcpr.us	Suspend, Resume package
SUNWcprx.u	Suspend, Resume package (64-bit)
SUNWcprx.us	Suspend, Resume package (64-bit)
SUNWcsd	Core entries for /dev and /devices needed for the initial boot of Solaris
SUNWcsl	Core shared libraries for a specific instruction-set architecture
SUNWcslx	Core 64-bit libraries for a specific instruction-set architecture
SUNWcsr	Core software for a specific instruction-set architecture
SUNWcsu	Core software for a specific instruction-set architecture
SUNWcsxu	Core 64-bit software for a specific instruction-set architecture
SUNWctlu	Print utilities for CTL locales
SUNWctpls	Layout interface for language engines
SUNWctplx	64-bit layout interface for language engines
SUNWcttf	Simplified Chinese (EUC) True Type Fonts
SUNWcudt	Simplified Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWcufnt	Simplified Chinese (UTF-8) X Window System Platform Required Fonts

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWculeu	Simplified Chinese (UTF-8) Language Environment specific files; it is a required package to run Simplified Chinese (UTF-8) Language Environment
SUNWculex	Simplified Chinese (UTF-8) Language Environment specific files (64-bit)
SUNWcuplt	Simplified Chinese (UTF-8) X Window System Platform Software Package
SUNWcvc.u	Network Console
SUNWcvcr.u	Network Console daemon and rc script
SUNWcvcx.u	Network Console (64-bit)
SUNWcxmft	Simplified Chinese (EUC) X Window System Platform Required Fonts
SUNWcxplt	Simplified Chinese (EUC) X Window System Platform Software Package
SUNWdeis	German install software localization
SUNWdespl	Spell Checking Engine - German Dictionary
SUNWdfb.d	Kernel device drivers for dumb frame buffers
SUNWdfb.m	Kernel device drivers for dumb frame buffers
SUNWdfb.u	Kernel device drivers for dumb frame buffers
SUNWdfb.us	Kernel device drivers for dumb frame buffers
SUNWdj2rt	Java virtual machine and core class libraries (German supplement)
SUNWdjvdv	German Localizations for JavaVM developers package
SUNWdjvrt	German Localizations for JavaVM Runtime environment
SUNWdoc	Utilities and fonts for development, display, and production of documentation such as manual pages (<i>nroff</i> / <i>troff</i>)
SUNWdrr.u	Dynamic Reconfiguration Modules for Sun Enterprise 10000
SUNWdrrx.u	Dynamic Reconfiguration Modules for Sun Enterprise 10000 (64-bit)
SUNWdtbas	CDE application basic Runtime environment
SUNWdtbax	CDE application basic Runtime environment (64-bit)
SUNWdtcor	Solaris Desktop /usr/dt file system anchor
SUNWdtct	UTF-8 Code Conversion Tool
SUNWdtamn	Daemons for the Common Desktop Environment, CDE
SUNWdtast	CDE Desktop Applications
SUNWdtate	Solaris Desktop Login Environment

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWdtezt	Address Manager, Process Manager, File Finder, Perfmeter, Workstation Info
SUNWdthe	CDE Help Runtime environment
SUNWdthev	CDE Help Volumes
SUNWdthez	Desktop Power Pack Help Volumes
SUNWdticn	Icons for the Common Desktop Environment, CDE
SUNWdtim	Solaris CDE Image Viewer
SUNWdtjxt	Java Extensions
SUNWdtlog	System boot for Desktop Login
SUNWdtnsc	Netscape Componentization Support for CDE
SUNWdtrme	Common Desktop Environment (CDE) release documentation
SUNWdtscm	CDE Dtpower Schemes
SUNWdtwm	CDE Desktop Window Manager
SUNWeeudt	Eastern Europe CDE Support
SUNWeeuos	Eastern Europe OS Support
SUNWeeuow	Eastern Europe OW Support
SUNWeeuox	Eastern Europe 64-bit OS Support
SUNWej2rt	Java virtual machine and core class libraries (Spanish supplement)
SUNWejvdv	Spanish Localizations for JavaVM developers package
SUNWejvrt	Spanish Localizations for JavaVM Runtime environment
SUNWensqr.u	Ensoniq ES1370/1371/1373 Audio Device Driver (32-bit), (root)
SUNWensqx.u	Ensoniq ES1370/1371/1373 Audio Device Driver (64-bit), (root)
SUNWesis	Latin Spanish install software localization
SUNWesspl	Spell Checking Engine - Spanish Dictionary
SUNWesu	Additional UNIX system utilities, including <code>awk</code> , <code>bc</code> , <code>cal</code> , <code>compress</code> , <code>diff</code> , <code>dos2unix</code> , <code>last</code> , <code>rup</code> , <code>sort</code> , <code>spell</code> , <code>sum</code> , <code>uniq</code> , and <code>uuencode</code>
SUNWesxu	Additional 64-bit UNIX system utilities
SUNWeudba	American English/UTF-8 L10N for CDE Base
SUNWeudbd	American English/UTF-8 L10N for CDE Dtbuilder

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWeudda	American English/UTF-8 L10N for CDE Desktop Applications
SUNWeudhr	American English/UTF-8 L10N for CDE Help Runtime
SUNWeudhs	American English/UTF-8 L10N for CDE Help Runtime
SUNWeudis	American English/UTF-8 L10N for CDE Icons
SUNWeudiv	American English/UTF-8 L10N for Desktop Image tools
SUNWeudlg	American English/UTF-8 L10N for CDE Desktop Login Environment
SUNWeudmg	American English/UTF-8 L10N for Desktop Window Manager
SUNWeuezt	American English/UTF-8 L10N for Desktop Power Pack Applications
SUNWeugrf	X11 fonts for sun_eu_greek character set
SUNWeuluf	American English/UTF-8 L10N for Environment User Files
SUNWeulux	American English/UTF-8 L10N for Environment User Files (64-bit)
SUNWeuodf	American English/UTF-8 Core OPEN LOOK Desktop Files
SUNWeusru	American English/UTF-8 L10N for Solaris User Registration
SUNWeuxwe	American English/UTF-8 X Window System Environment
SUNWfbc	Generic frame buffer configuration utility
SUNWfcp	Sun FCP SCSI Fibre Channel Device Driver
SUNWfcpx	Sun FCP SCSI Fibre Channel Device Driver (64-bit)
SUNWfctl	Fctl module and fp device driver
SUNWfctlx	Fctl module and fp device driver (64-bit)
SUNWfdl	Solaris Desktop Font Downloader for Adobe PostScript printers
SUNWffb.u	Device driver for the UPA Bus Creator graphics accelerator
SUNWffbcf	Configuration utility for the UPA Bus Creator graphics accelerator
SUNWffbw	X server loadable module for the UPA Bus Creator graphics accelerator
SUNWffbx.u	Device driver for the UPA Bus Creator graphics accelerator (64-bit)
SUNWfj2rt	Java virtual machine and core class libraries (French supplement)
SUNWfjvdv	French Localizations for JavaVM developers package
SUNWfjvrt	French Localizations for JavaVM Runtime environment
SUNWfns	Federated Naming Service (XFN) - core libraries and utilities

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWfnsx	Federated Naming Service (XFN) - core libraries and utilities (64-bit)
SUNWfris	French install software localization
SUNWfrspl	Spell Checking Engine - French Dictionary
SUNWftpr	File Transfer Protocol Daemon and Utilities
SUNWftpu	File Transfer Protocol Daemon and Utilities
SUNWgdt	Simplified Chinese (GBK) Localizations for CDE Desktop Login Environment
SUNWgleu	Simplified Chinese (GBK) Language Environment specific files; it is a required package to run Simplified Chinese (GBK) Language Environment
SUNWgleux	Simplified Chinese (GBK) Language Environment specific files (64-bit)
SUNWglmr.u	Symbios 875/876 SCSI device driver, (root)
SUNWglmx.u	Symbios 875/876 SCSI device driver, (root)
SUNWgsdhx	GSS-API 64-bit mechanism libraries for NIS+ extended Diffie-Hellman
SUNWgss	Generic Security Service Application Program Interface, Version 2 - user
SUNWgssc	Generic Security Service Application Program Interface, Version 2 - config
SUNWgssdh	GSS-API mechanism libraries for NIS+ extended Diffie-Hellman
SUNWgssk	Generic Security Service Application Program Interface, Version 2 - kernel
SUNWgsskx	Generic Security Service Application Program Interface, Version 2 - kernel (64-bit)
SUNWgssx	Generic Security Service Application Program Interface, Version 2 - user (64-bit)
SUNWgttf	Simplified Chinese (GBK) True Type Fonts
SUNWgxfont	Simplified Chinese (GBK) X Window System Platform Required Fonts
SUNWgxplt	Simplified Chinese (GBK) X Window System Platform Software Package
SUNWgxplx	Simplified Chinese (GBK) X Window System Platform Software Package (64-bit)
SUNWhdt	Traditional Chinese Localizations for CDE Desktop Login Environment
SUNWhiu8	Traditional Chinese iconv modules for UTF-8
SUNWhiu8x	Traditional Chinese (EUC) iconv modules for UTF-8 (64-bit)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWhler	Stream modules for Traditional Chinese Language Environment; it is a required package to run Traditional Chinese Language Environment
SUNWhlerx	Stream modules for Traditional Chinese Language Environment; it is a required package to run Traditional Chinese Language Environment (64-bit)
SUNWhleu	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese Language Environment
SUNWhleux	Traditional Chinese (EUC) Language Environment specific files; it is a required package to run Traditional Chinese Language Environment (64-bit)
SUNWhmd	SunSwift SBus Adapter Drivers
SUNWhmdu	SunSwift SBus Adapter Headers
SUNWhmdx	SunSwift SBus Adapter Drivers (64-bit)
SUNWhttf	Traditional Chinese True Type Fonts Package
SUNWhudt	Traditional Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWhufnt	Simplified Chinese (UTF-8) X Window System Platform Required Fonts
SUNWhuleu	Traditional Chinese (UTF-8) Language Environment specific files; it is a required package to run Traditional Chinese UTF-8 Language Environment
SUNWhulex	Traditional Chinese (UTF-8) Language Environment User Files (64-bit)
SUNWhuplt	Traditional Chinese UTF-8 X Window System Platform Software Package
SUNWhxfnt	Traditional Chinese X Window System Platform Required Fonts Package
SUNWhxplt	Traditional Chinese X Window System Platform Software Package
SUNWi13cs	X11 ISO-8859-13 Codeset Support
SUNWi13rf	X11 fonts for ISO-8859-13 character set (required fonts)
SUNWi15cs	X11 ISO-8859-15 Codeset Support
SUNWi15rf	X11 fonts for ISO-8859-15 character set (required fonts)
SUNWi1cs	X11 ISO-8859-1 Codeset Support
SUNWi1of	ISO-8859-1 (Latin-1) Optional Fonts
SUNWi2cr.u	Device drivers for I2C devices, (root, 32-bit)
SUNWi2cs	X11 ISO-8859-2 Codeset Support
SUNWi2cx.u	Device drivers for I2C devices, (root, 64-bit)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWi2of	X11 fonts for ISO-8859-2 character set (optional fonts)
SUNWi2rf	X11 fonts for ISO-8859-2 character set (required fonts)
SUNWi4of	X11 fonts for ISO-8859-4 character set (optional fonts)
SUNWi4rf	X11 fonts for ISO-8859-4 character set (required fonts)
SUNWi5cs	X11 ISO-8859-5 Codeset Support
SUNWi5of	X11 fonts for ISO-8859-5 character set (optional fonts)
SUNWi5rf	X11 fonts for ISO-8859-5 character set (required fonts)
SUNWi7cs	X11 ISO-8859-7 Codeset Support
SUNWi7of	X11 fonts for ISO-8859-7 character set (optional fonts)
SUNWi7rf	X11 fonts for ISO-8859-7 character set (required fonts)
SUNWi8rf	X11 fonts for ISO-8859-8 character set (required fonts)
SUNWi9cs	X11 ISO-8859-9 Codeset Support
SUNWi9of	X11 fonts for ISO-8859-9 character set (optional fonts)
SUNWi9rf	X11 fonts for ISO-8859-9 character set (required fonts)
SUNWidecr.u	IDE device drivers updated for UltraAX
SUNWidecx.u	IDE device drivers - 64-bit, updated for UltraAX
SUNWider.u	IDE Device Driver, (root)
SUNWidn.u	Inter-Domain Network Modules for Sun Enterprise 10000
SUNWidnx.u	Inter-Domain Network Modules for Sun Enterprise 10000 (64-bit)
SUNWifb.u	Device driver for the PCI Bus Sun Expert3D (IFB) graphics accelerator
SUNWifbcf	Configuration utility for the PCI Bus Sun Expert3D (IFB) graphics accelerator
SUNWifbr	Boot-time device initialization support for the PCI Bus Sun Expert3D (IFB) graphics accelerator
SUNWifbw	X server loadable module for the PCI Bus Sun Expert3D (IFB) graphics accelerator
SUNWifbx.u	Device driver for the PCI Bus Sun Expert3D (IFB) graphics accelerator (64-bit)
SUNWifp	Sun FC-AL Device Driver for QLogic Fibre Channel Family
SUNWifpx	Sun FC-AL Device Driver for QLogic Fibre Channel Family (64-bit)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWigsr.u	Kernel device driver (32-bit) for the IGS graphics card
SUNWigsu	OpenWindows DDX driver and utilites for the IGS graphics card
SUNWigsx.u	Kernel 64-bit device driver for the IGS graphics card
SUNWiiimr	Internet/Intranet Input Method Framework (root)
SUNWiiimu	Internet/Intranet Input Method Framework (usr)
SUNWij2rt	Java virtual machine and core class libraries (Italian supplement)
SUNWijvdv	Italian Localizations for JavaVM developers package
SUNWijvrt	Italian Localizations for JavaVM Runtime environment
SUNWinst	Sun installation software
SUNWipc	Utilities to monitor or remove messages, semaphores, or shared memory for interprocess communication
SUNWipcx	64-bit utilities to monitor or remove messages, semaphores, or shared memory for interprocess communication
SUNWislcc	XSH4 conversion for Eastern European locales
SUNWislcx	64-bit iconv conversion for Eastern European locales
SUNWisolc	XSH4 conversion for ISO Latin character sets
SUNWisolx	64-bit iconv conversion for ISO Latin character sets
SUNWitis	Italian install software localization
SUNWitspl	Spell Checking Engine - Italian Dictionary
SUNWj2dem	Demonstration applications and applets
SUNWj2pi	Configuration files for Java Plug-In 1.2.2
SUNWj2rt	Java virtual machine and core class libraries
SUNWjc0r	Japanese Kana-Kanji Conversion Server cs00 root Files
SUNWjc0u	Japanese Kana-Kanji Conversion Server cs00 User Files
SUNWjcom	Java Communications API for Smart Card support - Java and Native Code
SUNWjcomx	Java Communications API for Smart Card support - Native Code (64-bit)
SUNWjedt	Japanese (EUC) Localization for CDE Desktop Login Environment
SUNWjeuc	Japanese (EUC) Feature Package specific files for usr; it is a required package to support EUC environment

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWjeucx	Japanese (EUC) Feature Package specific 64-bit files for <code>usr</code> ; it is a required package to run JFP environment
SUNWjexpl	Japanese (EUC) Localizations for X Window System platform software
SUNWjexpx	Japanese (EUC) Localizations for X Window System platform software (64-bit)
SUNWj fpr	Stream modules for Japanese Feature Package (JFP); it is a required package to run JFP environment
SUNWj fpu	Japanese Feature Package (JFP) specific files for <code>usr</code> ; it is a required package to run JFP environment
SUNWj fpu8	Japanese Feature Package (JFP) specific 64-bit files for <code>usr</code> ; it is a required package to run JFP environment
SUNWjib	Dallas Semiconductor serial iButton OCF Card Terminal Driver
SUNWjiu8	Japanese iconv modules which convert data between {eucJP PCK} and UTF-8
SUNWjiu8x	Japanese 64-bit iconv modules which convert data between {eucJP PCK} and UTF-8
SUNWjman	Japanese Feature Package Man Pages to see English man pages for SUNWj fpr and SUNWj fpu
SUNWjmfp	JMF player
SUNWjpck	Japanese (PCK - PC Kanji Code) Feature Package specific files; it is a required package to support PCK environment
SUNWjpckx	Japanese (PCK) Feature Package specific 64-bit files for <code>usr</code> ; it is a required package to run JFP environment
SUNWjpdtd	Japanese (PCK) Localization for CDE Desktop Login Environment
SUNWjpxpl	Japanese (PCK) Localizations for X Window System platform software
SUNWjpxpx	Japanese (PCK) Localizations for X Window System platform software (64-bit)
SUNWju8	Japanese (UTF-8) Feature Package specific files; it is a required package to support Japanese UTF-8 environment
SUNWju8x	Japanese (UTF-8) Feature Package specific 64-bit files for <code>usr</code> ; it is a required package to run JFP environment
SUNWjudtd	Japanese (UTF-8) Localization for CDE Desktop Login Environment
SUNWjuxpl	Japanese (UTF-8) Localizations for X Window System platform software

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWjvjit	Java JIT compiler
SUNWjvrt	JavaVM Runtime environment, includes java, appletviewer, and classes.zip
SUNWjwbc	Japanese Localizations for Solaris WBEM Services
SUNWjxcft	Japanese JISX212 TrueType and bitmap fonts
SUNWjxmft	Japanese X Window System Minimum Required Fonts - gothic medium
SUNwkdtd	Korean Localizations for CDE Desktop Login Environment
SUNWkey	Configuration tables that specify keyboard attributes such as localized meanings for individual keys
SUNWkiu8	Korean UTF-8 iconv modules for UTF-8
SUNWkiu8x	Korean (UTF-8) iconv modules for UTF-8 (64-bit)
SUNWkler	Stream modules for Korean Language Environment; it is a required package to run Korean Language Environment
SUNWklerx	Stream modules for Korean Language Environment; it is a required package to run Korean Language Environment (64-bit)
SUNWkleu	Korean Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkleux	Korean (EUC) Language Environment specific files; it is a required package to run Korean Language Environment (64-bit)
SUNWkmp2r.u	PS/2 Keyboard and Mouse Device Drivers, (root, 32-bit)
SUNWkmp2x.u	PS/2 Keyboard and Mouse Device Drivers, (root, 64-bit)
SUNWkoi8f	X11 fonts for KOI8-R character set
SUNWkttf	Korean True Type Fonts
SUNWkudt	Korean/UTF-8 Localizations for CDE Desktop Login Environment
SUNWkuleu	Korean UTF-8 Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkullex	Korean (UTF-8) Language Environment specific files; it is a required package to run Korean Language Environment (64-bit)
SUNWkuxpl	Korean UTF-8 X Window System Platform Software Package
SUNWkvm.d	Core software for a specific hardware platform group
SUNWkvm.m	Core software for a specific hardware platform group
SUNWkvm.u	Core software for a specific hardware platform group

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWkvm.us	Core software for a specific hardware platform group
SUNWkvmx.u	Core software for a specific hardware platform group
SUNWkvmx.us	Core software for a specific hardware platform group
SUNWkxfnt	Korean X Window System Platform Required Fonts
SUNWkxmft	Korean UTF-8 X Window System Platform Required Fonts
SUNWkxplt	Korean X Window System Platform Software Package
SUNWlccom	Localization common files
SUNWlcl	Locale Conversion Library
SUNWlclx	Locale Conversion Library (64-bit)
SUNWlibC	Sun Workshop Compilers Bundled libC
SUNWlibCf	Sun WorkShop Bundled libC (cfront version)
SUNWlibCx	Sun Workshop Bundled 64-bit libC
SUNWlibms	Sun WorkShop Bundled shared libm
SUNWllc	LLC2 driver implementing IEEE 802.2 Logical Link Control 2 service
SUNWllcr	The configuration and startup files for llc2 driver
SUNWllcx	64-bit kernel device drivers implementing IEEE 802.2 Logical Link Control 2 service
SUNWlmsx	Sun WorkShop Bundled 64-bit shared libm
SUNWloc	Localization utilities and C locale (POSIX default) definitions
SUNWlocx	Localization utilities and C locale (POSIX default) definitions (64-bit)
SUNWlpmsg	ToolTalk programs for passing printer alerts
SUNWluxd.d	Sun Enterprise Network Array sf Device Driver
SUNWluxd.u	Sun Enterprise Network Array sf Device Driver
SUNWluxd.us	Sun Enterprise Network Array sf Device Driver
SUNWluxdx.u	Sun Enterprise Network Array sf Device Driver (64-bit)
SUNWluxdx.us	Sun Enterprise Network Array sf Device Driver (64-bit)
SUNWluxl	Sun Enterprise Network Array socal Device Driver
SUNWluxlx	Sun Enterprise Network Array socal Device Driver (64-bit)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWluxop	Sun Enterprise Network Array firmware and utilities
SUNWm64.u	Device driver for the M64 graphics accelerator
SUNWm64.us	Device driver for the M64 graphics accelerator
SUNWm64cf	Configuration utility for the PCI Bus M64 graphics accelerator
SUNWm64w	X server loadable module for the M64 graphics accelerator
SUNWm64x.u	Device driver for the M64 graphics accelerator (64-bit)
SUNWm64x.us	Device driver for the M64 graphics accelerator (64-bit)
SUNWm64xr.u	Extended configuration for Xclaim, Charger and Rage Pro graphics cards
SUNWm64xr.us	Extended configuration for Xclaim and Charger graphics cards
SUNWmeadt	Middle East CDE Support
SUNWmeaos	Middle East OS Support
SUNWmeaow	Middle East OW Support
SUNWmeaox	Middle East 64-bit OS Support
SUNWmfrun	Motif 2.1.1 libraries, headers, xmbind and bindings
SUNWmgapp	Solaris Management Applications
SUNWmibii	Solstice Enterprise Agents 1.0.3 snmp daemon
SUNWmp	MP Print Filter
SUNWnafdt	Northern Africa CDE Support
SUNWnafos	Northern Africa OS Support
SUNWnafow	Northern Africa OW Support
SUNWnafox	Northern Africa 64-bit OS Support
SUNWnamdt	North America CDE Support
SUNWnamos	North America OS Support
SUNWnamow	North America OW Support
SUNWnamox	North America 64-bit OS Support
SUNWneudt	Northern Europe CDE Support
SUNWneuos	Northern Europe OS Support
SUNWneuow	Northern Europe OW Support

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWneuoX	Northern Europe 64-bit OS Support
SUNWniser	Configuration files and directories for the Network Information System (NIS and NIS+)
SUNWnisu	Utilities for the Network Information System (NIS and NIS+)
SUNWntpr	Network Time Protocol v3, NTP Daemon and Utilities (xntpd 3.4y)
SUNWntpu	Network Time Protocol v3, NTP Daemon and Utilities (xntpd 3.4y)
SUNWocf	Open Card Framework - core libraries and utilities
SUNWocfh	Open Card Framework - header files
SUNWocfr	Open Card Framework - configuration files
SUNWocfx	Open Card Framework (OCF) - 64-bit core libraries
SUNWolaud	Audiotool and other auxiliary audio support
SUNWolbk	OpenWindows online handbooks
SUNWoldcv	OPEN LOOK document and help view applications
SUNWoldst	OPEN LOOK deskset tools
SUNWoldte	OPEN LOOK Desktop Environment (olwm, props, wsinfo, etc.)
SUNWolimt	OPEN LOOK imagetool
SUNWolrte	OPEN LOOK toolkits Runtime environment
SUNWowbcp	Support files, programs, and libraries for OpenWindows Binary Compatibility
SUNWpamsC	Pluggable Authentication Module for Smart Card Authentication
SUNWpamsX	Pluggable Authentication Module for Smart Card Authentication (64-bit)
SUNWpcelX	3COM EtherLink III PCMCIA Ethernet Driver
SUNWpcmcI	Kernel modules and start-up files for PCMCIA card services
SUNWpcmcU	Daemon providing PCMCIA card services
SUNWpcmcX	64-bit kernel modules for PCMCIA card services
SUNWpcmem	PCMCIA memory card driver
SUNWpcr	Client configuration files and utilities for the print service
SUNWpcser	PCMCIA serial card driver
SUNWpcu	Client configuration files and utilities for the print service

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWpd	Drivers for SPARC platforms with the PCI bus
SUNWpdas	Tools to synchronize desktop applications with the Palm Pilot PDA
SUNWpdx	64-bit Drivers for SPARC platforms with the PCI bus
SUNWpl5u	Perl 5 programming language
SUNWplow	OpenWindows enabling for Partial Locales
SUNWplow1	OpenWindows enabling for Supplementary Partial Locales
SUNWpmowr	Power Management OW Utilities, (<i>root</i>)
SUNWpmowu	Power Management OW Utilities, (<i>usr</i>)
SUNWpmr	Power Management configuration file and rc script
SUNWpmu	Power Management binaries
SUNWpmux	Power Management binaries (64-bit)
SUNWppm	Graphical tool for managing printers under Solaris
SUNWpsdpr	PCMCIA ATA card driver
SUNWpsf	Client configuration files and utilities for the print service
SUNWpsr	Configuration and start-up files for the print service
SUNWpsu	Client configuration files and utilities for the print service
SUNWqfed	Sun Quad FastEthernet PCI/SBus Adapter 32-bit Driver
SUNWqfedx	Sun Quad FastEthernet PCI/SBus Adapter 64-bit Driver
SUNWrdr	OILBN ReadMe Directory
SUNWrmodu	Realmode Modules, (<i>usr</i>)
SUNWrsg	GSS-API services for ONC RPC
SUNWrsgk	Kernel GSS-API services for ONC RPC
SUNWrsgx	GSS-API services for ONC RPC (64-bit)
SUNWsacom	Solstice Enterprise Agents 1.0.3 files for <i>root</i> file system
SUNWsadmi	Solstice Enterprise Agents 1.0.3 Desktop Management Interface
SUNWsadm	Solstice Enterprise Agents 1.0.3 Desktop Management Interface Libraries (64-bit)
SUNWsamdt	South America CDE Support

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWsamos	South America OS Support
SUNWsamow	South America OW Support
SUNWsamox	South America 64-bit OS Support
SUNWsasnm	Solstice Enterprise Agents 1.0.3 Simple Network Management Protocol
SUNWsasnx	Solstice Enterprise Agents 1.0.3 Simple Network Management Protocol Libraries (64-bit)
SUNWsbcbp	SPARCompilers Binary Compatibility Libraries
SUNWscgui	Solaris Smart Card Administration - Graphical User Interface component
SUNWscmos	SCM Microsystems SmartOS smart card protocol module
SUNWscmsc	Sun External Smart Card Reader 1 OCF Card Terminal Driver
SUNWscplp	Print utilities for user interface and source build compatibility with SunOS 4.x
SUNWscpr	Utilities for user interface and source build compatibility with SunOS 4.x
SUNWscpu	Utilities for user interface and source build compatibility with SunOS 4.x
SUNWses	SCSI Enclosure Services (ses) Device Driver
SUNWsesx	SCSI Enclosure Services (ses) Device Driver (64-bit)
SUNWseudt	Southern Europe CDE Support
SUNWseuos	Southern Europe OS Support
SUNWseuow	Southern Europe OW Support
SUNWseuox	Southern Europe 64-bit OS Support
SUNWsior.u	SuperIO 307 (plug-n-play) device drivers, (root)
SUNWsiox.u	SuperIO 307 (plug-n-play) device drivers, (root)
SUNWsj2rt	Java virtual machine and core class libraries (Swedish supplement)
SUNWsjvdv	Swedish Localizations for JavaVM developers package
SUNWsjvrt	Swedish Localizations for JavaVM Runtime environment
SUNWslpr	root file system portion of the Service Location Protocol (SLP) framework; includes the SLP configuration file and start scripts for the SLP daemon
SUNWslpu	usr file system portion of the Service Location Protocol (SLP) framework; included are C and Java developer libraries and a daemon which can act as a directory agent (DA)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWslpx	Service Location Protocol (SLP) 64-bit developer libraries
SUNWsndmr	Sendmail root
SUNWsndmu	Sendmail user
SUNWsolnm	Enable Solaris Name in <code>/etc/release</code> file
SUNWspl	Spell Checking Engine - Base Release (English)
SUNWssregu	Solaris User Registration prompts at desktop login for user registration information
SUNWssad	Pln, soc, and ssd kernel device drivers
SUNWssadx	Pln, soc, and ssd kernel device drivers (64-bit)
SUNWssaop	Administration utilities and firmware for the SPARCstorage Array (SSA)
SUNWsvis	Swedish install software localization
SUNWsvspl	Spell Checking Engine - Swedish Dictionary
SUNWswmt	Solaris 2.x Install and Patch Utilities
SUNWsx	Shareable library and header files for SX/CG14 loadable pipeline support
SUNWsxow	X server loadable module for the SX/CG14 graphics accelerator
SUNWsxr.m	Kernel device drivers for the SX video subsystem
SUNWtcx.m	Device driver for the S24 frame buffer
SUNWtcxow	X server loadable module and configuration utility for the S24 frame buffer
SUNWtdbas	Thai Localizations for CDE Base functionality
SUNWtddst	Thai Localizations for CDE Desktop Applications
SUNWtddte	Thai Localizations for CDE Desktop Login Environment
SUNWtdft	Thai Localizations for CDE Fonts
SUNWtdwm	Thai Localizations for CDE Desktop Window Manager
SUNWtiu8	Thai UTF-8 iconv modules for UTF-8
SUNWtiu8x	Thai UTF-8 iconv modules for UTF-8 (64-bit)
SUNWtleu	Thai Language Environment specific files; it is a required package to run Thai Language Environment
SUNWtleux	Thai Language Environment specific files; it is a required package to run Thai Language Environment (64-bit)

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWtltk	ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWtltkx	ToolTalk library (64-bit) needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWtoo	Utilities for software development, including <code>ld</code> , <code>ldd</code> , <code>od</code> , and <code>truss</code>
SUNWtoox	Utilities for software development (64-bit)
SUNWtxfnt	Thai X Window System Platform Required Fonts Package
SUNWtxodt	Thai Core OPEN LOOK Desktop Package
SUNWtxplt	X Window System Platform Software Package
SUNWudf	Universal Disk Format 1.50 File System, (<code>usr</code>)
SUNWudfr	Universal Disk Format 1.50 File System
SUNWudfrx	Universal Disk Format 1.50 File System (64-bit)
SUNWuiu8	Iconv modules for UTF-8 Locale
SUNWuiu8x	Iconv Modules for UTF-8 Locale (64-bit)
SUNWuium	Iconv Manual pages for UTF-8 Locale
SUNWulcf	UTF-8 Locale Environment Common Files
SUNWulcfx	UTF-8 Locale Environment Common Files (64-bit)
SUNWulocf	UTF-8 Locale Environment OpenWindows Common Files
SUNWusb	USBA (USB framework) and USB Device Drivers
SUNWusbx	USBA (USB framework) and USB Device Drivers (64-bit)
SUNWusoc	Sun Universal SOC+ Fibre Channel Device Driver
SUNWusocx	Sun Universal SOC+ Fibre Channel Device Driver (64-bit)
SUNWuxfl1.u	System FLASH PROM update for SUNW Ultra-1
SUNWuxfl2.u	System FLASH PROM update for SUNW Ultra-2
SUNWuxfl4.u	System FLASH PROM update for SUNW Ultra-4
SUNWuxfle.u	System FLASH PROM update for SUNW Ultra-Enterprise
SUNWuxflr.u	Generic components for sun4u System FLASH PROM Update
SUNWuxflu.u	Generic components for sun4u System FLASH PROM Update
SUNWuxlcf	UTF-8 X Locale Environment Common Files

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWuxlcx	UTF-8 X Locale Environment Common Files (64-bit)
SUNWvolg	Volume Management Graphical User Interface
SUNWvolr	Configuration and start-up files for volume (removable media) management and volfs
SUNWvolu	Utilities and a daemon (vold) for volume (removable media) management and volfs
SUNWvolux	Driver for volume (removable media) management (64-bit)
SUNWvygdr.m	Voyager Drivers and Streams Module
SUNWwbapi	Solaris WBEM API
SUNWwbcor	Solaris WBEM Services (root)
SUNWwbcou	Solaris WBEM Services (usr)
SUNWweudt	Western Europe CDE Support
SUNWweuos	Western Europe OS Support
SUNWweuow	Western Europe OW Support
SUNWweuox	Western Europe 64-bit OS Support
SUNWwsr	Product registry, viewer, and Web Start support
SUNWxcu4	Utilities providing conformance with XCU4 specifications
SUNWxcu4x	64-bit utilities providing conformance with XCU4 specifications
SUNWxi18n	Runtime library loaded by libX11.so; provides input and output capability for internationalized X Window System applications
SUNWxi18x	Runtime library loaded by sparcv9/libX11.so; provides input and output capability for internationalized X Window System applications
SUNWxilcg	XIL loadable pipelines for the SX/CG14 graphics accelerator
SUNWxildh	XIL Loadable Pipeline Libraries
SUNWxilow	XIL Deskset Loadable Pipeline Libraries
SUNWxilr1	XIL Runtime Environment
SUNWxilv1	XIL loadable pipelines for all sun4u platforms; includes loadable pipelines for the UPA Bus Creator graphics accelerator
SUNWxim	X Input Method server provides different styles of input
SUNWximx	X Input Method server provides different styles of input

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
SUNWxwacx	AccessX client program
SUNWxwcfnt	X Window System optional fonts
SUNWxwcls1	Font support library for Type1/CID fonts
SUNWxwdv	Kernel device drivers for X Window System
SUNWxwdvx	64-bit kernel device drivers for X Window System
SUNWxwfnt	X Window System Fonts (required fonts)
SUNWxwfs	OpenWindows font server
SUNWxwice	OpenWindows ICE library and iceauth
SUNWxwicx	X Window System ICE 64-bit library
SUNWxwkey	X Window System software, PC key tables
SUNWxwmod	Kernel modules required to run the OpenWindows product
SUNWxwoft	X Window System optional fonts
SUNWxwopt	Nonessential MIT core clients and server extensions
SUNWxwplt	X Window System platform software (server, DPS, extensions, Xlib, required and common MIT clients)
SUNWxwplx	X Window System 64-bit library software
SUNWxwpsr	X server modules optimized for sun4u platform; this package is not required for non-sun4u platforms; but installing this package will not affect the working of server on non-sun4u platforms
SUNWxwrtl	X Window System and Graphics Runtime library links
SUNWxwrtx	X Window System 64-bit Library Links in /usr/lib/sparcv9
SUNWxwslx	X Window System 64-bit lint libraries for programmers
TSBWvplr.m	Toshiba platform links
TSBWvplr.u	Toshiba platform links
TSBWvplu.m	Toshiba usr/platform links
TSBWvplu.u	Toshiba usr/platform links
TSIpgx.u	Device driver for PGX32 (Raptor GFX) graphics accelerator
TSIpgx.us	Device driver for PGX32 (Raptor GFX) graphics accelerator
TSIpgxw	X Server loadable module for PGX32 (Raptor GFX) graphics accelerator

TABLE 31-1 Packages on the Solaris 8 Software 1 of 2 *SPARC Platform Edition* CD
(Continued)

This Package	Contains
TSIpgxx.u	Device driver for PGX32 (Raptor GFX) graphics accelerator (64-bit)
TSIpgxx.us	Device driver for PGX32 (Raptor GFX) graphics accelerator (64-bit)
TWSvplr.u	TWS platform links
TWSvplu.u	TWS <code>usr/platform</code> links

Packages on the Solaris 8 Software 2 of 2 SPARC Platform Edition CD

This chapter lists and describes the packages included on the Solaris 8 Software 2 of 2 *SPARC Platform Edition CD*.

