



Sun WorkShop Quick Install

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Preface

Sun WorkShop Quick Install gives instructions for how to:

- Install the Sun™ WorkShop™ 5.0 software development tools you purchased
- Obtain and install the licenses for those software development tools
- Access Sun WorkShop documentation online
- Remove Sun WorkShop software

Who Should Use This Book

This book is designed for system administrators who install software and configure license servers so that users can access licensed software. Some understanding of the Solaris™ operating environment and UNIX® commands is expected.

How This Book Is Organized

Chapter 1 describes the software installation sequence, system requirements, and what's new regarding licensing and installation for this release.

Chapter 2 describes how to request your software licenses from the Sun License Center.

Chapter 3 explains how to install FLEXlm license manager software and the Sun WorkShop development tools you purchased.

Chapter 4 describes how to install your licenses on the machine or on the server configuration you selected.

Chapter 5 describes how to request, install, and use domain-based licenses for the ScholarPASS™ or GoldPass™ programs.

Chapter 6 describes how to access Sun WorkShop documentation online through AnswerBook2™ and in HTML format.

Chapter 7 describes how to remove installed Sun WorkShop software.

Appendix A lists the Sun WorkShop 5.0 development tools available, the licenses needed to start the tools, the feature names, and the package components and configurations.

Multiplatform Release

Sun WorkShop Quick Install covers the release of Sun WorkShop 5.0 for the Solaris 2.5.1, Solaris 2.6, and Solaris 7 operating environments on the following hardware platforms:

- The SPARC™ platform
- The x86 platform, where x86 refers to the Intel implementation of one of the following: Intel 80386, Intel 80486, Pentium, or the equivalent

Note - The term “x86” refers to the Intel 8086 family of microprocessor chips, including the Pentium, Pentium Pro, and Pentium II processors and compatible microprocessor chips made by AMD and Cyrix. In this reference, the term “x86” refers to the overall platform architecture. Features described in this reference that are particular to a specific platform are differentiated by the terms “SPARC” and “x86” in the text.

Related Book

Throughout this book there are references to the *Sun WorkShop Installation and Licensing Reference*. The *Sun WorkShop Installation and Licensing Reference* provides supporting installation and licensing information, including:

- Examples of license server configurations
- Information about license administration utilities
- A glossary

Ordering Sun Documents

The SunDocsSM program provides more than 250 manuals from Sun Microsystems, Inc. If you live in the United States, Canada, Europe, or Japan, you can purchase documentation sets or individual manuals using this program.

For a list of documents and how to order them, see the catalog/book section of the SunStoreSM web site at <http://sunstore.sun.com>.

Accessing Sun Documents Online

Sun WorkShop documentation is available online from several sources:

- The `docs.sun.com` Web site
- AnswerBook2TM collections
- HTML documents
- Online help and release notes

Using the `docs.sun.com` Web site

The `docs.sun.com` Web site enables you to access Sun technical documentation online. You can browse the `docs.sun.com` archive or search for a specific book title or subject. The URL is <http://docs.sun.com>.

Accessing AnswerBook2 Collections

Sun WorkShop documentation is available online through the AnswerBook2 Documentation Server. To access Sun WorkShop document collections, your system administrator must have installed the Sun WorkShop AnswerBook2 document collections during the installation process (if the documents are not installed, see your system administrator or Chapter 3 for installation instructions). For information about viewing Sun WorkShop AnswerBook2 document collections, see Chapter 6.

Note - To access Sun WorkShop document collections, Solaris 2.5.1 users must first download AnswerBook2 Documentation Server software from a Sun Web page. For more information, see Chapter 6.

Accessing HTML Documents

For information about viewing Sun WorkShop HTML documents, see Chapter 6.

Accessing Sun WorkShop Online Help and Release Notes

This release of Sun WorkShop includes an online help system as well as online manuals. To find out more see:

- **Online Help.** A help system containing extensive task-oriented, context-sensitive help. To access the help, choose Help Help Contents. Help menus are available in all Sun WorkShop windows.
- **Release Notes.** The Release Notes contain general information about Sun WorkShop and specific information about software limitations and bugs. To access the Release Notes, choose Help Release Notes.

What Typographic Changes Mean

Table P-1 describes the typographic changes used in this book.

TABLE P-1 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>% You have mail.</code>
AaBbCc123	What you type, as contrasted with on-screen computer output	<code>% su</code> <code>Password:</code>
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm <i>filename</i></code> .
<i>AaBbCc123</i>	Book titles, new words or terms, or emphasized words	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be root to do this.
AaBbCc123 \ aabbccdd	Continuation of a single line of code	<code>set path=(<i>install-directory</i>/\</code> <code>SUNWspro/bin \</code> <code>\$path)</code>

Shell Prompts in Command Examples

Table P-2 shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

TABLE P-2 Shell Prompts

Shell	Prompt
C shell prompt	<code>%</code>
C shell superuser prompt	<code>#</code>

TABLE P-2 Shell Prompts *(continued)*

Shell	Prompt
Bourne shell and Korn shell prompt	\$
Bourne shell and Korn shell superuser prompt	#

Preparing for Installation

This chapter describes:

- The software installation overview
- System and disk space requirements
- What's new in this release

Software Installation Overview

The following is the general process you will follow to install your Sun WorkShop software and your licenses (subsequent chapters contain specific instructions):

1. Your application and license servers must meet the minimum requirements for this release. See “System Requirements” on page 2.

Note - For disk space requirements and important last-minute information about this release, see the `READ_ME_FIRST` file located at the top level of the Sun WorkShop CD.

2. You need to request and receive your license information from the Sun License Center in order to install your licenses and start your software development tools. Chapter 2 describes how to request your license information from the Sun License Center.
3. You can install Sun WorkShop on your application server and license manager software on your license server by using a graphical user interface or a command-line interface. Chapter 3 describes both installation methods.
4. You then install the licenses for your Sun WorkShop software on your license server. See Chapter 4 for step-by-step instructions.

5. You are now ready to use your Sun WorkShop development tools.

System Requirements

This Sun WorkShop release supports versions 2.5.1, 2.6, and 7 of the Solaris[™] *SPARC Platform Edition* and the Solaris *Intel Platform Edition* operating environments.

Note - For disk space requirements and important last-minute information about this release, see the `READ_ME_FIRST` file located at the top level of the Sun WorkShop CD.

Table 1-1 lists the system requirements for each platform.

TABLE 1-1 System Requirements by Platform

	Solaris <i>SPARC Platform Edition</i>		Solaris <i>Intel Platform Edition</i>	
	2.5.1 and 2.6	Solaris 7	2.5.1 and 2.6	Solaris 7
System	Recommended: SPARCstation [™] 5	Recommended: Ultra	Recommended: Pentium/90 MHz	Recommended: Pentium/233 MHz
	Minimum: SPARCstation 10	Minimum: SPARCstation 10	Minimum: 486/50 MHz	Minimum: Pentium/90 MHz
Monitor	1024 x 768 resolution	1024 x 768 resolution	1024 x 768 resolution; 15" color monitor	1024 x 768 resolution; 15" color monitor
Memory	64 Mbytes, recommended; 32 Mbytes minimum; 80 Mbytes of swap space			

Configuring a Stand-Alone License Server

There are several license server configuration requirements that are handled automatically if your license server is part of a network but which might be overlooked if your license server is a stand-alone machine.

TCP/IP

FLEXlm license manager software requires that TCP/IP be set up and operational before FLEXlm will allow you to access your licensed software. One way to test if TCP/IP is functional is to successfully telnet to the hostname of your license server, which is the machine running the license daemon. For more information, see the `tcp` man page or see your system administrator.

localhost

If your license server is a stand-alone machine, consider editing your `/etc/hosts` file to alias `localhost` to the hostname on the `SERVER` line in your license file.

No Network Interface Card

If your license server does not have a network interface card, you must configure the operating system on your license server appropriately. To configure a machine to not have a network interface card, follow these steps:

1. Become a superuser (root) by typing:

```
% su
```

```
Password: root-password
```

2. Type the following:

```
# sys-unconfig
```

Your machine will reboot automatically, or you will be prompted to reboot.

3. Answer the questions as prompted.

Type `no` when you are asked whether the system is to be networked.

What's New in This Release

The following are installation and licensing changes for this Sun WorkShop release:

- There are new installation and licensing man pages: `adjust_flexlm_owner`, `clustadd`, `clustinfo`, `license_errors`, and `lit_tty`.
- FLEXlm 6.1 license manager software is provided with Sun WorkShop 5.0.

- Sun WorkShop products now use the `sunwlicd` vendor daemon. You must install the FLEXlm 6.1 license manager software provided with this release to get this new vendor daemon binary; otherwise, licensing will not function properly.
- If you installed Sun WorkShop 5.0 pre-release software, you were required to obtain new licenses for the Sun WorkShop 5.0 Developer Release because that is when Sun WorkShop products changed to the `sunwlicd` vendor daemon. However, your licenses for the Sun WorkShop 5.0 Early Access release, which used the `sunlicd` vendor daemon, are still in the license file. If a Sun WorkShop product tries to use an old license before finding a current one, an error message is written to the `license_log` file. To prevent Sun WorkShop products from finding old licenses and issuing these error messages, do the following:
 1. Create a backup copy of the `/etc/opt/licenses/licenses_combined` file.
 2. Edit the `licenses_combined` file, deleting all lines that reference the `sunlicd` vendor daemon.
 3. Restart the license server. See the Sun WorkShop Installation and Licensing Reference for information about license administration utilities and how to restart the license server.
- The Solaris 1.x.x operating environment is no longer supported by Sun as a platform for FLEXlm license servers. If you have a license server for your Sun WorkShop licenses on a Solaris 1.x.x system, create a second license server in your Solaris 2.5.1, Solaris 2.6, or Solaris 7 operating environment. Install the FLEXlm software that comes with Sun WorkShop 5.0 and your Sun WorkShop 5.0 licenses on the new license server. Use your old license server to continue managing the licenses it is managing.
- Sun WorkShop 5.0 licenses are not compatible with previous versions of Sun WorkShop.

Requesting Your Licenses

Sun protects its applications from illegitimate use by implementing license agreements that detail manufacturer and user obligations concerning the number of users who can access Sun WorkShop software.

Note - For information about domain-based licenses that support products licensed through the GoldPass and ScholarPASS programs, see Chapter 5.

The following is the process you will follow to request and receive your licenses from the Sun License Center (detailed instructions are described in this chapter):

1. Choose a license server configuration (see “Choosing a License Server Configuration” on page 6).
2. Complete the License Request Form (see “Completing the License Request Form” on page 8). When you purchase your Sun WorkShop software, you receive a Proof of License Certificate in the product package. The Proof of License Certificate contains your software serial number, which you will be asked to type on the License Request Form.
3. Contact the Sun License Center to give the information contained in the License Request Form (see “Contacting the Sun License Center” on page 10).
4. Receive your license information from the Sun License Center. The Sun License Center responds to your license request *within one business day* after receiving your request.

Answers to frequently asked questions (FAQ) about Sun WorkShop licensing are available through the World Wide Web by visiting the following web page:

<http://www.sun.com/workshop/workshopFAQ.html>

Choosing a License Server Configuration

This release of Sun WorkShop supports the following types of licenses:

- Personal Edition (node-locked) licenses
- Floating licenses

There are the following possible license server configurations:

- Single independent server
- Multiple independent server
- Redundant server

Note - Personal Edition (node-locked) licenses can use a single independent or a redundant server configuration.

For examples of license server configurations, see Chapter 1 in *Sun WorkShop Installation and Licensing Reference*.

Personal Edition and Floating Licenses

This release of Sun WorkShop supports a node-locked (Personal Edition) license, where the licensed software only runs on the machine (the node) to which the software is locked. The machine where the licensed software is installed is the application server, and the machine running the license daemons is the license server. With a node-locked license, the license server and the application server might be the same machine, and only one user can run the application on the machine at any one time.

With a floating license, developers can access licensed software simultaneously over the network through FLEXlm license manager software. When two or more users invoke the same software product at the same time, they are considered *concurrent* users. The concurrent user license model makes software available to any user on any computer on a network because licenses are floating and not tied to a specific machine. FLEXlm license manager software monitors and controls access to the software. A license can be checked out by any developer on the network and then returned for others to use. A license is checked out transparently by each user who accesses the licensed software.

Single Independent Server Configuration

A single independent server administers all software licenses. This scenario is suited for sites where programmers, the license server, and application servers are close together on the network. The single independent server configuration is the default and the easiest to install and administer.

Multiple Independent Server Configuration

When you use two or more servers independently, you create a multiple independent server configuration. Using this configuration, you indicate a number of rights to use (RTUs) for each server, and users can obtain a license token from any one of the servers. This scenario is most common for medium to large software development environments distributed over a network.

Distributing the total number of license tokens among multiple license servers increases the likelihood that at least some license tokens will always be available; any license tokens served by computers that are offline are unavailable until those machines are returned to the network.

Redundant Server Configuration

A redundant server configuration enables you to have three servers acting as one logical server managing a set of license tokens. This configuration requires that two of the redundant license servers be operative and able to contact each other. If the redundant servers cannot contact each other, none of the license tokens are available.

At any point, one of the redundant servers is the *master server*, the one that actually issues license tokens with a heavier processing load. If the master server is unavailable, then the next available peer in the configuration becomes the master server.

Note - Once you have selected the machine to be used as a redundant license server, that machine cannot be used in a different licensing configuration.

The main advantage of redundant servers is an increased likelihood that if any tokens are available, then all tokens are available. The cost is increased installation and maintenance complexity.

Completing the License Request Form

Note - You must use English when completing the License Request Form if you will be contacting the Sun License Center located in the United States.

To obtain your licenses, complete the License Request Form by following these steps:

1. Put the Sun WorkShop 5.0 CD into your CD-ROM drive.
2. Copy the License Request Form template from the CD to a file name on your system by typing:

```
% cp /cdrom/devpro_v6n1_platform/License_Request_Form filename
```

Replace *platform* with *sparc* if you use the Solaris *SPARC Platform Edition* operating environment or *intel* if you use the Solaris *Intel Platform Edition* operating environment.
The file is read only when you copy it from the CD to your system; you will need to change permissions on the file in order to write to it.
3. Open your copy of the License Request Form in your preferred editor.
4. In section 1a, type your name, company name, address, telephone and fax numbers, and email address.
5. In section 1b, type an X next to the description that best describes your job title.
6. In section 2, type an X next to the method that the Sun License Center should use to send your license information to you.

Note - If you ask the Sun License Center to fax your license information to you, you must retype your license information when you install your licenses; if you ask the Sun License Center to email your license information to you, you do not have to retype it.

7. In section 3, type the product name, version number, number of rights to use (RTUs) for which you want a license, and the serial number.
Use the information listed on your Proof of License Certificate (in your product packaging). You do not have to install all of the RTUs listed on your Proof of License Certificate at the same time.

- 8. In section 4, complete either section 4a or 4b with your license server information.**

Note - If you will be using a multiple independent license server configuration, complete a separate License Request Form for each license server.

For floating licenses, you have completed the License Request Form when you have completed section 4 of the form. Skip to “Contacting the Sun License Center” on page 10.

Note - If you want to use the same license server for both floating and Personal Edition (node-locked) licenses, complete a separate License Request Form for each license configuration.

- 9. If you purchased a Personal Edition (node-locked) product, type the node-locked hostid in section 5 of the form.**

Use the output of `/usr/bin/hostid` for the machine (node) to which the licensed software will be locked (the licensed software will run only on the specified node).

Note - Single independent (including node-locked) and redundant server licenses cannot be mixed in the same license file (the `licenses_combined` file). A license server and its license file is for *either* a single independent server *or* a three redundant server set. A license server cannot handle both. A Personal Edition (node-locked) license can be installed on a three redundant server set. The Personal Edition hostid on the `INCREMENT` line in the license file can be the hostid of one of the redundant servers, if that is where the licensed application will be run, or it can be the hostid of an entirely different machine.

- 10. If you purchased a Sun WorkShop product through the GoldPass or ScholarPASS programs, type your site number and network domain name or names in section 6 of the form.**

For more information about the GoldPass and ScholarPASS programs, see Chapter 5.

Contacting the Sun License Center

You can contact the Sun License Center through email, fax, or telephone.

Note - The Sun License Center responds by fax or email (the method you ask them to use when you completed section 2 on the License Request Form) to your license request *within one business day* after receiving your request.

Email Contact

1. **Open your email message composition tool.**
2. **Copy and paste the completed License Request Form into your email message composition tool.**
3. **Send the email message to the Sun License Center.**
The Sun License Center email address is on the Proof of License Certificate in the product package.
4. **Go to Chapter 3.**

Fax Contact

1. **Print the License Request Form you completed.**
2. **Fax the form to the Sun License Center.**
The Sun License Center fax number is on the Proof of License Certificate in the product package.
3. **Go to Chapter 3.**

Telephone Contact

1. **Telephone the Sun License Center to give the information on your License Request Form.**
The Sun License Center telephone number is on the Proof of License Certificate in the product package.

2. Go to Chapter 3.

Installing Software

This chapter gives you step-by-step instructions for installing your Sun WorkShop development tools and the FLEXlm license manager software included with this release.

Note - You must have superuser (root) access to the systems where you want to install Sun WorkShop development tools.

Special Cases

If you are upgrading from Sun WorkShop Try and Buy (trial software) to purchased Sun WorkShop software, see “From Try and Buy Software to Purchase” on page 13.

If you plan to support this new Sun WorkShop release and previous Sun WorkShop releases on the same machine, see “Previous Software Releases” on page 14.

Otherwise, proceed to “Software Installation Steps ” on page 15.

From Try and Buy Software to Purchase

Note - If you did not try Sun WorkShop 5.0 on a trial basis before buying it, you do not need to read this section.

If you installed Sun WorkShop 5.0 development tools on a trial basis (known as Try and Buy software) and then purchased Sun WorkShop 5.0, you do *not* need to reinstall your Sun WorkShop 5.0 development tools. You *do* need to install FLEXlm

6.1 license manager software if you did not install FLEXlm on your license server when you installed your Sun WorkShop Try and Buy development tools.

To determine if you have FLEXlm 6.1 license manager software on your system, follow these steps:

1. Become a superuser (root) by typing:

```
% su
```

```
Password: root-password
```

2. Search for the installed license configuration data package by typing:

```
# pkginfo | grep SUNWwslic
```

- If there *is* output from the command, you have FLEXlm 6.1 license manager software already installed. Install your licenses by following the instructions in Chapter 4. Once your licenses are installed, you will be ready to use your Sun WorkShop development tools.
- If there is *no* output about the SUNWwslic package, follow these steps:
 - a. **Install FLEXlm 6.1 license manager software on your license server.**
The section “Software Installation Steps ” on page 15 describes how to install FLEXlm license manager software.

Note - You do *not* need to reinstall any of your Sun WorkShop development tools, and you do *not* need to reset your PATH and MANPATH variables.

b. Install your licenses on your license server.

See Chapter 4 for instructions.

When your licenses are installed, you are ready to use your Sun WorkShop development tools.

Previous Software Releases

Note - If you do not plan to support this new Sun WorkShop release and previous Sun WorkShop releases on the same machine, you do not need to read this section.

To support previous Sun WorkShop releases as well as this Sun WorkShop release on the same machine, select an installation directory for the new release that is different from the directory where the previous Sun WorkShop releases reside. For example, if you previously installed development tools in /opt, install the new development tools in *new-directory* by creating a directory called *new-directory* in a file system with

sufficient disk space (for disk space requirements, see the `READ_ME_FIRST` file at the top level of the Sun WorkShop CD).

Follow the installation instructions in “Software Installation Steps ” on page 15. After installation, modify your `PATH` and `MANPATH` environment variables to include the *new-directory* area. See “`PATH` and `MANPATH` Variables” on page 28 about setting the variables to access the new release.

Software Installation Steps

Note - If you installed the Alpha, Early Access, or Developer Releases of Sun WorkShop 5.0 and FLEXlm license manager software, you must remove all of that software before installing FLEXlm 6.1 and this final release of Sun WorkShop. See Chapter 7 for instructions for removing software.

There are two ways to install Sun WorkShop development tools and FLEXlm license manager software:

- `workshop_install` graphical user interface (see “The `workshop_install` GUI” on page 15)
- `clustadd` command-line installation executable if you do not have graphical user interface capabilities (see “The `clustadd` Command-Line Executable” on page 23)

The `workshop_install` GUI

These instructions describe how to start up and use the `workshop_install` GUI to install Sun WorkShop development tools and FLEXlm license manager software.

Note - If you use the `workshop_install` GUI to install your software, you have the `workshop_uninstall` script available to remove the software. The `workshop_uninstall` script is stored in `/usr/tmp`. If your application server regularly purges the `/usr/tmp` directory, you might want to move the `workshop_uninstall` script to another location. For more information about the `workshop_uninstall` script, see Chapter 7.

Preparing To Use the `workshop_install` GUI

This section describes how to prepare your system to use the `workshop_install` GUI.

Note - Throughout these instructions, replace *platform* with *sparc* if you use Solaris *SPARC Platform Edition* or with *intel* if you use Solaris *Intel Platform Edition*.

1. Decide on a local or remote installation method.

In a remote installation, you perform the installation on the system with the CD-ROM drive where you loaded the Sun WorkShop CD (the source computer) and install the software on another machine (the target computer). In a local installation, the source computer and the target computer are the same machine.

2. Check that your Sun WorkShop CD is in your CD-ROM drive.

3. On your source machine, enable client access by typing the following at a command line:

```
% /usr/openwin/bin/xhost + target-machine
```

Replace *target-machine* with the output of `/usr/bin/hostname` typed at a command line on the target machine.

4. Become a superuser (root) by typing:

```
% su
```

```
Password: root-password
```

5. Check that Volume Manager is running on your machine by typing the following at a command line:

```
# ps -ef | grep vold
```

If you see an entry that contains `/usr/sbin/vold`, Volume Manager is running on your machine.

- If Volume Manager is running on your machine, skip to Step 6 on page 16.

- If Volume Manager is *not* running on your machine, type:

```
# mkdir -p /cdrom/devpro_v6n1_platform
```

```
# mount -F hsfs -r cdrom-device /cdrom/devpro_v6n1_platform
```

An example of *cdrom-device* is `/dev/dsk/c0t6d0s2`.

6. Follow the instructions for a local or a remote installation (see “Local Installation” on page 16 or “Remote Installation” on page 17).

Local Installation

For a local installation, follow these steps:

1. Set your display.

Replace *hostname* with the output of the `/usr/bin/hostname` command in the following commands.

If you use a C shell, type:

```
# setenv DISPLAY hostname:0
```

If you use a Bourne shell, type:

```
# DISPLAY=hostname:0
```

```
# export DISPLAY
```

If you use a Korn shell, type:

```
# export DISPLAY=hostname:0
```

2. If you have not already done so, go to the CD by typing:

```
# cd /cdrom/devpro_v6n1_platform
```

3. Skip to “Using the `workshop_install` GUI” on page 18.

Remote Installation

For a remote installation, follow these steps:

1. Add the following line to your `/etc/dfs/dfstab` file:

```
share -F nfs -o ro /cdrom/devpro_v6n1_platform
```

2. Find out if your source machine is an NFS™ server by typing:

```
# ps -ef | grep nfsd
```

If you see screen output that contains `/usr/lib/nfs/nfsd`, then `nfsd` is running. If `nfsd` is running, type:

```
# /usr/sbin/shareall
```

If `nfsd` is not running, start `nfsd` by typing:

```
# /etc/init.d/nfs.server start
```

```
# ps -ef | grep nfsd
```

You should then get screen output that contains `/usr/lib/nfs/nfsd`. If not, contact your system administrator or your Sun authorized service provider.

3. Make sure your source machine is exporting your product directory by typing:

```
# /usr/sbin/dfshares
```

Screen output shows the resource and server. See the `dfshares` man page for more information.

4. Log in to the target machine.

Replace *user* with your user login name (not *root*), and use a lowercase *l* (not the number 1) in the following command:

```
# rlogin target-machine -l user
```

```
Password: user-password
```

```
% su
```

```
Password: root-password
```

5. Go to the source machine by typing:

```
# cd /net/source-machine/cdrom/devpro_v6n1_platform
```

If you cannot change to that directory and you do not have an automounter on your network, create a mount point on the target machine and mount the product directory by typing the following commands (do not type the backslash (\) as it indicates that the command must be typed as one line):

```
# mkdir /remote_products
```

```
# /usr/sbin/mount -F nfs -r source-machine:/cdrom/\
devpro_v6n1_platform /remote_products
```

```
# cd /remote_products
```

6. Redirect the target machine display.

If you use a C shell, type:

```
# setenv DISPLAY source-machine:0
```

If you use a Bourne shell, type:

```
# DISPLAY=source-machine:0; export DISPLAY
```

If you use a Korn shell, type:

```
# export DISPLAY=source-machine:0
```

7. Proceed to “Using the *workshop_install* GUI” on page 18.

Using the *workshop_install* GUI

This section describes the steps to follow to use the *workshop_install* GUI.