TABLE 32-1 Packages on the Solaris 8 Software 2 of 2 *SPARC Platform Edition CD*

This package	Contains
SUNWaccr	Utilities for accounting and reporting of system activity
SUNWaccu	Utilities for accounting and reporting of system activity
SUNWapchd	The Apache HTTP server (documentation)
SUNWapchr	The Apache HTTP server program (<code>root</code> components)
SUNWapchu	The Apache HTTP server program (<code>usr</code> components)
SUNWapppr	Configuration files for the daemon implementing asynchronous point-to-point protocol (PPP)
SUNWapppu	Login service and the daemon implementing asynchronous point-to-point protocol (PPP)
SUNWarc	System libraries in archive (<code>ar</code>) format for software development of statically linked executables
SUNWarcx	System libraries in archive (<code>ar</code>) format for software development of statically linked executables
SUNWast	Administrative utilities for improving system security by monitoring or restricting access to system files and directories
SUNWaudh	SunOS C/C++ header files for audio drivers and applications
SUNWaudmo	Audio demo programs, libraries, and sounds
SUNWbash	GNU Bourne-Again shell (<code>bash</code>)
SUNWbashS	Source for the GNU Bourne-Again shell (<code>bash</code>)

TABLE 32-1 Packages on the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD
(Continued)

This package	Contains
SUNWbnur	Configuration and start-up files for UUCP utilities
SUNWbnuu	UUCP utilities and daemon
SUNWbtool	Software development utilities, including <i>ar</i> , <i>dis</i> , <i>dump</i> , <i>elfdump</i> , <i>lex</i> , <i>lorder</i> , <i>mcs</i> , <i>nm</i> , <i>prof</i> , <i>ranlib</i> , <i>rpcgen</i> , <i>size</i> , <i>strip</i> , <i>tsort</i> , and <i>yacc</i>
SUNWbtoox	64-bit libraries for software development utilities, including <i>lex</i> and <i>yacc</i>
SUNWbzip	The <i>bzip</i> compression utility
SUNWbzipS	Source for the <i>bzip</i> compression utility
SUNWbzipx	The <i>bzip</i> compression library (64-bit)
SUNWcg6h	SunOS C/C++ header files for development of software for the GX frame buffer
SUNWcpc.u	Kernel support for CPU Performance Counters
SUNWcpc.us	Kernel support for CPU Performance Counters
SUNWcpcu	CPU Performance Counter libraries and utilities
SUNWcpcux	CPU Performance Counter libraries and utilities (64-bit)
SUNWcpcx.u	Kernel support for CPU Performance Counters (64-bit)
SUNWcpcx.us	Kernel support for CPU Performance Counters (64-bit)
SUNWcstl	Apptrace utility for application tracing, including shared objects
SUNWcstlx	Apptrace shared objects (64-bit)
SUNWdfbh	SunOS C/C++ header files for development of software for dumb frame buffers
SUNWdhcm	Graphical management interface for the DHCP server
SUNWdhcsr	root file system portion of the SunOS BOOTP/DHCP service, which uses the BOOT Protocol and/or Dynamic Host Configuration Protocol to provide network configuration parameters to BOOTP/DHCP clients; administration utilities for the service are included
SUNWdhcsu	usr file system portion of the SunOS BOOTP/DHCP service, which uses the BOOT Protocol and/or Dynamic Host Configuration Protocol to provide network configuration parameters to BOOTP/DHCP clients; administration utilities for the service are included
SUNWdial	Streams module for the dials and buttons devices
SUNWdialh	Header files for the dials and buttons devices
SUNWdialx	Streams module for the dials and buttons devices (64-bit)

TABLE 32-1 Packages on the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD
(Continued)

This package	Contains
SUNWdp1	System libraries compiled with profiling for software development performance measurement
SUNWdp1x	64-bit system libraries compiled with profiling for software development performance measurement
SUNWdtab	CDE Desktop Application Builder
SUNWdt.dem	CDE Demos
SUNWdthed	CDE Help Developer Environment
SUNWdt.inc	CDE Include files
SUNWdt.ma	Manual pages for the Common Desktop Environment, CDE
SUNWdt.mad	Common Desktop Environment (CDE) Developer manual pages
SUNWdt.maz	Manual pages for Address Manager, Process Manager, File Finder, Perfmer, Workstation Info
SUNWebnfs	Java packages for WebNFS
SUNWfac	Utilities and resources for a Form and Menu Language Interpreter (FMLI) execution environment
SUNWfnx5	Federated Naming Service (XFN) - support for X.500 Directory
SUNWfnx5x	Federated Naming Service (XFN) - support for X.500 Directory (64-bit)
SUNWg1t	Layout Table Generation Utility
SUNWgpch	The GNU Patch utility
SUNWgpchS	Source for the GNU Patch utility
SUNWgzip	The GNU Zip (<i>gzip</i>) compression utility
SUNWgzipS	Source for the GNU Zip (<i>gzip</i>) compression utility
SUNWhea	SunOS C/C++ header files for general development of software
SUNWifph	SunOS Header Files for QLogic FC-AL Family
SUNWj2dev	Tools and utilities including javac, jdb, javadoc, rmiregistry
SUNWj2man	Man pages
SUNWjv.dem	JavaVM demo programs
SUNWjv.dev	JavaVM developers packages, includes javac, javah, and javap
SUNWjv.man	JavaVM man pages
SUNWkcspf	Kodak Color Management System Runtime

TABLE 32-1 Packages on the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD
(Continued)

This package	Contains
SUNWkcspg	Kodak Color Management System Runtime Demos
SUNWkcspx	Kodak Color Management System Runtime Demos for 64-bit
SUNWkcsrt	Kodak Color Management System Runtime
SUNWkcsrx	Kodak Color Management System Runtime for 64-bit OS
SUNWless	The GNU pager (less)
SUNWlessS	Source for the GNU pager (less)
SUNWlibm	Sun WorkShop Bundled libm
SUNWlldap	Ldap libraries in for software development of dynamically linked executables
SUNWlmx	Sun WorkShop Bundled misc. 64-bit libm files
SUNWman	System Reference Manual Pages
SUNWmdb	Modular Debugger (MDB)
SUNWmdbx	Modular Debugger (MDB) (64-bit)
SUNWmfdev	Motif UIL compiler
SUNWmfman	CDE Motif Manuals
SUNWmkcd	CD creation utilities
SUNWmkcdS	Source for the CD creation utilities
SUNWncar	Core components to enable the network cache and accelerator
SUNWncarx	Core components to enable the network cache and accelerator (64-bit)
SUNWncau	Components to enable the network cache and accelerator
SUNWoladd	OPEN LOOK Alternate Desktop Demos
SUNWoldem	OPEN LOOK demo programs
SUNWoldim	Graphics files in various formats
SUNWolinc	OPEN LOOK include files
SUNWolman	OPEN LOOK toolkit/desktop users man pages
SUNWolslb	OPEN LOOK toolkit/desktop static and lint libraries for programmers
SUNWolsrc	OPEN LOOK example source code for programmers
SUNWosdem	Source code to demonstrate the use of OS interfaces: ELF

TABLE 32-1 Packages on the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD
(Continued)

This package	Contains
SUNWpdu	SunOS C/C++ header files for development of software for the PCI bus on SPARC platforms
SUNWp15m	Perl 5 Reference Manual Pages
SUNWp15p	POD documentation for Perl 5 programming language
SUNWpmowm	Power Management OW Utilities Man Pages
SUNWpppk	Kernel device drivers implementing asynchronous point-to-point protocol (PPP)
SUNWpppkx	64-bit kernel device drivers implementing asynchronous point-to-point protocol (PPP)
SUNWpstl.u	Appttrace processor specific shared objects
SUNWpstl.us	Appttrace processor specific shared objects
SUNWpstlx.u	Appttrace processor specific shared objects (64-bit)
SUNWpstlx.us	Appttrace processor specific shared objects (64-bit)
SUNWqfedu	Sun Quad FastEthernet PCI/SBus Adapter Headers
SUNWrpm	Utilities for processing RPM archives
SUNWrtvc	Device driver for the SunVideo real-time video capture and compression card
SUNWrtvcl	XIL loadable pipelines for SunVideo capture and compression
SUNWrtvcu	Header files, and examples for SunVideo capture and compression
SUNWrtvcx	Device driver for the SunVideo real-time video capture and compression card (64-bit)
SUNWsadm1	Solstice launcher and associated libraries
SUNWscpux	Utilities for user interface and source build compatibility with SunOS 4.x
SUNWspot	Solaris Bundled tools
SUNWspox	Sun Workshop Bundled 64-bit make library
SUNWsra	Libraries in archive (ar) format for source build compatibility with SunOS 4.x
SUNWsrh	SunOS C/C++ header files for source build compatibility with SunOS 4.x
SUNWsutl	Statically linked utilities for system disaster recovery
SUNWtcsh	Tenex C-shell (tcsh)

TABLE 32-1 Packages on the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD
(Continued)

This package	Contains
SUNWtcshS	Source for the Tenex C-shell (tcsh)
SUNWter	Extensive terminfo database entries describing capabilities of terminals and pseudoterminals
SUNWtltkd	ToolTalk static library and include files for programmers
SUNWtltkm	ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users
SUNWtnfc	Utilities needed to enable probe points, in the kernel and in applications, that can generate Trace Normal Format (TNF) records in a trace file
SUNWtnfcx	64-bit utilities needed to enable probe points, in the kernel and in applications, that can generate Trace Normal Format (TNF) records in a trace file
SUNWtnfd	Utilities needed by developers using Trace Normal Format (TNF) facilities
SUNWucbt	Apptrace shared objects for UCB compatibility libraries
SUNWucbtX	Apptrace shared objects for UCB compatibility libraries (64-bit)
SUNWusbu	USB Headers
SUNWxcu4t	XCU4 Compliant Versions of make and sccs utilities
SUNWxilh	XIL API Header files
SUNWxwdem	X Window System demo programs
SUNWxwdim	Graphics files in various formats
SUNWxwdxm	DPS MOTIF library
SUNWxwfa	Font Administration application for Solaris platforms
SUNWxwh1	X Window System and Graphics Header links in <code>/usr/include</code>
SUNWxwinc	X Window System include files
SUNWxwman	X Window System online user man pages
SUNWxwpmn	X Window System online programmers man pages
SUNWxwslb	X Window System static and lint libraries for programmers
SUNWxwsrc	X Window System example source code for programmers
SUNWypR	NIS Server for Solaris 2.6 and up
SUNWypu	NIS Server for Solaris 2.6 and up
SUNWzip	The Info-Zip (zip) compression utility

TABLE 32-1 Packages on the Solaris 8 Software 2 of 2 *SPARC Platform Edition* CD
(Continued)

This package	Contains
SUNWzipS	Source for the Info-Zip (zip) compression utility
SUNWzlib	The Zip compression library
SUNWzlibs	Source for the Zip compression library
SUNWzlibx	The Info-Zip compression library (64-bit)
SUNWzsh	Z shell (zsh)
SUNWzshS	Source for the Z shell (zsh)

Packages on the Solaris 8 Languages *SPARC Platform Edition* CD

This chapter lists and describes the packages included on the Solaris 8 Languages *SPARC Platform Edition* CD, by language.

TABLE 33-1 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Simplified Chinese

This Package	Contains
NSCPccom	Simplified Chinese localization of Netscape Communicator 4.7 supporting International security
NSCPcucom	Zh.UTF-8 localization of Netscape Communicator 4.7 supporting International security
NSCPgcom	Zh.GBK localization of Netscape Communicator 4.7 supporting International security
SUNWcadis	Simplified Chinese (EUC) Localizations for Admintool and GUI install
SUNWcadma	Simplified Chinese (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWhadis packages for Simplified Chinese (EUC) localization
SUNWcbcp	Simplified Chinese (EUC) Language Environment binary compatibility files
SUNWcdab	Simplified Chinese (EUC) Localizations for CDE Desktop Application Builder
SUNWcdbas	Simplified Chinese (EUC) Localizations for CDE Base functionality
SUNWcddst	Simplified Chinese (EUC) Localizations for CDE Desktop Applications
SUNWcddte	Simplified Chinese (EUC) Localizations for CDE Desktop Login Environment
SUNWcdezt	Simplified Chinese (EUC) Localizations for Desktop Power Pack Applications

TABLE 33-1 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWcdfcft	Simplified Chinese (EUC) Localizations for CDE Fonts
SUNWcdhe	Simplified Chinese (EUC) Localizations for CDE Help Runtime environment
SUNWcdhev	Simplified Chinese (EUC) CDE Help Volumes
SUNWcdhez	Simplified Chinese (EUC) (Common) Desktop Power Pack Help Volumes
SUNWcdicn	Simplified Chinese (EUC) Localizations for CDE Icons
SUNWcdim	Simplified Chinese (EUC) Localizations for CDE Imagetool
SUNWcdwm	Simplified Chinese (EUC) Localizations for CDE Desktop Window Manager
SUNWcepmw	Simplified Chinese (EUC) Localization for Power Management OW Utilities
SUNWcervl	Simplified Chinese (EUC) SunVideo Runtime Support Software
SUNWcexir	Simplified Chinese (EUC) XIL Runtime Environment
SUNWcj2p	Simplified Chinese localization of Java Plug-In 1.2.2
SUNWcj2rt	Java virtual machine and core class libraries (Simplified Chinese supplement)
SUNWcjvdv	Simplified Chinese Localizations for JavaVM developers package
SUNWcjvrt	Simplified Chinese Localizations for JavaVM Runtime environment
SUNWckcsr	Simplified Chinese (EUC) KCMS Runtime Environment
SUNWcleue	Simplified Chinese (EUC) Language Environment specific files; it is a required package to run Simplified Chinese (EUC) Language Environment
SUNWcoaud	Simplified Chinese (EUC) OPEN LOOK Audio Applications Package
SUNWcodcv	Simplified Chinese (EUC) OPEN LOOK Document and Help Viewer Applications Package
SUNWcodem	Simplified Chinese (EUC) OPEN LOOK Demo Programs Package
SUNWcodst	Simplified Chinese (EUC) OPEN LOOK Deskset Tools Package
SUNWcodte	Simplified Chinese (EUC) Core OPEN LOOK Desktop Package
SUNWcoimt	Simplified Chinese (EUC) OPEN LOOK Imagetool Package
SUNWcoman	Simplified Chinese (EUC) OPEN LOOK Toolkit/Desktop Users Man Pages Package
SUNWcorte	Simplified Chinese (EUC) OPEN LOOK Toolkits Runtime Environment Package

TABLE 33-1 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWcpdas	Simplified Chinese Localization for tools to synchronize desktop applications with the Palm Pilot PDA
SUNWcrdm	Simplified Chinese (EUC) OILBN ReadMe Directory
SUNWcreg	Simplified Chinese (EUC) Localizations for Solaris User Registration
SUNWcsadl	Simplified Chinese (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWctltk	Simplified Chinese (EUC) ToolTalk Runtime Package Package
SUNWcttfe	Simplified Chinese (EUC) True Type Fonts
SUNWcuada	Simplified Chinese (UTF-8) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWgadis packages for Simplified Chinese (UTF-8) localization
SUNWcuadi	Simplified Chinese (UTF-8) Localizations for Admintool and GUI install
SUNWcubas	Simplified Chinese (UTF-8) Localizations for CDE Base functionality
SUNWcudab	Simplified Chinese (UTF-8) Localizations for CDE Desktop Application Builder
SUNWcudc	Simplified Chinese (EUC) Localizations for User Defined Character tool for Solaris CDE environment
SUNWcudez	Simplified Chinese (UTF-8) Localizations for Desktop Power Pack Applications
SUNWcudft	Simplified Chinese (UTF-8) Localizations for CDE Fonts
SUNWcudhe	Simplified Chinese (UTF-8) Localizations for CDE Help Runtime environment
SUNWcudhv	Simplified Chinese (UTF-8) CDE Help Volumes
SUNWcudhz	Simplified Chinese (UTF-8) Localizations for Desktop Power Pack Help Volumes
SUNWcudic	Simplified Chinese (UTF-8) Localizations for CDE Icons
SUNWcudim	Simplified Chinese (UTF-8) L10N for CDE Desktop Imagetool
SUNWcudst	Simplified Chinese (UTF-8) Localizations for CDE Desktop Applications
SUNWcudte	Simplified Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWcudwm	Simplified Chinese (UTF-8) Localizations for CDE Desktop Window Manager

TABLE 33-1 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWculee	Simplified Chinese (UTF-8) Language Environment specific files; it is a required package to run Simplified Chinese (UTF-8) Language Environment
SUNWcuman	Simplified Chinese (UTF-8) X Window System Online User Man Pages Package
SUNWcuodt	Simplified Chinese (UTF-8) Core OPEN LOOK Desktop Package
SUNWcupmw	Simplified Chinese (UTF-8) Localization for Power Management OW Utilities
SUNWcurdm	Simplified Chinese (UTF-8) OILBN ReadMe Directory
SUNWcureg	Simplified Chinese (UTF-8) Localizations for Solaris User Registration
SUNWcusad	Simplified Chinese (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWcuudc	Simplified Chinese (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWcuxe	Simplified Chinese (UTF-8) X Window System Platform Software Package
SUNWcwbcp	Simplified Chinese (EUC) OpenWindows Binary Compatibility Package
SUNWcwsr	Simplified Chinese (EUC) product registry 2.0 localizable text resources
SUNWcxex	Simplified Chinese (EUC) X Window System Platform Software Package
SUNWcxfont	Simplified Chinese (EUC) X Window System Platform Required Fonts
SUNWcxman	Simplified Chinese (EUC) X Window System Online User Man Pages Package
SUNWcxoft	Simplified Chinese (EUC) X Window System Optional Fonts Package
SUNWgadis	Simplified Chinese (GBK) Localizations for Admintool and GUI install
SUNWgadma	Simplified Chinese (GBK) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWgadis packages for Simplified Chinese (GBK) localization
SUNWgdab	Simplified Chinese (GBK) Localizations for CDE Desktop Application Builder
SUNWgdbas	Simplified Chinese (GBK) Localizations for CDE Base functionality
SUNWgddst	Simplified Chinese (GBK) Localizations for CDE Desktop Applications
SUNWgddte	Simplified Chinese (GBK) Localizations for CDE Desktop Login Environment

TABLE 33-1 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWgdezt	Simplified Chinese (GBK) Localizations for Desktop Power Pack Applications
SUNWgdft	Simplified Chinese (GBK) Localizations for CDE Fonts
SUNWgdhe	Simplified Chinese (GBK) Localizations for CDE Help Runtime environment
SUNWgdhev	Simplified Chinese (GBK) CDE Help Volumes
SUNWgdhez	Simplified Chinese (GBK) Localizations for Desktop Power Pack Help Volumes
SUNWgdi.cn	Simplified Chinese (GBK) Localizations for CDE Icons
SUNWgdim	Simplified Chinese (GBK) L10N for CDE Desktop Imagetool
SUNWgdwm	Simplified Chinese (GBK) Localizations for CDE Desktop Window Manager
SUNWgleue	Simplified Chinese (GBK) Language Environment specific files; it is a required package to run Simplified Chinese (GBK) Language Environment
SUNWgodte	Simplified Chinese (GBK) Core OPEN LOOK Desktop Package
SUNWgpmw	Simplified Chinese (GBK) Localization for Power Management OW Utilities
SUNWgrdm	Simplified Chinese (GBK) OILBN ReadMe Directory
SUNWgreg	Simplified Chinese (GBK) Localizations for Solaris User Registration
SUNWgsadl	Simplified Chinese (GBK) Localizations for Solstice Admintool launcher and associated libraries
SUNWgttfe	Simplified Chinese (GBK) True Type Fonts
SUNWgudc	Simplified Chinese (GBK) Localizations for User Defined Character tool for Solaris CDE environment
SUNWgxe	Simplified Chinese (GBK) X Window System Platform Software Package
SUNWgxman	Simplified Chinese (GBK) X Window System Online User Man Pages Package

TABLE 33-2 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Traditional Chinese

This Package	Contains
NSCP5com	Zh_TW.BIG5 localization of Netscape Communicator 4.7 supporting International security
NSCPhcom	Traditional Chinese localization of Netscape Communicator 4.7 supporting International security

TABLE 33-2 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
NSCPhucom	Zh_TW.UTF-8 localization of Netscape Communicator 4.7 supporting International security
SUNW5adi	Traditional Chinese Localizations for Admintool and GUI install
SUNW5adma	Traditional Chinese Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNW5adi packages for Localization
SUNW5dab	Traditional Chinese Localizations for CDE Desktop Application Builder
SUNW5dbas	Traditional Chinese Localizations for CDE Base functionality
SUNW5ddst	Traditional Chinese Localizations for CDE Desktop Applications
SUNW5ddte	Traditional Chinese Localizations for CDE Desktop Login Environment
SUNW5dez	Traditional Chinese (BIG5) Localizations for Desktop Power Pack Applications
SUNW5dft	Traditional Chinese Localizations for CDE Fonts
SUNW5dhe	Traditional Chinese Localizations for CDE Help Runtime environment
SUNW5dhev	Traditional Chinese CDE Help Volumes
SUNW5dhez	Traditional Chinese (Common BIG5) Localizations for Desktop Power Pack Help Volumes
SUNW5dicn	Traditional Chinese Localizations for CDE Icons
SUNW5dim	Traditional Chinese Localizations for CDE Imagetool
SUNW5dwm	Traditional Chinese Localizations for CDE Desktop Window Manager
SUNW5leue	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese BIG5 Language Environment
SUNW5odte	Traditional Chinese BIG5 Core OPEN LOOK Desktop Package
SUNW5pmw	Traditional Chinese BIG5 Localization for Power Management OW Utilities
SUNW5rdm	Traditional Chinese (BIG5) OILBN ReadMe Directory
SUNW5sadl	Traditional Chinese Localizations for Solstice Admintool launcher and associated libraries
SUNW5ttfe	Traditional Chinese True Type Fonts Package Extension
SUNW5udc	Traditional Chinese (BIG5) Localizations for User Defined Character tool for Solaris CDE environment
SUNW5xfnt	Traditional Chinese BIG5 X Window System Platform Required Fonts Package

TABLE 33-2 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
SUNWhadis	Traditional Chinese (EUC) Localizations for Admintool and GUI install
SUNWhadma	Traditional Chinese (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWhadis packages for Traditional Chinese (EUC) localization
SUNWhbcp	Traditional Chinese Language Environment binary compatibility files
SUNWhdab	Traditional Chinese Localizations for CDE Desktop Application Builder
SUNWhdbas	Traditional Chinese Localizations for CDE Base functionality
SUNWhddst	Traditional Chinese Localizations for CDE Desktop Applications
SUNWhddte	Traditional Chinese Localizations for CDE Desktop Login Environment
SUNWhdezt	Traditional Chinese (EUC) Localizations for Desktop Power Pack Applications
SUNWhdft	Traditional Chinese Localizations for CDE Fonts
SUNWhdhe	Traditional Chinese Localizations for CDE Help Runtime environment
SUNWhdhev	Traditional Chinese CDE Help Volumes
SUNWhdhez	Traditional Chinese (Common) Localizations for Desktop Power Pack Help Volumes
SUNWhdicon	Traditional Chinese Localizations for CDE Icons
SUNWhdim	Traditional Chinese Localizations for CDE Imagetool
SUNWhdwm	Traditional Chinese Localizations for CDE Desktop Window Manager
SUNWhepmw	Traditional Chinese (EUC) Localization for Power Management OW Utilities
SUNWhervl	Traditional Chinese (EUC) SunVideo Runtime Support Software
SUNWhexir	Traditional Chinese (EUC) XIL Runtime Environment
SUNWhj2p	Traditional Chinese localization of Java Plug-In 1.2.2
SUNWhj2rt	Java virtual machine and core class libraries (Traditional Chinese supplement)
SUNWhjvdv	Traditional Chinese Localizations for JavaVM developers package
SUNWhjvrt	Traditional Chinese Localizations for JavaVM Runtime environment
SUNWhkcsr	Traditional Chinese (EUC) KCMS Runtime Environment
SUNWhleue	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese Language Environment

TABLE 33-2 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
SUNWhoaud	Traditional Chinese OPEN LOOK Audio Applications Package
SUNWhodcv	Traditional Chinese OPEN LOOK Document and Help Viewer Applications Package
SUNWhodem	Traditional Chinese OPEN LOOK Demo Programs Package
SUNWhodst	Traditional Chinese OPEN LOOK Deskset Tools Package
SUNWhodte	Traditional Chinese Core OPEN LOOK Desktop Package
SUNWhoimt	Traditional Chinese OPEN LOOK Imagetool Package
SUNWhoman	Traditional Chinese OPEN LOOK Toolkit/Desktop Users Man Pages Package
SUNWhorte	Traditional Chinese OPEN LOOK Toolkits Runtime Environment Package
SUNWhpdas	Traditional Chinese Localization for tools to synchronize desktop applications with the Palm Pilot PDA
SUNWhrdm	Traditional Chinese (EUC) OILBN ReadMe Directory
SUNWhreg	Traditional Chinese Localizations for Solaris User Registration
SUNWhsadl	Traditional Chinese (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWhtltk	Traditional Chinese ToolTalk Runtime Package Package
SUNWhttfe	Traditional Chinese True Type optional Fonts Package Extension
SUNWhuada	Traditional Chinese (UTF-8) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNW5adi packages for Localization
SUNWhuadi	Traditional Chinese (UTF-8) Localizations for Admintool and GUI install
SUNWhubas	Traditional Chinese (UTF-8) Localizations for CDE Base functionality
SUNWhuccd	Traditional Chinese Console Display Environment specific files; it is a required package to run Traditional Chinese Console Display Environment
SUNWhudab	Traditional Chinese (UTF-8) Localizations for CDE Desktop Application Builder
SUNWhudc	Traditional Chinese (EUC) Localizations for User Defined Character tool for Solaris CDE environment
SUNWhudez	Traditional Chinese (UTF-8) Localizations for Desktop Power Pack Applications
SUNWhudft	Traditional Chinese (UTF-8) Localizations for CDE Fonts

TABLE 33-2 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
SUNWhudhe	Traditional Chinese (UTF-8) Localizations for CDE Help Runtime environment
SUNWhudhv	Traditional Chinese (UTF-8) CDE Help Volumes
SUNWhudhz	Traditional Chinese (Common UTF-8) Localizations for Desktop Power Pack Help Volumes
SUNWhudic	Traditional Chinese (UTF-8) Localizations for CDE Icons
SUNWhudim	Traditional Chinese (UTF-8) Localizations for CDE Imagetool
SUNWhudst	Traditional Chinese (UTF-8) Localizations for CDE Desktop Applications
SUNWhudte	Traditional Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWhudwm	Traditional Chinese (UTF-8) Localizations for CDE Desktop Window Manager
SUNWhulee	Traditional Chinese (UTF-8) Language Environment specific files; it is a required package to run Traditional Chinese UTF-8 Language Environment
SUNWhuodt	Traditional Chinese UTF-8 Core OPEN LOOK Desktop Package
SUNWhupmw	Traditional Chinese UTF-8 Localization for Power Management OW Utilities
SUNWhurdm	Traditional Chinese (UTF-8) OILBN ReadMe Directory
SUNWhusad	Traditional Chinese (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWhuudc	Traditional Chinese (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWhwbcp	Traditional Chinese OpenWindows Binary Compatibility Package
SUNWhwsr	Traditional Chinese product registry 2.0 localizable text resources
SUNWhxe	Traditional Chinese X Window System Platform Software Package
SUNWhxman	Traditional Chinese X Window System Online User Man Pages Package

TABLE 33-3 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: French

This Package	Contains
NSCPfrcdo	French localization of Netscape Communicator 4.7 supporting U.S. security
NSCPfrcom	French localization of Netscape Communicator 4.7 supporting International security

TABLE 33-3 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: French
(Continued)

This Package	Contains
SUNWf8bas	Base L10N fr CDE functionality to run a CDE application
SUNWf8dst	CDE Desktop Applications
SUNWf8dte	CDE Desktop Environment
SUNWf8he	CDE Help L10N fr Runtime Environment
SUNWf8im	CDE Desktop applications
SUNWf8wm	French UTF-8 CDE Desktop Window Manager Messages
SUNWfbcp	French OS Binary Compatibility Package
SUNWfj2rt	Java virtual machine and core class libraries (French supplement)
SUNWfjvdr	French Localizations for JavaVM developers package
SUNWfjvrt	French Localizations for JavaVM Runtime environment
SUNWfoaud	French OPEN LOOK Audio applications
SUNWfobk	French OpenWindows online handbooks
SUNWfodcv	French OPEN LOOK document and help viewer applications
SUNWfodem	French OPEN LOOK demo programs
SUNWfodst	French OPEN LOOK deskset tools
SUNWfodte	French OPEN LOOK desktop environment
SUNWfoimt	French OPEN LOOK imagetool
SUNWforte	French OPEN LOOK toolkits Runtime environment
SUNWfpdas	French tools to synchronize desktop applications with the Palm Pilot PDA
SUNWfrbas	Base L10N fr CDE functionality to run a CDE application
SUNWfrdst	CDE Desktop Applications
SUNWfrdte	CDE Desktop Environment
SUNWfrhe	CDE Help L10N fr Runtime Environment
SUNWfrhed	CDE L10N fr Help Developer Environment
SUNWfrhev	CDE Help Volumes
SUNWfrim	CDE Desktop applications
SUNWfrj2p	French localization of Java Plug-In 1.2.2
SUNWfros	Localizable message files for the OS-Networking consolidation

TABLE 33-3 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: French
(Continued)

This Package	Contains
SUNwfrpmw	French (EUC) Localizations for Power Management OW Utilities
SUNwfrreg	Solaris User Registration prompts at desktop login for user registration
SUNwfrwm	French CDE Desktop Window Manager Messages
SUNwftltk	French ToolTalk binaries and shared libraries
SUNwfwacx	French OPEN LOOK AccessX
SUNwfwbcp	French OpenWindows Binary Compatibility Package
SUNwfwsr	Prodreg 2.0 localizable text resources
SUNwfxplt	French X Window System platform software

TABLE 33-4 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: German

This Package	Contains
NSCPdecom	German localization of Netscape Communicator 4.7 supporting International security
SUNwd8bas	Base L10N German UTF-8 CDE functionality to run a CDE application
SUNwd8dst	CDE Desktop Applications
SUNwd8dte	CDE Desktop Login Environment
SUNwd8he	CDE Help L10N German UTF-8 Runtime Environment
SUNwd8im	CDE Desktop applications
SUNwd8wm	German UTF-8 CDE Desktop Window Manager Messages
SUNwdbcp	German OS Binary Compatibility Package
SUNwdebas	Base L10N German CDE functionality to run a CDE application
SUNwdedst	CDE Desktop Applications
SUNwdedte	CDE Desktop Login Environment
SUNwdehe	CDE Help L10N German Runtime Environment
SUNwdehed	CDE L10N German Help Developer Environment
SUNwdehev	CDE Help Volumes
SUNwdeim	CDE Desktop applications
SUNwdej2p	German localization of Java Plug-In 1.2.2

TABLE 33-4 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: German
(Continued)

This Package	Contains
SUNWdeos	Localizable message files for the OS/Networking consolidation
SUNWdepmw	German (EUC) Localizations for Power Management OW Utilities
SUNWderereg	Solaris User Registration prompts at desktop login for user registration
SUNWdewm	German CDE Desktop Window Manager Messages
SUNWdj2rt	Java virtual machine and core class libraries (German supplement)
SUNWdjvdv	German Localizations for JavaVM developers package
SUNWdjvrt	German Localizations for JavaVM Runtime environment
SUNWdoaud	German OPEN LOOK Audio applications
SUNWdobk	German OpenWindows online handbooks
SUNWdodcv	German OPEN LOOK document and help viewer applications
SUNWdodem	German OPEN LOOK demo programs
SUNWdodst	German OPEN LOOK deskset tools
SUNWdodte	German OPEN LOOK desktop environment
SUNWdoimt	German OPEN LOOK imagetool
SUNWdorte	German OPEN LOOK toolkits Runtime environment
SUNWdpdas	German tools to synchronize desktop applications with the Palm Pilot PDA
SUNWdtltk	German ToolTalk binaries and shared libraries
SUNWdwacx	German OPEN LOOK AccessX
SUNWdwbcx	German OpenWindows Binary Compatibility Package
SUNWdwsr	Prodreg 2.0 localizable text resources
SUNWdxplt	German X Window System platform software

TABLE 33-5 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Italian

This Package	Contains
NSCPitcom	Italian localization of Netscape Communicator 4.7 supporting International security
SUNWi8bas	Base L10N it CDE functionality to run a CDE application
SUNWi8dst	CDE it Desktop Applications messages

TABLE 33-5 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Italian
(Continued)

This Package	Contains
SUNWi8dte	CDE Italian UTF-8 Desktop Login Environment
SUNWi8he	CDE Help L10N it Runtime Environment
SUNWi8im	CDE Italian UTF-8 Desktop Image editor
SUNWi8wm	Italian UTF-8 CDE Desktop Window Manager Messages
SUNWibcp	Italian OS Binary Compatibility Package
SUNWij2rt	Java virtual machine and core class libraries (Italian supplement)
SUNWijvdr	Italian Localizations for JavaVM developers package
SUNWijvrt	Italian Localizations for JavaVM Runtime environment
SUNWioaud	Italian OPEN LOOK Audio applications
SUNWiobk	Italian OpenWindows online handbooks
SUNWiodcv	Italian OPEN LOOK document and help viewer applications
SUNWiodem	Italian OPEN LOOK demo programs
SUNWiodst	Italian OPEN LOOK deskset tools
SUNWiodte	Italian OPEN LOOK desktop environment
SUNWioimt	Italian OPEN LOOK imagetool
SUNWiorte	Italian OPEN LOOK toolkits Runtime environment
SUNWipdas	Italian tools to synchronize desktop applications with the Palm Pilot PDA
SUNWitbas	Base L10N it CDE functionality to run a CDE application
SUNWitdst	CDE it Desktop Applications messages
SUNWitdte	CDE Italian Desktop Login Environment
SUNWithe	CDE Help L10N it Runtime Environment
SUNWitthed	CDE L10N it Help Developer Environment
SUNWithev	CDE Help Volumes
SUNWitim	CDE Italian Desktop Image editor
SUNWitj2p	Italian localization of Java Plug-In 1.2.2
SUNWitltk	Italian ToolTalk binaries and shared libraries
SUNWitos	Localizable message files for the OS-Networking consolidation
SUNWitpmw	Italian (EUC) Localizations for Power Management OW Utilities

TABLE 33-5 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Italian
(Continued)

This Package	Contains
SUNWitreg	Solaris User Registration prompts at desktop login for user registration
SUNWitwm	Italian CDE Desktop Window Manager Messages
SUNWiwacx	Italian OPEN LOOK AccessX
SUNWiwbcp	Italian OpenWindows Binary Compatibility Package
SUNWiwsr	Product registry 2.0 localizable text resources
SUNWixplt	Italian X Window System platform software

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese

This Package	Contains
JSat8xw	Japanese Input System ATOK8 for Japanese Solaris
JSatsvr	Japanese Input System ATOKserver root files for Japanese Solaris
JSatsvu	Japanese Input System ATOKserver usr files for Japanese Solaris
JSatsvw	Japanese Input System ATOKserver X11 support files for Japanese Solaris
NSCPjecom	Japanese (EUC) localization of Netscape Communicator 4.7 supporting International security
NSCPjpcom	Japanese (PCK) localization of Netscape Communicator 4.7 supporting International security
NSCPjucom	Japanese (UTF-8) localization of Netscape Communicator 4.7 supporting International security
SUNWjadis	Japanese (EUC) Localizations for Admintool and GUI install
SUNWjadma	Japanese (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWjadis packages for Japanese (EUC) localization
SUNWja2p	Japanese localization of Java Plug-In 1.2.2
SUNWjbcpl	Japanese (EUC) utilities including libc and locale data to provide a binary-compatible execution environment for SunOS 4.x applications
SUNWjc0d	Japanese Kana-Kanji Conversion Server cs00 user dictionary maintenance tool for CDE Motif
SUNWjc0w	Japanese Kana-Kanji Conversion Server cs00 user dictionary maintenance tool for OPEN LOOK; this package is also required to use X Input Method Server on X Window System
SUNWjcs3f	Japanese JIS X0212 Type1 fonts for printing