1. Start *workshop_install* by typing:

```
# ./workshop_install
```

Note - Do *not* type an ampersand (&) to run `workshop_install` in the background.

2. When prompted, decide in which directory you want to install your software.

See “Previous Software Releases” on page 14 if you want to install this new Sun WorkShop release on a machine with previous Sun WorkShop releases.

The following text appears:

The software will be installed by default in /opt.
Okay to use the default, /opt? <y|n>:

The installation directory you choose is your default installation directory for this `workshop_install` session.

- To install the software in a directory other than /opt, type n and the location where you want the software installed.
- To install in /opt, type y.

After a few moments, the WorkShop Install window opens (see Figure 3-1).

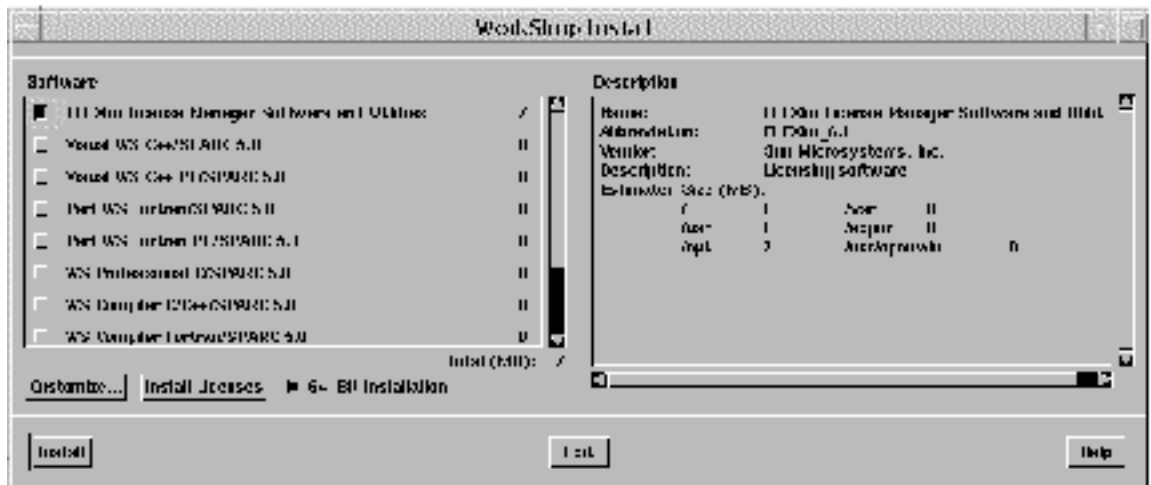


Figure 3-1 WorkShop Install Window (SPARC Platform)

3. Decide if you want to install only 32-bit packages or both 32-bit and 64-bit packages.

Note - The default installation for the SPARC platform installs *both* 32-bit and 64-bit packages.

- If you want to install *both* 32-bit and 64-bit packages, skip to Step 4 on page 20.
- If you want to install *only* 32-bit packages, deselect the checkbox next to 64-Bit Installation at the bottom of the WorkShop Install window. By deselecting the checkbox next to 64-Bit Installation, you are asking that only 32-bit packages be installed (all 64-bit-specific packages will be skipped during installation).

4. Click the checkbox next to FLEXlm License Manager Software and Utilities in the WorkShop Install window to install FLEXlm 6.1.

Note - If your application server and your license server are different machines, install FLEXlm 6.1 license manager software on your license server, *not* on your application server (install your Sun WorkShop development tools on your application server).

You *must* install FLEXlm version 6.1 (available with this release) to get the new `sunwlicd` vendor daemon binary; otherwise, licensing will not function properly.

If you are upgrading to FLEXlm 6.1 from an earlier FLEXlm version, you will automatically bring down your license manager during the upgrade. After you install your new licenses in Chapter 4, the license installation tool will start your license manager again. During the upgrade, your licensed software will be unavailable.

5. Click the checkboxes next to the Sun WorkShop development tools you want to install.

Use your Proof of License Certificate to determine which software you purchased.

Install your software development tools on your application server (your application server and your license server can be the same machine).

When you click the checkbox next to a Sun WorkShop development tool, you are asking to install all product components. In Step 6 on page 20, you can customize your installation and deselect product components from installation.

To install Sun WorkShop online document collections (in AnswerBook2 format), scroll down and click the checkbox next to WS AnswerBook2 Document Collections 5.0. After you install your Sun WorkShop AnswerBook2 document collections, you must add the Sun WorkShop AnswerBook2 document collections to your AnswerBook2 Documentation Server. For information about adding and working with document collections, see *Installing and Administering an AnswerBook2 Server* online in the AnswerBook2 Help Collection, in your Solaris printed documentation, or on the web at <http://docs.sun.com>. For information about downloading AnswerBook2 Documentation Server software packages and viewing Sun WorkShop AnswerBook2 document collections, see Chapter 6.

6. Decide if you want to customize the software installation.

If you do not want to customize your software installation, skip to Step 9 on page 22.

Follow these steps to customize the installation (deselect product components) of your Sun WorkShop software:

a. **In the left side of the WorkShop Install window, click on the name of the Sun WorkShop tool to be customized.**

b. **Click Customize.**

The Customize Installation window opens (see Figure 3–2) with the list of components for the software tool you selected.

Click Deselect All, and then click the checkbox next to the components you want to install.

To get software component descriptions, click on the name of the component in the left side of the Customize Installation window.

To view a software tool's components, click the arrow to the left of the component name in the left side of the Customize Installation window. See also Table A–3 in Appendix A for product package components.

Note - If you deselect a software tool for installation that has a component that is required by another piece of software, the checkbox next to the component required by another piece of software in the left side of the window changes from selected to half-filled.

If you want to change the default installation directory for the product you are customizing, type the name of an alternate installation directory in the Installation Directory text box in the Customize Installation window. With your cursor still in the Installation Directory text box, press Return.

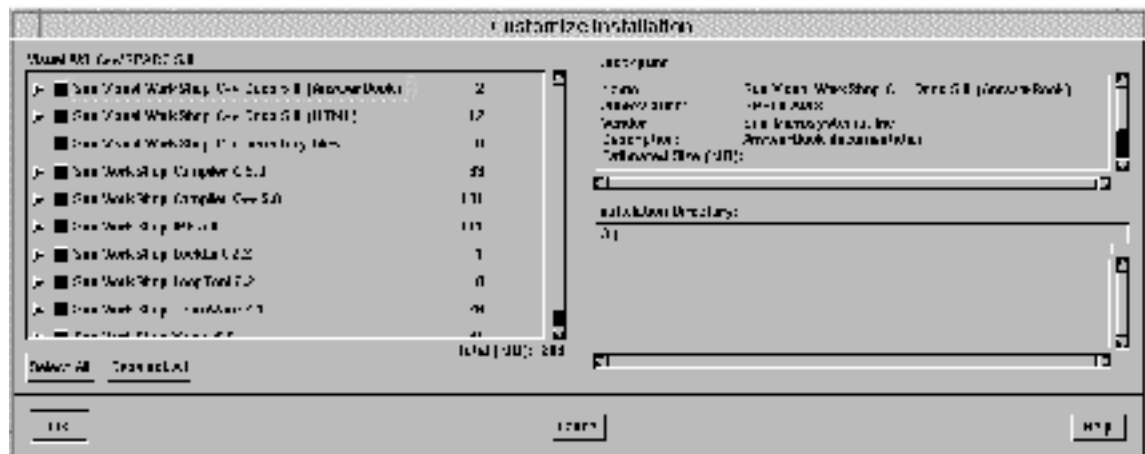


Figure 3–2 Customize Installation Window

7. Click OK in the Customize Installation window.
8. Repeat Step 6 on page 20 and Step 7 on page 22 as necessary to customize the installation of your Sun WorkShop development tools.
9. Click Install in the WorkShop Install window.

The software you selected is installed by `workshop_install`.

Note - To interrupt installation, click Interrupt Installation in the Installing Software – Progress window that opens after you click Install. To stop installation and close the `workshop_install` interface, first type `ps -ef | grep installer` at a command line, and then type the `kill` command to stop the `installer` executable. See the `ps` and `kill` man pages for more information.

A pop-up window appears when the installation is complete.

10. Click OK in the pop-up window when the installation is complete.
11. Click Exit in the WorkShop Install window.

Click Yes in the pop-up window to exit without installing license keys. You will install your licenses in the next chapter.
12. Install the required operating system and product patches by typing the following at a command line:

```
# ./install_required_patches
```

To get patch information, type `help` at the `install_required_patches` prompt. Then follow the instructions on the screen to install all the patches for this release.

Note - Run the `install_required_patches` script on each application server.

Read the `README` files in each of the patch directories to understand the fixes addressed by the patches.

To access current Sun WorkShop product patches, see the following web site:

<http://access1.sun.com>

13. If you mounted the product directory during a remote installation, unmount by typing:

```
# cd /  
  
# /usr/sbin/umount /remote_products
```

14. Exit from superuser privileges by typing:

```
# exit
```

15. If you performed a remote installation, follow these steps (if you did not perform a remote installation, skip to Step 16 on page 23):

a. Exit from the remote machine by typing:

```
% exit
```

b. Regarding the NFS server, follow these steps if they apply:

If `nfsd` was already running, type the following command:

```
# /usr/sbin/unshare /cdrom/devpro_v6n1_platform
```

If you manually started `nfsd`, stop it by typing:

```
# /etc/init.d/nfs.server stop
```

c. Remove the following line from the `/etc/dfs/dfstab` file:

```
share -F nfs -o ro /cdrom/devpro_v6n1_platform
```

d. Exit from superuser privileges by typing:

```
# exit
```

16. Disable client access by typing the following:

```
% /usr/openwin/bin/xhost - target-machine
```

Note - Be sure to type the minus sign (-) in the `xhost` command.

17. Review the `README` files located in the top directory of the software you installed.

18. Set your `PATH` and `MANPATH` variables by following the steps in “`PATH` and `MANPATH` Variables” on page 28.

The `clustadd` Command-Line Executable

These instructions describe how to use `clustadd` to install the FLEXlm license manager software and your Sun WorkShop development tools.

Note - If you use the `workshop_install` GUI to install your software, you have an uninstall script available to remove the software. The *only* way to remove software installed using the `clustadd` command-line executable is to use the `pkgrm` command for each package you want to remove. See Chapter 7 for more information.

Preparing To Use the `clustadd` Command-Line Executable

This section describes the steps to follow to prepare your system to use `clustadd`.

Note - Throughout these instructions, replace *platform* with `sparc` if you use the Solaris *SPARC Platform Edition* or with `intel` if you use the Solaris *Intel Platform Edition*.

1. Decide on a local or remote installation method.

In a remote installation, you perform the installation on the system with the CD-ROM drive where you loaded the Sun WorkShop CD (the source computer) and install the software on another machine (the target computer). In a local installation, the source computer and the target computer are the same machine.

2. Make sure your Sun WorkShop CD is in your CD-ROM drive.

3. On your source computer, become a superuser (root) by typing:

```
% su
```

```
Password: root-password
```

4. Follow the instructions for a local or a remote installation (see “Local Installation” on page 24 or “Remote Installation” on page 24).

Local Installation

For a local installation, follow these steps:

1. If you have not already done so, go to the CD by typing:

```
# cd /cdrom/devpro_v6n1_platform
```

2. Skip to “Using the `clustadd` Command-Line Executable” on page 26.

Remote Installation

For a remote installation, follow these steps:

1. Add the following line to your `/etc/dfs/dfstab` file:

```
share -F nfs -o ro /cdrom/devpro_v6n1_platform
```

2. Find out if your source machine is an NFS™ server by typing:

```
# ps -ef | grep nfsd
```

If you see screen output that contains `/usr/lib/nfs/nfsd`, then `nfsd` is running. If `nfsd` is running, type:

```
# /usr/sbin/shareall
```

If `nfsd` is not running, start `nfsd` by typing:

```
# /etc/init.d/nfs.server start
```

```
# ps -ef | grep nfsd
```

You should then get screen output that contains `/usr/lib/nfs/nfsd`. If not, contact your system administrator or your Sun authorized service provider.

3. Make sure your source machine is exporting your product directory by typing:

```
# /usr/sbin/dfshares
```

Screen output shows the resource and server. See the `dfshares` man page for more information.

4. Log in to the target machine.

Replace *user* with your user login name (not `root`), and use a lowercase `l` (not the number 1) in the following command:

```
# rlogin target-machine -l user
```

Password: *user-password*

```
% su
```

Password: *root-password*

5. Go to the source machine by typing:

```
# cd /net/source-machine/cdrom/devpro_v6n1_platform
```

If you cannot change to that directory and you do not have an automounter on your network, create a mount point on the target machine and mount the product directory by typing the following commands (do not type the backslash (\) as it indicates that the command must be typed as one line):

```
# mkdir /remote_products
```

```
# /usr/sbin/mount -F nfs -r source-machine:/cdrom/\  
devpro_v6n1_platform /remote_products
```

```
# cd /remote_products
```

6. Proceed to “Using the `clustadd` Command-Line Executable” on page 26.

Using the `clustadd` Command-Line Executable

To use `clustadd`, follow these steps:

1. Find the names of the metaclusters you want to install by typing the following:

```
# bin/clustinfo
```

Note - It might take a few moments before you get the output from the `clustinfo` command.

See the `clustinfo` man page for more information; to access the `clustinfo` man page, type:

```
man -M /cdrom/devpro_v6n1_platform/man clustinfo
```

Review the output of the `clustinfo` command for the names to use to replace *metacluster* in Step 2 on page 26.

You *must* install FLEXlm version 6.1 (available with this release) to get the new `sunwlicd` vendor daemon binary; otherwise, licensing will not function properly. If your application server and your license server are different machines, install FLEXlm 6.1 license manager software on your license server, *not* on your application server (install your Sun WorkShop development tools on your application server). To identify FLEXlm as a metacluster to be installed, use `FLEXlm_6.1` in place of *metacluster* in the `clustadd` command in Step 2 on page 26.

2. Type the following:

```
# bin/clustadd metacluster( ... metacluster)
```

Replace *metacluster* with the output of the `clustinfo` command described in Step 1 on page 26 for each metacluster you want to install.

See the `clustadd` man page for usage and options, including how to install in a non-default location (not in `/opt`) and how to install only 32-bit packages (the default SPARC installation is 64-bit and 32-bit packages). To access the `clustadd` man page, type:

```
man -M /cdrom/devpro_v6n1_platform/man clustadd
```

If you install the Sun WorkShop AnswerBook2 document collections (the `SPROWSDOC` metacluster), you must add the Sun WorkShop AnswerBook2 document collections to your AnswerBook2 Documentation Server. For information about adding and working with document collections, see *Installing and Administering an AnswerBook2 Server* online in the AnswerBook2 Help Collection, in your Solaris printed documentation, or on the web at <http://docs.sun.com>. For information about downloading AnswerBook2

Note - If you are upgrading to FLEXlm 6.1 license manager software from an earlier FLEXlm version, you will automatically bring down your license manager during the upgrade. After you install your new licenses in Chapter 4, the license installation tool will start your license manager again. During the upgrade, your licensed software will be unavailable.

3. Install the required operating system and product patches by typing:

```
# ./install_required_patches
```

To get patch information, type `help` at the `install_required_patches` prompt. Then follow the instructions on the screen to install all the patches for this release.

Note - Read the `README` files in each of the patch directories to understand the fixes addressed by the patches.

To access current Sun WorkShop product patches, see the following web site:

<http://access1.sun.com>

4. If you mounted the product directory during a remote installation, unmount by typing:

```
# cd /
```

```
# /usr/sbin/umount /remote_products
```

5. Exit from superuser privileges by typing:

```
# exit
```

6. If you performed a remote installation, follow these steps (if you did not perform a remote installation, skip to Step 7 on page 28):

a. Exit from the remote machine by typing:

```
% exit
```

b. Regarding the NFS server, follow these steps if they apply:

If `nfsd` was already running, type the following command.

```
# /usr/sbin/unshare /cdrom/devpro_v6n1_platform
```

If you manually started `nfsd`, stop it by typing:

```
# /etc/init.d/nfs.server stop
```

- c. Remove the following line from the `/etc/dfs/dfstab` file:

```
share -F nfs -o ro /cdrom/devpro_v6n1_platform
```

- d. Exit from superuser privileges by typing:

```
# exit
```

7. Review the `README` files located in the top directory of the software you installed.
8. Set your `PATH` and `MANPATH` variables by following the steps in “`PATH` and `MANPATH` Variables” on page 28.

PATH and MANPATH Variables

This section describes how to change your `PATH` and `MANPATH` variables to access the current release. See the section that describes the shell you use.

Note - In the paths listed in this section, the default *install-directory* is `/opt`. If you indicated another installation directory when you installed your software tools, replace *install-directory* with the path to your installation directory. Do *not* type the backslash (`\`) in any of the paths in this section; the backslash indicates that the path must be typed as one line.

Using the C Shell

If you use the C shell, follow these steps:

1. Open your `~/.cshrc` file in your preferred editor, and add the following lines at the end of the file:

```
set path=(install-directory/SUNWspro/bin $path)

setenv MANPATH install-directory/SUNWspro/man:install-directory/\
SUNWste/license_tools/man:$MANPATH
```

2. Save your `.cshrc` file.
3. Reread your shell's initialization files by executing the following command:


```
% source ~/.cshrc
```

Note - The `PATH` and `MANPATH` variables need to be set in each user's environment for each user to get the current product.

4. Proceed to Chapter 4.

Using the Bourne Shell

If you use the Bourne shell, follow these steps:

1. **Open your `~/.profile` file in your preferred editor, and add the following lines at the end of the file:**

```
PATH=install-directory/SUNWspro/bin:$PATH
MANPATH=install-directory/SUNWspro/man:install-directory/\
SUNWste/license_tools/man:$MANPATH
export MANPATH PATH
```

2. **Save your `.profile` file**
3. **Reread your shell's initialization files by executing the following command:**

```
$ . ~/.profile
```

Note - The `PATH` and `MANPATH` variables need to be set in each user's environment for each user to get the current product.

4. Proceed to Chapter 4.

Using the Korn Shell

If you are using the Korn shell, follow these steps:

1. **Open your `~/.profile` file in your preferred editor, and add the following lines at the end of the file:**

```
export PATH=install-directory/SUNWspro/bin:$PATH
export MANPATH=install-directory/SUNWspro/man:install-directory/\
SUNWste/license_tools/man:$MANPATH
```

2. **Save your .profile file.**

3. **Reread your shell's initialization files by executing the following command:**

```
$ . ~/.profile
```

Note - The `PATH` and `MANPATH` variables need to be set in each user's environment for each user to get the current product.

4. **Proceed to Chapter 4.**

Installing Your Licenses

Before you can install your licenses, you *must* have:

- Requested and received license information from the Sun License Center (see Chapter 2)
- Installed FLEXlm 6.1 license manager software on each license server (see Chapter 3 for installation instructions)

Note - For information about domain-based licenses, which support products licensed through the GoldPass and ScholarPASS programs, see Chapter 5.

This chapter describes how to install your licenses in the following ways:

- Through the License Installation Tool (`lit`) graphical user interface
- Through the `lit_tty` command-line interface if you do not have graphical user interface capabilities

Answers to Sun WorkShop licensing frequently asked questions (FAQ) are available through the World Wide Web at the following location:

<http://www.sun.com/workshop/workshopFAQ.html>

Special Cases

The following cases require special handling:

- When you completed your License Request Form, if you requested to have your floating and Personal Edition (node-locked) licenses on the same license server, you should have received separate license information from the Sun License Center for each floating and node-locked license you requested. To install your

licenses on the same license server, run `lit` (see “The `lit` GUI” on page 32) or `lit_tty` (see “The `lit_tty` Command-Line Executable” on page 41) on your license server for each license you received from the Sun License Center.

- If you are upgrading from Sun WorkShop Try and Buy (trial software) to purchased Sun WorkShop software, see “From Try and Buy Software to Purchase” on page 13.

Note - Single independent (including node-locked) and redundant server licenses cannot be mixed in the same license file (the `licenses_combined` file). A license server and its license file is for *either* a single independent server *or* a three redundant server set. A license server cannot handle both. A Personal Edition (node-locked) license can be installed on a three redundant server set. The Personal Edition `hostid` on the `INCREMENT` line in the license file can be the `hostid` of one of the redundant servers, if that is where the licensed application will be run, or it can be the `hostid` of an entirely different machine.

The `lit` GUI

This section describes how to start and use the `lit` graphical user interface.

Starting `lit`

This section describes how to start the `lit` GUI.

Note - You must run `lit` on your license server.

If `workshop_install` Is Running

If your application server and your license server are different machines, run `lit` on your license server by following the instructions in “If `workshop_install` Is Not Running” on page 33.

If your application server and your license server are the same machine and the WorkShop Install window is open, follow these steps:

1. **Click Install Licenses in the WorkShop Install window.**
The License Installation Tool window opens (see Figure 4-1).
2. **Skip to “Using `lit`” on page 33.**

If workshop_install Is Not Running

If your application server and your license server are different machines, run `lit` on your license server (not your application server).

Follow these steps:

1. **Enable client access by typing the following at a command line on your license server:**

```
% /usr/openwin/bin/xhost + hostname
```

Replace *hostname* with the output of the `/usr/bin/hostname` command run on your license server.

2. **Become a superuser (root) by typing:**

```
% su
```

```
Password: root-password
```

3. **Set your display.**

If you use a C shell, type:

```
# setenv DISPLAY hostname:0
```

If you use a Bourne shell, type:

```
# DISPLAY=hostname:0
```

```
# export DISPLAY
```

If you use a Korn shell, type:

```
# export DISPLAY=hostname:0
```

Replace *hostname* with the output of the `/usr/bin/hostname` command.

4. **Start the License Installation Tool by typing:**

```
# /etc/opt/licenses/lit &
```

The License Installation Tool window opens (Figure 4-1).

5. **Proceed to “Using `lit`” on page 33.**

Using `lit`

Depending upon how you received your license information from the Sun License Center, see either “Email License File Installation” on page 34 or “Fax License Installation” on page 37.

Email License File Installation

Note - If you have *not* filled out a License Request Form, see Chapter 2 for instructions.

If you received an email from the Sun License Center containing your license information, follow these instructions to install your licenses:

1. **Save to a file the license information that you received from the Sun License Center.**
-



Caution - Do not modify the license information that you received from Sun License Center. Any modification could invalidate your licenses.

The email you received from the Sun License Center has the license information either in an email attachment or embedded in the body of the email message.

- If you received an email attachment, save only the email attachment to a directory and a file name of your choice on your system.
- If you received an email with the license information embedded in the email message, strip out the mail headers and the body of the email message, and save only the license information to a directory and a file name of your choice on your system.

`lit` reads the license information directly from the file where you saved the license information you received through email.



Caution - If you are using a DOS-based email system, use the `dos2unix` command to convert the license file before using `lit` to read the license information. If you do not convert the license file before using `lit`, you might not be able to use your developer tools. See the `dos2unix` man page for more information.