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjdab	Japanese (Common) Localization for CDE Desktop Application Builder
SUNWjdbas	Japanese (Common) Localization for CDE application basic Runtime environment
SUNWjddst	Japanese (EUC) Localization for CDE Desktop Applications
SUNWjddte	Japanese (EUC) Localization for Solaris Desktop Login Environment
SUNWjdhcm	Japanese Localizations for DHCP Manager
SUNWjdhe	Japanese (EUC) Localization for CDE Help Runtime environment
SUNWjdhed	Japanese (EUC) Localization for CDE Help Developer Environment
SUNWjdhev	Japanese (Common) Localization for CDE Help Volumes
SUNWjdhez	Japanese (Common) Localizations for Desktop Power Pack Help Volumes
SUNWjdim	Japanese (EUC) Localization for Solaris CDE Image Viewer
SUNWjdrme	Japanese (EUC) Localization for Common Desktop Environment (CDE) release documentation
SUNWjdwmm	Japanese (EUC) Localization for CDE Desktop Window Manager
SUNWjeab	Japanese (EUC) Localization for CDE Desktop Application Builder
SUNWjebas	Japanese (EUC) Localization for CDE application basic Runtime environment
SUNWject	Japanese (EUC) Localizations for UTF-8 Code Conversion Tool
SUNWjedev	Japanese (EUC) Development Environment Package specific files
SUNWjeezt	Japanese (EUC) Localizations for Desktop Power Pack Applications
SUNWjehev	Japanese (EUC) Localization for CDE Help Volumes
SUNWjehez	Japanese (EUC) Localizations for Desktop Power Pack Help Volumes
SUNWjej2m	Japanese (EUC) man pages
SUNWjejmn	Japanese (EUC) JavaVM manual pages for Java programmers and users
SUNWjeman	Japanese Feature Package Man Pages to see Japanese (EUC) man pages for SUNWj fpr and SUNWj fpu and Japanese man pages for SUNWman and SUNWaled
SUNWjepmm	Japanese (EUC) Power Management OW Utilities Man Pages
SUNWjepmw	Japanese (EUC) Localizations for Power Management OW Utilities

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjerv1	Japanese (EUC) Localizations for XIL loadable pipelines for SunVideo capture and compression
SUNWjeuce	Japanese (EUC) Feature Package specific files for <code>usr</code> ; it is an extended package to support EUC environment
SUNWjeudc	Japanese (EUC) Localizations for User Defined Character tool for Solaris CDE environment
SUNWjewnu	Japanese Input System - Wnn6 Messages, (EUC)
SUNWjexfa	Japanese (EUC) Localizations for Font Administration application for Solaris platforms
SUNWjexir	Japanese (EUC) localizations for XIL Runtime Environment
SUNWjfd1	Japanese Localization for Solaris Desktop Font Downloader for Adobe PostScript printers
SUNWjfppe	Stream modules for Japanese Feature Package (JFP); it is an extended package to run JFP environment
SUNWjfpue	Japanese Feature Package (JFP) specific files for <code>usr</code> ; it is an extended package to run JFP environment
SUNWjfxmn	English man pages of Japanese features for X Window System
SUNWjj2dv	Japanese Java virtual macTools and utilities including <code>javac</code> , <code>jdb</code> , <code>javadoc</code> , <code>rmiregistry</code>
SUNWjj2rt	Japanese Java virtual machine and core class libraries
SUNWjjmfp	Japanese Localization for JMF player
SUNWjjvdv	Japanese Localizations for JavaVM developers package
SUNWjjvrt	Japanese Localizations for JavaVM Runtime environment
SUNWjkcsr	Japanese (EUC) Localizations for Kodak Color Management System Runtime
SUNWjlibj	Japanese specific library (<code>/usr/lib/libjapanese.a</code>), header, and transition kit
SUNWjmane	Japanese Feature Package Man Pages (Extension) to see English man pages for <code>SUNWjfppe</code> and <code>SUNWjfpue</code>
SUNWjmfrn	Japanese (EUC) Localizations for Motif 1.2.3 Runtime Kit
SUNWjoaud	Japanese (EUC) Localizations for Audiotool and other auxiliary audio support

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjodcv	Japanese (EUC) Localizations for OPEN LOOK document and help viewer applications
SUNWjodem	Japanese (EUC) Localizations for OPEN LOOK demo programs
SUNWjodst	Japanese (EUC) Localizations for OPEN LOOK deskset tools
SUNWjodte	Japanese (EUC) Localizations for OPEN LOOK Desktop Environment (olwm, props, wsinfo, etc.)
SUNWjoint	Japanese (EUC) Localizations for OPEN LOOK imagetool
SUNWjorte	Japanese (EUC) Localizations for OPEN LOOK toolkits Runtime environment
SUNWjoumn	Japanese (EUC) OPEN LOOK toolkit/desktop users man pages
SUNWjpab	Japanese (PCK) Localization for CDE Desktop Application Builder
SUNWjpacx	Japanese (PCK) Localizations for AccessX client program
SUNWjpadi	Japanese (PCK) Localizations for Admintool and GUI install
SUNWjpadm	Japanese (PCK) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWjpadi packages for Japanese (PCK) localization
SUNWjpbas	Japanese (PCK) Localization for CDE application basic Runtime environment
SUNWjpcke	Japanese (PCK - PC Kanji Code) Feature Package specific files; it is a extended package to support PCK environment
SUNWjpct	Japanese (PCK) Localizations for UTF-8 Code Conversion Tool
SUNWjpdas	Japanese Localization for tools to synchronize desktop applications with the Palm Pilot PDA
SUNWjpdst	Japanese (PCK) Localization for CDE Desktop Applications
SUNWjpdte	Japanese (PCK) Localization for CDE Desktop Login Environment
SUNWjpez	Japanese (PCK) Localizations for Desktop Power Pack Applications
SUNWjphe	Japanese (PCK) Localization for CDE Help Runtime environment
SUNWjphed	Japanese (PCK) Localization for CDE Help Developer Environment
SUNWjphev	Japanese (PCK) Localization for CDE Help Volumes
SUNWjphes	Japanese (PCK) Localizations for Desktop Power Pack Help Volumes
SUNWjpim	Japanese (PCK) Localization for Solaris CDE Image Viewer

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWj2m	Japanese (PCK) man pages
SUNWj2mn	Japanese (PCK) JavaVM manual pages for Java programmers and users
SUNWj2cs	Japanese (PCK) Localizations for Kodak Color Management System Runtime
SUNWj2man	Japanese Feature Package Man Pages to see Japanese (PCK) man pages for SUNWj2pr and SUNWj2pu and Japanese man pages for SUNW2man and SUNW2led
SUNWj2mfr	Japanese (PCK) Localizations for Motif 1.2.3 Runtime Kit
SUNWj2pmm	Japanese (PCK) Power Management OW Utilities Man Pages
SUNWj2pmw	Japanese (PCK) Localizations for Power Management OW Utilities
SUNWj2prdm	Japanese (PCK) OILBN ReadMe Directory
SUNWj2prme	Japanese (PCK) Localization for Common Desktop Environment (CDE) release documentation
SUNWj2prv1	Japanese (PCK) Localizations for XIL loadable pipelines for SunVideo capture and compression
SUNWj2psal	Japanese (PCK) Localizations for Solstice Admintool launcher and associated libraries
SUNWj2pt1m	Japanese (PCK) ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users
SUNWj2pt1t	Japanese (PCK) Localizations for ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWj2pudc	Japanese (PCK) Localizations for User Defined Character tool for Solaris CDE environment
SUNWj2pwm	Japanese (PCK) Localization for CDE Desktop Window Manager
SUNWj2pwnu	Japanese Input System - Wnn6 Messages, (PCK)
SUNWj2pxfa	Japanese (PCK) Localizations for Font Administration application for Solaris platforms
SUNWj2pxir	Japanese (PCK) Localizations for XIL Runtime Environment
SUNWj2pxpm	Japanese (PCK) X Window System online programmers man pages
SUNWj2pxum	Japanese (PCK) X Window System online user man pages
SUNWj2rdm	Japanese (EUC) OILBN ReadMe Directory

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjreg	Japanese Localizations for Solaris User Registration
SUNWjsadl	Japanese (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWjscag	Japanese Localization for Solaris Smart Card Administration - Graphical User Interface component
SUNWjt1mn	Japanese (EUC) ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users
SUNWjt1tk	Japanese (EUC) Localizations for ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWju8e	Japanese (UTF-8) Feature Package specific files; it is an extended package to support Japanese UTF-8 environment
SUNWjuab	Japanese (UTF-8) Localization for CDE Desktop Application Builder
SUNWjuacx	Japanese (UTF-8) Localizations for AccessX client program
SUNWjuadi	Japanese (UTF-8) Localizations for Admintool and GUI install
SUNWjuadm	Japanese (UTF-8) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWjuadi packages for Japanese (UTF-8) localization
SUNWjubas	Japanese (UTF-8) Localization for CDE application basic Runtime environment
SUNWjuct	Japanese (UTF-8) Localizations for UTF-8 Code Conversion Tool
SUNWjudst	Japanese (UTF-8) Localization for CDE Desktop Applications
SUNWjudte	Japanese (UTF-8) Localization for CDE Desktop Login Environment
SUNWjuezt	Japanese (UTF-8) Localizations for Desktop Power Pack Applications
SUNWjuhe	Japanese (UTF-8) Localization for CDE Help Runtime environment
SUNWjuhed	Japanese (UTF-8) Localization for CDE Help Developer Environment
SUNWjuhev	Japanese (UTF-8) Localization for CDE Help Volumes
SUNWjuhez	Japanese (UTF-8) Localizations for Desktop Power Pack Help Volumes
SUNWjuim	Japanese (UTF-8) Localization for Solaris CDE Image Viewer
SUNWjuj2m	Japanese (UTF-8) man pages
SUNWjujmn	Japanese (UTF-8) JavaVM Manual pages for Java programmers and users

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjukcs	Japanese (UTF-8) Localizations for Kodak Color Management System Runtime
SUNWjulcf	Japanese (UTF-8) Localizations for xutops command
SUNWjuman	Japanese Feature Package Man Pages to see Japanese (UTF-8) man pages for SUNWj <code>fpr</code> and SUNWj <code>fpu</code> and Japanese man pages for SUNW <code>man</code> and SUNW <code>aled</code>
SUNWjumfr	Japanese (UTF-8) Localizations for Motif 1.2.3 Runtime Kit
SUNWjupmm	Japanese (UTF-8) Power Management OW Utilities Man Pages
SUNWjupmw	Japanese (UTF-8) Localizations for Power Management OW Utilities
SUNWjurdm	Japanese (UTF-8) OILBN ReadMe Directory
SUNWjurme	Japanese (UTF-8) Localization for Common Desktop Environment (CDE) release documentation
SUNWjurvl	Japanese (UTF-8) Localizations for XIL loadable pipelines for SunVideo capture and compression
SUNWjusal	Japanese (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWjutlm	Japanese (UTF-8) ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users
SUNWjutlt	Japanese (UTF-8) Localizations for ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWjuudc	Japanese (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWjuwm	Japanese (UTF-8) Localization for CDE Desktop Window Manager
SUNWjuwnu	Japanese Input System - Wnn6 Messages, (UTF-8)
SUNWjuxfa	Japanese (UTF-8) Localizations for Font Administration application for Solaris platforms
SUNWjuxir	Japanese (UTF-8) Localizations for XIL Runtime Environment
SUNWjuxpm	Japanese (UTF-8) X Window System online programmers man pages
SUNWjuxum	Japanese (UTF-8) X Window System online user man pages
SUNWjwacx	Japanese (EUC) Localizations for AccessX client program
SUNWjwbc	Japanese Localizations for Solaris WBEM Services

TABLE 33-6 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjwbcp	Japanese (EUC) Localizations for Support files, programs, and libraries for Openwindows Binary Compatibility
SUNWjwbk	Japanese (EUC) Localizations for OpenWindows online handbooks
SUNWjwncr	Japanese Input System - Wnn6 Client (root)
SUNWjwncu	Japanese Input System - Wnn6 Client (usr)
SUNWjwncx	Japanese Input System - Wnn6 Client X Window System
SUNWjwndt	Japanese Input System - Wnn6 Client for CDE
SUNWjwnsr	Japanese Input System - Wnn6 Server (root)
SUNWjwnsu	Japanese Input System - Wnn6 Server (usr)
SUNWjwsr	Japanese Solaris Product Registry
SUNWjxfa	Japanese (Common) Localizations for Font Administration application for Solaris platforms
SUNWjxfnt	Japanese X Window System Fonts (required fonts) - gothic bold fonts and TrueType map files
SUNWjxoft	Sun Minchou bitmap fonts
SUNWjxplt	Japanese Localizations for X Window System platform software (Extensions)
SUNWjxpmn	Japanese (EUC) X Window System online programmers man pages
SUNWjxumn	Japanese (EUC) X Window System online user man pages

TABLE 33-7 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Korean

This Package	Contains
NSCPkocom	Korean localization of Netscape Communicator 4.7 supporting International security
NSCPkucom	Ko.UTF-8 localization of Netscape Communicator 4.7 supporting International security
SUNWkadis	Korean (EUC) Localizations for Admintool and GUI install
SUNWkadma	Korean (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWkadis packages for Korean (EUC) localization
SUNWkbcpl	Korean Language Environment binary compatibility files
SUNWkcoft	Korean/Korean UTF-8 common optional font package

TABLE 33-7 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Korean
(Continued)

This Package	Contains
SUNWkdab	Korean Localizations for CDE Desktop Application Builder
SUNWkdbas	Korean Localizations for CDE Base functionality
SUNWkdcst	The localized tools package for Korean
SUNWkddst	Korean Localizations for CDE Desktop Applications
SUNWkddte	Korean Localizations for CDE Desktop Login Environment
SUNWkdez	Korean (EUC) Localizations for Desktop Power Pack Applications
SUNWkdf	Fonts for the Common Desktop Environment, Korean L10N CDE
SUNWkdhe	Korean Localizations for CDE Help Runtime environment
SUNWkdhev	Korean CDE Help Volumes
SUNWkdhez	Korean (Common) Localizations for Desktop Power Pack Help Volumes
SUNWkdicn	Korean Localizations for CDE Icons
SUNWkdim	Korean Localizations for CDE Imagetool
SUNWkdwm	Korean Localizations for CDE Desktop Window Manager
SUNWkepmw	Korean (EUC) Localization for Power Management OW Utilities
SUNWkervl	Korean (EUC) SunVideo Runtime Support Software
SUNWkexir	Korean (EUC) XIL Runtime Environment
SUNWkj2rt	Java virtual machine and core class libraries (Korean supplement)
SUNWkjvdr	Korean Localizations for JavaVM developers package
SUNWkjvrt	Korean Localizations for JavaVM Runtime environment
SUNWkkcsr	Korean (EUC) KCMS Runtime Environment
SUNWkleue	Korean Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkoaud	Korean OPEN LOOK Audio Applications Package
SUNWkodcv	Korean OPEN LOOK Document and Help Viewer Applications Package
SUNWkodem	Korean OPEN LOOK Demo Programs Package
SUNWkodst	Korean OPEN LOOK Deskset Tools Package
SUNWkodte	Korean Core OPEN LOOK Desktop Package
SUNWkoimt	Korean OPEN LOOK Imagetool Package

TABLE 33-7 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Korean
(Continued)

This Package	Contains
SUNWkoj2p	Korean localization of Java Plug-In 1.2.2
SUNWkoman	Korean OPEN LOOK Toolkit/Desktop Users Man Pages Package
SUNWkorte	Korean OPEN LOOK Toolkits Runtime Environment Package
SUNWkpdas	Korean Localization for tools to synchronize desktop applications with the Palm Pilot PDA
SUNWkrdm	Korean (EUC) OILBN ReadMe Directory
SUNWkreg	Korean Localizations for Solaris User Registration
SUNWksadl	Korean (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWktltk	Korean ToolTalk Runtime Package Package
SUNWkttfe	Korean True Type Font Extension
SUNWkuadi	Korean (UTF-8) Localizations for Admintool and GUI install
SUNWkuadm	Korean (UTF-8) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWkadis packages for Korean (EUC) localization
SUNWkudab	Korean/UTF-8 Localizations for CDE Desktop Application Builder
SUNWkudbs	Korean/UTF-8 Localizations for CDE Base functionality
SUNWkudc	Korean (EUC) Localizations for User Defined Character tool for Solaris CDE environment
SUNWkudda	Korean/UTF-8 Localizations for CDE Desktop Applications
SUNWkuddt	Korean/UTF-8 Localizations for CDE Desktop Login Environment
SUNWkudft	Fonts for the Common Desktop Environment, Korean/UTF-8 L10N CDE
SUNWkudhr	Korean/UTF-8 Localizations for CDE Help Runtime environment
SUNWkudhv	Korean/UTF-8 CDE Help Volumes
SUNWkudhz	Korean (Common) Localizations for Desktop Power Pack Help Volumes
SUNWkudic	Korean/UTF-8 Localizations for CDE Icons
SUNWkudim	Korean/UTF-8 Localizations for CDE Imagetool
SUNWkudwm	Korean/UTF-8 Localizations for CDE Desktop Window Manager
SUNWkudzt	Korean (UTF-8) Localizations for Desktop Power Pack Applications

TABLE 33-7 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Korean
(Continued)

This Package	Contains
SUNWkulee	Korean UTF-8 Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkuodf	Korean UTF-8 Core OPEN LOOK Desktop Package
SUNWkupmw	Korean UTF-8 Localization for Power Management OW Utilities
SUNWkurdm	Korean (UTF-8) OILBN ReadMe Directory
SUNWkusal	Korean (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWkuudc	Korean (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWkuxe	Korean UTF-8 X Window System Platform Software Package
SUNWkuxft	Korean UTF-8 X Window System Platform Required Fonts
SUNWkwbcp	Korean OpenWindows Binary Compatibility Package
SUNWkwsr	Korean product registry 2.0 localizable text resources
SUNWkxe	Korean X Window System Platform Software Package
SUNWkxft	Korean X Window System Platform Required Fonts
SUNWkxman	Korean X Window System Online User Man Pages Package

TABLE 33-8 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Shared

This Package	Contains
SUNWabcp	Asian common files for SunOS 4.x Binary Compatibility
SUNWerdm	OILBN ReadMe Directory
SUNWudct	User Defined Character tool for Solaris CDE Environment

TABLE 33-9 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Spanish

This Package	Contains
NSCPescom	Spanish localization of Netscape Communicator 4.7 supporting International security
SUNWe8bas	Base L10N fr CDE functionality to run a CDE application
SUNWe8dst	CDE Desktop Applications
SUNWe8dte	CDE Desktop Login Environment

TABLE 33-9 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Spanish
(Continued)

This Package	Contains
SUNWe8he	CDE Help L10N es Runtime Environment
SUNWe8im	CDE Desktop applications
SUNWe8wm	Spanish UTF-8 CDE Desktop Window Manager Messages
SUNWej2rt	Java virtual machine and core class libraries (Spanish supplement)
SUNWejvdr	Spanish Localizations for JavaVM developers package
SUNWejvrt	Spanish Localizations for JavaVM Runtime environment
SUNWeoaud	Spanish OPEN LOOK Audio applications
SUNWeobk	Spanish OpenWindows online handbooks
SUNWeodcv	Spanish OPEN LOOK document and help viewer applications
SUNWeodem	Spanish OPEN LOOK demo programs
SUNWeodst	Spanish OPEN LOOK deskset tools
SUNWeodte	Spanish OPEN LOOK desktop environment
SUNWeoimt	Spanish OPEN LOOK imagetool
SUNWeorte	Spanish OPEN LOOK toolkits Runtime environment
SUNWepdas	Spanish tools to synchronize desktop applications with the Palm Pilot PDA
SUNWesbas	Base L10N fr CDE functionality to run a CDE application
SUNWesdst	CDE Desktop Applications
SUNWesdte	CDE Desktop Login Environment
SUNWeshe	CDE Help L10N es Runtime Environment
SUNWeshed	CDE L10N es Help Developer Environment
SUNWeshev	CDE Help Volumes
SUNWesim	CDE Desktop applications
SUNWesj2p	Spanish localization of Java Plug-In 1.2.2
SUNWesos	Localizable message files for the OS-Networking consolidation
SUNWespmw	Spanish (EUC) Localizations for Power Management OW Utilities
SUNWesreg	Solaris User Registration prompts at desktop login for user registration
SUNWeswm	Spanish CDE Desktop Window Manager Messages
SUNWetltk	Spanish ToolTalk binaries and shared libraries

TABLE 33-9 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Spanish
(Continued)

This Package	Contains
SUNWewacx	Spanish OPEN LOOK AccessX
SUNWewsx	Product registry 2.0 localizable text resources
SUNWexplt	Spanish X Window System platform software

TABLE 33-10 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Swedish

This Package	Contains
NSCPsvcom	Swedish localization of Netscape Communicator 4.7 supporting International security
SUNWs8bas	Base Swedish UTF-8 CDE functionality messages
SUNWs8dst	Swedish UTF-8 CDE Desktop Applications messages
SUNWs8dte	Swedish UTF-8 CDE Desktop Login Environment messages
SUNWs8he	Swedish UTF-8 CDE Help Runtime Environment
SUNWs8im	Swedish UTF-8 CDE Image editor messages
SUNWs8wm	Swedish UTF-8 CDE Desktop Window Manager Messages
SUNWsj2rt	Java virtual machine and core class libraries (Swedish supplement)
SUNWsjvdr	Swedish Localizations for JavaVM developers package
SUNWsjvrt	Swedish Localizations for JavaVM Runtime environment
SUNWsoaud	Swedish OPEN LOOK Audio applications
SUNWsobk	Swedish OpenWindows online handbooks
SUNWsodcv	Swedish OPEN LOOK document and help viewer applications
SUNWsodem	Swedish OPEN LOOK demo programs
SUNWsodst	Swedish OPEN LOOK deskset tools
SUNWsodte	Swedish OPEN LOOK desktop environment
SUNWsoimt	Swedish OPEN LOOK imagetool
SUNWsorte	Swedish OPEN LOOK toolkits Runtime environment
SUNWspdas	Swedish tools to synchronize desktop applications with the Palm Pilot PDA
SUNWstltk	Swedish ToolTalk binaries and shared libraries
SUNWsvbas	Base Swedish CDE functionality messages

TABLE 33-10 Packages on the Solaris 8 Languages *SPARC Platform Edition* CD: Swedish
(Continued)

This Package	Contains
SUNWsvdst	Swedish CDE Desktop Applications messages
SUNWsvdte	Swedish CDE Desktop Login Environment messages
SUNWsvhe	Swedish CDE Help Runtime Environment
SUNWsvhed	Swedish CDE Help Developer Environment messages
SUNWsvhev	CDE Help Volumes
SUNWsvim	Swedish CDE Image editor messages
SUNWsvj2p	Swedish localization of Java Plug-In 1.2.2
SUNWsvos	Localizable message files for the OS-Networking consolidation
SUNWsvpmw	Swedish (EUC) Localizations for Power Management OW Utilities
SUNWsvreg	Solaris User Registration prompts at desktop login for user registration
SUNWsvwm	Swedish CDE Desktop Window Manager Messages
SUNWswacx	Swedish OPEN LOOK AccessX
SUNWswsr	Product registry 2.0 localizable text resources
SUNWsxplt	Swedish X Window System platform software
SUNWvbcp	Swedish OS Binary Compatibility Package
SUNWvwbcp	Swedish OpenWindows Binary Compatibility Package

Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD

This chapter lists and describes the packages included on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD.

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD

This Package	Contains
AMImega	MEGA Family SCSI Host Bus Adapter
CPQcnft	Compaq NetFlex Family NIC
CPQncr	Compaq Family SCSI HBA
CPQsmi i	Compaq SMART-2/E Family of Array Controller
MADGFmt	Madge Token Ring Family of NIC
MYLXf1p	Buslogic FlashPoint Ultra PCI SCSI
NCRos86r	NCR Platform Support, OS Functionality (<i>root</i>)
NSCPcom	Application and configuration files of Netscape Communicator 4.7 supporting International security
NSCPcpcom	Simplified Chinese partial version of Netscape Communicator 4.7 supporting International security
NSCPphcom	Traditional Chinese partial version of Netscape Communicator 4.7 supporting International security
NSCPjacom	Japanese (common) localization of Netscape Communicator 4.7 supporting International security
NSCPkpcom	Korean Partial version of Netscape Communicator 4.7 supporting International security
SUNW1251f	Russian additional locale fonts (1251)
SUNW5dt	Traditional Chinese Localizations for CDE Desktop Login Environment

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNW51eu	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese BIG5 Language Environment
SUNW5ttf	Traditional Chinese True Type Fonts Package
SUNW5xmft	Chinese/Taiwan BIG5 X Window System Platform Required Fonts Package
SUNW5xp1t	Traditional Chinese BIG5 X Window System Platform Software Package
SUNWadmap	Software used to perform system administration tasks
SUNWadmc	Core software libraries used for system administration
SUNWadmfw	System and network administration libraries and services
SUNWadmj	Java libraries used for system administration tools
SUNWadmr	root programs and scripts for initializing system installation
SUNWadp	Adaptec 29xx/39/xx/78xx Family of SCSI HBAs
SUNWale	Common files shared by Chinese, Japanese, and Korean locales; it is a required package to run Asian Language Environment
SUNWaled	Man pages shared by Chinese, Japanese, and Korean locales
SUNWami	Authentication Management Infrastructure (AMI) - core libraries and utilities
SUNWamir	Authentication Management Infrastructure (AMI) - configuration files
SUNWarrf	X11 fonts for Arabic character set (required fonts)
SUNWatfsr	Configuration and start-up files for the AutoFS file system
SUNWatfsu	Utilities and a daemon (automountd) for the AutoFS file system
SUNWauadt	Australasia CDE Support
SUNWauaos	Australasia OS Support
SUNWauaow	Australasia OW Support
SUNWaudd	SunOS audio device drivers using the new audio driver architecture
SUNWaudio	Audio binaries
SUNWcadp	Adaptec AHA-29xx/39xx, AIC-78xx Ultra 2 SCSI HBAs
SUNWcamdt	Central America CDE Support
SUNWcamos	Central America OS Support
SUNWcamow	Central America OW Support
SUNWcar.i	Core software for a specific hardware platform group

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWcdt	Simplified Chinese (EUC) Localizations for CDE Desktop Login Environment
SUNWceudt	Central Europe CDE Support
SUNWceuos	Central Europe OS Support
SUNWceuow	Central Europe OW Support
SUNWciu8	Simplified Chinese (EUC) iconv modules for UTF-8
SUNWcleu	Simplified Chinese (EUC) Language Environment specific files; it is a required package to run Simplified Chinese (EUC) Language Environment
SUNWcor	Corollary PSMI MP Module
SUNWcpmp	Compaq PSMI MP Module
SUNWcqhp	Driver for COMPAQ Hot Plug PCI Controller
SUNWcsd	Core entries for <code>/dev</code> and <code>/devices</code> needed for the initial boot of Solaris
SUNWcsl	Core shared libraries for a specific instruction-set architecture
SUNWcsr	Core software for a specific instruction-set architecture
SUNWcsu	Core software for a specific instruction-set architecture
SUNWctl	Print utilities for CTL locales
SUNWctpls	Layout interface for language engines
SUNWcttf	Simplified Chinese (EUC) True Type Fonts
SUNWcudt	Simplified Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWcufnt	Simplified Chinese (UTF-8) X Window System Platform Required Fonts
SUNWculeu	Simplified Chinese (UTF-8) Language Environment specific files; it is a required package to run Simplified Chinese (UTF-8) Language Environment
SUNWcuplt	Simplified Chinese (UTF-8) X Window System Platform Software Package
SUNWcxmft	Simplified Chinese (EUC) X Window System Platform Required Fonts
SUNWcxplt	Simplified Chinese (EUC) X Window System Platform Software Package
SUNWdeis	German install software localization
SUNWdespl	Spell Checking Engine - German Dictionary
SUNWdoc	Utilities and fonts for development, display, and production of documentation such as manual pages (<code>nroff</code> / <code>troff</code>)
SUNWdtbas	CDE application basic Runtime environment

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWdtcor	Solaris Desktop /usr/dt file system anchor
SUNWdtct	UTF-8 Code Conversion Tool
SUNWdtcsm	Daemons for the Common Desktop Environment, CDE
SUNWdtcst	CDE Desktop Applications
SUNWdtcte	Solaris Desktop Login Environment
SUNWdtezt	Address Manager, Process Manager, File Finder, Perfometer, Workstation Info
SUNWdthe	CDE Help Runtime environment
SUNWdthev	CDE Help Volumes
SUNWdthez	Desktop Power Pack Help Volumes
SUNWdticn	Icons for the Common Desktop Environment, CDE
SUNWdtim	Solaris CDE Image Viewer
SUNWdtjxt	Java Extensions
SUNWdtlog	System boot for Desktop Login
SUNWdtnsc	Netscape Componentization Support for CDE
SUNWdtrme	Common Desktop Environment (CDE) release documentation
SUNWdtscm	CDE Dtpower Schemes
SUNWdtwm	CDE Desktop Window Manager
SUNWeeudt	Eastern Europe CDE Support
SUNWeeuos	Eastern Europe OS Support
SUNWeeuow	Eastern Europe OW Support
SUNWesis	Latin Spanish install software localization
SUNWesspl	Spell Checking Engine - Spanish Dictionary
SUNWesu	Additional UNIX system utilities, including <i>awk</i> , <i>bc</i> , <i>cal</i> , <i>compress</i> , <i>diff</i> , <i>dos2unix</i> , <i>last</i> , <i>rup</i> , <i>sort</i> , <i>spell</i> , <i>sum</i> , <i>uniq</i> , and <i>uencode</i>
SUNWeudba	American English/UTF-8 L10N for CDE Base
SUNWeudbd	American English/UTF-8 L10N for CDE Dtbuilder
SUNWeudda	American English/UTF-8 L10N for CDE Desktop Applications
SUNWeudhr	American English/UTF-8 L10N for CDE Help Runtime
SUNWeudhs	American English/UTF-8 L10N for CDE Help Runtime

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWeudis	American English/UTF-8 L10N for CDE Icons
SUNWeudiv	American English/UTF-8 L10N for Desktop Image tools
SUNWeudlg	American English/UTF-8 L10N for CDE Desktop Login Environment
SUNWeudmg	American English/UTF-8 L10N for Desktop Window Manager
SUNWeuezt	American English/UTF-8 L10N for Desktop Power Pack Applications
SUNWeugrf	X11 fonts for sun_eu_greek character set
SUNWeuluf	American English/UTF-8 L10N for Environment User Files
SUNWeuodf	American English/UTF-8 Core OPEN LOOK Desktop Files
SUNWeusru	American English/UTF-8 L10N for Solaris User Registration
SUNWeuxwe	American English/UTF-8 X Window System Environment
SUNWfdl	Solaris Desktop Font Downloader for Adobe PostScript printers
SUNWfns	Federated Naming Service (XFN) - core libraries and utilities
SUNWfris	French install software localization
SUNWfrspl	Spell Checking Engine - French Dictionary
SUNWftpr	File Transfer Protocol Daemon and Utilities
SUNWftpu	File Transfer Protocol Daemon and Utilities
SUNWgdt	Simplified Chinese (GBK) Localizations for CDE Desktop Login Environment
SUNWgleu	Simplified Chinese (GBK) Language Environment specific files; it is a required package to run Simplified Chinese (GBK) Language Environment
SUNWgss	Generic Security Service Application Program Interface, Version 2 - user
SUNWgssc	Generic Security Service Application Program Interface, Version 2 - config
SUNWgssdh	GSS-API mechanism libraries for NIS+ extended Diffie-Hellman
SUNWgssk	Generic Security Service Application Program Interface, Version 2 - kernel
SUNWgttf	Simplified Chinese (GBK) True Type Fonts
SUNWgxfnt	Simplified Chinese (GBK) X Window System Platform Required Fonts
SUNWgxplt	Simplified Chinese (GBK) X Window System Platform Software Package
SUNWhdt	Traditional Chinese Localizations for CDE Desktop Login Environment
SUNWhiu8	Traditional Chinese iconv modules for UTF-8

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWhler	Stream modules for Traditional Chinese Language Environment; it is a required package to run Traditional Chinese Language Environment
SUNWhleu	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese Language Environment
SUNWhttf	Traditional Chinese True Type Fonts Package
SUNWhudt	Traditional Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWhufnt	Simplified Chinese (UTF-8) X Window System Platform Required Fonts
SUNWhuleu	Traditional Chinese (UTF-8) Language Environment specific files; it is a required package to run Traditional Chinese UTF-8 Language Environment
SUNWhuplt	Traditional Chinese UTF-8 X Window System Platform Software Package
SUNWhxfnt	Traditional Chinese X Window System Platform Required Fonts Package
SUNWhxplt	Traditional Chinese X Window System Platform Software Package
SUNWi13cs	X11 ISO-8859-13 Codeset Support
SUNWi13rf	X11 fonts for ISO-8859-13 character set (required fonts)
SUNWi15cs	X11 ISO-8859-15 Codeset Support
SUNWi15rf	X11 fonts for ISO-8859-15 character set (required fonts)
SUNWi1cs	X11 ISO-8859-1 Codeset Support
SUNWi1of	ISO-8859-1 (Latin-1) Optional Fonts
SUNWi2cs	X11 ISO-8859-2 Codeset Support
SUNWi2of	X11 fonts for ISO-8859-2 character set (optional fonts)
SUNWi2rf	X11 fonts for ISO-8859-2 character set (required fonts)
SUNWi4of	X11 fonts for ISO-8859-4 character set (optional fonts)
SUNWi4rf	X11 fonts for ISO-8859-4 character set (required fonts)
SUNWi5cs	X11 ISO-8859-5 Codeset Support
SUNWi5of	X11 fonts for ISO-8859-5 character set (optional fonts)
SUNWi5rf	X11 fonts for ISO-8859-5 character set (required fonts)
SUNWi7cs	X11 ISO-8859-7 Codeset Support
SUNWi7of	X11 fonts for ISO-8859-7 character set (optional fonts)
SUNWi7rf	X11 fonts for ISO-8859-7 character set (required fonts)

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWi8rf	X11 fonts for ISO-8859-8 character set (required fonts)
SUNWi9cs	X11 ISO-8859-9 Codeset Support
SUNWi9of	X11 fonts for ISO-8859-9 character set (optional fonts)
SUNWi9rf	X11 fonts for ISO-8859-9 character set (required fonts)
SUNWiiimr	Internet/Intranet Input Method Framework (root)
SUNWiiimu	Internet/Intranet Input Method Framework (usr)
SUNWinst	Sun installation software
SUNWipc	Utilities to monitor or remove messages, semaphores, or shared memory for interprocess communication
SUNWislcc	XSH4 conversion for Eastern European locales
SUNWisolc	XSH4 conversion for ISO Latin character sets
SUNWitis	Italian install software localization
SUNWitspl	Spell Checking Engine - Italian Dictionary
SUNWj2dem	Demonstration applications and applets
SUNWj2pi	Configuration files for Java Plug-In 1.2.2
SUNWj2rt	Java virtual machine and core class libraries
SUNWjc0r	Japanese Kana-Kanji Conversion Server cs00 root Files
SUNWjc0u	Japanese Kana-Kanji Conversion Server cs00 User Files
SUNWjedt	Japanese (EUC) Localization for CDE Desktop Login Environment
SUNWjeuc	Japanese (EUC) Feature Package specific files for usr; it is a required package to support EUC environment
SUNWjexpl	Japanese (EUC) Localizations for X Window System platform software
SUNWjfpr	Stream modules for Japanese Feature Package (JFP); it is a required package to run JFP environment
SUNWjfpu	Japanese Feature Package (JFP) specific files for usr; it is a required package to run JFP environment
SUNWjiu8	Japanese iconv modules, which convert data between {eucJP PCK} and UTF-8
SUNWjman	Japanese Feature Package Man Pages to see English man pages for SUNWjfpr and SUNWjfpu
SUNWjmfp	JMF player