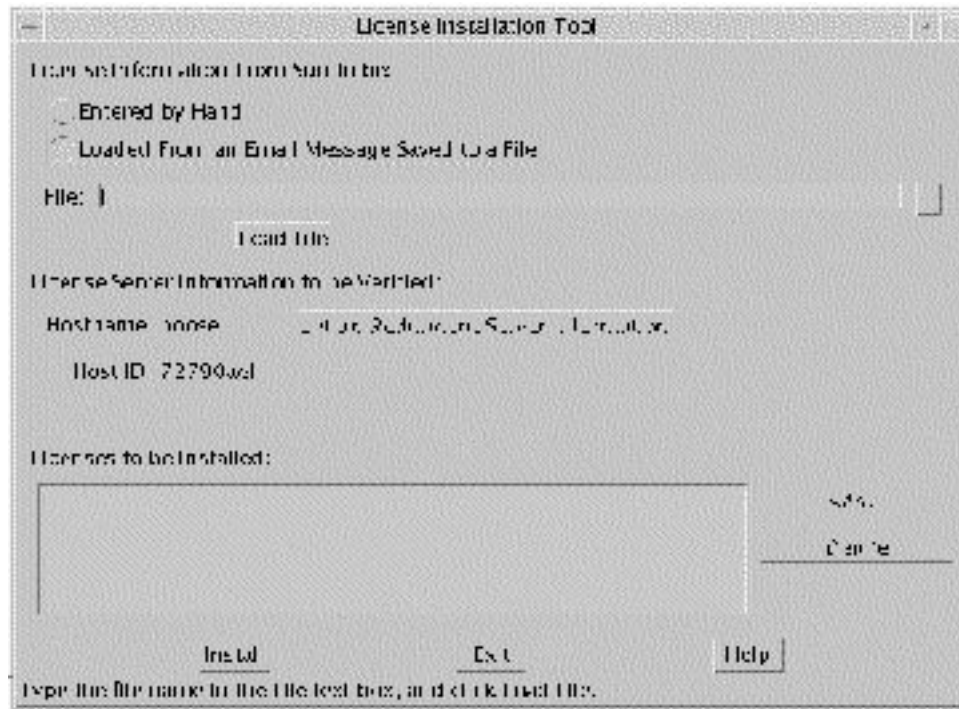


Figure 4-1 License Installation Tool Window

2. In the File text box in the License Installation Tool window, type the pathname to the file where you saved the license information that the Sun License Center emailed to you, or click the browse button (...) to use a file chooser to find the saved file.
3. Click Load File.
Your licenses listed in the email you received from the Sun License Center appear in the Licenses to be Installed pane.
4. If you requested a redundant license server configuration, click Set up Redundant Server Information.

The Redundant Server Information window opens. Type the information for the other license servers, and click Ok.

You must install FLEXlm license manager software and run `lit` on all three redundant servers. To install FLEXlm license manager software, see Chapter 3.

5. Click Install.

`lit` installs your licenses.

6. When the installation is complete, click OK in the pop-up window.

7. Click Exit in the License Installation Tool window.

8. If the WorkShop Install window is open, click Exit to exit from the `workshop_install` GUI.

9. If your application server is different from your license server, copy and run the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` script on each of the application servers that will access the software products.

Running the `LIC_CONFIG_SCRIPT` script creates an elementary license file on your application server. For information on elementary license files, see Chapter 2 in the *Sun WorkShop Installation and Licensing Reference*.

10. Change the owner of the license server daemon (optional).

The license server daemon is automatically configured to be owned by `nobody`. The `adjust_flexlm_owner` script is provided to allow you to change the user name to a valid account. The user name you select starts the license server daemon and has access to the license manager software utilities. Permissions are updated to allow group read and execute privileges for the user name you select.

Note - If you decide to use a user name that does not exist, create the user account before running the `adjust_flexlm_owner` script.

Run the `adjust_flexlm_owner` script by typing the following at a command line:

```
# /etc/opt/licenses/adjust_flexlm_owner
```



Caution - To avoid potential security risks, do not use `root` as the user name.

For your changes to take effect, you must stop the license daemon (if it is running) and restart it. To do so, follow the instructions at the end of the script. Run the `adjust_flexlm_owner` script at any time to change the user name.

11. Exit from superuser privileges by typing:

```
# exit
```

12. Disable client access by typing the following:

```
% /usr/openwin/bin/xhost - hostname
```

Replace *hostname* with the hostname you used to enable client access earlier in this chapter.

Note - Be sure to type the minus sign (-) in the `xhost` command.

You are now ready to use your Sun WorkShop development tools.

Fax License Installation

If you received your license information from the Sun License Center by fax, follow these instructions to install your licenses.

Note - If you have *not* filled out a License Request Form, see Chapter 2 for instructions.

1. Click Entered by Hand in the License Installation Tool window (Figure 4-1).

The Add License window opens (Figure 4-2).

Add License

License Informator

Demo License: ☐ Yes ☐ No

Product: WorkShop5.0

Feature Name: WS Compiler C/SPARC

Feature Version: 5.0

Nodelocked to Host ID:

Expiration Date: None

Rights to Use (RTU):

Password:

Vendor String (VS):

Item Type:

Password Checksum (PC): 6

Data Checksum (DC): 2

Add Exit Clear Help

Figure 4-2 Add License Window

2. For Demo License, click No.
3. Use the Product pulldown menu to select WorkShop5.0 if it is not already selected.
4. Use the Feature Name pulldown menu to select the software for which you want to install a license.
The information you received from the Sun License Center provides the feature names you need.
5. For Feature Version, verify the software version you are installing.
The information you received from the Sun License Center provides the software versions you need.
6. For the Nodelocked to Host ID text box, do one of the following:
 - For a floating license, type none.

- For a Personal Edition (node-locked) license, type your hostid in the Nodelocked to Host ID box. The hostid you type should match the hostid you typed in section 5 of your License Request Form.

7. **For Expiration Date, leave the field defined as `none`.**
8. **In the Rights to Use (RTU) text box, type the number of rights to use that you received from the Sun License Center.**
9. **In the Password text box, type the password that the Sun License Center provided.**

Note - A hostname and hostid are identified for each license. Be sure to enter the password that corresponds to the hostname of the license server listed in the License Installation Tool window.

10. **In the Vendor String (VS) text box, type the number that the Sun License Center provided.**
11. **For Password Checksum (PC), verify the number that the Sun License Center provided.**
If there is a discrepancy, recheck the checksum against the information provided by the Sun License Center, and then contact the Sun License Center (see your Proof of License Certificate for access information).
12. **For Data Checksum (DC), verify the number that the Sun License Center provided.**
If there is a discrepancy, recheck the checksum against the information provided by the Sun License Center, and then contact the Sun License Center (see your Proof of License Certificate for access information).
13. **Click Add.**
`lit` adds this license to the Licenses to be Installed pane in the License Installation Tool window.

14. **If you have more licenses to install, click Clear in the Add License window.**
Repeat Step 4 on page 38 through Step 13 on page 39 to add licenses to the list in the Licenses to be Installed pane.
If you requested a redundant license server configuration, click Set up Redundant Server Information in the License Installation Tool window. Then enter the information for the other license servers. You must install FLEXlm license manager software and run `lit` on all three redundant servers. To install FLEXlm license manager software, see Chapter 3.

15. Click **Exit** in the **Add License** window.

16. Click **Install** in the **License Installation Tool** window to install the licenses listed in the **Licenses to be Installed** pane.

`lit` installs the licenses.

17. When the installation is complete, click **OK** in the pop-up window.

18. Click **Exit** in the **License Installation Tool** window.

19. If the **WorkShop Install** window is open, click **Exit**.

20. If your application server and your license server are different machines, copy the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` script and run it on each of the application servers that will access the software.

Running the `LIC_CONFIG_SCRIPT` script creates an elementary license file on your application server. For information on elementary license files, see Chapter 2 in the *Sun WorkShop Installation and Licensing Reference*.

21. **Change the owner of the license server daemon (optional).**

The license server daemon is automatically configured to be owned by `nobody`. The `adjust_flexlm_owner` script is provided to allow you to change the user name to a valid account. The user name you select starts the license server daemon and has access to the license manager software utilities. Permissions are updated to allow group read and execute privileges for the user name you selected.

Note - If you decide to use a user name that does not exist (for example, `flexlm`), create the user account before running the `adjust_flexlm_owner` script.

Run the `adjust_flexlm_owner` script by typing the following at a command line:

```
# /etc/opt/licenses/adjust_flexlm_owner
```



Caution - To avoid potential security risks, do not use `root` as the user name.

For your changes to take effect, you must stop the license daemon (if it is running) and restart it. To do so, follow the instructions at the end of the script. Run the `adjust_flexlm_owner` script at any time to change the user name.

22. **Exit from superuser privileges by typing:**

```
# exit
```

23. Disable remote client access by typing the following:

```
% /usr/openwin/bin/xhost - hostname
```

Replace *hostname* with the hostname you used to enable client access earlier in this chapter.

Note - Be sure to type the minus sign (-) in the `xhost` command.

You are now ready to use your Sun WorkShop development tools.

The `lit_tty` Command-Line Executable

This section describes how to use the `lit_tty` command-line executable to install your licenses on your license server. Use the instructions that correspond to how you received your license information from the Sun License Center.

Email License File Installation

If you received an email from the Sun License Center containing your license information, follow these instructions to install your licenses on your license server.

Note - If you have not filled out a License Request Form, see Chapter 2 for instructions.

1. Save to a file the license information that you received from the Sun License Center.

The email you received from the Sun License Center has the license information either in an email attachment or embedded in the body of the email message:

- If you received an email attachment, save only the email attachment to a directory and a file name of your choice on your system.
- If you received an email with the license information embedded in the email message, strip out the mail headers and the body of the email message, and

save only the license information to a directory and a file name of your choice on your system.



Caution - Do not modify the license information that you received from the Sun License Center. Any modification could invalidate all your licenses.

`lit_tty` reads the information directly from the file where you saved the license information.

2. Become a superuser (root) on your license server by typing the following at the command line:

```
% su
```

```
Password: root-password
```

3. Start `lit_tty` by typing:

```
# /etc/opt/licenses/lit_tty -f license-file
```

Replace *license-file* with the pathname to the file where you saved the license information that the Sun License Center emailed to you. Refer to the `lit_tty` man page for more information.

4. Decide if you want the displayed license installed.

- If you want the displayed license installed, type `y`. `lit_tty` installs and saves your licenses.
- If the license listed is not the license you want to install, type `n`. Contact the Sun License Center (see your Proof of License Certificate for access information).

If you will be using a redundant server configuration, you must install FLEXlm license manager software and run `lit_tty` on all three redundant servers. To install FLEXlm license manager software, see Chapter 3.

5. If your application server is different from your license server, copy and run the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` script on each of the application servers that will access the software products.

Running the `LIC_CONFIG_SCRIPT` script creates an elementary license file on your application server. For information on elementary license files, see Chapter 2 in the *Sun WorkShop Installation and Licensing Reference*.

6. Change the owner of the license server daemon (optional).

The license server daemon is automatically configured to be owned by `nobody`. The `adjust_flexlm_owner` script is provided to allow you to change the user name to a valid account. The user name you select starts the license server daemon and has access to the license manager software utilities. Permissions are

updated to allow group read and execute privileges for the user name you selected.

Note - If you decide to use a user name that does not exist, create the user account before running the `adjust_flexlm_owner` script.

Run the `adjust_flexlm_owner` script by typing the following at a command line:

```
# /etc/opt/licenses/adjust_flexlm_owner
```



Caution - To avoid potential security risks, do not use `root` as the user name.

For your changes to take effect, you must stop the license daemon (if it is running) and restart it. To do so, follow the instructions at the end of the script. Run the `adjust_flexlm_owner` script at any time to change the user name.

7. Exit from superuser privileges by typing:

```
# exit
```

You are now ready to use your Sun WorkShop development tools.

Fax License Installation

If you received your license information from the Sun License Center through a fax, follow these instructions to install your licenses.

Note - If you have not filled out a License Request Form, see Chapter 2 for instructions.

1. Become a superuser (root) by typing the following at the command line:

```
% su
```

```
Password: root-password
```

2. Start `lit_tty` by typing:

```
# /etc/opt/licenses/lit_tty
```

Note - If you get a message that a `LIC_CONFIG_FILE` file cannot be found, you must install the `SUNWwslic` package (which is part of FLEXlm License Manager Software and Utilities when you install Sun WorkShop). See Chapter 3 for installation instructions.

- 3. In the Select Product to License screen, type an x next to WorkShop5.0.**

If instead of the Select Product to License screen you see the Select Product screen, skip to Step 4 on page 44.

Press Return to navigate down the product list to `WorkShop5.0`.

- 4. In the Select Product screen, type an x next to the product for which you want to install a license.**

Your Proof of License Certificate provides information about the product(s) you purchased. If you do not want to install a license for the product where the cursor is, press Return to navigate to the next product on the list.

Note - Only one product can be selected at a time. The process is iterative and will prompt you at the end of each cycle to install a license for the remaining products on the list.

- 5. To designate a regular (not DEMO) license, press Return.**

- 6. Type an x to select the number of servers you will use.**

Press Tab to select a different number of servers.

- 7. Verify the license server name and hostid.**

The license server name and hostid default to the machine where you are installing the license. Your hostid is the output of the `/usr/bin/hostid` command; your server name is the output of the `/usr/bin/hostname` command.

- 8. Press Return to navigate past Phone Number List.**

For Sun License Center telephone and fax numbers, see your Proof of License Certificate.

- 9. For Nodelocked to Host ID, type one of the following:**

- For a floating license, type `none`.

- For a Personal Edition (node-locked) license, type the same hostid you typed on your License Request Form.