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWjpck	Japanese (PCK - PC Kanji Code) Feature Package specific files; it is a required package to support PCK environment
SUNWjpdtdt	Japanese (PCK) Localization for CDE Desktop Login Environment
SUNWjpxpl	Japanese (PCK) Localizations for X Window System platform software
SUNWju8	Japanese (UTF-8) Feature Package specific files; it is a required package to support Japanese UTF-8 environment
SUNWjudtdt	Japanese (UTF-8) Localization for CDE Desktop Login Environment
SUNWjuxpl	Japanese (UTF-8) Localizations for X Window System platform software
SUNWjvjit	Java JIT compiler
SUNWjvrt	JavaVM Runtime environment, includes java, appletviewer, and classes.zip
SUNWjxcft	Japanese JISX212 TrueType and bitmap fonts
SUNWjxmft	Japanese X Window System Minimum Required Fonts - gothic medium
SUNWkdt	Korean Localizations for CDE Desktop Login Environment
SUNWkey	Configuration tables that specify keyboard attributes such as localized meanings for individual keys
SUNWkiu8	Korean UTF-8 iconv modules for UTF-8
SUNWkler	Stream modules for Korean Language Environment; it is a required package to run Korean Language Environment
SUNWkleu	Korean Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkoi8f	X11 fonts for KOI8-R character set
SUNWkttf	Korean True Type Fonts
SUNWkudtdt	Korean/UTF-8 Localizations for CDE Desktop Login Environment
SUNWkuleu	Korean UTF-8 Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkuxpl	Korean UTF-8 X Window System Platform Software Package
SUNWkvm.i	Core software for a specific hardware platform group
SUNWkxfnt	Korean X Window System Platform Required Fonts
SUNWkxmft	Korean UTF-8 X Window System Platform Required Fonts
SUNWkxpltdt	Korean X Window System Platform Software Package
SUNWlccom	Localization common files

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWlc1	Locale Conversion Library
SUNWlibC	Sun Workshop Compilers Bundled libC
SUNWlibCf	Sun WorkShop Bundled libC (cfront version)
SUNWlibms	Sun WorkShop Bundled shared libm
SUNWllc	LLC2 driver implementing IEEE 802.2 Logical Link Control 2 service
SUNWllcr	The configuration and startup files for llc2 driver
SUNWloc	Localization utilities and C locale (POSIX default) definitions
SUNWlpmsg	ToolTalk programs for passing printer alerts
SUNWmeadt	Middle East CDE Support
SUNWmeaos	Middle East OS Support
SUNWmeaow	Middle East OW Support
SUNWmfrun	Motif 2.1.1 libraries, headers, xmbind and bindings
SUNWmgapp	Solaris Management Applications
SUNWmibii	Solstice Enterprise Agents 1.0.3 snmp daemon
SUNWmlx	Mylex DAC960 Family of RAID devices
SUNWmp	MP Print Filter
SUNWnafdt	Northern Africa CDE Support
SUNWnafos	Northern Africa OS Support
SUNWnafow	Northern Africa OW Support
SUNWnamdt	North America CDE Support
SUNWnamos	North America OS Support
SUNWnamow	North America OW Support
SUNWneudt	Northern Europe CDE Support
SUNWneuos	Northern Europe OS Support
SUNWneuow	Northern Europe OW Support
SUNWnisr	Configuration files and directories for the Network Information System (NIS and NIS+)
SUNWnisu	Utilities for the Network Information System (NIS and NIS+)
SUNWntpr	Network Time Protocol v3, NTP Daemon and Utilities (xntpd 3.4y)

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWntpu	Network Time Protocol v3, NTP Daemon and Utilities (xntpd 3.4y)
SUNWolaud	Audiotool and other auxiliary audio support
SUNWolbk	OpenWindows online handbooks
SUNWoldcv	OPEN LOOK document and help view applications
SUNWoldst	OPEN LOOK deskset tools
SUNWoldte	OPEN LOOK Desktop Environment (olwm, props, wsinfo, etc.)
SUNWolimt	OPEN LOOK imagetool
SUNWolrte	OPEN LOOK toolkits Runtime environment
SUNWos86r	Platform Support, OS Functionality (root)
SUNWos86u	Platform Support, OS Functionality (root)
SUNWpcelx	3COM EtherLink III PCMCIA Ethernet Driver
SUNWpcmci	Kernel modules and start-up files for PCMCIA card services
SUNWpcmcu	Daemon providing PCMCIA card services
SUNWpcmem	PCMCIA memory card driver
SUNWpcr	Client configuration files and utilities for the print service
SUNWpcser	PCMCIA serial card driver
SUNWpcu	Client configuration files and utilities for the print service
SUNWpdas	Tools to synchronize desktop applications with the Palm Pilot PDA
SUNWpe10	Xircom parallel port Ethernet adaptor
SUNWp15u	Perl 5 programming language
SUNWp1ow	OpenWindows enabling for Partial Locales
SUNWp1ow1	OpenWindows enabling for Supplementary Partial Locales
SUNWpmi	X Server VESA PMI files
SUNWpmowr	Power Management OW Utilities, (root)
SUNWpmowu	Power Management OW Utilities, (usr)
SUNWpmr	Power Management config file and rc script
SUNWpmu	Power Management binaries
SUNWppm	Graphical tool for managing printers under Solaris

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWpsdcr	Platform Support, Bus-independent Device Drivers, (root)
SUNWpsdir	Platform Support, ISA Bus Device Drivers, (root)
SUNWpsdpr	PCMCIA ATA card driver
SUNWpsf	Client configuration files and utilities for the print service
SUNWpsr	Configuration and start-up files for the print service
SUNWpsu	Client configuration files and utilities for the print service
SUNWrdr	OILBN ReadMe Directory
SUNWrmodr	Realmode Modules, (root)
SUNWrmodu	Realmode Modules, (usr)
SUNWrsg	GSS-API services for ONC RPC
SUNWrsgk	Kernel GSS-API services for ONC RPC
SUNWsacom	Solstice Enterprise Agents 1.0.3 files for root file system
SUNWsadmi	Solstice Enterprise Agents 1.0.3 Desktop Management Interface
SUNWsamdt	South America CDE Support
SUNWsamos	South America OS Support
SUNWsamow	South America OW Support
SUNWsasnm	Solstice Enterprise Agents 1.0.3 Simple Network Management Protocol
SUNWscplp	Print utilities for user interface and source build compatibility with SunOS 4.x
SUNWscpr	Utilities for user interface and source build compatibility with SunOS 4.x
SUNWscpu	Utilities for user interface and source build compatibility with SunOS 4.x
SUNWseudt	Southern Europe CDE Support
SUNWseuos	Southern Europe OS Support
SUNWseuow	Southern Europe OW Support
SUNWslpr	root file system portion of the Service Location Protocol (SLP) framework; includes the SLP configuration file and start scripts for the SLP daemon
SUNWslpu	usr file system portion of the Service Location Protocol (SLP) framework; included are C and Java developer libraries and a daemon which can act as a directory agent (DA)
SUNWsndmr	Sendmail root

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWsndmu	Sendmail user
SUNWsolnm	Enable Solaris Name in <code>/etc/release</code> file
SUNWspl	Spell Checking Engine - Base Release (English)
SUNWsgregu	Solaris User Registration prompts at desktop login for user registration information
SUNWsvis	Swedish install software localization
SUNWsvspl	Spell Checking Engine - Swedish Dictionary
SUNWswmt	Solaris 2.x Install and Patch Utilities
SUNWtdbas	Thai Localizations for CDE Base functionality
SUNWtddst	Thai Localizations for CDE Desktop Applications
SUNWtdde	Thai Localizations for CDE Desktop Login Environment
SUNWtdft	Thai Localizations for CDE Fonts
SUNWtdwm	Thai Localizations for CDE Desktop Window Manager
SUNWtiu8	Thai UTF-8 iconv modules for UTF-8
SUNWtleu	Thai Language Environment specific files; it is a required package to run Thai Language Environment
SUNWtltk	ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWtoo	Utilities for software development, including <code>ld</code> , <code>ldd</code> , <code>od</code> , and <code>truss</code>
SUNWtxfnt	Thai X Window System Platform Required Fonts Package
SUNWtxodt	Thai Core OPEN LOOK Desktop Package
SUNWtxplt	X Window System Platform Software Package
SUNWudf	Universal Disk Format 1.50 File System, (<code>usr</code>)
SUNWudfr	Universal Disk Format 1.50 File System
SUNWuiu8	Iconv modules for UTF-8 Locale
SUNWuium	Iconv Manual pages for UTF-8 Locale
SUNWulcf	UTF-8 Locale Environment Common Files
SUNWulocf	UTF-8 Locale Environment OpenWindows Common Files
SUNWusb	USBA (USB framework) and USB Device Drivers
SUNWuxlcf	UTF-8 X Locale Environment Common Files

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWvolg	Volume Management Graphical User Interface
SUNWvolr	Configuration and start-up files for volume (removable media) management and volfs
SUNWvolu	Utilities and a daemon (vold) for volume (removable media) management and volfs
SUNWwbapi	Solaris WBEM API
SUNWwbcor	Solaris WBEM Services (<i>root</i>)
SUNWwbcou	Solaris WBEM Services (<i>usr</i>)
SUNWweudt	Western Europe CDE Support
SUNWweuos	Western Europe OS Support
SUNWweuow	Western Europe OW Support
SUNWwsr	Product registry, viewer, and Web Start support
SUNWxcu4	Utilities providing conformance with XCU4 specifications
SUNWxil8n	Runtime library loaded by <i>libX11.so</i> , and provides input and output capability for internationalized X Window System applications
SUNWxildh	XIL Loadable Pipeline Libraries
SUNWxilow	XIL Deskset Loadable Pipeline Libraries
SUNWxilrl	XIL Runtime Environment
SUNWxim	X Input Method server provides different styles of input
SUNWxsvc	Xinside Xserver pseudo driver
SUNWxwacx	AccessX client program
SUNWxwcf	X Window System optional fonts
SUNWxwcs1	Font support library for Type1/CID fonts
SUNWxwdv	Kernel device drivers for X Window System
SUNWxwfnt	X Window System Fonts (required fonts)
SUNWxwfs	OpenWindows font server
SUNWxwice	OpenWindows ICE library and iceauth
SUNWxwmod	Kernel modules required to run the OpenWindows product
SUNWxwoft	X Window System optional fonts
SUNWxwopt	Nonessential MIT core clients and server extensions

TABLE 34-1 Packages on the Solaris 8 Software 1 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWxwpls	X Server platform software
SUNWxwplt	X Window System platform software (server, DPS, extensions, Xlib, required and common MIT clients)
SUNWxwrtl	X Window System and Graphics Runtime library links
SUNWxwscf	X Server probe and configuration
SUNWxwssu	X Server platform specific, config start up software
SYMhis1	Symbios 8XX Hi-Performance SCSI HBA

Packages on the Solaris 8 2 of 2 Intel Platform Edition CD

This chapter lists and describes the packages included on the Solaris 8 Software 2 of 2 *Intel Platform Edition* CD.

TABLE 35-1 Packages on the Solaris 8 Software 2 of 2 *Intel Platform Edition* CD

This Package	Contains
SUNWaccr	Utilities for accounting and reporting of system activity
SUNWaccu	Utilities for accounting and reporting of system activity
SUNWapchd	The Apache HTTP server (documentation)
SUNWapchr	The Apache HTTP server program (<code>root</code> components)
SUNWapchu	The Apache HTTP server program (<code>usr</code> components)
SUNWapppr	Configuration files for the daemon implementing asynchronous point-to-point protocol (PPP)
SUNWapppu	Login service and the daemon implementing asynchronous point-to-point protocol (PPP)
SUNWarc	System libraries in archive (<code>ar</code>) format for software development of statically linked executables
SUNWast	Administrative utilities for improving system security by monitoring or restricting access to system files and directories
SUNWaudh	SunOS C/C++ header files for audio drivers and applications
SUNWaudmo	Audio demo programs, libraries, and sounds
SUNWbash	GNU Bourne-Again shell (<code>bash</code>)
SUNWbashS	Source for the GNU Bourne-Again shell (<code>bash</code>)
SUNWbnur	Configuration and start-up files for UUCP utilities

TABLE 35-1 Packages on the Solaris 8 Software 2 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWbnuu	UUCP utilities and daemon
SUNWbtool	Software development utilities, including ar, dis, dump, elfdump, lex, lorder, mcs, nm, prof, ranlib, rpcgen, size, strip, tsort, and yacc
SUNWbzip	The bzip compression utility
SUNWbzipS	Source for the bzip compression utility
SUNWcfff	UNIX System V, Release 3.x binary compatibility
SUNWcpci	Kernel support for CPU Performance Counters
SUNWcpcu	CPU Performance Counter libraries and utilities
SUNWcstl	Appttrace utility for application tracing, including shared objects
SUNWdfbh	SunOS C/C++ header files for development of software for dumb frame buffers
SUNWdhcm	Graphical management interface for the DHCP server
SUNWdhcsr	root file system portion of the SunOS BOOTP/DHCP service, which uses the BOOT Protocol and/or Dynamic Host Configuration Protocol to provide network configuration parameters to BOOTP/DHCP clients; administration utilities for the service are included
SUNWdhcsu	usr file system portion of the SunOS BOOTP/DHCP service, which uses the BOOT Protocol and/or Dynamic Host Configuration Protocol to provide network configuration parameters to BOOTP/DHCP clients; administration utilities for the service are included
SUNWdpl	System libraries compiled with profiling for software development performance measurement
SUNWdtab	CDE Desktop Application Builder
SUNWdt-dem	CDE Demos
SUNWdthed	CDE Help Developer Environment
SUNWdtinc	CDE Include files
SUNWdtma	Manual pages for the Common Desktop Environment, CDE
SUNWdtmad	Common Desktop Environment (CDE) Developer manual pages
SUNWdtmaz	Manual pages for Address Manager, Process Manager, File Finder, Perfometer, Workstation Info
SUNWebnfs	Java packages for WebNFS
SUNWfac	Utilities and resources for a Form and Menu Language Interpreter (FMLI) execution environment

TABLE 35-1 Packages on the Solaris 8 Software 2 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWfnsx5	Federated Naming Service (XFN) - support for X.500 Directory
SUNWglt	Layout Table Generation Utility
SUNWgpch	The GNU Patch utility
SUNWgpchS	Source for the GNU Patch utility
SUNWgzip	The GNU Zip (<i>gzip</i>) compression utility
SUNWgzipS	Source for the GNU Zip (<i>gzip</i>) compression utility
SUNWhea	SunOS C/C++ header files for general development of software
SUNWj2dev	Tools and utilities including javac, jdb, javadoc, rmiregistry
SUNWj2man	Man pages
SUNWjvdem	JavaVM demo programs
SUNWjvdev	JavaVM developers packages, includes javac, javah, and javap
SUNWjvman	JavaVM man pages
SUNWkcspf	Kodak Color Management System Runtime
SUNWkcspg	Kodak Color Management System Runtime Demos
SUNWkcsrt	Kodak Color Management System Runtime
SUNWless	The GNU pager (<i>less</i>)
SUNWlessS	Source for the GNU pager (<i>less</i>)
SUNWlibm	Sun WorkShop Bundled libm
SUNWlldap	LDAP libraries in for software development of dynamically linked executables
SUNWman	System Reference Manual Pages
SUNWmdb	Modular Debugger (MDB)
SUNWmfdev	Motif UIL compiler
SUNWmfman	CDE Motif Manuals
SUNWmkcd	CD creation utilities
SUNWmkcdS	Source for the CD creation utilities
SUNWncar	Core components to enable the network cache and accelerator
SUNWncau	Components to enable the network cache and accelerator
SUNWoladd	OPEN LOOK Alternate Desktop Demos

TABLE 35-1 Packages on the Solaris 8 Software 2 of 2 *Intel Platform Edition* CD (Continued)

This Package	Contains
SUNWoldem	OPEN LOOK demo programs
SUNWoldim	Graphics files in various formats
SUNWolinc	OPEN LOOK include files
SUNWolman	OPEN LOOK toolkit/desktop users man pages
SUNWols1b	OPEN LOOK toolkit/desktop static and lint libraries for programmers
SUNWolsrc	OPEN LOOK example source code for programmers
SUNWosdem	Source code to demonstrate the use of OS interfaces: ELF
SUNWp15m	Perl 5 Reference Manual Pages
SUNWp15p	POD documentation for Perl 5 programming language
SUNWpmonth	Power Management OW Utilities Man Pages
SUNWpppk	Kernel device drivers implementing asynchronous point-to-point protocol (PPP)
SUNWpsh	SunOS C/C++ header files for development of software for device drivers specific to bus and platform
SUNWrpm	Utilities for processing RPM archives
SUNWs53	Kernel module and associated utilities for the UNIX System V, Release 3, file system
SUNWsadm1	Solstice launcher and associated libraries
SUNWsprt	Solaris Bundled tools
SUNWsra	Libraries in archive (ar) format for source build compatibility with SunOS 4.x
SUNWsrh	SunOS C/C++ header files for source build compatibility with SunOS 4.x
SUNWsut1	Statically linked utilities for system disaster recovery
SUNWtcsh	Tenex C-shell (tcsh)
SUNWtcshS	Source for the Tenex C-shell (tcsh)
SUNWter	Extensive terminfo database entries describing capabilities of terminals and pseudoterminals
SUNWtltkd	ToolTalk static library and include files for programmers
SUNWtltkm	ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users

TABLE 35-1 Packages on the Solaris 8 Software 2 of 2 *Intel Platform Edition CD* (Continued)

This Package	Contains
SUNWtnfc	Utilities needed to enable probe points, in the kernel and in applications, that can generate Trace Normal Format (TNF) records in a trace file
SUNWtnfd	Utilities needed by developers using Trace Normal Format (TNF) facilities
SUNWucbt	Appttrace shared objects for UCB compatibility libraries
SUNWusbu	USB Headers
SUNWxcu4t	XCUI4 Compliant Versions of make and sccs utilities
SUNWxilh	XIL API Header files
SUNWxwdem	X Window System demo programs
SUNWxwdim	Graphics files in various formats
SUNWxwdxm	DPS MOTIF library
SUNWxwfa	Font Administration application for Solaris platforms
SUNWxwhl	X Window System and Graphics Header links in <code>/usr/include</code>
SUNWxwinc	X Window System include files
SUNWxwman	X Window System online user man pages
SUNWxwpmn	X Window System online programmers man pages
SUNWxwslb	X Window System static and lint libraries for programmers
SUNWxwsrc	X Window System example source code for programmers
SUNWyprr	NIS Server for Solaris 2.6 and up
SUNWypu	NIS Server for Solaris 2.6 and up
SUNWzip	The Info-Zip (<code>zip</code>) compression utility
SUNWzipS	Source for the Info-Zip (<code>zip</code>) compression utility
SUNWzlib	The Zip compression library
SUNWzlibS	Source for the Zip compression library
SUNWzsh	Z shell (<code>zsh</code>)
SUNWzshS	Source for the Z shell (<code>zsh</code>)

Packages on the Solaris 8 Languages Intel Platform Edition CD

This chapter lists and describes the packages included on the Solaris 8 Languages *Intel Platform Edition* CD, by language.

TABLE 36-1 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Simplified Chinese

This Package	Contains
NSCPccom	Simplified Chinese localization of Netscape Communicator 4.7 supporting International security
NSCPcucom	Zh.UTF-8 localization of Netscape Communicator 4.7 supporting International security
NSCPgcom	Zh.GBK localization of Netscape Communicator 4.7 supporting International security
SUNWcadis	Simplified Chinese (EUC) Localizations for Admintool and GUI install
SUNWcadma	Simplified Chinese (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWhadis packages for Simplified Chinese (EUC) localization
SUNWcdab	Simplified Chinese (EUC) Localizations for CDE Desktop Application Builder
SUNWcdbas	Simplified Chinese (EUC) Localizations for CDE Base functionality
SUNWcddst	Simplified Chinese (EUC) Localizations for CDE Desktop Applications
SUNWcddte	Simplified Chinese (EUC) Localizations for CDE Desktop Login Environment
SUNWcdezt	Simplified Chinese (EUC) Localizations for Desktop Power Pack Applications
SUNWcdf t	Simplified Chinese (EUC) Localizations for CDE Fonts

TABLE 36-1 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWcdhe	Simplified Chinese (EUC) Localizations for CDE Help Runtime environment
SUNWcdhev	Simplified Chinese (EUC) CDE Help Volumes
SUNWcdhez	Simplified Chinese (EUC) (Common) Desktop Power Pack Help Volumes
SUNWcdicn	Simplified Chinese (EUC) Localizations for CDE Icons
SUNWcdim	Simplified Chinese (EUC) Localizations for CDE Imagetool
SUNWcdwm	Simplified Chinese (EUC) Localizations for CDE Desktop Window Manager
SUNWcpepw	Simplified Chinese (EUC) Localization for Power Management OW Utilities
SUNWcexir	Simplified Chinese (EUC) XIL Runtime Environment
SUNWcj2p	Simplified Chinese localization of Java Plug-In 1.2.2
SUNWcj2rt	Java virtual machine and core class libraries (Simplified Chinese supplement)
SUNWcjvdv	Simplified Chinese Localizations for JavaVM developers package
SUNWcjvrt	Simplified Chinese Localizations for JavaVM Runtime environment
SUNWckcsr	Simplified Chinese (EUC) KCMS Runtime Environment
SUNWcleue	Simplified Chinese (EUC) Language Environment specific files; it is a required package to run Simplified Chinese (EUC) Language Environment
SUNWcoaud	Simplified Chinese (EUC) OPEN LOOK Audio Applications Package
SUNWcodcv	Simplified Chinese (EUC) OPEN LOOK Document and Help Viewer Applications Package
SUNWcodem	Simplified Chinese (EUC) OPEN LOOK Demo Programs Package
SUNWcodst	Simplified Chinese (EUC) OPEN LOOK Deskset Tools Package
SUNWcodte	Simplified Chinese (EUC) Core OPEN LOOK Desktop Package
SUNWcoimt	Simplified Chinese (EUC) OPEN LOOK Imagetool Package
SUNWcoman	Simplified Chinese (EUC) OPEN LOOK Toolkit/Desktop Users Man Pages Package
SUNWcorte	Simplified Chinese (EUC) OPEN LOOK Toolkits Runtime Environment Package
SUNWcpdas	Simplified Chinese Localization for tools to synchronize desktop applications with the Palm Pilot PDA
SUNWcrdm	Simplified Chinese (EUC) OILBN ReadMe Directory

TABLE 36-1 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWcreg	Simplified Chinese (EUC) Localizations for Solaris User Registration
SUNWcsadl	Simplified Chinese (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWctltk	Simplified Chinese (EUC) ToolTalk Runtime Package Package
SUNWcttfe	Simplified Chinese (EUC) True Type Fonts
SUNWcuada	Simplified Chinese (UTF-8) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWgadis packages for Simplified Chinese (UTF-8) localization
SUNWcuadi	Simplified Chinese (UTF-8) Localizations for Admintool and GUI install
SUNWcubas	Simplified Chinese (UTF-8) Localizations for CDE Base functionality
SUNWcudab	Simplified Chinese (UTF-8) Localizations for CDE Desktop Application Builder
SUNWcudc	Simplified Chinese (EUC) Localizations for User Defined Character tool for Solaris CDE
SUNWcudez	Simplified Chinese (UTF-8) Localizations for Desktop Power Pack Applications
SUNWcudft	Simplified Chinese (UTF-8) Localizations for CDE Fonts
SUNWcudhe	Simplified Chinese (UTF-8) Localizations for CDE Help Runtime environment
SUNWcudhv	Simplified Chinese (UTF-8) CDE Help Volumes
SUNWcudhz	Simplified Chinese (UTF-8) Localizations for Desktop Power Pack Help Volumes
SUNWcudic	Simplified Chinese (UTF-8) Localizations for CDE Icons
SUNWcudim	Simplified Chinese (UTF-8) L10N for CDE Desktop Imagetool
SUNWcudst	Simplified Chinese (UTF-8) Localizations for CDE Desktop Applications
SUNWcudte	Simplified Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWcudwm	Simplified Chinese (UTF-8) Localizations for CDE Desktop Window Manager
SUNWculee	Simplified Chinese (UTF-8) Language Environment specific files; it is a required package to run Simplified Chinese (UTF-8) Language Environment
SUNWcuman	Simplified Chinese (UTF-8) X Window System Online User Man Pages Package

TABLE 36-1 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWcuodt	Simplified Chinese (UTF-8) Core OPEN LOOK Desktop Package
SUNWcupmw	Simplified Chinese (UTF-8) Localization for Power Management OW Utilities
SUNWcurdm	Simplified Chinese (UTF-8) OILBN ReadMe Directory
SUNWcureg	Simplified Chinese (UTF-8) Localizations for Solaris User Registration
SUNWcusad	Simplified Chinese (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWcuudc	Simplified Chinese (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWcuxe	Simplified Chinese (UTF-8) X Window System Platform Software Package
SUNWcwsr	Simplified Chinese (EUC) product registry 2.0 localizable text resources
SUNWcxe	Simplified Chinese (EUC) X Window System Platform Software Package
SUNWcxfont	Simplified Chinese (EUC) X Window System Platform Required Fonts
SUNWcxman	Simplified Chinese (EUC) X Window System Online User Man Pages Package
SUNWcxoft	Simplified Chinese (EUC) X Window System Optional Fonts Package
SUNWgadis	Simplified Chinese (GBK) Localizations for Admintool and GUI install
SUNWgadma	Simplified Chinese (GBK) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWgadis packages for Simplified Chinese (GBK) localization
SUNWgdab	Simplified Chinese (GBK) Localizations for CDE Desktop Application Builder
SUNWgdbas	Simplified Chinese (GBK) Localizations for CDE Base functionality
SUNWgddst	Simplified Chinese (GBK) Localizations for CDE Desktop Applications
SUNWgddte	Simplified Chinese (GBK) Localizations for CDE Desktop Login Environment
SUNWgdezr	Simplified Chinese (GBK) Localizations for Desktop Power Pack Applications
SUNWgdft	Simplified Chinese (GBK) Localizations for CDE Fonts
SUNWgdhe	Simplified Chinese (GBK) Localizations for CDE Help Runtime environment
SUNWgdhev	Simplified Chinese (GBK) CDE Help Volumes

TABLE 36-1 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Simplified Chinese (Continued)

This Package	Contains
SUNWgdhez	Simplified Chinese (GBK) Localizations for Desktop Power Pack Help Volumes
SUNWgdi.cn	Simplified Chinese (GBK) Localizations for CDE Icons
SUNWgdim	Simplified Chinese (GBK) L10N for CDE Desktop Imagetool
SUNWgdwm	Simplified Chinese (GBK) Localizations for CDE Desktop Window Manager
SUNWgleue	Simplified Chinese (GBK) Language Environment specific files; it is a required package to run Simplified Chinese (GBK) Language Environment
SUNWgodte	Simplified Chinese (GBK) Core OPEN LOOK Desktop Package
SUNWgpmw	Simplified Chinese (GBK) Localization for Power Management OW Utilities
SUNWgrdm	Simplified Chinese (GBK) OILBN ReadMe Directory
SUNWgreg	Simplified Chinese (GBK) Localizations for Solaris User Registration
SUNWgsad1	Simplified Chinese (GBK) Localizations for Solstice Admintool launcher and associated libraries
SUNWgttfe	Simplified Chinese (GBK) True Type Fonts
SUNWgudc	Simplified Chinese (GBK) Localizations for User Defined Character tool for Solaris CDE environment
SUNWgxe	Simplified Chinese (GBK) X Window System Platform Software Package
SUNWgxman	Simplified Chinese (GBK) X Window System Online User Man Pages Package

TABLE 36-2 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Traditional Chinese

This Package	Contains
NSCP5com	Zh_TW.BIG5 localization of Netscape Communicator 4.7 supporting International security
NSCPhcom	Traditional Chinese localization of Netscape Communicator 4.7 supporting International security
NSCPhucom	Zh_TW.UTF-8 localization of Netscape Communicator 4.7 supporting International security
SUNW5adi	Traditional Chinese Localizations for Admintool and GUI install
SUNW5adma	Traditional Chinese Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNW5adi packages for Localization

TABLE 36-2 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
SUNW5dab	Traditional Chinese Localizations for CDE Desktop Application Builder
SUNW5dbas	Traditional Chinese Localizations for CDE Base functionality
SUNW5ddst	Traditional Chinese Localizations for CDE Desktop Applications
SUNW5ddte	Traditional Chinese Localizations for CDE Desktop Login Environment
SUNW5dez	Traditional Chinese (BIG5) Localizations for Desktop Power Pack Applications
SUNW5dft	Traditional Chinese Localizations for CDE Fonts
SUNW5dhe	Traditional Chinese Localizations for CDE Help Runtime environment
SUNW5dhev	Traditional Chinese CDE Help Volumes
SUNW5dhez	Traditional Chinese (Common BIG5) Localizations for Desktop Power Pack Help Volumes
SUNW5dicn	Traditional Chinese Localizations for CDE Icons
SUNW5dim	Traditional Chinese Localizations for CDE Imagetool
SUNW5dwm	Traditional Chinese Localizations for CDE Desktop Window Manager
SUNW5leue	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese BIG5 Language Environment
SUNW5odte	Traditional Chinese BIG5 Core OPEN LOOK Desktop Package
SUNW5pmw	Traditional Chinese BIG5 Localization for Power Management OW Utilities
SUNW5rdm	Traditional Chinese (BIG5) OILBN ReadMe Directory
SUNW5sadl	Traditional Chinese Localizations for Solstice Admintool launcher and associated libraries
SUNW5ttfe	Traditional Chinese True Type Fonts Package Extension
SUNW5udc	Traditional Chinese (BIG5) Localizations for User Defined Character tool for Solaris CDE environment
SUNW5xfnt	Traditional Chinese BIG5 X Window System Platform Required Fonts Package
SUNWhadis	Traditional Chinese (EUC) Localizations for Admintool and GUI install
SUNWhadma	Traditional Chinese (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWhadis packages for Traditional Chinese (EUC) localization
SUNWhdab	Traditional Chinese Localizations for CDE Desktop Application Builder

TABLE 36-2 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
SUNWhdbas	Traditional Chinese Localizations for CDE Base functionality
SUNWhdst	Traditional Chinese Localizations for CDE Desktop Applications
SUNWhdte	Traditional Chinese Localizations for CDE Desktop Login Environment
SUNWhdezt	Traditional Chinese (EUC) Localizations for Desktop Power Pack Applications
SUNWhdft	Traditional Chinese Localizations for CDE Fonts
SUNWhdhe	Traditional Chinese Localizations for CDE Help Runtime environment
SUNWhdhev	Traditional Chinese CDE Help Volumes
SUNWhdhez	Traditional Chinese (Common) Localizations for Desktop Power Pack Help Volumes
SUNWhdicon	Traditional Chinese Localizations for CDE Icons
SUNWhdim	Traditional Chinese Localizations for CDE Imagetool
SUNWhdwm	Traditional Chinese Localizations for CDE Desktop Window Manager
SUNWhepmw	Traditional Chinese (EUC) Localization for Power Management OW Utilities
SUNWhexir	Traditional Chinese (EUC) XIL Runtime Environment
SUNWhj2p	Traditional Chinese localization of Java Plug-In 1.2.2
SUNWhj2rt	Java virtual machine and core class libraries (Traditional Chinese supplement)
SUNWhjvdev	Traditional Chinese Localizations for JavaVM developers package
SUNWhjvrt	Traditional Chinese Localizations for JavaVM Runtime environment
SUNWhkcsr	Traditional Chinese (EUC) KCMS Runtime Environment
SUNWhleue	Traditional Chinese Language Environment specific files; it is a required package to run Traditional Chinese Language Environment
SUNWhoaud	Traditional Chinese OPEN LOOK Audio Applications Package
SUNWhodcv	Traditional Chinese OPEN LOOK Document and Help Viewer Applications Package
SUNWhodem	Traditional Chinese OPEN LOOK Demo Programs Package
SUNWhodst	Traditional Chinese OPEN LOOK Deskset Tools Package
SUNWhodte	Traditional Chinese Core OPEN LOOK Desktop Package
SUNWhoimt	Traditional Chinese OPEN LOOK Imagetool Package

TABLE 36-2 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
SUNWhoman	Traditional Chinese OPEN LOOK Toolkit/Desktop Users Man Pages Package
SUNWhorte	Traditional Chinese OPEN LOOK Toolkits Runtime Environment Package
SUNWhpdas	Traditional Chinese Localization for tools to synchronize desktop applications with the Palm Pilot PDA
SUNWhrdm	Traditional Chinese (EUC) OILBN ReadMe Directory
SUNWhreg	Traditional Chinese Localizations for Solaris User Registration
SUNWhsadl	Traditional Chinese (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWhtltk	Traditional Chinese ToolTalk Runtime Package Package
SUNWhttfe	Traditional Chinese True Type optional Fonts Package Extension
SUNWhuada	Traditional Chinese (UTF-8) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNW5adi packages for localization
SUNWhuadi	Traditional Chinese (UTF-8) Localizations for Admintool and GUI install
SUNWhubas	Traditional Chinese (UTF-8) Localizations for CDE Base functionality
SUNWhuccd	Traditional Chinese Console Display Environment specific files; it is a required package to run Traditional Chinese Console Display Environment
SUNWhudab	Traditional Chinese (UTF-8) Localizations for CDE Desktop Application Builder
SUNWhudc	Traditional Chinese (EUC) Localizations for User Defined Character tool for Solaris CDE
SUNWhudez	Traditional Chinese (UTF-8) Localizations for Desktop Power Pack Applications
SUNWhudft	Traditional Chinese (UTF-8) Localizations for CDE Fonts
SUNWhudhe	Traditional Chinese (UTF-8) Localizations for CDE Help Runtime environment
SUNWhudhv	Traditional Chinese (UTF-8) CDE Help Volumes
SUNWhudhz	Traditional Chinese (Common UTF-8) Localizations for Desktop Power Pack Help Volumes
SUNWhudic	Traditional Chinese (UTF-8) Localizations for CDE Icons
SUNWhudim	Traditional Chinese (UTF-8) Localizations for CDE Imagetool

TABLE 36-2 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Traditional Chinese (Continued)

This Package	Contains
SUNWhudst	Traditional Chinese (UTF-8) Localizations for CDE Desktop Applications
SUNWhudte	Traditional Chinese (UTF-8) Localizations for CDE Desktop Login Environment
SUNWhudwm	Traditional Chinese (UTF-8) Localizations for CDE Desktop Window Manager
SUNWhulee	Traditional Chinese (UTF-8) Language Environment specific files; it is a required package to run Traditional Chinese UTF-8 Language Environment
SUNWhuodt	Traditional Chinese UTF-8 Core OPEN LOOK Desktop Package
SUNWhupmw	Traditional Chinese UTF-8 Localization for Power Management OW Utilities
SUNWhurdm	Traditional Chinese (UTF-8) OILBN ReadMe Directory
SUNWhusad	Traditional Chinese (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWhuudc	Traditional Chinese (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWhwsr	Traditional Chinese prodreg 2.0 localizable text resources
SUNWhxe	Traditional Chinese X Window System Platform Software Package
SUNWhxman	Traditional Chinese X Window System Online User Man Pages Package