10. For the expiration date, type `none`.

11. For Rights to Use, type the number of rights to use that you received from the Sun License Center.

12. For Password, type the password that you received from the Sun License Center.

13. For Vendor String (VS), type the number from the VS column in the license information that the Sun License Center provided.

14. Verify the Data Checksum (DC).

If the data checksum is different from the number that the Sun License Center provided, recheck the checksum against the information provided by the Sun License Center, and then contact the Sun License Center (see your Proof of License Certificate for access information).

15. Verify the Password Checksum (PC).

If the password checksum is different from the number the Sun License Center provided, recheck the checksum against the information provided by the Sun License Center, and then contact the Sun License Center (see your Proof of License Certificate for access information).

16. Type an `x` next to Done Setting Up This License.

17. Press any key to return to selecting products for which you want to install a license, and repeat Step 4 on page 44 through Step 16 on page 45.

If you are done selecting products for which you want to install a license, press Return to navigate to the bottom of the screen.

Note - A server name and hostid are identified for each license. Make sure you use the license that is unique to the license server's server name and hostid.

18. Decide whether you want to install the licenses.

- To install the licenses, type an `x` next to Exit – Save Licenses.
- To quit without installing the license, type an `x` next to Exit – Don't Save Licenses.

If you will be using a redundant server configuration, you must install FLEXlm license manager software and run `lit_tty` on all three redundant servers. To install FLEXlm license manager software, see Chapter 3.

19. If your application server and your license server are different machines, copy the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` script and run it on each of the application servers that will access the software.

20. Change the owner of the license server daemon (optional).

The license server daemon is automatically configured to be owned by `nobody`. The `adjust_flexlm_owner` script is provided to allow you to change the user name to a valid account. The user name you select starts the license server daemon and has access to the license manager software utilities. Permissions are updated to allow group read and execute privileges for the user name you selected.

Note - If you decide to use a user name that does not exist, create the user account before running the `adjust_flexlm_owner` script.

Run the `adjust_flexlm_owner` script by typing the following at a command line:

```
# /etc/opt/licenses/adjust_flexlm_owner
```



Caution - To avoid potential security risks, do not use `root` as the user name.

For your changes to take effect, you must stop the license daemon (if it is running) and restart it. To do so, follow the instructions at the end of the script. Run the `adjust_flexlm_owner` script at any time to change the user name.

21. Exit from superuser privileges by typing:

```
# exit
```

You are now ready to use your Sun WorkShop development tools.

Requesting and Installing Domain-Based Licenses

This chapter describes domain-based licenses and how to request, install, and use them.

About Domain-Based Licenses

Domain-based licenses tie licensed products to a network domain. Domain-based licenses support products licensed through the GoldPass and ScholarPASS programs and link software to network domains rather than specific license servers. Domain-based licenses function without using a centralized license manager and without enforcing hard limits on the number of users.

The license agreement signed by your organization includes information about the network domains where licensed software is installed and any limitation on the number of users. Licenses are issued only for the domains associated with your site as described in your agreement.

Depending on how your network domains are set up, you can acquire a license for a single product (or product feature) that makes it available on all of the network domains at your site. You can also receive individual licenses for each domain and subdomain. This allows you reasonable control of user access to the software. For example, the license agreement may simply identify `my_org.org` as the domain on which licensed software may operate. However, you can acquire a license for a particular *subdomain* (for example, `eng.my_org.org`) and limit access to that subdomain as well as its subdomains.

Requesting Domain-Based Licenses

Domain-based licenses are available one or two weeks after your GoldPass or ScholarPASS license agreement has been approved. Check the date of the agreement before requesting your license.

Follow these steps to request your domain-based licenses:

1. Collect the following information:

- Site number. This number identifies your organization for all ScholarPASS or GoldPass licensed software. Upon approval of your agreement, a site number is assigned to each site in your organization. If you do not have this number, ask for it from the individual in your organization who signed the licensing agreement.
- Your Sun WorkShop product name, version number, and serial number. The serial number is printed on the label attached to the Proof of License Certificate, which is part of your ScholarPASS or GoldPass product package.
- Network domain names. The domain names that you supply are verified against the information that was provided in the license agreement. A license will be issued only if your requested domains are associated with your site number.

2. Follow the steps in Chapter 2 to request and receive your license information from the Sun License Center.

In section 6 of the License Request Form, add your site number and network domain name or names.

Installing Domain-Based Licenses

The current implementation of domain-based licenses does not require a separate license server, so it is not necessary to run a license server to use the GoldPass and ScholarPASS configured licenses.

Follow these steps to install your software and your licenses:

1. Install your Sun WorkShop development tools by following the instructions in Chapter 3.

There is no need for you to install FLEXlm 6.1 license manager software.

2. Check your directories to see if you have the following directory:

install-directory/SUNWspro/license_dir

The default *install-directory* is /opt.

3. Create a text file containing the license information you received from the Sun License Center.

- If you received an email attachment, copy only the email attachment into the text file.
- If you received an email with the license information embedded in the email message, copy only the license information into the text file (do not include the mail headers and the body of the email message).
- If you received your license information by fax, input the license information into the text file.

4. Save the text file in the following location with the following file name:

- For GoldPass: *install-directory*/SUNWspro/license_dir/sunpro.lic,gp
- For ScholarPASS: *install-directory*/SUNWspro/license_dir/sunpro.lic,sp

Note - Make sure your file name contains both a period (.) and a comma (,).

For the sunpro.lic text file you just saved, root should be the owner and have read and write permission; all others should have read-only access.

You can append the contents of this new file to an existing domain-based password file or create additional files with an incremental name (for example, sunpro.lic,sp1 or sunpro.lic,sp2).

Note - The number of licenses available is zero (unlimited) for a domain-based license.

You can now use your licensed software.

Using Domain-Based Licenses

- If a domain is specified in /etc/resolv.conf, it will be used.
- If hostname is set to be a value that contains at least one period (.), the value to the right of the first period will be used as the domain value.

- The domain listed in `/etc/resolv.conf` has precedence over the hostname value if both a domain and hostname are available.
- If both NIS and DNS results are non-null, a case-insensitive comparison is performed with the domain listed on the license. If the domain value from the license is a subset of either the NIS or DNS values, the license will be granted.

Note - The licensed software operates as long as the requesting user of the licensed software is on a valid network domain.

Viewing Online Documents

Sun WorkShop documentation is available online in AnswerBook2 document collections, and some Sun WorkShop documentation is available online in HTML format.

Viewing Sun WorkShop Document Collections

Sun WorkShop includes AnswerBook2 document collections. If you chose not to install the Sun WorkShop AnswerBook2 document collections when you installed Sun WorkShop, you must install the document collections to view them. To install the AnswerBook2 document collections, click the checkbox next to WS AnswerBook2 Document Collections 5.0 in the `workshop_install` GUI (see Chapter 3 for more information).

Sun WorkShop document collections are SGML documents accessed through the AnswerBook2 Documentation Server. You can use your web-browser interface (HTML 3.2 compliant, such as Netscape Navigator™) to search, browse, and print Sun WorkShop document collections. Sun WorkShop document collections provide the same information as printed Sun WorkShop documentation.

Note - The `workshop-answerbooks` command is obsolete and will not launch the AnswerBook2 Documentation Server.

To view Sun WorkShop document collections, you need:

- An AnswerBook2 Documentation Server (a machine on which the AnswerBook2 Documentation Server software packages are installed)

- The URL for your AnswerBook2 Documentation Server
- A browser
- Sun WorkShop AnswerBook2 document collections added to your AnswerBook2 Documentation Server

Note - For information about working with document collections and administering a documentation server, see *Installing and Administering an AnswerBook2 Server* in the AnswerBook2 Help Collection or through <http://docs.sun.com>.

From the Solaris 2.6 or Solaris 7 Operating Environments

Your Solaris software CD contains AnswerBook2 Documentation Server software. If you have not installed your AnswerBook2 Documentation Server software on your documentation server, see your Solaris printed documentation for installation instructions.

To view Sun WorkShop document collections, follow these steps:

- 1. Through your browser, go to the URL of your AnswerBook2 Documentation Server.**

The URL of the documentation server is `http://server-name:port-number` (the default *port-number* is 8888).

- 2. To view a document, click the title you wish to open.**

If you cannot find Sun WorkShop document collections, you need to add them to your AnswerBook2 Documentation Server. For information about working with document collections, see *Installing and Administering an AnswerBook2 Server* online in the AnswerBook2 Help Collection, in your Solaris printed documentation, or on the web at <http://docs.sun.com>.

From the Solaris 2.5.1 Operating Environment

To view document collections, you need to download and install the AnswerBook2 Documentation Server software onto your machine. Follow these steps:

- 1. Access the following web site:**

<http://www.sun.com/software/ab2>

2. Follow the instructions for Solaris 2.5.1 users to download the AnswerBook2 Documentation Server software packages and install them onto your documentation server.
3. Add your Sun WorkShop AnswerBook2 document collections to your AnswerBook2 Documentation Server.
For information about adding and working with document collections, see *Installing and Administering an AnswerBook2 Server* online in the AnswerBook2 Help Collection or on the web at <http://docs.sun.com>.
4. Through your browser, go to the URL of your AnswerBook2 Documentation Server (<http://server-name:port-number>).
5. To view a document, click the title you wish to open.

Viewing HTML Documents

Sun WorkShop HTML online documents (viewed with a browser that supports tables, such as Netscape Navigator 2.0.1 minimum) is available for some Sun WorkShop documentation.

The following Sun Workshop documents are available online only in HTML format:

- *Tools.h++ Class Library Reference*
- *Tools.h++ User's Guide*
- *Numerical Computation Guide*
- *Standard C++ Library User's Guide*
- *Standard C++ Class Library Reference*
- *Sun WorkShop Performance Library Reference Manual*
- *Sun WorkShop Visual User's Guide*
- *Sun WorkShop Memory Monitor User's Manual*

To view these HTML documents:

1. Open the following file through your HTML browser:

install-directory/SUNWspro/DOC5.0/lib/locale/C/html/index.html

Replace *install-directory* with the name of the directory where your Sun WorkShop software is installed (the default is /opt).

The browser displays an index of the HTML documents for the Sun WorkShop products that are installed.

- 2. Open a document in the index by clicking the document's title.**

Removing Software

This chapter describes how to remove software products that are installed on your system.

Note - Some software packages have interpackage dependencies and removing them will affect your ability to use the packages that remain. For a list of products and their component packages, see Table A-3.

There are two ways to remove Sun WorkShop development tools:

- The `workshop_uninstall` script to remove all packages installed in a particular `workshop_install` session
 - The `pkgrm` command to remove individual packages or packages installed using the `clustadd` command-line executable
-

Note - The `workshop_uninstall` script removes packages that were installed using the `workshop_install` GUI. If you installed packages using the `clustadd` command-line executable, you must use the `pkgrm` command to remove your software.

Using the `workshop_uninstall` Script

There is a `workshop_uninstall` script available to remove all packages installed during a particular `workshop_install` session. The `workshop_uninstall` script removes the right packages in the right order.

Note - Use the `pkgrm` command if you want to remove individual packages.

To run the `workshop_uninstall` script, follow these steps:

1. Become a superuser (root) by typing:

```
% su
```

```
Password: root-password
```

2. Look at the `/usr/tmp/workshop_install_log.datestamp` file to determine which `workshop_install` session to remove.

datestamp refers to the date and time when the `workshop_install` command was run. When you find the *datestamp* of the `workshop_install` session you want to remove, use that as the *datestamp* in Step 3 on page 56.

3. Run the `workshop_uninstall` script by typing the following:

```
# /usr/tmp/workshop_uninstall-datestamp.sh
```

To display the `workshop_uninstall-datestamp.sh` files, type the following:

```
# ls /usr/tmp/workshop_uninstall*.sh
```

The `workshop_uninstall` script takes no parameters.

After you have removed the software, consider removing the `workshop_uninstall` script so it will not clutter the `/usr/tmp` directory if you do other installations in the future.

Using the `pkgrm` Command

To remove individual packages, follow these steps:

1. Become a superuser by typing:

```
% su
```

```
Password: root-password
```

2. Remove a package by typing:

```
# pkgrm package-name
```

For *package-name* information, see Table A-3 and Table A-4 in Appendix A. See the `pkgrm` man page for more information about the `pkgrm` command.