TABLE 36-3 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: French

This Package	Contains
NSCPfrcdo	French localization of Netscape Communicator 4.7 supporting U.S. security
NSCPfrcdm	French localization of Netscape Communicator 4.7 supporting International security
SUNwf8bas	Base L10N fr CDE functionality to run a CDE application
SUNwf8dst	CDE Desktop Applications
SUNwf8dte	CDE Desktop Environment
SUNwf8he	CDE Help L10N fr Runtime Environment
SUNwf8im	CDE Desktop applications
SUNwf8wm	French UTF-8 CDE Desktop Window Manager Messages
SUNwfj2rt	Java virtual machine and core class libraries (French supplement)
SUNwfjvdv	French Localizations for JavaVM developers package

TABLE 36-3 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: French
(Continued)

This Package	Contains
SUNWfjvrt	French Localizations for JavaVM Runtime environment
SUNWfoaud	French OPEN LOOK Audio applications
SUNWfobk	French OpenWindows online handbooks
SUNWfodcv	French OPEN LOOK document and help viewer applications
SUNWfodem	French OPEN LOOK demo programs
SUNWfodst	French OPEN LOOK deskset tools
SUNWfodte	French OPEN LOOK desktop environment
SUNWfoimt	French OPEN LOOK imagetool
SUNWforte	French OPEN LOOK toolkits Runtime environment
SUNWfpdas	French tools to synchronize desktop applications with the Palm Pilot PDA
SUNWfrbas	Base L10N fr CDE functionality to run a CDE application
SUNWfrdst	CDE Desktop Applications
SUNWfrdte	CDE Desktop Environment
SUNWfrhe	CDE Help L10N fr Runtime Environment
SUNWfrhed	CDE L10N fr Help Developer Environment
SUNWfrhev	CDE Help Volumes
SUNWfrim	CDE Desktop applications
SUNWfrj2p	French localization of Java Plug-In 1.2.2
SUNWfros	Localizable message files for the OS-Networking consolidation
SUNWfrpmw	French (EUC) Localizations for Power Management OW Utilities
SUNWfrreg	Solaris User Registration prompts at desktop login for user registration
SUNWfrwm	French CDE Desktop Window Manager Messages
SUNWftltk	French ToolTalk binaries and shared libraries
SUNWfwacx	French OPEN LOOK AccessX
SUNWfwsr	Product registry 2.0 localizable text resources
SUNWfxplt	French X Window System platform software

TABLE 36-4 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: German

This Package	Contains
NSCPdecom	German localization of Netscape Communicator 4.7 supporting International security
SUNWd8bas	Base L10N German UTF-8 CDE functionality to run a CDE application
SUNWd8dst	CDE Desktop Applications
SUNWd8dte	CDE Desktop Login Environment
SUNWd8he	CDE Help L10N German UTF-8 Runtime Environment
SUNWd8im	CDE Desktop applications
SUNWd8wm	German UTF-8 CDE Desktop Window Manager Messages
SUNWdebas	Base L10N German CDE functionality to run a CDE application
SUNWdedst	CDE Desktop Applications
SUNWdedte	CDE Desktop Login Environment
SUNWdehe	CDE Help L10N German Runtime Environment
SUNWdehed	CDE L10N German Help Developer Environment
SUNWdehev	CDE Help Volumes
SUNWdeim	CDE Desktop applications
SUNWdej2p	German localization of Java Plug-In 1.2.2
SUNWdeos	Localizable message files for the OS-Networking consolidation
SUNWdepmw	German (EUC) Localizations for Power Management OW Utilities
SUNWdereg	Solaris User Registration prompts at desktop login for user registration
SUNWdewm	German CDE Desktop Window Manager Messages
SUNWdj2rt	Java virtual machine and core class libraries (German supplement)
SUNWdjvdv	German Localizations for JavaVM developers package
SUNWdjvrt	German Localizations for JavaVM Runtime environment
SUNWdoaud	German OPEN LOOK Audio applications
SUNWdobk	German OpenWindows online handbooks
SUNWdodcv	German OPEN LOOK document and help viewer applications
SUNWdodem	German OPEN LOOK demo programs
SUNWdodst	German OPEN LOOK deskset tools

TABLE 36-4 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: German
(Continued)

This Package	Contains
SUNWdodte	German OPEN LOOK desktop environment
SUNWdoimt	German OPEN LOOK imagetool
SUNWdorte	German OPEN LOOK toolkits Runtime environment
SUNWdpdas	German tools to synchronize desktop applications with the Palm Pilot PDA
SUNWdtltk	German ToolTalk binaries and shared libraries
SUNWdwacx	German OPEN LOOK AccessX
SUNWdwsr	Product registry 2.0 localizable text resources
SUNWdxplt	German X Window System platform software

TABLE 36-5 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Italian

This Package	Contains
NSCPitcom	Italian localization of Netscape Communicator 4.7 supporting International security
SUNWi8bas	Base L10N it CDE functionality to run a CDE application
SUNWi8dst	CDE it Desktop Applications messages
SUNWi8dte	CDE Italian UTF-8 Desktop Login Environment
SUNWi8he	CDE Help L10N it Runtime Environment
SUNWi8im	CDE Italian UTF-8 Desktop Image editor
SUNWi8wm	Italian UTF-8 CDE Desktop Window Manager Messages
SUNWij2rt	Java virtual machine and core class libraries (Italian supplement)
SUNWijvdv	Italian Localizations for JavaVM developers package
SUNWijvrt	Italian Localizations for JavaVM Runtime environment
SUNWioaud	Italian OPEN LOOK Audio applications
SUNWiobk	Italian OpenWindows online handbooks
SUNWiodcv	Italian OPEN LOOK document and help viewer applications
SUNWiodem	Italian OPEN LOOK demo programs
SUNWiodst	Italian OPEN LOOK deskset tools
SUNWiodte	Italian OPEN LOOK desktop environment

TABLE 36-5 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Italian
(Continued)

This Package	Contains
SUNWioimt	Italian OPEN LOOK imagetool
SUNWiorte	Italian OPEN LOOK toolkits Runtime environment
SUNWipdas	Italian tools to synchronize desktop applications with the Palm Pilot PDA
SUNWitbas	Base L10N it CDE functionality to run a CDE application
SUNWitdst	CDE it Desktop Applications messages
SUNWitdte	CDE Italian Desktop Login Environment
SUNWithe	CDE Help L10N it Runtime Environment
SUNWitwed	CDE L10N it Help Developer Environment
SUNWithev	CDE Help Volumes
SUNWitim	CDE Italian Desktop Image editor
SUNWitj2p	Italian localization of Java Plug-In 1.2.2
SUNWitltk	Italian ToolTalk binaries and shared libraries
SUNWitos	Localizable message files for the OS-Networking consolidation
SUNWitpmw	Italian UTF-8 (EUC) Localizations for Power Management OW Utilities
SUNWitreg	Solaris User Registration prompts at desktop login for user registration
SUNWitwm	Italian CDE Desktop Window Manager Messages
SUNWiwacx	Italian OPEN LOOK AccessX
SUNWiwsr	Product registry 2.0 localizable text resources
SUNWixplt	Italian X Window System platform software

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese

This Package	Contains
JSat8xw	Japanese Input System ATOK8 for Japanese Solaris
JSatsvr	Japanese Input System ATOKserver root files for Japanese Solaris
JSatsvu	Japanese Input System ATOKserver usr files for Japanese Solaris
JSatsvw	Japanese Input System ATOKserver X11 support files for Japanese Solaris
NSCPjecom	Japanese (EUC) localization of Netscape Communicator 4.7 supporting International security

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese
(Continued)

This Package	Contains
NSCPjpcom	Japanese (PCK) localization of Netscape Communicator 4.7 supporting International security
NSCPjucom	Japanese (UTF-8) localization of Netscape Communicator 4.7 supporting International security
SUNWjadis	Japanese (EUC) Localizations for Admintool and GUI install
SUNWjadma	Japanese (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWjadis packages for Japanese (EUC) localization
SUNWjaj2p	Japanese localization of Java Plug-In 1.2.2
SUNWjc0d	Japanese Kana-Kanji Conversion Server cs00 user dictionary maintenance tool for CDE Motif
SUNWjc0w	Japanese Kana-Kanji Conversion Server cs00 user dictionary maintenance tool for OPEN LOOK; this package is also required to use X Input Method Server on X Window System
SUNWjcs3f	Japanese JIS X0212 Type1 fonts for printing
SUNWjdab	Japanese (Common) Localization for CDE Desktop Application Builder
SUNWjdbas	Japanese (Common) Localization for CDE application basic Runtime environment
SUNWjddst	Japanese (EUC) Localization for CDE Desktop Applications
SUNWjddte	Japanese (EUC) Localization for Solaris Desktop Login Environment
SUNWjdhcm	Japanese Localizations for DHCP Manager
SUNWjdhe	Japanese (EUC) Localization for CDE Help Runtime environment
SUNWjdhed	Japanese (EUC) Localization for CDE Help Developer Environment
SUNWjdhev	Japanese (Common) Localization for CDE Help Volumes
SUNWjdhez	Japanese (Common) Localizations for Desktop Power Pack Help Volumes
SUNWjdim	Japanese (EUC) Localization for Solaris CDE Image Viewer
SUNWjdrme	Japanese (EUC) Localization for Common Desktop Environment (CDE) release documentation
SUNWjdwm	Japanese (EUC) Localization for CDE Desktop Window Manager
SUNWjeab	Japanese (EUC) Localization for CDE Desktop Application Builder
SUNWjebas	Japanese (EUC) Localization for CDE application basic Runtime environment

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNwject	Japanese (EUC) Localizations for UTF-8 Code Conversion Tool
SUNwjedev	Japanese (EUC) Development Environment Package specific files
SUNwjeezt	Japanese (EUC) Localizations for Desktop Power Pack Applications
SUNwjehev	Japanese (EUC) Localization for CDE Help Volumes
SUNwjehez	Japanese (EUC) Localizations for Desktop Power Pack Help Volumes
SUNwjej2m	Japanese (EUC) man pages
SUNwjejmn	Japanese (EUC) JavaVM manual pages for Java programmers and users
SUNwjeman	Japanese Feature Package Man Pages to see Japanese (EUC) man pages for SUNwjfpr and SUNwjfpu and Japanese man pages for SUNwman and SUNwaled
SUNwjepmm	Japanese (EUC) Power Management OW Utilities Man Pages
SUNwjepmw	Japanese (EUC) Localizations for Power Management OW Utilities
SUNwjeuce	Japanese (EUC) Feature Package specific files for usr; it is an extended package to support EUC environment
SUNwjeudc	Japanese (EUC) Localizations for User Defined Character tool for Solaris CDE environment
SUNwjewnu	Japanese Input System - Wnn6 Messages, (EUC)
SUNwjexfa	Japanese (EUC) Localizations for Font Administration application for Solaris platforms
SUNwjexir	Japanese (EUC) localizations for XIL Runtime Environment
SUNwjfdl	Japanese Localization for Solaris Desktop Font Downloader for Adobe PostScript printers
SUNwjfpre	Stream modules for Japanese Feature Package (JFP); it is an extended package to run JFP environment
SUNwjfpue	Japanese Feature Package (JFP) specific files for usr; it is an extended package to run JFP environment
SUNwjfxmn	English man pages of Japanese features for X Window System
SUNwj2dv	Japanese Java virtual macTools and utilities including javac, jdb, javadoc, rmiregistry
SUNwj2rt	Japanese Java virtual machine and core class libraries
SUNwj2mfp	Japanese Localization for JMF player
SUNwj2vdr	Japanese Localizations for JavaVM developers package

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjrvrt	Japanese Localizations for JavaVM Runtime environment
SUNWjkcsr	Japanese (EUC) Localizations for Kodak Color Management System Runtime
SUNWjlibj	Japanese specific library (/usr/lib/libjapanese.a), header, and transition kit
SUNWjmane	Japanese Feature Package Man Pages (Extension) to see English man pages for SUNWjfppe and SUNWjfpue
SUNWjmfrn	Japanese (EUC) Localizations for Motif 1.2.3 Runtime Kit
SUNWjoaud	Japanese (EUC) Localizations for Audiotool and other auxiliary audio support
SUNWjodcv	Japanese (EUC) Localizations for OPEN LOOK document and help viewer applications
SUNWjodem	Japanese (EUC) Localizations for OPEN LOOK demo programs
SUNWjodst	Japanese (EUC) Localizations for OPEN LOOK deskset tools
SUNWjodte	Japanese (EUC) Localizations for OPEN LOOK Desktop Environment (olwm, props, wsinfo, etc.)
SUNWjoimt	Japanese (EUC) Localizations for OPEN LOOK imagetool
SUNWjorte	Japanese (EUC) Localizations for OPEN LOOK toolkits Runtime environment
SUNWjoumn	Japanese (EUC) OPEN LOOK toolkit/desktop users man pages
SUNWjpab	Japanese (PCK) Localization for CDE Desktop Application Builder
SUNWjpacx	Japanese (PCK) Localizations for AccessX client program
SUNWjpadi	Japanese (PCK) Localizations for Admintool and GUI install
SUNWjpadm	Japanese (PCK) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWjpadi packages for Japanese (PCK) localization
SUNWjpbas	Japanese (PCK) Localization for CDE application basic Runtime environment
SUNWjpcke	Japanese (PCK - PC Kanji Code) Feature Package specific files; it is a extended package to support PCK environment
SUNWjpct	Japanese (PCK) Localizations for UTF-8 Code Conversion Tool
SUNWjpdas	Japanese Localization for tools to synchronize desktop applications with the Palm Pilot PDA

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjpdst	Japanese (PCK) Localization for CDE Desktop Applications
SUNWjpdte	Japanese (PCK) Localization for CDE Desktop Login Environment
SUNWjpez	Japanese (PCK) Localizations for Desktop Power Pack Applications
SUNWjphe	Japanese (PCK) Localization for CDE Help Runtime environment
SUNWjphed	Japanese (PCK) Localization for CDE Help Developer Environment
SUNWjphev	Japanese (PCK) Localization for CDE Help Volumes
SUNWjphesz	Japanese (PCK) Localizations for Desktop Power Pack Help Volumes
SUNWjpin	Japanese (PCK) Localization for Solaris CDE Image Viewer
SUNWj2m	Japanese (PCK) man pages
SUNWjpmn	Japanese (PCK) JavaVM manual pages for Java programmers and users
SUNWjpkcs	Japanese (PCK) Localizations for Kodak Color Management System Runtime
SUNWjpmn	Japanese Feature Package Man Pages to see Japanese (PCK) man pages for SUNWjpr and SUNWjpu and Japanese man pages for SUNWman and SUNWaled
SUNWjpmfr	Japanese (PCK) Localizations for Motif 1.2.3 Runtime Kit
SUNWjppmm	Japanese (PCK) Power Management OW Utilities Man Pages
SUNWjppmw	Japanese (PCK) Localizations for Power Management OW Utilities
SUNWjprdm	Japanese (PCK) OILBN ReadMe Directory
SUNWjprme	Japanese (PCK) Localization for Common Desktop Environment (CDE) release documentation
SUNWjpsal	Japanese (PCK) Localizations for Solstice Admintool launcher and associated libraries
SUNWjptlm	Japanese (PCK) ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users
SUNWjptlt	Japanese (PCK) Localizations for ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWjpuhc	Japanese (PCK) Localizations for User Defined Character tool for Solaris CDE environment
SUNWjpwmm	Japanese (PCK) Localization for CDE Desktop Window Manager
SUNWjpwnu	Japanese Input System - Wnn6 Messages, (PCK)

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjpxfa	Japanese (PCK) Localizations for Font Administration application for Solaris platforms
SUNWjpxir	Japanese (PCK) Localizations for XIL Runtime Environment
SUNWjpxpm	Japanese (PCK) X Window System online programmers man pages
SUNWjpxum	Japanese (PCK) X Window System online user man pages
SUNWjrdm	Japanese (EUC) OILBN ReadMe Directory
SUNWjreg	Japanese Localizations for Solaris User Registration
SUNWjsadl	Japanese (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWjtlmn	Japanese (EUC) ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users
SUNWjtltk	Japanese (EUC) Localizations for ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWju8e	Japanese (UTF-8) Feature Package specific files; it is a extended package to support Japanese UTF-8 environment
SUNWjuab	Japanese (UTF-8) Localization for CDE Desktop Application Builder
SUNWjuacx	Japanese (UTF-8) Localizations for AccessX client program
SUNWjuadi	Japanese (UTF-8) Localizations for Admintool and GUI install
SUNWjuadm	Japanese (UTF-8) Localizations for software used to perform system administration tasks; Admintool requires both this and SUNWjuadi packages for Japanese (UTF-8) localization
SUNWjubas	Japanese (UTF-8) Localization for CDE application basic Runtime environment
SUNWjuct	Japanese (UTF-8) Localizations for UTF-8 Code Conversion Tool
SUNWjudst	Japanese (UTF-8) Localization for CDE Desktop Applications
SUNWjudte	Japanese (UTF-8) Localization for CDE Desktop Login Environment
SUNWjuezt	Japanese (UTF-8) Localizations for Desktop Power Pack Applications
SUNWjuhe	Japanese (UTF-8) Localization for CDE Help Runtime environment
SUNWjuhed	Japanese (UTF-8) Localization for CDE Help Developer Environment
SUNWjuhev	Japanese (UTF-8) Localization for CDE Help Volumes
SUNWjuhez	Japanese (UTF-8) Localizations for Desktop Power Pack Help Volumes

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjuim	Japanese (UTF-8) Localization for Solaris CDE Image Viewer
SUNWjuj2m	Japanese (UTF-8) man pages
SUNWjujmn	Japanese (UTF-8) JavaVM Manual pages for Java programmers and users
SUNWjukcs	Japanese (UTF-8) Localizations for Kodak Color Management System Runtime
SUNWjulcf	Japanese (UTF-8) Localizations for xutops command
SUNWjuman	Japanese Feature Package Man Pages to see Japanese (UTF-8) man pages for SUNWjfprr and SUNWjfpur and Japanese man pages for SUNWman and SUNWaled
SUNWjumfr	Japanese (UTF-8) Localizations for Motif 1.2.3 Runtime Kit
SUNWjupmm	Japanese (UTF-8) Power Management OW Utilities Man Pages
SUNWjupmw	Japanese (UTF-8) Localizations for Power Management OW Utilities
SUNWjurdm	Japanese (UTF-8) OILBN ReadMe Directory
SUNWjurme	Japanese (UTF-8) Localization for Common Desktop Environment (CDE) release documentation
SUNWjusal	Japanese (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWjutlm	Japanese (UTF-8) ToolTalk manual pages for ToolTalk programmers, OpenWindows users, and Common Desktop Environment (CDE) users
SUNWjutlt	Japanese (UTF-8) Localizations for ToolTalk binaries and shared libraries needed for Common Desktop Environment (CDE), OpenWindows, and all ToolTalk clients
SUNWjuudc	Japanese (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWjuwm	Japanese (UTF-8) Localization for CDE Desktop Window Manager
SUNWjuwnu	Japanese Input System - Wnn6 Messages, (UTF-8)
SUNWjuxfa	Japanese (UTF-8) Localizations for Font Administration application for Solaris platforms
SUNWjuxir	Japanese (UTF-8) Localizations for XIL Runtime Environment
SUNWjuxpm	Japanese (UTF-8) X Window System online programmers man pages
SUNWjuxum	Japanese (UTF-8) X Window System online user man pages
SUNWjwacx	Japanese (EUC) Localizations for AccessX client program

TABLE 36-6 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Japanese
(Continued)

This Package	Contains
SUNWjwbc	Japanese Localizations for Solaris WBEM Services
SUNWjwbk	Japanese (EUC) Localizations for OpenWindows online handbooks
SUNWjwncr	Japanese Input System - Wnn6 Client (root)
SUNWjwncu	Japanese Input System - Wnn6 Client (usr)
SUNWjwncx	Japanese Input System - Wnn6 Client X Window System
SUNWjwndt	Japanese Input System - Wnn6 Client for CDE
SUNWjwnsr	Japanese Input System - Wnn6 Server (root)
SUNWjwnsu	Japanese Input System - Wnn6 Server (usr)
SUNWjwsr	Japanese Solaris Product Registry
SUNWjxfa	Japanese (Common) Localizations for Font Administration application for Solaris platforms
SUNWjxfnt	Japanese X Window System Fonts (required fonts) - gothic bold fonts and TrueType map files
SUNWjxoft	Sun Minchou bitmap fonts
SUNWjxplt	Japanese Localizations for X Window System platform software (Extensions)
SUNWjxpmn	Japanese (EUC) X Window System online programmers man pages
SUNWjxumn	Japanese (EUC) X Window System online user man pages

TABLE 36-7 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Korean

This Package	Contains
NSCPkoocom	Korean localization of Netscape Communicator 4.7 supporting International security
NSCPkucom	Ko.UTF-8 localization of Netscape Communicator 4.7 supporting International security
SUNWkadis	Korean (EUC) Localizations for Admintool and GUI install
SUNWkadma	Korean (EUC) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWkadis packages for Korean (EUC) localization
SUNWkcoft	Korean/Korean UTF-8 common optional font package
SUNWkdab	Korean Localizations for CDE Desktop Application Builder
SUNWkdbas	Korean Localizations for CDE Base functionality

TABLE 36-7 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Korean
(Continued)

This Package	Contains
SUNWkdcst	The localized tools package for Korean
SUNWkddst	Korean Localizations for CDE Desktop Applications
SUNWkddte	Korean Localizations for CDE Desktop Login Environment
SUNWkdezt	Korean (EUC) Localizations for Desktop Power Pack Applications
SUNWkdf t	Fonts for the Common Desktop Environment, Korean L10N CDE
SUNWkdhe	Korean Localizations for CDE Help Runtime environment
SUNWkdhev	Korean CDE Help Volumes
SUNWkdhez	Korean (Common) Localizations for Desktop Power Pack Help Volumes
SUNWkdicn	Korean Localizations for CDE Icons
SUNWkdim	Korean Localizations for CDE Imagetool
SUNWkdwm	Korean Localizations for CDE Desktop Window Manager
SUNWkepww	Korean (EUC) Localization for Power Management OW Utilities
SUNWkexir	Korean (EUC) XIL Runtime Environment
SUNWkj2rt	Java virtual machine and core class libraries (Korean supplement)
SUNWkjv dv	Korean Localizations for JavaVM developers package
SUNWkjvrt	Korean Localizations for JavaVM Runtime environment
SUNWkkcsr	Korean (EUC) KCMS Runtime Environment
SUNWkleue	Korean Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkoaud	Korean OPEN LOOK Audio Applications Package
SUNWkodcv	Korean OPEN LOOK Document and Help Viewer Applications Package
SUNWkodem	Korean OPEN LOOK Demo Programs Package
SUNWkodst	Korean OPEN LOOK Deskset Tools Package
SUNWkodte	Korean Core OPEN LOOK Desktop Package
SUNWkoimt	Korean OPEN LOOK Imagetool Package
SUNWkoj2p	Korean localization of Java Plug-In 1.2.2
SUNWkoman	Korean OPEN LOOK Toolkit/Desktop Users Man Pages Package
SUNWkorte	Korean OPEN LOOK Toolkits Runtime Environment Package

TABLE 36-7 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Korean
(Continued)

This Package	Contains
SUNWkpdas	Korean Localization for tools to synchronize desktop applications with the Palm Pilot PDA
SUNWkrdm	Korean (EUC) OILBN ReadMe Directory
SUNWkreg	Korean Localizations for Solaris User Registration
SUNWksadl	Korean (EUC) Localizations for Solstice Admintool launcher and associated libraries
SUNWkttltk	Korean ToolTalk Runtime Package Package
SUNWkttfe	Korean True Type Font Extension
SUNWkuadi	Korean (UTF-8) Localizations for Admintool and GUI install
SUNWkuadm	Korean (UTF-8) Localizations for Software used to perform system administration tasks; Admintool requires both this and SUNWkadis packages for Korean (EUC) localization
SUNWkudab	Korean/UTF-8 Localizations for CDE Desktop Application Builder
SUNWkudbs	Korean/UTF-8 Localizations for CDE Base functionality
SUNWkudc	Korean (EUC) Localizations for User Defined Character tool for Solaris CDE environment
SUNWkudda	Korean/UTF-8 Localizations for CDE Desktop Applications
SUNWkuddt	Korean/UTF-8 Localizations for CDE Desktop Login Environment
SUNWkudft	Fonts for the Common Desktop Environment, Korean/UTF-8 L10N CDE
SUNWkudhr	Korean/UTF-8 Localizations for CDE Help Runtime environment
SUNWkudhv	Korean/UTF-8 CDE Help Volumes
SUNWkudhz	Korean (Common) Localizations for Desktop Power Pack Help Volumes
SUNWkudic	Korean/UTF-8 Localizations for CDE Icons
SUNWkudim	Korean/UTF-8 Localizations for CDE Imagetool
SUNWkudwm	Korean/UTF-8 Localizations for CDE Desktop Window Manager
SUNWkudzt	Korean (UTF-8) Localizations for Desktop Power Pack Applications
SUNWkulee	Korean UTF-8 Language Environment specific files; it is a required package to run Korean Language Environment
SUNWkuodf	Korean UTF-8 Core OPEN LOOK Desktop Package
SUNWkupmw	Korean UTF-8 Localization for Power Management OW Utilities

TABLE 36-7 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Korean
(Continued)

This Package	Contains
SUNWkurdm	Korean (UTF-8) OILBN ReadMe Directory
SUNWkusal	Korean (UTF-8) Localizations for Solstice Admintool launcher and associated libraries
SUNWkuudc	Korean (UTF-8) Localizations for User Defined Character tool for Solaris CDE environment
SUNWkuxe	Korean UTF-8 X Window System Platform Software Package
SUNWkuxft	Korean UTF-8 X Window System Platform Required Fonts
SUNWkwsr	Korean product registry 2.0 localizable text resources
SUNWkxe	Korean X Window System Platform Software Package
SUNWkxfte	Korean X Window System Platform Required Fonts
SUNWkxman	Korean X Window System Online User Man Pages Package

TABLE 36-8 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Shared

This Package	Contains
SUNWerdm	OILBN ReadMe Directory
SUNWudct	User Defined Character tool for Solaris CDE Environment

TABLE 36-9 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Spanish

This Package	Contains
NSCPescom	Spanish localization of Netscape Communicator 4.7 supporting International security
SUNWe8bas	Base L10N fr CDE functionality to run a CDE application
SUNWe8dst	CDE Desktop Applications
SUNWe8dte	CDE Desktop Login Environment
SUNWe8he	CDE Help L10N es Runtime Environment
SUNWe8im	CDE Desktop applications
SUNWe8wm	Spanish UTF-8 CDE Desktop Window Manager Messages
SUNWej2rt	Java virtual machine and core class libraries (Spanish supplement)
SUNWejvdv	Spanish Localizations for JavaVM developers package

TABLE 36-9 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Spanish
(Continued)

This Package	Contains
SUNWejvrt	Spanish Localizations for JavaVM Runtime environment
SUNWeoaud	Spanish OPEN LOOK Audio applications
SUNWeobk	Spanish OpenWindows online handbooks
SUNWeodcv	Spanish OPEN LOOK document and help viewer applications
SUNWeodem	Spanish OPEN LOOK demo programs
SUNWeodst	Spanish OPEN LOOK deskset tools
SUNWeodte	Spanish OPEN LOOK desktop environment
SUNWeoimt	Spanish OPEN LOOK imagetool
SUNWeorte	Spanish OPEN LOOK toolkits Runtime environment
SUNWepdas	Spanish tools to synchronize desktop applications with the Palm Pilot PDA
SUNWesbas	Base L10N fr CDE functionality to run a CDE application
SUNWesdst	CDE Desktop Applications
SUNWesdte	CDE Desktop Login Environment
SUNWeshe	CDE Help L10N es Runtime Environment
SUNWeshed	CDE L10N es Help Developer Environment
SUNWeshev	CDE Help Volumes
SUNWesim	CDE Desktop applications
SUNWesj2p	Spanish localization of Java Plug-In 1.2.2
SUNWesos	Localizable message files for the OS-Networking consolidation
SUNWespmw	Spanish (EUC) Localizations for Power Management OW Utilities
SUNWesreg	Solaris User Registration prompts at desktop login for user registration
SUNWeswm	Spanish CDE Desktop Window Manager Messages
SUNWetltk	Spanish ToolTalk binaries and shared libraries
SUNWewacx	Spanish OPEN LOOK AccessX
SUNWewsr	Product registry 2.0 localizable text resources
SUNWexplt	Spanish X Window System platform software

TABLE 36–10 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Swedish

This Package	Contains
NSCPsvcom	Swedish localization of Netscape Communicator 4.7 supporting International security
SUNws8bas	Base Swedish UTF-8 CDE functionality messages
SUNws8dst	Swedish UTF-8 CDE Desktop Applications messages
SUNws8dte	Swedish UTF-8 CDE Desktop Login Environment messages
SUNws8he	Swedish UTF-8 CDE Help Runtime Environment
SUNws8im	Swedish UTF-8 CDE Image editor messages
SUNws8wm	Swedish UTF-8 CDE Desktop Window Manager Messages
SUNwsj2rt	Java virtual machine and core class libraries (Swedish supplement)
SUNwsjvdv	Swedish Localizations for JavaVM developers package
SUNwsjvrt	Swedish Localizations for JavaVM Runtime environment
SUNwsoaud	Swedish OPEN LOOK Audio applications
SUNwsobk	Swedish OpenWindows online handbooks
SUNwsodcv	Swedish OPEN LOOK document and help viewer applications
SUNwsodem	Swedish OPEN LOOK demo programs
SUNwsodst	Swedish OPEN LOOK deskset tools
SUNwsodte	Swedish OPEN LOOK desktop environment
SUNwsoimt	Swedish OPEN LOOK imagetool
SUNwsorte	Swedish OPEN LOOK toolkits Runtime environment
SUNwspdass	Swedish tools to synchronize desktop applications with the Palm Pilot PDA
SUNwstltk	Swedish ToolTalk binaries and shared libraries
SUNwsvbas	Base Swedish CDE functionality messages
SUNwsvdst	Swedish CDE Desktop Applications messages
SUNwsvdte	Swedish CDE Desktop Login Environment messages
SUNwsvhe	Swedish CDE Help Runtime Environment
SUNwsvhed	Swedish CDE Help Developer Environment messages
SUNwsvhev	CDE Help Volumes
SUNwsvim	Swedish CDE Image editor messages

TABLE 36-10 Packages on the Solaris 8 Languages *Intel Platform Edition* CD: Swedish
(Continued)

This Package	Contains
SUNWsvj2p	Swedish localization of Java Plug-In 1.2.2
SUNWsvos	Localizable message files for the OS-Networking consolidation
SUNWsvpmw	Swedish (EUC) Localizations for Power Management OW Utilities
SUNWsvreg	Solaris User Registration prompts at desktop login for user registration
SUNWsvwm	Swedish CDE Desktop Window Manager Messages
SUNWswacx	Swedish OPEN LOOK AccessX
SUNWswsr	Product registry 2.0 localizable text resources
SUNWsxplt	Swedish X Window System platform software

Platform Names and Groups

Table 37-1 lists the platform names and groups of various hardware platforms. You might need this information when preparing a system on which to install Solaris 8 software.

Note – On a running system, you can also use the `uname -i` command to determine a system's *platform name* or the `uname -m` command to determine a system's *platform group*.

TABLE 37-1 Platform Names and Groups

System	Platform Name	Platform Group
IA based	i86pc	i86pc
SPARCstation 1	SUNW,Sun_4_60	sun4c
SPARCstation 1+	SUNW,Sun_4_65	sun4c
SPARCstation SLC	SUNW,Sun_4_20	sun4c
SPARCstation ELC	SUNW,Sun_4_25	sun4c
SPARCstation IPC	SUNW,Sun_4_40	sun4c
SPARCstation IPX	SUNW,Sun_4_50	sun4c
SPARCstation 2	SUNW,Sun_4_75	sun4c
SPARCserver 1000	SUNW,SPARCserver-1000	sun4d
SPARCcenter 2000	SUNW,SPARCcenter-2000	sun4d

TABLE 37-1 Platform Names and Groups *(Continued)*

System	Platform Name	Platform Group
SPARCstation 5	SUNW,SPARCstation-5	sun4m
SPARCstation 10	SUNW,SPARCstation-10	sun4m
SPARCstation 10SX	SUNW,SPARCstation-10,SX	sun4m
SPARCstation 20	SUNW,SPARCstation-20	sun4m
SPARCstation LX	SUNW,SPARCstation-LX	sun4m
SPARCstation LX+	SUNW,SPARCstation-LX+	sun4m
SPARCclassic	SUNW,SPARCclassic	sun4m
SPARCclassic X	SUNW,SPARCclassic-X	sun4m
SPARCstation Voyager	SUNW,S240	sun4m
SPARCstation 4	SUNW,SPARCstation-4	sun4m
Ultra 1 systems	SUNW,Ultra-1	sun4u
Sun Enterprise 1 systems	SUNW,Ultra-1	sun4u
Ultra 30	SUNW,Ultra-30	sun4u
Ultra 2 systems	SUNW,Ultra-2	sun4u
Sun Enterprise 2 systems	SUNW,Ultra-2	sun4u
Sun Enterprise 150	SUNW,Ultra-1	sun4u
Sun Enterprise 250	SUNW,Ultra-2	sun4u
Ultra 450	SUNW,Ultra-4	sun4u
Sun Enterprise 450	SUNW,Ultra-4	sun4u
Sun Enterprise 3000, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 10000	SUNW,Ultra-Enterprise	sun4u
Ultra 5	SUNW,Ultra-5/10	sun4u
Ultra 10	SUNW,Ultra-5/10	sun4u
Ultra 60	SUNW,Ultra-60	sun4u
Ultra 80	SUNW,Ultra-80	sun4u

Locale Values

A *locale* determines how online information is displayed in a specific language and region. A language might also include more than one locale to accommodate regional differences, such as differences in the format of date and time, numeric and monetary conventions, and spelling.

For example, to use English with British spelling, use English for Great Britain (`en_GB`). To use English with American spelling, use English for the United States (`en_US`). Table 38–1 lists the values needed to set the `locale` keyword in a profile or to preconfigure a locale.

You might need to install a localized version of Solaris 8 to use a particular locale. Additional information about locales is presented in the *Solaris Internationalization Guide For Developers*.

TABLE 38–1 Locale Values

Region	Locale Name	Code Set	Comments
Albania	<code>sq_AL</code>	ISO8859-2	
Argentina	<code>es_AR</code>	ISO8859-1	
Australia	<code>en_AU</code>	ISO8859-1	
Austria	<code>de_AT</code>	ISO8859-15	
Belgium	<code>fr_BE</code>	ISO8859-1	French
	<code>fr_BE.ISO8859-15</code>	ISO8859-15	French; supports the euro currency.
	<code>nl_BE</code>	ISO8859-1	Dutch
	<code>nl_BE.ISO8859-15</code>	ISO8859-15	Dutch; supports the euro currency.
Bolivia	<code>es_BO</code>	ISO8859-1	

TABLE 38-1 Locale Values (Continued)

Region	Locale Name	Code Set	Comments
Bosnia	nr	ISO8859-2	
Brazil	pt_BR	ISO8859-1	
Bulgaria	bg_BG	ISO8859-5	
Canada	en_CA	ISO8859-1	English
	fr_CA	ISO8859-1	French
Chile	es_CL	ISO8859-1	
People's Republic of China	zh	gb2312	Simplified Chinese EUC codeset. Contains GB 1988-80 and GB 2312-80.
	zh.GBK	GBK	Simplified Chinese with GB extension. Includes all GB 2312-80 characters and all Unified Han characters of ISO/IEC 10646-1, Japanese Hiragana and Katagana characters, and many symbol characters of Chinese, Japanese, and Korean character sets and of ISO/IEC 10646-1.
Columbia	es_CO	ISO8859-1	
Costa Rica	es_CR	ISO8859-1	
Croatia	hr_HR	ISO8859-2	
Czech Republic	cz	ISO8859-2	
Denmark	da	ISO8859-1	
	da.ISO8859-15	ISO8859-15	Adds support for the euro currency.
Ecuador	es_EC	ISO8859-1	
Estonia	et	ISO8859-15	Supports the euro currency.
Europe	en_EU.ISO8859-15	ISO8859-15	This locale uses a set of European cultural data and returns the euro as the default currency symbol. The language is English.

TABLE 38-1 Locale Values (Continued)

Region	Locale Name	Code Set	Comments
	en_EU.UTF-8	UTF-8	This locale uses a set of European cultural data and returns the euro as the default currency symbol. The language is English.
Finland	fi	ISO8859-1	
	fi.ISO8859-15	ISO8859-15	Supports the euro currency.
France	fr	ISO8859-1	
	fr.ISO8859-15	ISO8859-15	Supports the euro currency.
	fr.UTF-8	UTF-8	
Germany	de	ISO8859-1	
	de.ISO8859-15	ISO8859-15	Supports the euro currency.
	de.UTF-8	UTF-8	
Great Britain	en_GB	ISO8859-1	
	en_GB.ISO8859-15	ISO8859-15	Supports the euro currency.
Greece	el.sun_eu_greek	ISO8859-7 (modified)	Supports the euro currency.
Guatemala	es_GT	ISO8859-1	
Hungary	hu	ISO8859-2	
Ireland	en_IE	ISO8859-1	
	en_IE.ISO8859-15	ISO8859-15	Supports the euro currency.
Israel	he	ISO8859-8	
	he_IL	ISO8859-8	
Italy	it	ISO8859-1	
	it.ISO8859-15	ISO8859-15	Supports the euro currency.
	it.UTF-8	UTF-8	

TABLE 38-1 Locale Values (Continued)

Region	Locale Name	Code Set	Comments
Japan	ja	eucJP	Japanese EUC codeset. Contains JIS X0201-1976, JIS X0208-1983, JIS X0212-1990.
	ja_JP.PCK	PCK	PCK is also known as Shift JIS (SJIS).
	ja_JP.UTF-8	UTF-8	
Korea	ko	5601	Korean EUC codeset. Contains KS C 5636 and KS C 5601-1987.
	ko.UTF-8	UTF-8	
Latvia	lt	ISO8859-13	
Lithuania	lv	ISO8859-13	
Luxembourg	lu	ISO8859-15	
Macedonia	mk_MK	ISO8859-5	
Netherlands	nl	ISO8859-1	
	nl.ISO8859-15	ISO8859-15	Supports the euro currency.
New Zealand	en_NZ	ISO8859-1	
Nicaragua	es_NI	ISO8859-1	
Norway	no	ISO8859-1	Supports bokmål Norwegian.
	no_NY	ISO8859-1	Supports nynorsk Norwegian.
Panama	es_PA	ISO8859-1	
Paraguay	es_PY	ISO8859-1	
Peru	es_PE	ISO8859-1	
Poland	pl	ISO8859-2	
Portugal	pt	ISO8859-1	
	pt.ISO8859-15	ISO8859-15	Supports the euro currency.
Romania	ro_RO	ISO8859-2	
Russia	ru	ISO8859-5	

TABLE 38-1 Locale Values (Continued)

Region	Locale Name	Code Set	Comments
	ru.KOI8-R	KOI8-R	
El Salvador	es_SV	ISO8859-1	
Saudi Arabia	ar	ISO8859-6	
Serbia	sr_SP	ISO8859-5	
Slovakia	sk_SK	ISO8859-2	
Slovenia	sl_SI	ISO8859-2	
Spain	es	ISO8859-1	
	es.ISO8859-15	ISO8859-15	Supports the euro currency.
	es.UTF-8	UTF-8	
Sweden	sv	ISO8859-1	
	sv.ISO8859-15	ISO8859-15	Supports the euro currency.
	sv.UTF-8	UTF-8	
Switzerland	fr_CH	ISO8859-1	French
	de_CH	ISO8859-1	German
Taiwan	zh_TW	cns11643	Traditional Chinese
	zh_TW.BIG5	BIG5	Traditional Chinese
Thailand	th_TH	TIS 620-2533	
Turkey	tr	ISO8859-9	
United States	en_US	ISO8859-1	
	en_US.UTF-8	UTF-8	
	C	ISO/IEC 646 (US-ASCII). Does not support 8-bit characters.	
Uruguay	es_UY	ISO8859-1	
Venezuela	es_VE	ISO8859-1	

Troubleshooting

This chapter contains a list of specific error messages and general problems you might encounter when installing Solaris 8 software and explains how to fix the problems. Start by using this list of sections in this chapter to determine where in the installation process the problem occurred.

- “Setting Up Network Installations” on page 391
- “Booting a System” on page 392
- “Booting a System Over the Network” on page 396
- “Installing Solaris 8 (Initial)” on page 400
- “Installing Solaris 8 (Upgrade)” on page 402

Setting Up Network Installations

Error: Unknown client "*host_name*"

Problem	How to fix the problem
The <i>host_name</i> argument in the <code>add_install_client</code> command is not a host in the name service.	Add the host <i>host_name</i> to the NIS or NIS+ name service and execute the <code>add_install_client</code> command again.

Booting a System

Error Messages

le0: No carrier - transceiver cable problem

Problem	How to fix the problem
The system is not connected to the network.	If this is a non-networked system, ignore this message. If this is a networked system, make sure the Ethernet cabling is attached securely.

The file just loaded does not appear to be executable

Problem	How to fix the problem
The system cannot find the proper media for booting.	Verify that the system has been set up properly to install Solaris 8 over the network from an install server. For example, make sure you specified the right platform group for the system when you set it up. Also, if you did not copy the images of the CDs labeled Solaris 8 Software 1 of 2, Solaris 8 Software 2 of 2, and Solaris 8 Languages to the install server, make sure the CD labeled Solaris 8 Software 1 of 2 is mounted and accessible on the install server.

boot: cannot open /kernel/unix

Problem	How to fix the problem
<i>SPARC based systems only</i> This error occurs when you override the location of the boot file by explicitly setting it to /kernel/unix. In Solaris 2.6 and subsequent releases, the kernel is no longer located in /kernel/unix, but in /platform/arch/kernel/unix.	Reset the boot file in the PROM to "" (blank).

Can't boot from file/device

Problem	How to fix the problem
JumpStart or the Solaris 8 Interactive Installation Program can't find the CD labeled Solaris 8 Software 1 of 2 for your platform in the system's CD-ROM drive.	Make sure the: <ul style="list-style-type: none"> ■ CD-ROM drive is installed properly and turned on ■ CD labeled Solaris 8 Software 1 of 2 is inserted into the CD-ROM drive

WARNING: clock gained xxx days -- CHECK AND RESET DATE!

Problem	How to fix the problem
<i>SPARC based systems only</i> This is an informational message.	Ignore the message and continue with the installation.

Not a UFS filesystem

Problem	How to fix the problem
<i>IA based systems only</i> When Solaris 8 software was installed (either through the Solaris 8 Interactive Installation Program or custom JumpStart), the default boot drive was not selected. When an alternate boot disk is selected, you must use the diskette labeled Solaris 8 Device Configuration Assistant <i>Intel Platform Edition</i> to boot the system from that point on.	Insert the diskette labeled Solaris 8 Device Configuration Assistant <i>Intel Platform Edition</i> into the system's boot diskette drive (usually the A: drive).

General Problems

Problem	How to fix the problem
<i>IA based systems only</i> The Solaris 8 root slice must be located within the first 1024 cylinders of the disk. If it is not, the installation fails after booting.	If the first <code>fdisk</code> partition is primary DOS (PRI DOS), use the <code>fdisk</code> command to delete space from it. Try booting again. If the first <code>fdisk</code> partition is extended DOS (EXT DOS) or another operating system, use the <code>fdisk</code> command to delete it. Try booting again.

Problem	How to fix the problem
<i>IA based systems only</i> The system hangs or panics when non-memory PC cards are inserted.	Non-memory PCs cannot use the same memory resources used by other devices. To correct this problem, use a DOS debugger to identify device memory usage, then manually reserve memory resources for the PC card device using the following instructions: <ol style="list-style-type: none"><li data-bbox="683 485 1305 541">1. Boot the system using the diskette labeled Solaris 8 Device Configuration Assistant <i>Intel Platform Edition</i>.<li data-bbox="683 548 1013 569">2. Go to the Device Tasks menu.<li data-bbox="683 575 997 596">3. Select Review/Edit Devices.<li data-bbox="683 602 899 623">4. Select Add Device.<li data-bbox="683 630 932 651">5. Select Define Device.<li data-bbox="683 657 1289 714">6. Enter a unique name following the EISA ID naming conventions (for example, ITD4001), and select Continue.<li data-bbox="683 720 1321 777">7. Select Memory Address from the list of resources, and select Continue.<li data-bbox="683 783 1192 840">8. Enter the address range to reserve (for example, CA800–CFFFF), and select Continue.<li data-bbox="683 846 1208 903">9. Return to the Device Tasks menu and select Save Configuration.<li data-bbox="683 909 899 930">10. Reboot the system.

Problem	How to fix the problem
<p data-bbox="266 373 483 401"><i>IA based systems only</i></p> <p data-bbox="266 415 730 527">The IDE BIOS primary drive on your system was not detected by the Solaris 8 Device Configuration Assistant during the pre-booting phase.</p>	<ul style="list-style-type: none"> <li data-bbox="760 373 1427 457">■ If you are using old drives, they might be unsupported. Check the <i>Solaris 8 (Intel Platform Edition) Hardware Compatibility List</i>. <li data-bbox="760 464 1427 520">■ Make sure the ribbon and power cables are plugged in correctly. Check the manufacturer's documentation. <li data-bbox="760 527 1427 730">■ If only one drive is attached to the controller, designate the drive as the master drive by setting jumpers. Some drives have different jumper settings for a single master, as opposed to a master operating with a slave. Connect the drive to the connector at the end of the cable to reduce signal ringing that occurs when an unused connector is dangling at the end of the cable. <li data-bbox="760 737 1427 821">■ If two drives are attached to the controller, jumper one drive as the master (or as a master operating with a slave), and jumper the second drive as a slave. <li data-bbox="760 827 1427 940">■ If one drive is a hard disk and the second a CD-ROM drive, designate one drive as the slave drive by setting jumpers. It doesn't matter which drive is plugged into which drive connection on the cable. <li data-bbox="760 947 1427 1129">■ If there are persistent problems with two drives on a single controller, attach one drive at a time to verify that each works. Jumper the drive as master or single master, and use the drive connector at the end of the IDE ribbon cable to attach the drive. Verify that each drive works, then jumper the drives back into a master and slave configuration. <li data-bbox="760 1136 1427 1276">■ If the drive is a disk drive, use the BIOS setup utility to ensure that the drive type (which indicates the number of cylinders, heads, and sectors) is configured correctly. Some BIOS software might have a feature that automatically detects the drive type. <li data-bbox="760 1283 1427 1367">■ If the drive is a CD-ROM drive, use the BIOS setup screen to configure the drive type as a CD-ROM drive, provided the BIOS software offers this capability. <li data-bbox="760 1373 1427 1486">■ If MS-DOS does not recognize the drive, there is probably a hardware or BIOS configuration problem. For many systems, IDE CD-ROM drives are only recognized by MS-DOS if an MS-DOS CD-ROM driver has been installed.

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>The IDE disk or CD-ROM drive on your system was not found by the Solaris 8 Device Configuration Assistant in the pre-booting phase.</p>	<ul style="list-style-type: none"> ■ If disks are disabled in the BIOS, use the Solaris 8 Device Configuration Assistant <i>Intel Platform Edition</i> to boot from the hard disk. ■ If the system has no disks, it might be a diskless client.

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>The system hangs before displaying the system prompt.</p>	<p>See the <i>Solaris 8 (Intel Platform Edition) Hardware Compatibility List</i>.</p>

Booting a System Over the Network

Error Messages

```
WARNING: getfile:
RPC failed: error 5 (RPC Timed out).
```

Problem	How to fix the problem
<p>This error occurs when you have two or more servers on a network responding to an install client's boot request. The install client connects to the wrong boot server, and the installation hangs. The following specific reasons might cause this error to occur:</p> <p><i>Reason 1:</i> There might be <code>/etc/bootparams</code> files on different servers with an entry for this install client.</p>	<p><i>Solution for Reason 1:</i> Make sure that servers on the network do not have multiple <code>/etc/bootparams</code> entries for the install client. If they do, remove duplicate client entries in the <code>/etc/bootparams</code> file on all install and boot servers except the one you want the install client to use.</p>

Problem	How to fix the problem
<p><i>Reason 2:</i> There might be multiple /tftpboot or /rplboot directory entries for this install client.</p>	<p><i>Solution for Reason 2:</i> Make sure that servers on the network do not have multiple /tftpboot or /rplboot directory entries for the install client. If they do, remove duplicate client entries from the /tftpboot or /rplboot directories on all install and boot servers except the one you want the install client to use.</p>
<p><i>Reason 3:</i> There might be an install client entry in the /etc/bootparams file on a server and an entry in another /etc/bootparams file enabling all systems to access the profile server. Such an entry looks like this:</p> <pre>* install_config=profile_server:path</pre> <p>A line like this in the NIS or NIS+ bootparams table can also cause this error.</p>	<p><i>Solution for Reason 3:</i> If there's a wildcard entry in the name service bootparams map or table (for example, *install_config=), delete it and add it to the /etc/bootparams file on the boot server.</p>
<p>No network boot server. Unable to install the system. See installation instructions.</p>	

Problem	How to fix the problem
<p><i>SPARC based systems only</i></p> <p>This error occurs on a system that you are attempting to install over the network. The system is not set up correctly.</p>	<p>Make sure you correctly set up the system to install over the network (see "Adding Systems to Be Installed From the Network" on page 91).</p>
<p>prom_panic: Could not mount filesystem</p>	

Problem	How to fix the problem
<p><i>SPARC based systems only</i></p> <p>This error occurs when you are installing Solaris 8 over a network, but the boot software cannot locate the Solaris 8 Software 1 of 2 CD image (either the CD labeled Solaris 8 Software 1 of 2 or a copy of the Solaris 8 Software 1 of 2 CD image on the install server).</p>	<p>Make sure that the installation software is mounted and shared.</p> <p>If you are installing Solaris 8 from the install server's CD-ROM drive, make sure the CD labeled Solaris 8 Software 1 of 2 is inserted in the CD-ROM drive, is mounted, and is shared in the /etc/dfs/dfstab file. If installing from a copy of the Solaris 8 Software 1 of 2 CD image on the install server's disk, make sure the directory path to the copy is shared in the /etc/dfs/dfstab file.</p>
<p>Timeout waiting for ARP/RARP packet...</p>	

Problem	How to fix the problem
<p><i>SPARC based systems only</i></p> <p>The client is trying to boot over the network, but it cannot find a system that knows about the client.</p>	<p>Verify the system's host name is in the NIS or NIS+ name service. Also, verify the <code>bootparams</code> search order in the boot server's <code>/etc/nsswitch.conf</code> file.</p> <p>For example, the following line in the <code>/etc/nsswitch.conf</code> file indicates that JumpStart or the Solaris 8 Interactive Installation Program first looks in the NIS maps for <code>bootparams</code> information. If not found there, JumpStart or the Solaris 8 Interactive Installation Program looks in the boot server's <code>/etc/bootparams</code> file.</p> <pre>bootparams: nis files</pre>

```
ip: joining multicasts failed on tr0 - will use link layer broadcasts for multicast
```

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>This error message is displayed when you boot a system with a token ring card. Ethernet multicast and token ring multicast do not work the same way. The driver returns this error message because an invalid multicast address was provided to it.</p>	<p>Ignore this error message. If multicast doesn't work, IP uses layer broadcasts instead and it won't cause the installation to fail.</p>

```
Requesting Internet address for Ethernet_Address
```

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>The client is trying to boot over the network, but it cannot find a system that knows about the client.</p>	<p>Verify the system's host name is listed in the NIS or NIS+ name service. If the system's host name is listed in the NIS or NIS+ name service, and the system continues to print this error message, try rebooting.</p>

```
RPC: Timed out
No bootparams (whoami) server responding; still trying...
```

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>The client is trying to boot over the network, but it cannot find a system with an entry in the <code>/etc/bootparams</code> file on the install server.</p>	<p>Use <code>add_install_client</code> on the install server. Using this command adds the proper entry in the <code>/etc/bootparams</code> file, enabling the client to boot over the network.</p>
<p>Still trying to find a RPL server...</p>	

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>The system is trying to boot over the network, but the server is not set up to boot this system.</p>	<p>On the install server, execute <code>add_install_client</code> for the system to be installed. The <code>add_install_client</code> command sets up an <code>/rplboot</code> directory, which contains the necessary network boot program.</p>

General Problems

Problem	How to fix the problem
<p>The system boots over the network, but from a system other than the specified install server.</p>	<p>On the name server, update the <code>/etc/bootparams</code> entry for the system being installed. The entry should conform to the following syntax:</p> <pre>install_system root=boot_server:path install=install_server:path</pre> <p>Also, ensure there is only one <code>bootparams</code> entry on the subnet for the install client.</p>

Problem	How to fix the problem
<p><i>SPARC based systems only</i></p> <p>After you set up an install server and configure the system to install Solaris 8 over the network, the system still does not boot.</p>	<p>Be sure the <code>tftpd</code> daemon is running on the install server. Type the following command and press Return:</p> <pre># ps -ef grep tftpd</pre> <p>If this command does not return a line indicating the <code>tftpd</code> daemon is running, edit the <code>/etc/inetd.conf</code> file and remove the comment (<code>#</code>) character from the following line:</p> <pre># tftp dgram udp wait root /usr/sbin/in.tftpd in.tftpd -s /tftpboot</pre> <p>After making this change, try booting the system again.</p>

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>After setting up an install server and configuring the system to install over the network, the system still does not boot.</p>	<p>Be sure the <code>tftpd</code> daemon is running on the install server. Type the following command and press Enter:</p> <pre># ps -ef grep rpld</pre> <p>If this command does not return a line indicating the <code>rpld</code> daemon is running, execute the following command:</p> <pre># /usr/sbin/rpld</pre> <p>After making this change, try booting the system again.</p>

Installing Solaris 8 (Initial)

/cdrom/Solaris_2.x/SUNWxxx/reloc.cpio: Broken pipe

Problem	How to fix the problem
<p>Bug ID: 1212370</p> <p>This error message does not affect the installation.</p>	<p>Ignore the message and continue with the installation.</p>

WARNING: CHANGE DEFAULT BOOT DEVICE

Problem	How to fix the problem
<p><i>IA based systems only</i></p> <p>The default boot device set in the system's BIOS might be set to a device that requires your using the Solaris 8 Device Configuration Assistant <i>Intel Platform Edition</i> diskette to boot the system.</p> <p>This is an informational message.</p>	<p>Continue with the installation and, if necessary, change the system's default boot device specified in the BIOS after you install the Solaris software to a device that does not require the Solaris 8 Device Configuration Assistant <i>Intel Platform Edition</i> diskette.</p>

Problem	How to fix the problem
<p data-bbox="266 369 483 401"><i>IA based systems only</i></p> <p data-bbox="266 415 743 552">IDE disk drives do not automatically map out bad blocks like other drives supported by Solaris software. Before installing Solaris 8 on an IDE disk, you might want to perform a surface analysis on the disk.</p>	<p data-bbox="743 369 1427 426">To perform surface analysis on an IDE disk, follow this procedure:</p> <ol data-bbox="743 426 1427 1035" style="list-style-type: none"> <li data-bbox="743 426 1427 636">1. Start the Solaris 8 Interactive Installation Program, as described in “IA: Performing an Installation or Upgrade With the Solaris 8 Interactive Installation Program” on page 114. The Solaris 8 Interactive Installation Program starts either a graphical user interface (GUI) or a character user interface (CUI), depending on whether you have a graphics or non-graphics monitor. <li data-bbox="743 636 1427 699">2. When either the GUI or CUI program starts, enter information and select Continue on the first few screens. <li data-bbox="743 699 1427 762">3. When you see the Installing Solaris - Initial screen, select Exit and exit the installation. <li data-bbox="743 762 1427 940">4. If you are using the GUI version of the Solaris 8 Interactive Installation Program, open a command tool window for the remaining steps in this procedure. If you are using the CUI version of the Solaris 8 Interactive Installation Program, use the system shell for the remaining steps in this procedure. <li data-bbox="743 940 1427 972">5. Start the <code>format</code> program by typing <code>format</code>. <li data-bbox="743 972 1427 1035">6. Specify the IDE disk drive on which you want to perform a surface analysis. <p data-bbox="743 1050 1427 1127">IDE drives do not include a target number. The IDE drive naming convention is <code>cx_idy</code>, where <code>cx</code> is the controller number and <code>dy</code> is the device number.</p> <ol data-bbox="743 1150 1427 1734" style="list-style-type: none"> <li data-bbox="743 1150 1427 1245">1. At the <code>format></code> prompt, type <code>fdisk</code>. Use the <code>fdisk</code> command to create a Solaris 8 partition on the disk. (If a Solaris 8 <code>fdisk</code> partition already exists, leave it alone.) <li data-bbox="743 1245 1427 1276">2. At the <code>format></code> prompt, type <code>analyze</code>. <li data-bbox="743 1276 1427 1371">3. At the <code>analyze></code> prompt, type <code>config</code>. The current settings for a surface analysis are displayed. If you want to change settings, type <code>setup</code>. <li data-bbox="743 1371 1427 1465">4. At the <code>analyze></code> prompt, type <code>read</code>, <code>write</code>, or <code>compare</code> for the type of surface analysis to be performed. If <code>format</code> finds bad blocks, it re-maps them. <li data-bbox="743 1465 1427 1497">5. At the <code>analyze></code> prompt, type <code>quit</code>. <li data-bbox="743 1497 1427 1581">6. Do you want to specify blocks to re-map? If no, go to the next step. If yes, at the <code>format></code> prompt, type <code>repair</code>. <li data-bbox="743 1581 1427 1644">7. Type <code>quit</code>. The <code>format</code> program quits. <li data-bbox="743 1644 1427 1734">8. Choose Restart Install on the Workspace menu to resume the GUI installation, or type <code>suninstall</code> to resume the CUI installation.

Installing Solaris 8 (Upgrade)

Error Messages

No upgradeable disks

Problem

Bug ID: 1191792

A swap entry in the `/etc/vfstab` file is causing the upgrade to fail.

How to fix the problem

Comment out the following lines in the `/etc/vfstab` file:

- All swap files and slices on disks not being upgraded
- Swap files that are no longer present
- Any unused swap slices

General Problems

Problem

The upgrade fails because the Solaris installation program could not mount metadevices on the system.

How to fix the problem

Metadevices cannot be upgraded automatically. Instructions are provided in *Solstice DiskSuite 4.2 Reference Guide*.

Problem

Bug ID: 1170953

The upgrade option is not presented even though there is a version of Solaris software that's upgradable on the system.

The following specific reasons might cause this problem:

Reason 1: The `/var/sadm` directory is a symlink or it is mounted from another file system.

How to fix the problem

Solution for Reason 1: Move the `/var/sadm` directory into the root (`/`) or `/var` file system.

<p>Problem</p> <p><i>Reason 2:</i> The <code>/var/sadm/softinfo/INST_RELEASE</code> file is missing.</p>	<p>How to fix the problem</p> <p><i>Solution for Reason 2:</i> Create a new <code>INST_RELEASE</code> file by using the following template:</p> <pre>OS=Solaris VERSION=2.x REV=0</pre> <p>where <code>x</code> is the version of Solaris software on the system.</p>
<p>Problem</p> <p>The upgrade fails for reasons beyond your control, such as a power failure or a network connection failure, and the system cannot be soft-booted.</p>	<p>How to fix the problem</p> <ol style="list-style-type: none"> 1. Reboot the system from the Solaris 8 Installation CD, the Solaris 8 Software 1 of 2 CD for your platform or from the network. 2. Choose the upgrade option for installation. <p>The Solaris installation program determines if the system has been partially upgraded and continues the upgrade.</p>
<p>Problem</p> <p>The upgrade fails because the Solaris installation program cannot mount a file system. During an upgrade, the script attempts to mount all the file systems listed in the system's <code>/etc/vfstab</code> file on the root (<code>/</code>) file system being upgraded. If the installation script cannot mount a file system, it fails and exits.</p>	<p>How to fix the problem</p> <p>Make sure all file systems in the system's <code>/etc/vfstab</code> file can be mounted. Comment out any file systems in the <code>/etc/vfstab</code> file that can't be mounted or that might cause the problem so the Solaris 8 Interactive Installation Program doesn't try to mount them during the upgrade.</p> <p>Any system-based file systems that contain software to be upgraded (for example, <code>/usr</code>) cannot be commented out.</p>
<p>Problem</p> <p>There is not enough space on the system for the upgrade. Check the following reasons for the space problem and see if you can fix it without using auto-layout to reallocate space:</p>	<p>How to fix the problem</p>

Problem	How to fix the problem
<p><i>Reason 1:</i> Since the automounter is not active during an upgrade, the Solaris installation program installs any files or directories in a package that are symbolic links to automounted file systems. If a symbolic link is overwritten, the upgrade might fail because of insufficient disk space.</p> <p>The <code>/var/mail</code> and <code>/var/news</code> directories, which are usually located on an automounted file system, are not affected by an upgrade.</p> <p><i>Reason 2:</i> New software has been added to the software group that you are upgrading or some of the existing software has increased in size. During an upgrade, the Solaris 8 Interactive Installation Program installs any new software that is part of the software group previously installed on the system, and it also upgrades any existing packages on the system.</p>	<p><i>Solution for Reason 1:</i> During the upgrade, delete software packages in the Customize Software screen that create files or directories on the automounted file systems. Then the Solaris 8 Interactive Installation Program does not overwrite the symbolic link with the files or directories in the package.</p> <p><i>Solution for Reason 2:</i> During the upgrade, delete software packages in the Customize Software screen that install into the file systems that need more space. Especially look for any new packages that have been added to the Solaris release that the system doesn't need.</p>

Problem	How to fix the problem
<p>During an upgrade, a message is displayed regarding some of the packages (including <code>SUNWolrte</code>, <code>SUNWoldcv</code>, <code>SUNWoldte</code>, <code>SUNWolaud</code>).</p> <p>An example of this message is:</p> <pre>Doing pkgadd of SUNWolrte to /</pre>	<p>This message indicates an attempt to install the same architecture and version of a package that is already installed.</p> <pre>Installation of SUNWolrte was successful...</pre> <p>No action is required; this message is informational only.</p>

Adding and Removing Software After Installing Solaris 8

This appendix describes how to customize the Solaris software on your system after you install or upgrade to the Solaris 8 software.

You can add and remove software in the following ways:

You can use	To add, remove, or change
Solaris Web Start program	Products, software groups, and additional software on the Solaris 8 DVD, Solaris 8 Software CDs, Solaris 8 Software Companion CD, Solaris 8 Languages CD, or Solaris 8 Documentation CD You cannot install individual software packages.
Solaris Product Registry	All software installed using the Solaris Web Start program or the Solaris package management commands, for example, <code>pkgadd</code>
Admintool	Products, groups, and individual software packages on the Solaris 8 DVD, Solaris 8 Software CDs, Solaris 8 Software Companion CD, Solaris 8 Languages CD, or Solaris 8 Documentation CD You can use Admintool to add or remove software only on the system on which you are running Admintool. Admintool is not intended for use in a distributed environment.
The <code>pkgadd(1M)</code> and <code>pkgrm(1M)</code> commands	Individual software packages

Note – *System Administration Guide, Volume I* contains information about adding and removing software packages on client systems in a variety of computing environments.

Adding Software With the Solaris Web Start Program

This section describes how to use the Solaris Web Start program to add software to a system on which you have ve installed the Solaris operating environment.

▼ To Add Software With the Solaris Web Start Program

Note – This procedure assumes that the system is running the Volume Manager. If you are not using the Volume Manager to manage media, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without the Volume Manager.

1. **Log in to the installed or upgraded system.**
2. **Decide to install from the network, from a DVD, or from a CD and select one of the following.**
 - If you are installing from the network, locate the net image of the software you want to install.
 - If you are installing from a DVD or a CD, insert the disc in the drive.

Note – If you insert the Solaris 8 Languages CD, the Solaris Web Start program starts automatically.

3. **Change directories to find the Solaris Web Start installer for the software that you want to install.**

Solaris Web Start installers are located in various directories on the DVD and on the CDs. For more information about DVD and CD directory structures, see Chapter 30.

4. Begin the Solaris Web Start installation program.

- From a file manager, double click Installer or installer.
- From the command line, type the following.

```
% ./installer [options]
```

```
-nodisplay
```

Run the installer without a graphical user interface.

```
-noconsole
```

Runs the installer without any interactive text console device. Use this option with the `-nodisplay` option when you include the installation command in a UNIX script that you want to use to install the software.

An Installer window is displayed, followed by a Solaris Web Start dialog box.

5. Follow the directions on the screen to install the software.

6. If you installed the software from a DVD or a CD, eject the disc.

Adding and Removing Software With the Product Registry

Purpose

The Solaris Product Registry is a tool to help you manage installed software. After the Solaris software is installed, Product Registry provides a list of all the software that was installed using the Solaris Web Start program or the Solaris package management commands, for example, `pkgadd`.

The Solaris Product Registry enables you to:

- View a list of installed and registered software and some software attributes.
- View all of the Solaris system products that you installed in their localized version in the System Software Localizations folder.
- Find and launch an installer.
- Install additional software products.

- Uninstall software.
- Uninstall individual system packages.

How the Product Registry Works

The Solaris Product Registry main window, shown in Figure B-1, consists of three areas of information:

- Installed, registered, and removed software
- Standard attributes of the currently selected software
- Customized attributes and attributes internal to the registered software

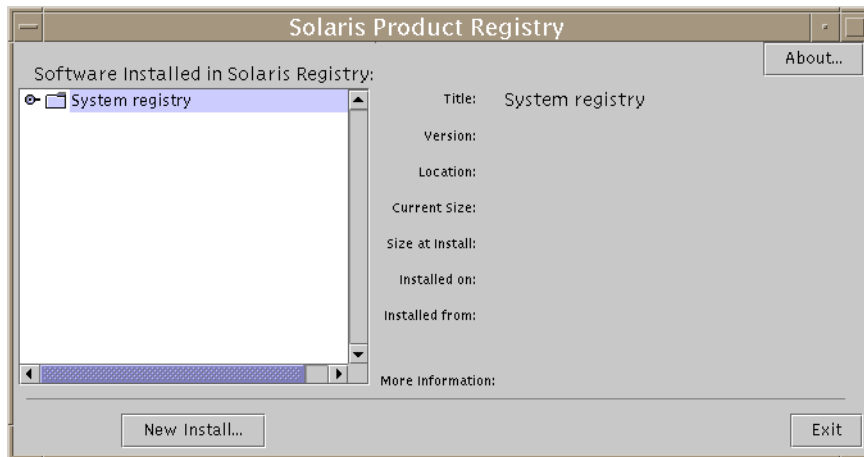


FIGURE B-1 Solaris Product Registry Window

To view the items in the Product Registry, click the turner control to the left of the folder icon next to “System registry.” Notice that the turner control changes from pointing to the right to pointing down.

You can expand or collapse any item in the Registry except items that have a text file icon to its left.

“Solaris 8” under “Software Installed in Solaris Registry,” as shown in Figure B-2, always contains two items: the configuration software group you chose when installing Solaris and “additional system software.”

Software groups that can be displayed include Core, End User System Support, Developer System Support, Entire Distribution, or Entire Distribution Plus OEM Support.

The “additional system software” item contains Solaris products that are not part of the software group you chose. Additionally, “unclassified software” contains any package that you installed using the `pkgadd` command that is not a Solaris product or part of the software group.

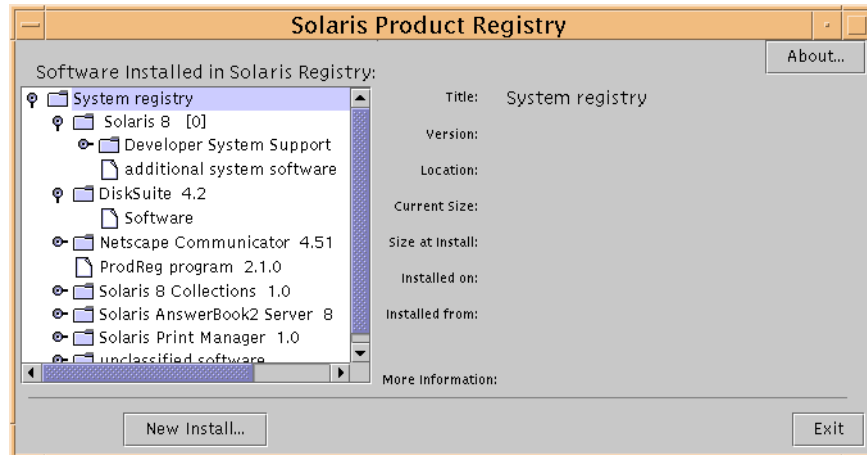


FIGURE B-2 Solaris Product Registry Expanded

Product Registry attributes appear above the “More Information” box. For product items installed with Solaris Web Start, the Product Registry contains values for at least Title, Version, Location, and Installed on. Items in an expanded list under a product or software group inherit the version information of the product. You can click an item to view its attribute values.

Sometimes an item appears in the Product Registry window but the corresponding software has been removed with the `pkgrm` command.

In this case, the message “Missing files in one or more components” is displayed after the “Installed from” attribute (see Figure B-3). You can either re-install the software by using the `pkgadd` command or you can remove it by using the Product Registry.

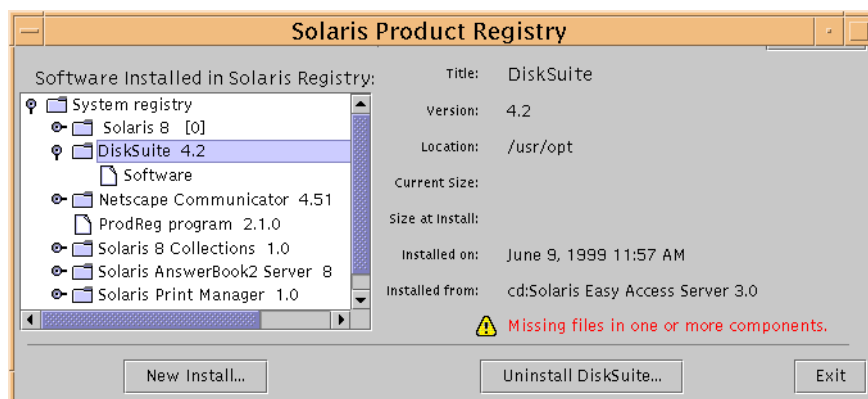


FIGURE B-3 Missing Files Message in the Solaris Product Registry

▼ To List Information About All Installed Products

1. If the Solaris Product Registry is not already running, type:
`/usr/bin/prodreg`

Note – In most cases, you do not need to specify the path `/usr/bin/`.

The Solaris Product Registry window, which contains the System registry, is displayed.

2. To view the list of installed and registered software, click the turner control to its left.
3. Do you want to view software attributes?
 - If no, go to the next step.
 - If yes, select the software you want by clicking its name under “Software installed in Solaris Registry.”

The Product Registry displays attribute information for the selected software.

▼ To Check the Integrity of an Installed Product

1. If the Solaris Product Registry is not already running, type:
`/usr/bin/prodreg`

Note – In most cases, you do not need to specify the path `/usr/bin/`.

The Solaris Product Registry window, which contains the System registry, is displayed.

2. To view the list of installed and registered software, click the turner control to its left.
3. Select the software you want by clicking its name in the window titled “Software installed in Solaris Registry.”

If all or part of the product was removed with the `pkgrm` command, the message “Missing files in one or more components” is displayed after the “Installed from” attribute.