Sun WorkShop Products and Packages

This appendix provides the following information:

- For the Solaris *SPARC Platform Edition* operating environment: license sticker ID, license information, and Sun WorkShop feature names (see Table A-1)
- For the Solaris *Intel Platform Edition* operating environment: license sticker ID, license information, and Sun WorkShop feature names (see Table A-2)
- Sun WorkShop product package component and configuration information (see Table A-3)
- Sun WorkShop HTML and AnswerBook2 documentation package component and configuration information (see Table A-4)

Table A-1 provides the license sticker ID, license information, and the feature names for Sun WorkShop products offered in the Solaris *SPARC Platform Edition*.

TABLE A-1 Solaris *SPARC Platform Edition* Licenses and Feature Names

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun Visual WorkShop C++ 5.0 (Visual WS C++/SPARC, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	workshop.c.sparc
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/SPARC)	workshop.cc.sparc
	Sun WorkShop Visual 5.0 (WS Visual/SPARC)	workshop.visu.sparc
	Sun WorkShop IPE 5.0 (WS IPE/SPARC)	workshop.tools.sparc
	Sun WorkShop LoopTool 2.2, Sun WorkShop LockLint 2.2 (WS LockLintLoopTool/SPARC)	workshop.mpmt.sparc
	Sun WorkShop TeamWare 2.1 (WS TeamWare/SPARC)	workshop.teamware.sparc
	Sun WorkShop dbx 5.0 (WS dbx/SPARC)	workshop.dbx.sparc

TABLE A-1 Solaris *SPARC Platform Edition* Licenses and Feature Names *(continued)*

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun Visual WorkShop C++ Personal Edition 5.0 (Visual WS C++ PE/SPARC, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	workshop.c.sparc
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/SPARC)	workshop.cc.sparc
	Sun WorkShop Visual 5.0 (WS Visual/SPARC)	workshop.visu.sparc
	Sun WorkShop IPE 5.0 (WS IPE/SPARC)	workshop.tools.sparc
	Sun WorkShop LoopTool 2.2, Sun WorkShop LockLint 2.2 (WS LockLintLoopTool/SPARC)	workshop.mpmt.sparc
	Sun WorkShop TeamWare 2.1 (WS TeamWare/SPARC)	workshop.teamware.sparc
	Sun WorkShop dbx 5.0 (WS dbx/SPARC)	workshop.dbx.sparc

TABLE A-1 Solaris *SPARC Platform Edition* Licenses and Feature Names *(continued)*

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun Performance WorkShop Fortran 5.0 (Perf WS Fortran/SPARC, 5.0)	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/SPARC)	<code>workshop.f77.sparc</code>
	Sun WorkShop Compilers Fortran 90 2.0 (WS Comp Fortran 90/SPARC)	<code>workshop.f90.sparc</code>
	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	<code>workshop.c.sparc</code>
	Sun WorkShop IPE 5.0 (WS IPE/SPARC)	<code>workshop.tools.sparc</code>
	Sun WorkShop LoopTool 2.2, Sun WorkShop LockLint 2.2 (WS LockLintLoopTool/SPARC)	<code>workshop.mpmt.sparc</code>
	Sun WorkShop TeamWare 2.1 (WS TeamWare/SPARC)	<code>workshop.teamware.sparc</code>
	Sun WorkShop dbx 5.0 (WS dbx/SPARC)	<code>workshop.dbx.sparc</code>

TABLE A-1 Solaris *SPARC Platform Edition* Licenses and Feature Names *(continued)*

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun Performance WorkShop Fortran Personal Edition 5.0 (Perf WS Fortran PE/SPARC, 5.0)	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/SPARC)	workshop.f77.sparc
	Sun WorkShop Compilers Fortran 90 2.0 (WS Comp Fortran 90/SPARC)	workshop.f90.sparc
	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	workshop.c.sparc
	Sun WorkShop IPE 5.0 (WS IPE/SPARC)	workshop.tools.sparc
	Sun WorkShop LoopTool 2.2, Sun WorkShop LockLint 2.2 (WS LockLintLoopTool/SPARC)	workshop.mpmt.sparc
	Sun WorkShop TeamWare 2.1 (WS TeamWare/SPARC)	workshop.teamware.sparc
	Sun WorkShop dbx 5.0 (WS dbx/SPARC)	workshop.dbx.sparc
Sun WorkShop Professional C 5.0 (WS Professional C/SPARC, 5.0)	Sun WorkShop IPE 5.0 (WS IPE/SPARC)	workshop.tools.sparc
	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	workshop.c.sparc
	Sun WorkShop dbx 5.0 (WS dbx/SPARC)	workshop.dbx.sparc

TABLE A-1 Solaris *SPARC Platform Edition* Licenses and Feature Names *(continued)*

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun WorkShop Professional C Personal Edition 5.0 (WS Professional C PE/SPARC, 5.0)	Sun WorkShop IPE 5.0 (WS IPE/SPARC)	<code>workshop.tools.sparc</code>
	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	<code>workshop.c.sparc</code>
	Sun WorkShop dbx 5.0 (WS dbx/SPARC)	<code>workshop.dbx.sparc</code>
Sun WorkShop Compilers C/C++ 5.0 (WS Compiler C/C++/SPARC, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	<code>workshop.c.sparc</code>
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/SPARC)	<code>workshop.cc.sparc</code>
Sun WorkShop Compilers Fortran 5.0 (WS Compiler Fortran/SPARC 5.0)	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/SPARC)	<code>workshop.f77.sparc</code>
	Sun WorkShop Compilers Fortran 90 2.0 (WS Comp Fortran 90/SPARC)	<code>workshop.f90.sparc</code>
Sun WorkShop TeamWare 2.1 (WS TeamWare/SPARC, 2.1)	Sun WorkShop TeamWare 2.1 (WS TeamWare/SPARC)	<code>workshop.teamware.sparc</code>

TABLE A-1 Solaris *SPARC Platform Edition* Licenses and Feature Names *(continued)*

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun WorkShop University Edition 5.0 (WS for University/SPARC, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/SPARC)	<code>workshop.c.sparc</code>
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/SPARC)	<code>workshop.cc.sparc</code>
	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/SPARC)	<code>workshop.f77.sparc</code>
	Sun WorkShop Compilers Fortran 90 2.0 (WS Comp Fortran 90/SPARC)	<code>workshop.f90.sparc</code>
	Sun WorkShop Visual 5.0 (WS Visual/SPARC)	<code>workshop.visu.sparc</code>
	Sun WorkShop IPE 5.0 (WS IPE/SPARC)	<code>workshop.tools.sparc</code>
	Sun WorkShop LoopTool 2.2, Sun WorkShop LockLint 2.2 (WS LockLintLoopTool/SPARC)	<code>workshop.mpmt.sparc</code>
	Sun WorkShop TeamWare 2.1 (WS TeamWare/SPARC)	<code>workshop.teamware.sparc</code>
	Sun WorkShop dbx 5.0 (WS dbx/SPARC)	<code>workshop.dbx.sparc</code>

Table A-2 provides the license sticker ID, license information, and the feature names for Sun WorkShop products offered in the Solaris *Intel Platform Edition*.

TABLE A-2 Solaris *Intel Platform Edition* Licenses and Feature Names

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun Visual WorkShop C++ 5.0 (Visual WS C++/Intel, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/Intel)	workshop.cc.x86
	Sun WorkShop Visual 5.0 (WS Visual/Intel)	workshop.visu.x86
	Sun WorkShop IPE 5.0 (WS IPE/Intel)	workshop.tools.x86
	Sun WorkShop TeamWare 2.1 (WS TeamWare/Intel)	workshop.teamware.x86
	Sun WorkShop dbx 5.0 (WS dbx/Intel)	workshop.dbx.x86
Sun Visual WorkShop C++ Personal Edition 5.0 (Visual WS C++ PE/Intel, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/Intel)	workshop.cc.x86
	Sun WorkShop Visual 5.0 (WS Visual/Intel)	workshop.visu.x86
	Sun WorkShop IPE 5.0 (WS IPE/Intel)	workshop.tools.x86
	Sun WorkShop TeamWare 2.1 (WS TeamWare/Intel)	workshop.teamware.x86
	Sun WorkShop dbx 5.0 (WS dbx/Intel)	workshop.dbx.x86

TABLE A-2 Solaris *Intel Platform Edition* Licenses and Feature Names *(continued)*

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun Performance WorkShop Fortran 5.0 (Perf WS Fortran/Intel, 5.0)	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/Intel)	workshop.f77.x86
	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop IPE 5.0 (WS IPE/Intel)	workshop.tools.x86
	Sun WorkShop TeamWare 2.1 (WS TeamWare/Intel)	workshop.teamware.x86
	Sun WorkShop dbx 5.0 (WS dbx/Intel)	workshop.dbx.x86
Sun Performance WorkShop Fortran Personal Edition 5.0 (Perf WS Fortran PE/Intel, 5.0)	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/Intel)	workshop.f77.x86
	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop IPE 5.0 (WS IPE/Intel)	workshop.tools.x86
	Sun WorkShop TeamWare 2.1 (WS TeamWare/Intel)	workshop.teamware.x86
	Sun WorkShop dbx 5.0 (WS dbx/Intel)	workshop.dbx.x86

TABLE A-2 Solaris *Intel Platform Edition* Licenses and Feature Names (continued)

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun WorkShop Professional C 5.0 (WS Professional C/Intel, 5.0)	Sun WorkShop IPE 5.0 (WS IPE/Intel)	workshop.tools.x86
	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop dbx 5.0 (WS dbx/Intel)	workshop.dbx.x86
Sun WorkShop Professional C Personal Edition 5.0 (WS Professional C PE/Intel, 5.0)	Sun WorkShop IPE 5.0 (WS IPE/Intel)	workshop.tools.x86
	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop dbx 5.0 (WS dbx/Intel)	workshop.dbx.x86
Sun WorkShop Compilers C/C++ 5.0 (WS Compiler C/C++/Intel, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/Intel)	workshop.cc.x86
Sun WorkShop Compilers Fortran 5.0 (WS Compiler Fortran/ Intel, 5.0)	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/Intel)	workshop.f77.x86
Sun WorkShop TeamWare 2.1 (WS TeamWare/Intel, 2.1)	Sun WorkShop TeamWare 2.1 (WS TeamWare/Intel)	workshop.teamware.x86

TABLE A-2 Solaris *Intel Platform Edition* Licenses and Feature Names *(continued)*

Product (License Sticker ID)	License Needed (License Sticker ID)	Feature Name
Sun WorkShop University Edition 5.0 (WS for University/Intel, 5.0)	Sun WorkShop Compilers C 5.0 (WS Compiler C/Intel)	workshop.c.x86
	Sun WorkShop Compilers C++ 5.0 (WS Compiler C++/Intel)	workshop.cc.x86
	Sun WorkShop Compilers FORTRAN 77 5.0 (WS Comp FORTRAN 77/Intel)	workshop.f77.x86
	Sun WorkShop Visual 5.0 (WS Visual/Intel)	workshop.visu.x86
	Sun WorkShop IPE 5.0 (WS IPE/Intel)	workshop.tools.x86
	Sun WorkShop TeamWare 2.1 (WS TeamWare/Intel)	workshop.teamware.x86
	Sun WorkShop dbx 5.0 (WS dbx/Intel)	workshop.dbx.x86

The packages contained in the products provide the files needed to run the tools, and Table A-3 provides product package component and configuration information.

TABLE A-3 Sun WorkShop Product Package Components

Package	Component	Configuration
Sun WorkShop Compilers C 5.0	C compiler	SPROcc
	Incremental linker	SPROild
	Incremental linker (64 bit)	SPROildx
	Common components	SPROlang
	Common components (64 bit)	SPROlangx
	Unbundled libm archive	SPROlibma
	Unbundled shared libm	SPROlibms
	C9X math library	SPROm9xs
	C9X math library profiled (64 bit)	SPROm9xpx
	C9Xmath library (64 bit)	SPROm9xsx
	C man pages/README	SPROmrcc
	Common man pages/README	SPROmrcom
	Source browser tools man pages/ README	SPROmrabe
	Source browser tools	SPROsbe
	Profiling shared libsunmath (64 bit)	SPROsmpx
	Shared libsunmath (64 bit)	SPROsmsx
	Shared libsunmath	SPROsunms
	Common tools	SPROoutool

TABLE A-3 Sun WorkShop Product Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop Compilers C++ 5.0	Common tools	SPROutool
	C++ library	SPROcml
	C++ compiler	SPROcpl
	C++ compiler libraries (64 bit)	SPROcplx
	Sun WorkShop Memory Monitor libraries	SPROgc
	Sun WorkShop Memory Monitor libraries (64 bit)	SPROgcx
	Incremental linker	SPROild
	Incremental linker (64 bit)	SPROildx
	Common components	SPROlang
	Common components (64 bit)	SPROlangx
	Sun WorkShop Memory Monitor	SPROlgc
	Sun WorkShop Memory Monitor (64 bit)	SPROlgcx
	Unbundled libm archive	SPROlibma
	Unbundled shared libm	SPROlibms
	C9X math library	SPROm9xs
	C9X math library profiled (64 bit)	SPROm9xpx
	C9Xmath library (64 bit)	SPROm9sxx
	Common man pages/README	SPROmrcom
	C++ man pages/README	SPROmrcpl
	Sun WorkShop Memory Monitor man pages	SPROmrmon
	Source browser tools man pages/README	SPROmrabe
	Standard library for C++ man pages	SPROmrstd
	Source browser tools	SPROsbe
	C++ standard library	SPROsc1
	C++ standard class library (64 bit)	SPROsc1x
	Profiling shared libsunmath (64 bit)	SPROsmpx

TABLE A-3 Sun WorkShop Product Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop Compilers FORTRAN 77 5.0	FORTRAN 77 compiler	SPROf77
	Fortran tools	SPROftool
	Incremental linker	SPROild
	Incremental linker (64 bit)	SPROildx
	Common components	SPROlang
	Common components (64 bit)	SPROlangx
	Unbundled libm archive	SPROlibma
	Unbundled shared libm	SPROlibms
	Fortran libraries	SPROlib77
	FORTRAN 77 5.0 libraries (64 bit)	SPROl77x
	C9X math library profiled (64 bit)	SPROm9xpx
	C9X math library	SPROm9xs
	C9X math library (64 bit)	SPROm9sxx
	Common man pages/README	SPROmrcom
	FORTRAN 77 man pages/ README	SPROmrf77
	Source browser tools man pages/ README	SPROmrabe
	Source browser tools	SPROsbe
	Profiling shared libsunmath (64 bit)	SPROsmpx
	Shared libsunmath (64 bit)	SPROsmsx
	Shared libsunmath	SPROsunms
	Common tools	SPROoutool

TABLE A-3 Sun WorkShop Product Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop Compilers Fortran 90 2.0 (SPARC platform only)	Fortran 90 compiler	SPROf90
	Fortran tools	SPROftool
	Incremental linker	SPROild
	Incremental linker (64 bit)	SPROildx
	Common components	SPROlang
	Common components (64 bit)	SPROlangx
	Unbundled libm archive	SPROlibma
	Unbundled shared libm	SPROlibms
	FORTTRAN 77 5.0 libraries (64 bit)	SPRO177x
	Fortran 90 2.0 libraries (64 bit)	SPRO190x
	Fortran 5.0 libraries	SPROlib77
	Fortran 90 2.0 libraries	SPROlib90
	C9X math library profiled (64 bit)	SPROm9xpx
	C9X math library	SPROm9xs
	C9X math library (64 bit)	SPROm9sxx
	Common man pages/README	SPROmrcom
	Fortran 90 man pages/README	SPROmr f90
	Profiling shared libsunmath (64 bit)	SPROsmpx
	Shared libsunmath (64 bit)	SPROsmsx
	Shared libsunmath	SPROsunms
	Common tools	SPROoutool

TABLE A-3 Sun WorkShop Product Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop IPE (integrated programming environment) 5.0	DBX debugging tools	SPROdbx
	DBX debugging tools (64 bit)	SPROdbxx
	Edit server	SPROesrt
	FileMerge	SPROflmrg
	Demo programs	SPROdemo
	Sun WorkShop 5.0 icons and glyphs	SPROglyph
	IPE online help	SPROhlpws
	dbx man pages/README	SPROmrdbx
	Analyzer man pages/README	SPROmrpan
	Source browser tools man pages/README	SPROmrabe
	Sun WorkShop IPE man pages/README	SPROmrws
	XEmacs online documentation	SPROmrxm
	Performance Analyzer	SPROprfan
	Source browser tools	SPROsbe
	Source browser tags	SPROsbfsf
	Common tools	SPROoutool
	Sun WorkShop 5.0	SPROws
	Separable help for CDE	SUNWdthep
	XEmacs architecture-dependent runtime kit	SPROxmbin
	XEmacs architecture-independent runtime kit	SPROxmshr

TABLE A-3 Sun WorkShop Product Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop LoopTool 2.2 (SPARC platform only)	Edit server	SPROesrt
	LoopTool	SPROltool
	Sun WorkShop 5.0 icons and glyphs	SPROglyph
	LoopTool man pages/README	SPROmrmp
	Separable help for CDE	SUNWdthep
	Common tools	SPROoutool
Sun WorkShop LockLint 2.2 (SPARC platform only)	LockLint	SPROlklnt
	LockLint man pages/README	SPROmrmp
Sun Performance Library 2.0 ¹	Perflib man pages/README	SPROmrpl
	Archive libraries/headers	SPROpl
	Archive libraries (SPARC platform only)	SPROplm
	Archive libraries (SPARC platform only)	SPROplms
	Shared libraries MT (64 bit)	SPROplmsx
	Archive libraries MT (64 bit)	SPROplmx
	Shared libraries	SPROpls
	Shared libraries (64 bit)	SPROplsx
	Archive libraries (64 bit)	SPROplx

TABLE A-3 Sun WorkShop Product Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop TeamWare 2.1	CodeManager	SPROcodmg
	Distributed Make	SPROdmake
	FileMerge	SPROflmrg
	Sun WorkShop 5.0 icons and glyphs	SPROglyph
	FreezePoint	SPROfrzpt
	TeamWare online help	SPROhlptw
	Maketool	SPROmktl
	Sun WorkShop TeamWare man pages/README	SPROmrtyw
	VersionTool	SPROvertl
	Separable help for CDE	SUNWdthep
	Common tools	SPROoutool
Sun WorkShop Visual 5.0	Visual man pages/README	SPROmrvis
	Visual Designer	SPROvisu
	Edit Server	SPROesrt
	Separable help for CDE	SUNWdthep
	Common tools	SPROoutool

TABLE A-3 Sun WorkShop Product Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop Building 2.1 ²	Distributed Make	SPROdmake
	Edit Server	SPROesrt
	Sun WorkShop 5.0 icons and glyphs	SPROglyph
	Sun WorkShop TeamWare online help	SPROhlptw
	IPE online help	SPROhlpws
	Maketool	SPROmktl
	Sun WorkShop TeamWare man pages/README	SPROmrtw
	Common tools	SPROoutool
XEmacs 20.4 Text Editor	XEmacs man pages/README	SPROmrxm
	XEmacs runtime kit (architecture dependent)	SPROxmbin
	XEmacs runtime kit (architecture independent)	SPROxmshr
XEmacs Source Distribution 20.4	Source Distribution	SPROxmsrc

1. Sun Performance Library 2.0 is used by Sun Performance WorkShop Fortran and Sun WorkShop University Edition.
2. Sun WorkShop Building 2.1 is used by Sun WorkShop Professional C and Sun WorkShop TeamWare.

Table A-4 provides product package component and configuration information for Sun WorkShop HTML and AnswerBook2 documentation packages.

TABLE A-4 Sun WorkShop HTML and AnswerBook2 Documentation Package

TABLE A-4 Sun WorkShop HTML and AnswerBook2 Documentation Package
Components *(continued)*

Components

Package	Component	Configuration
Sun Visual WorkShop C++ Docs 5.0 (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Tools.h++ 7.0	SPROhtt17
	Standard Library 2.0	SPROhtstd
	Sun WorkShop Memory Monitor 1.0	SPROhtmm
	Sun WorkShop Visual 5.0	SPROhtvis
	Numerical Computation Guide	SPROhtcom
Sun Visual WorkShop C++ Docs 5.0 Personal Edition (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Tools.h++ 7.0	SPROhtt17
	Standard Library 2.0	SPROhtstd
	Sun WorkShop Memory Monitor 1.0	SPROhtmm
	Sun WorkShop Visual 5.0	SPROhtvis
	Numerical Computation Guide	SPROhtcom

TABLE A-4 Sun WorkShop HTML and AnswerBook2 Documentation Package Components *(continued)*

Package	Component	Configuration
Sun Performance WorkShop Fortran Docs 5.0 (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Common Tools	SPROhtcom
	Sun Performance Library 2.0	SPROhtpl
Sun Performance WorkShop Fortran Docs 5.0 Personal Edition (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Common Tools	SPROhtcom
	Sun Performance Library 2.0	SPROhtpl
Sun WorkShop Professional C Docs 5.0 (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Common Tools	SPROhtcom
Sun WorkShop Compilers C/C++ Docs 5.0 (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Common Tools	SPROhtcom
	Tools.h++ 7.0	SPROhtt17
	Standard Library 2.0	SPROhtstd

TABLE A-4 Sun WorkShop HTML and AnswerBook2 Documentation Package
Components *(continued)*

Package	Component	Configuration
Sun WorkShop Compilers FORTRAN Docs 5.0 (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Common Tools	SPROhtcom
	Sun Performance Library 2.0	SPROhtpl
Sun WorkShop TeamWare Docs 2.1 (HTML)	None	
Sun WorkShop University Edition Docs 5.0 (HTML)	Viewer Scripts	SPROhtbin
	Copyright and Images	SPROhtbas
	Sun WorkShop Visual 5.0	SPROhtvis
	Common Tools	SPROhtcom
	Sun Performance Library 2.0	SPROhtpl
	Tools.h++ 7.0	SPROhtt17
	Standard Library 2.0	SPROhtstd
	Sun WorkShop Memory Monitor 1.0	SPROhtmm

TABLE A-4 Sun WorkShop HTML and AnswerBook2 Documentation Package Components *(continued)*

Package	Component	Configuration
Sun Visual WorkShop Docs 5.0 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop 5.0	SPROabws
	Sun WorkShop Compilers C 5.0	SPROabcc
	Sun WorkShop Compilers C++ 5.0	SPROabcp1
	Sun WorkShop TeamWare 2.1	SPROabtw
	Sun WorkShop Overviews	SPROabov
Sun Visual WorkShop Personal Edition Docs 5.0 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop 5.0	SPROabws
	Sun WorkShop Compilers C 5.0	SPROabcc
	Sun WorkShop Compilers C++ 5.0	SPROabcp1
	Sun WorkShop TeamWare 2.1	SPROabtw
	Sun WorkShop Overviews	SPROabov
Sun Performance WorkShop Docs 5.0 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop 5.0	SPROabws
	Sun WorkShop Compilers FORTRAN 77/90	SPROabftn
	Sun WorkShop Compilers C 5.0	SPROabcc
	Sun WorkShop TeamWare 2.1	SPROabtw
	Sun WorkShop Overviews	SPROabov

TABLE A-4 Sun WorkShop HTML and AnswerBook2 Documentation Package
Components *(continued)*

Package	Component	Configuration
Sun Performance WorkShop Personal Edition Docs 5.0 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop 5.0	SPROabws
	Sun WorkShop Compilers FORTRAN 77/90	SPROabftn
	Sun WorkShop Compilers C 5.0	SPROabcc
	Sun WorkShop TeamWare 2.1	SPROabtw
	Sun WorkShop Overviews	SPROabov
Sun WorkShop Professional C Docs 5.0 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop 5.0	SPROabws
	Sun WorkShop Compilers C 5.0	SPROabcc
Sun WorkShop Compilers C/C++ Docs (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop Compilers C 5.0	SPROabcc
	Sun WorkShop Compilers C++ 5.0	SPROabcpl
Sun WorkShop Compilers FORTRAN Docs 5.0 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop Compilers FORTRAN 77/90	SPROabftn
Sun WorkShop TeamWare Docs 2.1 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop TeamWare 2.1	SPROabtw

TABLE A-4 Sun WorkShop HTML and AnswerBook2 Documentation Package Components *(continued)*

Package	Component	Configuration
Sun WorkShop University Edition Docs 5.0 (AnswerBook2)	Sun WorkShop Installation	SPROabins
	Sun WorkShop 5.0	SPROabws
	Sun WorkShop Compilers FORTRAN 77/90	SPROabftn
	Sun WorkShop Compilers C 5.0	SPROabcc
	Sun WorkShop Compilers C++ 5.0	SPROabcp1
	Sun WorkShop TeamWare 2.1	SPROabtw
	Sun WorkShop Overviews	SPROabov

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