▼ To Install Software With the Product Registry

1. Log in to the installed or upgraded system.
2. Decide to install from the network, from a DVD, or from a CD and select one of the following.
 - If you are installing from the network, locate the net image of the software you want to install.
 - If you are installing from a DVD or a CD, insert the disc in the drive.

Note – If you insert the Solaris 8 Languages CD, the Solaris Web Start program starts automatically.

3. If the Solaris Product Registry is not already running, type:
`/usr/bin/prodreg`

Note – In most cases, you do not need to specify the path `/usr/bin/`.

The Solaris Product Registry window, which contains the System registry, is displayed.

4. To view the list of installed and registered software, click the turner control to the left of the System registry.
5. Click the New Install button at the bottom of the Solaris Product Registry window.
The Product Registry displays the Select Installer dialog box, which initially points to the `/cdrom` directory.

Note – You can install software from local media or from a network.

6. When you find the installer you want, click its name in the Files box.

Note – The Solaris Web Start installer is named `Installer` or `installer`.

7. Click OK.

The installer you selected is launched.

8. Follow the directions displayed by the installer you selected to install the software.

▼ To Uninstall Products

1. If the Solaris Product Registry is not already running, type:

```
/usr/bin/prodreg
```

Note – In most cases, you do not need to specify the path `/usr/bin/`.

The Solaris Product Registry window, which contains the System registry, is displayed.

2. To view the list of installed and registered software, click the turner control to its left.
3. Select the software you want to uninstall by clicking its name in the window titled "Software installed in Solaris Registry."
4. Read the software attributes to make sure this is the software you want to uninstall.
5. Click the Uninstall *software_product_name* button at the bottom of the Solaris Product Registry window.

The software product you selected is uninstalled.

Adding and Removing Packages With Admintool

This section describes how to add and remove software packages through the Admintool graphical user interface.

▼ To Add Packages With Admintool

Note – Unless you are a member of the UNIX[®] system administrator group (group 14), you must become superuser on your system to add or remove software packages with Admintool.

1. **Log in to the installed or upgraded system and become superuser:**

```
# su
```

2. **Insert the DVD or CD that contains the software you want to add.**

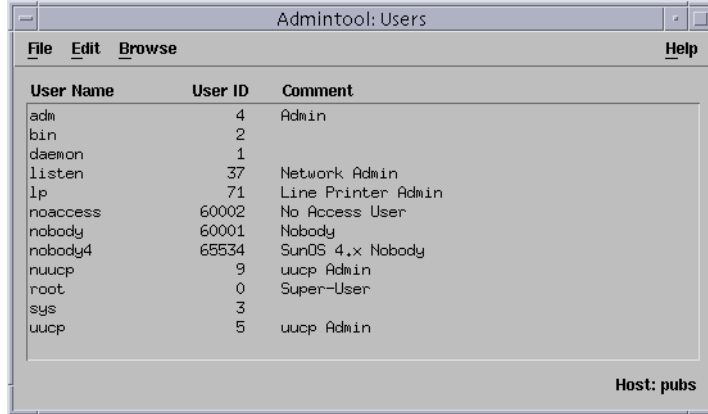
Volume Manager automatically mounts the disc.

3. **Note the directory path to the software that you want to add.**

4. **Start Admintool:**

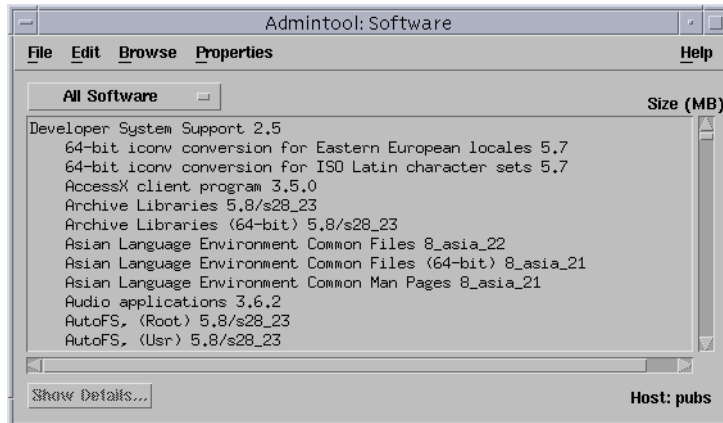
```
# admintool &
```

The Users window is displayed:



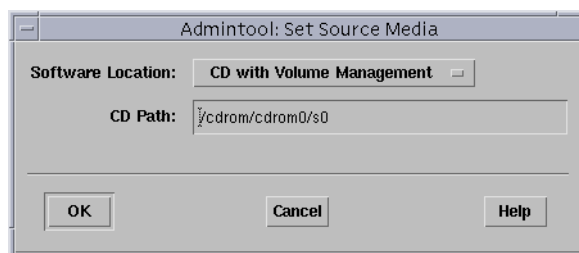
5. From the Browse menu, choose Software.

The Software window is displayed:



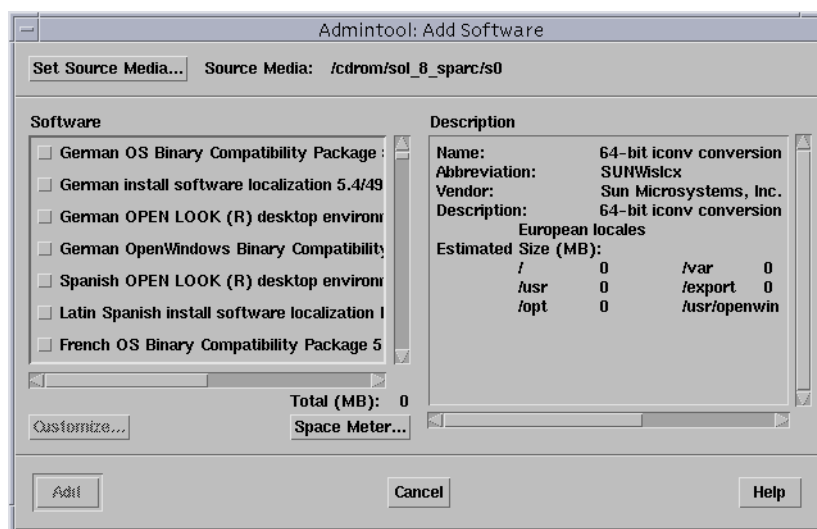
6. From the Edit menu, choose Add.

7. Did the Set Source Media window appear?

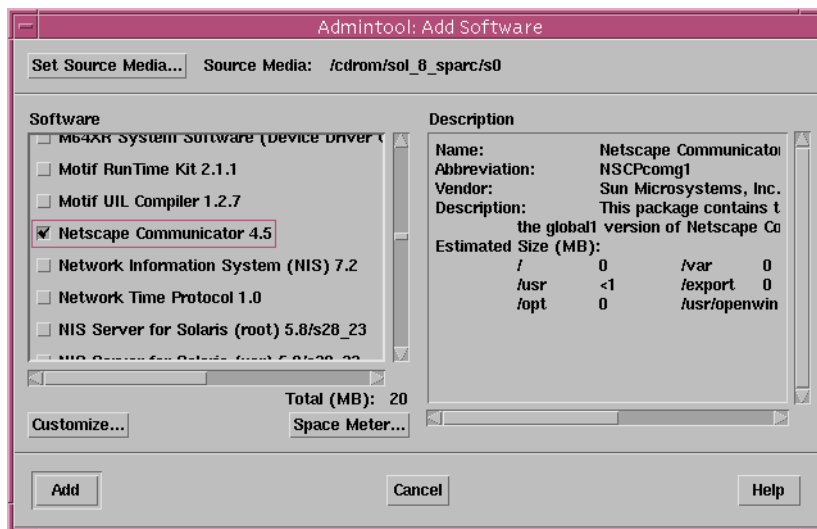


- If no, go to the next step.
- If yes, and if it is not already displayed in the CD Path box, specify the directory path to the CD or DVD that you noted in step 3 and click OK.

The Add Software window is displayed:

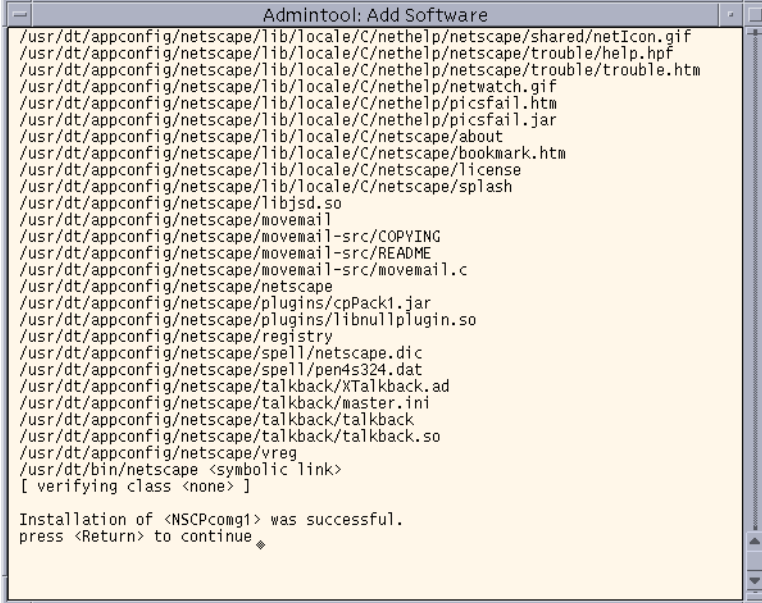


8. In the Software portion of the window, select the software you want to install on the local system:



9. Click Add.

The Add Software terminal window appears, in which a message is displayed as each component of the software is added:



```
Admintool: Add Software
/usr/dt/appconfig/netscape/lib/locale/C/nethelp/netscape/shared/netIcon.gif
/usr/dt/appconfig/netscape/lib/locale/C/nethelp/netscape/trouble/help.hp
/usr/dt/appconfig/netscape/lib/locale/C/nethelp/netscape/trouble/trouble.htm
/usr/dt/appconfig/netscape/lib/locale/C/nethelp/netwatch.gif
/usr/dt/appconfig/netscape/lib/locale/C/nethelp/picsfail.htm
/usr/dt/appconfig/netscape/lib/locale/C/nethelp/picsfail.jar
/usr/dt/appconfig/netscape/lib/locale/C/netscape/about
/usr/dt/appconfig/netscape/lib/locale/C/netscape/bookmark.htm
/usr/dt/appconfig/netscape/lib/locale/C/netscape/license
/usr/dt/appconfig/netscape/lib/locale/C/netscape/splash
/usr/dt/appconfig/netscape/libjsd.so
/usr/dt/appconfig/netscape/movemail
/usr/dt/appconfig/netscape/movemail-src/COPYING
/usr/dt/appconfig/netscape/movemail-src/README
/usr/dt/appconfig/netscape/movemail-src/movemail.c
/usr/dt/appconfig/netscape/netscape
/usr/dt/appconfig/netscape/plugins/cpPack1.jar
/usr/dt/appconfig/netscape/plugins/libnullplugin.so
/usr/dt/appconfig/netscape/registry
/usr/dt/appconfig/netscape/spell/netscape.dic
/usr/dt/appconfig/netscape/spell/pen4s324.dat
/usr/dt/appconfig/netscape/talkback/xTalkback.ad
/usr/dt/appconfig/netscape/talkback/master.ini
/usr/dt/appconfig/netscape/talkback/talkback
/usr/dt/appconfig/netscape/talkback/talkback.so
/usr/dt/appconfig/netscape/vreg
/usr/dt/bin/netscape <symbolic link>
[ verifying class <none> ]

Installation of <NSCPcomg1> was successful.
press <Return> to continue
```

When all the components that make up the software you selected are added, the following message is displayed:

```
Installation of <software> was successful. press <Return> to continue
```

10. Press Return.

The Add Software terminal window is dismissed, and the Software window is displayed so you can continue to add software.

11. When you're done adding software, from the File menu, choose Exit.

▼ To Remove Packages With Admintool

Note – Unless you are a member of the UNIX system administrator group (group 14), you must become superuser on your system to add or remove software packages with Admintool.

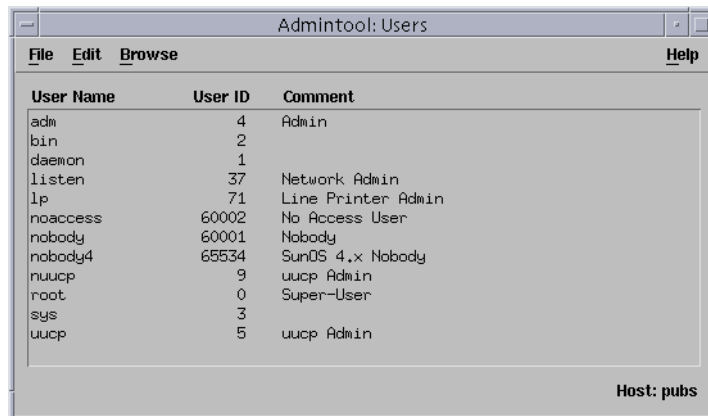
1. Log in to the installed or updated system and become superuser:

```
# su
```

2. Start Admintool:

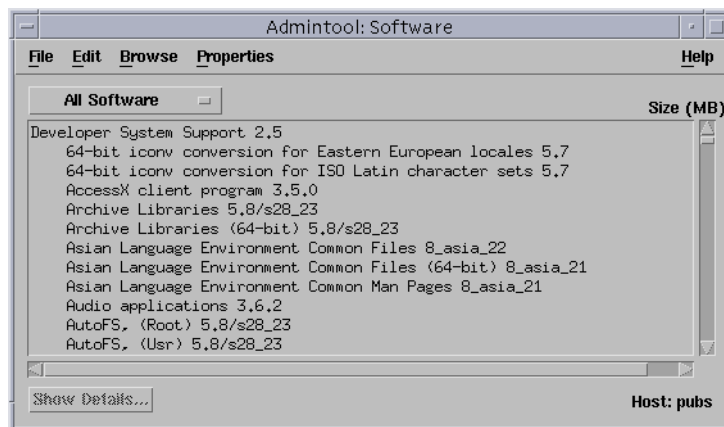
```
# admintool &
```

The Users window is displayed:



3. From the Browse menu, choose Software.

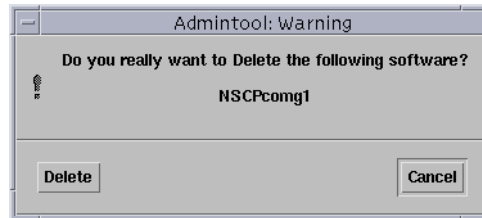
The Software window is displayed:



4. Select the software you want to delete by highlighting it.

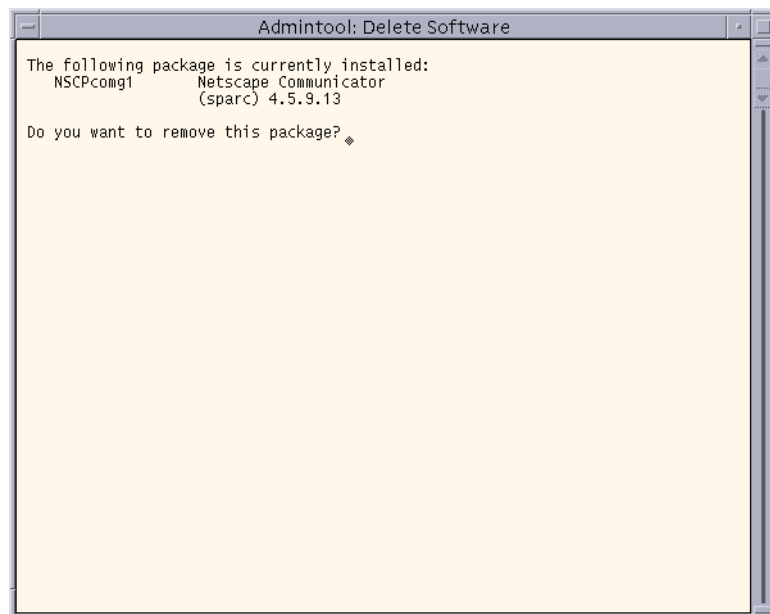
5. From the Edit menu, choose Delete.

The Warning dialog box is displayed, and you are prompted to confirm that you want to delete the software:



6. On the Warning dialog box, click Delete.

The Delete Software terminal window is displayed with messages that are generated as the software is being deleted:



You are prompted to confirm that you want to delete each software package you selected.

7. At each prompt, type y, n, or q.

A message is displayed as each component of the software is deleted. When all the components that make up the software you selected are deleted, the following message is displayed:

Removal of *<name_of_software>* was successful. press *<Return>* to continue

8. Press Return.

The Delete Software terminal window is dismissed, and the Software window is displayed so you can select more software to delete.

9. When you're done deleting software, from the File menu, choose Exit.

Adding and Removing Packages With `pkgadd` and `pkgrm`

▼ To Add Packages With `pkgadd`

1. Log in to the installed or updated system and become superuser:

```
# su
```

2. Insert the DVD or the CD that contains the software you want to add.

Volume Manager automatically mounts the disc.

3. Note the directory path to the software that you want to add.

4. Add one or more packages to the system:

```
# /usr/sbin/pkgadd -d device_name pkgid
```

where:

device_name Is the directory path to the DVD or CD that contains the software you want to add to the installed system.

pkgid Is the name of the software package to be added to the installed system. For example, SUNWaudio.

5. When you are finished, use the `pkgchk(1M)` command to verify that the package is installed correctly:

```
# /usr/sbin/pkgchk -v pkgid
```

If no errors are found, `pkgchk` returns a list of installed files. If an error is found, `pkgchk` returns a message that describes the problem.

SPARC: Example: Installing Software From a Mounted CD

The following example shows how to use `pkgadd` to install the `SUNWaudio` package from a mounted Solaris 8 Software 1 of 2 CD.

```
# /usr/sbin/pkgadd -d /cdrom/sol_8_sparc/Solaris_8/Product SUNWaudio
.
Installation of <SUNWaudio> was successful.
# pkgchk -v SUNWaudio
/usr
/usr/bin
/usr/bin/audioconvert
/usr/bin/audioplay
/usr/bin/audiorecord
#
```

IA: Example: Installing Software From a Mounted CD

The following example shows how to use `pkgadd` to install the `SUNWaudio` package from a mounted Solaris 8 Software 1 of 2 CD.

```
# /usr/sbin/pkgadd -d /cdrom/sol_8_ia/Solaris_8/Product SUNWaudio
.
Installation of <SUNWaudio> was successful.
# pkgchk -v SUNWaudio
/usr
/usr/bin
/usr/bin/audioconvert
/usr/bin/audioplay
/usr/bin/audiorecord
#
```

▼ To Remove Packages With `pkgrm`

1. Log in to the installed or updated system and become superuser:

```
# su
```

2. Remove one or more packages from the system:

```
# /usr/sbin/pkgrm pkgid
```

Where *pkgid* is the name of the software package you want to remove from the installed system. For example, `SUNWaudio`.

3. At each prompt, type `y`, `n`, or `q` to specify that you want to remove the package, not remove the package, or quit.

4. When you're done, use the `pkgchk(1M)` command to verify that the package was removed correctly:

```
# /usr/sbin/pkgchk -v pkgid
```

If the package was not removed correctly, `pkgchk` returns a warning message.

SPARC: Example: Removing Software From a System

The following example shows how to use `pkgrm` to remove the `SUNWaudio` package from a system.

```
# /usr/sbin/pkgrm SUNWaudio
The following package is currently installed:
  SUNWaudio      Audio applications
                  (SPARC) 3.6.20,REV=1.2000.11.7
Do you want to remove this package? y
.
.
.
Removal of <SUNWaudio> was successful.
# pkgchk -v SUNWaudio
WARNING: no pathnames were associated with <SUNWaudio>
#
```

IA: Example: Removing Software From a System

The following example shows how to use `pkgrm` to remove the `SUNWaudio` package from a system.

```
# /usr/sbin/pkgrm SUNWaudio
The following package is currently installed:
  SUNWaudio      Audio applications
                  (i386) 3.6.20,REV=1.2000.11.7
Do you want to remove this package? y
.
.
.
Removal of <SUNWaudio> was successful.
# pkgchk -v SUNWaudio
WARNING: no pathnames were associated with <SUNWaudio>
#
```

Installing or Upgrading From a Remote DVD-ROM and CD-ROM

This appendix describes how use the Solaris Web Start program to install or upgrade to the Solaris operating environment on a machine or domain that does not have a directly attached DVD-ROM or CD-ROM drive.

Note – If you are installing or upgrading the Solaris operating environment on a multi-domain server, refer to the system controller or system service processor documentation before beginning the installation process.

SPARC: Using the Solaris Web Start Program to Install or Upgrade From a Remote DVD-ROM or CD-ROM

If you want to install the Solaris operating environment on a machine or domain that does not have a directly attached DVD-ROM or CD-ROM drive, you can use a drive attached to another machine. Both machines must be connected to the same subnet. Use the following instructions to complete the installation.

▼ To Install or Upgrade From a Remote DVD-ROM and CD-ROM

Note – This procedure assumes that the system is running the Volume Manager. If you are not using the Volume Manager to manage media, refer to *System Administration Guide: Basic Administration* for detailed information about managing removable media without the Volume Manager.

1. **Identify a system that is running the Solaris operating environment and has a DVD-ROM or CD-ROM drive.**

In these commands, this system is identified as *host1*.

2. **On the system with the DVD-ROM or CD-ROM drive, insert the Solaris 8 SPARC Platform Edition DVD or the Solaris 8 Installation SPARC Platform Edition CD in the drive.**

The Volume Manager mounts the disc.

3. **On the system that is to be the client, check to see if this system is a client of another server.**

```
host2# bpgetfile
```

- If the `bpgetfile` command returns an empty screen, proceed to step 4.
- If the system is a client of a server other than one you are installing from, remove the system as a client with the following procedure.

- a. **Log in to the system with the DVD-ROM or CD-ROM drive.**

- b. **Change to the directory that was reported by the `bpgetfile` command, for example:**

```
host2# cd /export/solaris/s9
```

- c. **Remove that system as a client.**

```
host2# .rmclient line1-u5
```

4. **On the system with the DVD-ROM or CD-ROM drive, check the `/etc/dfs/dfstab` file to see if you need to export the DVD or CD.**

```
host1# more /etc/dfs/dfstab
```

- If the following lines are in the file, proceed to step 6:

```
share -F nfs -o ro,anon=0 /cdrom/cdrom0/s0
share -F nfs -o ro,anon=0 /cdrom/cdrom0/s1
```

- If the lines are not in the file, continue.

5. Export the Solaris 8 DVD or the Solaris 8 Installation CD.

```
host# share -F nfs -o ro,anon=0 /cdrom/cdrom0/s0
host# share -F nfs -o ro,anon=0 /cdrom/cdrom0/s1
```

6. Change directories to the DVD or CD.

```
host1# cd /cdrom/en_icd_sol_release_sparc /s0
```

release Is the software release, for example, s8 for the Solaris 8 release

7. Add the machine that you want to install as a client of the system that has the DVD-ROM or CD-ROM drive.

```
host1# ./add_install_client -s host1:/cdrom/cdrom0/s0 host2 arch
```

host1 The name of the system with the DVD-ROM or CD-ROM drive

host2 The name of the machine you want to install

arch The platform group of the machine you want to install, for example sun4u. On the system that you want to install, find the platform group by using the `uname -m` command.

8. Boot the machine that you want to install.

```
ok boot net
```

The Solaris Web Start installation begins.

9. Type system configuration information if needed.

- If you preconfigured all of the system configuration information, you are not prompted to enter any configuration information. Proceed to step 10.
- If you did not preconfigure the system configuration information, type system configuration information.

The machine reboots and the Solaris installation program begins. After the Welcome panel, the Specify Media panel appears with Network File System selected.

10. On the Specify Media panel, click Next.

The Specify Network File System Path panel appears and the text field contains the installation path.

```
host1_ip_address:/cdrom/cdrom0/s0
```

11. On the machine where the DVD or CD is mounted, change directories to root.

```
host1# cd /
```

12. Unshare the Solaris 8 DVD or Solaris 8 Installation CD.

```
host1# unshare /cdrom/en_icd_sol_release_sparc/s0
host1# unshare /cdrom/en_icd_sol_release_sparc/s1
```

release

The software release, for example s8 for the Solaris 8 release

13. Eject the Solaris 8 DVD or Solaris 8 Installation CD.

```
host1# eject cdrom
```

- If you are using a DVD, you are finished.
- If you are using CDs, continue.

14. Insert the Solaris 8 Software 1 of 2 CD in the CD-ROM drive.

15. Export the Solaris 8 Software 1 of 2 CD.

```
share -F nfs -o ro,anon=0 /cdrom/cdrom0/s0
share -F nfs -o ro,anon=0 /cdrom/cdrom0/s1
```

16. On the machine that you are installing, continue the Solaris installation by clicking Next.

17. If the Solaris Web Start program prompts you to insert the Solaris 8 Software 2 of 2 CD, repeat step 12 through step 16 to unshare the Solaris 8 Software 1 of 2 CD and to export and install the Solaris 8 Software 2 of 2 CD.

18. If the Solaris Web Start program prompts you to insert the Solaris 8 Languages CD, repeat step 12 through step 16 to unshare the Solaris 8 Software 2 of 2 CD and to export and install the Solaris 8 Languages CD.

When you export the Solaris 8 Languages CD, an installer window appears on the machine where the CD-ROM is mounted. Ignore the installer window while you install the Solaris 8 Languages CD. After you complete the installation of the Solaris 8 Languages CD, close the installer window.

Glossary

archive	A file that contains all of the files copied from a master system. The file also contains identification information about the archive, such as name and the date you created the archive. When you select to install an archive on a system, the system then contains the exact configuration of the master system you used to create the archive.
begin script	A user-defined Bourne shell script, specified within the <code>rules</code> file, that performs tasks before the Solaris software is installed on the system. You can use begin scripts only with custom JumpStart installations.
boot server	A server that provides boot services to systems on the same subnet. A boot server is required to install over the network if the install server is on a different subnet than the systems on which Solaris software is to be installed.
client	A system connected to a network.
clone system	A system that you installed by using a Web Start Flash archive. The clone system has the exact same installation configuration as the master system.
cluster	A logical grouping of software packages. The Solaris 8 software is divided into <i>software groups</i> , which are each composed of clusters and <i>packages</i> .
Core	A software group that contains the minimum software required to boot and run the Solaris operating environment on a system. It includes some networking software and the drivers required to run the Common Desktop Environment (CDE) or OpenWindows desktop. It does not include the CDE or OpenWindows software.
custom JumpStart	A type of installation in which the Solaris 8 software is automatically installed on a system based on a user-defined profile. You can create customized profiles for different types of users and systems. A custom JumpStart installation is a JumpStart installation you create.

custom probes file	A file, which must be located in the same JumpStart directory as the <code>rules</code> file, is a Bourne shell script that contains two types of functions: probe and comparison. Probe functions gather the information you want or does the actual work and sets a corresponding <code>SI_</code> environment variable you define. Probe functions become probe keywords. Comparison functions call a corresponding probe function, compare the output of the probe function, and return 0 if the keyword matches or 1 if the keyword doesn't match. Comparison functions become rule keywords. See also <i>rules file</i> .
derived profile	A profile that is dynamically created by a begin script during a custom JumpStart installation.
Developer System Support	A software group that contains the End User System Support software group plus the libraries, include files, man pages, and programming tools for developing software.
DHCP	DHCP, or Dynamic Host Configuration Protocol, is an application-layer protocol that enables individual computers, or clients, on a TCP/IP network to extract an IP address and other network configuration information from a designated and centrally maintained DHCP server or servers. This facility reduces the overhead of maintaining and administering a large IP network.
disk configuration file	A file that represents a structure of a disk (for example, bytes/sector, flags, slices). Disk configuration files enable you to use <code>pfinstall</code> from a single system to test profiles on different sized disks.
diskless client	A networked system that does not have its own disk, so it relies completely on an OS server for software and file storage.
domain	A part of the Internet naming hierarchy. It represents a group of systems on a local network that share administrative files.
domain name	The identification of a group of systems on a local network. A domain name consists of a sequence of component names separated by periods (for example: <code>tundra.mpk.ca.us</code>). As you read a domain name from left to right, the component names identify more general (and usually remote) areas of administrative authority.
End User System Support	A software group that contains the Core software group plus the recommended software for an end user, including OpenWindows or the Common Desktop Environment (CDE) and DeskSet software.
Entire Distribution	A software group that contains the entire Solaris 8 release.
Entire Distribution Plus OEM Support	A software group that contains the entire Solaris 8 release, plus additional hardware support for OEMs. This software group is recommended when installing Solaris software on SPARC based servers.

EISA	Extended Industry Standard Architecture. A type of bus on IA based systems. EISA bus standards are “smarter” than ISA bus systems, and attached devices can be automatically detected when they have been configured via the “EISA configurator” program supplied with the system. See also ISA.
<code>/etc</code>	A directory that contains critical system configuration files and maintenance commands.
<code>/export</code>	A file system on an OS server that is shared with other systems on a network. For example, the <code>/export</code> file system can contain the root file system and swap space for diskless clients and the home directories for users on the network. Diskless clients rely on the <code>/export</code> file system on an OS server to boot and run.
fdisk partition	A logical partition of a disk drive dedicated to a particular operating system on IA based systems. To install the Solaris software, you must set up at least one Solaris 8 <code>fdisk</code> partition on an IA based system. IA based systems are designed to support up to four different operating systems on each drive; each operating system must be located on a unique <code>fdisk</code> partition.
file server	A server that provides the software and file storage for systems on a network.
file system	A collection of files and directories that, when set into a logical hierarchy, make up an organized, structured set of information. File systems can be mounted from your local system or a remote system.
finish script	A user-defined Bourne shell script, specified within the <code>rules</code> file, that performs tasks after the Solaris software is installed on the system, but before the system reboots. You can use finish scripts only with custom JumpStart installations.
host name	The name by which a system is known to other systems on a network. This name must be unique among all the systems within a given domain (usually, this means within any single organization). A host name can be any combination of letters, numbers, and minus signs (-), but it cannot begin or end with a minus sign.
initial installation option	An option presented by the Solaris Web Start program and the Solaris 8 Interactive Installation Program that overwrites the disk(s) with a new version of Solaris. The initial installation option is presented for systems that can be upgraded. However, the disk(s) that contain the old version of Solaris software (including the local modifications) are overwritten if you choose the initial installation option.
install server	A server that provides the Solaris 8 CD images from which other systems on a network can install Solaris (also known as a <i>media server</i>). You can create an install server by copying the Solaris 8 CD images to the server’s hard disk.

interactive installation A type of installation where you have full, hands-on interaction with the installation program that installs the Solaris 8 software on a system.

IP address Internet protocol address. A unique number that identifies a networked system so it can communicate via Internet protocols. It consists of four numbers separated by periods (192.9.9.1, for example). Most often, each part of the IP address is a number between 0 and 225; however, the first number must be less than 224 and the last number cannot be 0.

IP addresses are logically divided into two parts: the network (similar to a telephone area code), and the local system on the network (similar to a phone number). The numbers in a Class A IP address, for example, represent "network.local.local.local" and the numbers in a Class C IP address represent "network.network.network.local".

Class	Range (<i>xxx</i> is a number 0 to 255)	Number of Available IP Addresses
Class A	1. <i>xxx.xxx.xxx</i> - 126. <i>xxx.xxx.xxx</i>	Over 16 million
Class B	128.0. <i>xxx.xxx</i> - 191.255. <i>xxx.xxx</i>	Over 65,000
Class C	192.0.0. <i>xxx</i> - 223.255.255. <i>xxx</i>	256

IPv6 IPv6 is a new version (version 6) of Internet Protocol (IP) designed to be an evolutionary step from the current version, IPv4 (version 4). It is an increment to IPv4. Deploying IPv6, using defined transition mechanisms, does not disrupt current operations. In addition, IPv6 provides a platform for new Internet functionality.

IPv6 is described in more detail in "Overview of IPv6" in *System Administration Guide, Volume 3*.

ISA Industry Standard Architecture. A type of bus found in IA based systems. ISA bus systems are "dumb" and provide no mechanism the system can use to detect and configure devices automatically. See also EISA.

JumpStart directory When using a profile diskette for custom JumpStart installations, the JumpStart directory is the root directory on the diskette that contains all the essential custom JumpStart files. When using a profile server for custom JumpStart installations, the JumpStart directory is a directory on the server that contains all the essential custom JumpStart files.

JumpStart installation A type of installation in which the Solaris 8 software is automatically installed on a system by using the factory-installed JumpStart software.

Kerberos	A network authentication protocol that uses strong, secret-key cryptography to enable a client and server to identify themselves to each other over an insecure network connection.
locale	A specific language associated with a region or territory.
master system	A system that you use to create a Web Start Flash archive. The system configuration is saved in the archive.
media server	See <i>install server</i> .
miniroot	The smallest possible bootable Solaris <code>root</code> file system. A miniroot contains a kernel and just enough software to install the Solaris environment on a hard disk. The miniroot is the file system that is copied to a machine in the initial installation.
mount	The process of making a remote or local file system accessible by executing the <code>mount(1M)</code> command. To mount a file system, you need a mount point on the local system and the name of the file system to be mounted (for example, <code>/usr</code>).
mount point	A directory on a system where you can mount a file system that exists on the local or a remote system.
name server	A server that provides a name service to systems on a network.
name service	A distributed network database that contains key system information about all the systems on a network, so the systems can communicate with each other. With a name service, the system information can be maintained, managed, and accessed on a network-wide basis. Sun supports the following name services: NIS and NIS+. Without a name service, each system has to maintain its own copy of the system information (in the local <code>/etc</code> files).
network installation	A way to install software over the network—from a system with a CD-ROM drive to a system without a CD-ROM drive. Network installations require a <i>name server</i> and an <i>install server</i> .
networked systems	A group of systems (called hosts) connected through hardware and software, so they can communicate and share information; referred to as a local area network (LAN). One or more servers are usually needed when systems are networked.
NIS	Network Information Service. A type of name service that is standard on SunOS 3.x, 4.x, and Solaris 1.x systems.
NIS+	Network Information Service, Plus. The replacement for NIS that provides automatic information updating and adds security features such as authorization and authentication. NIS+ is the standard on Solaris 2.x, Solaris 7, and Solaris 8 systems.
non-networked systems	Systems that are not connected to a network or do not rely on other systems.

<code>/opt</code>	A file system that contains the mount points for third-party and unbundled software.
OS server	A system that provides services to systems on a network. To serve diskless clients, an OS server must have disk space set aside for each diskless client's root file system and swap space (<code>/export/root</code> , <code>/export/swap</code>).
package	A functional grouping of files and directories that form a software application. The Solaris 8 software is divided into <i>software groups</i> , which are each composed of <i>clusters</i> and packages.
patch analyzer	A script you run manually or as part of the Solaris 8 Interactive Installation Program that performs an analysis on your system to determine which (if any) patches will be removed by upgrading to a Solaris 8 Update.
platform group	A vendor-defined grouping of hardware platforms for the purpose of distributing specific software. Examples of valid platform groups are <code>i86pc</code> and <code>sun4u</code> .
platform name	The output of the <code>uname -i</code> command. For example, the platform name for the Ultra 60 is <code>SUNW,Ultra-60</code> .
Power Management	Software that automatically saves the state of a system and turns it off after it is idle for 30 minutes. When you install the Solaris software on a system that complies with Version 2 of the U.S. Environmental Protection Agency's Energy Star guidelines—a <code>sun4u</code> SPARC system, for example—the Power Management software is installed by default, and you are prompted after subsequently rebooting to enable or disable the Power Management software. Energy Star guidelines require that systems or monitors automatically enter a "sleep state" (consume 30 watts or less) after the system or monitor becomes inactive.
probe keyword	A syntactical element that extracts attribute information about a system without your having to set up a matching condition and run a profile as you would for a rule. See also <i>rule</i> .
profile	A text file that defines how to install the Solaris software (for example, which software group to install). Every rule specifies a profile that defines how a system is to be installed when the rule is matched. You usually create a different profile for every rule; however, the same profile can be used in more than one rule. See also <i>rules file</i> .
profile diskette	A diskette that contains all the essential custom JumpStart files in its root directory (JumpStart directory).
profile server	A server that contains all the essential custom JumpStart files in a JumpStart directory.

/ (root)	The file system at the top of the hierarchical file tree on a system. The root directory contains the directories and files critical for system operation, such as the kernel, device drivers, and the programs used to start (boot) a system.
rule	A series of values that assigns one or more system attributes to a profile.
rules file	A text file that contains a rule for each group of systems (or single systems) that you want to install automatically. Each rule distinguishes a group of systems based on one or more system attributes, and it links each group to a profile, which is a text file that defines how the Solaris 8 software is to be installed on each system in the group. See also <i>profile</i> .
rules.ok file	A generated version of the <code>rules</code> file. It is required by the custom JumpStart installation software to match a system to a profile. You <i>must</i> use the check script to create the <code>rules.ok</code> file.
server	See <i>OS server</i> .
slice	An area on a disk composed of a single range of contiguous blocks. A slice is a physical subset of a disk. Before you can create a file system on a disk, you must format it into slices.
software group	A logical grouping of the Solaris software (clusters and packages). During a Solaris installation, you can install one of the following software groups: Core, End User System Support, Developer System Support, or Entire Distribution, and for SPARC systems only, Entire Distribution Plus OEM Support.
Solaris 8 CD images	The Solaris 8 software that is installed on a system, which you can access on the Solaris 8 CDs or an install server's hard disk to which you have copied the Solaris 8 CD images.
Solaris 8 Interactive Installation Program	A graphical user interface (GUI) or command-line interface (CLI), menu-driven, interactive script that enables you to set up a system and install the Solaris 8 software on it.
Solaris Web Start program	A graphical user interface (GUI) or command-line interface (CLI) installation program that uses wizard panels to guide you step-by-step through installing the Solaris 8 software and third party software.
standalone	A system that has its own root (/) file system, swap space, and /usr file system, which are located on its local disk(s); it does not require boot or software services from an OS server. A standalone system can be connected to a network.
subnet	A working scheme that divides a single logical network into smaller physical networks to simplify routing.
subnet mask	A bit mask, which is 32 bits long, used to determine important network or system information from an IP address.

swap space	Disk space used for virtual memory storage when the system does not have enough system memory to handle current processes. Also known as the <code>/swap</code> or <code>swap</code> file system.
sysidcfg file	A file in which you specify a set of special system configuration keywords that preconfigure a system.
time zone	Any of the 24 longitudinal divisions of the earth's surface for which a standard time is kept.
upgrade option	An option presented by the Solaris 8 Interactive Installation Program. The upgrade procedure merges the new version of Solaris with existing files on your disk(s), and it saves as many local modifications as possible since the last time Solaris was installed.
<code>/usr</code>	A file system on a standalone system or server that contains many of the standard UNIX programs. Sharing the large <code>/usr</code> file system with a server rather than maintaining a local copy minimizes the overall disk space required to install and run the Solaris 8 software on a system.
<code>/var</code>	A file system or directory (on standalone systems) containing system files that are likely to change or grow over the life of the system. These include system logs, <code>vi</code> files, mail files, and <code>uucp</code> files.
Volume Manager	A program that provides a mechanism to administer and obtain access to the data on CD-ROMs and diskettes.
Web Start Flash	A Solaris installation feature that enables you to create an archive of the files on a system, known as the master system. You can then use the archive to install other systems, making the other systems identical in their configuration to the master system.

Index

Numbers and Symbols

- #
 - in profiles, 171
 - in rules files, 168
- && (ampersands) rule field, 169
- = (equals sign) in profile field, 182
- ! (exclamation mark) rule field, 169
- (/) file systems
 - value set by JumpStart, 251

A

- adding
 - clusters when upgrading, 240
 - dataless clients, 91
 - dataless clients with DVD media, 78
 - files with a finish script, 184
 - install server configuration information, 91
 - install server configuration information with DVD media, 79
 - locale.org_dir table entries, 57
 - packages and patches with a finish script, 184
 - packages from software groups, 249
 - rules to rules file, 168
- adding software
 - with Admintool, 405, 413
 - with pkgadd, 405, 420
 - with Solaris Product Registry, 405, 407
 - with Solaris Web Start, 405, 406

- add_install_client command
 - example, 81, 94
 - example for DVD media, 81, 93
 - install server setup, 91
 - install server setup with DVD media, 79
 - JumpStart directory access, 161
 - syntax, 79, 92, 93
- Admintool
 - adding software with, 405, 413
 - removing software with, 405, 413, 417
- alternative installation programs, 195
- ampersands (&&) rule field, 169
- AND rule field, 169
- any
 - probe keyword
 - description and values, 257
 - rule keyword, 223, 256
- arch probe keyword, 256
- arch rule keyword, 223, 256
- archive, *See* Web Start Flash
- auto_install_sample directory
 - check script, 179, 201
 - copying files to JumpStart directory, 160, 164, 166
 - set_root_pw finish script, 186, 188
- auto-layout, 61

B

- b option of setup_install_server command, 216

- backslash in `rules` files, 168
- `backup_media` keyword, 61, 235
- bad blocks, 401
- banner command, 96
- begin rule field
 - described, 169
- begin scripts
 - creating derived profiles with, 182, 183
 - overview, 181
 - permissions, 182
 - rule field, 169
 - site-specific installation programs, 195
- `begin.log` file, 182
- boot: cannot open `/kernel/unix` message, 392
- boot server
 - creating on subnet, 88
 - creating on subnet with DVD media, 76
 - described, 68
 - requirement for network installation, 68
- `boot_device` keyword, 237
- booting the system
 - resetting terminals and display first, 96
- `bootparams` file
 - enabling JumpStart directory access, 162
 - updating, 399
- Bourne shell scripts in rule fields, 169
- c option
 - `add_install_client` command, 92, 93, 178, 219, 220

C

- cannot open `/kernel/unix` message, 392
- Can't boot from file/device message, 392
- CD labeled Solaris 8 Software 1 of 2 *Intel Platform Edition*
 - image on local disk, 160, 166
- CD labeled Solaris 8 Software 1 of 2 *SPARC Platform Edition*
 - image on local disk, 160, 164
- CD-ROM drives
 - troubleshooting
 - messages, 397
- CHANGE DEFAULT BOOT DEVICE
 - message, 400

- changing directories
 - to image of CD labeled Solaris 8 Software 1 of 2 *Intel Platform Edition* on local disk, 160, 166
 - to image of CD labeled Solaris 8 Software 1 of 2 *SPARC Platform Edition* on local disk, 160, 164
 - to JumpStart directory, 179, 201
- check script
 - `custom_probes` file validation, 201, 202
 - `custom_probes.ok` file creation, 201
 - derived profiles and, 183
 - rules file validation, 179, 180, 202
 - `rules.ok` file creation, 179
 - testing rules, 180, 202
- `client_arch` keyword, 238
- `client_root` profile keyword, 238
- clock gained xxx days message, 393
- cluster profile keyword
 - description and values, 239
 - examples, 172
- color depth, preconfiguring, 49
- comments
 - in profiles, 171
 - in `rules` files, 168
- configuring
 - creating disk configuration files, 190
- copying
 - JumpStart directory files, 184
 - JumpStart installation files from CD, 164, 166
 - JumpStart installation files from Solaris 8 Software 1 of 2 *Intel Platform Edition*, 160
 - JumpStart installation files from Solaris 8 Software 1 of 2 *SPARC Platform Edition*, 160
 - Solaris 8 Device Configuration Assistant *Intel Platform Edition*, 165
 - Solaris 8 Languages *SPARC Platform Edition*
 - to install server's local disk, 86
 - Solaris 8 Software 1 of 2 *Intel Platform Edition*
 - to install server's local disk, 95
 - Solaris 8 Software 1 of 2 *SPARC Platform Edition*
 - to install server's local disk, 73, 75, 77, 85, 89, 95
 - Solaris 8 Software 2 of 2 *Intel Platform Edition*
 - to install server's local disk, 95

- copying (*continued*)
 - Solaris 8 Software 2 of 2 *SPARC Platform Edition* to install server's local disk, 86, 95
 - Core System Support software, 239
 - Could not mount filesystem message, 397
 - CPUs (processors)
 - probe keywords, 256
 - rule keywords, 223, 256
 - creating
 - boot server on subnet, 88
 - boot server on subnet with DVD media, 76
 - /etc/locale file, 57
 - custom_probes.ok file, 201
 - disk configuration files, 190
 - install server, 72, 74, 85
 - JumpStart directory
 - server, 159
 - local file systems, 243
 - profiles, 171
 - derived, 182, 183
 - rules file, 167
 - rules.ok file, 179, 201
 - sysidcfg file, 54
 - UFS, 163
 - .cshrc file, 186
 - custom JumpStart installation, 203
 - booting and installing, 203
 - compared to other installation methods, 28
 - described, 156
 - examples, 213, 221
 - booting and installing, 221
 - check script, 219
 - engineering systems setup, 219
 - eng_profile creation, 217
 - JumpStart directory, 216, 217
 - marketing systems setup, 216, 221
 - marketing_profile creation, 218
 - networked, 155
 - non-networked, 152
 - rules file editing, 218, 219
 - site setup, 213, 214
 - standalone system, 152
 - installing Web Start Flash archives, 138
 - optional features, 181
 - begin scripts, 181, 183
 - finish scripts, 183, 188
 - overview, 181
 - custom JumpStart installation, optional features (*continued*)
 - site-specific installation programs, 195
 - overview, 155
 - preparing, 156, 180
 - tip line connection and, 205, 209
 - when upgrading, 60
 - custom_probes file
 - naming, 198
 - requirements, 198
 - testing custom_probes, 202
 - validating using check, 201, 202
 - custom_probes.ok file
 - creating, 201
 - described, 201
 - d option
 - add_install_client command, 92, 93
- D**
 - daemons, 399, 400
 - date and time, preconfiguring, 49
 - dd command, 165
 - default router
 - preconfiguring, 48
 - defaults
 - derived profile name, 183
 - partitioning, 250
 - designating disks, 253
 - excluding disks, 240
 - SI_CONFIG_DIR variable, 184
 - software group installed, 239
 - deleting
 - clusters when upgrading, 240
 - packages from software groups, 249
 - derived profiles, 182, 183
 - Developer Solaris software group
 - description, 32
 - size, 33
 - Developer system support software
 - profile example, 172
 - Developer System Support software
 - group, 239
 - dfstab file, 159, 217
 - DHCP (Dynamic Host Configuration Protocol),
 - preconfiguring, 48

- directories
 - changing
 - to image of CD labeled Solaris 8 Software 1 of 2 *Intel Platform Edition* on local disk, 160, 166
 - to image of CD labeled Solaris 8 Software 1 of 2 *SPARC Platform Edition* on local disk, 160, 164
 - to JumpStart directory, 179, 201
 - JumpStart
 - adding files, 184
 - allowing access, 161
 - copying files, 184
 - copying installation files from CD, 164, 166
 - copying installation files from Solaris 8 Software 1 of 2 *Intel Platform Edition*, 160
 - copying installation files from Solaris 8 Software 1 of 2 *SPARC Platform Edition*, 160
 - creating directory, 216
 - creating for systems, 162
 - permissions, 159, 162
 - rules file example, 168
 - sharing directory, 159, 217
 - disk configuration files
 - creating
 - IA based systems, 192
 - SPARC based systems, 190
 - described, 175, 190
 - disk space
 - planning, 31
 - requirements for software groups, 33
 - diskettes
 - copying Solaris 8 Device Configuration Assistant *Intel Platform Edition*, 165
 - formatting, 163, 165
 - JumpStart directory
 - access, 161
 - creating for IA based systems, 162
 - diskless clients
 - platforms, 238
 - swap space, 238
 - disks probe keyword
 - description and values, 256
 - disksize rule keyword
 - description and values, 224, 256
 - display
 - tip line connection and custom JumpStart installation, 205, 209
 - display resolution, preconfiguring, 49
 - displaying
 - mounted file systems, 95
 - platform name, 96
 - system information, 96
 - domain name, preconfiguring, 48
 - domainname probe keyword, 256
 - domainname rule keyword, 224, 256
 - domains
 - probe keyword, 256
 - rule keyword, 224, 256
 - dontuse profile keyword, 240, 253

E

 - End User Solaris software group
 - description, 32
 - size, 33
 - End User System Support software group, 239
 - eng_profile example, 217
 - Entire Distribution Plus OEM Support software group, 239
 - Entire Distribution software group, 239
 - Entire Solaris software group
 - description, 32
 - size, 33
 - Entire Solaris Software Group Plus OEM Support
 - description, 32
 - size, 33
 - equals sign (=) in profile field, 182
 - /etc/bootparams file
 - enabling JumpStart directory access, 162, 399
 - /etc/dfs/dfstab file, 159, 217
 - /etc/locale file, 57
 - /etc/mnttab file, 163
 - exclamation mark (!) rule field, 169
 - existing
 - partitioning value, 250

explicit
partitioning value, 250
/export file system, 32

F

factory JumpStart
compared to other installation methods, 30
failed upgrade
rebooting problems, 403
fdformat command, 163, 165
fdisk command, 192
fdisk profile keyword
description and values, 240
fdisk profile keyword
example, 172
file just loaded does not appear to be executable
message, 392
files and file systems
begin scripts output, 182
copying
JumpStart directory files using finish
scripts, 184
JumpStart installation files from CD, 164,
166
JumpStart installation files from Solaris 8
Software 1 of 2 *Intel Platform
Edition*, 160
JumpStart installation files from Solaris 8
Software 1 of 2 *SPARC Platform
Edition*, 160
Solaris 8 Device Configuration Assistant
Intel Platform Edition, 165
creating local file systems, 243
displaying mounted file systems, 95
finish scripts output, 183
mounting remote file systems, 242
UFS creation, 163
filesys keyword, 243
filesys profile keyword
description and values, 242
examples, 172
finish rule field
described, 169
finish scripts
adding files, 184

finish scripts (*continued*)
adding packages and patches, 184
customizing the root environment, 186
rule field, 169
setting the system's root password, 186
finish.log file, 183
flar command, 146
flarcreate command, 144
formatting diskettes, 163

G

geo keyword, 245
getfile: RPC failed: error 5: RPC Timed out
message, 162, 396
graphics card, preconfiguring, 49

H

hard disks
copying Solaris 8 Languages *SPARC Platform
Edition* to install server, 86
copying Solaris 8 Software 1 of 2 *SPARC
Platform Edition* to install server, 73, 75,
77, 85, 89
copying Solaris 8 Software 2 of 2 *SPARC
Platform Edition* to install server, 86
mounting, 242
partitioning
designating for partitioning default, 253
examples, 172
excluding for partitioning default, 240
profile keyword, 250
rootdisk values, 251
size
probe keywords, 256, 257
root space, 238
rule keywords, 224, 228, 256, 257
space available, 73, 75, 86, 89
surface analysis for IDE drives, 401
swap space
diskless client, 238
profile examples, 156, 172
size requirement for Solaris Web
Start, 23, 24

- host
 - name, 92, 93, 225, 256
- host name, preconfiguring, 48
- hostaddress probe keyword, 256
- hostaddress rule keyword, 224, 256
- hostname probe keyword
 - description and values, 256
- hostname rule keyword
 - description and values, 225, 256
 - example, 223

I

- IDE interface
 - mapping out bad blocks, 401
 - surface analysis, 401
- install server
 - copying Solaris 8 Languages *SPARC Platform Edition* to local disk, 86
 - copying Solaris 8 Software 1 of 2 *Intel Platform Edition* to local disk, 95
 - copying Solaris 8 Software 1 of 2 *SPARC Platform Edition* to local disk, 73, 75, 77, 85, 89, 95
 - copying Solaris 8 Software 2 of 2 *Intel Platform Edition* to local disk, 95
 - copying Solaris 8 Software 2 of 2 *SPARC Platform Edition* to local disk, 86, 95
 - creating, 72, 74, 85
 - network installation setup, 91
 - network installation setup with DVD media, 79
 - on subnet, 74, 76, 87
 - system types applicable, 67
- installation
 - compared to upgrade, 21
 - comparison of methods, 27
 - disk space recommendations, 31
 - log file, 101, 107, 114, 119
 - overview of tasks, 19
 - system requirements, 22
- install_config command, 162
- installed probe keyword
 - description and values, 256
- installed rule keyword
 - description and values, 225, 256

- install_type keyword, 246
- install_type profile keyword
 - examples, 172
 - requirement, 171, 172
 - testing profiles, 176, 178
- Interactive Installation, *See* Solaris 8 Interactive Installation Program
- Internet address request, 398
- Internet Protocol address
 - preconfiguring, 48
- IP addresses
 - probe keyword, 256
 - rule keyword, 224, 256
- ip: joining multicasts failed message, 398
- IPv6, preconfiguring, 48
- IRQ level, preconfiguring, 49
- isa_bits keyword, 247

J

- joining multicasts failed message, 398
- JumpStart directory
 - adding files with finish scripts, 184
 - copying files
 - installation files from CD, 164, 166
 - installation files from Solaris 8 Software 1 of 2 *Intel Platform Edition*, 160
 - installation files from Solaris 8 Software 1 of 2 *SPARC Platform Edition*, 160
 - using finish scripts, 184
 - creating
 - diskette for IA based systems, 162, 165
 - diskette for SPARC based systems, 163
 - example, 216
 - server, 159
 - permissions, 159, 162
 - rules file example, 168
 - sharing, 159, 217

K

- karch probe keyword, 256
- karch rule keyword, 225, 256
- Kerberos
 - information to configure, 39

Kerberos (*continued*)
 preconfiguring, 48
kernel location and upgrade installation, 392
keyboard language and layout,
 preconfiguring, 49
keywords
 custom JumpStart
 Web Start Flash archives, 230
 probe, 197
 sysidcfg file, 51

L

layout_constraint keyword, 61, 247
LBA, *See* Logical Block Addressing
le0: No carrier - transceiver cable problem
 message, 392
locale file, 57
locale keyword, 249
locale.org_dir table, adding entries, 57
log files
 begin scripts output, 182
 finish scripts output, 183
 installation, 101, 107, 114, 119
 upgrade, 101, 107, 114, 119
logical AND rule field, 169
Logical Block Addressing, 25

M

Makefile file, 56
mapping out bad blocks on IDE drives, 401
marketing_profile example, 218
master system, *See* Web Start Flash
matching
 derived profiles, 182
 order for rules, 170, 203, 207
 rootdisk values, 251
memory
 probe keyword, 256
 rule keyword, 226, 256
memsize probe keyword
 description and values, 256
memsize rule keyword
 description and values, 226, 256

microprocessors
 probe keywords, 256
 rule keywords, 223, 256
mnttab file, 163
model probe keyword
 description and values, 256
model rule keyword
 description and values, 226, 256
monitor type, preconfiguring, 49
mount command, 95
mounting
 begin script caution, 182
 displaying mounted file systems, 95
 by Solaris 8 installation, 183
 remote file systems, 242
 Solaris 8 Languages *SPARC Platform Edition*, 86
 Solaris 8 Software 1 of 2 *SPARC Platform Edition*, 73, 75, 85
multicasts failed message, 398
multiple lines in rules files, 168

N

name server, preconfiguring, 48
name service
 preconfiguring, 48
names/naming
 custom_probes file, 198
 derived profile names, 183
 host name, 92, 93, 225, 256
 rules file, 168
 software group, 239
 software groups, 239
 system model names, 226, 256
 system platform name determination, 96
netmask, preconfiguring, 48
network installation
 custom JumpStart installation
 example, 155
 described, 67
 preparing, 67
network interface, preconfiguring, 48
network number, 226, 256
network probe keyword
 description and values, 256

- network rule keyword
 - description and values, 226, 256
- nistbladm command, 57, 58
- No carrier - transceiver cable problem message, 392
- No network boot server message, 397
- Not a UFS filesystem message, 393
- num_clients profile keyword, 249

O

- organization, Solaris 8 Documentation CD, 272
- organization, Solaris 8 Installation *Intel Platform Edition*, 268, 270
- organization, Solaris 8 Installation *SPARC Platform Edition*, 263, 264
- organization, Solaris 8 Languages *Intel Platform Edition* CD, 274
- organization, Solaris 8 Languages *SPARC Platform Edition* CD, 274
- organization, Solaris 8 Software *Intel Platform Edition* CDs, 271
- organization, Solaris 8 Software *SPARC Platform Edition* CDs, 264
- osname probe keyword, 257
- osname rule keyword, 227, 257
- output files
 - begin scripts log, 182
 - finish scripts log, 183
 - installation log, 101, 107, 114, 119
 - upgrade log, 101, 107, 114, 119

P

- p option of check script, 180, 201
- package profile keyword
 - description and values, 249
- packages
 - adding with a finish script, 184
 - adding with chroot, 186
 - administration file, 181
- partitioning
 - examples, 172
 - excluding disks, 240
 - fdisk partitions, 172, 240

- partitioning (*continued*)
 - profile keyword, 250, 253
 - root slice location, 393
- partitioning keyword, 250
- password, root, 186, 188
- Patch Analyzer, 62
- patches, 43
 - adding with a finish script, 184
 - adding with chroot, 186
- paths
 - check script, 179, 201
 - install server setup, 93
- permissions
 - begin scripts, 182
 - finish scripts, 183
 - JumpStart directory, 159, 162
- pfinstall command, 61, 175
- pkgadd
 - adding software with, 405, 420
- pkgrm
 - removing software with, 405, 420, 421
- planning
 - comparison of installation methods, 27
 - disk space, 31
 - initial installation compared to upgrade, 20
 - installing over the network, 25
 - overview of tasks, 19
 - system requirements, 22
- platforms
 - diskless client, 238
 - install server setup, 92, 93
 - matching system attributes and profiles, 170, 203, 207
 - name determination, 96
 - probe keywords, 256
 - rule keywords, 225, 256
 - system model names, 226, 256
- pointing device, preconfiguring, 49
- Power Management, 49, 58
- preconfiguring system configuration information
 - advantages, 47
 - choosing a method, 48
 - locale using NIS+, 57
 - locale using NIS, 56
 - Power Management, 58
 - using a name service, 49, 55

- preconfiguring system configuration information (*continued*)
 - using `sysidcfg` file, 49
- preparing for installation
 - custom JumpStart installation, 156, 180
- preparing for Solaris 8 installation
 - getting the system ready to install, 37
 - getting the system ready to upgrade, 42
 - information you need before installing, 38
 - information you need before upgrading, 43
 - preconfiguring system information
 - advantages, 47
 - methods, 48
- probe keywords
 - arch, 256
 - disks
 - description and values, 256
 - domainname, 256
 - hostaddress, 256
 - hostname, 256
 - installed, 256
 - karch, 256
 - memsize, 256
 - model, 256
 - network, 256
 - osname, 257
 - rootdisk, 257
 - totaldisk, 257
- probe rule keyword
 - description and values, 227
- processors
 - probe keywords, 256
 - rule keywords, 223, 256
- Product Registry
 - adding software with, 405, 407
 - checking integrity of installed products, 410
 - description, 408
 - installing software with, 411
 - listing information about installed products, 410
 - purpose, 407
 - removing software with, 405, 407
 - uninstalling products with, 412
- profile keywords, 228, 253
 - backup_media, 235
 - boot_device, 237
 - case sensitivity, 228
- profile keywords (*continued*)
 - client_arch, 238
 - client_root, 238
 - client_swap, 238
 - cluster, 239
 - examples, 172
 - dontuse
 - description and values, 240
 - usedisk and, 253
 - fdisk
 - description and values, 240
 - fdisk
 - example, 172
 - filesystem
 - description and values, 242
 - examples, 172
 - local file systems, 243
 - remote file systems, 242
 - geo
 - description and values, 245
 - install_type, 246
 - examples, 172
 - requirement, 171, 172
 - isa_bits
 - description and values, 247
 - layout_constraint, 247
 - locale, 249
 - num_clients, 249
 - package, 249
 - partitioning, 250
 - designating disks, 253
 - examples, 172
 - excluding disks, 240
 - root_device, 251
 - system_type
 - description and values, 252
 - examples, 172
 - usedisk
 - description and values, 253
- profiles
 - comments in, 171
 - creating, 171
 - derived profiles, 182, 183
 - described, 171
 - examples, 172
 - eng_profile, 217
 - marketing_profile, 218

- profiles, examples (*continued*)
 - matching systems to, 170, 203, 207
 - naming, 172
 - requirements, 168, 171
 - rule field, 169
 - testing, 61, 176, 178
- prom_panic: Could not mount filesystem message, 397
- prvtoc command
 - IA: disk configuration file creation, 192
 - SPARC: creating disk configuration file, 190

R

- r option of check script, 180, 202
- release of Solaris 8 software
 - installed probe keyword, 256
 - installed rule keyword, 225, 256
 - osname probe keyword, 257
 - osname rule keyword, 227, 257
- remote file systems
 - mounting, 242
- removing software
 - with Admintool, 405, 413, 417
 - with pkgrm, 405, 421
 - with Solaris Product Registry, 405, 407
- Requesting Internet address message, 398
- requirements
 - custom_probes file, 198
 - disk space, 31
 - memory, 23
 - network installation
 - servers, 67
 - profiles, 168, 171
 - swap space, 23, 24
 - to use Solaris Web Start, 23, 25
- reset command, 96
- resetting display and terminal after I/O
 - interrupts, 96
- root (/) file systems
 - profile example, 156
- root environment, customizing with a finish script, 186
- root password
 - preconfiguring, 48
- root password, setting with a finish script, 186
- root slice location, 393
- root_device keyword, 251
- rootdisk
 - defined, 251
 - slice value for fileysys, 243
 - value set by JumpStart, 251
- RPC failed: error 5: RPC Timed out message, 162, 396
- RPC Timed out message, 162, 396, 398, 399
- rule keywords, 223
 - any
 - description and values, 223, 256
 - arch, 223, 256
 - disksize, 224, 256
 - domainname, 224, 256
 - hostaddress, 224, 256
 - hostname, 223, 225, 256
 - installed, 225, 256
 - karch, 225, 256
 - memsize, 226, 256
 - model, 226, 256
 - network, 226, 256
 - osname, 227, 257
 - probe, 227
 - totaldisk, 228, 257
- rule_keyword rule field, 169
- rules
 - derived profiles, 182, 183
 - examples, 170
 - field descriptions, 168, 169
 - matching order, 170, 203, 207
 - multiple line rules, 168
 - rootdisk matching rules, 251
 - syntax, 168
 - testing validity, 180, 202
- rules file
 - adding rules, 168
 - comments in, 168
 - creating, 167
 - custom JumpStart example, 218, 219
 - described, 167
 - example, 168
 - multiple line rules, 168
 - naming, 168
 - syntax, 168
 - testing rules, 180
 - validating using check, 179, 180, 202

- rules file (*continued*)
 - custom JumpStart example, 219
 - derived profiles and, 183
- rules.ok file
 - creating, 179
 - described, 179, 201
 - matching order for rules, 170, 203, 207
- rule_value rule field, 169

S

- s option of add_install_client command, 93, 220
- screen size, preconfiguring, 49
- scripts
 - begin scripts, 181, 183, 195
 - Bourne shell scripts in rule fields, 169
 - finish scripts, 183, 188, 195
- security
 - root password, 186, 188
- security policy
 - preconfiguring, 48
- servers
 - JumpStart directory creation, 159
 - network installation setup
 - standalone installation, 91
 - network installation setup with DVD media, 78
 - requirements for network installation, 67
 - root space, 238
- set_root_pw finish script, 186, 188
- setup_install_server command
 - described, 95
 - install server setup, 77, 89
- share command
 - sharing JumpStart directory, 159, 217
- shareall command, 160, 217
- sharing
 - JumpStart directory, 159, 217
- SI_CONFIG_DIR variable, 184
- SI_PROFILE environment variable, 183
- site-specific installation programs, 195
- size
 - fdisk partition, 242
 - hard disk
 - probe keywords, 256, 257

- size, hard disk (*continued*)
 - root space, 238
 - rule keywords, 224, 228, 256, 257
 - space available, 73, 75, 86, 89
- local file system, 243
- memory, 226, 256
- swap space
 - diskless client, 238
 - minimum size for Solaris Web Start, 23, 24
 - profile examples, 156
 - tip window dimensions, 205, 209
- slices
 - fileys values, 243
 - probe keyword, 256
 - profile examples, 172
 - root slice location, 393
 - rule keyword, 225, 256
- software
 - adding after installing Solaris, 405
 - removing after installing Solaris, 405
- software groups
 - descriptions, 32
 - for profiles, 239
 - profile examples, 172
 - sizes, 33
 - specifying packages, 249
 - upgrading, 22, 240
- Solaris 8 Device Configuration Assistant *Intel Platform Edition*, 165
- Solaris 8 Documentation CD
 - organization, 272
- Solaris 8 Installation *Intel Platform Edition*
 - organization, 268, 270
- Solaris 8 Installation *SPARC Platform Edition*
 - organization, 263, 264
- Solaris 8 Interactive Installation Program
 - command-line interface (CLI), 111
 - compared to other installation methods, 28
 - graphical user interface (GUI), 111
 - how to install
 - IA systems, 115
 - SPARC systems, 113
 - installing Web Start Flash archives, 137
 - overview of tasks
 - for IA systems, 115
 - for SPARC systems, 112

- Solaris 8 Interactive Installation Program,
 - overview of tasks (*continued*)
 - post-upgrade corrections, 120
- Solaris 8 Languages *Intel Platform Edition* CD
 - organization, 274
- Solaris 8 Languages *SPARC Platform Edition* CD
 - organization, 274
- Solaris 8 software
 - groups, 239
 - profile examples, 172
 - specifying packages, 249
 - upgrading, 240
 - release or version
 - installed probe keyword, 256
 - installed rule keyword, 225, 256
- Solaris 8 Software 1 of 2 CD
 - installation on systems without CD-ROM drives, 72, 74, 85
- Solaris 8 Software 1 of 2 *Intel Platform Edition*
 - displaying mounted file systems, 95
- Solaris 8 Software 1 of 2 *SPARC Platform Edition*
 - displaying mounted file systems, 95
- Solaris 8 Software 2 of 2 CD
 - installation on systems without CD-ROM drives, 72, 74, 85
- Solaris 8 Software 2 of 2 *Intel Platform Edition*
 - displaying mounted file systems, 95
- Solaris 8 Software 2 of 2 *SPARC Platform Edition*
 - displaying mounted file systems, 95
- Solaris 8 Software *Intel Platform Edition* CDs
 - organization, 271
- Solaris 8 Software *SPARC Platform Edition* CDs
 - organization, 264
- Solaris Product Registry
 - adding software with, 405, 407
 - checking integrity of installed products, 410
 - description, 408
 - installing software with, 411
 - listing information about installed products, 410
 - purpose, 407
 - removing software with, 405, 407
 - uninstalling products with, 412
- Solaris software
 - release or version
 - osname probe keyword, 257
 - osname rule keyword, 227, 257
- Solaris Web Start
 - adding software with, 405, 406
 - command-line interface (CUI), 97
 - compared to other installation methods, 27
 - description, 97
 - graphical user interface (GUI), 97
 - how to install
 - IA systems, 103
 - SPARC systems, 99
 - installing Web Start Flash archives, 135
- Kiosk
 - access after installation, 108
 - how to save, 108
- overview of tasks
 - for IA systems, 103
 - for SPARC systems, 99
- post-upgrade corrections, 108
- removing software with, 405
- requirements
 - LBA on IA systems, 25
 - swap size, 23, 24
- standalone systems
 - custom JumpStart installation example, 152
 - profile examples, 172
- starting
 - check script, 179, 180
 - rpld daemon, 400
 - tftpd daemon, 399, 400
- Still trying to find a RPL server message, 399
- stty command, 37, 42, 205, 209
- subnet
 - boot server creation on, 88
 - boot server creation on with DVD media, 76
 - install server and, 74, 75, 87
- SUNWCall group, 239
- SUNWCprog group, 239
- SUNWCreq group, 239
- SUNWCuser group, 239
- SUNWCXall group, 239
- surface analysis for IDE drives, 401
- swap file systems
 - diskless client swap space, 238
 - profile examples, 156
- sysidcfg file
 - guidelines and requirements, 49
 - how to create, 54

- sysidcfg file (*continued*)
 - keywords, 51
- sysidcfg file
 - syntax for dependent keywords, 50
 - syntax for independent keywords, 50
- sysidcfg file
 - syntax rules, 50
- system information, displaying, 96
- system_type profile keyword
 - description and values, 252
 - examples, 172

T

- terminal type, preconfiguring, 49
- testing
 - profiles, 61, 175, 176, 178
 - validating custom_probes file
 - using check, 202
 - validating custom_probes files
 - testing custom_probes, 202
 - using check, 201
 - validating rules file, 202
 - validating rules files
 - custom JumpStart example, 219
 - derived profiles and, 183
 - testing rules, 180
 - using check, 179, 180
- tftpd daemon, 399, 400
- time and date, preconfiguring, 49
- time zone, preconfiguring, 49
- timed out RPC error, 396, 398, 399
- Timeout waiting for ARP/RARP packet message, 397
- tip line connection and custom JumpStart installation, 205, 209
- token ring card, booting error with, 398
- totaldisk probe keyword, 257
- totaldisk rule keyword, 228, 257
- transceiver cable problem message, 392
- troubleshooting, 393
 - booting from wrong server, 399
 - general installation problems, 393
 - booting the system, 399

U

- UFS, 163
- Unable to install the system message, 397
- uname command, 96
- Unknown client error message, 391
- upgrade
 - compared to initial installation, 21, 59
 - comparison of methods, 27
 - correcting local modifications, 108, 120
 - disk space recommendations, 31
 - failed upgrade, 403
 - log file, 101, 107, 114, 119
 - methods, 22, 60
 - overriding boot file location, 392
 - overview of tasks, 19
 - system requirements, 22
 - to a Solaris Update release, 62
 - to Solaris Update Release, 22
 - with custom JumpStart, 60
 - with Disk Space Reallocation, 61
- upgrade installation
 - custom JumpStart installation, 203
 - failed upgrade, 403
 - profile keywords, 240, 246, 250
- usedisk profile keyword
 - description and values, 253
- user locales table, 385
- /usr/sbin/rpld command, 400

V

- validating
 - custom_probes file
 - using check, 202
 - custom_probes files
 - testing custom_probes, 202
 - using check, 201
 - profiles, 176
 - rules file, 202
 - rules files
 - custom JumpStart example, 219
 - derived profiles and, 183
 - testing rules, 180
 - using check, 179, 180
- variables
 - SI_CONFIG_DIR, 184

variables (*continued*)

SI_PROFILE, 183

SYS_MEMSIZE, 177

/var/sadm/begin.log file, 182

/var/sadm/finish.log file, 183

/var/yp/make command, 57

/var/yp/Makefile file, 56

version of Solaris 8 software

installed rule keyword, 225

version of Solaris software

installed probe keyword, 256

installed rule keyword, 256

osname probe keyword, 257

osname rule keyword, 227, 257

volcheck command, 163, 165

Volume Manager

copying, 163, 165

Solaris 8 Device Configuration Assistant
image, 166

Solaris 8 Device Configuration Assistant
Intel Platform Edition, 165

Web Start Flash, keywords (*continued*)

layered archives, 128

master system

description, 124

how to install, 132

peripheral devices, 125

wrapping lines in `rules` files, 168

W

WARNING: CHANGE DEFAULT BOOT

DEVICE, 400

WARNING: clock gained xxx days

message', 393

Web Start Flash

archive sections described, 141

compared to other installation methods, 29

description, 123

flar command

description, 146

to combine archives, 147

to extract archive information, 146

to split archives, 146

flarcreate command, 144

how to create an archive, 132

installing

how to install, 135

installation methods, 127

keywords

custom JumpStart, 230

section identification, 142

section_begin and section_end, 142